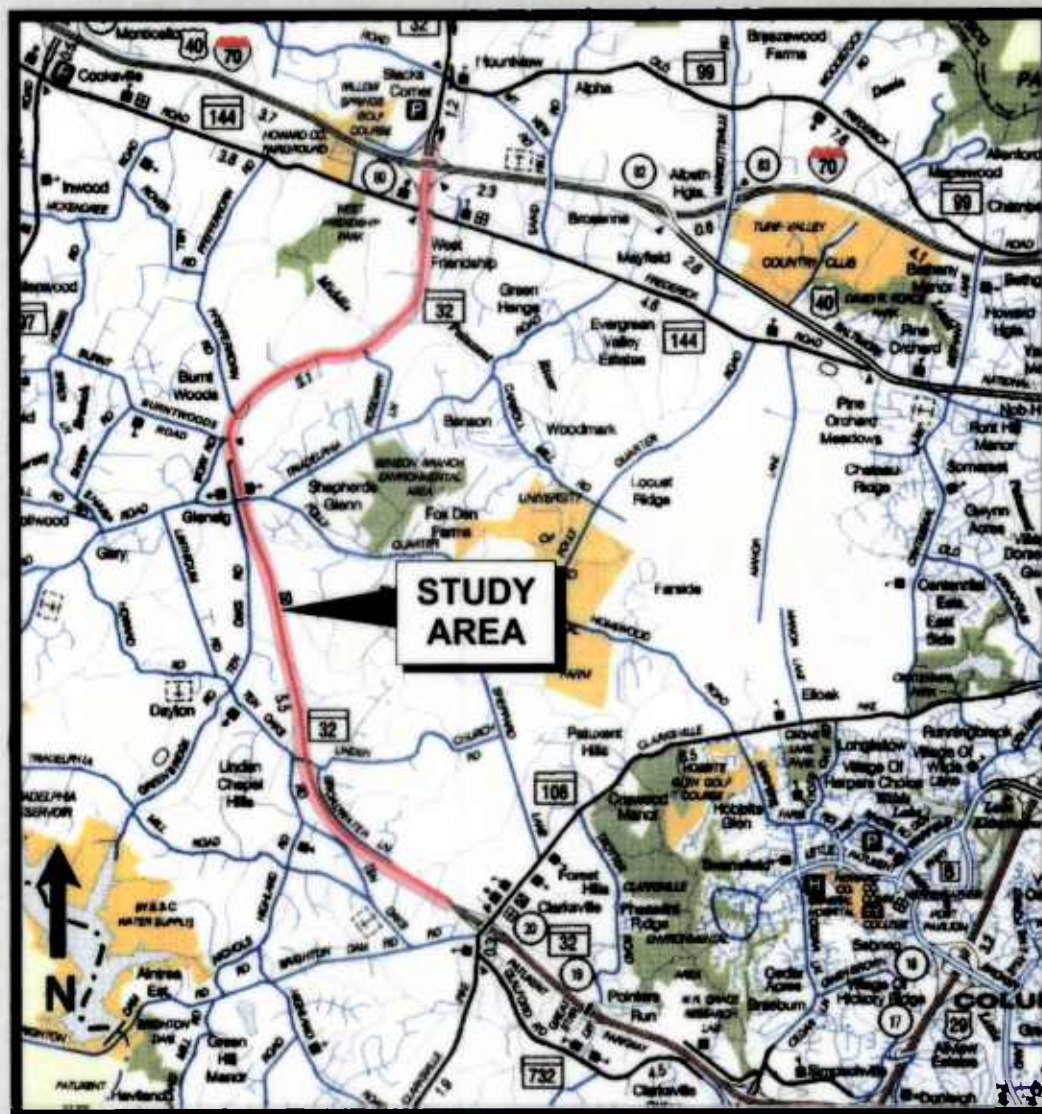




Howard County,
Maryland

DRAFT ENVIRONMENTAL IMPACT STATEMENT

MD 32 PLANNING STUDY



MD 108 to I-70 Howard County, Maryland

Prepared by:



U.S. Department of Transportation
Federal Highway Administration

Maryland Department of Transportation
State Highway Administration



MD 32 PLANNING STUDY
from MD 108 to Interstate 70
Howard County, Maryland

ADMINISTRATIVE ACTION

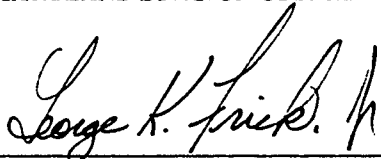
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to 42 U.S.C. 4332 (2)(c), 49 U.S.C. 303,
and CEQ Regulations (40 CFR 1500 et seq.)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
MARYLAND DIVISION OFFICE

and

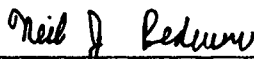
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION



FEDERAL HIGHWAY ADMINISTRATION
Division Administrator

1-21-99

Date



STATE HIGHWAY ADMINISTRATION
Director, Office of Planning and Preliminary Engineering

1/21/99

Date

The following persons may be contacted for additional information concerning this Draft EIS document:

Ms. Pamela S. Stephenson
Environmental Protection Specialist
Federal Highway Administration
The Rotunda - Suite 220
711 West 40th Street
Baltimore, MD 21211
PHONE: (410) 962-4342
HOURS: 7:30 a.m. - 4:30 p.m.

Mr. Louis H. Ege, Jr.
Deputy Director
Office of Planning and Preliminary Engineering
State Highway Administration
707 North Calvert Street
Mailstop C-301
Baltimore, MD 21202
PHONE: (410) 545-8500 or 1-800-548-5026
HOURS: 7:30 a.m. - 4:30 p.m.

The proposed action would upgrade the two-lane section of MD 32 in Howard County, Maryland, thereby improving traffic operations along this critical nine-mile transportation link in Maryland. Alternatives being considered include the No-Build Alternative and two Build Alternatives. The Build Alternatives include dualization of the main line along the existing alignment; provision of a 34-foot wide median; and interchanges at Linden Church Road, Dayton Shop, Burntwoods Road, Rosemary Lane, MD 144, and I-70. Build Alternative I includes an additional interchange at Nixon's Farm Lane. Environmental impacts associated with this project are summarized in Table S-1 and would include residential and business displacements, right of way acquisitions, effects upon Waters of the U.S. including wetlands, and 100 year floodplain encroachment.

Comments on this Draft Environmental Impact Statement are due April 19, 1999, and can be sent to the persons listed above.



Maryland Department of Transportation
State Highway Administration

3

Parris N. Glendening
Governor
John D. Porcari
Secretary
Parker F. Williams
Administrator

January 25, 1999

Project No. HO75B11
MD 32 from MD 108 to I-70
Howard County, Maryland

Enclosed for your review and comment is the MD 32 Draft Environmental Impact Statement (DEIS). This document has been prepared in accordance with the CEQ Regulations and 23 CFR 771.

You are requested to provide comments on or before April 19, 1999 to:

Mr. Louis H. Ege, Jr.
Deputy Director
Office of Planning and Preliminary Engineering
Mailstop C-301
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

All responses will be considered in developing the final document.

Very truly yours,

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

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

MD 32 DEIS

Page Two

NJP:AEG

Enclosure

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Ms. Heather Murphy
Mr. Doug Rose
Mr. Robert Sanders
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Ms. Pamela Stephenson
Mr. Robert Fisher

SUMMARY

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

Summary

1. Administrative Action

Federal Highway Administration:

- () Environmental Assessment
- (X) Draft Environmental Impact Statement
- () Final Environmental Impact Statement
- () Finding of No Significant Impact

2. Informational Contacts

The following persons may be contacted for additional information concerning this document:

Ms. Pamela S. Stephenson
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Phone: 410-545-8500 or 1-800-548-5026
Hours: 7:30 a.m. - 4:30 p.m.

3. Proposed Action/Purpose and Need

The purpose of this study is to improve traffic operations and safety conditions between MD 108 and I-70 and complete the MD 32 facility as a controlled access divided expressway. The purpose and need for improvements along this portion of MD 32, which are fully described in Chapter I of this Draft Environmental Impact Statement (Draft EIS), are summarized as follows:

- MD 32 south of the study limits, from MD 108 to I-97 is currently a four and six lane divided expressway with controlled access interchanges. Improvements to this 9-mile section of MD 32 are necessary to provide continuity with the rest of the system.
- The 1997 average daily traffic (ADT) along MD 32 within the study area ranges from 15,900 vehicles per day to 18,300 vehicles per day and the roadway operates at a level of service (LOS) E/F. The volumes are anticipated to increase by 60 percent with the 2020 No-Build scenario and operate at a further deteriorated LOS F. In addition to the heavy volumes, the truck traffic, including school buses, comprises 10 percent of the traffic volumes
- Baltimore Metropolitan Council (BMC) Round 5 Growth Data within the immediate vicinity of this section of MD 32 shows a projected increase in households, population and

employment (149.7 percent, 113.7 percent and 63.6 percent, respectively) from 1990 to 2020, see Figure I-1, Howard County Growth Data for Project Vicinity.

- Data for the area surrounding the MD 32 project area shows households, population and employment are projected to increase 221 percent, 177.6 percent and 86.2 percent respectively from 1990 to 2020, see Figure I-2, Howard County Growth Data for Surrounding Vicinity.
- Sporadic commercial and residential development activity is presently occurring within the corridor.
- With the increasing population and household growth occurring in the northern portion of the county, travel demand for MD 32 is projected to increase with employment centers located in eastern Howard, Anne Arundel, and Montgomery Counties and Washington, D.C.

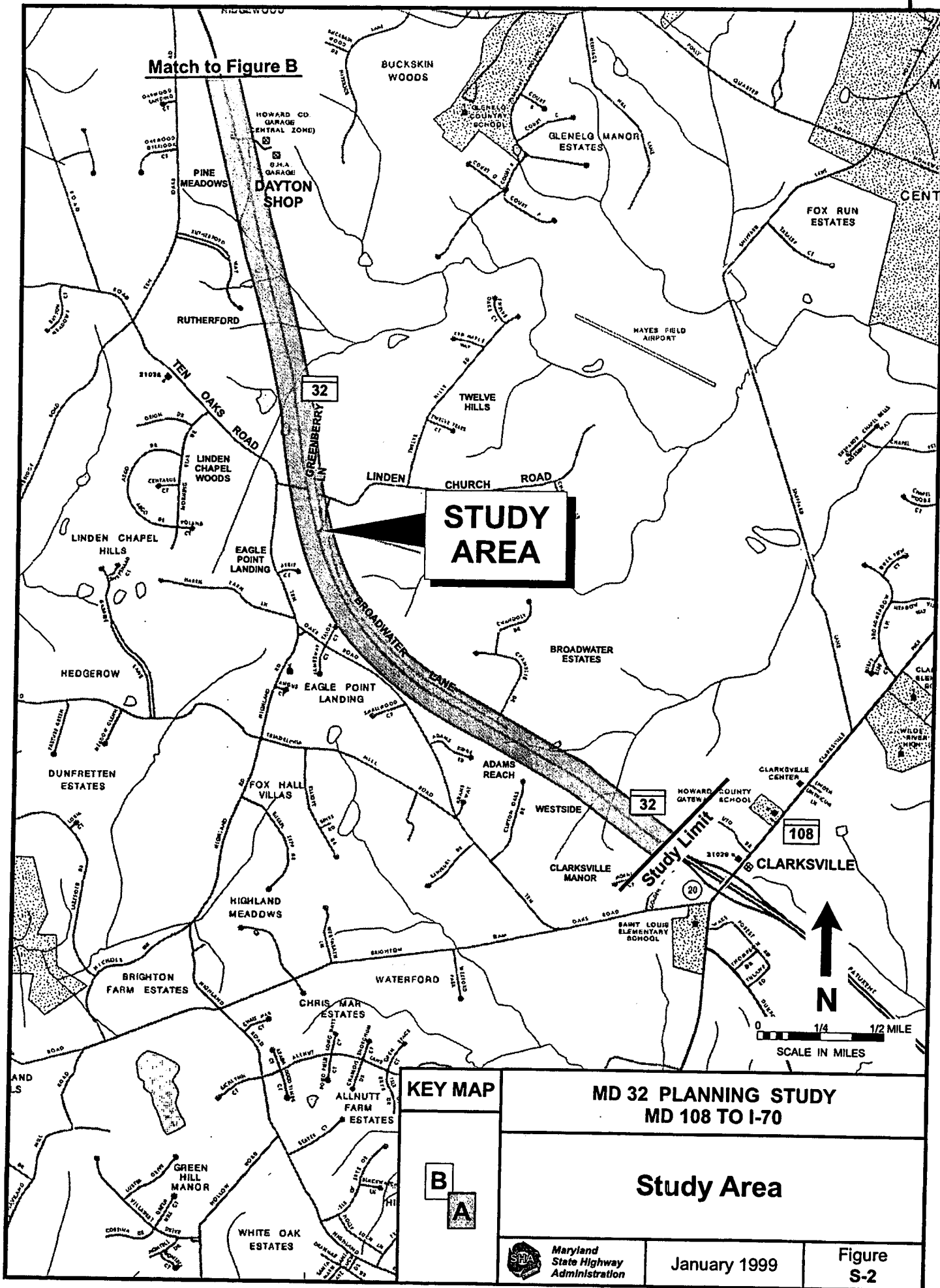
This section of MD 32 is part of the "Patuxent Freeway" system that stretches from Annapolis, the state capital, to I-70, a total distance of 40 miles, see Figures S-1, Vicinity Map and S-2, Study Area. This roadway is part of a high volume transportation corridor that will provide a safe and efficient route for people and goods between the Eastern Shore and Western Maryland, while bypassing the more densely populated areas of Baltimore and Washington, D.C. This system connects the north-south arterial routes leading to the major employment centers of Washington, D.C. and Baltimore and is included in the 1993 Long Range Plan for the Baltimore region.

4. Alternatives Considered

This study has identified transportation alternatives that address the project need while minimizing impacts to the social, cultural, and natural environment. Preliminary alternatives were developed and presented to the public at the Alternates Public Workshop held in June 1996. Following the Workshop, and in response to citizen and environmental agency comments, alternatives retained for detailed study were identified. Results of the Congestion Management Strategies (CMS) analyses, a regional assessment of the transportation network, were incorporated into the development of alternatives. All alternatives considered are described in Chapter II. Selection of an alternative for final design will be made after the comments received on the Draft EIS and from the public hearing have been fully evaluated. Alternatives retained for detail study include:

No Build Alternative would provide no major improvement to the existing MD 32 roadway other than spot safety and maintenance improvements. These planned improvements are assumed to be in place by 2020 and thus the No-Build Alternative is the baseline for the transportation analysis of the build alternatives. A detailed description of this alternative is presented in Section II.C.1 of this Draft EIS.

Build Alternative I proposes an access controlled, four-lane, divided highway with a 34-foot median. Interchanges included in this alternative are Linden Church Interchange Option



2, Dayton Shop Interchange Option 1M, Burntwoods Road Interchange Option 2, Rosemary Lane Interchange Option 2, Nixon's Farm Lane Interchange Option 2, MD 144 Interchange Option 3M, and I-70 Interchange Option 2. A detailed description of this alternative is presented in Sections II.C.2 and II.C.3 of this Draft EIS.

Build Alternative II proposes an access controlled, four-lane, divided highway with a 34-foot median. The MD 32 mainline design and the interchanges at Linden Church Road, Dayton Shop, Burntwoods Road, Rosemary Lane, and I-70 are the same as those described above for the Build Alternative I. Under Build Alternative II access to Nixon's Farm Lane and MD 144 are provided via MD 144 Interchange Option 4 and access roads in lieu of the two separate interchanges proposed in Build Alternative I. A detailed description of this alternative is presented in Sections II.C.2 and II.C.4 of this Draft EIS.

5. Summary of Environmental Impacts

The MD 32 study area is rural with adjacent land uses consisting primarily of agricultural land, and rural residential developments. Table S-1 presents a summary of the environmental impacts for each of the alternatives.

No-Build Alternative was evaluated as the baseline condition and would have no environmental impacts.

Build Alternative I (dualize along existing MD 32 providing a 34-foot median and full access control with seven interchanges) would require the displacement of nine residences and one business, and would require 101.5 acres of additional right-of-way. Furthermore, 3.54 acres of wetlands, 14 acres of floodplains, 73.1 acres of upland forest, 100.0 acres of upland meadow, and 34.1 acres of maintained turf areas would be required. Build Alternative I would require 20 stream crossings and would impact 8,940 linear feet of stream channel by encroachment, crossing, and/or possible relocation. No substantial cumulative effects were identified.

Build Alternative II (dualize along existing MD 32 providing a 34-foot median and full access control with six interchanges) would require the displacement of nine residences, one business, and 89.0 acres of additional right-of-way. Furthermore, 2.2 acres of wetlands, 14 acres of floodplains, 71.5 acres of upland forest, 94.5 acres of upland meadow, and 34.0 acres of landscaped/mowed turf areas would be required. Build Alternative II would require 20 stream crossings and would impact 8,360 linear feet of stream channel by encroachment, crossing, and/or possible relocation. No substantial cumulative effects were identified.

6. Permits Required

Construction of the project would require review and approval for the following permits:

U.S. Army Corps of Engineers:	Section 404 Permit
Maryland Department of the Environment:	National Pollutant Discharge Elimination System (NPDES) Permit
Maryland Department of the Environment:	Reforestation Plan
Maryland Department of the Environment:	Sediment and Erosion Control Plan
Maryland Department of the Environment:	Stormwater Management Plan
Maryland Department of the Environment:	Water Quality Certification
Maryland Department of the Environment:	Nontidal/Tidal Wetland and Waterways Permit

7. Areas of Controversy

Several areas of particular concern have been raised by citizens and environmental agencies throughout the public involvement process. These include the following:

Noise - Many area residents are concerned about existing noise levels along MD 32, especially noise caused by trucks. Residents are concerned that by dualizing MD 32 additional traffic will result in unacceptable noise levels. In addition, communities outside the study area have expressed concern that the additional traffic attracted by dualizing this segment of MD 32 will further exacerbate existing noise problems.

Truck Traffic - Many residents are concerned about the volume of trucks on MD 32. Trucks are viewed as safety hazards and as causing excessive noise. Many requested that trucks be either prohibited, restricted from using MD 32, or required to pay a toll.

Terrapin Branch - The environmental agencies are concerned that impacts to Terrapin Branch, immediately adjacent to MD 32, be kept to a minimum. Further, proposed improvements should accommodate fish passage while preserving the integrity of the stream bank during and after construction.

8. Next Steps in the Project Development Process

After considering testimony presented at the Location/Design Public Hearing and all agency and public written comments received during the comment period for this document, the Maryland Department of Transportation will select an alternative subject to the approval of the Federal Highway Administration (FHWA). This Draft EIS may be supplemented if it is determined that necessary changes to the alternatives result in significant environmental impacts that were not evaluated in this document. If a supplemental EIS is prepared, it will be circulated for public review prior to final decision making. A Final Environmental Impact Statement will be prepared setting forth:

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- the preferred alternative
- mitigation measures to be incorporated in further project development
- response to substantive comments received during the Public Hearing and Draft EIS comment period
- the results of collateral environmental and resource review procedures

The Final EIS will be made available for public review, and sent to review agencies and those who provide substantive written comments or testimony during the public comment period on the Draft EIS.

The project planning process will conclude following the receipt of Location and Design Approvals on the preferred alternative. A Record of Decision (ROD) from FHWA will constitute Location Approval. The SHA Administrator grants Design Approval, approval on the design elements of the preferred alternative.

The project would then be considered for inclusion in the Maryland Consolidated Transportation Program for design, right-of-way acquisition, and construction funding.

9. Summary Table

Table S-1 presents a summary of the social, cultural, economic, and natural environmental impacts of the project alternatives presented in this document.

Table S-1: Summary of Impacts

Comparison Features	No Build	Build Alternative I	Build Alternative II
♦ Description of Alternative			
Project Length	9.0 miles	9.0 miles	9.0 miles
Number of Interchanges	0	7	6
♦ Traffic Operations			
Existing Level of Service (1997)	E/F	not applicable	not applicable
Design Year Level of Service (2020)	F	C/D	C/D
♦ Socio-economic			
Right-of-Way	0	101.6 acres	89.1 acres
Residential Relocations	0	9	9
Business Displacements	0	1	1
Active Farmland	0	23.5 acres	21.5 acres
Number of Farm Parcels	0	15	15
Public Parks	0	0	0
Public Facilities	0	0	0
♦ Cultural Resources			
Archeological Sites	0	0	0
Historic Structures	0	no adverse effect	no adverse effect
♦ Natural Resources			
Stream Crossings	0	20	20
Linear Feet of Streams	0	8,940 linear feet	8,360 linear feet
100 Year Floodplain Acreage	0	14 acres	14 acres
Wetland Acreage	0	3.34 acres	2.24 acres
Upland Forest	0	73.1	71.5
Upland Meadow	0	100.0	94.5
Landscaped and Turf Areas	0	34.1	34.0
Federally Listed RTE Species	0	0	0
State Listed RTE Species	0	0	0
♦ Air Quality	No Violation	No Violation	No Violation
♦ Noise Receptors Impacted	10	15	15
♦ Hazardous Waste Sites	0	4	4
♦ Cost Estimate			
Right-of-Way	\$ 0	\$11 million	\$10 million
Engineering & Construction	\$ 0	\$145 to 150 million	\$132 to 137 million
Total Cost	\$ 0	\$156 to 161 million	\$142 to 147 million

10. Environmental Assessment Form

The Environmental Assessment Form for the Maryland 32 Planning Study is presented on the following pages. The 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 recommended that duplication of federal, state, and local procedures be integrated into a single process.

The checklist identifies specific areas of the natural and socio-economic environment that have been considered while preparing this environmental assessment. The reviewer can refer to the appropriate section of this Draft EIS document, as indicated in the "comment" column of the form, for a description of specific characteristics of the natural or socio-economic environment 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

	<u>Yes</u>	<u>No</u>	<u>Comments Attached</u>
A. Land Use Considerations			
1. Will the action be within the 100 year floodplain?	<u>X</u>	—	<u>See Section III.G and IV.H</u>
2. Will the action require a permit for construction or alteration within the 50 year floodplain?	—	<u>X</u>	—
3. Will the action require a permit for dredging, filling, draining, or alteration of a wetland?	<u>X</u>	—	<u>See Section S.6</u>
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?	—	<u>X</u>	—
5. Will the action occur on slopes exceeding 15%?	—	<u>X</u>	—
6. Will the action require a grading plan or a sediment control permit?	<u>X</u>	—	<u>See Section S.6</u>
7. Will the action require a mining permit for deep or surface mining?	—	<u>X</u>	—
8. Will the action require a permit for drilling a gas or oil well?	—	<u>X</u>	—
9. Will the action require a permit for airport construction?	—	<u>X</u>	—
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	—	<u>X</u>	—

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		<u>Yes</u>	<u>No</u>	<u>Comments Attached</u>
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?	—	<u>X</u>	—
21.	Will the action result in any discharge into surface or sub-surface water?	<u>X</u>	—	<u>See Sections III.E and F, and IV.F and G</u>
22.	If so, will the discharge affect ambient water quality limits or require a discharge permit?	—	<u>X</u>	—
C.	Air Use Considerations			
23.	Will the action result in any discharge into the air?	—	<u>X</u>	<u>See Sections III-J and IV-K</u>
24.	If so, will the discharge affect ambient air quality limits or produce a disagreeable odor?	—	<u>X</u>	—
25.	Will the action generate additional noise which differs in character or level from present conditions?	<u>X</u>	—	<u>See Section III-K and IV.L</u>
26.	Will the action preclude future use of related air space?	—	<u>X</u>	—
27.	Will the action generate any radio-logical, electrical, magnetic, or light influences?	—	<u>X</u>	—
D.	Plants and Animals			
28.	Will the action cause the disturbance, reduction, or loss of any rare, unique or valuable plant or animal?	—	<u>X</u>	—

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		<u>Yes</u>	<u>No</u>	<u>Comments Attached</u>
38.	Will the action affect the employment opportunities for persons in the area?	—	<u>X</u>	<u>See Sections III.A.2.a and IV.A.2.a</u>
39.	Will the action affect the ability of the area to attract new sources of tax revenue?	—	<u>X</u>	—
40.	Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?	—	<u>X</u>	—
41.	Will the action affect the ability of the area to attract tourism?	—	<u>X</u>	—
F.	Other Considerations			
42.	Could the action endanger the public health, safety, or welfare?	—	<u>X</u>	—
43.	Could the action be eliminated without deleterious affects to the public health, safety, welfare, or the natural environment?	—	<u>X</u>	<u>See Section I.C</u>
44.	Will the action be of statewide significance?	<u>X</u>	—	<u>See Section I.B</u>
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?	—	<u>X</u>	—

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MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

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I.

PURPOSE OF AND NEED FOR ACTION

MD 32 Planning Study

MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

I. Purpose and Need

A. Project Location and Description

This study evaluates the potential for improvements to MD 32 from MD 108 to I-70, a distance of approximately nine miles, in Howard County, see Figure S-2.

MD 32 is on Maryland's primary highway system and is functionally classified by the State of Maryland as a Minor Arterial with a federal classification as a Rural - Other Principal Arterial. This portion of MD 32 is a two-lane roadway extending from MD 108 in the village/commercial center of Clarksville to I-70 in the West Friendship community area, see Figure S-1. MD 32 in this area traverses rolling terrain with low density residential and agricultural land uses.

The existing two-lane roadway, which consists of a bituminous surface with two 12-foot lanes and 10-foot shoulders, was built in the late 1950's and early 1960's. It was intended to be the future northbound roadway of a four-lane divided highway. From MD 108 to Burntwoods Road, MD 32 is access controlled, generally within an existing 300-foot right-of-way. From Burntwoods Road to I-70, MD 32 has no access controls and is within an existing 150-foot right-of-way. This section of MD 32 serves not only central Howard County, but also provides a link between Annapolis and the central and western parts of the state.

B. Background

1. Systems Linkage and Regional Plan Consistency

This section of MD 32 completes the "Patuxent Freeway" system that stretches from Annapolis, to I-70, a total distance of 40 miles (see Figure S-1, Vicinity Map). It is part of a high volume transportation corridor that will provide a safe and efficient route for people and goods between the Eastern Shore and Western Maryland, while bypassing the more densely populated areas of Baltimore and Washington, D.C. This system connects the north-south arterial routes leading to the major employment centers of Washington, D.C. and Baltimore and is included in the 1993 Long Range Plan for the Baltimore region.

2. Master Plan Consistency and County Support

The upgrading and widening of MD 32 to a four-lane Principle Arterial from MD 108 to I-70 is identified in the Howard County Comprehensive Transportation Plan, 2010 Highway Element. This designation permits both grade separated and at-grade intersections. The need for a location and design study of MD 32 north of Clarksville was first identified in the Howard County Executive's May 1995 highway priority letter to the Maryland Department of Transportation.

3. Highway Needs Inventory and CTP History

MD 32 improvements appear in the State Highway Administration's (SHA) current Highway Needs Inventory (HNI). MD 32 from MD 108 to Burntwoods Road is listed as a freeway reconstruct, and MD 32 from Burntwoods Road to I-70 is listed as a divided highway reconstruct (including access control improvements). MD 32 from MD 108 to Burntwoods Road first appeared in the 1968-1988 Highway Needs Study. MD 32 from Burntwoods Road to I-70 first appeared in the 1975-1994 Highway Needs Study.

The improvement of MD 32 from MD 108 to I-70 is included in the Primary Development and Evaluation (D&E) portion of the 1997-2002 Consolidated Transportation Program (CTP). This section of MD 32 first appeared in SHA's CTP in the 1990-1995 edition's D&E portion as part of a MD 32/MD 97 corridor study for a four-lane divided highway from MD 108 to MD 26 (in Carroll County). This project was deleted from the following year's CTP. MD 32 from MD 108 to I-70, the subject of this study, was subsequently added in the 1994-1999 CTP.

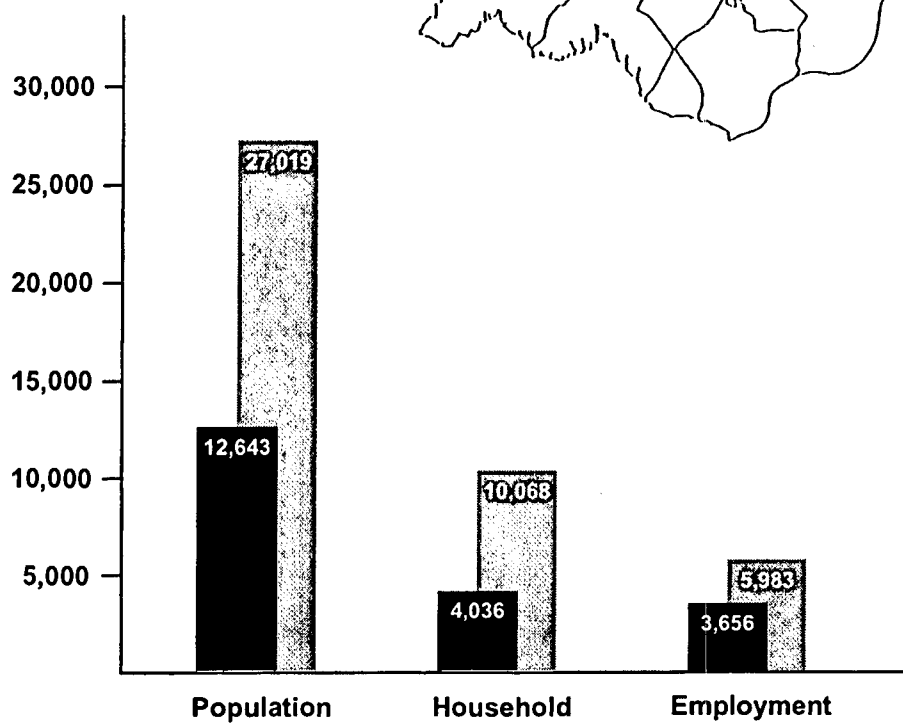
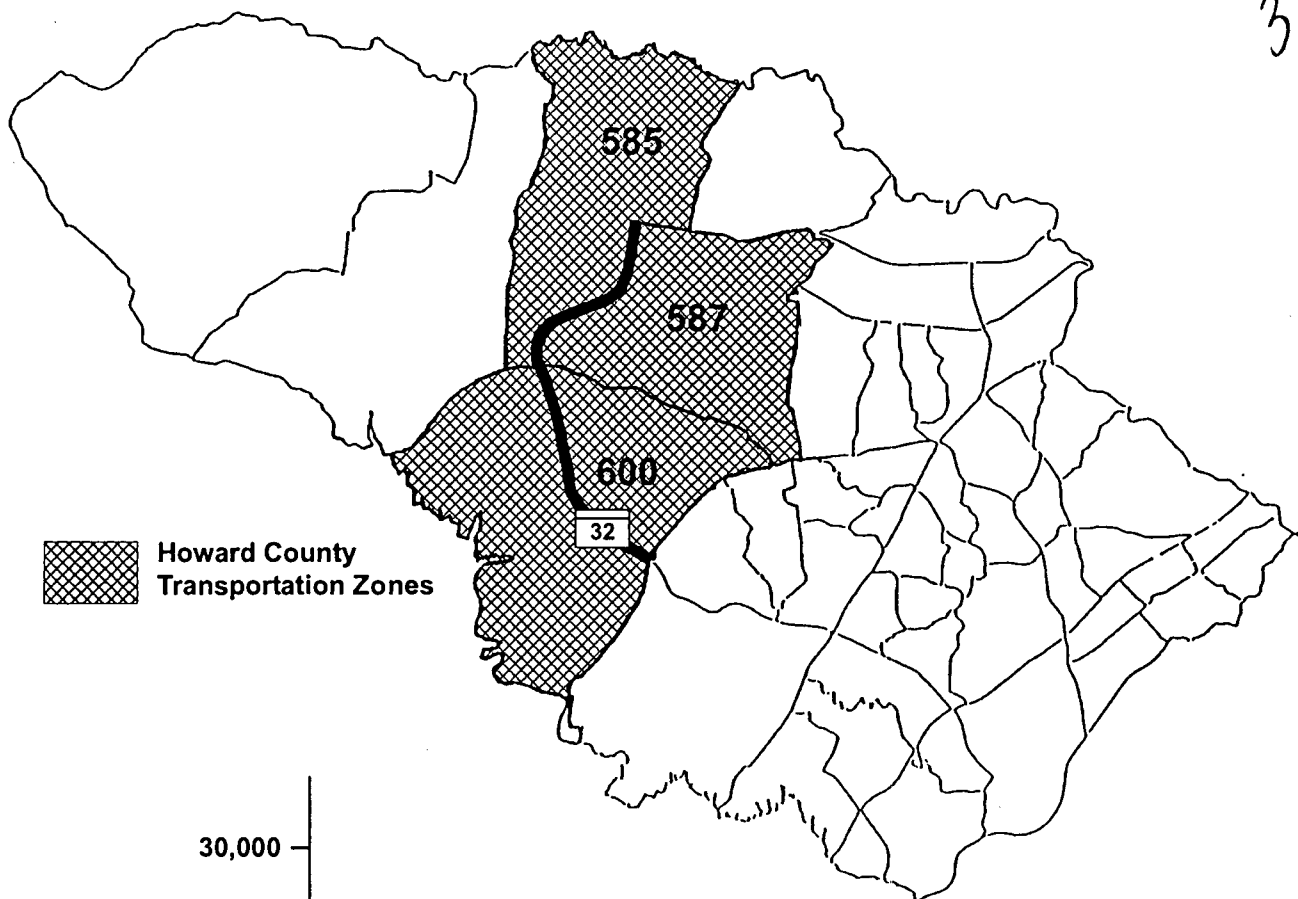
C. Need for the Project

Existing MD 32 through the project area consists of a two-lane 24-foot roadway with 10-foot shoulders. From MD 108 to Burntwoods Road, MD 32 is located within an existing 300-foot right-of-way and has partial access control. From Burntwoods Road to I-70, MD 32 has no access controls and is located within an existing 150-foot right-of-way. When the roadway was built in the late 1950's/early 1960's, it was intended to be the initial two lanes of a four-lane divided highway, and was anticipated to be able to handle traffic demand to the year 2000. Additional construction was anticipated after the year 2000.

This section of MD 32 is part of the "Patuxent Freeway" system that stretches from Annapolis, the state capital, to I-70, a total distance of 40 miles. Improvements to this section of MD 32 are necessary to help provide continuity with the remainder of the system.

Baltimore Metropolitan Council (BMC) Round 5 Growth Data within the immediate vicinity of this section of MD 32 shows a projected increase in households of 4,036 to 10,068 from 1990 to 2020. Population is projected to increase from 12,643 to 27,019 within the same time frame. This represents an increase of 149.5 percent and 113.7 percent, respectively. Employment within the immediate vicinity is projected to rise 63.6 percent from 3,656 jobs to 5,983 jobs, see Figure I-1 Howard County Growth Data for Project Vicinity.

Data within the surrounding area for MD 32 shows households are projected to increase from 8,496 to 27,275 and population is projected to increase from 26,531 to 73,663 from 1990 to 2020, an increase of 221.0 percent and 177.6 percent respectively. Employment for the surrounding area is projected to increase 86.2 percent from 11,296 to 21,032 in the same time frame, see Figure I-2, Howard County Growth Data for Surrounding Vicinity.



■ 1990
▨ 2020

**MD 32 PLANNING STUDY
MD 108 TO I-70**

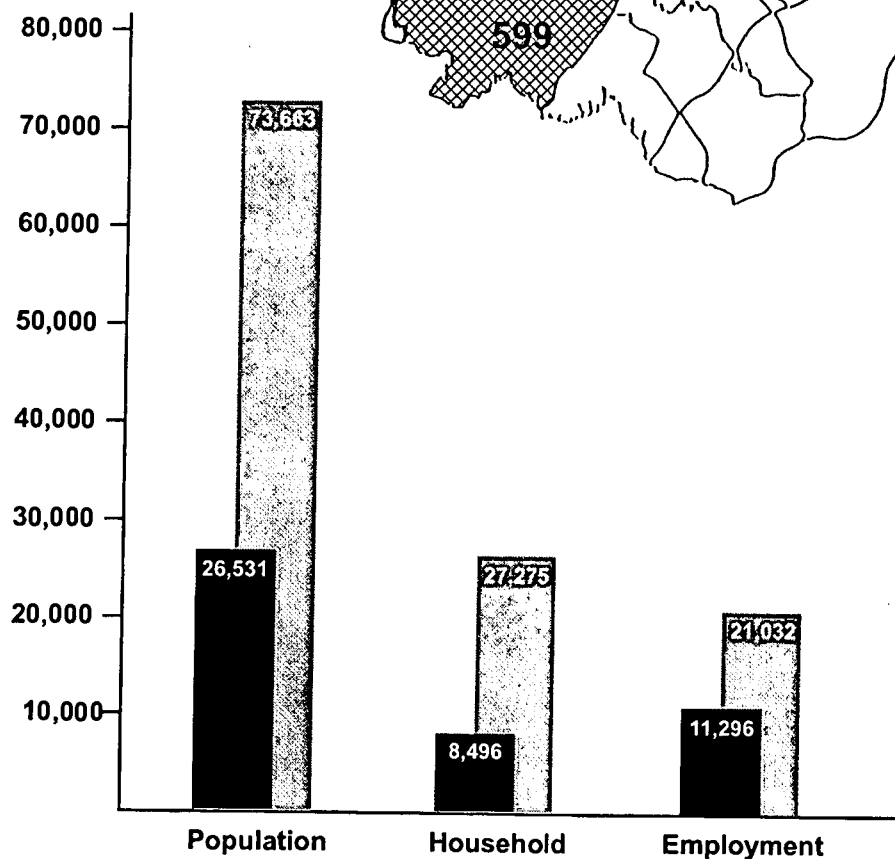
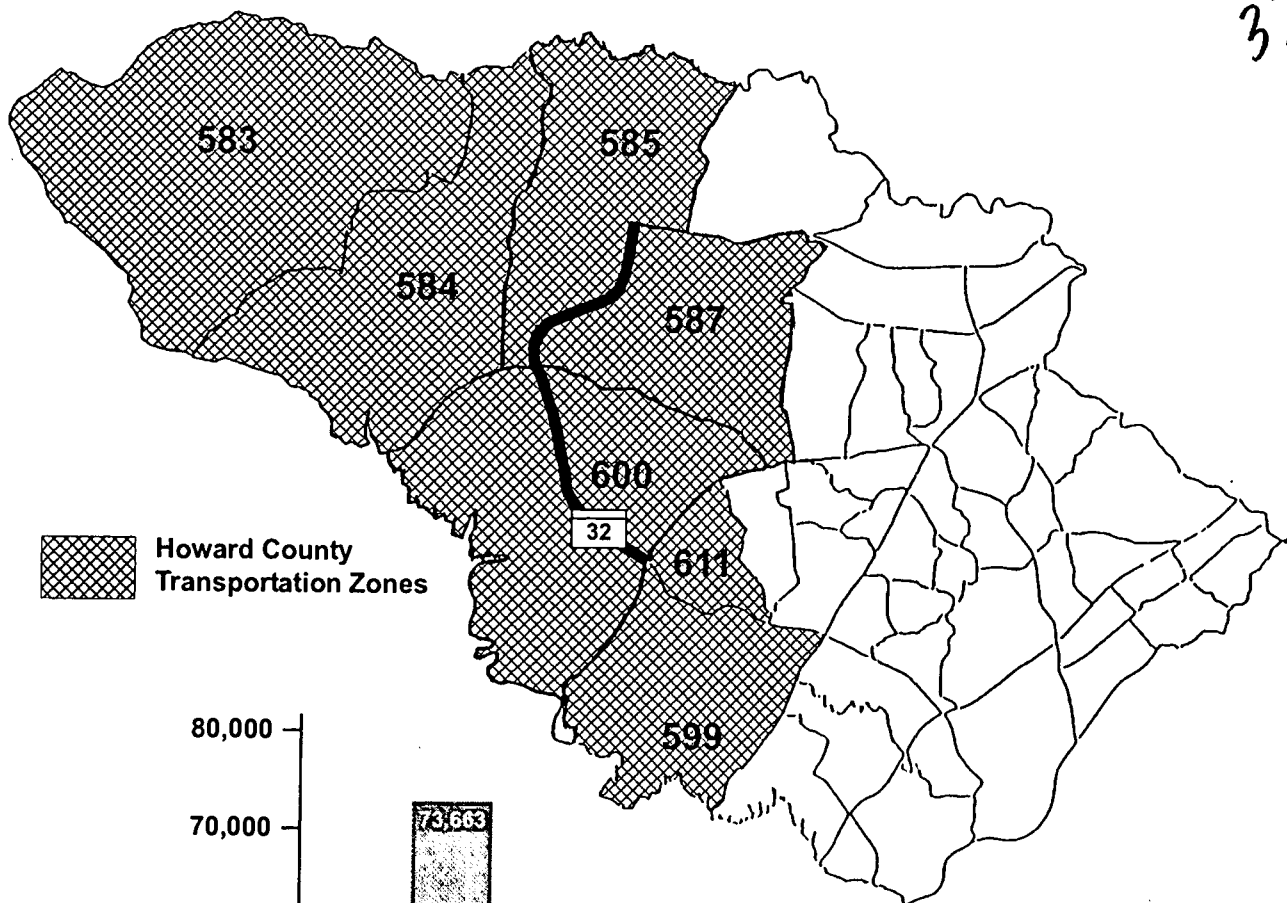
**Howard County Growth
Data for Project Vicinity**





Maryland
State Highway
Administration

January 1999

Figure
I-1



 1990
 2020

**MD 32 PLANNING STUDY
MD 108 TO I-70**

**Howard County Growth Data
for Surrounding Vicinity**



Maryland
State Highway
Administration

January 1999

Figure
I-2

With the increasing population and household growth occurring in the northern portion of the county, travel demand for MD 32 is projected to increase with the growth of employment centers located in eastern Howard County, Anne Arundel County, Montgomery County and Washington, D.C.

1. Traffic Operations

a. Average Daily Traffic

Average daily traffic (ADT) is the average number of vehicles traveling on a roadway during a 24-hour period. The current ADT (1997) along MD 32 ranges from 15,900 vehicles per day just south of the intersection with MD 144 to 18,300 vehicles per day just south of the intersection with Linden Church Road. The projected 2020 No-Build ADT for these areas are 26,700 and 29,900 vehicles per day respectively, an increase of 60 percent. The projected 2020 Build ADT ranges from 39,100 vehicles per day just south of MD 144 to 42,100 vehicles per day just south of Linden Church Road, increases of 246 and 230 percent, respectively, over the current volumes. Truck traffic on MD 32, including school buses, comprises 10 percent of the 1997 ADT. In order to determine the percentage of trucks for design year 2020, an origin and destination (O&D) study was completed in June 1995 at the weigh station on I-70. The results of the survey indicated that truck traffic on MD 32 would comprise 9 percent of the 2020 ADT. Under a "No Build" option, MD 32 would be unable to function effectively as a minor arterial by 2020. Table I-1 presents the intersection levels of service for the existing and 2020 No-Build traffic scenarios.

b. Peak Hour Traffic

Peak hour traffic volumes were developed for 1997 and 2020 to analyze existing and future levels of service (LOS). The morning peak hour occurs between 7:00 and 8:00 AM while the afternoon peak occurs between 5:00 and 6:00 PM.

c. Level of Service

Traffic flow is measured by determining the level of service (LOS) along any given section of a roadway. LOS designations, from A to F, coincide with conditions that drivers experience while traveling along the roadway. A brief explanation of the various levels of service is listed below:

- LOS A - free traffic flow, low volumes, high speeds;
- LOS B - stable traffic flow, some speed restrictions;
- LOS C - stable flow, increasing traffic volumes;
- LOS D - approaching unstable flow, heavy traffic volumes, decreasing speeds;
- LOS E - low speeds, high traffic volumes approaching roadway capacity, temporary delays;
- LOS F - forced flow with traffic delays.

Table I-1: Intersection Levels of Service

Intersections	1997 LOS		2020 No-Build LOS		Existing Distance Between Intersections
	AM	PM	AM	PM	
MD 32 @ I-70 Interchange (WB Ramps)	C	C	C	F	0.30 miles
MD 32 @ I-70 Interchange (EB Ramps)	C	C	E	D	0.27 miles
MD 32 @ MD 144 *	A	A	B	C	1.49 miles
MD 32 @ Rosemary Lane	F	D	F	F	1.38 miles
MD 32 @ Pfefferkorn Road	F	D	F	F	0.25 miles
MD 32 @ Burntwoods Road *	F	D	F	F	0.21 miles
MD 32 @ Ten Oaks Road *	F	F	F	F	1.42 miles
MD 32 @ SHA's Dayton Shop	F	E	F	F	1.38 miles
MD 32 @ West Linden Church Road *	F	E	F	F	0.17 miles
MD 32 @ Linden Church Road *	F	E	F	F	2.22 miles

* Signalized intersections

2. Accident History

Overall, the section of MD 32 between MD 108 and I-70 experienced an average accident rate of 113.1 accidents per 100 million vehicle miles (acc/100 mvm) during the three-year study period from 1995 to 1997, see Table I.2. This accident rate is 11.5 percent lower than the average statewide rate (SWR) of 127.8 acc/100 mvm for similarly designed highways. There was, however, a substantial increase in the overall number of accidents in 1997 compared to the other study years. Available data for 1998 indicates a continuing trend of increased accident rates since 1996. During the three-year study period, 1995-1997, there were two fatal accidents, both occurring in 1997. In 1998 there were an additional four fatal accidents.

In terms of the nature of the accidents, most of the accident rates along MD 32 were within range of the statewide averages. The truck-related and "other" collisions have rates significantly higher than the statewide average for similar highways. The high rate of "other" type collisions is primarily due to the number of animal-related accidents. In the three-year study period, 26 of the 37 total accidents classified as "other" collision involved animals. When partial 1998 data is included, rear end accidents and truck related accidents are both substantially higher than the statewide average.

The percentage of nighttime and wet surface accidents was slightly less than that of similar highways across the state. Alcohol was involved in two percent of the accidents, compared to eight percent for similar type highways statewide.

There were no high accident locations (HAL) within the study limits for the three-year study period.

Table I-2: Accident History
January 1, 1995 through December 31, 1997

Accident Type	Total Accidents	Study Rate **	Statewide Rate**
Fatal	2	1.4	1.1
Injury	63	44.2	68.6
Property Damage	96	67.4	58.2
Total Accidents	161	113.1	127.8
Angle Collision	26	18.3	22.1
Rear End	46	32.3	28.7
Fixed Object	19	13.3	31.4
Opposite Direction	5	3.5	6.4
Sideswipe	9	6.3	6.5
Left Turn	15	10.5	10.1
Pedestrian	1	0.7	0.9
Parked Vehicle	3	2.1	2.4
Other Collision	37	26.0 *	3.6
Truck Related	27	19.0 *	8.3
Nighttime	41	25%	32%
Wet Surface	34	21%	28%
Alcohol Related	4	2%	8%

* Significantly higher rate than the statewide average accident rate for similar type highways

** Accident rates signify number of accidents per 100 million vehicle miles traveled (acc/100 mvm)

II. ALTERNATIVES CONSIDERED

MD 32 Planning Study

MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

II. Alternatives Considered

A. Multi-Modal Considerations

1. Congestion Management System (CMS)

Congestion Management System (CMS) analyses have been conducted within a corridor from Frederick to Annapolis. This corridor, which includes MD 32, has been designated Corridor #24. CMS studies involve a regional assessment of the transportation network. The results of the CMS analyses assists planners in identifying future transportation improvements, including using many different modes within the study corridor, possibly reshaping transportation elements in the Long Range Plan.

The CMS report, dated July 1997, evaluated several different alternative packages including a variety of improvement options. The CMS report of Corridor #24 identified several general conclusions that relate to regarding MD 32 from MD 108 to I-70:

- Transportation Demand Management (TDM) and Transportation System Management (TSM) measures, by themselves, are insufficient in providing congestion relief and noticeable mobility improvement in the corridor. However, as elements in an overall strategy in support of other more capital intensive elements - HOV lanes, highway capacity improvements, etc., they are useful and, given their relative low cost, are cost effective.
- Further planning for congestion relief and mobility improvements in Corridor #24 should focus on more detailed consideration of the recommended strategy to widen and upgrade MD 32 from MD 108 to I-70.
- The appropriate State and local agencies could implement many of the TSM/TDM elements, including the bus service and pedestrian and bicyclist improvements, relatively quickly. The more capital intensive improvements, highway capacity improvements and HOV lanes, should be considered for one or more parts of the overall corridor.
- The CMS also recommends supporting Howard County in its efforts to coordinate future development in such a manner as to promote transit ridership potential by reviewing new developments for their ability to accommodate buses, requiring that space be reserved for transit stops in major employment and mixed use centers. In addition, support for Howard County's efforts in the following areas are recommended:
 - Intention to prohibit extension of water and sewer facilities into the western part of the county,

- Coordination of land use changes along transit corridors to support and reinforce their ridership potential, and
- Proposing several mixed use town centers within the more urbanized eastern part of the county.

2. Major Investment Study (MIS)

A MD 32 MIS sub-team was established in February 1995 to evaluate MIS strategies for this project. Team members included the Baltimore Metropolitan Council staff representing the Baltimore Regional Transportation Steering Committee (the Metropolitan Planning Organization), Mass Transit Administration (MTA), Maryland Department of Transportation (MDOT), Federal Highway Administration (FHWA), Howard County Departments of Planning and Public Works as well as various SHA staff. The sub-team met in February, May, June, July, August and September of 1995. All future work regarding MIS was handled in regular team meetings. The sub-team developed draft Measures of Effectiveness (MOE), a public involvement strategy, identified agency roles and discussed possible multi-modal alternatives.

In May of 1995, team members made a presentation to the Transportation Steering Committee to formally initiate the MIS. In June of 1995, team members presented the initial MIS strategy at an Interagency Review Meeting. In May 1996, team members presented the MIS strategy and draft MOEs to the Federal Transit Administration.

The draft Measures of Effectiveness (MOE) were developed for system performance and environmental impacts. The system performance MOEs were: traffic volumes, volume to capacity ratio, level of service, vehicle occupancy, transit ridership, truck percentages, travel time by mode, delay, travel speed and number of incidents (accident rates). The environmental impact MOEs were: communities and businesses, cultural resources, floodplains, public parks and recreational areas, streams, wetlands, air and noise, and farmlands.

The MD 32 MIS sub-team coordinated with the CMS Corridor #24 team as they developed strategies for the entire MD 32 corridor from Mount Airy to Annapolis at the same time as the MD 32 study team was developing preliminary alternatives for the project area. The planning study progressed concurrently with the CMS with the knowledge that initial CMS results indicated highway based alternatives appeared to be the only set of solutions feasible for this segment of the corridor. Once the CMS report was finalized in July of 1997, the recommendations (see Section II.A) were examined and the draft MOEs were revisited. Based upon the highway oriented CMS recommendations MOEs retained included, the traffic volumes, volume to capacity ratio, level of service and number of accidents as well as the draft environmental impact MOEs.

Based upon the CMS recommendations the team examined TSM strategies, the highway widening and upgrade alternatives, bicycle and pedestrian accommodations, and land use concerns in terms

of the MIS/NEPA evaluation. As discussed in Section II.A.3 numerous TSM strategies were considered and implemented by the SHA District 7 Office and thus the TSM strategies were included in the No-Build Alternative, which was retained for detailed study. The existing highway alternatives were also retained for detailed study. Bicycle and pedestrian accommodations were examined along existing parallel county routes considering the access control recommendation of all the highway alternatives retained. The study team also supports Howard County's efforts to prohibit the extension of water and sewer facilities into the western part of the county by studying only options that control access and therefore help the County's efforts to limit development in the study area. The CMS analysis indicated that strategies such as HOV lanes or enhanced public transit improvements were not viable alternatives for this section of MD 32. In the study area there are no dense population centers or employment centers, thus the CMS analysis showed very little reduction in Level of Service with any of the alternative packages containing these strategies.

For the alternatives retained for detailed study, the results of the system performance MOEs are included in Section IV.B and the environmental impact MOEs are summarized in Table S-1 and explained in detail in their respective subsections of Chapter III and IV.

A resolution that the MIS requirements have been addressed for the MD 32 project from MD 108 to I-70 is on the agenda for the February meeting of the Transportation Steering Committee.

3. Transportation Systems Management (TSM) Alternative

A Transportation System Management (TSM) alternative was considered for this project. It was determined that TSM improvements would not adequately address the capacity and safety concerns as presented in Chapter I, Purpose and Need. However, the State Highway Administration, District 7 Office has considered and implemented numerous TSM strategies to improve operations in the study area. Spot improvements under consideration by the District 7 office include: signing and marking, street lighting, traffic signals, and intersection improvements. Additional improvements are being considered including turn lanes, acceleration/deceleration lanes, bypass lanes, skid resistant pavement overlays, and additional no passing zones. These improvements are included in the No-Build Alternative and are described in detail in Section II.C.1.

On the basis of the projected high traffic volumes and additional capacity requirements, no further evaluations of the TSM Alternative were made and this alternative was not carried forward for detailed study. However, elements of the TSM Alternative have been or are planned for implementation and thus are part of the No-Build Alternative (see Table II-1).

B. Highway Alternatives Considered

The Maryland State Highway Administration (SHA) held an Alternates Workshop on June 25, 1996 to present the improvement alternatives that were being considered for more detailed study.

Preliminary alternatives included the dualization of the MD 32 mainline and a series of interchanges to provide full access control. Three preliminary alternatives were considered for the MD 32 mainline: No-Build (Alternative 1), Four-Lane Divided Highway with a 54-foot median (Alternative 2), and Four-Lane Divided Highway with a 34-foot median (Alternative 3). Interchange alternatives were considered at seven locations along the corridor: Linden Church Road, Dayton Shop, Burntwoods Road, Rosemary Lane, Nixon's Farm Lane, MD 144, and I-70.

Public comments and ideas received at the workshop were subsequently incorporated into the development of the detailed alternatives evaluated in this Draft EIS. In addition to the Alternates Workshop, the SHA held over ten informal meetings with residents to review the additional interchange alternatives. Comments from these meetings were also evaluated and used to refine the alternatives retained for detailed study. The alternatives presented at the June 1996 Alternates Workshop and some of the additional alternatives developed after that meeting are described below.

1. Mainline Alternatives

a. No-Build Alternative

Existing MD 32, a two-lane undivided roadway with two 12-foot lanes, 10-foot shoulders, lies within a 150 to 300-foot right-of-way. Under the No-Build Alternative, no significant capacity improvements would be made to the existing roadway. Minor improvements would occur as part of normal maintenance and safety operations. The routine maintenance operations would not measurably increase roadway capacity or reduce accident rates.

The No-Build Alternative has been retained for detailed study. Although this alternative does not meet the project need for capacity and safety improvements, it provides a baseline comparison for the build alternatives. This alternative is described in detail in Section II.C.1 of this Draft EIS. A list of improvements included under the No-Build Alternative is presented in Table II-1. Each improvement listed as part of the No-Build Alternative has been, or is currently programmed for, implementation.

b. Four-Lane Divided Highway with 54-Foot Median

Existing MD 32 would be upgraded to a divided highway with two through lanes in each direction. The existing two-lane roadway would become the northbound lanes of the dual highway. A 54-foot median would separate the northbound and southbound roadways. A series of interchange options and service roads were developed to provide a full access controlled facility with a design speed of 60 MPH.

Following the Alternates Workshop, this alternative was removed from further consideration because of impacts to communities and individual properties adjacent to the roadway. In

addition, the Congestion Management System (CMS) report, a regional assessment of the transportation network, concluded that the extra median width was not necessary to support other modal solutions.

c. Four-Lane Divided Highway with 34-Foot Median

This alternative would upgrade existing MD 32 to a divided highway with two through lanes in each direction. For most of the project length, the existing two-lane roadway would become the northbound lanes of the highway. A series of interchange options and service roads were developed for the 34-foot median alternative to provide a fully access-controlled facility with a design speed of 60 MPH.

Following the Alternates Workshop, the Four-Lane Divided Highway with 34-foot Median alternative was retained for detailed study. This alternative is described in detail in Section II.C.3.a of this Draft EIS.

2. Interchange Options

Seven interchange locations were considered to create a full access-controlled facility. The proposed locations of these interchanges and the options considered are as follows:

Linden Church Road, Options 1, 2, and 3;
Dayton Shop, Options 1 and 1 Modified;
Burntwoods Road, Options 1 and 2;
Rosemary Lane, Options 1 and 2;
Nixon's Farm Lane, Options 1 and 2;
MD 144, Options 1, 2, 3, 3 Modified, and 4; and
I-70, Options 1 and 2.

a. Linden Church Road Interchange

Linden Church Road currently intersects MD 32 at two T-intersections approximately 900 feet apart. Traffic signals operate at each intersection. Median acceleration lanes with flexible delineators are provided on MD 32 to accommodate left turn movements from both legs of Linden Church Road onto MD 32. Left and right turn lanes are provided on MD 32 to accommodate turning movements. Three interchange concepts, Options 1, 2, and 3, for Linden Church Road were presented at the Alternates Workshop.

Option 1 was a full diamond interchange. Under Option 1 the intersection of Linden Church Road and Ten Oaks Road would be shifted to the south and a new intersection would be created with Broadwater Lane and Greenberry Lane. *Option 1 was removed from further*

consideration because the relocated intersection of Linden Church Road and Ten Oaks Road had additional impacts and higher construction and right-of-way costs without providing additional benefits.

Option 2 has the same diamond ramp configuration as Option 1; however, the intersection with Ten Oaks Road would not be relocated. *This option, Linden Church Road Interchange Option 2, was retained for detailed study and is described in detail in Section II.C.3.b of this Draft EIS.*

Option 3 has the same diamond ramp configuration as Option 1; however, Option 3 would not provide access to Ten Oaks Road on the west side of MD 32. *Option 3 was removed from further consideration because it did not provide the existing connection between MD 32 and Ten Oaks Road. Removal of this connection would cause residents to travel an additional distance on local roads to access MD 32 via MD 108 or Ten Oaks Road near Burntwoods Road.*

b. Dayton Shop Interchange

Currently, the access road to Dayton Shop Maintenance Facility forms a T-intersection with MD 32. Access to the Dayton Shop facilities would be provided by acceleration and deceleration lanes along northbound MD 32 and a jug handle and a redundant median left turn lane along southbound MD 32. Option 1, as presented at the Alternates Workshop, would provide a grade-separated movement for the southbound traffic with diamond ramps and a bridge crossing over MD 32 south of the existing entrance. Northbound traffic would have access to the facility with the right in/right out movement at the existing entrance to the Dayton Shop.

Following the Alternates Workshop, Option 1 was modified to improve the internal movements on the Dayton Shop property and to reduce impacts to residents on the west side of MD 32. The bridge crossing was relocated north of the existing Dayton Shop entrance to reduce impacts to properties west of MD 32. The northbound right in/right out access road was shifted approximately 500 feet south of the existing entrance to provide acceptable vertical alignments on the Dayton Shop circulation roads. The Dayton Shop Interchange Option 1 Modified was retained for detailed study and is described in detail in Section II.C.3.c of this Draft EIS.

c. Burntwoods Road Interchange

The intersection of MD 32 and Burntwoods Road is currently a signalized intersection. Left and right turns lanes are provided on MD 32 to accommodate existing traffic movements. Option 1 was presented at the Alternates Workshop and would include a diamond interchange with a bridge connecting Burntwoods Road to Ivory Road East. Ten Oaks Road

and Pfefferkorn Road would be extended to meet Burntwoods Road at a four-way intersection west of MD 32.

This option had extensive right-of-way impacts to the surrounding properties; therefore, it was removed from further consideration.

Following the Alternates Workshop, additional interchange concepts at Burntwoods Road and Triadelphia Road were investigated to minimize impacts while still addressing the purpose and need for the interchange. A new interchange at Triadelphia Road was initially considered as an interim solution to eliminate the Ten Oaks Road and MD 32 intersection and to ultimately service traffic along Triadelphia Road. The interchange would have been used in conjunction with or as a stand-alone replacement for, the Burntwoods Road Interchange. The option provided right in/right out access southbound to Ten Oaks Road and right in/right out access northbound to a proposed frontage road connecting to Triadelphia Road. The interchange was adjacent to a historic site, the Westwood M.E. Church, and required property from a proposed middle school site owned by the Howard County Board of Education. This option was removed from further consideration because of potential impacts to the historic site and opposition from the Board of Education.

Option 2 at Burntwoods Road was among many additional concepts evaluated for this location. The design would provide right in/right out access southbound to Pfefferkorn Road and would connect Pfefferkorn Road to Ten Oaks Road. Option 2 would also provide right in/right out access northbound to Ivory Road East and connect Ivory Road East to Burntwoods Road with a bridge over MD 32. This alternative, Burntwoods Road Interchange Option 2, was retained for detailed study and is described in detail in Section II.C.3.d of this Draft EIS.

d. Rosemary Lane Interchange

The existing intersection of MD 32 and Rosemary Lane is an unsignalized T- intersection. Currently, there are no designated turn lanes or acceleration/deceleration lanes. Existing 10-foot shoulders along MD 32 provide limited acceleration/deceleration areas for entering and exiting Rosemary Lane.

Option 1 as presented at the Alternates Workshop was a diamond interchange with two frontage roads connecting Rosemary Lane to Parliament Place and River Valley Chase on the east and west sides of MD 32, respectively.

This option impacted properties near Parliament Place and floodplains on the west side of MD 32. Additionally, there were safety and operational concerns associated with the two-way ramp in the northeast quadrant of the proposed interchange. Following the Alternates Workshop, this option was removed from further consideration and additional

interchange concepts were investigated to minimize impacts while still addressing the purpose and need for the interchange. Rosemary Lane Option 2 was identified and retained for detailed study. Option 2 would shift a section of the MD 32 mainline to the west side of existing MD 32 and would utilize the existing roadway as a frontage road. This option would provide right in/right out connections northbound and southbound to frontage roads. Rosemary Lane Interchange Option 2 is described in detail in Section II.C.3.e of this Draft EIS.

e. Nixon's Farm Lane Interchange

Currently, Nixon's Farm Lane forms a T-intersection with MD 32. Nixon's Farm, the former Glenwood Country Club, is a banquet and meeting facility which hosts a number of events throughout the year. The idea of an interchange at Nixon's Farm Lane was conceived by the Focus Group. Option I, developed with input from the Focus Group and later presented at the Alternates Workshop, was a diamond interchange that provided access to Nixon's Farm Lane and the dispersed residences along MD 32 between MD 144 and the Middle Patuxent River. Due to the amount of traffic generated by the Nixon's Farm facility it was decided to site the interchange at Nixon's Farm Lane to avoid routing event traffic in front of neighboring properties.

This option would cause extensive impacts to the Terrapin Branch and presents safety concerns associated with two-way ramps in the northwest and southeast quadrants. Therefore, it was removed from further consideration.

Following the Alternates Workshop, additional interchange concepts were investigated to minimize impacts while still addressing the purpose and need for the interchange. Some of these concepts would have provided a single interchange to serve Nixon's Farm Lane and the surrounding properties, as well as MD 144. The affected property owners, who provided input into the development of these concepts, were strongly opposed to single interchange concepts because of the event traffic that would be forced to use a service road across the front of their properties to access Nixon's Farm. The following list includes some of the concepts that were not retained for further study: widening on the east side; providing an access road on the west side of the Terrapin Branch; and moving the bridge to the north to combine the Nixon's Farm Lane and MD 144 interchanges. Nixon's Farm Lane Interchange Option 2 was one of the alternatives developed during this process. It would provide right in/right out movements northbound and southbound to service roads furnishing access to the properties along MD 32 and has fewer stream and wetland impacts than Option 1. This option, Nixon's Farm Lane Option 2 was retained for detailed study and is described in detail in Sections II.C.3.f and II.C.4.b of this Draft EIS.

Under Nixon's Farm Lane Option 2, access to the residences on the east side of MD 32 would be provided by an access road from the northbound MD 32 ramps. An alternative

access option, the Wellworth Way Access, was developed to provide access to residences east of MD 32 via a service road from Wellworth Way. If this access were provided, then the service road from the northbound right in/right out ramps would not be required. This access option is described in detail in Section II.C.3.f of this Draft EIS.

f. MD 144 Interchange

The MD 32 and MD 144 intersection is currently a signalized intersection with left and right turn lanes provided on MD 32.

Three interchange design options for MD 144 were presented at the Alternates Workshop.

Option 1 provided access to MD 144 with right in/right out intersection movements at the location of the existing intersection with MD 32. MD 144 would be relocated approximately 300 feet south of the existing intersection, and would span both MD 32 and Terrapin Branch with a 1,100-foot bridge. *This option was removed from further consideration because the right in/right out intersection movements would require drivers to decelerate on MD 32 to make the right turn movement and thereby disrupt through traffic on MD 32. In addition, the length of the bridge made the construction costs excessively high.*

Option 2 provided access with two loop ramps and two outer ramps in the southeast and southwest quadrants of the interchange. *Option 2 was removed from further consideration due to operational concerns related to design speed along MD 144 and weaving distances along MD 32. In addition, the southbound ramps would substantially impact the Terrapin Branch.*

Option 3 is similar to Option 2; however, it includes roundabouts at the intersections of the ramps and MD 144. *The design speed is not a concern in this option because motorists would be forced to reduce speeds to maneuver the roundabouts. Following the Alternates Workshop, Option 3 was modified to provide a longer weaving distance between the I-70 entrance ramp and the MD 144 exit ramp. The ramps were adjusted to reduce impacts to the Terrapin Branch. This alternative, MD 144 Interchange Option 3 Modified, was retained for detailed study and is described in Section II.C.3.g of this Draft EIS.*

Following the Workshop, additional interchange concepts were investigated to minimize impacts while still addressing the purpose and need of the interchange. MD 144 Interchange Option 4 was identified and retained for detailed study and is described in Section II.C.4.b of this Draft EIS. This option has a ramp configuration similar to that used for Option 3 Modified; however, the southbound ramps would connect to a frontage road at a T-intersection. The frontage road would run parallel to MD 32 from the T-intersection north to MD 144. A driveway access would be provided on the west side of MD 32 to connect the T-intersection with Nixon's Farm Lane. The northbound ramps would have the

same configuration as Option 3 Modified. In this option, the properties on the east side of MD 32, south of Nixon's Farm Lane, would have the same two access options as provided in the Nixon's Farm Lane Interchange; access would be provided either from a service road connection to northbound MD 32 or Wellworth Way. This option would eliminate the need for a separate interchange at Nixon's Farm Lane.

g. I-70 Interchange

Option 1 provides a full cloverleaf interchange between I-70 and MD 32.

Following the Alternates Workshop, Option 1 was modified to include collector/distributor (C-D) roads along I-70, as requested by the Federal Highway Administration. All weaving areas within this interchange would operate at LOS E/F due to the short weaving distances. Therefore, this option did not adequately accommodate the traffic volumes and was removed from further consideration.

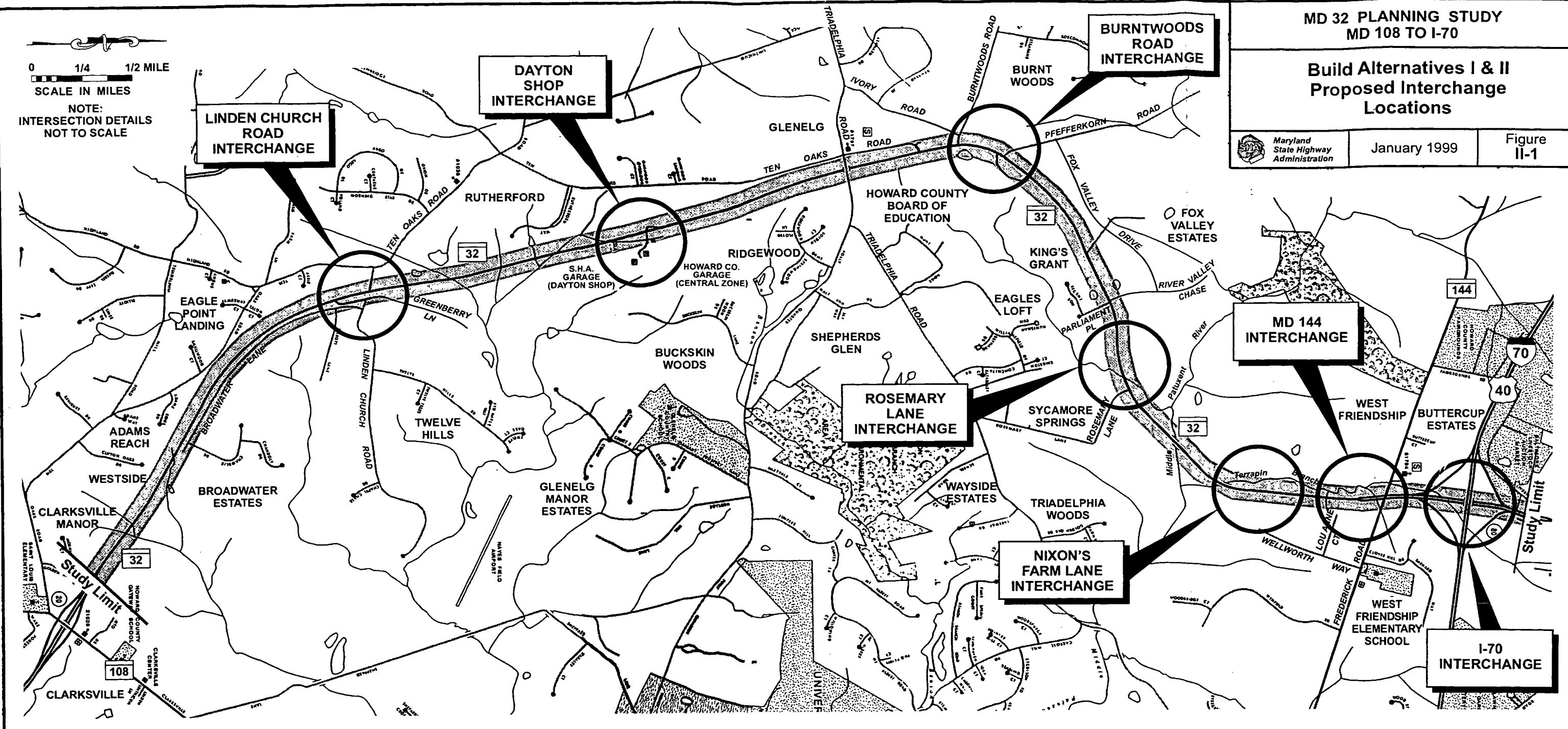
An additional alternative was developed to satisfy the purpose and need for the interchange modifications. Option 2 would provide a partial cloverleaf interchange with two new loop ramps in the northeast and southwest quadrants. Collector/distributor roads would not be required and traffic would operate at acceptable levels of service. This option, I-70 Interchange Option 2, was retained for detailed study and is described in detail in Section II.C.3.h of this Draft EIS.

C. Alternatives Retained for Detailed Study

Alternatives retained for detailed study include the No-Build Alternative and two Build Alternatives, Build Alternative I and Build Alternative II. Both build alternatives include dualizing the MD 32 mainline and providing a 34-foot median. Build Alternative I includes interchanges at Linden Church Road, Dayton Shop, Rosemary Lane, Burntwoods Road, Nixon's Farm Lane, MD 144, and I-70. Build Alternative II is similar to Build Alternative I, however, it does not include a separate interchange at Nixon's Farm Lane. Schematic drawings of each proposed interchange are presented in Figure II-1.

Text and typical sections for these alternatives are presented in this Section. Plans at a scale of 1" = 400' are presented in Appendix A, Figures 1 through 5A. The impacts associated with these alternatives are addressed in Chapter IV of this Draft EIS and are summarized in Table S-1.

The build alternatives were developed and refined to minimize impacts to the natural, socio-economic, and cultural environment while addressing the purpose and need for the project. The major environmental constraints that affected the location of the alternatives and options included wetlands, streams, existing and planned residential communities, historic sites, and Howard County Agricultural Preservation Land. In these sensitive areas, the typical sections were modified to avoid



MD 32 PLANNING STUDY
MD 108 TO I-70

Build Alternatives I & II
Proposed Interchange
Locations

Maryland
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January 1999

Figure
II-1

LINDEN CHURCH ROAD INTERCHANGE - OPTION 2	DAYTON SHOP INTERCHANGE - OPTION 1M	BURNTWOODS ROAD INTERCHANGE - OPTION 2	ROSEMARY LANE INTERCHANGE - OPTION 2	NIXON'S FARM LANE INTERCHANGE - OPTION 2	MD 144 INTERCHANGE - OPTION 3M INTERCHANGE - OPTION 4		I-70 INTERCHANGE - OPTION 2
BUILD ALTERNATIVES I & II	BUILD ALTERNATIVES I & II	BUILD ALTERNATIVES I & II	BUILD ALTERNATIVES I & II	BUILD ALTERNATIVE I	BUILD ALTERNATIVE I	BUILD ALTERNATIVE II	BUILD ALTERNATIVES I & II

or minimize impacts. During final design, more detailed evaluations will be performed to further reduce impacts.

1. No-Build Alternative

Within the limits of the nine mile study corridor between MD 108 and I-70, existing MD 32 is a two-lane undivided highway with partial access control south of Burntwoods Road and no access control north of Burntwoods Road. South of the study limits from MD 108 to I-97, MD 32 is a full access-controlled, 30 mile long, divided highway with the exception of a one mile segment immediately east of I-95. Full access control means that all vehicular access is limited to grade separated interchanges. Partial access control on MD 32 means access is limited to public road intersections: Linden Church Road, Dayton Shop entrance, Ten Oaks Road, and Burntwoods Road.

Currently, traffic signals operate at the intersections of east and west Linden Church Road, Ten Oaks Road, Burntwoods Road, and MD 144. Turn lanes are provided at intersections along the length of the project to improve traffic operations. Left and right turn lanes are located at Linden Church Road, Ten Oaks Road, Burntwoods Road, River Valley Chase, MD 144, and the I-70 ramps. The existing Dayton Shop intersection includes a jug handle and median left turn lanes along southbound MD 32 and acceleration/deceleration lanes along northbound MD 32.

Traffic along Triadelphia Road does not have direct access to MD 32. Triadelphia Road is grade-separated with a bridge over MD 32.

MD 32 crosses the Terrapin Branch, Middle Patuxent River, Clyde's Branch, and Benson Branch on structures.

Additional roadway improvements installed since the June 1996 Alternates Public Workshop and those planned for implementation in the future are listed in Table II-1.

Table II-1: No-Build Alternative

Sheet Number *	MD 32 Improvement Location	No-Build Alternative Improvements	
			Status
2	Linden Church Road, East and West	Intersection warning beacons Left turn acceleration lanes Intersection lighting Full signals to replace intersection warning beacons	Completed Completed Completed Completed
3	Ten Oaks Road Ivory Road East Pfefferkorn Road	Signal Striping Intersection lighting Intersection lighting	Completed Completed Completed Completed
3 and 4	Burntwoods Road to Rosemary Lane	Resurfacing Restriping Raised pavement markers	Planned Planned Planned
4	River Valley Chase/Parliament Place Rosemary Lane	Resurfacing Restriping Install left turn lanes Intersection lighting Intersection lighting	Completed Completed Completed Completed Completed
1 through 5/5A	MD 108 to I-70 I-70 Ramps	Signs suggesting headlight usage during the day Signals	Completed Planned

* Sheet number corresponds to the plans presented in Appendix A

Note: No-Build improvements are currently funded for implementation.

2. Build Alternatives

a. Introduction

Two build alternatives are being considered for the corridor. Build Alternative I would provide a four-lane, full access controlled, divided highway with a 34-foot median. The interchanges in this alternative would include Linden Church Interchange Option 2, Dayton Shop Interchange Option 1M, Burntwoods Road Interchange Option 2, Rosemary Lane Interchange Option 2, Nixon's Farm Lane Interchange Option 2, MD 144 Interchange Option 3M, and I-70 Interchange Option 2. Build Alternative II, like Build Alternative I, would provide a four-lane, full access controlled, divided highway with a 34-foot median. The interchanges at Linden Church Road, Dayton Shop, Burntwoods Road, Rosemary Lane, and I-70 would be the same as those described for Build Alternative I in Section II.C.2. Under Build Alternative II, access to Nixon's Farm Lane and MD 144 would be provided via the MD 144 Interchange Option 4 and access roads.

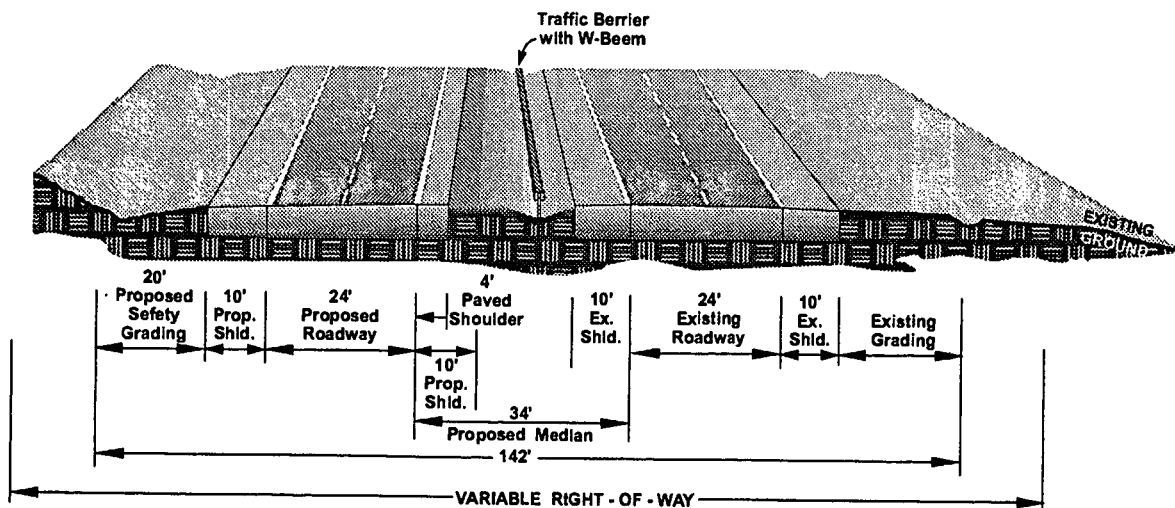
b. Design Elements**Mainline MD 32**

The MD 32 mainline typical section was developed for a 60 MPH design speed and is shown in Figure II-2. It includes four 12-foot lanes and a 34-foot median. The outside shoulders have a 10-foot wide paved section and the inside shoulders have a 4-foot wide paved section. Beyond the outside shoulder is a 20-foot wide graded area called a clear zone. The clear zone provides a recovery area for an errant vehicle that is free of hazards such as trees, ditches, culverts, etc. Clear zone widths vary for different design speeds. Studies indicate that for high-speed facilities, such as MD 32, a width of 30 feet or more from the edge of the travel lane permits about 80 percent of the errant vehicles to recover. The proposed typical section provides this 30-foot area as the 10-foot shoulder together with the 20-foot clear zone. In some sensitive areas, the clear zone would be reduced to a minimum width of 6 feet with a steeper (4:1) slope. Traffic barriers would be provided along the shoulder edge in these areas. The standard side slopes beyond the clear zone range from 4:1 to 2:1 depending on the height of the cut or fill in sensitive areas, the side slopes were reduced to 2:1. The existing right-of-way is 300 feet wide, south of Burntwoods Road, and is generally 150 feet wide north of Burntwoods Road with the right-of-way expanding at interchanges and intersections. The proposed right-of-way line has been set 15 feet beyond the limit of disturbance to accommodate drainage facilities.

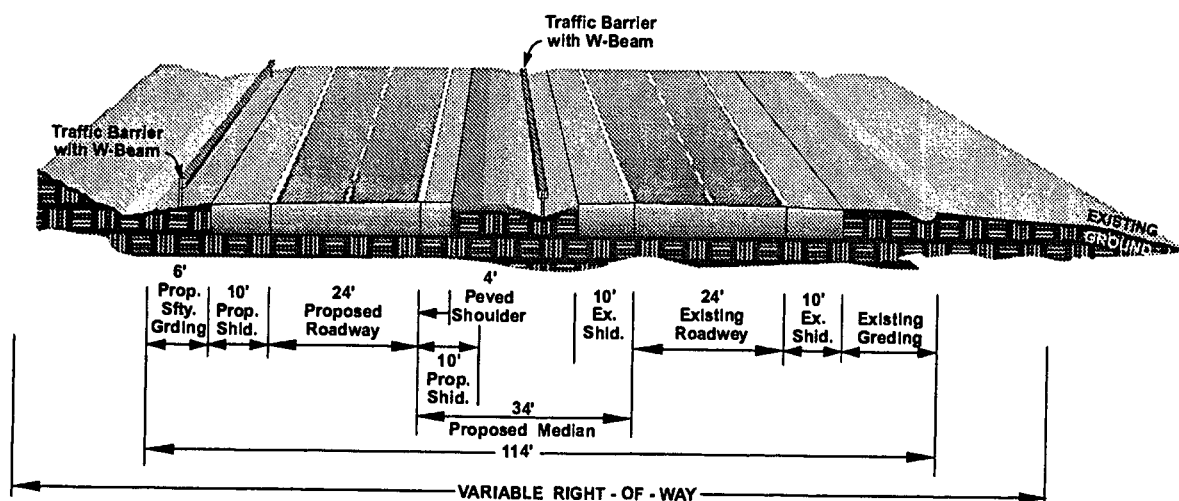
Interchange Ramps

The interchange ramps were developed for design speeds ranging from 50 MPH where they leave the mainline to 25 MPH near the local road connections to afford a gradual speed change for the drivers as they traverse the ramp. The typical section for the interchange ramps is shown in Figure II-3. Ramps include one lane, which is 15 feet wide for curve radii greater than 260 feet and 16 feet wide for curve radii less than 260 feet. The shoulders have a 10-foot wide graded area; the right shoulder also includes a 6-foot wide paved area and the left shoulder includes a 4-foot wide paved area. The clear zone is a 6-foot wide section at a 4:1 slope, followed by the standard side slope criteria. The proposed right-of-way line has been set 15 feet from the limit of disturbance.

Acceleration and deceleration lanes for the interchange ramps include one 12-foot lane followed by the same roadside grading as the MD 32 mainline: 10-foot paved shoulder, 20-foot clear zone, and standard side slope criteria. This typical section is reduced through sensitive areas, similar to the MD 32 mainline reductions. The proposed right-of-way line has been set 15 feet from the limit of disturbance.



**NORMAL TYPICAL SECTION
MD 32 DUALIZATION**



**REDUCED TYPICAL SECTION THROUGH SENSITIVE AREAS
MD 32 DUALIZATION**

The dimensions shown are for the purpose of determining cost estimates and environmental impacts and are subject to change during the final design phase.

**MD 32 PLANNING STUDY
MD 108 TO I-70**

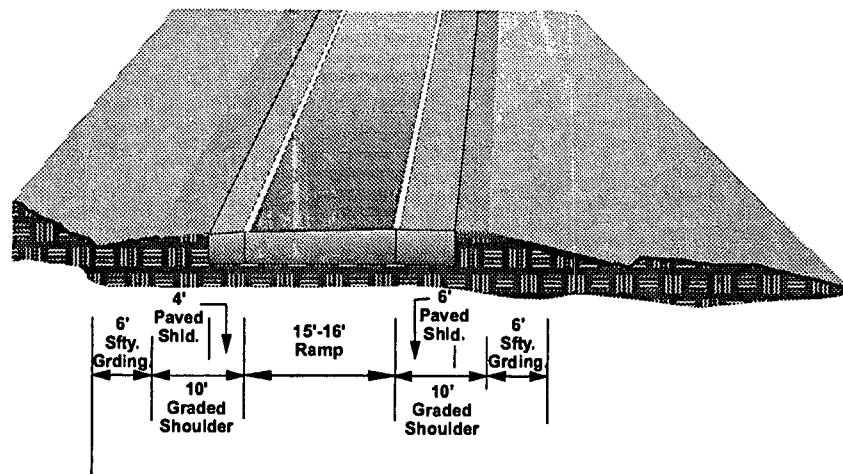
**Typical Sections for
Mainline MD 32**



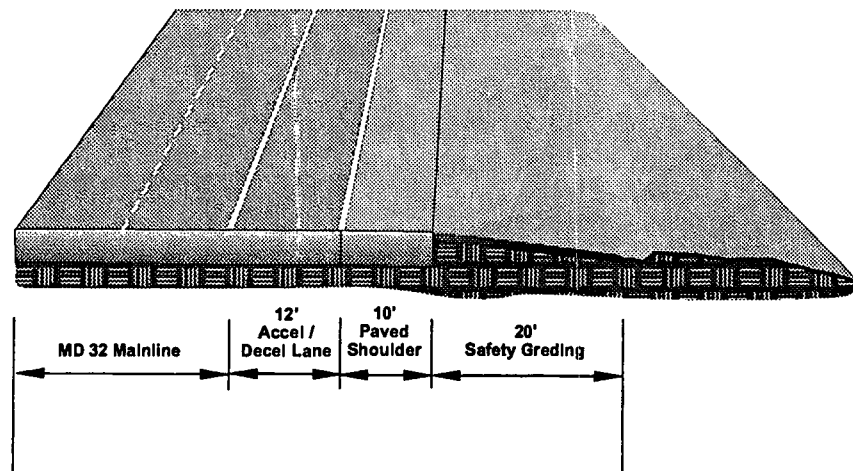
Maryland
State Highway
Administration

January 1999

Figure
II-2



RAMP TYPICAL SECTION



**ACCELERATION AND DECELERATION LANE
TYPICAL SECTION**

The dimensions shown are for the purpose of determining cost estimates and environmental impacts and are subject to change during the final design phase.

**MD 32 PLANNING STUDY
MD 108 TO I-70**

**Typical Sections for
Ramps and Acceleration /
Deceleration Lanes**



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Administration

January 1999

Figure
II-3

Local, Frontage, and Access Roads

A 30 MPH design speed was used for the frontage roads and local roads unless otherwise noted in the interchange description. The typical section shown in Figure II-4 consists of two 11-foot lanes and two 10-foot wide graded shoulders with a 4-foot paved area. The clear zone is six feet wide at a 4:1 slope and is followed by the standard side slope criteria. The proposed right-of-way line has been set 15 feet from the limit of disturbance.

Access roads are defined as publicly maintained roadways or driveways that provide access to two to fifteen houses. Access road design speeds range from 20 to 25 MPH. The typical section shown in Figure II-4 is based on the Howard County standard for access streets with an average daily traffic (ADT) volume of less than 100 vehicles. It consists of a 14-foot roadway, two 4-foot graded shoulders, two 1-foot offsets at a 6:1 slope, and the standard side slope criteria. The proposed right-of-way for access roads is set at the limit of disturbance.

3. Build Alternative I

Build Alternative I would provide a four-lane, full access controlled, divided highway with a 34-foot median. The interchanges in this alternative would include Linden Church Road Interchange Option 2, Dayton Shop Interchange Option 1M, Burntwoods Road Interchange Option 2, Rosemary Lane Interchange Option 2, Nixon's Farm Lane Interchange Option 2, MD 144 Interchange Option 3M, and I-70 Interchange Option 2.

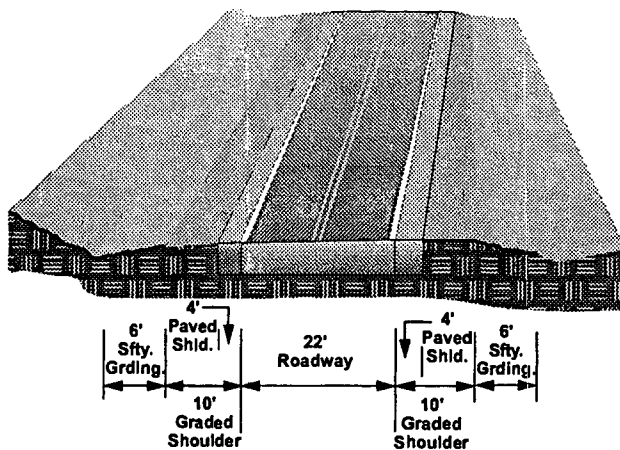
The MD 32 mainline and interchange options for Build Alternative I are described below. Plans for the mainline and interchanges are presented in Appendix A, Sheets 1 through 5. Typical sections for the mainline and the interchanges are described in Section II.C.2.b and shown on Figures II-2, 3, and 4.

Details regarding the environmental impacts of these alternatives are discussed in Chapter IV.

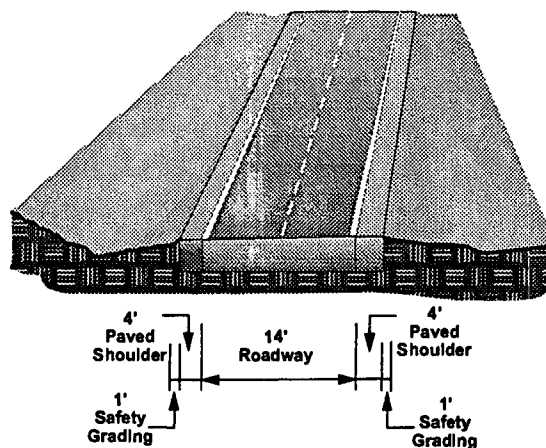
a. MD 32 Mainline

Existing MD 32 south of the project area is a four-lane, access-controlled facility with a 54-foot median. North of MD 108, the southbound lanes would be constructed on the west side of the existing roadway to stay within the existing 300-foot right-of-way and would include a tapered section to provide a smooth transition between the existing 54-foot median and the proposed 34-foot median.

From MD 108 to Linden Church Road, the dualization would continue on the west side of the existing roadway. Near MD 108, 2:1 slopes would be used to minimize impacts to Wetland W.




**LOCAL ROAD / FRONTAGE ROAD
TYPICAL SECTION**



ACCESS ROAD TYPICAL SECTION

The dimensions shown are for the purpose of determining cost estimates and environmental impacts and are subject to change during the final design phase.

MD 32 PLANNING STUDY MD 108 TO I-70		
Typical Sections for Local Roads, Frontage Roads, and Access Roads		
 Maryland State Highway Administration	January 1999	Figure II-4

From Linden Church Road to the Dayton Shops, the dualization would continue on the west side of the existing roadway to stay within the existing 300-foot right-of-way. A retaining wall (approximately 1,100 feet long) would be required to support the fill between the MD 32 southbound lanes and the southbound ramps at the proposed Dayton Shop interchange.

Continuing north from the Dayton Shops to Ten Oaks Road, the dualization would remain on the west side of the existing roadway. The Triadelphia Road overpass is within this section of the roadway. The existing structure, designed in 1960, could be completely replaced or it could be lengthened to accommodate the dualization of MD 32; this decision will be made later in the design phase. Construction of either bridge option could be accomplished without adversely impacting the adjacent historic property.

Beginning at Ten Oaks Road and extending through Burntwoods Road to north of Pfefferkorn Road, MD 32 would be completely reconstructed to flatten the horizontal geometrics and improve substandard vertical geometrics. Approximately 2,200 feet of existing MD 32 would be reconstructed.

From north of Pfefferkorn Road to Rosemary Lane, MD 32 crosses River Valley Chase and Parliament Place. South of River Valley Chase, MD 32 would be dualized to the west of existing MD 32 to stay within the existing right-of-way. North of River Valley Chase, the entire four-lane section would be constructed west of the existing roadway. The existing roadway would be used as a frontage road to provide access to Parliament Place. Approximately one mile of MD 32 would be completely reconstructed. North of Rosemary Lane, the alignment would shift back and utilize the existing roadway for the northbound lanes.

From Rosemary Lane through Nixon's Farm Lane to MD 144, the dualization would occur primarily on the west side. Through the horizontal curve at Nixon's Farm Lane, the alignment would shift to the east to avoid impacts to the Terrapin Branch. Approximately 2,400 feet of existing MD 32 would be reconstructed. South of MD 144, the alignment would shift back to the west side of the existing roadway. A retaining wall, approximately 950 feet long, would be built between Access Road 1 and the auxiliary lane for MD 144 and Nixon's Farm Lane to avoid impacts to the Terrapin Branch. Just north of Rosemary Lane, on the west side of MD 32, a reduced clear zone and 2:1 slopes would be used to avoid impacting Wetlands H and F. From Nixon's Farm Lane to MD 144, 2:1 outside slopes would be used to minimize impacts to the adjacent properties and the sensitive environmental areas.

At MD 144, the proposed 34-foot median would be widened to connect with the existing dualized section of MD 32. From MD 144 to north of I-70, the existing MD 32 is dualized with a ± 54 -foot median. The median would be modified for the I-70 Interchange Option 2

to include two acceleration lanes for the traffic turning left on to MD 32 from the outer ramps.

b. Linden Church Road Interchange Option 2

This interchange option would provide access to the local roadway network with a full diamond interchange at MD 32 and Linden Church Road. Plans for this interchange are presented in Appendix A, Sheet 2. Typical sections for this interchange are described in Section II.C.2.b and shown in Figure II.3.

West of the proposed interchange, Linden Church Road begins at its existing T-intersection with Ten Oaks Road. Just east of Ten Oaks Road, Linden Church Road would be realigned to the south and would then cross over MD 32. On the east side of MD 32, the roadway would tie back into existing Linden Church Road just east of Broadwater Lane. In the northeast quadrant of the interchange, Greenberry Lane would be realigned to the east to create a four-leg intersection with Broadwater Lane and Linden Church Road. Greenberry Lane would be designed as an access road.

In the southwest quadrant of the interchange, 2:1 slopes were used to avoid right-of-way impacts.

c. Dayton Shop Interchange Option 1 Modified

This interchange option would provide access to the State and County Dayton Shop maintenance facilities with diamond ramps southbound and right in/right access northbound.

The southbound ramps would connect to a bridge spanning MD 32 just north of the existing entrance. The new bridge and entrance road is referred to as Dayton Shop Road. The northbound entrance road would be relocated approximately 500 feet south of the existing entrance and is referred to as Access Road 3. Within the Dayton Shop property, an additional road, Access Road 2, would be constructed to connect Access Road 3 to Dayton Shop Road in front of the state maintenance facilities. Access Road 1 would connect Dayton Shop Road with the back of the state facilities. Two retaining walls, approximately 1,100 feet long, would be required to support the fill between the southbound ramps and the MD 32 mainline.

d. Burntwoods Road Interchange Option 2

This interchange option would provide access to the local roadway system with northbound and southbound right in/right out ramps.

The MD 32 mainline would be shifted to the east for approximately 2,200 feet through the interchange to flatten the horizontal geometrics. In addition, MD 32 would be reconstructed

to improve substandard vertical geometrics in this area. The southbound right in/right out ramps would connect to Pfefferkorn Road at a T-intersection. The northbound right in/right out ramps would connect to Burntwoods Road and East Ivory Road at a T-intersection.

This interchange would replace four existing at-grade intersections with MD 32: Ten Oaks Road, Burntwoods Road, Pfefferkorn Road, and Ivory Road East. These local roads would be realigned to provide access to MD 32 via the proposed interchange. West of the interchange, Burntwoods Road would be relocated north of its existing alignment and would continue in a northeasterly direction across MD 32 to connect with East Ivory Road in the northeast quadrant of the interchange. East Ivory Road, north of the ramps would be designed as an access road. Pfefferkorn Road would extend south, parallel to MD 32, to intersect with Burntwoods Road and Ten Oaks Road at a four-leg intersection. From this new intersection, Ten Oaks Road would continue south and connect to its existing alignment slightly south of the existing terminus. A cul-de-sac would be constructed at the northern end of Ivory Road to limit Ivory Road to local traffic. Ten Oaks Road, Pfefferkorn Road, and Burntwoods Road west of MD 32 would have a 40 MPH design speed and 12-foot wide lanes.

In the southeast quadrant, 2:1 slopes would be used along Burntwoods Road and the adjacent driveway to avoid impacts to Wetland EE.

e. Rosemary Lane Interchange Option 2

This interchange option would provide access to the local roadway system with right in/right out ramps to frontage roads.

The MD 32 mainline would be constructed immediately west of the existing roadway for approximately one mile through the interchange to avoid impacts to the King's Grant community. A portion of the existing roadway on the east side would be used as the East Frontage Road. The northbound right in/right out ramps would create a T-intersection with this frontage road that would connect Rosemary Lane to Parliament Place. The East Frontage Road, south of the ramps, would be designed as an access road. The southbound right in/right out ramps would create a T-intersection with the West Frontage Road that would connect Rosemary Lane to River Valley Chase.

In the northeast quadrant, an access road would connect a small community of houses to Rosemary Lane. This access road would replace the existing access to MD 32. In the southwest quadrant, the access driveway off of River Valley Chase serving Fox Valley flag lots would be realigned to connect to the West Frontage Road.

In the northwest quadrant of the interchange, 2:1 slopes would be used to minimize impacts to the floodplains and avoid impacts to Wetland H.

f. Nixon's Farm Lane Interchange Option 2

This interchange option would provide access to the dispersed properties along MD 32 with right in/right out ramps.

The MD 32 mainline would be shifted to the east side of the existing roadway for approximately 2,400 feet through the interchange in order to minimize impacts to the Terrapin Branch. Nixon's Farm Lane would include an upgrade and an extension of the existing Nixon's Farm driveway. On the west side of the interchange, the southbound exit and entrance ramps would create a T-intersection with the West Frontage Road and Access Road 2 south of the proposed Nixon's Farm Lane overpass. Access Road 2 would continue south from the intersection and provide access to two residences. The West Frontage Road would continue north from the intersection and intersect with Nixon's Farm Lane. Access Road 1 would begin at the intersection of Nixon's Farm Lane and the West Frontage Road and continue north to provide access to the residences along the west side of MD 32. On the east side of the interchange, the northbound exit and entrance ramps would terminate at the East Frontage Road, which connects to Nixon's Farm Lane. Access Road 3 would begin at this intersection and continue south to provide access to four residences along the east side of MD 32.

In lieu of constructing Access Road 3, access to the four residential properties could be provided via Wellworth Way access. The Wellworth Way access would consist of a 1,000-foot extension of the existing Wellworth Way and Access Road 4. Access Road 4 would begin at a T-intersection with Wellworth Way extended and continue west for approximately 500 feet before turning 90 degrees and heading south for approximately 1,600 feet.

On the east side of MD 32, 2:1 slopes would be used to minimize right-of-way requirements and forest impacts. In the northwest quadrant, 2:1 slopes would be used for the portion of Access Road 1 that is adjacent to the MD 32 mainline to avoid impacts to the Terrapin Branch. There would be four crossings of the Terrapin Branch and two retaining walls to minimize impacts. The first retaining wall would be located south of the Nixon's Farm bridge and would be approximately 90 feet long. The second wall would be located north of the bridge, approximately 950 feet long. This second retaining wall would be used to support the fill between Access Road 1 and the MD 32 mainline.

g. MD 144 Interchange Option 3 Modified

The MD 144 Interchange Option 3 Modified would provide access to the local network with two loop ramps and two outer ramps in the southeast and southwest quadrants.

64

MD 144 would remain in its existing location, but it would be raised to span over MD 32. The southbound exit ramp would be a loop ramp that connects to MD 144. The southbound entrance ramp would run parallel to the exit ramp for approximately 1,300 feet then it would separate to cross the Terrapin Branch and tie to southbound MD 32. The northbound entrance ramp would be a loop ramp that would run parallel to the exit ramp for approximately 500 feet before both ramps connect to MD 144. Roundabouts would be provided at the intersections of the ramps and MD 144. The entrance to the West Friendship Shopping Center is provided from the roundabout on the west side of MD 32. The MD 144 design speed would be 35 MPH through the interchange area.

On the west side of MD 32, there would be three crossings of the Terrapin Branch and two retaining walls are proposed which would minimize stream impacts. The first retaining wall would be located south of MD 144, approximately 300 feet long. The second would be north of MD 144 near the West Friendship Shopping Center and would be approximately 200 feet long.

h. I-70 Interchange Option 2

The I-70 Interchange Option 2 would provide a partial cloverleaf interchange with loop ramps and slip ramps in the northeast and southwest quadrants. The loop ramps would provide free flow access from MD 32 to I-70. The left turn movement from I-70 off ramps to MD 32 would utilize slip ramps and they would be controlled by half signals. Northbound traffic on MD 32 would be controlled by the signal at the westbound I-70 exit ramps while the southbound traffic would be controlled by the signal at the eastbound I-70 exit ramps.

4. Build Alternative II

Build Alternative II would provide a four-lane, access-controlled, divided highway with a 34-foot median. The interchanges at Linden Church Road, Dayton Shop, Burntwoods Road, Rosemary Lane, and I-70 would be designed as described above for Build Alternative I in Section II.C.3. Under Build Alternative I, interchanges were provided at Nixon's Farm Lane (Option 2) and at MD 144 (Option 3M). Under Build Alternative II, access to Nixon's Farm Lane and the adjacent residential properties would be provided via the MD 144 Interchange Option 4 and access roads.

a. MD 32 Mainline

The MD 32 mainline alignment in Build Alternative II would be the same as Build Alternative I from MD 108 to Rosemary Lane and north of MD 144. A discussion of these segments is provided in Section II.C.3.

From Rosemary Lane to MD 144, the dualization of MD 32 would occur on the west side of the existing roadway. Just north of Rosemary Lane, the southbound outside slopes would

be 2:1 to avoid impacts to Wetland H and to minimize impacts to Wetland F. A retaining wall would be required south of Nixon's Farm Lane to avoid impacts to the Terrapin Branch. A retaining wall would be built between Access Road 1 and the acceleration lane for MD 144 to avoid impacts to the Terrapin Branch. From Nixon's Farm Lane to MD 144, 2:1 outside slopes would be used to minimize impacts to the adjacent properties and the sensitive environmental areas. The MD 32 mainline through this area would not impact wetlands, however, wetlands would be impacted by the MD 144 Interchange Option 4.

Plans for the mainline and for this interchange are presented in Appendix A, Sheet 5A. Typical sections for the MD 32 mainline and for the MD 144 Interchange Option 4 are shown on Figures II-2, 3, and 4.

b. MD 144 Interchange Option 4

The MD 144 Interchange Option 4 would provide southbound access with right in/right out ramps and northbound access with a loop ramp and an outer ramp in the southeast quadrant. MD 144 would remain in its existing location, but it would be raised to span over MD 32. The southbound right in/right out ramps would connect to the West Frontage Road and Access Road 1. The West Frontage Road would join the ramps with MD 144. Access Road 1 would connect the ramps with the Nixon's Farm driveway to provide access to residential driveways along the west side of MD 32. Access Road 2 would provide a connection from the Nixon's Farm driveway south to two parcels. The northbound entrance ramp would be a loop ramp that would run parallel to the exit ramp for approximately 500 feet before both ramps connect to MD 144. Roundabouts would be provided at the intersections of the ramps and MD 144. The MD 144 design speed would be 35 MPH through the interchange area.

The four properties on the east side of MD 32, south of Nixon's Farm Lane, would have access from either MD 32 or Wellworth Way. If access were provided from MD 32, then two right in/right out ramps would be provided northbound and would connect to Access Road 3. Access Road 3 would begin at the terminus of the ramps and continue south along MD 32. If access were provided via Wellworth Way, then a 1,000-foot extension of the existing Wellworth Way would be required in place of the ramps. In addition, Access Road 4 would create a T-intersection with Wellworth Way and would then continue west for approximately 500 feet before turning 90 degrees and heading south for approximately 1,600 feet. The environmental impacts of the Wellworth Way option are presented under each resource discussed in Chapter IV.

One business and two residential displacements may be associated with the MD 144 Interchange Option 4 location. If the four properties on the east side of MD 32, south of Nixon's Farm Lane, receive access from MD 32, then there would be one additional residential displacement. Along this access road and along the northbound deceleration lane, 2:1 slopes would be used to minimize right-of-way impacts and forest impacts. Along

Access Road 1, 2:1 slopes would be used to avoid impacts to the Terrapin Branch. The fill from MD 144 would impact Wetlands A and UU. Near Nixon's Farm driveway, Wetlands C, D/E, RR, and S would be impacted. On the west side of MD 32, there would be four crossings of the Terrapin Branch and two retaining walls are proposed which would minimize stream impacts. The first retaining wall would be located south of MD 144, approximately 300 feet long. The second would be located north of MD 144 near the West Friendship Shopping Center and would be approximately 200 feet long. On the west side of the interchange, the southbound ramps would impact a portion of a preserved agricultural land.

III.

AFFECTED ENVIRONMENT

MD 32 Planning Study

MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

III. Affected Environment

The general setting within which the alternatives for improvements to MD 32 were developed is described in this chapter. This information provides an inventory of the resources that may be affected by the alternatives under consideration.

A. Social, Economic, and Land Use

1. Social Environment

a. Population Characteristics

Statistical data regarding population demographics for the project area was gathered from the 1990 US Bureau of the Census, the Baltimore Metropolitan Council (BMC), and the Howard County Department of Planning and Zoning. The observations provided by Howard County were compared with 1990 US Census data and county planning documents.

At the time of the 1990 US Census, Howard County had a population of 187,328. The estimated 1995 population for the county is 220,000 (Howard County, 1997 and BMC, 1997). Howard County's population is projected to grow by 0.7 percent per year to 303,500 by the year 2020 (Howard County and BMC, 1997). Residential population growth is expected to be driven by a continued increase in employment relocated from the Baltimore - Washington, D.C. area, and new residents who commute to jobs outside of the county. The recent population growth has not been evenly distributed throughout the county but has predominantly occurred in the eastern portion of the county in the vicinity of Columbia. Past and projected population growth rates for the County are identified on Table III-1.

Table III-1: Howard County Population

Decade	Past Growth Trends					Projected Growth Trends		
	1940-50	1950-60	1960-70	1970-80	1980-90	2000	2010	2020
Population	23,100	36,200	62,400	118,600	187,300	253,500	302,500	303,500
% of Increase		36.0%	42.0%	47.3%	36.7%	26.1%	16.1%	0.3%

Sources: Howard County Department of Planning and Zoning
US Census Bureau, 1990 US Census of Population and Housing
Baltimore Metropolitan Council, Round 5A Population Forecasts, 1997

Census Tracts

The boundaries for census tracts cover large geographic areas. The US Census Bureau divides these tracts into smaller geographic areas, called block groups. The study area for this project lies within two (2) census tracts, Census Tract 6030, Block Groups 2, 3, and 4 and Census Tract 6051.01, Block Group 2. The geographic boundaries for these block groups are shown on Figure III-1. The data for these block groups, as shown on Table III-2, has been compared to the census tracts within which they are located as well as to countywide and statewide data to create a comprehensive understanding of the socio-economic conditions in the study area.

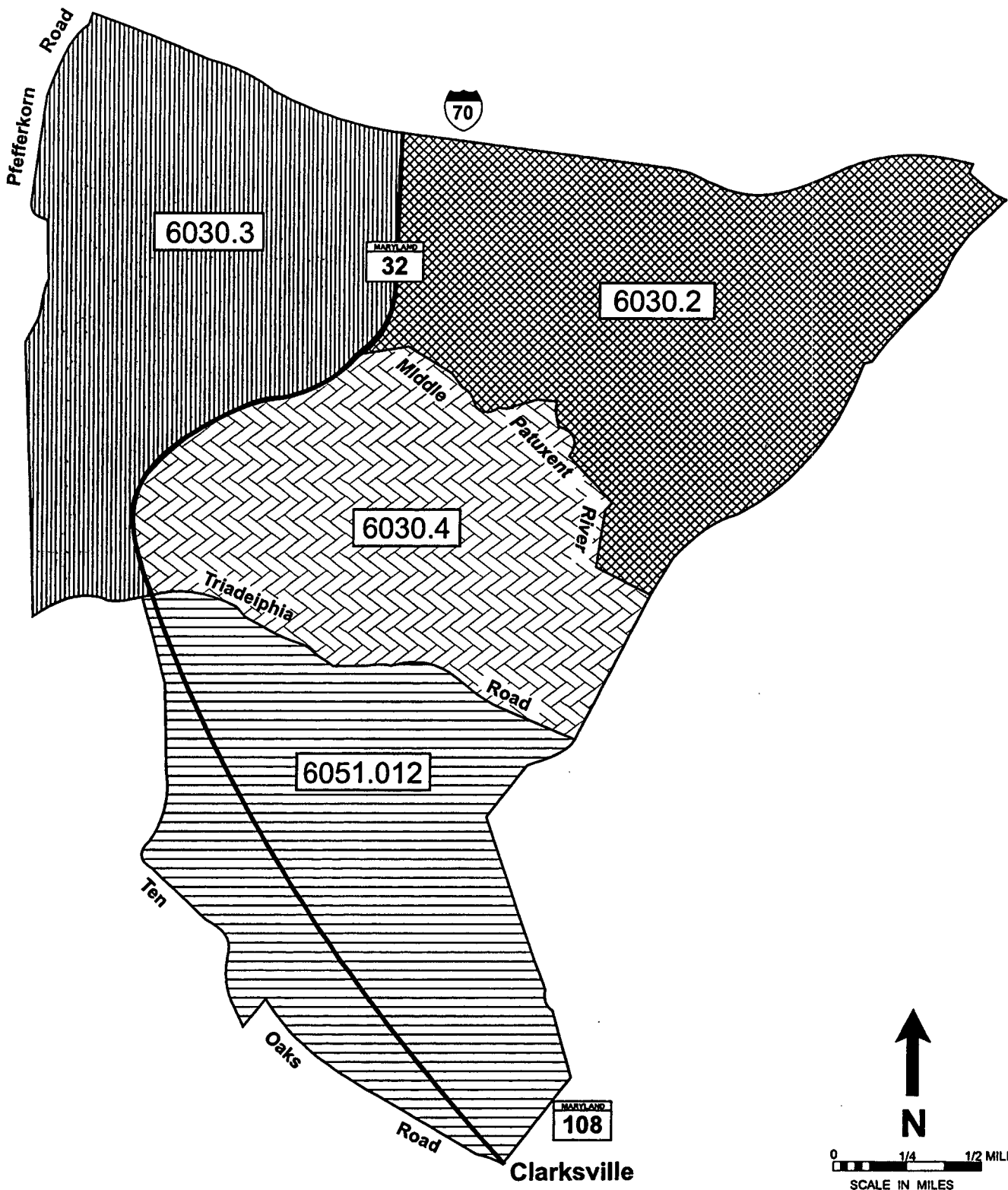
Table III-2: Regional and Local Population

Geographic Area	1990 Population	2020 Population	Annual % Increase
Maryland	4,781,500	6,073,000	0.8 %
Howard County	187,300	303,500	1.6 %
Census Tract 6030	7,592	17,595	2.8%
Block Group 6030.2	1,565	3,630	2.8 %
Block Group 6030.3	683	1,590	2.8 %
Block Group 6030.4	1,978	4,590	2.8 %
Census Tract 6051.01	6,239	10,524	1.7 %
Block Group 6051.012	945	3,670	4.6 %
Study Area Total	5,170	13,470	3.2 %

Sources: US Census Bureau, 1990 US Census of Population and Housing
 Baltimore Metropolitan Council, Round 5A Forecasts, 1997
 Maryland Office of Planning, Planning Data Services, June 1994

Age Distribution

Howard County has a higher number of young residents relative to most counties in Maryland, and a lower number of older adult residents. According to the 1990 US Census, 70 percent (132,000) of Howard County residents are between the ages of 16 and 64. Approximately 6 percent of the county residents are over the age of 65. The high number of young residents is due to the fact that the Baltimore-Washington, D.C. area provides greater employment opportunities for young adults with a college education. Therefore, many young adults working in the Baltimore and Washington, D.C. areas live in Columbia, west of the MD 32 project area, because of its proximity to the two metropolitan areas. The 1990 Howard County General Plan states that "by the year 2000



**MD 32 PLANNING STUDY
MD 108 TO I-70**

**Census Tract
Boundary Map**

Source: US Census Bureau, 1990



Maryland
State Highway
Administration

January 1999

Figure
III-1

the number of residents over age 45 is anticipated to increase by 130 percent."

The age distribution in the study area census tracts is presented in Table III-3. According to the 1990 US Census, the study area block groups have between 62 and 73 percent of their populations who are in the work force age group, 16 to 64 years of age.

Table III-3: Age Distribution

Location		Age Distribution			
		<16	16-64	65 + over	Total
State of Maryland	Population	1,044,638	3,220,200	516,680	4,781,518
	Percent	22%	67%	11%	100%
Howard County	Population	43,990	131,991	11,347	187,328
	Percent	24%	71%	6%	100%
Census Tract 6030	Population	1,716	5,262	614	7,592
	Percent	23%	69%	8%	100%
Block Group 6030.2	Population	290	1,090	185	1,565
	Percent	19%	70%	12%	100%
Block Group 6030.3	Population	130	495	60	685
	Percent	19%	72%	9%	100%
Block Group 6030.4	Population	565	1,265	150	1,980
	Percent	29%	64%	8%	100%
Census Tract 6051.01	Population	1,171	3,273	322	4,766
	Percent	25%	69%	7%	100%
Block Group 6051.012	Population	300	590	55	945
	Percent	32%	62%	6%	100%
Study Area Total	Population	1,285	3,440	450	5,175
	Percent	25%	66%	9%	100%

Source: US Census Bureau, 1990 US Census of Population and Housing

Racial Characteristics

The census data indicates that the predominant racial groups within the county are Caucasians and African-Americans. The African-American population (22,000 as of the 1990 census) is distributed throughout the county, and does not constitute a majority in any census tract. According to the 1990 Census, the racial breakdown for Howard County was 83 percent Caucasian and 12 percent African-American, with other racial groups constituting 5 percent of the county population. Census tracts in the study area have a considerably smaller percentage of minority residents than found in the county as a whole (see Table III-4).

According to the 1990 Census data for the Block Groups that make up the study area 4,807 persons, 93 percent of the population, was Caucasian. The remainder of the study area populations consisted of 187 African Americans (3.6 percent of the study area population), 18 American Indians, Eskimos, or Aleutians (0.3 percent of the study area

population), and 153 Asians or Pacific Islanders (3.0 percent of the study area population), and 6 Other races, not defined (0.1 percent of the study area population). While Block Group 6030.4 had the highest number of African Americans and Asians or Pacific Islanders, no concentrations of racial minorities have been identified.

Table III-4: Racial Population Characteristics

Geographic Area	Caucasian	African-American	American Indian, Eskimo or Aleutian	Asian or Pacific Islander	Other Races
Maryland	71.0%	24.9%	0.3%	2.9%	0.9%
Howard County	83.3%	11.7%	0.2%	4.3%	0.4%
Census Tract 6030	92.7%	4.1%	0.2%	2.8%	0.1%
Block Group 6030.2	98.8%	0.0%	1.2%	0.0%	0.0%
Block Group 6030.3	99.0%	0.0%	0.0%	1.0%	0.0%
Block Group 6030.4	85.7%	8.2%	0.0%	5.8%	0.3%
Census Tract 6051.01	92.1%	3.3%	0.3%	4.3%	0.0%
Block Group 6051.012	94.1%	2.6%	0.0%	3.3%	0.0%
Study Area Total	93.0%	3.6%	0.3%	3.0%	0.1%

Note: Other races are not defined.

Two percent of the 1990 Howard County population is identified as Hispanic (as compared to 2.5 percent of the population of Maryland). The US Census does not categorize Hispanic as a race, rather, it is identified as an independent characteristic and this population is counted within the races shown in the table.

Source: US Census Bureau, 1990 US Census of Population and Housing

Income

According to Howard County officials, low, middle, and high income households are intermingled throughout the county, and there is no singular concentration of low or high income households. The 1990 median household income for the State of Maryland was \$39,386, while it was \$54,348 for Howard County. The median household incomes within the study area are shown on Table III-5.

Table III-5 shows the percentage of persons under the US Department of Health and Human Services poverty level standard (\$6,310 for one person) as of the 1990 Census. Howard County's rate of persons below poverty (3.1 percent) was below the state's rate (8.3 percent). None of the census tracts in the study area had a rate higher than the state. Only one of the block groups (6030.2) in the study area had a higher poverty rate than the Howard County rates (US Census 1990).

Table III-5: 1990 Regional and Local Income Information

Geographic Area	Median Household Income	% Persons Under Poverty Level
Maryland	\$39,400	8.3 %
Howard County	\$54,300	3.1 %
Block Group 6030.2	\$69,600	3.6 %
Block Group 6030.3	\$58,300	1.5 %
Block Group 6030.4	\$77,300	2.5 %
Block Group 6051.012	\$73,100	1.7 %

Note: As of March 10, 1997, the US Department of Health and Human Services annual poverty income standard for one person increased from the 1990 level of \$6,310 to \$7,890.

Source: US Census Bureau, 1990 US Census of Population and Housing

b. Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations issued on February 11, 1994, requires federal agencies "to identify and address as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations... "Minority is defined as "individual(s) who are members of the following groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic." Also, low income "should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty". These populations are to be provided access to public information and an opportunity to participate in matters relating to the environment.

The purpose of the environmental justice order discussed in this document is to:

- identify and address any disproportionately high and adverse impacts on minority populations and low income populations resulting from alternatives under consideration, and
- to describe the opportunity for public participation afforded to minority populations and low income populations in the study area

To identify minority populations and low income populations a census tract analysis was conducted. Although block group 6030.4 has the highest percentage of minority residents within the study area (14 percent), this percentage is still lower than the minority population of Howard County of 17 percent, see Table III-4. Block group

6030.2 has the highest percentage of individuals living under the poverty level within the study area (3.6 percent). This percentage is slightly higher than the percentage of low income population in the County, see Table III-5. No concentrations of minority populations or low income populations were identified within the study area.

A public outreach effort to supplement the census tract information was conducted. Correspondence was sent to the local chapter of the National Association for the Advancement of Colored People (NAACP) requesting their assistance to informing their members of the project and in helping to identify concentrations of minority and low income populations in the study area. The NAACP did not identify concentrations of minority or low income communities and stated that all of the groups and individuals NAACP contacted were aware of the proposed project. The notification included an offer by the Study Team to give a presentation on the MD 32 project, thereby providing an opportunity to readily access public information and get involved in the project.

c. Neighborhoods

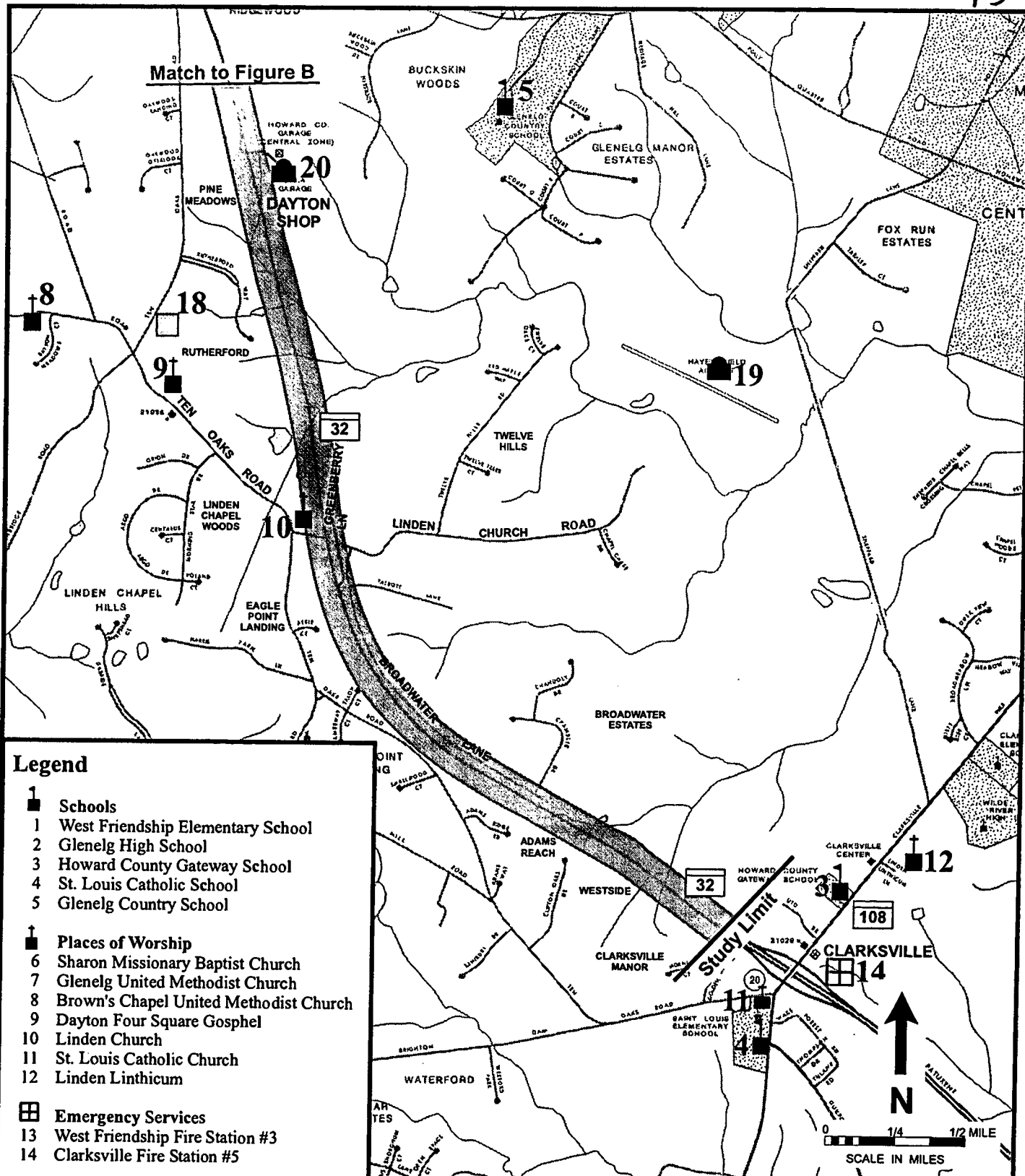
Through coordination with the Howard County Department of Planning and Zoning and review of county mapping, several neighborhood communities were identified within the project area. Residential communities located along the MD 32 corridor include Clarksville, Broadwater Estates, Twelve Hills, Adams Reach, Pine Meadows, Ridgewood, Rutherford, Glenelg, Burntwoods, King's Grant, Fox Valley Estates, Friendship Manor, and West Friendship. Single family, large lot dwellings (average lot size of three acres) are the dominant housing types in these communities. The locations of these communities are shown on Figure III-2 and on the mapping in Appendix A.

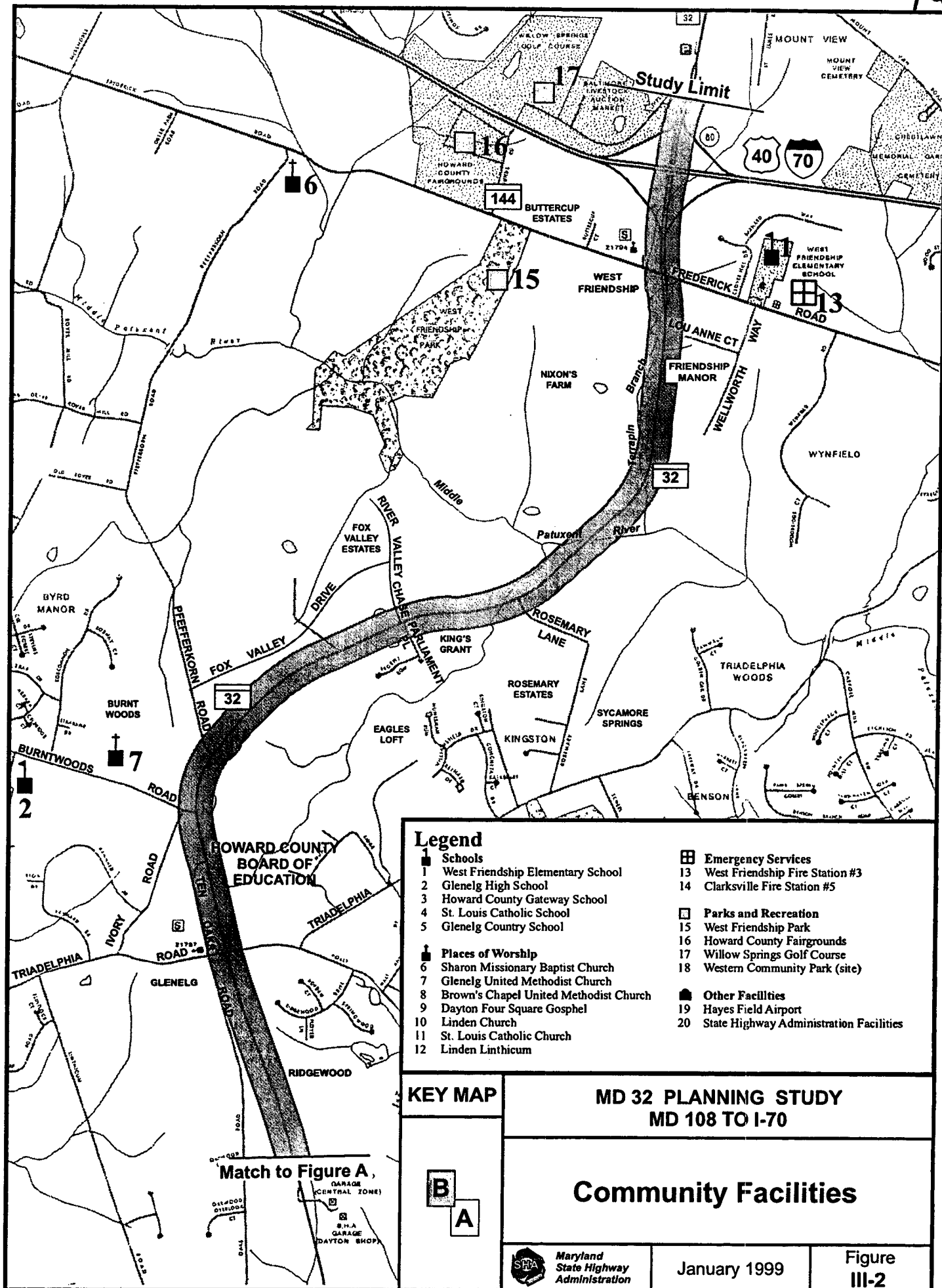
d. Community Facilities and Services

Located throughout the study area are community facilities that provide a variety of services to people in the area. These include educational, religious, and health care facilities as well as libraries and emergency services. Field visits to the study area and reviews of Howard County mapping were conducted to identify these facilities and services in the study area. Community facilities and services located in the study area are shown on Figure III-2. Some of these facilities are located outside of the study area but serve the citizens of the area.

Educational Facilities

Howard County operates several schools within the project area. Clarksville Elementary School, Pointers Run Elementary School, Howard County Gateway School, Clarksville Middle School, and River Hill High School are public schools located in Clarksville. The Howard County Gateway School is an alternative school for middle and high school level students. The West Friendship Elementary School is located in West Friendship. Glenelg High School is located on Burntwoods Road west of MD 32. One private school, the





Glenelg Country School offering a pre-kindergarten through 12th grade curriculum, is located on Maryvale Court at Folly Quarter Road. A parochial school, St. Louis Elementary School, is located on MD 108 just south of the MD 32. Howard County Public School System is constructing an elementary school and future middle school (scheduled for a 2003 opening) at Triadelphia Road and MD 32.

Religious Facilities

There are numerous existing places of worship within the study area. The Sharon Missionary Baptist Church is located west of the project area along MD 144. The Glenelg United Methodist Church is located along Burntwoods Road in the community of Glenelg west of the study area. Shepherd of Glen Luther is located west of MD 32, on Shady Lane, near the Ellerslie, Warfield and Glenwood Estates subdivisions. Located in Dayton are Brown's Chapel United Methodist and Dayton Four-Square Chapel. Linden Church is located east of MD 32 on Linden Church Road. In Clarksville, there are two churches: St. Louis Catholic and Linden Linthicum Methodist Church. Linden Linthicum Methodist Church is located north of the project area on MD 108. St. Louis Catholic Church is located south of the project area adjacent to the St. Louis Elementary School on MD 108.

Parks and Recreational Areas

While there are numerous public recreational facilities located throughout Howard County, there are none located in or adjacent to the MD 32 study area. Near the study area two public facilities, West Friendship Park and Howard County Fairgrounds, one private facility, Willow Springs Golf Course, and a county park proposed for the West Friendship community along MD 144 west of MD 32, Western Community Park.

All seven county public schools in the study area have outdoor recreational facilities, such as playgrounds and ball fields, open to the public.

Emergency Services

Law Enforcement

Public safety is provided by the Waterloo Barrack of the Maryland State Police, located on Washington Boulevard in Jessup. In addition, the Howard County Police Department has two stations, one in the county seat, Ellicott City and the other at US 29 and Maryland 216, southeast of Clarksville. These law enforcement agencies are responsible for patrolling the unincorporated area of the county. The towns of Clarksville and West Friendship do not have their own police patrol within their respective municipalities.

Fire and Rescue

The Howard County Department of Fire and Rescue Services is a combination career and volunteer department. The county is divided into six Fire Districts with eleven fire stations. Fire Districts 3 and 5 serve the MD 32 study area. The West Friendship Fire Station, District 3, Station 3 is located on MD 144 east of the MD 32, next to the West Friendship Elementary School. The Fifth District Volunteer Fire Department, Inc., District 5, Station 5, is located on MD 108 at MD 32. Fire and emergency medical services are provided from these stations

Health Care Facilities

There are no health care facilities located within the project area, therefore, residents are served by facilities outside of the project area. These health care facilities are not shown on Figure II-2. Howard County General Hospital, the county's only hospital is located in Columbia. The County government operates health clinics at various locations primarily to serve individuals without health insurance. Twelve health agencies, three walk-in clinics, seven Health Maintenance Organizations, three preferred provider organizations, and numerous private providers serve residents in the county. (Howard County Department of Planning, 1990). There is only one elderly day care facility in Howard County, which is located in Columbia. According to the 1990 Howard County General Plan, additional facilities are being considered in Ellicott City, Elkridge and East Columbia. The Hospice Services of Howard County serve the terminally ill and their families.

Vantage Place, a 65 bed alternative living facility in Columbia serves Howard County's chronically mentally ill adult residents. Cooksville Academy provides a group home for emotionally disturbed boys. Seventy beds are provided for retarded citizens through the Howard County Association of Retarded Citizens Community Choice program. In addition, the County provides alcohol and drug abuse treatment and shelter centers for emotionally and mentally disturbed individuals.

The County Health Department provides many clinical services to its' residents. Services include addiction programs for the Howard County Detention Center and a rehabilitation program for the chronically mentally ill.

Other Community Facilities

Howard County operates senior citizens' nutrition centers at the Clarksville Fire Station and the Glenelg United Methodist Church, both of which are shown on Figure III-2.

The Lisbon Community Library on Woodbine Road just north of I-70 serves the Glenelg and West Friendship area. This library is a "storefront" community library that serves approximately 15,000 - 20,000 people with limited reference service and small core

collections (Howard County, 1990). A branch library in the Glenelg/West Friendship area is to be built between the years 2005 and 2010. The Central Branch Library, located in West Columbia, serves the entire county.

The US Post Office has three facilities in the study area located in Clarksville, Glenelg and West Friendship.

2. Economic Environment

a. Employment Characteristics

The largest sectors of employment in Howard County are services (43 percent), retail (16 percent) and construction (11 percent). The major employers in the county are Howard County Public Schools (4,003 employees), Johns Hopkins Applied Physics Lab (2,600 employees), Howard County Government (1,747 employees), The Columbia Association (1,275 employees) and Giant Food, Inc. (1,200 employees) (Howard County Dept. Of Economic Development, 1997).

Within the MD 32 study area the largest sectors of employment are services (32 percent), retail (12 percent), public sector (11 percent) and construction (11 percent).

As of May 1997, Howard County's unemployment rate was 3.0 percent. The state unemployment rate was 4.7 percent as compared to the national unemployment rate of 5.9 percent (Maryland Department of Labor, 1997)

Employment growth in Howard County is projected to be 28 percent between the years 2000 and 2020. The employment sectors with the largest projected growth are Services (23.71 percent), Finance, Insurance and Real Estate (F.I.R.E.) (15.38 percent), and Retail Trade (13.68 percent) (Maryland Office of Planning, 1995).

b. Commercial and Industrial Facilities

The county's location between the Baltimore and Washington D. C. metropolitan areas and the development of Columbia were the two primary reasons for the county's economic growth in the recent past. Both new industry and the expansion of the established economic base are encouraged. Planned economic growth and development are dependent upon efficient transportation systems. I-95, I-70, and US 29 serve as primary arteries for the transportation of goods and MD 32 serves as the primary connector between Annapolis and I-70 in Howard County. There are no industrial land uses along this corridor (Howard County 1990 General Plan).

3. Land Use

a. Existing Land Use

The existing land uses along the MD 32 corridor within the study area consists of residential development, woodland, farmland, and light commercial use. The 1990 Howard County General Plan states that 3,100 homes were on lots less than three acres and approximately 3,900 were on lots greater than three acres.

Large lot residential development, (three acres or greater lots) are the primary land uses in this portion of the county. Prior to 1987, the zoning allowed for sprawl development. As of 1990, thirty-two percent of the total acreage in the Western portion of the county had been developed. Since 1987, three-acre zoning has been implemented in this area.

Since 1980, there has been an annual average of 300 new homes built in the Howard County region (Howard County 1990 General Plan). According to the General Plan, the majority of the homes sold along this corridor are to buyers who are second or third time homeowners from Columbia, Baltimore and other points east. The remainder of the buyers' market consists of individuals from the DC metropolitan area and newcomers to the region.

Clarksville, Broadwater Estates, Twelve Hills, Rutherford, Glenelg, Burntwoods, King's Grant, Fox Valley Estates, Adams Reach, Pine Meadows, Ridgewood, Sycamore Spring, Friendship Manor, and West Friendship, are predominantly small, residential communities located along the study area portion of the MD 32 corridor. One and two story single family detached housing are the dominant housing types in these communities.

According to the 1990 Howard County General Plan, an extensive, yet random pattern of subdivision development has evolved. Farming previously dominated the land use in areas where there has been a large amount of subdivided land. This land has often been rented for farming purposes.

Due to the demand for subdivision development, agricultural lands were becoming scarce. Therefore, in 1980 the County developed the Agricultural Land Preservation Program designed to protect the land base needed for farming. Through this voluntary program, a farmer whose land meets size and soil criteria could offer to sell perpetual easement to the County, while holding fee simple title to the land and continuing to farm. The farm may be sold but the perpetual easement restricts the development of the property, which remains with the land and binds all future owners. Two sources, a County tax on real estate transfers and the Maryland Agricultural Transfer Tax fund the purchase program. According to the 1990 Howard County General Plan, the primary goal of this program was to preserve 20,000 acres of farmland for agricultural activities.

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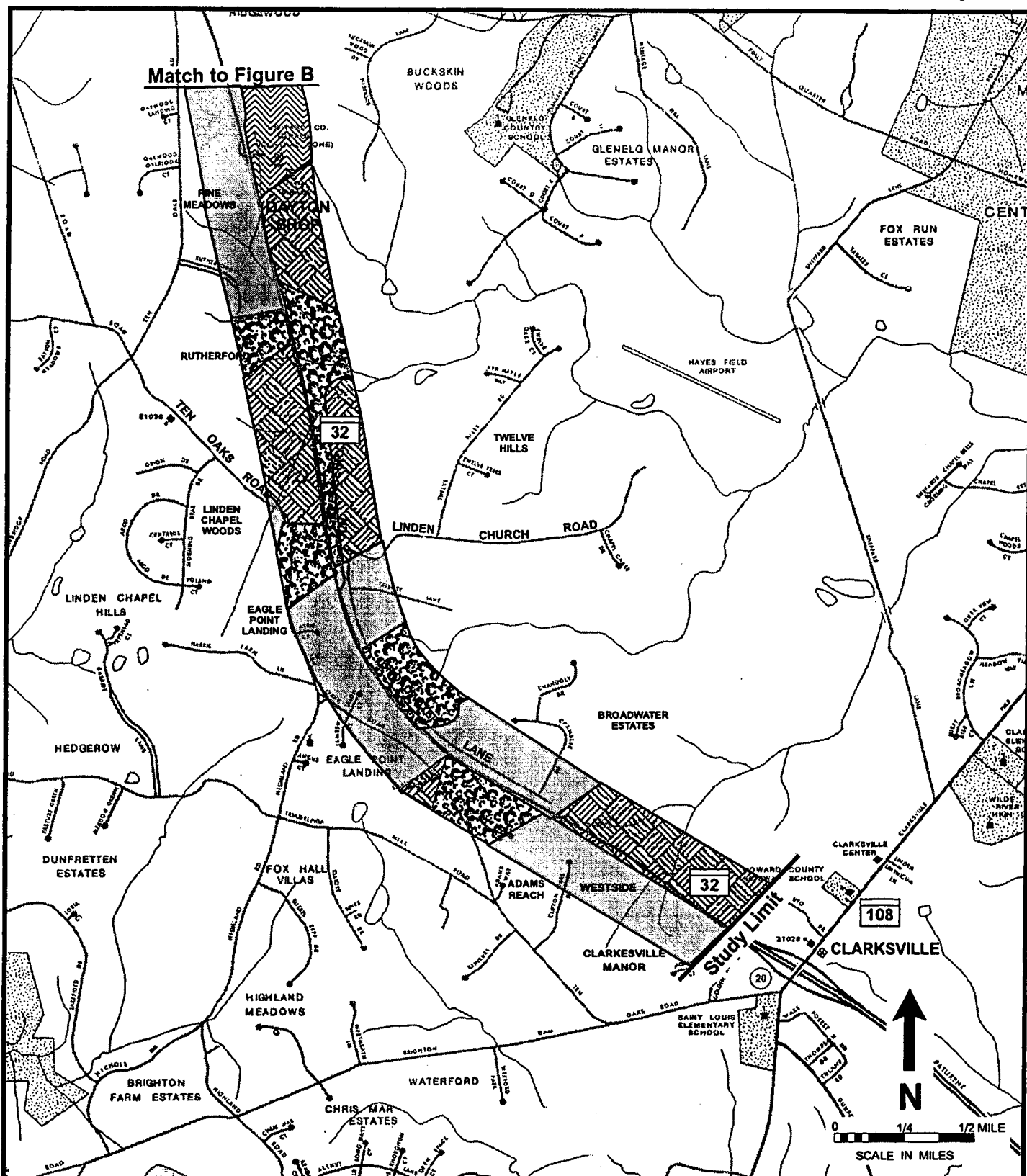
In 1990 this goal was increased to 30,000 acres (Pickens, 1998). By the spring of 1998 approximately 17,500 acres of farmland have been preserved under this program.

b. Future Land Use

To regulate and guide land use, Howard County has adopted a zoning ordinance, subdivision regulations and a comprehensive development plan. The existing land use in the study area is shown on Figure III-3. Figure III-4 shows the Howard County zoning classifications for the study area. Most of the land in the study area is zoned for Rural Residential (RR) which permits agriculture and cluster and non-cluster forms of residential development. The 1990 Howard County General Plan states that public water and sewer facilities are only planned for an area south of the study area, on the southwest portion of MD 108 where it intersects MD 32.

Between 1973 and 1990, Howard County experienced a 72.6 percent increase in total development, most of which consisted of residential development along with commercial support services. By the year 1973, approximately 3.7 percent of the total land area were developed. By the year 1990, approximately 27 percent of the total land area were developed. According to the 1990 Howard County General Plan, a mid-county greenbelt is planned for the south end of MD 32 study area near Clarksville. This greenbelt development will connect the regional park systems, including the protected land areas and the stream valley corridors. Eastern county residents will benefit from the major open space areas that will be located in close proximity. The greenbelt is located in the southern study area northwest of Clarksville. Also within this vicinity, the county has identified an area that is known to have a high potential for groundwater pollution. This groundwater pollution designation is used as a guide to control subdivision and planning for land uses in the Western portion of the county.

Future land use, as described in Table III-6, for the West Friendship community will be Employment Commercial, Preservation, Rural Residential and Rural Conservation. Future land use for Glenelg has been identified as Employment Commercial, Rural Residential and Preservation. Clarksville's future land use has been identified as Employment Commercial, Rural Residential, Low Density Residential, Preservation and Environmental Protection. Dayton's future land uses include Employment Commercial, Preservation and Rural Residential. Other indicators, i.e., the expansion of the DC Metro subway into Wheaton, and the expansion of Frederick, Sykesville and Mount Airy, could facilitate future demand for development along the corridor.



LEGEND

**Residential / Commercial**

Forest Lands



Agriculture



Rural Residential



Institutional

**Source: Howard County -
1990 General Plan**

KEY MAP

B

A

MD 32 PLANNING STUDY MD 108 TO I-70

Existing Land Use






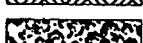
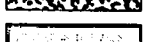
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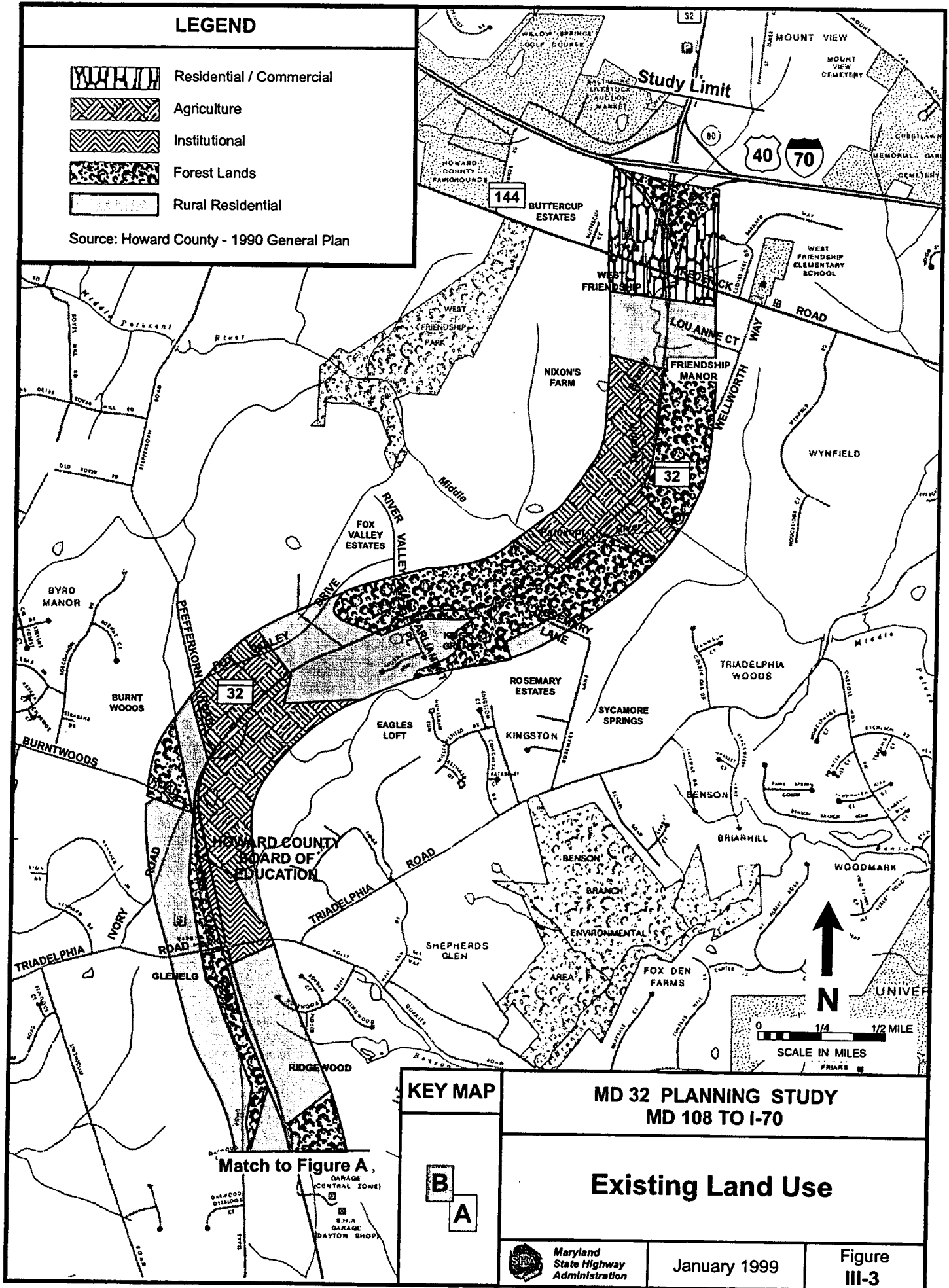
**Figure
III-3**

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LEGEND

-  Residential / Commercial
-  Agriculture
-  Institutional
-  Forest Lands
-  Rural Residential

Source: Howard County - 1990 General Plan



KEY MAP

MD 32 PLANNING STUDY
MD 108 TO I-70

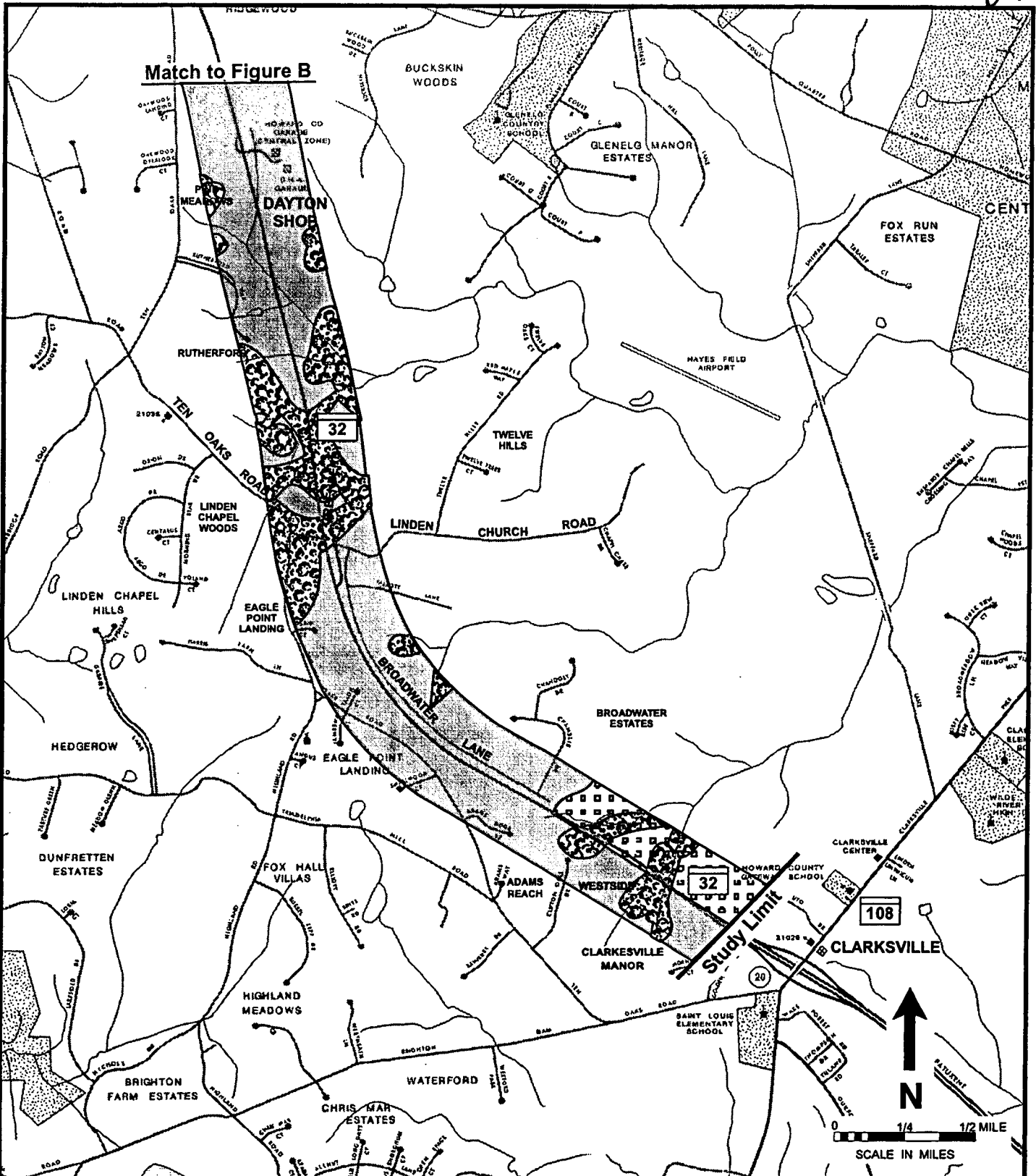
Existing Land Use










Maryland
State Highway
Administration






January 1999

Figure
III-3



LEGEND		KEY MAP		MD 32 PLANNING STUDY MD 108 TO I-70		
	Rural Conservation			Zoning Classifications		
	Employment Commercial					
	Rural Residential					
	Environmental Protection					
	Preservation Areas					
Source: Howard County - 1990 General Plan Land Use 2010				 Maryland State Highway Administration	January 1999	Figure III-4

LEGEND

-  Rural Conservation
-  Employment Commercial
-  Rural Residential
-  Environmental Protection
-  Preservation Areas

Source: Howard County - 1990 General Plan Land Use 2010

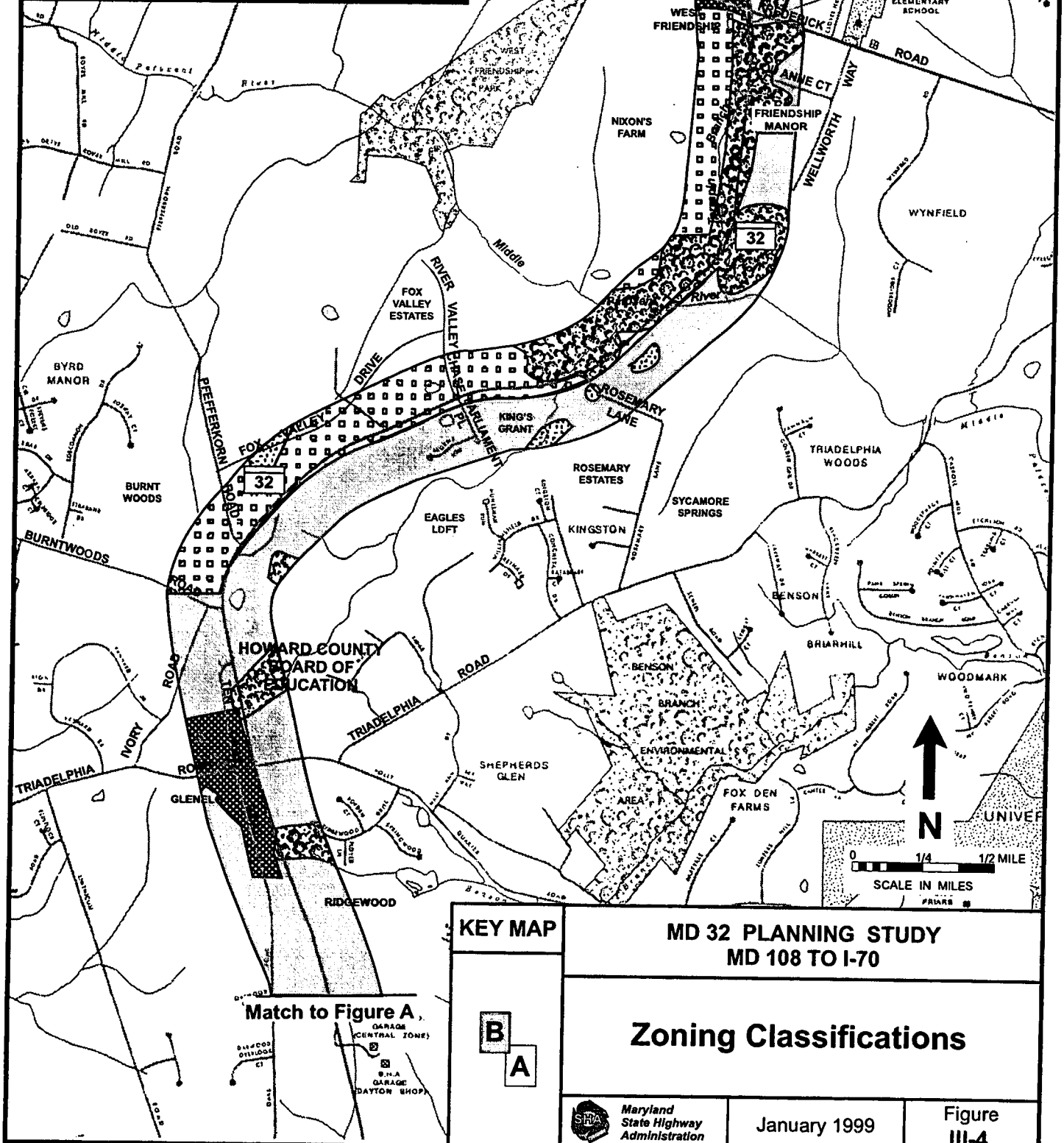


Table III-6: Howard County Land Use Definitions

Land Use	Definition
Rural Conservation	Encompasses areas where densities of new development will be at one unit per five acres net, where housing will be required to cluster and where extensive open space will be preserved in perpetuity. Some developments on three-acre or one-acre lots as of 1989 are included in this designation. Farming will remain the dominant land use and activity in these areas. A new zoning classification will be developed to address this land use.
Rural Residential	Encompasses areas where densities will typically range between one unit per two acres through five acres. This applies in those parts of the west where a large-lot suburban character will be the predominant land use pattern.
Environmental Protection	This is an open space category where only open-space related development can occur. This category includes state and county owned parks and Columbia Association open space. It is a generalized depiction of such open space and only significant elements of the open space network are shown; smaller, discontinuous parcels are omitted. It also includes cemeteries. It does not represent a specific zoning district.
Employment Commercial	Includes areas where retail and service type commercial uses will be dominant. In terms of 1989 zoning categories, it incorporates B-1, B-2, and SC zones.
Preservation Area	Incorporates sensitive environments along stream valleys. This includes floodplains, wetlands, and steep slopes. Development is not necessarily prohibited in these areas but is subject to state and county environmental regulations. It does not represent any specific zoning district.

Source: Howard County General Land Use Plan Maps 1990

The 1990 Howard County General Plan has identified areas along MD 32 south of I-70 at MD 144 and at Triadelphia Road to be designated for employment uses on a long-term basis. This area has been zoned General Business (B-2).

Table III-7 shows the land use forecast for Howard County through the year 2020. Total development is projected to increase approximately 51 percent between 1990 and 2020. Of the 160,505 acres of land area in Howard County, an estimated 103,512 acres of land (64 percent of the entire land area in the county) are projected to be in development by the year 2020.

Howard County's natural environment is an attraction for population and economic growth. Growth will continue in the county as long as quality natural resources can be maintained (Howard County Planning Commission, 1989).

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Table III-7: Howard County Land Use Forecast, 1990-2020

Land Use Category	Land Use in Acres				Land Use Change 1990-2020 (%)
	1990	2000	2010	2020	
Very Low Density Residential (1)	9,134	13,486	17,547	19,736	116%
Low Density Residential (2)	22,797	32,438	41,434	46,285	103%
Med./High Density Residential (3)	9,865	13,136	16,188	17,834	81%
Commercial/Industrial	5,496	7,766	9,884	11,027	101%
Institutional and Open	3,161	4,467	5,685	6,342	101%
Total Development	50,453	71,293	90,738	101,224	96%
Agriculture	52,593	42,414	32,915	27,794	-47%
Forest	55,079	44,418	34,471	29,107	-47%
Wetland (4)	82	82	82	82	0%
Total Resources	107,754	86,914	67,468	56,983	-47%
Total Land Area	158,125	158,125	158,125	158,125	Constant

Source: Maryland Land Use/Land Cover 1990-2020 Forecast.
Maryland Office of Planning, 1992

Notes: (1) 1 dwelling unit/5 acres to 1 dwelling unit/20 acres
(2) 0.2 dwelling unit/acre to 2 dwelling units/acre
(3) 2 dwelling units/acre to > 8 dwelling units/acre
(4) Assumed constant over forecast period

c. Smart Growth

The intent of Maryland's Smart Growth Areas Act of 1997 is to direct state funding for growth-related projects to areas designated by local jurisdictions as Priority Funding Areas (PFAs). PFAs are existing communities and other locally designated areas as determined by local jurisdictions in accordance with "smart growth" guidelines. The Act is intended to direct development to existing towns, neighborhoods, and business areas by directing State infrastructure improvements to these places.

B. Traffic and Transportation Network

MD 32 is on Maryland's primary highway system and is functionally classified by the State of Maryland as a Principle Arterial with a federal classification as a Rural-Other Principal Arterial. This segment of MD 32 through Howard County is a two-lane roadway extending from MD 108 in the village/commercial center of Clarksville to I-70 in the West Friendship community area.

Through this nine-mile section, MD 32 traverses rolling terrain and passes through low density residential and agricultural areas. This segment, however, is also part of a high volume transportation corridor that provides an efficient connection for people and goods between the Eastern Shore and Western Maryland. If this section of MD 32 is dualized, it would complete the "Patuxent Freeway" system that stretches from Annapolis, the state capital, to I-70 and points west, a total distance of 40 miles (see Figure S-1, Vicinity Map). This section also connects I-70 with I-95 and points south while bypassing I-695, the Baltimore Beltway.

The existing two-lane roadway consists of a bituminous surface with two 12-foot lanes and 10-foot shoulders. When the roadway was built in the late 1950's/early 1960's, it was intended to be the initial two lanes of a four-lane divided highway, and was anticipated to be able to handle traffic demand to the year 2000. Between MD 108 and Burntwoods Road, MD 32 is an access-controlled roadway with a 300-foot right-of-way. Between Burntwoods Road and I-70, MD 32 has no access control and an approximate right-of-way of 150 feet.

Currently, there are traffic signals at Linden Church Road, east and west; Ten Oaks Road; Burntwoods Road, and MD 144. Signals are scheduled for installation at the I-70 ramps in 1999. There are passing zones throughout the length of the project; however they are generally not utilized during the peak hour because the opposing volumes are too heavy. There are turn lanes at the following intersections: Linden Church Road, Dayton Shop, Ten Oaks Road, Burntwoods Road, River Valley Chase, MD 144, and the I-70 ramps.

The traffic flow along MD 32 was measured by determining the level of service (LOS) for the roadway (see Section I.C.1 for a description of each level of service). Each level coincides with conditions that drivers' experience while traveling along the roadway during the peak travel periods. LOS designations, from A to F, are used to define traffic flow. LOS A indicates ideal conditions and LOS F indicates severe congestion with substantial delays.

1. Traffic Conditions

The current ADT (1997) along MD 32 ranges from 15,900 vehicles south of MD 144 to 18,300 vehicles south of Linden Church Road. Existing volumes are presented on Figure IV-1, as are the traffic projections for the year 2020 under the No-Build and the Build scenarios. Trucks, including school buses, currently make up ten percent of the ADT volumes along MD 32.

The existing LOS along MD 32 is at LOS E north of Linden Church Road and LOS F south of Linden Church Road. All of the intersections south of MD 144 operate at LOS F during the morning peak period and between D and F, during the afternoon peak period. The MD 144 and I-70 intersections operate at LOS A and C respectively during both the morning and afternoon peak periods.

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2. Public Transportation

Howard County is served by the Maryland Mass Transit Administration rail and commuter bus services. The Marc Camden Line includes four stations in Howard County: Jessup, Savage, Laurel Racetrack, and Laurel. The Camden Line runs along the border between Howard and Anne Arundel Counties with service into both Baltimore and Washington, D.C. Commuter Bus service is provided between Columbia and Washington, D.C. on routes 929 and 995, between Columbia and Baltimore on routes 310 and 311 and between Laurel and Baltimore on route 320. None of these routes directly serve the study area. Park and ride lots located in the county near the study area include a lot on MD 32 just north of the I-70 interchange. The county's 1990 General Plan identifies a second proposed location for a park and ride facility at MD 32 and MD 108 at the southern edge of the study area. MTA paratransit service is not available in Howard County.

C. Cultural Resources

Historic structures and archeological resource identification and evaluation studies have been completed for the study area. Letters from the Maryland Historical Trust (MHT), the State Historic Preservation Officer (SHPO) coordinating the identification of cultural resources evaluations are presented in Chapter V. The identification studies were undertaken to address the requirements of Section 106 of the National Historic Preservation Act, which was passed to address the widespread disturbance of historic properties.

The National Historic Preservation Act of 1966 (NHPA) was passed to address these concerns and has since been amended and strengthened several times. The cornerstone of the Federal preservation law, NHPA established today's national historic preservation program, which includes elements for identification, assistance and protection.

Section 106 requires each agency to take into account the effects of its actions on historic properties. Furthermore, an agency must afford the Advisory Council on Historic Preservation, an independent Federal agency created by NHPA, an opportunity to comment on any of the agency's undertakings that could affect historic properties.

The language of Section 106 of the National Historic Preservation Act as amended (16 U.S.C. §§ 470f) follow:

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the affect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion on the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic

Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

The National Register's standards for evaluating the significance of properties were developed to recognize the accomplishments of all peoples who have had a contribution to our country's history and heritage.

The quality of *significance* in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- (A) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (B) that are associated with the lives of persons significant in our past; or
- (C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (D) that have yielded, or may be likely to yield, information important in prehistory or history.

The Section 106 review process includes steps for identification and evaluating historic properties, assessing the effects of the agency's proposed action on the historic properties and, if there is a harmful (adverse) effect, consultation about ways to avoid, reduce, or mitigate that harm.

1. Historic Sites

Two historic structures which were determined to be National Register Eligible (NRE) occur within the Area of Potential Effect (APE). The locations of the structures, Westwood M.E. Church (HO-207) and the Milton Shipley Farm Corncrib (HO 6-45) are shown on Sheets 3 and 5 respectively, located in Appendix A.

The SHPO has concurred that these two historic structures within the project's Area of Potential Effect are eligible to the NHRP.

a. HO-207, Westwood Methodist Episcopal Church

The Westwood M.E. Church, located at 13554 Triadelphia Road, is a three-part complex, which is currently the location of the Westwood Antiques. The original structure, a very simple, Gothic Revival frame chapel, was constructed in 1858 upon the instruction of local parishioners, who had previously met in a schoolhouse. Circuit-riding ministers provided services. During the Civil War services were held separately for the Union and Confederate supporters. In 1920 the size of the congregation had increased to the point

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that a second, more elaborate chapel was constructed just west of the original, complete with square tower, shingled second level, and large stained glass window in the south principal elevation. The two sections were connected in 1956 by means of a school wing. The Methodist Church found that the property was redundant, and had sold it to a private party by ca 1979. The school wing was converted to a residence, and the churches were stripped of furniture, etc. The newer church had been retained more or less in its original condition, according to the present owner, who uses it as a furniture storeroom and salesroom. The original frame structure has had some major alterations, however, in the form of removal of the slave gallery above the front door, remodeling, building of internal walls, and the additional of a vestibule. It is currently used as a salesroom for Tiffany lamps.

The structures are eligible under Criterion C and are good examples of the rural Gothic Revival styles, illustrating the evolving tastes on the part of the architects and/or builders and their client, in this case the Methodist Church. Because of drastically falling attendance, the Methodists have closed many churches, this among them, and another structure a short distance away from the Westwood Church has also been surplused.

b. HO 6-45, Milton Shipley Farm Corncrib

This structure is located on the former Milton Shipley Farm within an ensemble of highly altered or modern farm structures. The corncrib is eligible under Criterion C as a rare example of type and method of construction. Maryland Historical Trust staff is not aware of any other such structure within the state, but knows of an apparently identical example in the Midwest. The design of the corncrib is unusual for its use of perforated corrugated metal and its oval shape. It probably dates to the early 20th century and may possibly have been obtained from a mail order catalogue. It appears to be representative of the growing use of standardized designs and mass marketed products, including small structures, on American farms in the early 20th century, a development which paralleled the national trend toward mass consumption and standardization. The historic property boundary for the Milton Shipley Corncrib need only extend several feet beyond the footprint of the structure.

Previously, the Howard County Hunt Club (HO-14) was determined NRE. The Howard County Board of Education (BOE) purchased this site for the construction of two schools (see Section V-OA-7). The MHT together with the Public School Construction Program and the BOE entered into a Memorandum of Agreement (MOA) dated February 18, 1997 regarding the Howard County Hunt Club. This MOA stated that the BOE would demolish the Hunt Club NRE structure to undertake construction of Western Elementary School #3. The MOA stipulated that an exhibit demonstrating the history of the Hunt Club would be prepared for display at the new school.

2. Archeological Resources

The project area was also surveyed for potential archeological resources, see Table III-8. Prehistoric sites 18HO230, 18HO231, and 18HO232, historic sites 18HO233, 18HO234, and 18HO235, and several isolated finds designated 18HOX33, were identified as a result of the survey. A previously identified prehistoric site 18HO139 was found to be located outside the project's area of potential effects and would be avoided by the undertaking. Of the newly identified archeological resources, only prehistoric site 18HO232 is potentially eligible for the National Register of Historic Places. This site may be potentially significant under criterion D for its potential to yield information important in prehistory or history. Site 18HO232 is a multi component site with diagnostic artifacts indicative of a Late Archaic occupation. Artifact densities are moderate to high, and the site is well preserved. Prehistoric site 18HO232 may be able to provide important information in prehistory regarding economic organization and technology in the Piedmont during Late Archaic times. The remaining sites and isolated finds (18HO230, 18HO231, 18HO233, 18HO234, 18HO235 and 18HOX33) are not eligible for listing on the National Register of Historic Places because of low information potential and no additional archeological investigations were recommended.

Table III-8: Archeological Sites

Site Number	Affiliation	NR Eligibility	Recommendations
18HO230	Prehistoric	Not Eligible	No Further Investigation
18HO231	Prehistoric - Late Archaic	Not Eligible	No Further Investigation
18HO232	Prehistoric - Late Archaic and Middle Woodland	Potentially Eligible	Avoidance and temporary protective fencing
18HO139	Prehistoric	Undetermined	Avoidance
18HOX33	Mixed Historic and Prehistoric	Not Eligible	No Further Investigation
18HO233	Historic - 19 th and 20 th Centuries	Not Eligible	No Further Investigation
18HO234	Historic - 19 th and 20 th Centuries	Not Eligible	No Further Investigation
18HO235	Historic - 19 th and 20 th Centuries	Not Eligible	No Further Investigation

D. Geology, Topography, and Soils

1. Physiography/Topography

Howard County is located within the Piedmont Physiographic Province except for a small zone of the Coastal Plain Province along the Anne Arundel County border. The topography of Howard County is mostly rolling and slopes from the west and north to the east and south. Surface elevations range from 875 feet above sea level in the west at Frederick County to 20 feet above sea level in the southeast at Anne Arundel County. The rolling terrain of the Piedmont Plateau of Howard County results from the folding and faulting and the variable erosional properties of the underlying crystalline bedrock and intrusive igneous rock.

2. Geology

The study area is located entirely within the Piedmont Physiographic Province and is underlain by crystalline bedrock of pre-Cambrian and early Paleozoic ages. Soils consist of material weathered in place from crystalline and micaceous bedrock. The study area is underlain, specifically, by the bedrock of the Liberty Complex and Wissahickon Group. The geology of the study area is shown in Figure III-5.

The Morgan Run Formation of the Liberty Complex consists of fine to medium grained, silvery gray to greenish gray, garnetiferous, quartz-chlorite / biotite-muscovite schist. Undifferentiated ultra mafic and mafic rock exists within the Morgan Run Formation and consists of discontinuous layers of fine to medium grained dark green to black chlorite-amphibolite schist.

Interlayered Loch Raven and Oella Formations underlie the majority of the study area. The Loch Raven Formation consists of medium grained, medium to dark gray, biotite-plagioclase-garnet-muscovite-quartz schist. The Oella Formation consists of medium grained, medium gray biotite-plagioclase-muscovite-quartz schist interlayered with fine grained, biotite-plagioclase-quartz gneiss.

Cockeysville Marble, Baltimore Gneiss and Pegmatite underlie the southern end of the study area. The Cockeysville Marble consists of fine to medium grained, white to light bluish gray calcite marble with minor white to pale tan dolostone. Baltimore Gneiss is fine to coarse grained, light pink to pale tan gneiss interlayered with biotite-microcline-quartz-plagioclase gneiss. Pegmatite is intrusive igneous rock consisting of massive light gray to pinkish-gray rock composed of muscovite mica, quartz, albite, and microcline-perthite.

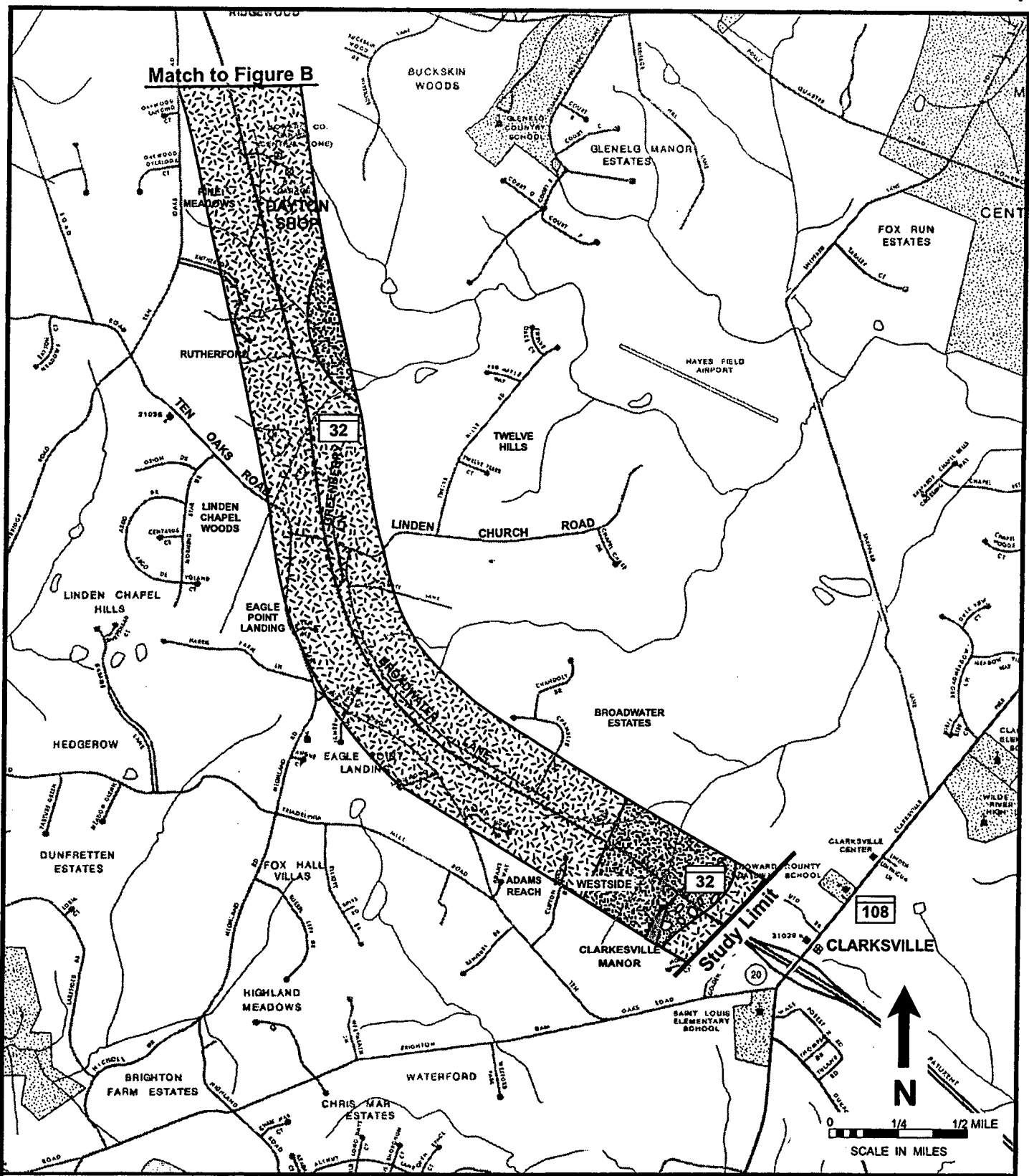
3. Soils











Based upon the Soil Conservation Service (SCS) Soil Survey, now known as the Natural Resources Conservation Service (NRCS), for Howard County Maryland 1968, the soils encountered within the study area consist of loam, silt loam, gravelly loam and gravelly silt loam. These soils are formed in place from weathered crystalline and micaceous rock.

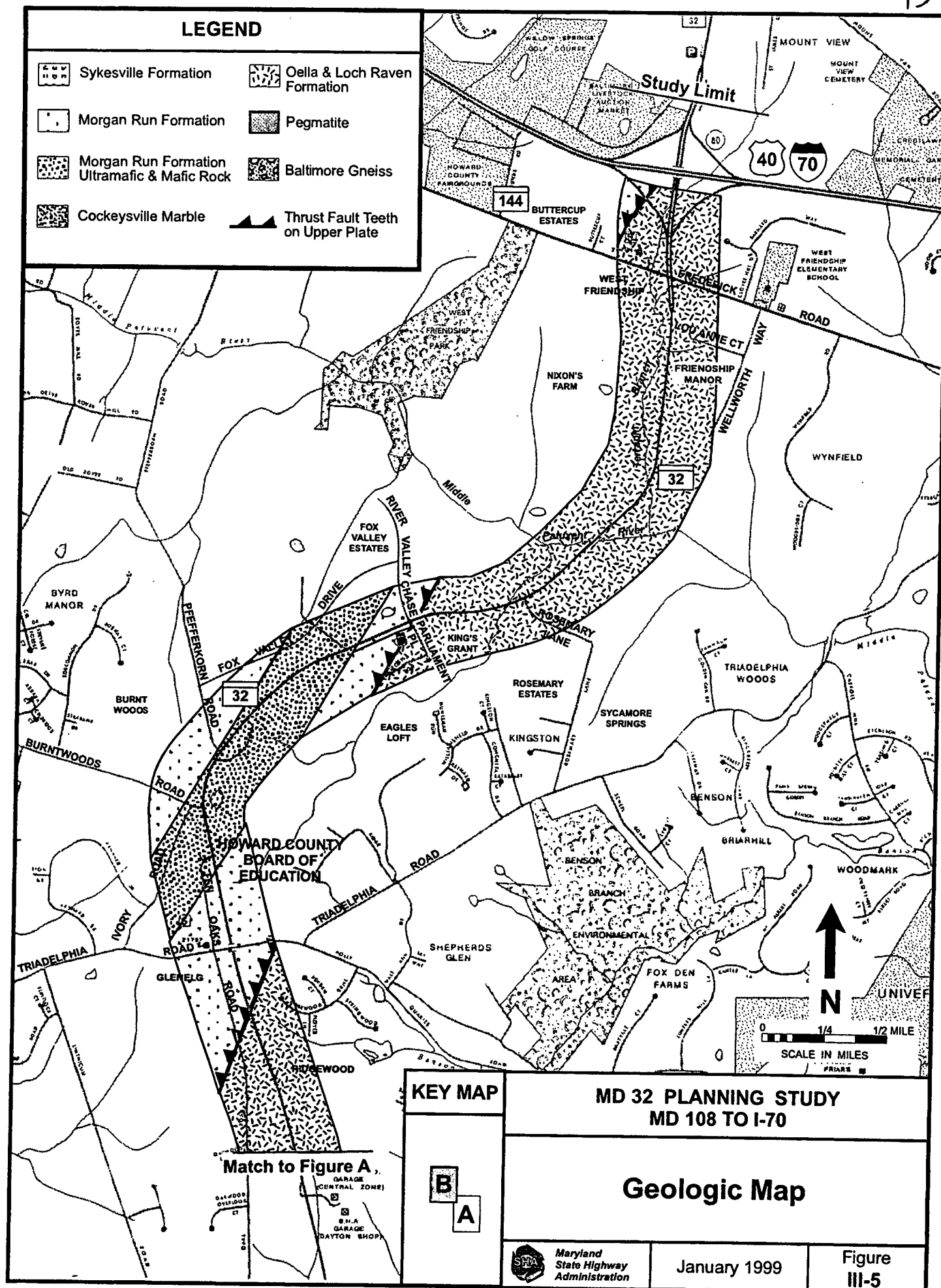
These soils are classified into soil series according to similar soil profiles as determined by the Soil Survey. These series include the Glenelg, Manor, Chester, Elioak, Glenville, Baile, Hatboro, and Comus series. Parent material for the Glenelg, Manor, Chester, Elioak, Glenville and Baile soils is weathered soft, micaceous schist. Recently deposited alluvium formed on flood plains is the parent material for the Hatboro and Comus soils.

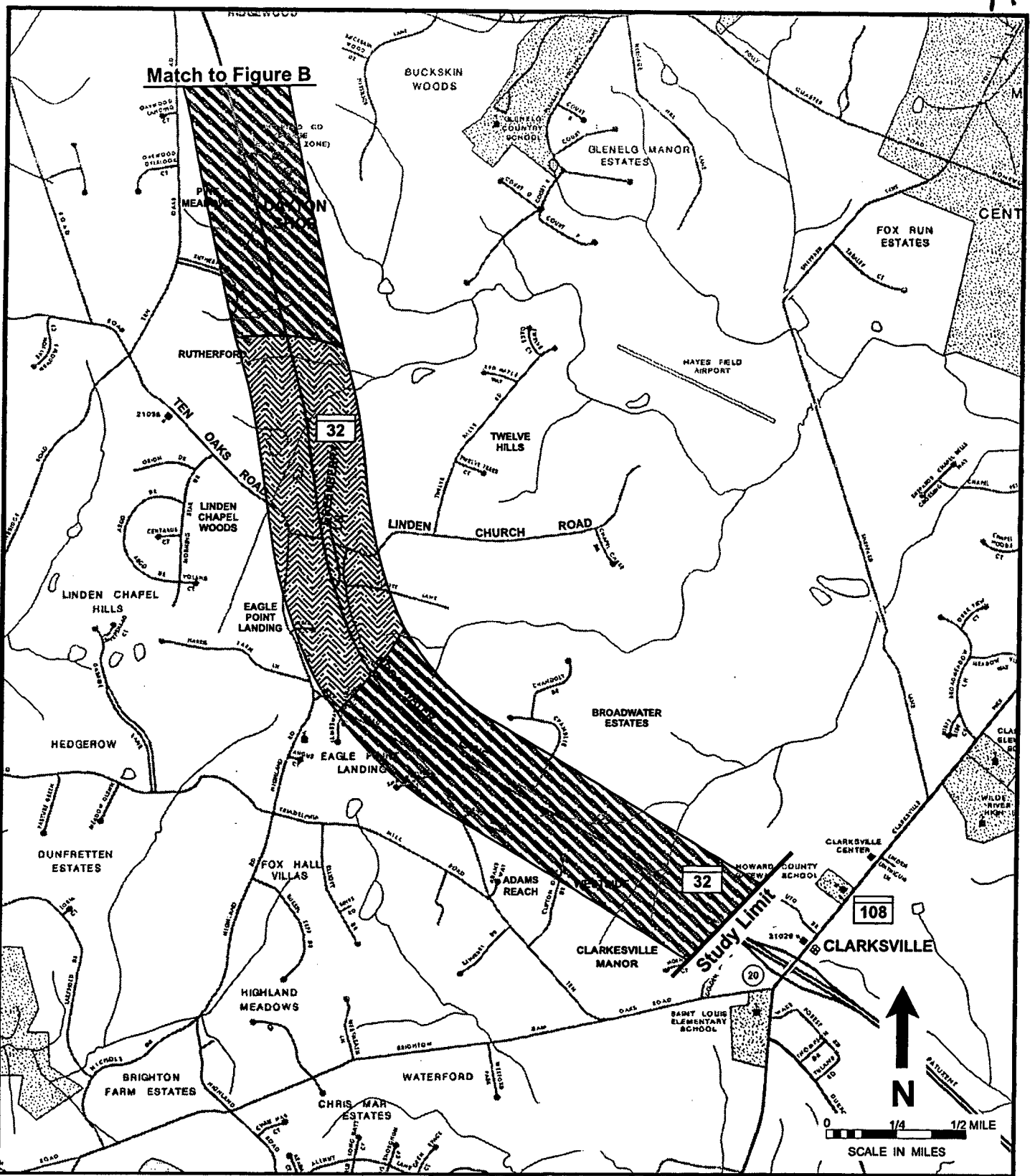
The soil series encountered within the majority of the study area are the Glenelg, Manor and Chester series. These soils comprise approximately 85 percent of all soils along the study area.




A brief description of the soil series encountered within the study is contained in Table III-9. The soil series have been grouped into soil associations based on similar soil forming processes and geographic setting. These associations are shown on Figure III-6.



LEGEND		KEY MAP		MD 32 PLANNING STUDY MD 108 TO I-70			
	Sykesville Formation		Oella & Loch Raven Formation		<h1>Geologic Map</h1>		
	Morgan Run Formation		Pegmatite				
	Morgan Run Formation Ultramafic & Mafic Rock		Baltimore Gneiss				
	Cockeysville Marble		Thrust Fault Teeth on Upper Plate				
					Maryland State Highway Administration	January 1999	Figure III-5





LEGEND		KEY MAP		MD 32 PLANNING STUDY MD 108 TO I-70		
<div><div>Glenelg - Manor - Chester Association</div></div> <div><div>Glenelg - Chester - Manor Association</div></div>		<div><div>B</div><div>A</div></div>		Soil Associations		
				 <div>Maryland State Highway Administration</div>	January 1999	Figure III-6

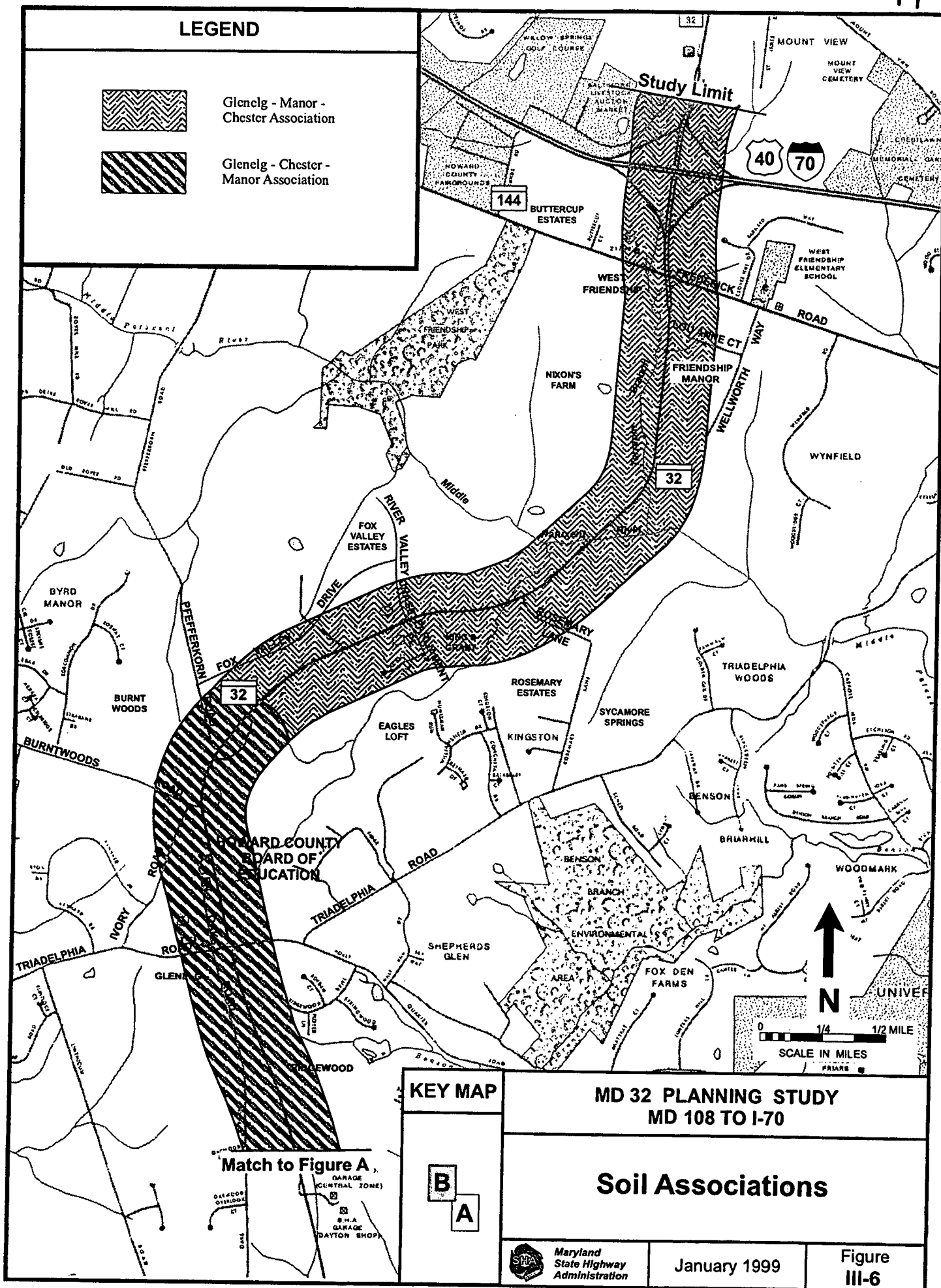
LEGEND



Glenelg - Manor -
Chester Association



Glenelg - Chester -
Manor Association



KEY MAP

MD 32 PLANNING STUDY
MD 108 TO I-70

Soil Associations



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Figure
III-6

Table III-9: Description of Common Soil Series in the Study Area

Soil Series	Description
Glenelg Series	Gently Sloping to Steep, Well-drained Loam
Manor Series	Nearly Level to Steep, Well-drained Loam and Gravelly Loam
Chester Series	Nearly Level to Steep, Well-drained Silt Loam and Gravelly Silt Loam
Elioak Series	Nearly Level to Steep, Well-drained Silt Loam
Glenville Series	Nearly Level to Steep, Moderately to Well-drained Silt Loam
Baile Series	Nearly Level, Poorly drained Silt Loam
Hatboro Series	Nearly Level, Poorly drained Silt Loam
Comus Series	Nearly Level, Well-drained Silt Loam

The characteristics of the soils within the study area have been reviewed for the suitability of the soils for engineering purposes. The properties of soils significant for design and construction include permeability, compactibility, drainage and shrink-swell potential of the soils.

Based upon the Unified Classification system, the soils in the study area classify as ML, low plasticity silt, MH, high plasticity silt, and CL, a low plasticity clay. The permeability of undisturbed samples is estimated between 0.63 and 2.0 inches per hour. These soils are generally well drained and exhibit little potential of shrink-swell with changes in moisture. The maximum dry density of these soils is estimated from 101 to 110 pounds per cubic foot with estimated average optimum moisture content of 16 percent.

Soils encountered within the study area have been reviewed for constructibility of pipelines, roadways, and embankments. It is estimated that depth to bedrock for the majority of the study area is four to 10 feet below ground surface. Constructions below these depths will likely encounter bedrock. Depth to groundwater is estimated to be greater than 20 feet below ground surface for the Glenelg, Manor, Chester, and Elioak series. In areas of the Baile, Hatboro, Comus, and Glenville series, the groundwater is estimated at approximately zero to four feet below ground surface. These soils are subject to flooding.

The Glenelg, Manor, Elioak and Glenville soils provide fair to good stability for roadway location and embankments. The Glenelg soils are elastic and may be difficult to compact. The Baile, Hatboro, and Comus soil provide poor to very poor stability for roadway location and embankment. These soils will be encountered in limited areas.

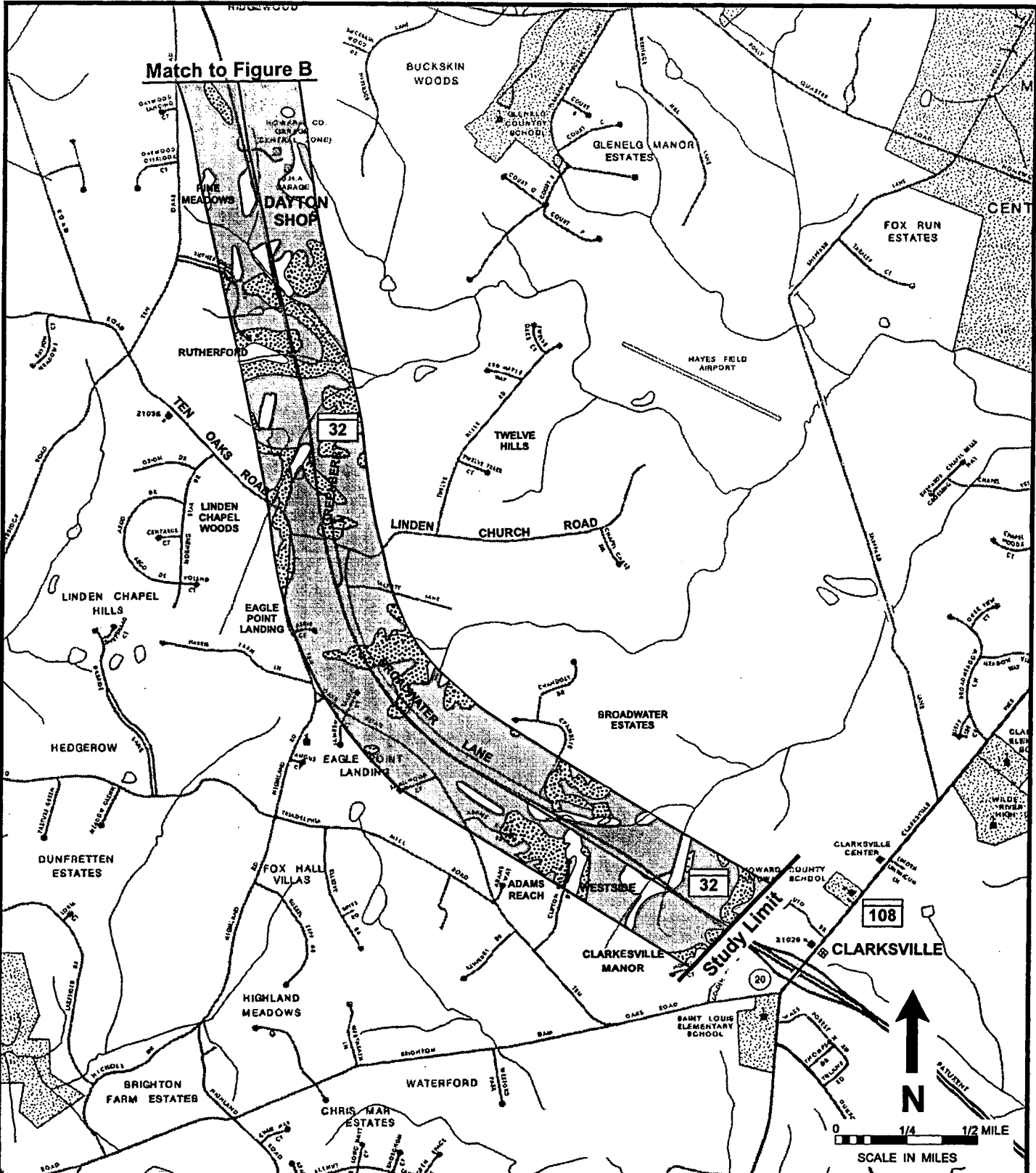
a. **Farmlands**

The NRCS identifies certain soils as Prime and Statewide Important farmland soils. Prime farmland soils are those whose composition is best for producing food, feed, forage, fiber and oilseed crops. Prime farmlands have adequate moisture supply, favorable temperature and growing season and acceptable soil quality. Statewide important farmland soils are similar to the prime farmland soils; however, these soils require treatment and management to produce as high a yield as prime farmland soils. The prime and statewide important farmland soils encountered within the study area are identified in Tables III-10 and III-11 and are presented in Figure III-7.

The NRCS categorizes soils into capability groups according to the soil's suitability for most kinds of farming. The prime farmland soils in the study area are classified as Capability Classes I and II. Class I soils, ChA, Cs, and EkA, have few limitations that restrict their use for farming practices. The Class II soils, CgB2, ChB2, EkB2, GIB2, GnA, GnB2, MgB2 and MIA have some limitations that reduce the choice of plants or require moderate conservation practices. Soils of statewide importance in the study area are classified into Capability Class III. The Class III soils, CgC2, ChC2, EkC2, GIC2, Ha, MgC2 and MIC2, have severe limitations such as erosion and variable hydrology that reduce the choice of plants and require special conservation practices.

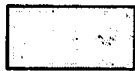
Table III-10: Prime Farmland Soils

Soil Survey Symbol	Soil Name
CgB2	Chester Gravelly Silt Loam, 3 to 8 percent slopes
ChA	Chester Silt Loam, 0 to 3 percent slopes
ChB2	Chester Silt Loam, 3 to 8 percent slopes
Cs	Comus Silt Loam
EkA	Elioak Silt Loam, 0 to 3 percent slopes
EkB2	Elioak Silt Loam, 3 to 8 percent slopes
GIB2	Glenelg Loam, 3 to 8 percent slopes
GnA	Glenville Silt Loam, 0 to 3 percent slopes
GnB2	Glenville Silt Loam, 3 to 8 percent slopes
MgB2	Manor Gravelly Loam, 3 to 8 percent slopes
MIA	Manor Loam, 0 to 3 percent slopes

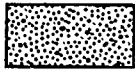


LEGEND		KEY MAP		MD 32 PLANNING STUDY MD 108 TO I-70		
	Prime Farmland Soils			Prime and Statewide Important Farmland Soils		
	Statewide Important Farmland Soils				Maryland State Highway Administration	January 1999
				Figure III-7		

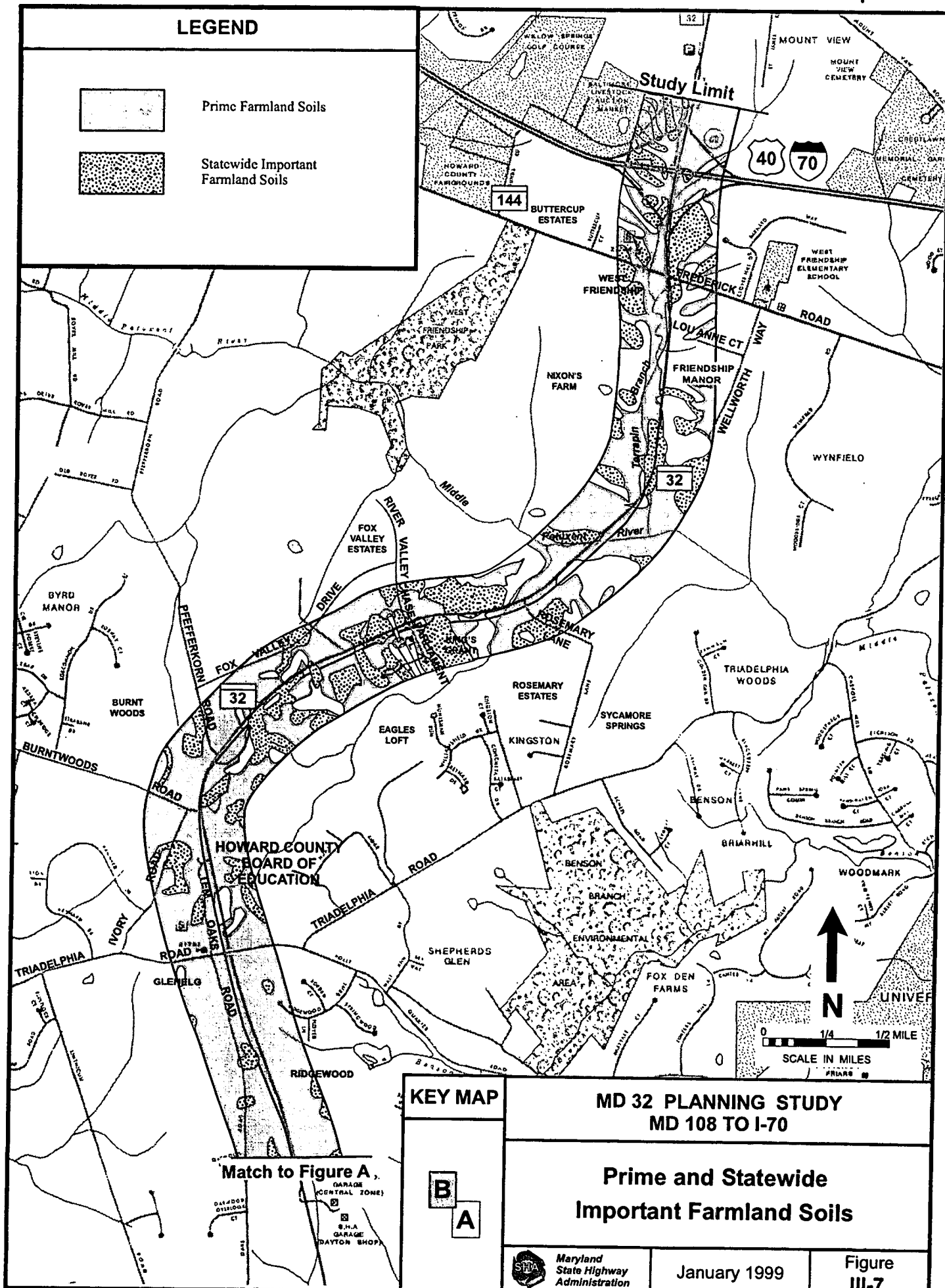
LEGEND



Prime Farmland Soils



Statewide Important Farmland Soils



KEY MAP



Match to Figure A

MD 32 PLANNING STUDY
MD 108 TO I-70

Prime and Statewide
Important Farmland Soils



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Figure
III-7

Table III-11: Soils of Statewide Importance

Soil Survey Symbol	Soil Name
CgC2	Chester Gravelly Silt Loam, 8 to 15 percent slopes
ChC2	Chester Silt Loam, 8 to 15 percent slopes
EkC2	Elioak Silt Loam, 8 to 15 percent slopes
G1C2	Glenelg Loam, 8 to 15 percent slopes
Ha	Hatboro Silt Loam
MgC2	Manor Gravelly Loam, 3 to 8 percent slopes
MIC2	Manor Loam, 8 to 15 percent slopes

E. Surface Water Resources

Surface waters within the study area encompass ponds, streams, rivers and jurisdictional wetlands, which are considered Waters of the US and Waters of the State. Wetlands are discussed in detail in Section III-H. The study area lies entirely within the Middle Patuxent River watershed, near the drainage divides with South Branch Patapsco River and Little Patuxent River to the north and the drainage divide with Patuxent River (Triadelphia Reservoir) to the west. The location of these surface water features and the drainage divides are shown on Figure III-8. Drainage divides were delineated based on United States Geological Survey (USGS) topographic quadrangles for Clarksville and Sykesville, Maryland (1971 and 1979).

All the streams and rivers within the study area are classified by the Maryland Department of the Environment (MDE) as Use I-P (March 1 through June 15, inclusive), which indicates that the designated uses include Water Contact Recreation, Protection of Aquatic Life and Public Water Supply. The study area contains part of the Middle Patuxent River mainstem and its tributaries, including Terrapin Branch, the upper reaches of Benson Branch, the upper reaches of Clydes Branch, their tributaries, and other unnamed tributaries of the Middle Patuxent River.

The streams throughout the study area vary in width from approximately 2 feet to 20 feet and in depth from approximately 2 inches to greater than 3 feet. Review of respective USGS maps indicates that most tributaries are probably generated by groundwater discharge and surface water run-off from surrounding upland areas. The majority of the streams and river channels are unvegetated. Tributaries, along with ponds, provide aquatic habitat and drinking water for both mammal and bird species. The freshwater tributaries also provide some spawning environments for fish species indigenous to the Middle Patuxent. A discussion of the aquatic and wetland habitat features within the study area is included in Section III-I.

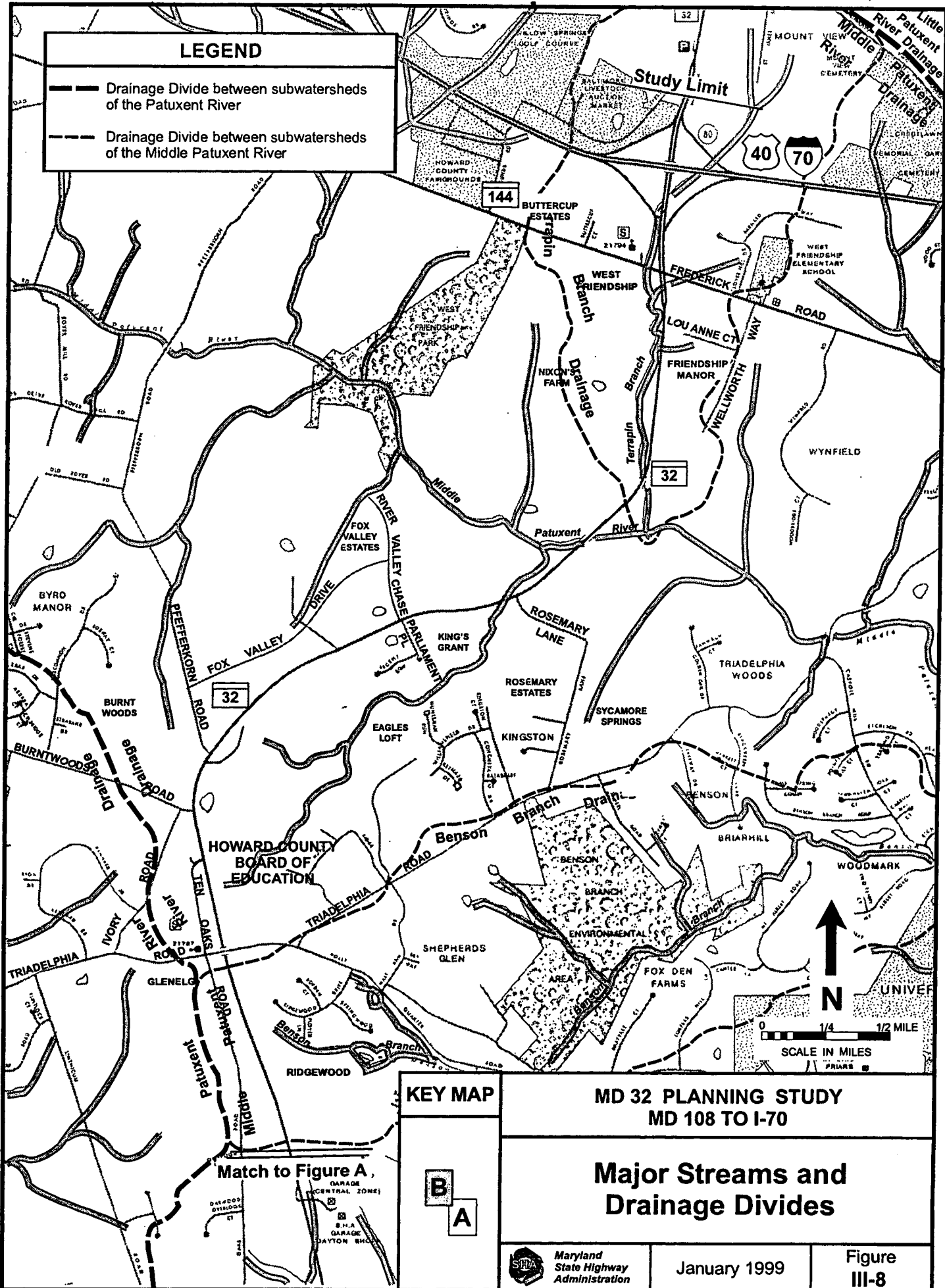
Major Streams and Drainage Divides



**Maryland
State Highway
Administration**

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**Figure
III-8**



The functions provided by these streams and rivers include production export and nutrient removal/transformation.

Approximately three acres of ponds were observed within approximately 250 feet of the project study areas on both the east and west sides of MD 32. The study area widens beyond 250 feet in various areas, including proposed interchange locations. The ponds primarily serve as stormwater management facilities and farm ponds (possibly spring-fed), varying in depth from approximately 2 feet to greater than 3 feet. Many of these ponds are bordered with fringe wetlands, areas of vegetation tolerant of frequent soil saturation or continued inundation. No lakes are located within the study area.

These water resources serve as habitats for aquatic plant and animal species and as a water source for terrestrial animals which may frequent the adjacent forested and old field habitats.

An assessment of basic water quality and other conditions was conducted for streams within the project area. These assessments were conducted on representative portions of Terrapin Branch, Middle Patuxent main channel, its unnamed tributary, and tributaries to Clydes Branch. Data were collected at a total of seven (7) sampling stations for dissolved oxygen, pH, conductivity, turbidity and temperature. In addition, macroinvertebrates were collected from the stream beds based on EPA Rapid Bioassessment Protocols and Save Our Streams methods, in order to supplement the water quality data and to assess the habitat suitability of the streams. An additional three samplings per station are planned during the course of the next twelve months to monitor conditions. The sampling station locations are listed in Table III-12.

Table III-12: Water Quality Sampling Site Locations

Site Number	Water Quality Sampling Site Location
1	Terrapin Branch, 600 feet upstream of MD 144 bridge crossing
2	Terrapin Branch, 350 feet downstream of MD 32 culvert
3	Middle Patuxent, 980 feet downstream of MD 32 bridge crossing
4	Middle Patuxent, 1,200 feet upstream of MD 32 bridge crossing
5	Unnamed tributary to Middle Patuxent, 560 ft downstream of MD 32
6	Unnamed tributary to Clydes Branch, 800 feet upstream of MD 32 culvert, which is located 2,400 feet south of the existing Dayton Shop entrance
7	Same tributary as No. 6, but 320 feet downstream of MD 32 culvert

The results of the initial sampling efforts are presented in Tables III-13 and III-14. All of the water quality parameters tested fell within normal ranges for healthy streams, and were within acceptable standards for Maryland streams (see COMAR, November 1993). High dissolved oxygen levels are important to aquatic life in streams, and concentrations for the sites sampled were at maximums for the observed temperatures. Turbidity levels were low and pH was close to neutral, which is ideal. Conductivity levels were relatively low, but might be a function of low water temperatures and/or geological conditions.

Over 1,500 macroinvertebrate specimens were collected at the seven sampling stations, representing 22 different taxonomic families. Table III-15 shows the results of the data analysis for six metrics. Based on the types of organisms found, standard sensitivity values for each taxa and weighting values allocated to metric values, a total biosurvey score was calculated for each sample site. Biosurvey scores were evaluated relative to standard habitat suitability categories and rated as good, fair or poor. Only sample site 7 was rated in the good category, five sites were rated as fair and site 1 was rated poor. While the water quality parameters tested might lead one to expect higher biosurvey scores for these sites, there may be limiting factors, including seasonal factors (sampling was done in fall) and the presence of untested pollutants. The results obtained from these investigations will provide baseline information to compare future conditions during and following project construction.

Geomorphic data was also collected on Terrapin Branch and the unnamed tributary to Middle Patuxent in order to classify the streams and evaluate relative stability. These streams were selected based on their relatively extensive lengths within the project corridor and potentially greater disturbance from future activities deriving from this project. In addition to classifying the streams significant portions of these and other channels within the project area were walked and qualitatively evaluated for bank erosion, down-cutting and deposition of bed material.

The stream classification investigation was based on the Rosgen methodology (Rosgen, 1996) for three representative reaches for the selected streams. The locations of channel cross-sections for this effort are listed in Table III-13.

Table III-13: Channel Cross-section Sampling Site Locations

Site Number	Channel Cross-section Sampling Site Location
CS 1	Terrapin Branch, 1,250 feet downstream of MD 144 bridge crossing
CS 2	Terrapin Branch, same location as Water Quality Site Number 2
CS 3	Unnamed tributary to Middle Patuxent, 1,200 feet upstream of MD 32 crossing (same tributary as Water Quality Site Number 5)

The results of these assessments are presented in Table III-16. Based on the cross-sections selected, all three reaches of these streams have been classified as "F4" channels, which represents an unstable form. These channels are characterized by large width to depth ratios at bankfull elevations, high entrenchment, moderate sinuosity, low slope, and gravel bed material. Thus, these streams tend to have a broad channel with shallow water levels. During "bankfull" flows, i.e. the most dominant channel-forming flows (approximating the 1.5 year storm), water does not typically overflow the banks, but is confined within the existing channel. Without a significant floodplain to spread out the flow and dissipate energy, increased stress on the stream banks has resulted in significant bank erosion along many reaches of these streams. Consequently, the eroded bank material is transported downstream. However, due to the shallow water depths, velocity is relatively low and this eroded bank material has become deposited in mid-channel and side-channel bars in numerous locations along these streams.

Due to existing conditions in their watersheds, bank erosion and other problems will likely continue for presently disturbed streams, such as Terrapin Branch and the tributary to the Middle Patuxent. As a result, channels will become wider and less capable of effectively transporting bed material downstream. Further deposition will likely restrict flows to the point where downcutting of the channels will occur as the stream seeks to restore equilibrium. According to fluvial geomorphology principles and Rosgen's evolutionary stages of channel adjustment, if current hydrological conditions in the watersheds remain, these F4 channels will likely evolve toward a more stable "C" channel configuration. This is already evident in some sections of these streams where a "C" channel has already begun to form within the existing wide "F" channel. The rate of this transformation is dependent on factors such as land use activities within the watershed and long-term climatic changes. Typically, as a watershed becomes more developed and paved with impervious materials peak flows become more frequent and velocities increased, which causes more stress on stream banks and increased erosion. Proper sediment and erosion control practices and channel restoration efforts can often reduce such problems and bring a stream back into physical, chemical and biological balance.

Table III-14: Averaged Water Quality Measurements At Selected Stream Sites

Site Number	pH	Conductivity microsiemens/cm	Temperature °C	Turbidity NTUs	Dissolved Oxygen mg/l
1	6.5	.36	9	7	13.0
2	6.7	.37	7	5	11.7
3	6.7	.10	7	6	12.4
4	7.0	.12	7	5	12.4
5	6.8	.09	7	4	12.2
6	6.8	.09	8	7	11.4
7	6.9	.15	8	6	11.8

Table III-15: Metric Values From Macroinvertebrate Sampling Sites

Primary Metric	Weighted Biosurvey Scores By Site Number						
	1	2	3	4	5	6	7
Number of Taxa	0	3	3	3	3	3	3
Number of EPT Taxa ¹	0	3	3	3	3	3	3
Percent Dominance ²	0	0	0	3	3	3	6
Sensitive Taxa Index ³	6	6	6	6	6	6	6
Percent Abundance of Scrapers ⁴	3	0	0	0	0	6	3
Percent Abundance of Shredders ⁵	0	0	0	0	6	0	6
Overall Site Score	9	12	12	15	21	21	27
Site Condition Value	<i>Poor</i>	<i>Poor-Fair</i>	<i>Poor-Fair</i>	<i>Fair</i>	<i>Fair</i>	<i>Fair</i>	<i>Good</i>

- ¹ Number of taxa in the generally pollution-sensitive orders: Ephemeroptera, Plecoptera and Trichoptera (a high diversity or variety indicates more suitable conditions)
- ² Percent composition of the most abundant family at a site (high values indicate less suitable conditions)
- ³ Modified Hilsenhoff index calculated based on standard tolerance values for each taxon (high values indicate less suitable conditions)
- ⁴ Scrapers consume algae from rocks and a high value indicates good habitat conditions
- ⁵ Shredders breakdown leaf litter and debris; a high value indicates good habitat conditions

Table 16: Rosgen Stream Classification and Delineative Criteria

Delineative Criteria	Station CS-1	Station CS-2	Station CS-3
Bankfull Width (Feet) Width of channel at bankfull stage elevation in a cross-over reach	14.3	22.50	13.4
Mean Depth (Feet) Average depth of channel cross-section at bankfull elevation	0.47	1.67	0.55
Bankfull Channel Cross-section Area (Square Feet) Area of the stream channel cross-section at bankfull elevation	9.87	37.50	0.74
Width/Depth Ratio Bankfull width divided by bankfull mean depth in a riffle section	44.60	21.09	24.36
Maximum Depth (Feet) Maximum depth of the bankful channel cross-section	0.85	1.50	0.75
Width of Flood-Prone Area (Feet) Distance across channel at twice maximum depth	21.30	36.00	14.40
Entrenchment Ratio An index of channel flow confinement during bankfull discharges	1.49 ¹	1.60 ¹	1.07
Dominant Streambed Particle Type Represents the mean diameter of channel bed materials	Coarse Gravel	Medium Gravel	Fine Gravel
Water Surface Slope (Feet per Foot) Gradient change over a reach of 20 -30 bankfull channel widths	0.005	0.009	0.007
Channel Sinuosity An index of channel meander pattern from stream length/valley length	1.35	1.11 ¹	1.36
Stream Class	F4	F4	F4

¹"F" class channels typically have an entrenchment ratio less than 1.4 and sinuosity greater than 1.2; However, under Rosgen's classification system values of entrenchment and sinuosity ratios can vary by +/- 0.2 units and meet the criteria for "F" channels.

F. Groundwater Resources

Groundwater in Howard County is derived entirely from precipitation. Precipitation flows as surface runoff into streams, evaporates to the atmosphere or percolates into the ground. The amount of precipitation that enters the ground depends upon the permeability of the soil and bedrock, the topography of the land and the duration and intensity of the precipitation. Most of the precipitation that percolates into the ground never reaches the groundwater reservoirs because it is lost by seepage into springs and streams and by evaporation and transpiration.

Groundwater is found in the openings of joints and fractures within the igneous and metamorphic rocks underlying Howard County. Water is also contained in the pores, between the particles of rock within the weathered zone of bedrock. Groundwater occurs typically in a water table condition where precipitation is able to percolate into the unconfined aquifer and is not restricted by an impervious rock layer. Artesian conditions may occur in localized areas.

Water use in Howard County has increased from about 2.9 million gallons per day (MGD) in 1980 to about 20 MGD in 1990. Water is supplied by reservoirs for most of the eastern portion

of the county, while the western portion, including the project area, relies upon wells for water supply. These wells are fed by the Maryland Piedmont Aquifer, which EPA has designated as a Sole Source Aquifer (meaning that it supplies 50 percent or more of the drinking water for a given area). Of the 20 MGD used in 1990, 3.1 MGD was supplied through private systems: 2.7 MGD from groundwater and 0.4 MGD from surface water. The remaining 17 MGD of water was supplied by Baltimore City and Washington Suburban Sanitary Commission (WSSC) systems from sources outside the county.

G. Floodplains

The 100-year floodplain limits have been identified and delineated based on mapping provided by the Federal Emergency Management Agency (FEMA). Within the study area, 100-year floodplains are associated with the Middle Patuxent River, Benson Branch, Clydes Branch and some tributaries of Clydes Branch. The river, streams and their associated floodplains are shown on Figure III-9.

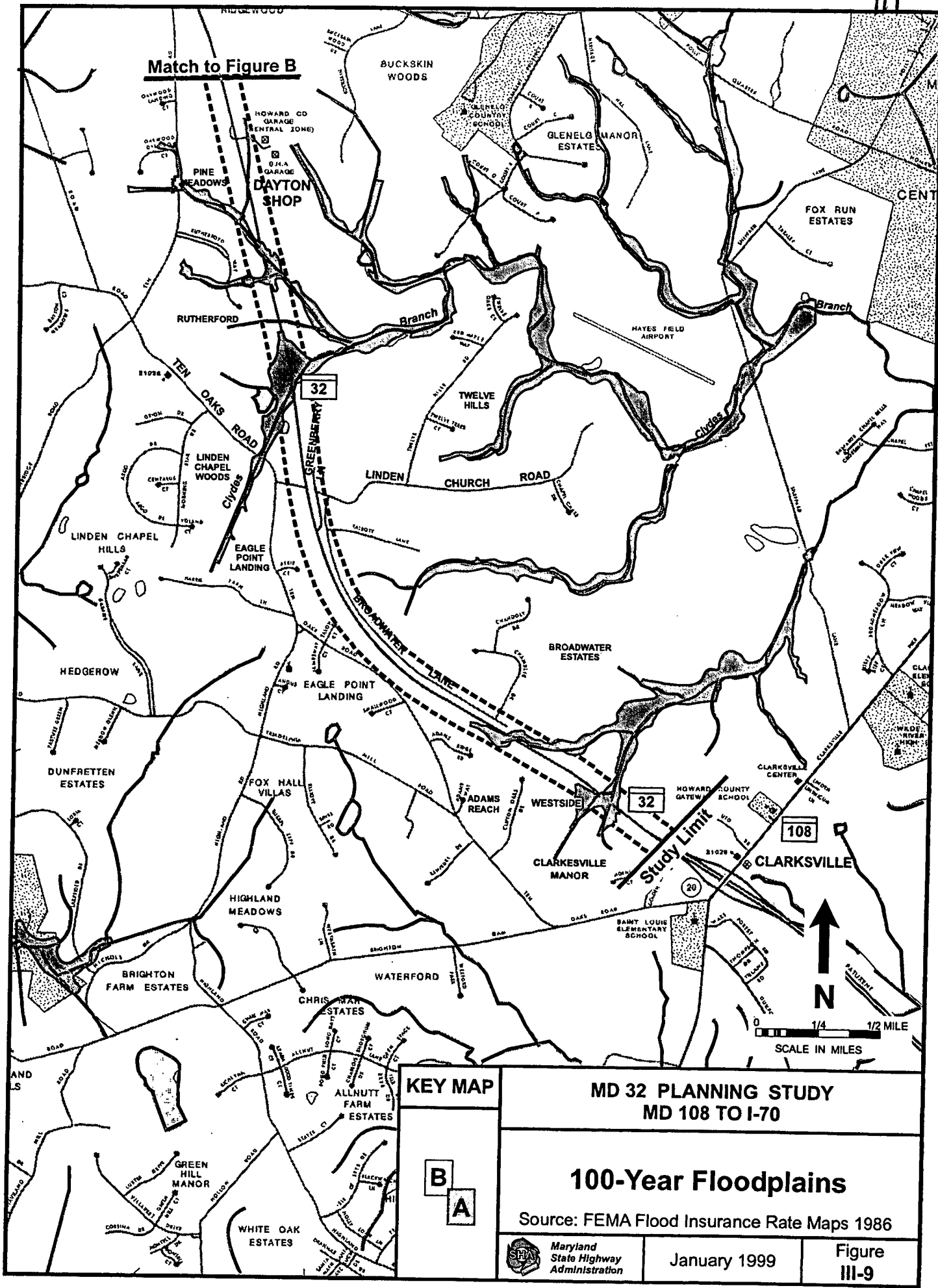
The 100-year floodplains associated with the Middle Patuxent River and Clydes Branch and its upper tributaries include farm fields, wooded areas, wetlands and some improved properties. Forested area covers the 100-year floodplain of Benson Branch within the study area.

The Middle Patuxent River 100-year floodplain incorporates a few driveways, but no structures within the study area. The 100-year floodplain of Clydes Branch and its tributary that cross MD 32 between the Linden Church Road and the Dayton Shop entrance contains six structures and a few driveways east of the study area. The 100-year floodplains of Benson Branch and the Clydes Branch tributaries that cross MD 32 between MD 108 and Chamblis Drive do not include structures in or near the study area.

H. Wetlands

1. Methodology

The federal wetlands permit process was created under the Clean Air Act, which forbids the discharge of any pollutant into navigable water unless permitted by the U.S. Army Corps of Engineers (COE). Section 404 of the act requires potential dischargers of dredged or fill materials into waters of the United States to secure a permit from COE. Although the Section 404 permit program was established in 1972, interpretations of the jurisdictional definitions and requirements have become increasingly broad and complex since the legislation was first enacted. As presently applied a Section 404 permit is that required for most activities proposed to take place in wetlands and surface waters. Actions considered less severe may qualify for a Nationwide Permit, which has fewer reporting requirements and theoretically reduced processing time than an Individual Permit. Generally, projects which propose to disturb less than a few acres of wetlands, for example, would tend to qualify for a Nationwide Permit, if the wetland does not otherwise possess exceptional functional value, such as providing habitat for an endangered species. The regulatory authority under Section 404 actually extends beyond



Match to Figure B

32

32

108

20

KEY MAP

B
A

MD 32 PLANNING STUDY
MD 108 TO I-70

100-Year Floodplains

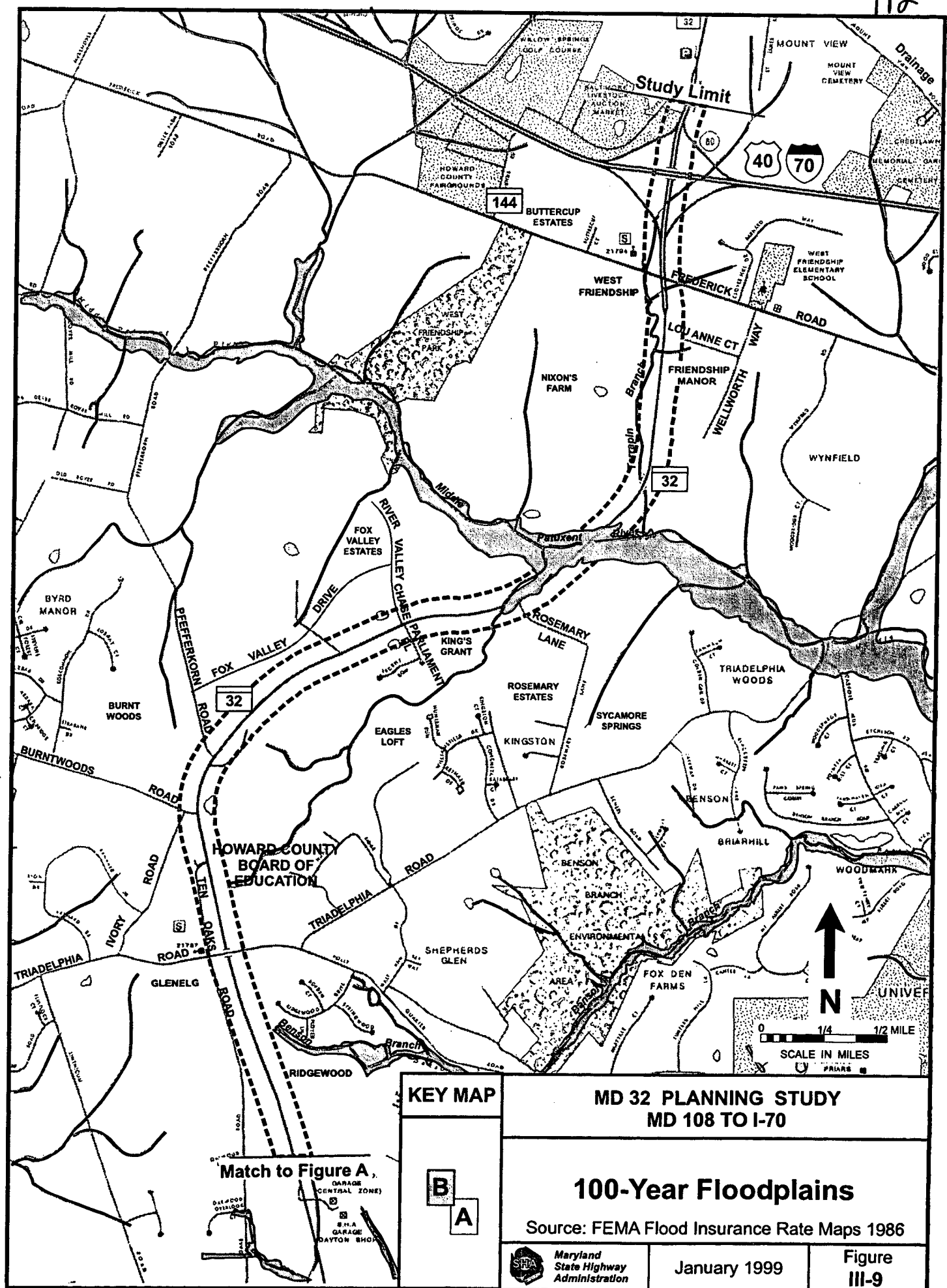
Source: FEMA Flood Insurance Rate Maps 1986



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Figure
III-9



wetland and surface waters, since it requires consideration and approvals on seemingly unrelated issues such as historic structures and archeological resources if they occur on the project site.

Wetland identification and delineation were conducted in accordance with the US Army Corps of Engineers Wetlands Delineation Manual (1987). The Routine On Site Determination Method was used to identify characteristics of the study area wetlands. Wetlands were classified in accordance with the US Fish and Wildlife Service's (USF&WS) "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin et al., 1979).

Soils were identified using field indicators and the "Soil Survey of Howard County, Maryland". Soil color was determined using "Munsell Soil Color Charts" (Kollmorgen Corp., 1975). Soil profiles were sampled using a hand auger. Plant species were identified using "Flora of West Virginia" (Strausbaugh and Cole, 1974), "Newcomb's Wildflower Guide" (Newcomb, 1977), the "Shrub Identification Book" (Symonds, 1963), and "Trees of the Eastern United States and Canada" (Harlow, 1957). Wetland indicator status of observed vegetation was determined using the USF&WS's "National List of Plant Species that Occur in Wetlands: 1988 National Summary" (USF&WS Biological Report 88 (24), 1988).

Wetland hydrology was determined based on soil pit evaluations and observations noted in the field. National Wetland Inventory (NWI) mapping was obtained for preliminary identification of wetland areas.

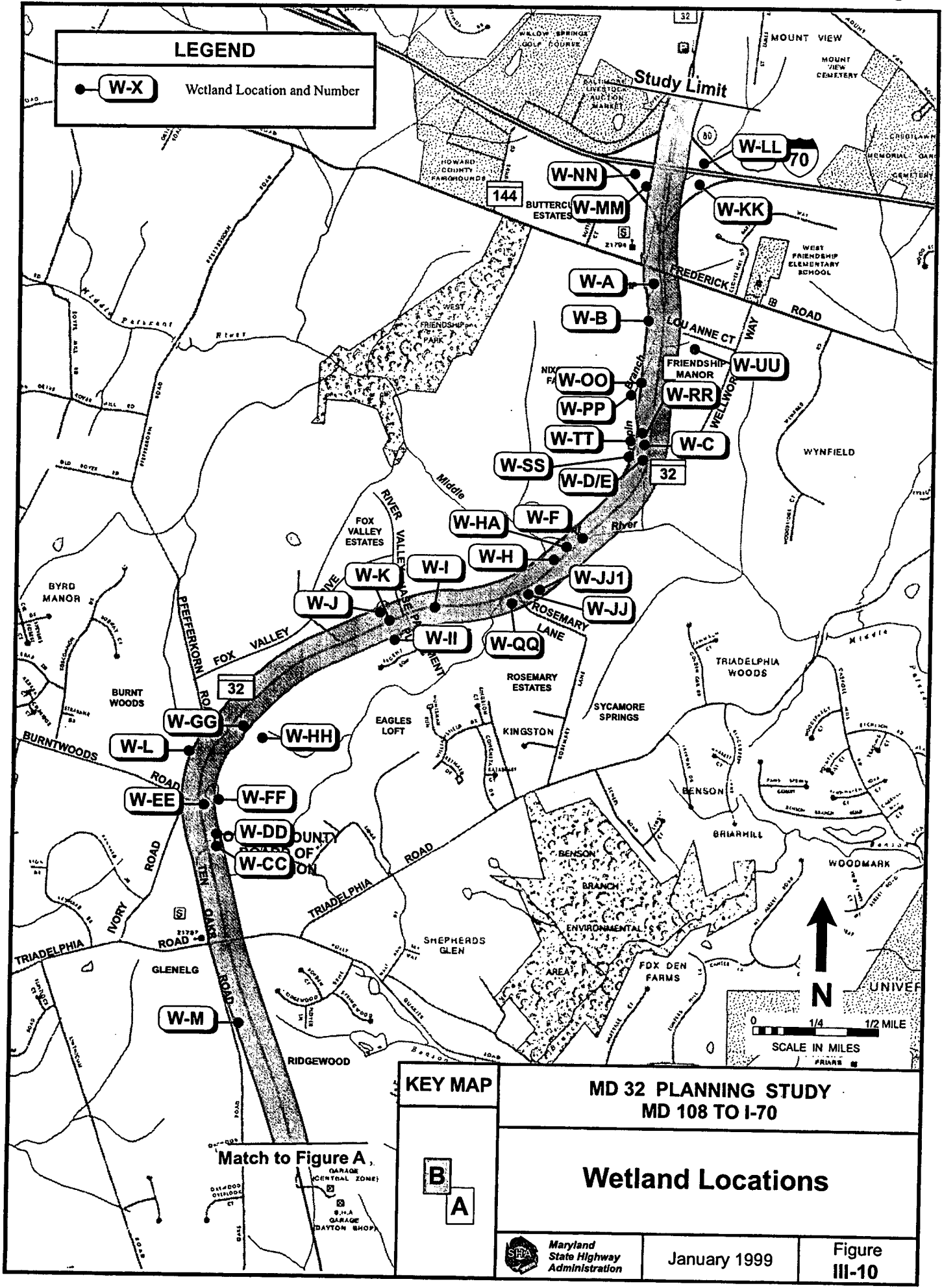
All wetlands within the study area were assigned a qualitative value according to the importance of functions performed for the surrounding environment. The manual "A Method for Wetland Functional Value Assessment" (US DOT Federal Highway Administration, 1983) was used as a guide to evaluate relative functional values for wetlands. A determination of functions and values were based on observations during field investigations. An overall value of high, medium, or low was assigned to each wetland based on the specific function(s) identified. Of the 44 wetlands identified, 22 wetlands were determined to be of low value, 19 of medium value and two of high value. In 1997, SHA requested that significant wetlands (defined as wetlands within the study area that equal or exceed 0.5 acre be evaluated using the more detailed function/value assessment technique of the US Army Corps of Engineers, New England Division, Method for Wetland Function and Value Assessment. Wetlands F, H, J/K, EE/FF, S, L, and W were evaluated using this technique. Only wetlands F and W were assessed as having relatively high overall functional value scores compared with others evaluated. One area, identifies as Wetland G, was determined not to be a wetland.

2. Identification and Delineation

The field investigation of wetlands was originally conducted in July of 1995 (Wetlands A through JJ). Additional studies were conducted for an expanded study area in 1997 and 1998 (Wetlands KK through UU). A total of 47 wetlands were identified and delineated during the field investigations. Soil borings were taken at each wetland and a detailed account of vegetation and hydrologic conditions was prepared. Figure III-10 and the alternatives mapping in Appendix

LEGEND

● **W-X** Wetland Location and Number



KEY MAP

B

A

MD 32 PLANNING STUDY
MD 108 TO I-70

Wetland Locations

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Figure III-10

A identify wetland locations in the study area. Table III-17 summarizes the data for each wetland. The US Army Corps of Engineers completed the jurisdictional determination of Wetlands A through PP in November 1997. A jurisdictional determination of Wetlands QQ through UU was completed in 1998 and concurrence was received in April 1998.

The relative value assigned for wetland functions are based on combining scores for all functions to obtain an overall rating. The methodology is presented in the Wetland Identification and Delineation Report, July 1997, for this project.

3. Palustrine Wetlands

Wetland A, approximately 0.04 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from A1-5. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland A is habitat for wildlife. Because of the small size and proximity to area roadways, the wetland was determined to have a low value.

Wetland B, approximately 0.16 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from B1-9. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland B include habitat for wildlife and active recreation (residential trail). Because of the small size, the wetland was determined to have a low value.

Wetland C, approximately 0.15 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was partially flagged in the field, numbered sequentially from C1-7. A portion of the wetland was in active pasture and therefore was not flagged. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland C is groundwater discharge. Because of the small size and the existing disturbance, active pasture, the wetland was determined to have a low value.

Wetland D/E, approximately 0.27 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from DE1-13. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland D/E are short-term sediment trapping/stabilization and habitat for wildlife. Because most of the area is periodically maintained by mowing, and there is limited cover for wildlife, the wetland was determined to have a low value.

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Wetland F, approximately 0.60 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10B and Appendix A, Sheet 4. The wetland was flagged in the field, numbered sequentially from F1-25. The wetland appeared to have been modified in the past by ditch excavation and may have been a pasture (old barbed wire fence). Several very large (30" DBH) pin oak trees are found within this wetland. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland F include passive recreation, habitat for wildlife, short-term sediment trapping/stabilization, and flood desynchronization. Because of the large size of the forested wetland, the wetland was determined to have a high value.

Wetland H, approximately 0.55 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10B and Appendix A, Sheet 4. The wetland was flagged in the field, numbered sequentially from H1-27. The wetland appeared to have been a remnant stream channel that has become filled with organic material due to permanent saturation/inundation. Minor fill associated with household trash was found in a portion of the wetland. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland H include habitat for wildlife, nutrient retention/removal (long term), and groundwater discharge. Because of the diverse vegetation and undisturbed nature of the wetland found under a forested canopy, the wetland was determined to have a medium value.

Wetland HA, approximately 0.04 acre, is a small isolated, palustrine forested (PFO) wetland, see Figure III-10B and Appendix A, Sheet 4. This wetland is flagged in the field with six flags. The wetland is located north of Wetland H. This area is contained within a pocket depression. The area does not appear on NWI mapping.

The most significant functions provided by Wetland HA include flood desynchronization, long-term nutrient retention/removal, and long-term sediment trapping. Because of the wetland's small size and isolated nature, the wetland was determined to have a low value.

Wetland I, approximately 0.14 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheet 4. The wetland was flagged in the field, numbered sequentially from I1-10. The wetland was surrounded by maintained lawn and roadway right-of-way. A female box turtle was observed in the wetland. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland I is habitat for wildlife. Because of the isolated nature of the wetland and its small size, the wetland was determined to have a low value.

Wetland J, approximately 0.77 acre, is a palustrine, open water, excavated (POWx) wetland, see Figure III-10B and Appendix A, Sheet 4. The wetland was not flagged in the field and is contained within the pond banks. The wetland was an old farm pond, which is now found adjacent to a development. This area was shown on the NWI mapping as a POWZh wetland.

The most significant functions provided by Wetland J include habitat for wildlife and active recreation (paths and adjacent development). Because of the recreational use of the wetland by area residents, the wetland was determined to have a medium value.

Wetland K, approximately 0.09 acre, is a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10B and Appendix A, Sheet 4. The wetland was flagged in the field, numbered sequentially from K1-7. The wetland was found at the foot of the berm containing Wetland J. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland K is habitat for wildlife. Because of past disturbance, the wetland was determined to have a low value.

Wetland L, approximately 0.68 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, open water, excavated (POWx) wetland, see Figure III-10B and Appendix A, Sheet 3. The wetland was not flagged in the field because the wetland is found in active pasture. The POW portion of the wetland is contained within the pond banks, only a small portion of PEM wetland is found at the overflow swale. Regular grazing activity disturbs the PEM area. This area was shown on the NWI mapping as a POWZh wetland.

The most significant functions provided by Wetland L include habitat for wildlife, flood desynchronization, and groundwater discharge. Because of active farm use, the wetland was determined to have a medium value.

Wetland M, approximately 0.29 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10B and Appendix A, Sheet 3. The wetland was flagged in the field, numbered sequentially from M1-7. The wetland consists of two wetland areas in close proximity. The one wetland was created by roadside swale excavation. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland M is groundwater discharge. Because of its small size and past disturbance (swale excavation), the wetland was determined to have a low value.

Wetland N, approximately 0.10 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was flagged in the field, numbered sequentially from N1-10. The hydrology of the wetland was affected by roadside swale excavation in the past. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland N is groundwater discharge. Because of past disturbance and its small size, the wetland was determined to have a low value.

Wetland O, approximately 0.08 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was flagged in the field, numbered sequentially from O1-8. The wetland was recently cleared for gas pipeline maintenance activities. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland O is groundwater discharge. Because of recent disturbance and its small size, the wetland was determined to have a low value.

Wetland P, approximately 0.03 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was flagged in the field, numbered sequentially from P1-5. The wetland was contained within the banks of a perennial stream. This area was shown on the NWI mapping as a PEM5A wetland.

The most significant function provided by Wetland P is habitat for wildlife. Because of its small size, the wetland was determined to have a low value.

Wetland Q, approximately 0.13 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was flagged in the field, numbered sequentially from Q1-14. The wetland bordered a perennial stream and averaged twenty feet wide. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland Q include habitat for wildlife and groundwater discharge. Because the diverse vegetation provides shading to and filters runoff entering the stream, the wetland was determined to have a medium value.

Wetland R, approximately 0.02 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was flagged in the field, numbered sequentially from R1-2, and had an average width of five feet (1.5 meters). The wetland is a farmed wetland swale. This wetland was not shown on the NWI mapping.

No significant functions were provided by Wetland R, therefore, the wetland was determined to have a low value.

Wetland S, approximately 0.50 acre, is a palustrine, open water, excavated (POWx) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was not flagged in the field and is contained within the banks. The wetland is actively used for recreation. This area was shown on the NWI mapping as a POWZh wetland.

The most significant functions provided by Wetland S include habitat for wildlife and active recreation (boat dock and recreational equipment). Because of the recreational use of the wetland by area residents, the wetland was determined to have a medium value.

Wetland T, approximately 0.14 acre, is a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10A and Appendix A, Sheet 1. The wetland was flagged in the field, numbered sequentially from T1-18. The wetland is associated with a number of shallow intermittent stream channels within an upland forested canopy. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland T include passive recreation and habitat for wildlife. Because of the forested conditions surrounding the wetland, the wetland was determined to have a medium value.

Wetland U, approximately 0.28 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10A and Appendix A, Sheet 1. The wetland consisted of two wetland areas in close proximity and with similar vegetation. An old fence found within the forested area indicated that the area was used as pasture in the past. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland U include habitat for wildlife and groundwater discharge. Because of the relatively undisturbed nature of the wetland found within a forested area, the wetland was determined to have a medium value.

Wetland V, approximately 0.06 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10A and Appendix A, Sheet 1. The wetland was flagged in the field, numbered sequentially from V1-7. The wetland appeared to have been an old farm pond that had been breached. This area was shown on the NWI mapping as a POWZh wetland.

The most significant functions provided by Wetland V include groundwater discharge, habitat for wildlife, and long-term sediment trapping/stabilization. Because of the diverse vegetation found in the wetland, the wetland was determined to have a medium value.

Wetland W, approximately 3.54 acres, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10A and Appendix A, Sheet 1. The wetland was flagged in the field, numbered sequentially from W1-33. The wetland appears to have been an area that had remained unutilized for agricultural purposes due to a high groundwater table. This wetland was not shown on the NWI mapping. The following information was collected near the transition area between wetland and upland. The wetland characteristics became stronger as you move down the gradual slope toward the perennial stream.

The most significant functions provided by Wetland W include passive recreation, habitat for wildlife, flood desynchronization, active recreation (hunting), and groundwater discharge. Because of the large wetland area and forested conditions, the wetland was determined to have a high value.

Wetland X, approximately 0.30 acre, is a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10A and Appendix A, Sheet 1. The wetland was flagged in the field, numbered sequentially from X1-10. This area was shown on the NWI mapping as a PFO1A wetland.

The most significant functions provided by Wetland X include habitat for wildlife and groundwater discharge. Because of existing disturbances (active pasture) and the small size of the wetland, the wetland was determined to have a low value.

Wetland Y, approximately 0.05 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10A and Appendix A, Sheet 1. The wetland was flagged in the field, numbered sequentially from Y1-9. The wetland was a small seepage area adjacent to a perennial stream. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland Y is habitat for wildlife. Because of its small size, the wetland was determined to have a low value.

Wetland Z, approximately 0.01 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was flagged in the field, numbered sequentially from Z1-4. The wetland was a small seepage area adjacent to an intermittent stream. This wetland was not shown on the NWI mapping.

No significant functions provided by Wetland Z, therefore, the wetland was determined to have a low value.

Wetland AA, approximately 0.40 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10A and Appendix A, Sheet 1. The wetland was flagged in the field, numbered sequentially from AA1-20. The wetland appeared to have been partially cleared for pipeline right-of-way in the past. The wetland appeared to be suitable habitat for the Bog turtle (*Clemmys muhlenbergii*). This area was shown on the NWI mapping as a PEM5A/SS1A wetland.

The most significant functions provided by Wetland AA include habitat for wildlife, groundwater discharge, and long-term sediment trapping/stabilization. Because the wetland appeared to be good turtle habitat and because of the vegetative diversity, the wetland was determined to have a medium value.

Wetland BB, approximately 0.03 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10A and Appendix A, Sheet 2. The wetland was not flagged in the field due to regular

MDSHA roadside mowing activities. The wetland was a roadside drainage swale. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland BB is short-term sediment trapping/stabilization. Because of the man-made character of the wetland, the wetland was determined to have a low value.

Wetland CC, approximately 0.08 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) and a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10B and Appendix A, Sheet 3. The wetland was flagged in the field, numbered sequentially from CC1-7. The wetland is found adjacent to an intermittent stream channel. This area was shown on the NWI mapping as a PFO1A wetland.

The most significant functions provided by Wetland CC include: active recreation (horse trails) and groundwater discharge. Because of the small size of the wetland, the wetland was determined to have a low value.

Wetland DD, approximately 0.05 acre, is a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10B and Appendix A, Sheet 3. The wetland was flagged in the field, numbered sequentially from DD1-15. The wetland consists of two small wetland areas in close proximity. This area was shown on the NWI mapping as a PFO1A wetland.

The most significant function provided by Wetland DD is groundwater discharge. Because of the small size of the wetland, the wetland was determined to have a medium value.

Wetland EE, approximately 0.58 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, open water, excavated (POWx) wetland, see Figure III-10B and Appendix A, Sheet 3. The wetland was flagged in the field, numbered sequentially from EE1-5 and EE10-15. The pond is found on an active farm. This area was shown on the NWI mapping as a POWZh wetland.

The most significant functions provided by Wetland EE include habitat for wildlife and groundwater discharge. Because the pond is on an active farm, the wetland was determined to have a medium value.

Wetland FF, approximately 0.41 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheet 3. The wetland was flagged in the field, numbered sequentially from FF1-8. The approximately two-thirds of the wetland was maintained for horse pasture by regular mowing. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland FF include habitat for wildlife and groundwater discharge. Because of the diverse vegetation, the wetland was determined to have a medium value.

Wetland GG, approximately 0.01 acre, is a palustrine, emergent, persistent (PEM1) wetland. The wetland was flagged in the field, numbered sequentially from GG1-5, see Figure III-10B and Appendix A, Sheet 3. The wetland is a small wetland pocket adjacent to an intermittent stream. This wetland was not shown on the NWI mapping.

No significant functions were provided by Wetland GG, therefore, the wetland was determined to have a low value.

Wetland HH, approximately 0.03 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheet 3. The wetland was flagged in the field, numbered sequentially from HH1-8. However, approximately half of the wetland, which extends into a backyard, was not flagged. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland HH is groundwater discharge. Because of the small size, regular mowing, and past filling disturbances (trash), the wetland was determined to have a low value.

Wetland II, approximately 0.41 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10B and Appendix A, Sheet 4. The wetland was flagged in the field, numbered sequentially from II1-5. The wetland appeared to have been part of a former farm pond. This was shown on the NWI mapping as a POWZh wetland.

Wetland II provides minor habitat for wildlife, active recreation (recreational walking bridge), and groundwater discharge. Because of past disturbance and the small size of the wetland in the study area, the wetland was determined to have an overall composite low value.

Wetland JJ, approximately 0.01 acre, is a palustrine, scrub/shrub, broad-leaved deciduous (PSS1) wetland, see Figure III-10B and Appendix A, Sheet 4. The wetland was flagged in the field, numbered sequentially from JJ1-3. The wetland is a roadside drainage swale. This wetland was not shown on the NWI mapping. A small linear channel wetland was added near Wetland JJ (not contiguous with JJ). This area was named **Wetland JJ1**, see Figure III-10B and Appendix A, Sheet 4, and was flagged with two flags. In addition, a riverine channel was added perpendicular to Wetland JJ on the west side of MD 32.

Wetland JJ provides short-term sediment trapping/stabilization. However, because of its man-made character and its small size, the wetland was determined to have an overall medium value.

Wetland KK, approximately 0.4 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from KK1-15. The wetland was found in a low, flat area within the southeast quadrant of the MD 32/I-70 Interchange. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland KK is habitat for wildlife. The wetland was determined to have a medium value.

Wetland LL, approximately 0.1 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from LL1- 8. The wetland was found in a low, flat area within the northeast quadrant of the MD 32/I-70 Interchange. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland LL is habitat for wildlife. The wetland was determined to have a medium value.

Wetland MM, approximately 0.3 acre, is a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from MM1-9. The wetland was found in a gently sloping, swale area within the southwest quadrant of the MD 32/I-70 Interchange. This wetland was not shown on the NWI mapping.

Relative to other functions evaluated for Wetland MM, the most significant function provided by this wetland is a small amount of habitat for wildlife. However, this function when combined with others resulted in an overall medium value score.

Wetland NN, approximately 0.2 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from NN1-10. The wetland was found in a gently sloping, swale area, along the toe-of-slope of I-70 within the southwest quadrant of the MD 32/I-70 Interchange. This wetland was not shown on the NWI mapping.

The most significant functions provided by Wetland NN are sediment trapping and habitat for wildlife. The wetland was determined to have a medium value.

Wetland OO, approximately 0.2 acre, is a palustrine, emergent, persistent (PEM1) and a palustrine, forested, broad-leaved deciduous (PFO1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was flagged in the field, numbered sequentially from OO1-15. It was located in a forested area, along the west side of the Terrapin Branch, a tributary to the Patuxent River. This wetland was not shown on the NWI mapping.

The most significant function provided by Wetland OO is habitat for wildlife. The wetland was determined to have a medium value.

Wetland PP, approximately 0.2 acre, is a palustrine, emergent, persistent (PEM1) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. The wetland was found, already flagged in the field by another party (10 flags total). It was located in a field area, west of Terrapin Branch. This wetland was not shown on the NWI mapping.

Due to its small size and lack of cover for wildlife, Wetland PP was determined to have an overall low value.

Wetland QQ, approximately 0.10 acre, consists of two small, non-contiguous palustrine emergent (PEM) wetlands, see Figure III-10B and Appendix A, Sheet 4. This wetland is flagged with 10 flags. The wetland is located at the southeast corner of the intersection of Rosemary Land and MD 32. This area has been significantly impacted by grading activities, and does not display hydric soils throughout. This wetland does not appear on NWI mapping.

The most significant functions provided by Wetland QQ include flood desynchronization, dissipation of erosive forces, and wildlife habitat, short-term sediment trapping, and long-term nutrient retention/removal. Because of the wetland's small size and highly disturbed nature, the wetland was determined to have a low value.

Wetland RR, approximately 0.88 acre, is a palustrine emergent (PEM) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. This wetland is flagged in the field using 24 flags. This area is maintained in a pastoral condition. The wetland is located near the Nixon's Farm access drive, east of Terrapin Branch, contiguous with Wetland C. Due to the differing characters of Wetlands C and RR these wetlands are evaluated separately, but are hydrologically connected units. The Natural Resources Conservation Service has confirmed that this wetland does not qualify as "prior converted cropland". This wetland does not appear on NWI mapping.

The most significant functions provided by Wetland RR include wildlife habitat, short-term sediment trapping, flood desynchronization, groundwater discharge/recharge, long-term nutrient retention/removal, and long-term sediment trapping. Because of the wetland's highly disturbed nature, however, the wetland was determined to have an overall medium value.

Wetland SS, approximately 0.12 acre, is a small isolated, palustrine emergent (PEM) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. This wetland is flagged in the field using 8 flags. Wetland SS is located south of the Nixon's Farm entrance road, west Terrapin Branch, near Wetland D/E. This area is maintained in a pastoral condition. This wetland is not contiguous with other wetlands, but maintains a perennial, piped, sub-surficial link with Terrapin Branch. The Natural Resources Conservation Service has confirmed that this wetland does not qualify as "prior converted cropland". This wetland does not appear on NWI mapping.

The only significant function provided by Wetland SS includes groundwater discharge/recharge. Because of the wetland's highly disturbed nature and small size, the wetland was determined to have a low value.

Wetland TT, approximately 1.23 acres, is a palustrine emergent (PEM) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. This wetland is flagged in the field using 40 flags. This area is maintained in a pastoral condition. The wetland is located near the Nixon's Farm access drive, west of Terrapin Branch, across from Wetlands C and RR. The Natural Resources

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Conservation Service has confirmed that this wetland does not qualify as "prior converted cropland". This wetland does not appear on NWI mapping.

The most significant functions provided by Wetland TT include groundwater discharge/recharge, and wildlife habitat, short-term sediment trapping, flood desynchronization, food chain support, long-term nutrient retention/removal, and long term sediment trapping. Because of the wetland's highly disturbed nature the wetland was determined to have an overall medium value.

Wetland UU, approximately 0.01 acre, is a small, seep, palustrine forested (PFO) wetland, see Figure III-10B and Appendix A, Sheets 5 and 5A. This wetland is flagged with 4 flags. The wetland is located at the southeast corner of the MD 32 and MD 144 intersection. This area is contiguous with an unnamed tributary to Terrapin Branch. The area does not appear on NWI mapping.

The most significant functions provided by Wetland UU include passive recreation, short-term sediment trapping, dissipation of erosive forces, and groundwater discharge/recharge. Because of the wetland's small size, the wetland was determined to have a low value.

4. Constructed Stormwater Management Areas

During the field studies conducted in 1995, two constructed stormwater management areas were found within the study area. These sites appear to fulfill two of the three criteria (vegetation and hydrology) required for jurisdictional wetlands. However, long-term wetland hydrology could not be confirmed with the absence of hydric characteristics in the soils. The soils should gain hydric characteristics over time if wetland hydrology is maintained. One of these stormwater management areas is associated with a development and the other is an SHA storm water management area at the southern limits of the study area (see Appendix A, Project Alternative Plates).

5. Waters of the United States

As defined by Section 404 of the Clean Water Act, riverine "Waters of the United States" were identified in the study area, which include the rivers streams and tributaries that transport surface and groundwater during the year. Waters of the United States are further described in Section III.E, Surface Water Resources. Only jurisdictional wetlands were surveyed, other water areas were not surveyed. They have been approximately located on the Wetland Delineation Plans presented in the Wetland Identification and Delineation Report, Appendix D.

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
A	0.04 acre	PEM1	Black willow Spotted touch-me-not Sensitive fern Japanese honeysuckle	<i>Salix nigra</i> <i>Impatiens capensis</i> <i>Onoclea sensibilis</i> <i>Lonicera japonica</i>	Cs-Comus silt loam	low topographic area in floodplain, oxidized root channels	habitat for wildlife
B	0.16 acre	PEM1 PSS1	Red maple Shallow sedge Touch-me-not Grasses Silky dogwood	<i>Acer rubrum</i> <i>Carex lurida</i> <i>Impatiens capensis</i> <i>Gramineae spp.</i> <i>Cornus amomum</i>	Cs-Comus silt loam	oxidized root channels, low topographic location, crayfish chimneys	habitat for wildlife active recreation
C	0.15 acre	PEM1	Spotted touch-me-not Soft rush Sensitive fern Arrow-leaf tearthumb	<i>Impatiens capensis</i> <i>Juncus effusus</i> <i>Onoclea sensibilis</i> <i>Polygonum sagittatum</i>	Cs-Comus silt loam	inundation and saturation	groundwater discharge
D/E	0.27 acre	PEM1	Sensitive fern Shallow sedge Soft rush Green bulrush Unidentified goldenrod	<i>Onoclea sensibilis</i> <i>Carex lurida</i> <i>Juncus effusus</i> <i>Scirpus atrovirens</i> <i>Solidago sp.</i>	Ha-Hatboro silt loam	oxidized root channels, saturation, depressional topography, dominant OBL, FACW vegetation	habitat for wildlife short-term sediment trapping/stabilization
F	0.60 acre	PFO1	Red maple Spicebush Halberd-leaf tearthumb Pin oak Skunk cabbage	<i>Acer rubrum</i> <i>Lindera benzoin</i> <i>Polygonum arifolium</i> <i>Quercus palustris</i> <i>Symplocarpus foetidus</i>	Cs-Comus silt loam	water-stained leaves, scour, wetland drainage patterns, shallow tree roots	passive recreation, habitat for wildlife, short-term sediment trapping/stabilization, flood desynchronization
H	0.55 acre	PEM1 PSS1	Red maple Sedge Rice cutgrass Spicebush Swamp rose Broad-leaf arrow-head Skunk cabbage	<i>Acer rubrum</i> <i>Carex stricta</i> <i>Leersia oryzoides</i> <i>Lindera benzoin</i> <i>Rosa palustris</i> <i>Sagittaria latifolia</i> <i>Symplocarpus foetidus</i>	Cs-Comus silt loam	soil saturation, water-stained leaves, wetland drainage patterns	habitat for wildlife, nutrient retention/removal (long term) groundwater discharge

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
HA	0.04 acre	PFO	Multiflora rose Silky dogwood Spicebush Red maple Black willow Black cherry	<i>Rosa multiflora</i> <i>Cornus amomum</i> <i>Lindera benzoin</i> <i>Acer rubrum</i> <i>Salix nigra</i> <i>Prunus serotina</i>	Ha - Hatboro silt loam	inundation, soil saturation, oxidized root channels, water stained leaves	wildlife habitat, floodflow alteration, long-term sediment trapping/stabilization
I	0.14 acre	PEM1	Grass-leaved goldenrod Soft rush Seedbox Sensitive fern Arrow-leaf tearthumb	<i>Euthamia graminifolia</i> <i>Juncus effusus</i> <i>Ludwigia palustris</i> <i>Onoclea sensibilis</i> <i>Polygonum sagittatum</i>	Cs-Corus silt loam	soil saturation, oxidized root channels	habitat for wildlife
J	0.77 acre	POWx			undetermined	inundation	habitat for wildlife active recreation
K	0.09 acre	PSS1	Spotted touch-me-not Spicebush Sensitive fern Clearweed Arrow-leaf tearthumb Black willow Elderberry	<i>Impatiens capensis</i> <i>Lindera benzoin</i> <i>Onoclea sensibilis</i> <i>Pilea pumila</i> <i>Polygonum sagittatum</i> <i>Salix nigra</i> <i>Sambucus canadensis</i>	Ba-Balc silt loam	soil saturation	habitat for wildlife
L	0.68 acre 1	PEM1 POWx	Soft rush Path rush Virginia bugleweed	<i>Juncus effusus</i> <i>Juncus tenuis</i> <i>Lycopus virginicus</i>	Ba-Baile silt loam	inundation, topographic location	habitat for wildlife flood desynchronization groundwater discharge
M	0.29 acre	PEM1 PFO1	Red maple Spotted touch-me-not Sensitive fern Arrow-leaf tearthumb Broad-leaf cattail	<i>Acer rubrum</i> <i>Impatiens capensis</i> <i>Onoclea sensibilis</i> <i>Polygonum sagittatum</i> <i>Typha latifolia</i>	ChB2-Chester silt loam, 3-8 percent	water-stained leaves, shallow tree roots, crayfish chimncys, topographic location	groundwater discharge
N	0.10 acre	PEM1	Red maple Spotted touch-me-not Soft rush Sensitive fern Broad-leaf cattail	<i>Acer rubrum</i> <i>Impatiens capensis</i> <i>Juncus effusus</i> <i>Onoclea sensibilis</i> <i>Typha latifolia</i>	Ba-Baile silt loam	soil saturation	groundwater discharge

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
O	0.08 acre	PEM1	Joe-pye-weed Spotted touch-me-not Soft rush Arrow-leaf tearthumb Black willow	<i>Eupatorium purpureum</i> <i>Impatiens capensis</i> <i>Juncus effusus</i> <i>Polygonum sagittatum</i> <i>Salix nigra</i>	Ba-Baile silt loam	soil saturation	groundwater discharge
P	0.03 acre	PEM1 PSS1	Nepal microstegium Spotted touch-me-not Arrow-leaf tearthumb Bulrush Black willow	<i>Eulalia viminea</i> <i>Impatiens capensis</i> <i>Polygonum sagittatum</i> <i>Scirpus spp.</i> <i>Salix nigra</i>	Cs-Comus silt loam	soil saturation, topographic location	habitat for wildlife
Q	0.13 acre	PEM1	Shallow sedge Spotted touch-me-not Soft rush Rice cutgrass Arrow-leaf tearthumb Broad-leaf Arrowhead	<i>Carex lurida</i> <i>Impatiens capensis</i> <i>Juncus effusus</i> <i>Leersia oryzoides</i> <i>Polygonum sagittatum</i> <i>Sagittaria latifolia</i>	Ha-Hatboro silt loam	soil saturation, topographic location	habitat for wildlife groundwater discharge
R	0.02 acre	PEM1	Common persimmon grasses Soft rush Sensitive fern Black willow New York ironweed	<i>Diospyros virginiana</i> <i>Gramineae spp.</i> <i>Juncus effusus</i> <i>Onoclea sensibilis</i> <i>Salix nigra</i> <i>Vernonia noveboracensis</i>	Cs-Comus silt loam	low topographic location	none
S	0.50 acre	POWx			undetermined	inundation	habitat for wildlife active recreation
T	0.14 acre	PSS1	Spotted touch-me-not Spicebush Skunk cabbage Northern arrow-wood	<i>Impatiens capensis</i> <i>Lindera benzoin</i> <i>Symplocarpus foetidus</i> <i>Viburnum recognitum</i>	GnB2-Glenville silt loam, 3-8 percent	wetland drainage patterns	passive recreation habitat for wildlife

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
U	0.28 acre	PFO1	Red maple Alder Winterberry Spotted touch-me-not Spicebush Royal fern Halberd-leaf tearthumb Skunk cabbage	<i>Acer rubrum</i> <i>Alnus spp.</i> <i>Ilex verticillata</i> <i>Impatiens capensis</i> <i>Lindera benzoin</i> <i>Osmunda regalis</i> <i>Polygonum arifolium</i> <i>Symplocarpus foetidus</i>	GnB2-Glenville silt loam, 3-8 percent	soil saturation, wetland drainage patterns	habitat for wildlife, groundwater discharge
V	0.06 acre	PEM1	Shallow sedge Spotted touch-me-not Soft rush Rice cutgrass Broad-leaf Arrowhead Broad-leaf cattails	<i>Carex lasiocarpa</i> <i>Impatiens capensis</i> <i>Juncus effusus</i> <i>Leersia oryzoides</i> <i>Sagittaria latifolia</i> <i>Typha latifolia</i>	GIC3-Glenelg loam, 8-15 percent	soil saturation	habitat for wildlife groundwater discharge long-term sediment trapping/stabilization
W	3.54 acre ¹	PFO1	Red maple Spicebush Japanese honeysuckle Virginia creeper Slippery elm	<i>Acer rubrum</i> <i>Lindera benzoin</i> <i>Lonicera japonica</i> <i>Parthenocissus quinquefolia</i> <i>Ulmus rubra</i>	Ba-Baile silt loam	wetland drainage patterns, water-stained leaves, site topography	passive recreation habitat for wildlife flood desynchronization active recreation groundwater discharge
X	0.30 acre	PSS1	Alder Spotted touch-me-not Field mint Clearweed Broad-leaf arrow-head Black willow Nannyberry	<i>Alnus spp.</i> <i>Impatiens capensis</i> <i>Mentha arvensis</i> <i>Pilea pumila</i> <i>Sagittaria latifolia</i> <i>Salix nigra</i> <i>Viburnum lentago</i>	Ba-Baile silt loam	soil saturation, oxidized root channels	habitat for wildlife groundwater discharge

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
Y	0.05 acre	PFO1	Red maple Spotted touch-me-not Black willow Skunk cabbage Northern arrow-wood	<i>Acer rubrum</i> <i>Impatiens capensis</i> <i>Salix nigra</i> <i>Symplocarpus foetidus</i> <i>Viburnum recognitum</i>	GnB2-Glenville silt loam, 3-8 percent	inundation, soil saturation	habitat for wildlife
Z	0.01 acre	PEM1	Spotted touch-me-not Grasses	<i>Impatiens capensis</i> <i>Gramineae spp.</i>	GnB2-Glenville silt loam, 3-8 percent	soil saturation, water-stained leaves, wetland drainage patterns	none
AA	0.40 acre	PEM1 PSS1	Tussock sedge Spotted touch-me-not Soft rush Spicebush Arrow-head tearthumb Swamp rose Broad-leaf arrow-head Black willow Giant burreed	<i>Carex stricta</i> <i>Impatiens capensis</i> <i>Juncus effusus</i> <i>Lindera benzoin</i> <i>Polygonum sagittatum</i> <i>Rosa palustris</i> <i>Sagittaria latifolia</i> <i>Salix nigra</i> <i>Sparganium eurycarpum</i>	Ha-Hatboro silt loam	inundation soil saturation	habitat for wildlife groundwater discharge long-term sediment trapping/stabilization
BB	0.03 acre	PEM1	Umbrella sedge Grasses Rice cutgrass Sensitive fern	<i>Cyperus strigosus</i> <i>Gramineae spp.</i> <i>Leersia oryzoides</i> <i>Onoclea sensibilis</i>	Ba-Baile silt loam	soil saturation	short-term sediment trapping/stabilization
CC	0.08 acre	PFO1 PSS1	Red maple Spicebush Panic grass Poison ivy Skunk cabbage Northern arrow-wood	<i>Acer rubrum</i> <i>Lindera benzoin</i> <i>Panicum spp.</i> <i>Toxicodendron radicans</i> <i>Symplocarpus foetidus</i> <i>Viburnum recognitum</i>	GnB2-Glenville silt loam	wetland drainage patterns	active recreation groundwater discharge
DD	0.05 acre	PSS1	Spicebush Skunk cabbage	<i>Lindera benzoin</i> <i>Symplocarpus foetidus</i>	GnB2-Glenville silt loam	wetland drainage patterns	groundwater discharge

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
EE	0.58 acre	PEM1 POWx	Water purslane Black willow Broad-leaf cattail	<i>Ludwigia palustris</i> <i>Salix nigra</i> <i>Typha latifolia</i>	GnB2-Glenville silt loam	inundation	habitat for wildlife, groundwater discharge
FF	0.41 acre	PEM1	Swamp milkweed Shallow sedge Soft rush Seedbox Panic grass Arrow-leaf tearthumb	<i>Asclepias incarnata</i> <i>Carex lurida</i> <i>Juncus effusus</i> <i>Ludwigia alternifolia</i> <i>Panicum spp.</i> <i>Polygonum sagittatum</i>	GnB2-Glenville silt loam	inundation, soil saturation, oxidized root channels	habitat for wildlife, groundwater discharge
GG	0.01 acre	PEM1	Spotted touch-me-not Sensitive fern	<i>Impatiens capensis</i> <i>Onoclea sensibilis</i>	Ba-Baile silt loam	soil saturation	none
HH	0.03 acre	PEM1	Grasses Spotted touch-me-not Spicebush	<i>Gramineae spp.</i> <i>Impatiens capensis</i> <i>Lindera benzoin</i>	CgB2-Chester gravelly silt loam, 3- 8 percent	soils saturation, wetland drainage patterns	groundwater discharge
II	0.41 acre	PFO1	Red maple Spotted touch-me-not Halberd-leaf tearthumb Arrow-leaf tearthumb Black willow	<i>Acer rubrum</i> <i>Impatiens capensis</i> <i>Polygonum arifolium</i> <i>Polygonum sagittatum</i> <i>Salix nigra</i>	Ba-Baile silt loam	soils saturation, wetland drainage patterns	habitat for wildlife, active recreation, groundwater discharge
JJ	0.01 acre	PSS1	Red maple Alder Spotted touch-me-not Rose Broad-leaf arrow-head New York Ironweed	<i>Acer rubrum</i> <i>Alnus spp.</i> <i>Impatiens capensis</i> <i>Rosa spp.</i> <i>Sagittaria latifolia</i> <i>Vernonia noveboracensis</i>	disturbed soils	soil saturation	short-term sediment trapping/stabilization
JJI	0.002 acre	PSS1	Red maple Alder Spotted touch-me-not Rose Broad-leaf arrow-head New York Ironweed	<i>Acer rubrum</i> <i>Alnus spp.</i> <i>Impatiens capensis</i> <i>Rosa spp.</i> <i>Sagittaria latifolia</i> <i>Vernonia noveboracensis</i>	disturbed soils	soil saturation	short-term sediment trapping/stabilization

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
KK	0.4 acre	PFO1	Green ash Black willow Red maple Arrow-wood Touch-me-not Lurid sedge	<i>Fraxinus pennsylvanica</i> <i>Salix nigra</i> <i>Acer rubrum</i> <i>Viburnum dentatum</i> <i>Impatiens capensis</i> <i>Carex lurida</i>	Cs-Comus silt loam	soil saturation, oxidized root channels, water stained leaves	habitat for wildlife groundwater discharge
LL	0.1 acre	PFO1	Green ash Spicebush Touch-me-not	<i>Fraxinus pennsylvanica</i> <i>Lindera benzoin</i> <i>Impatiens capensis</i>	Cs-Comus silt loam	soil saturation, oxidized root channels, water stained leaves	habitat for wildlife groundwater discharge
MM	0.3 acre	PFO1	Red maple Silver maple Black willow	<i>Acer rubrum</i> <i>Acer saccharinum</i> <i>Salix nigra</i>	ChB2	drift lines, drainage patterns, oxidized root channels, water stained leaves	habitat for wildlife short term sediment trapping/stabilization
NN	0.2 acre	PEM1	Touch-me-not Unidentified goldenrod	<i>Impatiens capensis</i> <i>Solidago sp.</i>	ChB2-Chester silt loam	soil saturation	habitat for wildlife short term sediment trapping/stabilization groundwater discharge long term nutrient retention/removal
OO	0.2 acre	PEM1 PFO1	Red Maple Spicebush Black willow Touch-me-not Lurid sedge Arrow-leaf tearthumb Arrow-head	<i>Acer Rubrum</i> <i>Lindera Benzoin</i> <i>Salix nigra</i> <i>Impatiens sp.</i> <i>Carex lurida</i> <i>Polygonum sagittatum</i> <i>Sagittaria latifolia</i>	Cs-Comus silt loam	soil saturation	habitat for wildlife short term sediment trapping/stabilization flood desynchronization
PP	0.2 acre	PEM1	Unidentified sedge Soft rush Green bulrush Arrow-leaf tearthumb Unidentified grass	<i>Carex sp.</i> <i>Juncus effusus</i> <i>Scirpus atrovirens</i> <i>Polygonum sagittatum</i> <i>Gramineae sp.</i>	Cs-Comus silt loam	oxidized root channels	none

Table III-17: Wetland Summary

Wetland Number	Approx. Size	Cowardin Classification ²	Dominant Vegetation		Soils	Hydrologic Indicators	Principal Function
QQ	0.10 acre	PEM	Sneezeweed Fox Sedge Soft Rush Shallow Sedge Monkey Flower Green Bulrush Jewelweed Microstegium, Nepal	<i>Helenium autumnale</i> <i>Carex vulpinoidea</i> <i>Juncus effusus</i> <i>Carex lurida</i> <i>Mimulus guttatus</i> <i>Scirpus atrovirens</i> <i>Impatiens capensis</i> <i>Enhalia viminea</i>	Cs-Comus silt loam	soil survey data, FAC-Neutral	wildlife habitat, short-term sediment trapping/stabilization
RR	0.88 acre	PEM	Soft Rush Blue Vervain Green Bulrush Indian Paintbrush	<i>Juncus effusus</i> <i>Verbena hastata</i> <i>Scirpus atrovirens</i> <i>Castilleja coccinea</i>	Cs-Comus silt loam	soil saturation, drainage patterns, oxidized root channels	wildlife habitat, short-term sediment trapping/stabilization
SS	0.12 acre	PEM	Soft Rush Willow-herb Monkey Flower	<i>Juncus effusus</i> <i>Epilobium hirsutum</i> <i>Mimulus guttatus</i>	Cs-Comus silt loam	soil saturation, drainage patterns	groundwater discharge
TT	1.23 acre	PEM	Soft Rush Monkey Flower Blue Vervain Green Bulrush Bull Thistle Red-top Panicgrass	<i>Juncus effusus</i> <i>Mimulus guttatus</i> <i>Verbena hastata</i> <i>Scirpus atrovirens</i> <i>Cirsium vulgare</i> <i>Panicum rigidum</i>	Cs-Comus silt loam	inundation, soil saturation, drainage patterns, oxidized root channels	wildlife habitat, short-term sediment trapping/stabilization groundwater discharge
UU	0.01 acre	PFO	Jewelweed Willow-herb Red maple Sedge, spp. Rush, spp.	<i>Impatiens capensis</i> <i>Epilobium hirsutum</i> <i>Acer rubrum</i> <i>Carex spp.</i> <i>Juncus spp.</i>	MID3-Manor Loam, 15-25 percent	soil saturation, drainage patterns, seep	groundwater discharge, recreation

Footnotes:

1. These wetlands extend beyond the area studied for the Wetland Identification and Delineation Report, July 1997.
2. Cowardin et al. 1979. Classification of wetlands and deepwater habitats of the United States.
3. Wetland G – was determined not to be a wetland.

Note: Wetland functions and values were not determined for wetlands that are less than one acre, or outside the study area for the alternatives under consideration.

I. Vegetation and Wildlife

The study area encompasses forests, wetlands, farmlands, meadows plus landscaped and turfed areas associated with developed commercial, recreational, institutional and residential land uses.

The forested habitats vary from bottomland floodplain areas dominated by plant species tolerant of semi-saturated and prolonged saturated and inundated conditions, to sloping and level uplands consisting of vegetation tolerant of drier soil environments.

The forest density varies, with some areas having a fairly dense overstory, subcanopy, shrub and herbaceous cover while other areas have sparse or no subcanopy trees, shrubs and herbaceous species. The forested areas were all disturbed sometime in the past by farming, road construction or development.

Based on vegetation, three major habitat types within the study area have been identified: terrestrial or upland, wetland and aquatic. Many of the wildlife species found in the study area are generalists and use the variety of habitats found in the area. Some species, however, have more specific habitat requirements.

The study area parallels the existing alignment of MD 32 and impacts many existing tree lines and fringe portions of forested areas. These forested tracts are interrupted by croplands, commercial and residential properties and meadows. Several of the forested areas are extensive enough to provide safe havens and breeding habitat for many neotropical migrant and other interior dwelling species.

1. Terrestrial Habitat and Wildlife

The upland forests are dominated primarily by white oak (*Quercus alba*), hickories (*Carya* sp.), tulip tree (*Liriodendron tulipifera*), red maple (*Acer rubrum*), flowering dogwood (*Cornus florida*), Japanese honeysuckle (*Lonicera japonica*), poison-ivy (*Toxicodendron radicans*) and Virginia creeper (*Parthenocissus quinquefolia*). Tree-of-heaven (*Ailanthus altissima*) commonly grows along the roadway and other disturbed forest edges.

A few meadows/fallow fields are interspersed between the farmed areas, landscaped areas and forests and are dominated by various grasses as well as flowering herbs and shrubby species. Plant species occurring in the fallow field areas include: meadow fescue (*Festuca pratensis*), golden rod (*Solidago* spp.), Queen Anne's lace (*Daucus carota*), sour dock (*Rumex crispus*), chicory (*Cichorium intybus*), horse-nettle (*Solanum carolinense*), daisy fleabane (*Erigeron strigosus*) and multiflora rose (*Rosa multiflora*).

Vegetation on the few actively farmed areas consists primarily of crops such as corn (*Zea mays*). Some residences have vegetable gardens.

The developed areas contain a wide variety of native, naturalized and ornamental trees, shrubs and herbaceous plants. These include lawns and other turfed areas, hedgerows, foundation plantings and flowerbeds.

In the developed areas, wildlife species able to adapt and coexist with humans are commonly found. Certain forest dwelling mammal species will also occasionally venture onto developed and cropland areas in search of food. Bird species expected to commonly use the developed, cropland and meadow areas, as well as the forested areas, include: mourning dove (*Zenaidura macroura*), American robin (*Turdus migratorius*), gray catbird (*Dumetella carolinensis*), northern mocking bird (*Mimus polyglottos*), turkey vulture (*Carthartes aura*), common grackle (*Quiscalus quiscula*), and American crow (*Corvus brachyrhynchos*). Mammal and reptile species include: red fox (*Vulpes vulpes*), white-tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monox*), raccoon (*Procyon loter*), gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamias striatus*), Virginia opossum (*Didelphis virginiana*), eastern box turtle (*Terrapine carolina carolina*) and black rat snake (*Elaphe obsoleta obsoleta*).

2. Aquatic and Wetland Habitat and Wildlife

The wetland habitats within and adjacent to the study area consist of forested, scrub-shrub and emergent wetlands as well as riverine stream systems. The stream systems are identified and described in Section III-E and the wetland systems are discussed in Section III-H. The streams crossed within the study area have primarily unvegetated, sand and gravel channel bottoms. The adjacent channel slopes typically support emergent and scrub-shrub plant species, although some reaches display eroded areas of bare soil. Palustrine deciduous forests often occur on the adjacent floodplains.

The bottomland forests are dominated primarily by several species that include red maple (*Acer rubrum*), box elder (*Acer negundo*), sycamore (*Platanus occidentalis*), tulip-tree (*Liriodendron tulipifera*), spicebush (*Lindera benzoin*), Japanese honeysuckle (*Lonicera japonica*) and spotted touch-me-not (*Impatiens capensis*).

Wetlands occur within or adjacent to and within floodplains or other areas where a prolonged high water table or other water source sustains plant species able to adapt and reproduce in soils which may be saturated or inundated for long periods of time. Such species include: red maple (*Acer rubrum*), silky dogwood (*Cornus amomum*), spicebush (*Lindera benzoin*), broad-leaved cattail (*Typha latifolia*), spotted touch-me-not (*Impatiens capensis*), soft rush (*Juncus effusus*), sedges (*Carex sp.*) and skunk cabbage (*Symplocarpus foetidus*).

Bird species dependent on aquatic habitats include: great blue heron (*Ardea herodias*), mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), and red-winged black bird (*Agelaius phoeniceus*). Mammal, reptile and amphibian species also utilizing these habitats include: muskrat (*Ondatra zibethius*), northern water snake (*Nerodia sipedon*), bullfrog (*Rana catesbeiana*), pickerel frog (*Rana palustris*), green frog (*Rana clamitans melanota*) and northern two-lined salamander (*Eurycea bislineata*).

Streams and ponds within and adjacent to the study area are considered to be aquatic habitats. Shallow depths in these habitats permit the dense growth of some submerged vascular plant species, which are either attached to the substrate or float freely in the water above the bottom or on the surface. These species include curly pondweed (*Potamogeton crispus*) and common waterweed (*Elodea canadensis*).

Systems that occur within the Middle Patuxent River watershed provide food sources and spawning environments for fish species listed in Table III-18.

Table III-18: Fish Species Found in the Middle Patuxent River

Common Name	Scientific Name
American Eel*	<i>Anguilla rostrata</i>
Blacknose Dace*	<i>Rhinichthys atratulus</i>
Bluegill Sunfish*	<i>Lepomis macrochirus</i>
Common Shiner*	<i>Luxilus cornutus</i> (formerly <i>Notropis c.</i>)
Creek Chub*	<i>Semotilus atromaculatus</i>
Cutlip Minnow*	<i>Exoglossum maxillingua</i>
Fallfish*	<i>Semotilus coporalis</i>
Golden Shiner	<i>Notemigonus crysoleucas</i>
Longnose Dace*	<i>Rhinichthys cataractae</i>
Margined Madtom	<i>Noturus insignis</i>
Northern Hogsucker	<i>Hypentelium nigricans</i>
Redbreast Sunfish	<i>Lepomis auritus</i>
River Chub	<i>Nocomis micropogon</i>
Rosyface Shiner	<i>Notropis rubellus</i>
Rosyside Dace*	<i>Clinostomus funduloides</i>
Satinfin Shiner	<i>Cyprinella analostana</i>
Shield Darter	<i>Percina peltata</i>
Smallmouth Bass	<i>Micropterus dolomieu</i>
Swallowtail Shiner	<i>Notropis procne</i>
Tesselated Darter*	<i>Etheostoma olmsted</i>
White Sucker*	<i>Catostomus commersoni</i>

* These species were also found in tributaries of the Middle Patuxent, such as Clydes Branch and Benson Branch (DNR: Maryland Biological Stream Survey, March 1997).

American eels do not spawn in Maryland waters. DNR's Use I-P instream work restriction period (March 1 through June 15) will protect the spawning period for the rest of the listed fish species and any other fish species likely to reside within the study area (Dintaman, Jr., 1994). Many of the upland species such as American robin, northern mockingbird, gray catbird, red fox, white-tailed deer, raccoon, Virginia opossum, eastern box turtle and black rat snake also utilize the wetland and aquatic habitats.

3. Rare, Threatened, or Endangered Species

Coordination with the US Fish and Wildlife Service (Wolflin, 1989) revealed that, except for occasional transient individuals, there are no known Federally listed endangered or threatened species under their jurisdiction within the study area. Coordination with the Maryland DNR Fish, Heritage and Wildlife Administration (McKegg, 1994) also stated that there are no known/recorded Federal or State rare, threatened and endangered plants or animals within the study area. Coordination with the Maryland DNR Environmental Review Program (Dintaman, Jr., 1994) indicates that C. Tsai and S.L. Golembiewski of the Center for Estuarine and Environmental Studies, University of Maryland, reported in a 1979 paper that one glassy darter (*Etheostoma vitreum*), a State endangered finfish species, was captured during fish sampling in the Middle Patuxent River at Triadelphia Road on July 1, 1966. However, DNR does not have any information to document or confirm this record. The Little Patuxent River supports one of two known populations of the endangered fish in the State. Although Middle Patuxent River flows into the Little Patuxent near the known range of the glassy darter (the Little Patuxent from Savage to the confluence with Patuxent River), the MD 32 study area is located a significant distance upstream. During the wetland delineation of Wetland AA, it was noted that this area appeared to provide some features of suitable habitat for the Bog turtle.

J. Existing Air Quality

The project area is located in Howard County, Maryland, which is a severe air quality non-attainment area for ozone (O₃). Howard County is not a non-attainment area for carbon monoxide (CO) and Particulate Matter (PM₁₀). Since the project area is in a non-attainment area for ozone, the region is subject to transportation control measures such as the Vehicle Emissions Inspection Program.

A detailed microscale air quality analysis has been performed to determine the local CO impact of the proposed project. The locations of air quality sensitive receptors used in the analysis are listed on Table III-19 and shown on Figure III-11. The results are summarized in Section IV.K. A copy of the Air Quality Technical Analysis Report is available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

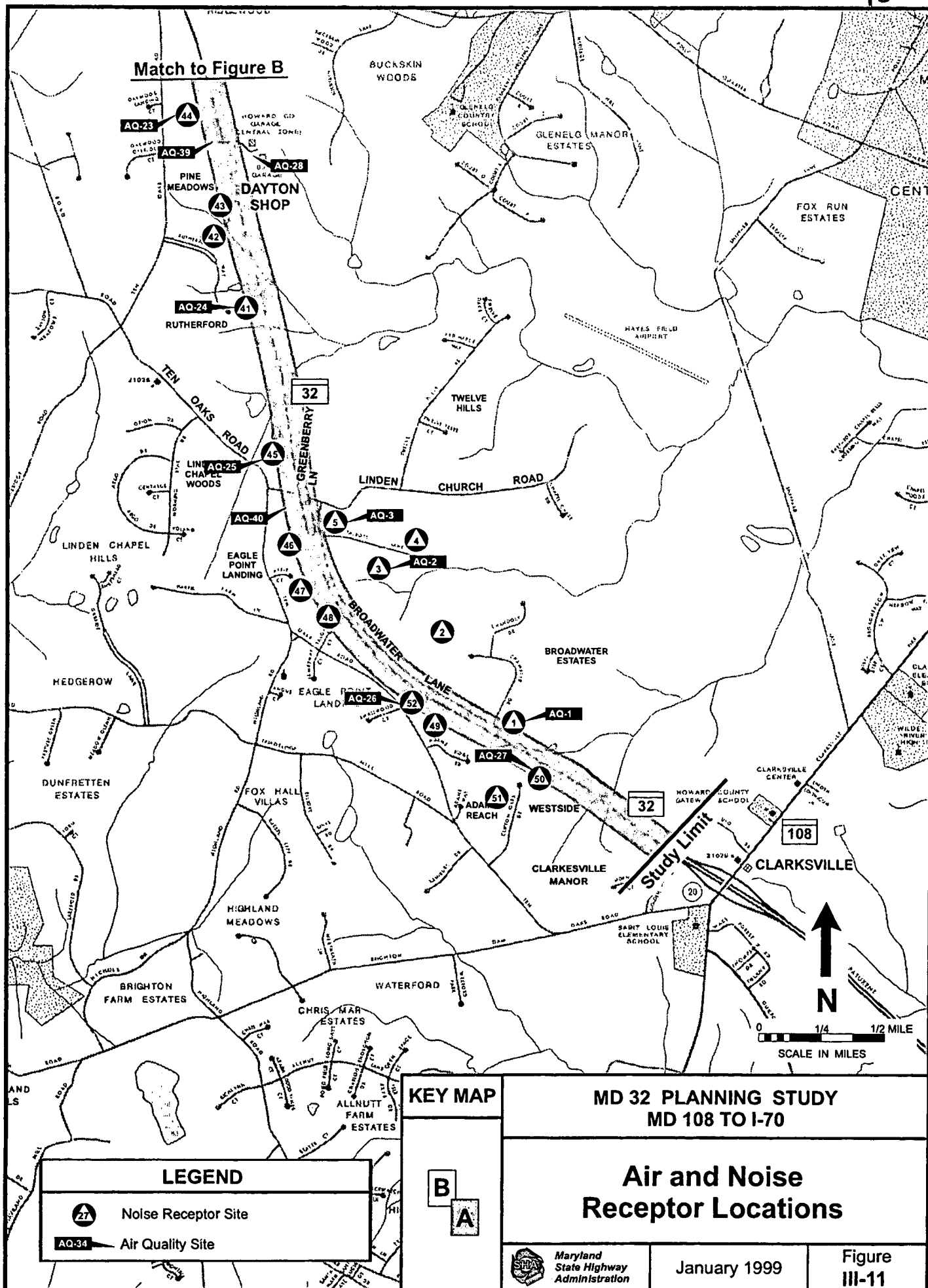


Table III-19: Air Monitoring Locations

Receptor	Location	Description
AQ-1	5635 Broadwater Lane	Residence
AQ-2	5385 Broadwater Lane	Residence
AQ-3	13125 Linden Church Road	Residence
AQ-4	Triadelphia Road	Westwood M.E. Church
AQ-5	13339 Ridgewood Drive	Residence
AQ-6	3625 Ivory Road	Residence
AQ-7	3490 Ivory Road	Residence
AQ-8	3405 Ivory Road	Residence
AQ-9	3213 Parliament Place	Residence
AQ-10	3115 MD 32	Residence
AQ-11	3075 MD 32	Residence
AQ-12	2885 MD 32	Residence
AQ-13	12569 MD 144	Residence
AQ-14	2935 MD 32	Residence
AQ-15	12592 Clover Hill Drive	Residence
AQ-16	12765 MD 144	Residence
AQ-17	2740 MD 32	Residence
AQ-18	3080 MD 32	Residence
AQ-19	13124 Fox Path Lane	Residence
AQ-20	3183 Fox Valley Drive	Residence
AQ-21	3625 Ten Oaks Road	Residence
AQ-22	4109 Ten Oaks Road	Residence
AQ-23	4315 Ten Oaks Road	Residence
AQ-24	4537 Ruthcrford Way	Residence
AQ-25	5073 Ten Oaks Road	Residence
AQ-26	5505 Ten Oaks Road	Residence
AQ-27	5936 Clifton Oaks Drive	Residence
AQ-28	Fill line east of Dayton Shops A.R. 2	Dayton Shops Interchange
AQ-29	R.O.W. line east of STA122 BWR	Burntwoods Road Interchange
AQ-30	R.O.W. line east of STA 221 EFR	Rosemary Lane Interchange
AQ-31	R.O.W. line east of STA 12 EFR	Nixon's Farm Lane Interchange
AQ-32	R.O.W. line east of STA 70 Ramp 3	MD 144 Interchange
AQ-33	R.O.W. line north of STA 74 Loop 4	I-70 Interchange
AQ-34	R.O.W. line west of STA 37 Loop 2	I-70 Interchange
AQ-35	R.O.W. line south of STA 53 Ramp 2	MD 144 Interchange
AQ-36	R.O.W. line west of STA 310 WFR	Nixon's Farm Lane Interchange
AQ-37	R.O.W. line west of STA 321 WFR	Rosemary Lane Interchange
AQ-38	R.O.W. line west of STA 218 PFR	Burntwoods Road Interchange
AQ-39	R.O.W. line west of STA 29 Ramp 1	Dayton Shops Interchange
AQ-40	R.O.W. line west of STA 204 Ramp 2	Linden Church Road Interchange

K. Existing Noise Conditions

As listed in Table III-20 and shown on Figure III-11, there are 52 receptor sites located within 14 Noise Sensitive Areas (NSAs) characterized by noise levels at specific locations within each NSA. The NSAs are generally residential areas, although a church is also included as a receptor site. These sites were selected to represent the existing noise environment in those areas adjacent to MD 32 involving regular human use or activities that would be susceptible to adverse noise impacts from highway generated noise. A NSA may represent several residences or an entire community. Noise receptor sites represent individual analysis sites within the NSA. See Section IV.L for a detailed explanation of approved SHA noise criteria).

In this study, noise levels are presented in terms of the A-weighted equivalent sound level, abbreviated L_{eq} . L_{eq} is a single number representation of the actual fluctuating sound level that accounts for all sound energy during a given period of time. The units of L_{eq} are A-weighted decibels, or dBA. The A-weighting means that the sound is measured by a method that approximates the response of the human ear, with de-emphasis of the low and very high frequencies and emphasis on the mid-frequency noise level range. In order to give a sense of perspective to the noise levels discussed the following noise level descriptions are provided; a quiet rural night would register about 40 dBA, a quiet suburban night about 60 dBA, a noisy day about 80 dBA, a gas lawn mower at 100 feet about 70 dBA, and a diesel truck at 50 feet about 85 dBA. Under typical field conditions, noise level changes of 2 to 3 dBA are barely perceptible, while a change of 5 dBA is readily noticeable. A 10 dBA increase in noise level is judged by most people as a doubling of sound loudness.

A field measurement program to establish ambient noise levels was conducted from April 1998 through June 1998. An acoustical analysis measurement of the ambient noise levels is required to establish the basis for impact analysis and to calibrate the STAMINA 2.0 computer model. The ambient noise levels shown in Table III-21, as recorded over 15-minute periods represent a generalized view of current highway traffic noise levels. Measurements were taken between 10 a.m. and 3 p.m. on weekdays to determine what a typical daytime noise level is at these sites. Monitoring sessions were performed in accordance with the procedures outlined in FHWA Report PD-96-046, Measurement of Highway Related Noise, dated May, 1996, and Fundamentals and Abatement of Highway Traffic Noise by Bolt, Beranek and Newman, Inc., using ANSI Type 2 integrating sound level meters, model DB308 manufactured by Metrosonics, Inc. In addition to the 15-minute measurements, 24-hour measurements were taken at selected locations. Using this data, an adjusted peak ambient noise level was developed at each receptor site. This adjusted level represents the peak noise level to be expected during a 24-hour period. In accordance with an FHWA memorandum dated April 23, 1986, "When making measurements of existing noise, we recommend traffic counts also be made (autos, medium truck, heavy trucks). The existing measured and calculated noise levels at the site should be compared to verify the accuracy of the FHWA model." Therefore, where appropriate, classified traffic counts were taken at receptor sites to provide data for this calibration. The traffic volumes combined with existing topographic and roadway alignment data were used in the STAMINA 2.0 computer model. If the computer model could not be calibrated to within 3 dBA of the ambient

measurement, then additional measuring and/or modeling was performed until the model was calibrated. It should be noted that, in addition to noise generated by traffic, the ambient measurements include background noise such as crickets, wind, rustling leaves and aircraft/helicopter flyovers. However, when there is significant traffic, the contribution of background noise to the ambient noise level is usually negligible. Background noise that could be considered excessive is noted at the time of measurement and results in the retaking of a measurement if the model cannot be calibrated.

A description of each NSA along with the receptor sites and the results of the ambient noise monitoring program are presented in Table III-21. Peak ambient levels ranged from 51 to 71 dBA. As expected, the lower values were found in isolated areas, while the higher values were found near existing roads.

Table III-20: Noise Sensitive Areas (NSA)

NSA	Description	Number of Residences	Number of Receptors
A	NB MD 32: Broadwater Estates, from Chamblis Drive to Linden Church Road. (Sta. 135+00 to 200+00)	27	5
B	NB MD 32: Vicinity of Triadelphia Road (Sta. 310+00 to 335+00)	12+ Church	4
C	NB MD 32: Vicinity of Ivory Road (Sta. 380+00 to 390+00)	6	2
D	NB MD 32: Parliament Place to Rosemary Lane (Sta. 415+00 to 450+00)	15	4
E	NB MD 32: Rosemary Lane to Middle Patuxent River (Sta. 450+00 to 470+00)	3	2
F	NB MD 32: Middle Patuxent River to MD144 (Sta. 48+00 to 530+00)	20	5
G	NB MD 32: At I-70 interchange (Sta. 540+00 to 550+00)	5	2
H	SB MD 32: At MD 144 intersection (Sta. 530+00)	5	3
I	SB MD 32: Vicinity of Nixon's Farm Lane (Sta. 505+00 to 515+00)	5	2
J	SB MD 32: Fox Valley Estates (Sta. 390+00 to 460+00)	35	6
K	SB MD 32: Vicinity of Burntwoods Road (Sta. 350+00 to 370+00)	9	3
L	SB MD 32: Vicinity of Ten Oaks Road (Sta. 300+00 to 315+00)	8	2
M	SB MD 32: Rutherford Community (Sta. 245+00 to 290+00)	20	4
N	SB MD 32: Eagle Point Landing & Adams Reach Communities (Sta. 125+00 to 215+00)	32	8

Table III-21: Ambient Noise Levels

NSA	Rec.	Location	Description	Adjusted Ambient (dBA)
A	1	South East End of Broadwater Lane	Single Family Residence	61
	2	5577 Broadwater Lane, Broadwater Estates	Single Family Residence	54
	3	5385 Broadwater Lane, Broadwater Estates	Single Family Residence	60
	4	13125 Linden Church Road	Single Family Residence	51
	5	5317 Talbot Lane	Single Family Residence	55
B	6	Westwood Church At Triadelphia Road	Church	67
	7	13523 Triadelphia Road	Single Family Residence	58
	8	13339 Ridgewood Drive	Single Family Residence	66
	9	13351 Ridgewood Drive	Single Family Residence	58
C	10	3625 Ivory Road East	Single Family Residence	63
	11	3405 Ivory Road East	Single Family Residence	70
D	12	3220 Regents Row at King's Grant Community	Single Family Residence	63
	13	3213 Parliament Place Road	Single Family Residence	55
	14	3115 NB MD 32	Single Family Residence	59
	15	3262 Rosemary Lane	Single Family Residence	57
E	16	3075 NB MD 32	Single Family Residence	68
	17	3035 NB MD 32	Single Family Residence	57
F	18	2935 NB MD 32	Single Family Residence	71
	19	2666 Wellworth Way at Friendship Manor	Single Family Residence	55
	20	2620 Lou Anne Court at Friendship Manor	Single Family Residence	68
	21	12569 EB MD144	Single Family Residence	57
	22	2591 Lou Anne Court at Friendship Manor	Single Family Residence	52
G	23	12575 Clover Hill Drive, WB MD144	Single Family Residence	62
	24	12592 Clover Hill Drive, WB MD144	Single Family Residence	64
H	25	12765 EB MD144	Single Family Residence	60
	26	12791 EB MD144	Single Family Residence	60
	27	12790 WB MD144	Single Family Residence	60
I	28	2740 SB MD 32	Single Family Residence	56
	29	2710 SB MD 32	Single Family Residence	57

Table III-21: Ambient Noise Levels (Continued)

NSA	Rec.	Location	Description	Adjusted Ambient (dBA)
J	30	3080 SB MD 32	Single Family Residence	63
	31	13124 Fox Path Lane, North at Fox Valley Estates	Single Family Residence	57
	32	3101 Fox Valley Drive at Fox Valley Estates	Single Family Residence	55
	33	3129 Fox Valley Drive at Fox Valley Estates	Single Family Residence	53
	34	3183 Fox Valley Drive at Fox Valley Estates	Single Family Residence	58
	35	3310 Fox Valley Drive at Fox Valley Estates	Single Family Residence	57
K	36	13755 Burntwoods Road	Single Family Residence	58
	37	3625 Ten Oaks Road	Single Family Residence	62
	38	3753 Ivory Road West	Single Family Residence	57
L	39	4109 Ten Oaks Road	Single Family Residence	61
	40	4195 Ten Oaks Road	Single Family Residence	61
M	41	4537 Rutherford Way	Single Family Residence	59
	42	4551 Ten Oaks Road	Single Family Residence	54
	43	4521 Ten Oaks Road	Single Family Residence	65
	44	4315 Ten Oaks Road	Single Family Residence	64
N	45	5073 Ten Oaks Road	Single Family Residence	62
	46	5199 Ten Oaks Road	Single Family Residence	59
	47	5306 Aerie Court - Eagle Point Landing	Single Family Residence	60
	48	5427 Talon Court	Single Family Residence	61
	49	5508 Ten Oaks Road	Single Family Residence	62
	50	5936 Clifton Oaks Drive	Single Family Residence	62
	51	5931 Clifton Oaks Drive	Single Family Residence	57
	52	5505 Ten Oaks Road	Single Family Residence	62

L. Visual Quality

Visual resources of a landscape include the visual character and elements within the project area. The visual landscape is bounded by those areas that can be seen from the project area as well as those areas, which afford a view of the project itself. The MD 32 corridor offers views from and to property adjacent to the roadway. No regional vista points were identified. Mobile viewers of the landscape include pleasure drivers, commuters, and truck drivers, among others. Stationary viewers of visual landscape include residents, farmers, business employees, consumers, and tourists.

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1. Existing Visual Environment

Farmland, open space, forests, and single family homes in large lot subdivisions (greater than one-acre lots) dominate the visual landscape in the study area. The generally rolling topography limits low-lying views to the immediate vicinity and elevated views to the hilltops. Given the study area's relatively gentle relief, opportunities for expansive vistas are limited. Additionally, public views are limited to views from roadways, as a majority of the property adjacent to MD 32 is privately owned. The topography of the study area is discussed in Section III.D.1.

2. Methodology

View sheds are determined by review of land use mapping and field reconnaissance throughout the study area to assist in the evaluation of the visual quality of the area. A view shed is "the surface area visible from a given view point or series of view points; it is also the area from which that view point or series of view points may be seen" (FHWA, 1981). It may also be defined as, "a tool for identifying the views that a project could actually affect" (FHWA, 1981).

Field visits were conducted during which the existing visual character of the study area was documented through photography. No expansive vistas were identified. Views of the MD 32 roadway are accessible from individual properties as well as from roadway overpasses. Views from the MD 32 roadway are of the farms, residences, rolling hills, and forests.

M. Municipal, Industrial and Hazardous Waste Sites

1. Initial Site Assessment Methodology

An Initial Site Assessment (ISA) was conducted to identify the potential presence of hazardous or other environmentally sensitive waste sites potentially impacted by the proposed improvements to MD 32 from north of the MD 108 interchange to south of the I-70 interchange.

The tasks of the ISA included the following:

- Research and review of available public records to identify recognized environmental conditions in connection with the project corridor including records maintained by the U.S. Environmental Protection Agency (EPA), Maryland Department of the Environment (MDE), and Howard County.
- Review of environmental databases including the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS); the National Priorities List (NPL); Hazardous Waste Sites (SHWS); Solid Waste Facilities (SWF); Underground Storage Tanks (USTs); Resource Information System Treatment Storage and Disposal (RCRIS-TS); RCRIS Large Quantity Generator (RCRIS-LG); and RCRIS Small Quantity Generator (RCRIS-SG).

-
- Research and review of available related aerial photographs (current and historical), topographic maps, land ownership/development maps, soils maps, hydrological maps, geologic maps, and Sanborn fire insurance maps.
 - Performance of a field reconnaissance of the project corridor and facilities to identify recognized environmental conditions and screening areas of potential environmental significance with a photoionization detector (PID) to measure volatile organic compounds (VOCs) in the ambient air.
 - Documentation of the project corridor with color photographs representing important environmental features or facilities.
 - Interviewing of key personnel to obtain information regarding the environmental conditions of the project corridor, if available.
 - Development of recommendations and a preliminary work plan for further investigation as part of a Phase II - Preliminary Site Investigation (PSI), if warranted.

2. Environmental Database Review

An environmental database search was conducted for an area contained within a four-mile radius centered on a location in Glenelg, Maryland. This location was selected to ensure the entire study area would be contained within the search area. The database consists of available records from Federal and State regulatory agencies and is updated regularly. A particular address or site may be listed concurrently on multiple databases. The complete environmental database report is available for review

Comprehensive Environmental Response, Compensation and Liability Information System

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) contains data on potential hazardous waste sites that have been reported to the EPA by states, municipalities, private companies and citizens pursuant to Section 103 of CERCLA. Based on this search, there are no CERCLIS sites within the study area.

National Priority List

Also known as Superfund, the National Priority List, or NPL, is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the EPA. Based on the search, no NPL sites are located within the study area.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) databases includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of these databases is the EPA and includes the Resource Information System Treatment Storage and Disposal (RCRIS-TS) database; RCRIS Large Quantity Generator (RCRIS-LG) database; and RCRIS Small Quantity Generator (RCRIS-SG) database. These sites are listed in the Resource Conservation and Recovery Information System (RCRIS). The site numbers in Table III-22 refer to the locations as noted on Figure III-12, Potential Hazardous Waste Locations.

Underground Storage Tanks

The Underground Storage Tank (UST) database contains registered USTs. USTs are regulated under Subtitle I of RCRA. The source of the data is MDE. The site numbers in Table III-23 refer to the locations as noted on Figure III-12, Potential Hazardous Waste Locations.

Table III-22: RCRIS Listed Sites

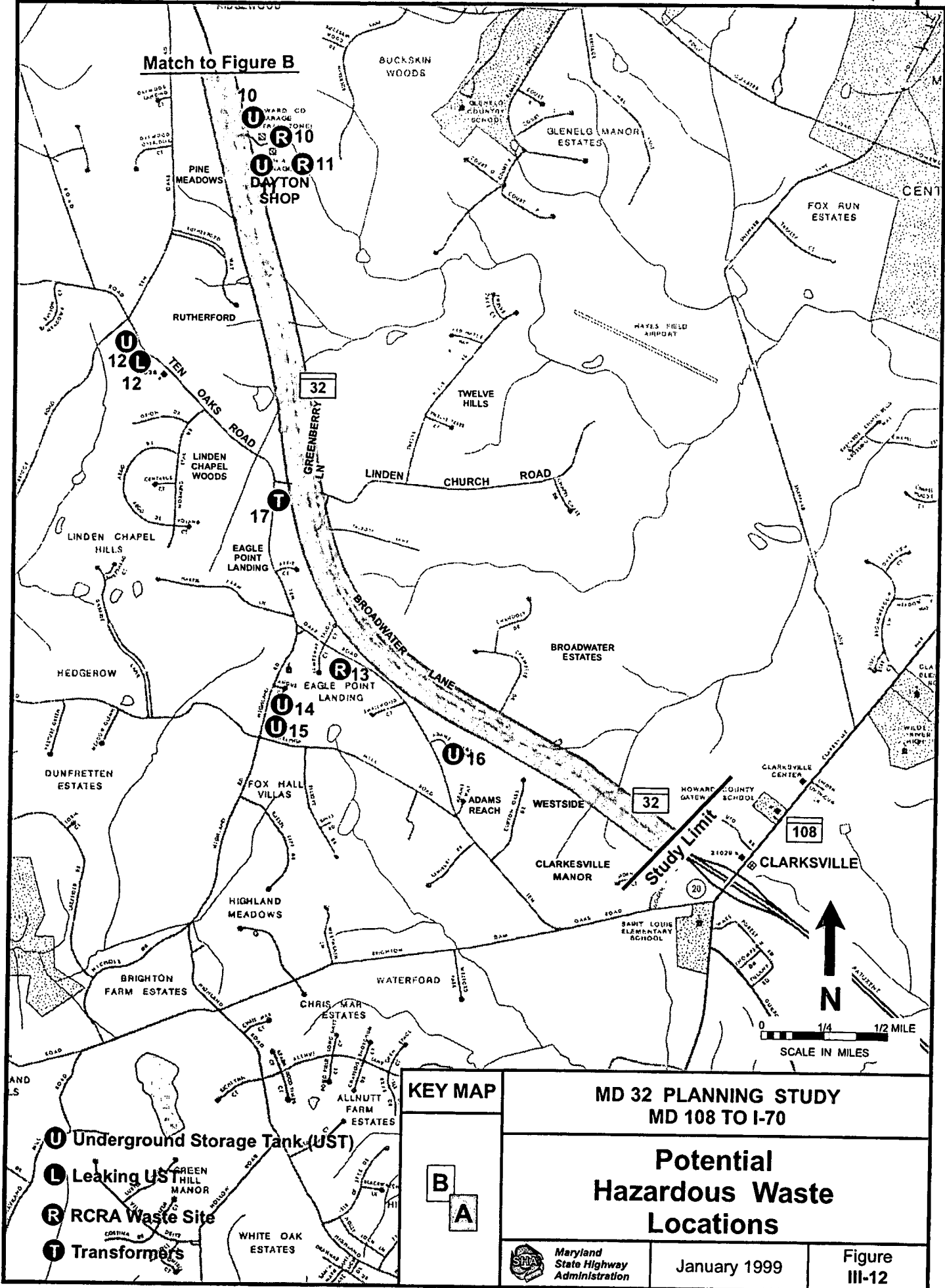
Site Number	RCRIS Description	
	Classification	Product
8	Small Quantity Generator	waste oil
10	Small Quantity Generator	waste oil
11	Small Quantity Generator	waste oil
13	Small Quantity Generator	waste oil

Leaking Underground Storage Tanks

The Leaking Underground Storage Tank (LUST) database contains UST locations currently undergoing corrective or remedial action. The source of the data is MDE. The site numbers in Table III-24 refer to the locations as noted on Figure III-12, Potential Hazardous Waste Locations.

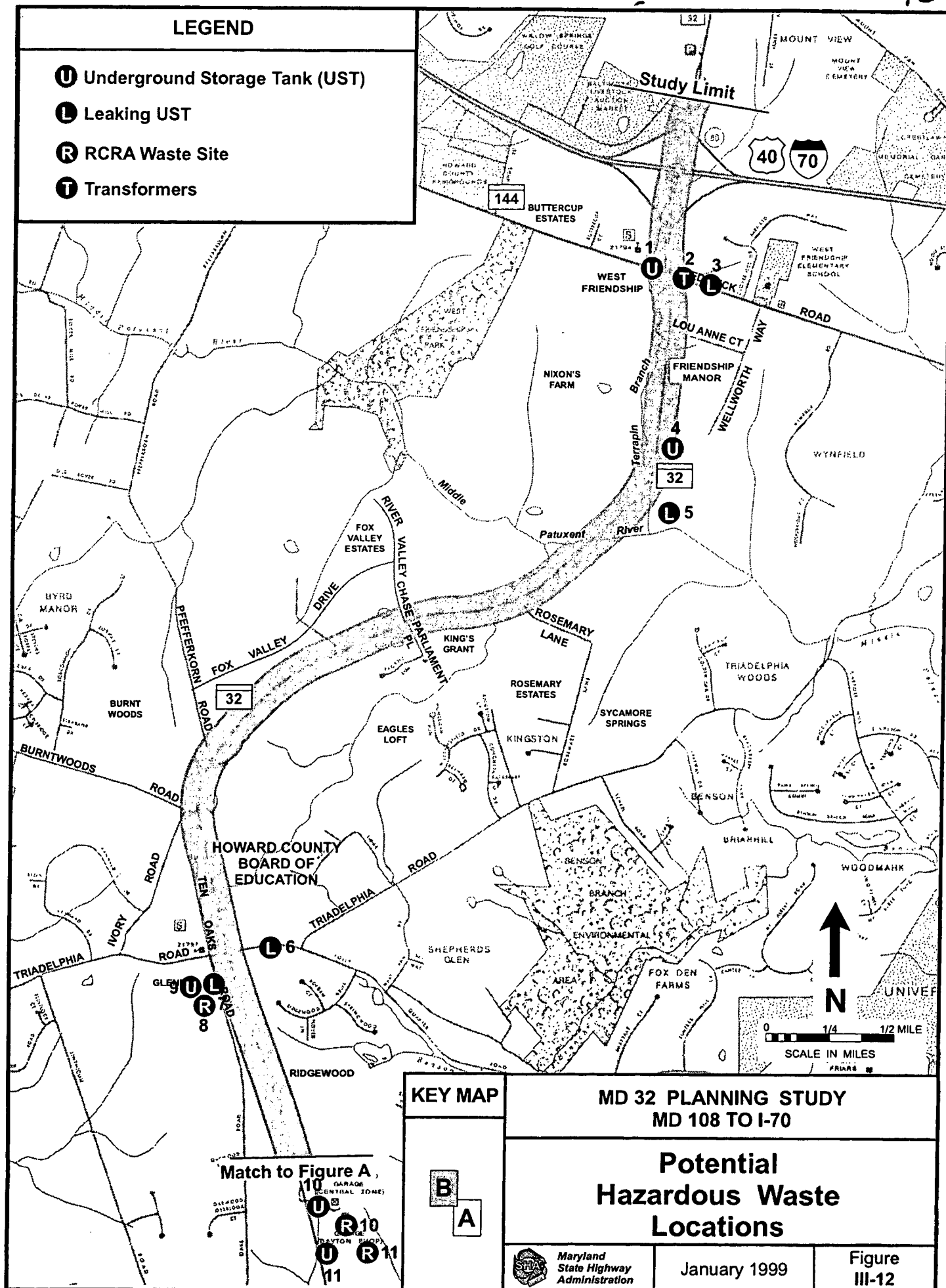
State Hazardous Waste Sites

The State Hazardous Waste Sites (SHWS) records are the state's equivalent to the NPL. These sites may or may not be listed on the federal NPL. Priority sites planned for cleanup using state funds are identified along with sites where cleanup will be paid for by potentially responsible parties. The source of this database is the MDE. Based on this search, there are no SHWS sites within the study area.



LEGEND

- U** Underground Storage Tank (UST)
- L** Leaking UST
- R** RCRA Waste Site
- T** Transformers



KEY MAP



MD 32 PLANNING STUDY
MD 108 TO I-70

Potential Hazardous Waste Locations



Maryland
State Highway
Administration

January 1999

Figure
III-12

Solid Waste Facilities

The Solid Waste Facility (SWF) database contains data on permitted solid waste sites or landfills. This database is maintained by MDE. Based on this search, there are no SWF sites within the study area.

Table III-23: Underground Storage Tanks

Site Number	UST Description	
	Quantity and Size	Product
1	1 - 10,000 gallon	gasoline
	1 - 10,000 gallon	diesel fuel
4	1 - 2,000 gallon	heating oil
9	1 - 10,000 gallon	gasoline
	1 - 10,000 gallon	diesel fuel
10	2 - 10,000 gallon	diesel fuel
	1 - 10,000 gallon	gasoline
	1 - 1,000 gallon	waste oil
	1 - 2,000 gallon	kerosene
	1 - 6,000 gallon	heating oil
11	1 - 10,000 gallon	diesel fuel
	1 - 2,000 gallon	gasoline
	1 - 500 gallon	waste oil
	1 - 4,000 gallon	heating oil
	1 - 1,000 gallon	kerosene
12	1 - 8,000 gallon	gasoline
	1 - 8,000 gallon	gasoline
14	1 - 2,000 gallon	diesel fuel
15	1 - 300 gallon	not reported
16	1 - 2,000 gallon	heating oil
	1 - 2,000 gallon	gasoline
	1 - 2,000 gallon	diesel fuel

Table III-24: Leaking Underground Storage Tanks

Site Number	LUST Description	
	Status	Recovery Type
3	Closed	monitoring only
5	Open	monitoring only
6	Open	monitoring only
7	Open	monitoring only
12	Open	24 hour re-mediation

3. Aerial Photography Review

Aerial photographs of Howard County from 1969 and 1981 obtained from the U.S. Geological Survey (USGS) were reviewed for indications of potential hazardous waste locations. The review indicated that the area has remained largely unchanged with the exception of additional residential development.

4. Field Reconnaissance

On October 1 and 2, 1997 and on September 20, 1998, field reconnaissance of the study area were conducted. The purpose of the reconnaissance was to identify any obvious environmental concerns associated with the study area and confirm the results presented in the environmental database review. The field reconnaissance was also performed to identify potential environmental concerns not identified in the environmental database search or on aerial photography or mapping.

In addition to the sites discussed previously, two Baltimore Gas and Electric (BGE) electrical substations are located in the project area. One site is located on MD 144 (Frederick Road) approximately 500 feet east of the intersection of MD 144 and MD 32, see Site Location 2 on Figure III-12. The second site is location on Ten Oaks Road at the intersection with Linden Church Road, see Site Location 17 on Figure III-12. Due to the large number of electrical transformers located at these electrical substations, the potential for polychlorinated biphenyl (PCB) contamination at this site exists. PCBs are classified as known carcinogens and were used as transformer insulating oil until 1976.

The project area is primarily rural and residential in nature. For this reason, potential hazardous waste locations are generally limited to commercial locations. Industrial development, both current and historical, has not occurred in the study area.

An independent and supplemental Initial Site Assessment was performed in November 1998 to verify potential hazardous materials/wastes within the project corridor. A thorough search of available federal and state databases was conducted in compliance with industry standards. In addition, field screening reconnaissance was conducted to verify on-site issues and concerns derived from the database searches. A total of thirty-two sites within a one-mile radius of MD 32 were identified. Based on the federal and state database searches, and limited field investigations, seventeen potential waste sites were identified within or in close proximity to the proposed project improvements. Upon further evaluation, three sites remain with questionable status regarding presence or disposition of potential hazardous/waste materials. The Maryland Department of the Environment (MDE) has stated they might have records pertaining to these three sites and are presently in the process of conducting a search for such records. Once located, MDE will permit SHA to review the records and a final determination will be made as to project impacts, if any. The three remaining sites from this site search are as follows:

High's Dairy Store, 12780 Frederick Road - This site is located 200 feet south of the I-70 interchange, approximately 600 feet west of MD 32, and immediately adjacent to the north side of MD 144. This property contains two 10,000-gallon fuel tanks, one

containing gasoline and one containing diesel fuel. The age of these tanks is unknown. Since this will likely constitute a taking of a portion of the site, these tanks will be abandoned. Therefore, further investigation on this site is warranted.

Allen Vansant Inc., 12630 Frederick Road - This site is located approximately 200 feet south of the I-70 interchange, approximately 650 feet east of MD 32, and immediately north and adjacent to MD 144. The database search indicates that this site has had up to 7 USTs, up to 37 years old. The field investigation revealed several commercial uses including a turfgrass/pesticide/herbicide business. The primary commercial complex on this property was constructed on approximately 25 feet of fill, which apparently was placed at least 20 years ago. The age and thickness of the fill, the USTs, and the varied commercial uses of the property both presently and presumably through time, are indications that further investigations may be required on this site.

Former BGE Substation, west and adjacent to Allen Vansant Inc. -This site is located approximately 200 feet south of the I-70 interchange and approximately 250 feet east of MD 32, and immediately north and adjacent to MD 144. This site has been abandoned for some time, and is presently enclosed with a 6-foot high chain link fence. PCBs could be present due to the probable former existence of electrical transformers. Further investigation should be considered based on this factor.

5. Conclusions

Based on the results of both ISAs, the following conclusion are offered:

Four properties directly within the project area have USTs located on them. They are the Old Tyme/Ten Oaks Liquors, Allen Vansant, Inc., Former BGE Sub-station, and the High's Dairy Store located near the intersection of Triadelphia and Ten Oaks Roads. Should the acquisition of any of these properties be required for the roadway improvements, it is recommended that a Phase II - Preliminary Site Investigation (PSI) be conducted to confirm the presence of contaminants.

The Howard County Dayton Repair Center and the State Highway Administration Dayton Shop are of concern due to the large-scale maintenance activities and the number of USTs present at each location.

It is unlikely that the MD 32 improvements will have any impact on the other sites indicated due to their locations and distance from any potential improvements.

IV. ENVIRONMENTAL CONSEQUENCES

*MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland*



*Office of Planning and Preliminary Engineering
Maryland State Highway Administration*

IV. Environmental Consequences

The environmental consequences of the alternatives under consideration are described in this chapter of the Draft EIS. Alternatives currently under consideration include the No-Build Alternative and two build alternatives (see Section II.C). Both build alternatives include dualizing the MD 32 mainline, providing a 34-foot median, and building interchanges at Linden Church Road, Dayton Shop, Burntwoods Road, Rosemary Lane, and I-70. Build Alternative I includes the Nixon's Farm Lane Interchange and the MD 144 Option 3 Modified Interchange. Build Alternative II, includes the MD 144 Option 4 Interchange. Consequences of avoidance and minimization of these impacts, and mitigation measures where appropriate, are discussed. The extent of impacts as presented in this chapter, and further opportunities to avoid and minimize impacts, would be refined during the design phase of the project, should a build alternative be selected.

For the purpose of assessing the environmental consequences of the build alternatives, the impact study area was defined by the proposed right-of-way line for socio-economic resources and the limit of disturbance for natural resources, as depicted on the mapping in Appendix A.

Secondary and cumulative effects are also addressed in this chapter, see Section Q. The temporal boundary for these analyses has been considered to be from the 1970's through 2020, the design year for this project. The spatial boundary studied for secondary and cumulative effects is bounded by the Howard County border with Carroll County to the north, US 29 to the east, and the Howard County border with Montgomery County to the south, and MD 97 to the west.

A. Social, Economic, and Land Use

1. Social Impacts

a. Residential Displacements

Residential property acquisition and relocations would be required by the build alternatives currently under consideration (as shown on mapping presented in Appendix A). All properties would be acquired in accordance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987. Residential property acquisition includes both unimproved property not owned by SHA that does not require the acquisition of a structure and relocations that would require the acquisition of a structure by the build alternatives. Most of the parcels in the study area are large lot single family residences. Table IV-1 presents the number of relocations and estimated right-of-way required for each alternative.

The No-Build Alternative would not require any relocations or property acquisition. The build alternatives would each require land from 94 properties for right-of-way. Required right-of-way ranges from 0.001 to 11.19 acres per property. Each of the build

alternatives would involve nine residential displacements. According to the Greater Baltimore Board of Realtors replacement housing is available in the study area. Current housing prices range from \$135,000 to \$1.3 million, most properties being in the \$135,000 to \$750,000 range.

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 disability or sexual orientation in all State Highway Administration projects funded in whole or in part by the Federal Highway Administration. The State Highway Administration will not discriminate in highway planning, design, or 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 to ensure 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.

Table IV-1: Right-of-Way Impacts and Displacements by Alternative

	No-Build	Build Alternative I	Build Alternative II
Additional Right-of-Way Required	None	101.6 acres	89.1 acres
Number of Parcels Impacted	None	94 parcels	94 parcels
Residential Relocations	None	9	9 *
Business Displacements	None	1	1

Note: Under both Build Alternatives access via Wellworth Way would require an additional four acres right-of-way.

* Under Build Alternative II one residential displacement would be avoided should access would be provided from Wellworth Way.

b. Effects on Elderly and Persons with Disabilities

There are no known concentrations of elderly residents in the study area. Census tracts 6030 and 6051.1, in which the study area is located, have equal or very slightly larger percentages of elderly residents (8 percent and 6 percent respectively) than the County as a whole (6 percent of the population is 65 years of age and older). However, Howard County has a very small population of elderly residents.

Concentrations of persons with disabilities were not identified within the study area. Adverse impacts to this population group are not anticipated by any of the alternatives. If required, appropriate relocation advisory services would be offered to displaced elderly or disabled individuals.

c. Environmental Justice

As previously discussed in Section III.A.1.b, minority residents and low income residents reside in the study area. However, they are not present in numbers larger than that found in the region, and they are not concentrated.

One of the nine residential displacements anticipated is minority owned. The one business that would be displaced under either build alternative is not minority owned. Based on this information it was determined that the proposed project would not result in a disproportionately high or adverse impact to minority populations.

In a public outreach effort to supplement the census information and to inform people of the project, the SHA sent correspondence to the local chapter of the NAACP, see Chapter V. NAACP was requested to assist in informing their members of the project and in helping to identify concentrations of minority and/or low income populations in the project area. NAACP did not identify concentrations of minority or low income communities and stated that all of the groups and individuals NAACP contacted were aware of the proposed project. SHA also offered to meet with groups and organizations to discuss the project.

d. Effects on Community Facilities

None of the alternatives being considered involve the displacement of community facilities. Neither is right-of-way required from any community facility in the study area.

The major impact to community facilities would be the effect on access to services and facilities. Access to these facilities would be affected under each of the alternatives being considered, improved traffic operations are anticipated under the build alternatives and traffic congestion is projected under the No-Build Alternative, see Section IV.B.

The No-Build Alternative would eventually result in extended delays due to increased traffic congestion anticipated for this highway facility.

The proposed build alternatives to dualize MD 32 and limit access to proposed interchange locations would improve regional access to community facilities. However, for some citizens specific access may be longer. For example, motorists requiring access to the opposite side of MD 32 from which they are driving would have to travel to one of the new interchanges and backtrack to a facility on the opposite side of the road. Travel time estimates conducted for the Build Alternatives show a maximum of 2 to 2 ½ minutes

of additional travel time for these maneuvers. The increased level of service associated with the dualized access controlled highway should offset this inconvenience.

Emergency Services

MD 32 is a north/south route through central Howard County, connecting communities and emergency services. Howard County emergency service providers, fire and police, were requested to review the alternatives under consideration and provide analysis as to how the alternatives might affect response times, access, and service, see Chapter V, NEPA Coordination, Other Agency Correspondence. The Howard County Department of Police stated concerns regarding travel delays due to traffic volumes on the existing roadway. Regarding the build alternatives, crossovers at regular intervals to reduce time required for emergency equipment to reach incidents in the opposing lanes of travel were recommended and would be addressed during the design phase of this project.

Utilities

Permanent disruption of utility services is not anticipated as a result of the proposed alternatives. Temporary disruption of utility service may occur if utility lines located along the right-of-way need to be relocated. SHA would coordinate with utility companies and Howard County to locate utility lines and prevent or minimize disruption of electric, gas, water, sewer, telephone, and cable television service within the study area.

Transportation Systems

No adverse impacts to the regional transportation network are anticipated with the proposed alternatives. The build alternatives would reduce the risk of a head-on collision between vehicles by separating northbound and southbound traffic with a median. Travel times would decrease with the build alternatives. The proposed interchanges would provide safer access to and from MD 32 as discussed in Section IV.B.3.

e. Disruption of Neighborhoods and Communities

Many neighborhoods and communities are located along the MD 32 corridor. These include both older established communities, as well as newer developments recently built or currently planned for the area. None of the established or emerging communities cross MD 32. MD 32 has historically been a community boundary. Community facilities and services are located both east and west of the highway and do not create community cohesion in either their visual characteristics or in their function. The proposed interchanges would provide safer access to the communities located on both sides of MD 32. Therefore, dualization of this facility as well as the controlled access would not create a neighborhood or community disruption.

2. Economic Impacts

a. Effects on Regional Business Activities

MD 32, as part of the Patuxent Freeway, is a critical commuter link in the region. Roadway improvements can be an incentive to businesses to relocate or remain in an area by providing a safer, more efficient transportation system.

The majority of land use in the study area is low density residential and agricultural. The County's 1990 General Plan, supported by the draft update, states that the County's land use objectives include encouraging growth in the existing population centers and discouraging urban types of development in the rural residential areas, such as the area surrounding MD 32 between MD 108 and I-70. The proposed build alternatives would not adversely impact the local economy through the loss of any businesses required for right-of-way.

b. Effects on Existing Businesses

The No-Build Alternative would not require any business displacements (see Table IV-1).

Both build alternatives would require the displacement of one business, a High's Convenience Store, located at MD 144. SHA would attempt to relocate this business to an adjacent site. Through communication with business and property owners it was determined that there is opportunity for relocation adjacent to the existing site of this business and therefore the business and its employees should not be adversely impacted by this project. This relocation would improve the visibility of the store and the proposed interchange would improve access.

This commercial property, as with all commercial properties acquired by SHA for construction of a project, would be compensated at fair market value and in accordance with the requirements of the Uniform Relocation and Real Property Acquisition Act of 1970, as amended in 1987.

Access to businesses located in the study area would change with the proposed improvements. As no businesses are located directly on MD 32, few rely on drive by traffic for their business. Some businesses are located on roadways intersecting MD 32. Access to these roads would be provided via the proposed interchanges or access roads. Improved traffic operations provided by the proposed improvements are expected to enhance accessibility.

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c. Tax Base Effects

The tax base implication for the no-build and build alternatives is related to the direct impact on the tax base through the acquisition of private lands for highway use and to the alternatives' impacts on future growth. According to the County Office of Assessment and Taxation, effects on the tax base are not anticipated with the right-of-way acquisitions and displacements associated with the build alternatives (Finkelsen, 1998).

3. Land Use

Existing land uses in the study area would be altered by the proposed build alternatives through conversion of residential, commercial and industrial properties, farmland, and natural resources to transportation use. Acreage impacted by each alternative is shown on Table IV-2. Impacts to farmland are further discussed in Section IV.D. Impacts to industrial property relates to the impacts at the Dayton Shop. The proposed improvements and related acreage required from this property would not effect the use of the facilities on the site.

Table IV-2: Right-of-Way Required by Land Use

Land Uses Impacted	No-Build		Build Alternative I		Build Alternative II	
	Parcels	Acreage	Parcels	Acreage	Parcels	Acreage
Residential	0	0	66	73.8	66	63.6
Agricultural	0	0	21	23.6	21	21.3
Commercial	0	0	6	2.6	6	2.6
Institutional	0	0	1	1.6	1	1.6
Total Required	0	0	94	101.6	94	89.1

Howard County's population is projected to grow by 0.7 percent per year to 303,500 by the year 2020 (Howard County, 1997 and Baltimore Metropolitan Council (BMC), 1997). New residential development, businesses, community facilities and services would be needed to accommodate this anticipated population growth. Howard County has developed a plan for future growth that specifically directs urban development (residential development, businesses, and services) to the eastern portion of the County. It is the County's intention to preserve the rural nature in the western portion of the County, which includes the MD 32 study area. Within the study area, the prominent type of development planned is residential. This residential development is not dependent upon access along MD 32 as it is today or would be under the No-Build Alternative. Although the build alternatives would change the access routes to these proposed residential developments, it would not negate or cause changes in planned land uses. Access to land areas adjacent to the study area would remain as they currently are, with or without the proposed project. Growth depends on the implementation of land use controls to focus potential growth into specific areas. The responsibility to guide development and land use

rests with the Howard County Department of Planning and Zoning, see Howard County letter dated July 20, 1988 presented in Chapter V.

The Smart Growth Areas Act went into effect in October, 1997. The intent of this legislation is to direct state funding for growth related projects to areas designated by local jurisdictions as Priority Funding Areas (PFAs).

The widening of MD 32 from MD 108 to I-70 will complete the Patuxent Freeway from Annapolis to I-70. This important transportation link will provide a fully access controlled freeway for east/west travel within the Baltimore/Washington corridor. This project, will eliminate direct access to MD 32 from many properties thereby helping to limit development. The project supports the continuation of agricultural and rural residential zoning that Howard County has established in this part of the County (see letter on page V-OA-18).

This project is outside Howard County's PFA, therefore it will require approval by the Board of Public Works before State funds can be spent on construction. The Smart Growth Area Act allows for the approval of transportation projects outside Priority Funding Areas if the project provides a connection between PFAs and if adequate access controls are in place to prevent development inconsistent with the State's Smart Growth Policy. Upon completion, this project would provide a fully access controlled connection from PFAs situated along the Patuxent Freeway in Anne Arundel and Howard Counties to PFAs in Carroll and Frederick Counties and other points west. Both Howard and Carroll Counties have identified this link of MD 32 as the preferred location for such a connection to occur. Once completed, this facility will be capable of safely handling the projected demand to travel between these PFAs.

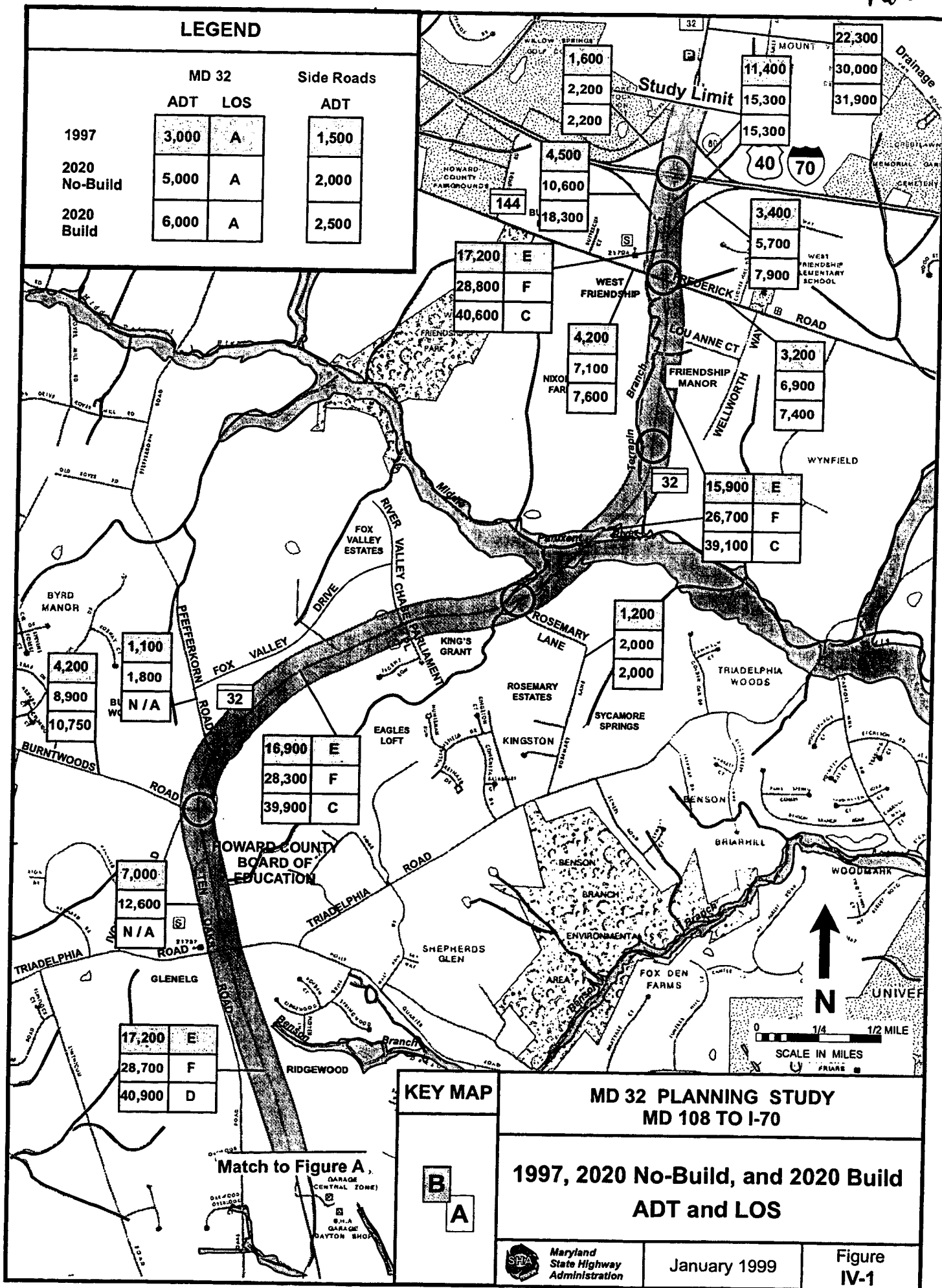
B. Traffic and Transportation Network

The study portion of MD 32 consists of two 12-foot lanes and 10-foot shoulders. Currently, there are traffic signals at five intersections and turn lanes at nine intersections. Two new signals will be installed at the I-70 interchange ramps in 1999. There are also passing zones throughout the length of the project; however they are generally not utilized during the peak hour because the opposing traffic volumes are too heavy. Between MD 108 and Burntwoods Road, MD 32 is an access-controlled roadway with a 300-foot right-of-way. Between Burntwoods Road and I-70, MD 32 has no access control and an approximate right-of-way of 150 feet. The build alternatives would provide a four-lane section with a 34-foot median. Interchanges would be constructed to provide grade-separated movements and a fully access-controlled facility.

The 2020 design year traffic forecasts were prepared in accordance with the Comprehensive Development Plan for Howard County and the Baltimore Metropolitan Council. Figure IV-1 shows the average daily traffic volumes (ADT) and level of service (LOS) for the existing condition, No-Build Alternative, and the build alternatives. The traffic flow is measured by determining a LOS for the roadway (see Section I.C.1 for a description of each level of service).

LEGEND

	MD 32		Side Roads
	ADT	LOS	ADT
1997	3,000	A	1,500
2020 No-Build	5,000	A	2,000
2020 Build	6,000	A	2,500



KEY MAP

B
A

MD 32 PLANNING STUDY MD 108 TO I-70

1997, 2020 No-Build, and 2020 Build
ADT and LOS



Maryland
State Highway
Administration

January 1999

Figure
IV-1

LOS designations, from A to F, represent conditions that drivers experience along the roadway and are used to define the traffic operations within that section of the roadway. LOS A indicates ideal conditions and LOS F indicates severe congestion with substantial delays.

1. Impacts of the No-Build Alternative

The No-Build Alternative, as described in Section II.C.1, would not provide major improvements to the existing MD 32 roadway. Specific improvements recently implemented or programmed for implementation are listed in Table II-1. These routine maintenance and operational improvements would not measurably affect roadway capacity. Other spot improvements could occur as conditions warrant. Although the No-Build Alternative would not meet the project need, it has been used as a basis of comparison for the analysis of the build alternatives.

Existing and design year 2020 ADT and levels of service for the No-Build Alternative are presented on Figure IV-1 and Table IV-3, respectively. In summary, the mainline MD 32 traffic would operate at LOS F during the peak periods in the 2020 No-Build scenario. Average daily traffic would range from 26,700 to 29,900 under this scenario. All of the intersections south of MD 144 would also operate at LOS F. The MD 144 and I-70 ramp intersections would operate at levels of service ranging from B to F, depending on the peak period.

Table IV-3: Levels of Service for 1997, 2020 No-Build, and 2020 Build

Intersection	1997 (Intersections)	2020 No-Build (Intersections)	2020 Build (Interchanges)
Linden Church Road	F	F	A
Dayton Shop	F	F	A
Ten Oaks Road	F	F	not applicable
Burntwoods Road	F	F	C
Pfefferkorn Road	F	F	not applicable
Rosemary Lane	F	F	A
Nixon's Farm Lane	not applicable	not applicable	A
MD 144	A	C	A
I-70 Eastbound Ramps	C	E	C
I-70 Westbound Ramps	C	F	B

Notes: Under the Build Alternatives Ten Oaks Road and Pfefferkorn Road will not intersect MD 32. Current access, as well as access under the No-Build Alternative, to Nixon's Farm is via a driveway entrance, therefore, LOS for these conditions was not analyzed.

2. Impacts of the Build Alternatives

The build alternatives would provide a four-lane section with a 34-foot median. Build Alternative I includes interchanges at Linden Church Road, Dayton Shop, Rosemary Lane, Burntwoods Road, Nixon's Farm Lane, MD 144, and I-70. Build Alternative II is similar to Build Alternative I, however, it does not include a separate interchange at Nixon's Farm Lane.

Typical sections are shown on Figures II-2, II-3, and II-4 and the mapping presented in Appendix A.

The two build alternatives have similar traffic patterns except for the area between the Nixon's Farm Lane interchange and the MD 144 interchange. Through this area, Build Alternative I includes two weaving sections, northbound and southbound. Build Alternative II includes one weaving section northbound, and this weave would only exist if access were provided to the east side properties via Access Road 3 instead of Wellworth Way (see mapping in Appendix A).

The 2020 ADTs and LOS for the four-lane freeway section and the interchanges are shown on Figure IV-1. The LOS for the intersections are shown in Table IV-3. The MD 32 mainline would operate at LOS C north of Burntwoods Road and LOS D south of Burntwoods Road in the peak directions (southbound in the AM and northbound in the PM). The mainline would operate at LOS A/B during the remainder of the day.

The LOS for all of the intersections associated with the proposed interchanges would operate at LOS C or better as shown in Table IV-3. All of the interchange ramps would operate at LOS A.

There would be four weaving areas with Build Alternative I and three weaving areas with Build Alternative II. The traffic operations (LOS) would be the same for both alternatives. Table IV-4 shows the LOS associated with these weaving sections.

Table IV-4: LOS for Weaving Areas

Weaving Section	Level of Service (LOS)	
	AM Peak	PM Peak
MD 32 NB Between I-70 and MD 144	C	C
MD 32 SB Between I-70 and MD 144	D	B
MD 32 NB Between MD 144 and Nixon's Farm Lane	A	A
MD 32 SB Between MD 144 and Nixon's Farm Lane (Build Alternative I only)	A	A

3. Safety

The accident history in the study area is discussed in I.C.2. As shown on Table I-2, MD 32 experienced a total of 161 accidents (113.1 accidents per million vehicle miles traveled) between January 1995 and December 1997. During this three-year period there were two fatal accidents, both occurring in 1997. In 1998, there were four fatal accidents.

Two types of accidents were significantly higher than the statewide average: truck-related, and "other" accidents. The high percentage of "other" accidents appears to be animal-related accidents. Two additional accident types, rear end and left turn accidents were slightly higher than the statewide average. Partial data for 1998 show a continuing increase in rear end accidents. The rear end accidents can be attributed to the stop-and-go conditions that are

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associated with the high traffic volumes and levels of service E and F on the MD 32 mainline during the peak period. The left turn-related accidents result from motorists attempting to enter and exit MD 32 from a crossroad. The high volumes along the mainline make it difficult to find an acceptable break in the traffic in order to perform a turning maneuver. This causes motorists to either wait an extensive period of time at intersections or to take chances which result in left turn accidents.

The No-Build Alternative would not alleviate these safety concerns; in fact, the accident rate may increase because the traffic volumes would increase and the roadway access and geometrics would not be modified. In 1997 there was a significant increase in the overall number of accidents compared to the other study years. Also, available data for 1998 indicates a continuing trend in the increased number of accidents since 1996. As traffic volumes increase, it is anticipated that accidents will increase proportionately.

Build Alternatives I and II would improve traffic operation and reduce the potential for accidents. The dualization of MD 32 would improve the LOS to C and D on the mainline, thus reducing the stop and go conditions during the peak periods. The four-lane facility would allow the slower moving truck traffic to travel in the right lane so that faster moving traffic could safely pass on the left. The use of interchanges instead of intersections would provide a grade-separated, access-controlled facility that would eliminate access via intersections. The interchange ramps and acceleration/deceleration lanes would allow the vehicles accessing MD 32 to nearly reach the speed of the vehicles on the mainline; thereby simplifying the merge between vehicles on MD 32 and vehicles entering MD 32.

C. Cultural Resources

1. Historic Sites

§36 CFR 800 implements the requirements of the National Historic Preservation Act (NHPA).

Once the agency has identified historic properties, it then determines whether its proposed activity could affect the properties in any way. The agency consults with the SHPO to decide this and takes into account the views of any interested persons.

The agency's judgement about whether there could be an effect is found in the Council's regulations. The agency official having jurisdiction and the SHPO apply the criteria of effect to determine if the undertaking would affect characteristics qualifying historic properties for inclusion in the National Register.

"An undertaking has an adverse effect on historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to features of a property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered."

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"An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity if the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

- (1) Physical destruction, damage, or alteration of all or part of the property;
- (2) Isolation of the property from or alteration of the character if the property's setting when that character contributes to the property's qualification for the National Register.
- (3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- (4) Neglect of a property resulting in its deterioration or destruction; and
- (5) Transfer, lease, or sale of the property"

a. HO-207, Westwood Methodist Episcopal Church

The proposed build alternatives would not require right-of-way from the National Register Eligible Westwood M.E. Church (HO-207) which was converted to a residence and business during an extensive renovation some years ago. It is located in the northwest quadrant of MD 32 and Triadelphia Road. MD 32, in the vicinity of the former church, is depressed below grade. The right-of-way line, the western boundary of the church property, is located at the top of the cut line generally where the roadway is below grade. A heavy stand of trees and vegetation is located along this boundary.

The proposed build alternatives call for widening of MD 32 west of the existing roadway. Therefore neither the property nor the tree stand would be impacted. The tree stand would continue to provide a visual buffer between the roadway and the historic property. The south side of the structure is adjacent to Triadelphia Road. The southwest view from the former church included the Triadelphia Road bridge over MD 32. The widening of MD 32 at this location would continue to be below the view shed from the former church. In summary, the building is well isolated from the proposed alternatives by extensive vegetation and differing elevations.

The SHPO, in the October 14, 1998 letter, stated the Build Alternatives would have no effect on the Westwood M.E. Church.

b. HO 6-45, Milton Shipley Farm Corner

None of the proposed build alternatives would have an adverse impact of the historic structure. The structure is primarily significant for its form as an oval metal agricultural out building likely to originating in the middle decades of the twentieth century. Given its significance as a type of structure, the encroachment along the frontage of the parcel on which it is located would not introduce elements out of keeping with those characteristics qualifying it as eligible for listing in the National Register of Historic

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Places. It is located within a cluster of farm buildings which are in turn buffered by woods and thick vegetation from the mainline widening and the construction of an access road along the rear of the property. There would be no property taken from the historic site boundary, which is just outside of the footprint of the small, ovoid corrugated metal corncrib.

The SHPO, in their October 14, 1998 letter (see Chapter V) stated that the Build Alternatives would have no adverse effect on the corncrib. The SHPO has recommended that SHA seek ways to maintain as much of the landscaping buffer as possibly in the vicinity of the corncrib. During the final engineering phase of this project, SHA would explore ways to minimize impact to existing vegetation in the vicinity of the corncrib.

2. Archaeological Resources

Identification of archeological resources was completed in accordance with the requirements of 36CFR800.4 for each alternative under consideration.

No potentially eligible archeological resources would be impacted by the build alternatives.

In correspondence from the MHT – State Historic Preservation Officer, dated October 14, 1998, it was agreed that Phase II investigations would be warranted to conclusively evaluate site 18HO232 eligibility for the National Register of Historic Places. Because this site is located immediately west of the proposed construction limits for this undertaking, temporary fencing to protect this site during construction is recommended.

3. Conclusion

The Federal Highway Administration (FHWA) and the SHPO have consulted regarding the potential for the MD 32 project to affect cultural resources as required by the regulations promulgated by the Advisory Council on Historic Preservation (ACHP) [36CFR800.5(d)]. None of the three properties identified in the Area of Potential Effect (HO-207 Westwood Methodist Episcopal Church, HO 6-45 Milton Shipley Farm Corncrib, or archeological site 18HO232) would incur direct construction impact, and would not be adversely affected. The FHWA and SHPO have determined that this project would have no adverse effect on historic properties, with the following considerations: SHA would seek ways to maintain as much of the landscaping buffer as possibly in the vicinity of the Milton Shipley Farm Corncrib, and would evaluate the archeological site 18HO232 to determine its eligibility for inclusion in the National Register should the site incur construction impacts, based on further engineering refinement of the alternatives. If impacted, further study will be completed at the archeological site to record the important information that may contribute to site's significance. Data recovery plans will be developed in consultation with the SHPO and will be included with any documentation developed for the project.

As required, SHA will provide a letter plus supporting documentation to the Advisory Council on Historic Places (ACHP) advising it of the no adverse effect determination.

D. Farmlands

Active farmland would be impacted by the build alternatives. Based on the proposed alignments of the alternatives, no farming operations would be put out of business. A summary of farmland and soil impacts are presented in Table IV-5.

In accordance with the Farmland Protection Policy Act (FPPA), a Farmland Conversion Impact Rating form has been completed for this project and submitted for evaluation by the Howard County Natural Resources Conservation Service (NRCS) office to assess FPPA compliance. According to the FPPA, The USDA recommends that alternatives scoring more than 160 points be given higher levels of consideration for protection. The Build Alternatives I and II received scores of 94 points for Relative Value of Farmland to be Converted and 64 points for Total Site Assessment, for a total of 158 points. A copy of the completed rating form along with the rationale used for evaluation of the site assessment criteria is included in Appendix C.

Because of their widespread occurrence throughout the project corridor, both build alternatives would disturb and/or remove prime farm soils and soils of statewide importance within the project limits. A summary of potential affected acreage for each alternative and these two categories of soils is provided in Table IV-6. However, these figures likely overstate the actual acreage of these soils to be affected, since the extent of farming has changed, since the soil survey was conducted in 1968. Thus, the expected impacts to remaining prime farm soils and statewide important soils are generally not substantial in terms of secondary effects to farming practices. Also, many of the soils of statewide significance to be disturbed are located adjacent to the existing MD 32, and are not amenable to major farming activities.

Table IV-5: Farmland Impact Summary

Impacted Farmland and Farmland Soils	No-Build Alternative	Build Alternative I	Build Alternative II
Direct Impact to Farmland	0	22.8 acres	20.5 acres
Indirect Impact to Farmland	0	0.8 acre	0.8 acre
Number of Parcels Directly Impacted	0	19	19
Number of Parcels Indirectly Impacted	0	2	2

Note: The Build Alternatives with the Wellworth Way Access option would not result in additional impacts to farmland.

E. Geology, Topography, and Soils

The build alternatives would not substantially change the existing topographic conditions along the MD 32 corridor. For the most part, the grades of the build alternatives would follow the existing grades except at the proposed new interchanges and overpasses. Here, the difference in elevation between the MD 32 mainline surface and the surface of the overpasses would average 22 feet. Exit and entrance ramps, as well as proposed access roads for new interchanges would result in an increase in grade at these locations. Some lowering of the existing grade would occur at selected locations, but the overall impact of cutting and filling for either build alternative would be minimal on topographic and geologic features. There are no known unusual or especially valuable geologic resources within the project limits, nor are there areas that would be important sites for mining activities. The changes in grades resulting from the project would not substantially affect drainage patterns or climatic conditions.

The No-Build Alternative would have no direct effect on existing geological, topographical or soil features. Relative to the build alternatives, Build Alternative II would result in a greater amount of grade alterations than Build Alternative I due to the addition of an interchange with overpass and access lanes at the Nixon's Farm Lane location.

Other soils which would be disturbed through either excavation, filling, or paving would be types comprised of either of the Glenelg-Chester-Manor Soil Association or the Glenelg-Manor-Chester Soil Association. The extent of disturbance is shown in Table IV-6.

Implementation of either build alternative would result in some erosion and sedimentation during construction, and the removal of vegetation would expose soils and increase the probability of runoff. However, Best Management Practices would be installed during construction to minimize such consequences. Best Management Practices may include installation of vegetated median strips and infiltration basins, silt fencing, and other techniques outlined in the stormwater management manuals of MDE and Howard County. The No-Build Alternative would have no direct effect on soils in the area.

**Table IV-6: Impacts To Prime Farmland Soils,
State-Wide Important Soils and Soil Associations**

Soils	No-Build Alternative	Build Alternative I ¹	Build Alternative II ²
Prime Farmland Soil	0	155.0 acres	152.9 acres
Soils of Statewide Importance	0	52.9 acres	49.0 acres
Glenelg-Chester-Manor Association	0	91.6 acres	91.6 acres
Glenelg-Manor-Chester Association	0	157.8 acres	150.7 acres

1 Build Alternative I with the Wellworth Way Access option would result in additional impacts to Prime Farmland and Glenelg-Manor-Chester Association soils.

2 Build Alternative II with the Wellworth Way Access option would result in additional impacts to Prime Farmland soils and less impacts to Statewide Important and Glenelg-Manor Chester Association soils.

F. Surface Water Resources

Each of the build alternatives would cause direct surface water impacts from bridging, culverting, and relocation of streams. All streams within the study area are contributors to the Middle Patuxent River watershed, including the mainstem and the Benson Branch, Clydes Branch, and Terrapin Branch tributary systems.

During construction, streams would temporarily be subject to increased soil erosion and sedimentation, as a result of earthmoving. A Soil Erosion and Sedimentation Control Plan, approved by the Howard County Natural Resource Conservation District, would be implemented to reduce possible effects. Effects may also include the loss of stream bottom, loss of stream length, and changes in water velocity.

The following effects to streams are typically experienced from projects that cross or encroach on stream channels and will likely result from the MD 32 build alternatives. However, the magnitude of such impacts will likely be reduced by state-of-the-art designs of culverts, bridges, and restoration efforts. Stream crossings have the potential to cause a constriction of flow at each location. This constriction may cause an increase in velocity, potentially causing stream erosion, leading to scour holes and bank instability. Bridging of streams would result in minimal stream resource impacts (bridging impacts are predominantly temporary in nature). Permanent bridging impacts would result if footings are placed in regulated waters. Culverting of streams would cause the loss of stream bottom habitat, and reduced water quality effects associated with loss of daylight. Changes in velocity would occur with the straightening of channels, resulting in potential acceleration of erosion and sedimentation. Relocation of streams would produce temporary degradation of stream habitats and water quality. However, when successfully completed, stream relocations can avoid permanent habitat and water quality impacts that would otherwise occur. The introduction of additional impervious roadway surface to the study area may increase pollutant run-off loads, thereby adversely affecting water quality.

Removal of trees and shrubs along stream banks has the potential to increase water temperature of the nearby streams during periods of low flow. Increases in water temperature can result in a degradation of the macro-invertebrate and fish populations. In addition, stream riffle areas are important habitat for fish species such as darters, sculpins, and trout. Loss of stream riffles may impact macro-invertebrate and fish populations.

Stream crossings are defined when streams intersect the impact study area in an approximately perpendicular alignment. Stream encroachments are defined when streams intersect the impact study area in an approximately parallel alignment. Type and size of stream encroachments (culverts and/or relocations) will be determined in later phases of this project. Table IV-7 provides figures for the linear footage of stream impacts within the impact study area, the number of potential stream crossings, and the number of stream encroachments (encroachments should result in either stream culverts or relocation).

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The amount of stream impacts will be determined more definitively during the final design phase of the project. An assessment of preliminary impacts was conducted based on encroachment to stream channels within the projected limits of disturbance. This assessment evaluated impacts in accordance with jurisdictional criteria for streams issued by the Baltimore District, U.S. Army Corps of Engineers in their Guidance Letter 95-01 dated October 17, 1994. Stream channels mapped on the project plans were compared with maps from the USGS, US Soil Conservation Service Soil survey maps and Howard County topographic maps. Channels which did not appear on any of these latter maps were evaluated in the field for jurisdictional indicators. Channels which did not meet the criteria were eliminated from further analysis as being ephemeral in nature or ditches, both of which are not regulated under the Clean Water Act. A formal field review to obtain jurisdictional agreement from the Corps on all regulated channels in this project area is currently underway.

The total amount of channel disturbance due either to crossing by the new road or lateral encroachment on the banks will be approximately 8,940 linear feet for Build Alternative I and 8,360 linear feet for Build Alternative II. This includes nearly 1,865 linear feet of channels that presently flow through culverts or bridges in crossing MD 32, which are likely to need replacing or upgrading. When this is considered, the net amount of new stream impact will be approximately 7,075 linear feet for Build Alternative I, and 6,495 linear feet for Build Alternative II. These impacts represent 28 different stream channels, with most being a few hundred feet per channel. However, a significant portion will occur to Terrapin Branch (1,480 linear feet to main stem) and the unnamed tributary to the Middle Patuxent (1,200 linear feet) at the Rosemary Lane interchange.

With or without construction of this highway project, stream bank erosion, channel downcutting and bed material deposition are likely to continue as streams such as Terrapin Branch and tributaries to the Middle Patuxent seek to regain equilibrium. Permit requirements under the Clean Water Act for stream disturbances from this project will likely require mitigation. There are numerous opportunities for conducting restoration efforts along many portions of Terrapin Branch within the project area, as well as the unnamed tributary to Middle Patuxent. Bank erosion and aggradation are particularly evident in the reaches north of the Nixon Farm lane crossing. Several of the meander bends on the unnamed tributary exhibit similar problems, as do portions of the Middle Patuxent. Detailed studies would be conducted during later stages of this project to select specific stream reaches and to design restoration and remediation options using bioengineering techniques. In some reaches of Terrapin Branch the channel is currently beginning to adjust toward a more stable geometry by forming a Class "C" channel inside the existing less stable "F" channel. Restoration efforts could accelerate this process, as well as modifying the meander geometry in selected reaches of the stream. There are many possible bank stabilization techniques that might be applied to eroded sections, and the use of particular options will be determined during the design phase of the project.

Table IV-7: Potential Stream Impacts

Stream Impact	Build Alternative I	Build Alternative II
Linear footage within Study Area	8,940 linear feet	8,360 linear feet
Crossings (perpendicular)	20	20
Encroachments (parallel)	7	7

The most concentrated area of stream encroachments and crossings is in the northern portion of the study area within the Middle Patuxent River, Terrapin Branch tributary system. All streams and rivers within the study area are classified as Use I-P, indicating that the streams do not qualify as Use III or Use IV trout habitat.

Increases in sediment discharges from erosion areas and solids from highway runoff can affect downstream biologically sensitive areas, resulting in a change in macro-invertebrate composition. The degree of water quality impacts from roads is related to the amount of impervious surface (and consequently the oils, grease, and road salt washing from the roadway). Impervious surfaces may also raise runoff water temperature that can degrade stream biota. In general, the effects of temperature and pollutant impacts are greatest in the headwaters of a stream, where the drainage area is small compared to the road surface area. The increased discharge of pollutants and raised water temperature from runoff can be controlled through the use of stormwater management practices. Highway runoff may contain an array of pollutants. Some pollutants, such as solids, heavy metals, and organics from fuel and motor oils are related to traffic volume. Other pollutants, such as herbicides and nutrients, are found in highway runoff mainly as a result of highway maintenance activities and adjacent land use contributions. Table IV-8 lists mean pollutant concentrations in highway runoff. All of these pollutants have the potential to be introduced to receiving streams during rain events. Stormwater basins or special construction materials that promote infiltration are very effective in controlling runoff temperature and providing a high level of pollutant removal.

Table IV-8: Mean Pollutant Concentrations in Highway Runoff from Urban and Rural Highways

Pollutant	Mean Pollutant Concentration (mg/L) for Urban Highways (ADT > 30,000)	Mean Pollutant Concentration (mg/L) for Rural Highways (ADT < 30,000)
Total Suspended Solids	142	41
Volatile Suspended Solids	39	12
Total Organic Carbon	25	8
Chemical Oxygen Demand	114	49
Nitrite + Nitrate	0.76	0.57
Total Kjeldahl Nitrogen	1.83	0.87
Phosphorus	0.40	0.16
Total Copper	0.054	0.022
Total Lead	0.40	0.080
Total Zinc	0.329	0.08

Source: Driscoll et al., 1990

G. Groundwater Resources

Potential groundwater impacts from the project could conceivably include adverse effects upon groundwater recharge, availability (well yield), and water quality. However, it is unlikely, based on the activities proposed for this project, that any of the build alternatives would pose any substantial threat to groundwater resources. Following is a discussion of groundwater values and potential concerns for roadway design and construction. The primary source of recharge for most aquifers is infiltration of precipitation. In general, construction activities may affect this process by reducing the area available for infiltration and/or increasing run-off by converting porous soils to impermeable road surface. However, construction of this project would have virtually no effect on the recharge of groundwater, because the proposed additional impervious area would be so small in comparison to the total watershed area contributing to recharge.

The well yield, defined as the maximum pumping rate a well can sustain, can be affected by road grading. A road cut that extends below the elevation of the water table could potentially cause the diversion of groundwater flow to surface run-off, and away from water supply wells. A comparison of the proposed road inverts to the current topography suggests that there are several places where road cuts in excess of 5 feet would be made. This would be safe in most parts, however based on records and visual inspection of the site, some of the homes with private wells within 2,000 feet of the road could potentially be affected. In the event issues are raised regarding uncertainties about the effects of the construction on a well, geotechnical and

hydrogeologic studies would be performed to quantify those effects before the construction phase of the project and remedial measures would be evaluated.

Groundwater quality can be impaired by contaminants in run-off from roadways. Pollutants can be channeled to groundwater by the same mechanisms that result in recharge. Should a build alternative be selected, stormwater management plans would be developed. The potential impacts to groundwater resources as discussed above would be similar for Build Alternatives I and II.

H. Floodplains

The 100-year floodplains within the impact study area were delineated using the Federal Emergency Management Administration (FEMA) floodplain mapping. Streams documented with FEMA mapping include Clydes Branch and the Middle Patuxent River. A technical hydrology and hydraulics engineering analysis of the actual floodplains within the impact study area would be conducted, as more detailed design data becomes available. Approximately 10.79 acres of the Clydes Branch floodplain occur within the impact study area. Approximately 3.28 acres of the Middle Patuxent River floodplain are within the impact study area. Table IV-9 represents the potential floodplain impacts within the study area:

Table IV-9: Potential Floodplain Impacts

Alternative	FEMA Floodplain Impacts
No-Build Alternative	0.0 (0.0)
Build Alternative I	612,734 square feet (14.07 acres)
Build Alternative II	612,896 square feet (14.07 acres)

Potential impacts to FEMA floodplains would be least with the No-Build Alternative (zero acres of floodplain impact). Of the Build Alternatives I and II, the FEMA floodplain impacts are almost identical (± 162 square feet of the Middle Patuxent River floodplain). The significance of the encroachment on floodplains was evaluated with respect to the criteria in Executive Order 11988-*Floodplain Management*, and with regard to the provisions in the Federal Aid Highway Program Manual (FHPM), which recommends that longitudinal encroachment be avoided whenever possible.

Transverse crossings are considered to have a significant effect on floodplain values if one of the following impacts is involved:

- A significant effect on the natural and beneficial floodplain values in the area. Floodplain values are defined by FHPM to include natural moderation of floods, groundwater recharge, maintenance of water quality, fish and plant maintenance. The

effects on natural moderation of floods and groundwater recharge have to do with the aerial extent of the crossing, and the volume of roadway fill in the floodplain. Floodplain overbanks provide for storage of flood discharges. A reduction in this storage capacity results in increased downstream discharges. Similarly, an increase in the storage capacity as a result of construction would lower downstream discharges. In either case, the effects of the change could cause an upset of the downstream ecosystem with far reaching consequences.

- The highway improvement project will increase the acreage of impervious road surfaces, which will decrease slightly the change in the floodplain capacity from cut and fills associated with the Clydes Branch and Middle Patuxent River floodplain crossings. However, this change in capacity would not be a significant impact to the watersheds or the total storage capacity of the floodplains associated with the streams in the project area.
- An increased risk associated with flooding, such as property loss or threat to human life: The filling in or increasing the capacity of a floodplain must be done with a thorough understanding of the hydrology of the system to insure against flood risk. This is achieved by conducting a detailed and thorough hydrologic study of the floodplain to identify the extent of filling to be conducted and to determine the impact of the loss of conveyance and/or storage capacity and their effects on the flood flows. Flooding can also cause damage to existing road crossings, and residential and commercial properties.
- Areas along the proposed alternatives where the construction of road crossings could impact floodplains, and subsequently adjacent properties and/or facilities, would be evaluated during a later design stage of this project to determine the actual magnitude of impacts, if any. The effects of construction may result in reduced and/or increased downstream discharges.
- A significant potential for the interruption or termination of a community's sole evacuation route. Due to the high level of development and the geographic setting of the region, there is no sole evacuation route. Therefore, this item is not relevant to the MD 32 Planning Study project.

In designing stream crossings, all possible measures would be included to reduce or mitigate the impact of flooding. Generally, the construction of stream crossings tends to increase the risks of upstream flooding and flood elevations; reduce flood conveyance of the stream; and increase downstream discharge. In order to mitigate these problems, standard engineering practices use design/construction techniques to limit the change in flood elevation, and estimate downstream flood discharge. Some of these techniques include increasing the span and/or height of the structures, thereby providing a larger area for the flow, decreasing the length, and enhancing the hydraulic characteristics of the entrance.

With the exception of proposed impacts to the Terrapin Branch tributary system, all other stream crossings are extensions of existing crossings. The hydraulic characteristics of waterways with existing crossings have already been impacted. All proposed crossing designs would focus on minimizing encroachment to the floodplain, and should provide for hydraulic characteristics that are compatible with the existing structure.

I. Wetlands

1. Wetland Impacts

Several wetland areas are located within the study area. Potential wetland impacts were calculated based on the total area of wetland within the limit of disturbance. All wetland impacts would occur within palustrine nontidal areas. Approximate wetland acreage impacted by the project alternatives is provided in Table IV-10.

Table IV-10: Potential Wetland Impacts

Wetland	Acreage	Acreage of Potential Wetland Impact		
		No-Build	Build Alternative I	Build Alternative II
A	0.04	0.00	0.04	0.04
C	0.15	0.00	0.02	0.03
D/E	0.27	0.00	0.23	0.03
F	0.60	0.00	0.01	0.01
I	0.04	0.00	0.14	0.14
K	0.09	0.00	0.09	0.09
M	0.29	0.00	0.27	0.27
N	0.10	0.00	0.10	0.10
O	0.08	0.00	0.08	0.08
P	0.03	0.00	0.01	0.01
Q	0.13	0.00	0.01	0.01
R	0.02	0.00	0.02	0.02
T	0.14	0.00	0.05	0.05
U	0.28	0.00	0.04	0.04
W	3.54	0.00	0.86	0.86
BB	0.03	0.00	0.03	0.03
GG	0.01	0.00	0.01	0.01
JJ	0.01	0.00	0.01	0.01
JJ1	0.002	0.00	0.002	0.002
MM	0.3	0.00	0.13	0.13
QQ	0.10	0.00	0.10	0.10
RR	0.88	0.00	0.55	0.16
SS	0.12	0.00	0.12	0.01
TT	1.23	0.00	0.61	0.00
UU	0.01	0.00	0.01	0.01
Total	8.49	0.00	3.54	2.24

Notes: The following wetlands are not impacted by the No-Build, Build Alternative I or Build Alternative II options: B, H, J, L, S, V, X, Y, Z, AA, CC, DD, EE, FF, HA, HH, II, KK, LL, NN, OO, PP.
The Wellworth Way access option would result in no additional wetland impacts.

The No-Build Alternative requires the least wetland impacts (0.0 acre). Of the build alternatives, Build Alternative II would result in the least wetland disturbance (approximately 2.24 acres). Build Alternative I would result in approximately 3.54 acres of impact to nontidal wetlands.

2. Section 404 Clean Water Act - Impact Avoidance and Minimization Measures

Avoiding and minimizing impacts to federally protected resources and wetlands under the federal Clean Water Act (CWA) could be accomplished by alignment shifts, bridging, retaining walls, or other design options. Avoidance and minimization of wetland impacts would be further evaluated during final design.

Wetland W (see Figure III-10 and Appendix A, Sheet 1) is located west of existing MD 32 just north of the MD 108 interchange. The proposed build alternative impacts 0.86 acre of this 3.54-acre wetland. This wetland could not be avoided by either of the build alternatives because it is located immediately adjacent to the existing roadway. Widening to the east side of MD 32 would require reconstruction of existing MD 32 and a portion of the previously improved MD 108 interchange. Direct impacts have been minimized through the use of 2:1 slopes.

Wetlands T and U (see Figure III-10 and Appendix A, Sheet 1) are located west of existing MD 32 and east of Adams Reach. The proposed build alternatives impact 0.05 and 0.04 acre of these 0.14-acre and 0.28-acre wetlands, respectively. Impacts to these wetlands could not be avoided by either build alternative because widening to the east side of MD 32 would require reconstruction of 2,300' of existing MD 32 and would impact Broadwater Lane. Due to the size of the wetlands and the flat topography at this location, the use of 2:1 slopes would have minimal effect.

Wetland R (see Figure III-10 and Appendix A, Sheet 2) is located on the west side of MD 32, north of Linden Church Road. The proposed build alternatives completely impact this 0.02-acre wetland. Impacts to this wetland could not be avoided or minimized. Widening to the east side of MD 32 would require reconstruction of 2,300' of existing MD 32 and would require additional right-of-way from residential and agricultural preservation properties.

Wetland Q (see Figure III-10 and Appendix A, Sheet 2) is located on the west side of MD 32, south of the Dayton Shop. The proposed build alternatives impact 0.01 acre of this 0.13-acre wetland. Widening to the east side of MD 32 would avoid impacts to this wetland; however, it would require reconstruction of 2,300' of existing MD 32, additional right-of-way from agricultural preservation property and impacts to Wetland AA.

Wetland P (see Figure III-10 and Appendix A, Sheet 2) is located on the west side of MD 32, south of the Dayton Shop. The proposed build alternatives impact 0.01 acre of this 0.03-acre wetland. Widening to the east side of MD 32 would avoid impacts to this wetland; however, it would require reconstruction of 2,300' of existing MD 32 and would require additional right-of-way from agricultural preservation property.

Wetland O (see Figure III-10 and Appendix A, Sheet 2) is located on the west side of MD 32, south of the Dayton Shop. The MD 32 mainline and the proposed Dayton Shop interchange completely impacts this 0.08-acre wetland. Impacts to this wetland could not be avoided or minimized because the location of this interchange was constrained by the residential properties on the west side of the interchange, the agricultural preservation property in the southeast quadrant, and the location and geometric constraints on the Dayton Shop site.

Wetland N (see Figure III-10 and Appendix A, Sheet 2) is located on the west side of MD 32, across from the Dayton Shop. The proposed build alternatives completely impact this 0.10-acre wetland. Impacts to this wetland could not be avoided or minimized. Widening on the east side of MD 32 would impact the Agricultural Land Preservation Property south of the Dayton Shop and would require modifications to the site layout and roadway circulation of the Dayton Shop facilities.

Wetland BB (see Figure III-10 and Appendix A, Sheet 2) is located on the east side of MD 32, at the Dayton Shop. The proposed build alternatives completely impact this 0.03-acre wetland. Impacts to this wetland could not be avoided or minimized because of the location and geometric constraints on the Dayton Shop site and because of the proximity of the residential properties on the west side of the MD 32.

Wetland M (see Figure III-10 and Appendix A, Sheet 3) is located on the west side of existing MD 32, south of Triadelphia Road. The proposed build alternatives impact 0.27 acre of this 0.29-acre wetland. Impacts to this wetland could not be avoided. Widening to the east side of MD 32 would avoid impacts to this wetland; however, it would require reconstruction of 2,300' of existing MD 32, additional right-of-way from residential property, reconstruction of the Triadelphia Road bridge, and it would impact the National Register Eligible (NRE) Westwood M.E. Church.

Within the Burntwoods Road Interchange Option 2, 2:1 slopes were used to avoid impacts to Wetlands EE and L. The northbound acceleration lane would impact Wetland GG.

Wetland EE (see Figure III-10 and Appendix A, Sheet 3) is located on the east side of MD 32, across from Burntwoods Road. This 0.58-acre wetland is not affected by the build alternatives because 2:1 slopes were used along Burntwoods Road and the adjacent driveway to avoid impacting it.

Wetland L (see Figure III-10 and Appendix A, Sheet 3) is located on the west side of MD 32, north of Burntwoods Road. This 0.68-acre wetland is not affected by the build alternatives because the alignment of Pfefferkorn Road was designed to avoid impacting it.

Wetland GG (see Figure III-10 and Appendix A, Sheet 3) is located on the east side of existing MD 32, north of Pfefferkorn Road. The proposed build alternatives completely impact this 0.01-acre wetland. Impacts to this wetland could not be avoided because of its proximity to the existing MD 32.

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Wetland K (see Figure III-10 and Appendix A, Sheet 4) is located on the west side of existing MD 32, south of River Valley Chase. The proposed build alternatives completely impact this 0.09-acre wetland. Impacts to this wetland could not be avoided. Widening to the east side of MD 32 would avoid impacts to this wetland; however, it would require additional right-of-way from residential property. In addition, the existing alignment of MD 32 was adjusted to the west side in order to meet current design standards for the section of roadway north of River Valley Chase.

Wetland I (see Figure III-10 and Appendix A, Sheet 4) is located on the west side of existing MD 32, north of River Valley Chase. The proposed build alternative would completely impact this 0.14-acre wetland. Impacts to this wetland could not be avoided because it is located adjacent to existing MD 32. Widening to the east side of MD 32 and modifying the alignment of the Rosemary Lane interchange would avoid impacts to this wetland; however, it would require additional right-of-way from residential property and could require a residential displacement. In addition, the geometric layout of the Rosemary Lane Interchange was developed to minimize impacts to the floodplains and the stream that pass through the interchange.

Wetland QQ (see Figure III-10 and Appendix A, Sheet 4) is located on the east side of existing MD 32, south of Rosemary Lane. The proposed build alternatives completely impact this 0.10-acre wetland. Impacts to this wetland could not be avoided. Realigning the Rosemary Lane interchange would avoid impacts to this wetland; however, the interchange is situated between residential properties (Kings Grant and Fox Valley Chase) and the Middle Patuxent River. Modifying the alternatives would have additional impacts to the surrounding environmental features.

Wetland JJ and JJ1 (see Figure III-10 and Appendix A, Sheet 4) are located on the east side of existing MD 32, north of Rosemary Lane. The proposed build alternatives completely impact these 0.01-acre and 0.002-acre wetlands. Impacts to these wetlands could not be avoided because they are located in the ditch adjacent to MD 32. Realigning the Rosemary Lane interchange would avoid impacts to these wetlands; however, the interchange is situated between residential properties (Kings Grant and Fox Valley Chase) and the Middle Patuxent River.

Wetland H (see Figure III-10 and Appendix A, Sheet 4) is located on the west side of existing MD 32, north of Rosemary Lane. A reduced clear zone and 2:1 slopes were used to minimize impacts to this 0.55-acre wetland.

Wetland F (see Figure III-10 and Appendix A, Sheet 4) is located on the west side of existing MD 32, north of Rosemary Lane. A reduced clear zone and 2:1 slopes were used to minimize impacts to this 0.6-acre wetland.

Wetland C (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the west side of existing MD 32, north of Nixon's Farm Lane. Proposed Build Alternative I impacts 0.02 acre of this 0.15-acre wetland. Build Alternative II impacts 0.03 acre of Wetland C. Relocating Access

Road 1 could minimize impacts to this wetland; however, this would result in additional impacts to Wetlands TT and RR.

Wetland D/E (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the west side of existing MD 32, south of Nixon's Farm Lane. Proposed Build Alternative I impacts 0.23 acre of this 0.27-acre wetland. Relocating Nixon's Farm Lane to the north would reduce impacts to this wetland; however, it would further impact Wetlands RR, TT, and C. Relocating Nixon's Farm Lane to the south would severely impact the Terrapin Branch. Build Alternative II impacts 0.03 acre of Wetland D/E. This impact could be avoided by widening MD 32 on the east side of the existing roadway; however, that would require additional residential property, and it would severely impact a steep slope and wooded area.

Wetland RR (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the west side of existing MD 32, north of Nixon's Farm Lane. The proposed Build Alternative I impacts 0.55 acre of this 0.88-acre wetland. Build Alternative II impacts 0.16 acre of Wetland RR. Impacts to this wetland could not be avoided because access had to be provided to the dispersed properties along MD 32. Impacts could have been minimized to this wetland by realigning Access Road 1; however, this would have resulted in additional impacts to Wetlands TT and C.

Wetland SS (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the west side of existing MD 32, south of Nixon's Farm Lane. The proposed Build Alternative I completely impacts this 0.12-acre wetland because it is immediately adjacent to Nixon's Farm Lane. Relocating Nixon's Farm Lane to the north would avoid impacts to this wetland; however, it would further impact Wetlands RR, TT, and C. Relocating Nixon's Farm Lane to the south would severely impact the Terrapin Branch. Relocating the West Frontage to the west would also avoid impacts to the wetland; however, it would require additional residential property. Build Alternative II impacts 0.01 acre of Wetland SS. These wetland impacts could not be avoided without further encroachment on the Terrapin Branch or causing substantial encroachment on additional residential property.

Wetland TT (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the west side of existing MD 32, north of Nixon's Farm Lane. The proposed Build Alternative I impacts 0.61 acre of this 1.23-acres wetland. Impacts to this wetland were minimized by designing Access Road 1 parallel to MD 32 and Nixon's Farm Lane and by using small radii for the curves. This wetland cannot be avoided because access must be provided to the dispersed properties along MD 32. The proposed Build Alternative II does not impact this wetland.

Wetland A (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the west side of existing MD 32, south of MD 144. The proposed build alternative completely impacts this 0.04-acre wetland. Impacts to this wetland could not be avoided because of its proximity to MD 144. Relocating MD 144 to the north would avoid impacts to this wetland; however, it would require impacts to commercial property in the northeast and northwest quadrants of the interchange.

Wetland UU (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the east side of existing MD 32, south of MD 144. The proposed build alternatives completely impact this 0.01-acre wetland. Impacts to this wetland could not be avoided because of its proximity to MD 144. Relocating MD 144 to the north would avoid impacts to this wetland; however, it would require impacts to commercial property in the northeast and northwest quadrants of the interchange.

Wetland B (see Figure III-10 and Appendix A, Sheet 5/5A) is located on the west side of existing MD 32, south of MD 144. The proposed build alternatives do not impact this 0.16-acre wetland because the ramps in the MD 144 interchange were designed to avoid it.

Wetland MM (see Figure III-10 and Appendix A, Sheet 5/5A) is located in the southwest quadrant of the I-70/MD 32 interchange. The proposed build alternative impacts 0.13 acre of this 0.30-acre wetland. This interchange layout was designed to accommodate the heavy traffic movements. Impacts to Wetland MM could not be avoided because the loop ramp must be located in this quadrant and it must meet a minimum design speed of 25 mph.

3. Section 404 Clean Water Act - Mitigation Measures

Mitigation planning for unavoidable wetland impacts would follow the sequencing guidelines of the *Maryland Compensatory Mitigation Guidance* (1994). After avoidance and minimization alternatives have been fully designed, the characteristics of the impacted wetlands (functions/values and areas) would be considered in the development of the goals of the mitigation plan. Currently available, preliminary design information indicates that wetland losses would equal or exceed 2.24 acres; therefore, wetland mitigation would be required. However, mitigation requirements under Section 404 are not directly related to severity of impacts, but only to some ratio of wetland acres replaced to wetland acres lost. The exact ratio for this and all projects is determined by the U.S. Army Corps of Engineers, but typical ratios for palustrine forested wetlands have been 2:1 and for palustrine shrub/scrub wetlands and palustrine emergent wetlands have been 1:1. These replacement ratios applied to the proposed build alternatives would result in the mitigation acreage requirements as shown in Table IV-11.

Table IV-11: Wetland Mitigation Requirements

Wetland Type	Acres Impacted by Build Alternative I	Acres Impacted by Build Alternative II	Mitigation Requirements for Build Alternative I	Mitigation Requirements for Build Alternative II
Palustrine Forested	1.05 acres	1.05 acres	2.1 acres	2.1 acres
Palustrine shrub/scrub	0.16 acre	0.16 acre	0.16 acre	0.16 acre
Palustrine emergent	2.3 acres	1.0 acre	2.3 acres	1.0 acre

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The replacement wetlands must restore similar functions and values of the disturbed wetlands. For this project the only wetlands with a high score for function are Wetland F (0.1 acre disturbed) and Wetland W (0.86 acre disturbed), which is due to their relatively larger size compared to other impacted wetlands in the project area.

Based on the mitigation goals, combinations of mitigation options are available to this project (listed below in order of preference):

- "in-kind" on-site wetland creation/replacement,
- "in-kind" off-site wetland replacement,
- "out-of-kind" wetland enhancement, and/or
- "fee-in-lieu" mitigation compensation.

J. Vegetation and Wildlife

The No-Build Alternative would have no further effect on wildlife in the project area beyond what has already occurred due to development activities in the corridor.

Wildlife abundance and diversity in this region are primarily a function of the quantity, condition and interspersed of habitat components within not only the project corridor, but more importantly, the regional landscape. The change in land use over the past several decades in this part of Howard County with increased rural residential areas has caused corresponding changes in local wildlife abundance and species composition. This habitat conversion is likely to continue to have much more serious long-term consequences for wildlife than the loss of vegetated areas from this highway improvement project. Since this project is an upgrade of an existing roadway rather than a new alignment, impacts would primarily result from removing vegetation and habitat along a narrow strip of land adjacent to the present roadway, as well as more substantial earthmoving and habitat disruption at interchange locations. At interchanges, larger blocks of upland habitat would be removed, including forest, scrub-shrub, old field and pasture, as well as some wetlands and floodplains. The amount of forest habitat and agricultural land use (including cropped as well as pasture/field areas) to be disturbed for the build alternatives is shown in Table IV-12. These values were based on available land use maps for the region.

Perennial streams would be temporarily affected by siltation from runoff, especially near areas proposed for stream crossings and channel relocations. Time of year restrictions and other limitations would be complied with, in order to minimize aquatic impacts during construction. The increased amount of impervious road surface and resulting traffic would likely produce more runoff of pollutants typically associated with this type of highway project, including gasoline, oil, asbestos, de-icing chemicals and other compounds. These would run off into drainage ditches, road side slopes and overpasses and ultimately enter the streams within the project corridor. Some temporary degradation to local water quality and consequently aquatic organisms may occur during rain events. Installation of vegetated median strips and infiltration basins, for example, would reduce the impacts from runoff.

Habitat fragmentation or compartmentalization, especially in relation to large forested tracts is often a concern for transportation corridor projects because new roadways criss-cross habitat and form barriers to wildlife travel and needed resources. Because most of the landscape along the proposed project corridor consists of an extensive mosaic of open fields with hedgerows interspersed with wooded tracts and some scattered residential areas, fragmentation due to widening of the main road would be minor. However, at interchanges, especially Rosemary Lane, Nixon's Farm Lane and MD 144, local forest fragmentation and wildlife travel barriers would occur due to new access roads and ramps. Presently, terrestrial animals use the forest areas and woody hedgerows for cover as they disperse locally eastward and westward. When they encounter the present two-lane MD 32 a barrier of sorts is found, but crossing, while frequently hazardous, is often achievable for many species. Development of these interchanges would make this activity much more difficult because the overall barrier width would be substantially increased, and an increase in road-kills is likely to result, especially for smaller animals. The severity of such impacts cannot be quantified without extensive studies of existing and post-construction animal movement patterns. However, the increased barrier width and habitat fragmentation would cause larger animals, such as deer, as they encounter the outer edge of the initial interchange access road or ramp, to travel parallel to it until a suitable, narrower, crossing is found beyond the interchange area. This may be particularly problematic, however, for animals traveling eastward and westward between the northern edge of the I-70 interchange and the southern terminus of the Nixon's Farm Lane interchange. These proposed interchanges in combination with the existing I-70 interchange would create an almost continuous wider swath of disturbance to forest and other habitat, and hence, fewer suitable crossing areas for a length of approximately 9,000 linear feet along MD 32, compared to the present situation. SHA policy includes fencing along access controlled facilities. Fencing would protect animals from interference the potential hazards of roadway traffic.

Between the southern terminus of the Nixon's Farm Lane interchange and the northern portion of the Rosemary Lane interchange there would be relatively more suitable wildlife crossing areas for a length along MD 32 of about 2,000 linear feet, which includes the main wildlife corridor adjacent to the Middle Patuxent River. Nevertheless, the increased width of habitat disturbance from the additional lanes would make wildlife crossings more difficult here, as elsewhere along the mainline. The Rosemary Lane interchange itself would disturb or eliminate forest habitat on the north side of Rosemary Lane, which currently links the forest cover on the west side of MD 32 as a suitable wildlife corridor. Since it eliminates the Nixon's Farm Lane interchange, Build Alternative II would likely have less impact to habitat and wildlife corridors than Build Alternative I.

On the whole, while disturbances to wildlife corridors and increased crossing barriers would occur, the proposed improvements would be made to an existing roadway and adjacent areas at interchange locations, rather than from a new alignment through an undisturbed landscape. Some localized habitat fragmentation would occur at the interchange areas where several access roads and ramps are constructed, leaving small patches of vegetation between the main road and these access roads. Cutting off or blocking of travel access for terrestrial wildlife would not impact regional wildlife populations because, despite the increased difficulty many animals

would still cross successfully and many suitable crossing areas would remain. These habitat and wildlife consequences are expected to be typical in type and severity to those encountered on similar transportation projects. The loss and fragmentation of forest habitat may reduce some habitat for forest interior dwelling birds in the vicinity of interchanges, but relative to remaining habitat in the region it is not expected to be a major adverse impact. However, with the limited information available on abundance, distribution and movement patterns of local animals, specific quantification of wildlife impacts cannot be made.

None of the alternatives would affect known rare, threatened or endangered species.

Table IV-12: Potential Disturbance to Habitat (acres)

Habitat	Build Alternative I	Build Alternative II
Upland Forest	73.1 acres	71.5 acres
Upland Meadow	100.0 acres	94.5 acres
Lawn/Landscaped	34.1 acres	34.0 acres
Cropland	5.0 acres	5.0 acres
Wetlands	3.5 acres	2.2 acres

Note: Under Build Alternative I, Wellworth Way access would require an additional 1.1 acres of upland forest land, 2.0 acres of upland meadow and 0.7 acre less of lawn/landscaped, than the alternative without Wellworth Way access.
Under Build Alternative II, Wellworth Way access would require 3.2 acres less of upland forest and 1.9 acres less of upland meadow than the alternative without Wellworth Way access.

K. Air Quality

1. Objectives and Type of Analysis

This air quality analysis will serve as support documentation for the project and has been prepared in accordance with the US Environmental Protection Agency (EPA), Federal Highway Administration (FHWA), and Maryland State Highway Administration (SHA) guidelines.

The EPA's CAL3QHC dispersion model was used to predict CO concentrations for air quality sensitive receptors for the year of completion (2000) and the design year (2020). These detailed analyses predict air quality impacts from carbon monoxide vehicular emissions for both the no-build and build alternatives for each analysis year. Modeled one-hour and eight-hour average CO concentrations were added to background CO concentrations for comparison to the State and National Ambient Air Quality Standards (S/NAAQS).

The detailed analyses conducted for this study included predictions of carbon monoxide concentrations at forty (40) air quality receptors, listed in Table III-12 and on Figure III-11. These receptors were selected to represent the worst case conditions for air quality impacts associated with the MD 32 project.

2. Construction Impacts

The construction phase of the proposed project has the potential to impact the local ambient air quality by generating fugitive dust through activities such as demolition and materials handling. The State Highway Administration has addressed this possibility by establishing "Standard Specifications for Construction and Materials" which specifies procedures to be followed by contractors involved in site work.

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 the specifications to be consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures (Code of Maryland Regulations 10.18.06.03D) would be incorporated to minimize the impact of the proposed transportation improvements on the air quality of the area. Examples of these measures include:

- applying water or other appropriate liquids during demolition, land clearing, grading, and construction operations, such as maintenance of material stockpiles, to minimize fugitive dust
- covering open-body trucks, used for transporting materials, at all times when in motion and removing all excavated material promptly
- prohibiting delivery trucks of other equipment from idling during periods of unloading or other non-active use
- maintaining the existing number of traffic lanes, to maximum extent possible, and planning construction schedules in such a manner to reduce traffic congestion

3. Receptor Site Locations

Forty (40) air quality receptor sites were selected to model the area impacted by vehicles on the highway. Twenty-six (26) receptors represent single family residences, and one (1) receptor represents the Westwood M.E. Church (AQ-4). The other thirteen (13) receptors (AQ-28 through AQ-40) were placed at the right-of-way of the roadway. The locations of the air quality sensitive sites are described in Section III.J and are presented on Table III-12 and on Figure III-11.

4. Conformity with Regional Air Quality Planning

The MD 32 project is located in Howard County, Maryland, which is a severe nonattainment area for ozone, but is not a nonattainment area for carbon monoxide. Since the project is located in an ozone nonattainment area, conformity to the State Implementation Plan (SIP) is determined through a regional air quality analysis performed on the Transportation Improvement Plan (TIP) and transportation plan. This project conforms to the SIP as it originates from a conforming TIP and transportation plan.

5. Analysis Input

a. Traffic Data

The traffic data used for this air quality analysis included average daily traffic volumes (ADTs), a.m. and p.m. peak hour volumes, percent daily distributions (diurnal traffic curves), and peak and off-peak vehicle speeds.

Three signalized intersections were included in the study for the No-Build Alternative. The intersections analyzed are MD 32 at Ten Oaks Road, MD 32 at Burntwoods Road, and MD 32 at MD 144. The preliminary plans do not show signals at the interchange ramps for the build alternatives, because of the low traffic volumes, no signals were assumed.

b. Vehicular Emissions

Mobile source emission factors were obtained for use in the CO prediction models using the latest version of the (EPA) Mobile Source Emission Factors Model, MOBILE5b, released September 14, 1996. The emission rates of individual vehicles are influenced by factors such as ambient air temperature, engine temperature, operating mode, average speed, and maintenance. The average emission rate for a fleet of vehicles operating on a highway is further influenced by the composition of the fleet, vehicle type, and vehicle age.

Vehicle CO emission rates increase with decreasing ambient temperatures. An ambient temperature of 20°F was used to determine peak hour impacts, while an average temperature of 35°F was selected to represent the composite hours that together make up the eight-hour average impact. Engine operating temperature is included in the emission rate calculation as that fraction of vehicles operating in the cold or hot start modes. Federal Test Procedure (FTP) percentages were assumed. The FTP assumes 20.6 percent of vehicles are non-catalytic cold start vehicles, 27.3 percent are catalytic hot start vehicles, and 20.6 percent are catalytic cold start vehicles. Vehicle maintenance is factored into the emissions rate calculation as the rate of compliance with the Maryland Vehicle Emissions Inspection Program (VEIP). The vehicle fleet mix and age also influence the average fleet emission rates. The vehicle mix was determined from the traffic data and average regional vehicle ages were assumed.

c. Meteorological Factors

For direct comparison to the S/NAAQS, CO concentrations were estimated for worst-case one-hour and eight-hour periods. The meteorological conditions that would result in the maximum one-hour concentrations are (1) conditions of very light wind speeds (1.0 m/sec) and (2) very stable atmospheric conditions (Stability F). The wind direction that results in the maximum receptor concentration is dependent upon

roadway/receptor geometry. In general, for receptors near free flow links, wind angles nearly parallel to the roadway yield the highest CO concentrations. The highest CO concentration for receptors near signalized intersections can result from wind directions nearly parallel to the roadway, to wind directions nearly perpendicular to the roadway depending on the interaction of moving and idling vehicles.

The worst case one-hour average analyses conducted for this study were performed using the highest one-hour traffic volumes, Stability Class F, and a 1.0 m/sec. wind speed. Both a.m. and p.m. peaks were analyzed. The maximum one-hour CO impact was obtained for each air quality sensitive receptor by adding the background concentration to the one-hour CO receptor-specific concentration.

To estimate the maximum eight-hour average CO concentration, daily traffic distributions (diurnal curves) were used to breakdown the ADTs into hourly traffic volumes. Hourly time segments were analyzed to determine the receptor-specific CO concentrations. The worst consecutive eight hours were averaged and added to the background CO concentration to obtain the eight-hour average CO concentration.

d. CAL3QHC Analysis

The mathematical model used to estimate future air quality concentrations was the current version of the EPA's CAL3QHC dispersion model, released in June 1993. The CAL3QHC dispersion model is a microcomputer-based modeling methodology developed to predict the level of CO or other inert pollutant concentrations from motor vehicles traveling near roadway intersections. The CAL3QHC model is a consolidation of the CALINE3 line source dispersion model and an algorithm that internally estimates the length of the queues formed by idling vehicles at signalized intersections. Based on the assumption that vehicles at an intersection are either in motion or in an idling state, the program is designed to predict air pollution concentrations by combining the emissions from both moving and idling vehicles. By including emissions from idling vehicles, CAL3QHC represents a more reliable tool than CALINE3 alone for predicting CO concentrations near signalized intersections where idling vehicles interact with moving vehicles in complex configurations. Predictions of free flow traffic volumes using either CALINE3 or CAL3QHC would yield equivalent results.

The CAL3QHC program requires the roadways to be broken down into segments known as links. Links can be either free flow links (for vehicles moving at a constant velocity) or queue links (for idling vehicles). Each of these can be one of four types based on the roadway geometry (at-grade, fill, bridge, or depressed). All free flow and queue links used in this study are at-grade links. The required inputs for each link are the end points, traffic volume (vehicles/hour), and the emission factor (g/veh* mile for free flow links or g/veh*hour for queue links). Additional inputs for queue links only are the average cycle length (seconds), average red time length (seconds), clearance time lost (seconds) saturation flow rate (vehicles/hour), signal type (pre-timed actuated, or semi-actuated),

and arrival rate (worst, below average, average, above average, or best profession). The saturation flow was assumed to be 1,600 vehicles/hour with all signals assumed to be pre-timed, with an average arrival rate, and a clearance lost time of 2.0 seconds.

A free flow link is defined as a straight segment of roadway having a constant width, height, traffic volume, traffic speed, and vehicle emission factor. A change in any of these factors requires a new link to be coded. The width of a free flow link is equal to the roadway width plus 10 feet on each side of the roadway to account for the dispersion of the plume generated by the wake of moving vehicles. In cases where the median width is less than or equal to 20 feet, the width of free-flow links was taken as the curb to curb width of the roadway plus 20 feet. The traffic volume used on these links was the combined traffic volume in both directions traveling along the free flow link.

A queue link is defined as a straight segment of roadway with a constant width and emission source strength, on which vehicles are idling during the average red time length. The width of a queue link is the actual roadway width.

CAL3QHC also requires the input of meteorological factors. These factors are averaging time (minutes), surface roughness coefficient (cm), settling velocity (cm/s), deposition velocity (cm/s), wind speed (m/s), and mixing height (m). The values used for these factors were held constant throughout the analysis and are presented as follows:

e. Background Levels

In order to calculate the total concentration of CO that occurs at a particular receptor site during worst cast meteorological conditions; the background levels are considered in addition to the levels directly attributable to the facility under construction. The background levels were derived from the application of rollback methodology to on-site monitoring conducted by the Maryland Air Management Administration at their Rockpike Air Monitoring Station in Montgomery County during the period of 1995.

6. Results of Microscale Analysis

The CO concentrations for this analysis are summarized in Tables IV-13 through IV-18. The values shown consist of predicted CO concentrations attributable to traffic on various roadway links plus projected background levels. The concentrations at all receptors are below the State and National Ambient Air Quality Standards for the one-hour and eight-hour analyses of 35.0 ppm and 9.0 ppm, respectively. The a.m. and p.m. peak hour CO concentrations include a 4.4-ppm background concentration. The eight-hour average CO concentrations include a 2.6-ppm background concentration.

A relative comparison between the No-Build and Build alternatives shows a slight change in CO concentrations for the one-hour analysis, and an overall decrease in CO concentrations for the eight-hour analysis. In the year 2000, 16 receptors show a decrease, 13 receptors have no

change, and 11 receptors show an increase in CO concentrations for the one-hour analysis. For the eight-hour analysis, 24 receptors show a decrease, 13 receptors have no change, and 3 receptors show an increase. On the year 2020, 12 receptors show a decrease, 123 receptors have no change, and 15 receptors show an increase in CO concentrations for the one-hour analysis. For the eight-hour analysis, 24 receptors show a decrease, 14 receptors have no change, and 3 receptors show an increase. The maximum relative change in CO concentrations is 0.6 ppm for the one-hour case and 0.3 ppm for the eight-hour case.

The maximum one-hour increase is 0.6 ppm in 2000 and 0.4 ppm in 2020. The maximum eight-hour increase is 0.1 ppm in 2000 and 2020. These increases are most likely attributable to the close proximity of the proposed travel lanes to the residences and therefore to the receptors. The maximum one-hour decrease is 0.6 ppm in 2000 and 0.5 ppm in 2020. The maximum eight-hour decrease is 0.3 ppm in 2000 and 2020. These decreases in CO concentrations are attributable to increased traffic speeds on MD 32 resulting in decreased vehicle emissions, and to the elimination of signalized intersections that results in the elimination of queued vehicles.

The highest CO concentrations occur at receptor AQ-14. This receptor is located along the MD 32 right-of-way, at a location where the travel lanes are the closest to the right-of-way.

Table IV-13: Air Quality Constants

Variable	Value
Averaging Time	0 minutes
Surface Roughness Coefficient	108 cm (Suburban Area)
Settling Velocity	0.0 cm/second
Deposition Velocity	0.0 cm/second
Mixing Height	350 meters
Scale Factor	0.3048 meters/foot
Source Height	0.0 feet

CAL3QHC calculates the CO concentration at each receptor for a given wind direction. The wind direction was varied through a full 360 degrees in five-degree increments in this study. The results for all wind directions for each receptor are placed in a matrix, and CAL3QHC determines the wind direction that caused the worst CO concentration at each receptor.

Table IV-14: Background Carbon Monoxide (PPM)

	One-Hour	Eight-Hour
Year 2000	4.4	2.6
Year 2020	4.4	2.6

Source: Maryland Air Quality Data Report 1995, Maryland Department of the Environment, Air Management Administration, 2500 Broening Highway, Baltimore, Maryland 21224

**Table IV-15: Year 2000 Carbon Monoxide (CO) Concentrations for MD 32
Air Quality Receptors AQ 1 through AQ 20**

Air Quality Receptors	No-Build Alternative		Build Alternatives	
	One-Hour	Eight-Hour	One-Hour	Eight-Hour
AQ-1	5.3	2.9	4.9	2.8
AQ-2	4.8	2.7	4.7	2.7
AQ-3	4.8	2.7	4.7	2.7
AQ-4	5.1	2.8	5.0	2.8
AQ-5	4.9	2.8	5.0	2.7
AQ-6	5.2	2.9	4.8	2.7
AQ-7	5.6	2.9	5.0	2.7
AQ-8	5.1	2.9	5.1	2.8
AQ-9	4.8	2.7	5.3	2.8
AQ-10	5.4	2.9	5.4	2.8
AQ-11	5.4	2.9	5.4	2.8
AQ-12	5.8	3.2	5.5	2.9
AQ-13	4.9	2.9	5.0	2.8
AQ-14	5.9	3.3	5.7	3.0
AQ-15	5.5	3.2	5.5	3.0
AQ-16	5.0	2.9	5.1	2.8
AQ-17	4.8	2.7	4.7	2.7
AQ-18	4.7	2.7	5.0	2.7
AQ-19	5.1	2.7	5.2	2.8
AQ-20	4.8	2.7	5.4	2.8

Notes: one-hour CO concentrations include a 4.4-ppm background concentration. Worst case (a.m. or p.m.) shown.

eight-hour CO concentrations include a 2.6-ppm background concentration.

The S/NAAQS for the one-hour scenario is 35.0 ppm.

The S/NAAQS for the eight-hour scenario is 9.0 ppm.

**Table IV-16: Year 2000 Carbon Monoxide (CO) Concentrations MD 32
Air Quality Receptors AQ 21 through AQ 40**

Air Quality Receptors	No-Build Alternative		Build Alternatives	
	One-Hour	Eight-Hour	One-Hour	Eight-Hour
AQ-21	5.4	2.9	5.1	2.8
AQ-22	5.1	2.8	5.3	2.8
AQ-23	4.8	2.7	4.8	2.7
AQ-24	4.9	2.8	4.9	2.7
AQ-25	4.8	2.7	4.7	2.7
AQ-26	5.2	2.9	4.9	2.8
AQ-27	5.6	2.9	5.0	2.8
AQ-28	4.9	2.8	4.9	2.7
AQ-29	5.0	2.7	4.8	2.7
AQ-30	4.9	2.7	5.3	2.8
AQ-31	5.0	2.9	4.9	2.7
AQ-32	5.1	3.0	5.1	2.7
AQ-33	5.4	3.1	5.4	2.9
AQ-34	5.4	3.2	5.4	3.0
AQ-35	5.0	2.9	5.0	2.7
AQ-36	4.7	2.7	4.7	2.7
AQ-37	5.1	2.7	5.1	2.7
AQ-38	5.5	2.9	5.2	2.8
AQ-39	4.9	2.8	5.1	2.8
AQ-40	5.0	2.7	5.1	2.7

Notes: one-hour CO concentrations include a 4.4-ppm background concentration. Worst case (a.m. or p.m.) shown.

eight-hour CO concentrations include a 2.6-ppm background concentration.

The S/NAAQS for the one-hour scenario is 35.0 ppm.

The S/NAAQS for the eight-hour scenario is 9.0 ppm.

**Table IV-17: Year 2020 Carbon Monoxide (CO) Concentrations MD 32
Air Quality Receptors AQ 1 through AQ 20**

Air Quality Receptors	No-Build Alternative		Build Alternatives	
	One-Hour	Eight-Hour	One-Hour	Eight-Hour
AQ-1	5.2	2.9	4.9	2.7
AQ-2	4.7	2.7	4.7	2.7
AQ-3	4.8	2.7	4.7	2.7
AQ-4	5.0	2.8	5.0	2.8
AQ-5	4.9	2.8	4.9	2.7
AQ-6	5.2	2.9	4.8	2.7
AQ-7	5.4	2.9	5.0	2.8
AQ-8	5.0	2.9	5.1	2.8
AQ-9	4.8	2.7	5.2	2.8
AQ-10	5.2	2.8	5.1	2.8
AQ-11	5.2	2.9	5.3	2.8
AQ-12	5.5	3.1	5.3	2.9
AQ-13	4.9	2.9	5.0	2.8
AQ-14	5.6	3.3	5.6	3.1
AQ-15	5.3	3.2	5.3	2.9
AQ-16	5.0	2.9	5.1	2.8
AQ-17	4.7	2.7	4.7	2.7
AQ-18	4.7	2.7	4.9	2.7
AQ-19	4.9	2.7	5.0	2.7
AQ-20	4.8	2.7	5.2	2.8

Notes: one-hour CO concentrations include a 4.4-ppm background concentration. Worst case (a.m. or p.m.) shown.

eight-hour CO concentrations include a 2.6-ppm background concentration.

The S/NAAQS for the one-hour scenario is 35.0 ppm.

The S/NAAQS for the eight-hour scenario is 9.0 ppm.

L. Noise Quality

1. Introduction

Fifty-two (52) receptor locations are located within the Study Area as indicated in Table III. 14 and on Figure III-11. The sites are located in fourteen (14) Noise Sensitive Areas (NSAs). Receptors were selected to represent the overall noise environment and to determine locations where residences may be impacted by traffic noise. A summary of impacts and mitigation measures is presented in this section.

Additionally, a detailed Noise Analysis Technical Report has been prepared to determine the impact of the project on noise levels. The Technical Report is available at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

2. Predicted Noise Levels

The method used to model noise levels was developed by the Federal Highway Administration of the US Department of Transportation. The computer model derived from this method, called STAMINA 2.0/OPTIMA, utilizes a reference sound level for three classes of vehicles (autos, medium duty trucks, and heavy duty trucks) and applies a series of adjustments to each reference level to arrive at the predicted sound level. The adjustments include: 1) Traffic flow corrections, taking into account the number of vehicles and average vehicle speed; 2) Distance adjustments, comparing a reference and actual distance between receiver and roadway; and 3) Adjustments for ground softness and for various types of physical barriers that would reduce noise transmission from source (roadway) to receiver.

In this study, noise levels are presented in terms of the A-weighted equivalent sound level, abbreviated here as Leq. Leq is a single number representation of the actual fluctuating sound level that accounts for all the sound energy during a given period of time. The units of Leq are A-weighted decibels or dBA. The A-weighting means that the sound level is measured by a method that approximates the response of the human ear, with de-emphasis of the low and very high frequencies and emphasis on the mid-frequency noise level range. In order to give a sense of perspective to the noise levels discussed, a quiet rural night would register about 46 dBA, a quiet suburban night about 60 dBA, a noisy day about 80 dBA, a gas lawn mower at 100 feet about 70 dBA and a diesel truck at 50 feet about 85 dBA. Under typical field conditions, noise level changes of 2-3 dBA are barely perceptible, while a change of 5 dBA is readily noticeable. A 10 dBA increase in noise level is judged by most people as a doubling of sound loudness.

The noise levels presented in this section are for the noisiest hour of the day. This hour usually coincides with the peak traffic hour. However, in some cases where the peak hour traffic volume moves at a speed significantly less than the free-flow speed, a combination of reduced off-peak traffic volume and increase travel speed may generate peak noise levels. In this case, Level of Service analysis would be performed and the worst case combination of traffic volume and speed used. For this analysis, the combination of 2020 peak hour traffic and associated travel speed resulted in the worst case noise levels.

3. Impact Assessment and Abatement Consideration

a. Impact Assessment and Feasibility of Noise Control

The determination of traffic noise impacts is based on the relationship between the ambient noise levels, the predicted peak hour traffic noise levels, and the established noise abatement criteria in the project area. For this study, the applicable criteria are defined in 23 CFR, Part 772 and subsequent memoranda (see Table IV-18). Mitigation measures were investigated at impacted receptors. An impacted receptor is a site where the peak hour noise levels approached or exceeded the 67 dBA Federal Noise Abatement Criterion for residential areas. Based on current State Highway Administration Sound Barrier Policy, 66 dBA is considered as approaching the criteria. Additionally, criteria calls for

mitigation measures to be considered where build levels exceed the existing ambient levels by 10 dBA or more.

When mitigation is investigated, certain feasibility and reasonableness criteria established by federal guidelines and State Highway Administration Sound Barrier Policy must be met in order for a barrier to be considered eligible for construction. These criteria are summarized below:

Feasibility Criteria

- Noise levels can be reduced by more than 7 dBA at impacted receptors.
- Placement of barrier cannot restrict vehicular or pedestrian access.
- Barrier cannot cause any safety or maintenance problems.
- Barrier can be constructed given topography, drainage, utilities, etc.
- There should not be non-highway noise sources that would reduce barrier effectiveness.
- Barrier should not have significant impact upon a Section 4(f) resource.

Reasonableness Criteria

- The majority of impacted receptors should receive a 7 dBA or greater noise reduction.
- At least 75 percent of the impacted residents approve of the proposed noise abatement.
- A 3 dBA or greater change in design year noise levels over design year no-build noise levels is expected to result from the proposed action, OR the cumulative effect of highway improvements on the design year noise levels at receptors that existed when prior improvements were made is equal to or greater than 3 dBA.
- Build levels are greater than or equal to 72 dBA and there is an increase in noise levels provided that other reasonable and feasible criteria are met.
- The barrier cannot have significant negative visual impact.
- The cost of noise abatement is equal to or less than \$50,000 per residence benefited. (However, barriers with a cost per residence of \$50,000 to \$100,000 will be considered reasonable if the combined cost per residence of mitigation on the entire project does not exceed \$50,000)
- There are special circumstances (e.g., historical or cultural significance).

For each NSA, the results of whether criteria were met are included herein. Feasibility/Reasonableness Checklists are include in the Noise Analysis Technical Report.

b. Noise Abatement Criteria

The study of noise abatement measures considers the size of the impacted areas, the number and distribution of noise sensitive sites within that area, the predominant activities being performed and their vulnerability to noise disturbances, and the visual impact and economic feasibility of the noise attenuation methods.

An assessment of reasonable cost for sound barriers is based on the following assumptions: An effective barrier should, in general, extend in both directions for four times the distance between receiver and roadway (source) and provide a 7 to 10 dBA reduction in the noise level at first row receptors. The effective barrier height was considered to be the height at which this reduction was achieved. If a 7 dBA reduction could not be obtained with a maximum 26 foot barrier, the height was reduced to obtain the most cost effective barrier while retaining the noise abatement characteristics of the 26 foot barrier to within 1 dBA. A second consideration was that the barrier block the line of sight to all vehicles from every location. The cost per residence is determined by dividing an assumed barrier cost by the number of benefited residences. A current unit cost of \$16.54 per square foot is used to determine the cost of the barrier when evaluating economic feasibility. An impacted residence is considered benefited when the existing peak noise level equals or exceeds criteria and it experiences a minimum 3 dBA reduction in noise with mitigation. A residence that is not impacted is also considered benefited if it receives a 5 dBA reduction from the mitigation. When determining the cost per residence, State Highway Administration Sound Barrier Policy has assumed that churches and schools each have a value considered equal to ten residences.

The effects of noise from each alternative are judged in accordance with the Federal Highway Administration's activity/criteria relationship published in 23 CFR, Part 772 and subsequent memorandum. The FHWA criteria, shown in Table IV-18, are based on specific land uses and are used in determining the need for studying noise attenuation measures. All locations within this study area are of land use Category B, which has a design noise level of 67 dBA (Leq).

This evaluation was also completed in accordance with the State Highway Administration's Sound Barrier Policy, in a report dated May 11, 1998. This is a Type I noise project as defined in 23 CFR, Part 772. A Type I project provides evaluation of noise mitigation for projects that propose construction of a highway on a new location or the expansion or reconstruction of an existing highway that substantially changes the highway's horizontal or vertical alignment or increases the number of through traffic lanes.

**Table IV-18: Noise Abatement Criteria
(Specified in 23CFR.772)**

Land Use Category	Design Noise Level (Leq)	Description of Land Use Category
A	57 dBA (exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and preservation of those qualities is essential if the area is to continue its intended purpose. Such areas could include amphitheaters, particular parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 dBA (exterior)	Residences, motels, hotels, public meeting (exterior) rooms, schools, churches, libraries, hospitals, picnic areas, playgrounds, active sports areas, and parks.
C	72 dBA (exterior)	Developed lands, properties or activities not included in categories A or B above.
D	None Prescribed	Land which is undeveloped on the date of public knowledge of the project, and on which no known future development is planned.
E	52 dBA (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

c. Mitigation Measures

In acoustical analysis, various methods of noise abatement are possible: noise attenuation through a barrier or berm placed between the source and the receptor; traffic flow restrictions or controls; and attenuation of noise generated by the vehicles.

Several types of sound barriers, including walls and earth berms, can be used to reduce noise levels at sensitive receptors. Walls were analyzed in this study due to two factors: 1) the NSAs in this study generally consist of residences located adjacent to the roadway, and 2) the proposed right-of-way has been limited to the minimum required. When barriers are constructed, walls or earth berms are generally used. Absorptive walls are used in areas where reflective walls would exacerbate noise levels on the opposite side of the road. Due to the wide typical section associated with the build alternatives, reflective barriers were deemed acceptable and absorptive barriers were not analyzed. Berms can be effective and practical where right-of-way is not restricted and development is set back a considerable distance from the highway. Where feasible, berms were studied as an alternative to reflective barriers. Construction of berms was determined to be feasible at five NSAs (A, B, L, M, and N). A description of the berm analysis is included for each NSA studied in Section IV.L.4. At each of these locations, additional right-of-way would be required for construction of the berms. In conformance with current State Highway Administration Sound Barrier Policy, the adjacent property owners must donate this additional

right-of-way for noise mitigation. Because, at this time, the donation of this property cannot be assured, only barriers, which would be constructed within planned SHA right-of-way, are included in Table IV-19. While NSAs were selected where impacts were expected to occur, some NSAs are not impacted above criteria noise levels by the proposed alternatives. Mitigation was not investigated at these locations because 2020 build levels do not equal or exceed current SHA criteria. Mitigation was also not analyzed in those residential neighborhood areas where required access for driveways and sidewalks would make construction of barriers impossible. At these locations or other locations where mitigation is not feasible or reasonable, investigations will be made during final design to determine if landscaping buffer schemes or other options that would soften the effects of the proposed improvements and minimize noise impacts could be utilized in a cost effective way. At locations where barriers are not determined to be feasible and reasonable, these options could be considered as a way to improve the cost effectiveness of mitigation.

Following is a discussion of noise mitigation for each NSA. A complete list of noise levels for all receptors is presented in Table IV-19, found at the end of this section. A final decision on the installation of abatement measures would be made upon completion of the project design and the public involvement process.

4. Findings

The locations of noise receptors are shown on Figure III-11.

Noise Sensitive Area A (Receptors 1-5)

NSA A consists of single family residences adjacent to Broadwater Lane, on the east side of MD 32 from Station 140+ to Station 200+ shown on mapping sheets 1 and 2 of Appendix A.

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. In addition, there is at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 7,748 feet long with an average height of 19.3 feet, constructed at a cost of \$2,465,051, would reduce first row receptor noise levels by up to 10 dBA. The cost per benefited residence is \$102,710 for the 24 residences benefited. (A berm, in combination with a short retaining wall adjacent to Broadwater Lane, was analyzed for this NSA. The total cost would be \$4,388,640 or \$151,330 per residence for the 29 residences benefited). Due to the cost per residence, this NSA does not meet the reasonable cost criterion for further consideration of a barrier.

NSA A Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
1	61	68	66	7	2	58	10
2	54	59	58	5	1	52	7
3	60	66	64	6	2	58	8
4	51	58	53	7	5	57	1
5	55	64	62	9	2	62	2

Noise Sensitive Area B (Receptors 6-9)

NSA B consists of single family residences and a church adjacent to Triadelphia Road and Ridgewood Drive, on the east side of MD 32 from Station 310+ to Station 340+ shown on Sheet 3 of Appendix A.

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. In addition, there is at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 4,385 feet long with a height of 24 feet, constructed at a cost of \$1,736,344, would reduce first row receptor noise levels by up to 10 dBA. The cost per benefited residence is \$102,138 for the 17 residences benefited. (A berm was analyzed for this NSA as an alternative to a reflective wall. The total cost of the berm would be \$825,510 or \$77,500 per residence for the 11 residences benefited. In addition, approximately 2.5 acres would be required from adjacent property owners for berm construction.) Due to the cost per residence, this NSA does not meet the reasonable cost criterion for further consideration of a barrier.

NSA B Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
6	67	68	66	1	2	63	5
7	58	62	59	4	3	59	3
8	66	69	67	3	2	59	10
9	58	61	58	3	3	52	9

Noise Sensitive Area C (Receptors 10 –11)

NSA C consists of single family residences adjacent to Ivory Road East, on the east side of MD 32 from Station 370+ to Station 390+ shown on Sheet 3 of Appendix A

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. In addition, the peak noise level is 72 dBA and there is a 1 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 3,051 feet long with a height of 22 feet, constructed at a cost of \$1,107,546, would reduce first row receptor noise levels by up to 14 dBA. The cost per benefited residence is \$158,221 for the 7 residences benefited. (Construction of a berm is not feasible at this NSA.) Due to the cost per residence, this NSA does not meet the reasonable cost criterion for further consideration of a barrier.

NSA C Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
10	63	67	66	4	1	58	9
11	70	72	72	2	0	58	14

Noise Sensitive Area D (Receptors 12-15)

NSA D consists of single family residences in the King's Grant and Rosemary Estates Communities, on the east side of MD 32 from Station 415+ to Station 455+ shown on Sheet 4 of Appendix A.

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. In addition, there is at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 3,874 feet long with an average height of 21.1 feet, constructed at a cost of \$1,349,103, would reduce first row receptor noise levels by up to 10 dBA. The cost per benefited residence is \$112,425 for the 12 residences benefited. (Construction of a berm is not feasible at this NSA.) Due to the cost per residence, this NSA does not meet the reasonable cost criterion for further consideration of a barrier.

NSA D Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
12	63	65	63	2	2	55	10
13	55	58	57	3	1	52	6
14	59	67	65	8	2	60	7
15	57	58	55	1	3	58	0

Noise Sensitive Area E (Receptors 16 –17)

NSA E consists of single family residences on the east side of MD 32 from Station 455+ to Station 475+ shown on Sheet 4 of Appendix A.

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. However, there is not at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 1,370 feet long with a height of 22 feet, constructed at a cost of \$497,190 would reduce first row receptor noise levels by up to 7 dBA. The cost per benefited residence is \$497,190 for the 1 residence benefited. (Construction of a berm is not feasible at this NSA.) Due to the cost per residence and the build/no-build difference, this NSA does not meet current criteria for further consideration of a barrier.

NSA E Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
16	68	68	67	0	1	61	7
17	57	57	56	0	1	56	1

Noise Sensitive Area F (Receptors 18 –22)

NSA F consists of single family residences in the Friendship Manor Community at the MD144 intersection, on the east side of MD 32 from Station 500+ to Station 530+ shown on Sheets 5 and 5A of Appendix A.

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. In addition, there is at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 4989 feet long with an average height of 20 feet, constructed at a cost of \$1,644,572 would reduce first row receptor noise levels by up to 8 dBA. The cost per benefited residence is \$102,786 for the 16 residences benefited. (Construction of a berm is not feasible at this NSA.) Due to the cost per residence, this NSA does not meet the reasonable cost criterion for further consideration of a barrier.

NSA F Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
18	71	72	70	1	2	64	8
19	55	57	54	2	3	53	4
20	68	69	66	1	3	61	8
21	57	64	63	7	1	64	0
22	52	58	55	6	3	54	4

Noise Sensitive Area G (Receptors 23 & 24)

NSA G consists of single family residences between MD144 and I-70 on the east side of MD 32, from Station 430+ to Station 445+ shown on Sheets 5 and 5A of Appendix A.

Impacts: Investigation of a sound barrier is not warranted at this location because the 2020 build noise levels do not exceed 66 dBA and are not equal to or more than 10 dBA above ambient noise levels.

NSA G Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
23	62	64	62	2	2	N/A	N/A
24	64	65	64	1	1	N/A	N/A

Noise Sensitive Area H (Receptors 25 –27)

NSA H consists of single family residences adjacent to MD144 west of MD 32, at Station 452+ shown on Sheets 5 and 5A of Appendix A.

Impacts: Investigation of a sound barrier is not warranted at this location because the 2020 build noise levels do not exceed 66 dBA and are not equal to or more than 10 dBA above ambient noise levels.

NSA H Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
25	60	65	63	5	2	N/A	N/A
26	60	63	62	3	1	N/A	N/A
27	60	62	60	2	2	N/A	N/A

Noise Sensitive Area I (Receptors 28 – 29)

NSA I consists of single family residences on the west side of MD 32, from Station 500+ to Station 510+ shown on Sheet 3 of Appendix A.

Impacts: Investigation of a sound barrier is not warranted at this location because the 2020 build noise levels do not exceed 66 dBA and are not equal to or more than 10 dBA above ambient noise levels.

NSA I Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
28	56	59	56	3	3	N/A	N/A
29	57	57	55	0	2	N/A	N/A

Noise Sensitive Area J (Receptors 30 - 35)

NSA J consists of single family residences in the Fox Valley Estates Community on the west side of MD 32, from Station 380+ to Station 440+ shown on Sheet 3 of Appendix A.

Impacts: Investigation of a sound barrier is not warranted at this location because the 2020 build noise levels do not exceed 66 dBA and are not equal to or more than 10 dBA above ambient noise levels.

NSA J Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
30	63	65	63	2	2	N/A	N/A
31	57	64	62	7	2	N/A	N/A
32	55	57	55	2	2	N/A	N/A
33	53	59	57	6	2	N/A	N/A
34	58	64	64	6	0	N/A	N/A
35	57	52	53	-5	-1	N/A	N/A

Noise Sensitive Area K (Receptors 36 – 38)

NSA K consists of single family residences adjacent to Ten Oaks Road on the west side of MD 32, from Station 345+ to Station 365+ shown on Sheet 3 of Appendix A.

Impacts: Investigation of a sound barrier is warranted at this location because the 2020 build noise levels exceed 66 dBA. In addition, there is at least a 3 dBA increase over no-build noise levels.

Mitigation: Due to openings required for driveways and sidewalks, construction of an effective wall or berm is not feasible at this location.

NSA K Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
36	58	62	60	4	2	61	1
37	62	69	66	7	3	65	4
38	57	57	57	0	0	54	3

Noise Sensitive Area L (Receptors 39 – 40)

NSA L consists of single family residences adjacent to Ten Oaks Road, on the west side of MD 32 from Station 305+ to Station 325+ shown on Sheet 3 of Appendix A

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. In addition, there is at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 2,780 feet long with a height of 22 feet, constructed at a cost of \$1,009,157, would reduce first row receptor noise levels by up to 9 dBA. The cost per benefited residence is \$126,145 for the 8 residences benefited. (A berm was analyzed for this NSA as an alternative to a reflective wall. The total cost of the berm would be \$455,000 or \$56,875 per residence for the eight residences benefited. In addition, approximately 0.6 acre would be required from adjacent property owners for berm construction.) Due to the cost per residence, this NSA does not meet the reasonable cost criterion for further consideration of a barrier.

NSA L Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
39	61	68	66	7	2	59	9
40	61	63	60	2	3	57	6

Noise Sensitive Area M (Receptors 41 – 44)

NSA M consists of single family residences adjacent to Ten Oaks Road and Rutherford Way, on the west side of MD 32 from Station 240+ to Station 290+ shown on Sheet 2 of Appendix A.

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. However, there is not at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 5,871 feet long with a height of 24 feet, constructed at a cost of \$2,324,768, would reduce first row receptor noise levels by up to 9 dBA. The cost per benefited residence is \$232,477 for the 10 residences benefited. (A berm was analyzed for a portion of this NSA with the remainder of the required mitigation being provided by a reflective wall. The total cost of the wall and berm would be \$2,719,380 or \$209,180 per residence for the 13 residences benefited.) In addition, approximately 0.6 acre would be required from adjacent property owners for berm construction.) Due to the cost per residence and the build/no-build noise level difference, this NSA does not meet the cost criterion for further consideration of a barrier.

NSA M Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
41	59	64	63	5	1	58	6
42	54	60	58	6	2	56	4
43	65	66	64	1	2	58	8
44	64	64	62	0	2	55	9

Noise Sensitive Area N (Receptors 45 - 52)

NSA N consists of single family residences in the Eagle Point Landing and Adams Reach Communities, on the west side of MD 32 from Station 120+ to Station 215+ shown on Sheet 1 of Appendix A.

Impacts: Investigation of a sound barrier is warranted because the 2020 build noise levels equal or exceed 66 dBA. In addition, there is at least a 3 dBA increase over no-build noise levels.

Mitigation: To protect the residences, a wall 11,217 feet long with a height of 24 feet, constructed at a cost of \$4,442,031, would reduce first row receptor noise levels by up to 9 dBA. The cost per benefited residence is \$177,681 for the 25 residences benefited. (A berm was analyzed where feasible for a portion of this NSA, with the remainder of the required mitigation being provided by a reflective wall. The total cost of the wall and berm would be \$3,192,650 or \$110,090 per residence for the 29 residences benefited. In addition, approximately 3.6 acres would be required from adjacent property owners for berm construction.) Due to the cost per residence, this NSA does not meet the reasonable cost criterion for further consideration of a barrier.

NSA N Noise Analysis Summary

Rec.	Adjusted Ambient Level	2020 Build Level	2020 No-Build Level	Change Over Ambient Level	Change Over 2020 No-Build Level	Build With Barrier	Insertion Loss
45	62	62	60	0	2	56	6
46	59	64	61	5	3	55	9
47	60	63	61	3	2	57	6
48	61	67	65	6	2	61	6
49	62	62	60	0	2	56	6
50	62	69	67	7	2	60	9
51	57	60	58	3	2	55	5
52	62	66	64	4	2	58	8

5. Construction Impacts

As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of noise impact. This type of project would probably employ the following pieces of equipment that would likely be sources of construction noise:

- Bulldozer and Earth Movers
- Graders
- Front End Loaders
- Dump and other Diesel Trucks
- Compressors
- Pile Drivers

Construction noise level specifications, especially relating to nighttime periods in more sensitive areas, will be coordinated with Howard County.

Temporary fencing will be considered, where feasible, to screen construction activities.

Table IV-19: Noise Summary

NSA	Receptor	Adjusted Ambient Level	2020 No-Build	2020 Build Level	Change over Ambient	Change over No-Build	Barrier Analysis			
							Build with Barrier	Insertion Loss		
A	1	61	66	68	7	2	58	10	Length = 7748'	Benefited Residences = 24
	2	54	58	59	5	1	52	7	Height = 14' - 20'	Cost/Residence = \$102,710
	3	60	64	66	6	2	58	8	Avg. Height = 19.3'	
	4	51	53	58	7	5	57	1	Cost = \$2,465,051	
	5	55	62	64	9	2	62	2		
B	6	67	66	68	1	2	63	5	Height = 24'	Benefited Residences = 17
	7	58	59	62	4	3	59	3	Length = 4385'	Cost/Residence = \$102,138
	8	66	67	69	3	2	59	10	Cost = \$1,736,344	
	9	58	58	61	3	3	52	9		
C	10	63	66	67	4	1	58	9	Height = 22'	Benefited Residences = 7
	11	70	72	72	2	0	58	14	Length = 3051'	Cost/Residence = \$158,221
									Cost = \$1,107,546	
D	12	63	63	65	2	2	55	10	Height = 16' - 24'	Benefited Residences = 12
	13	55	57	58	3	1	52	6	Avg. Height = 21.1'	Cost/Residence = \$112,425
	14	59	65	67	8	2	60	7	Length = 3874'	
	15	57	55	58	1	3	58	0	Cost = \$ 1,349,103	

Table IV-19: Noise Summary continued

NSA	Receptor	Adjusted Ambient Level	2020 No-Build	2020 Build Level	Change over Ambient	Change over No-Build	Barrier Analysis			
							Build with Barrier	Insertion Loss		
E	16	68	67	68	0	1	61	7	Height = 22'	Benefited Residences=1
	17	57	56	57	0	1	56	1	Length = 1370	Cost/Residence = \$497,190
									Cost = \$497,190	
F	18	71	70	72	1	2	64	8	L = 4,989	Benefited Residences=16
	19	55	54	57	2	3	53	4	Height = 18' - 22'	Cost/Residence = \$102,786
	20	68	66	69	1	3	61	8	Avg. Height = 20.0'	
	21	57	63	64	7	1	64	0	Cost = \$1,644,572	
	22	52	55	58	6	3	54	4		
G	23	62	62	64	2	2			Barrier not considered Criteria is not exceeded	
	24	64	64	65	1	1				
H	25	60	63	65	5	2			Barrier not considered Criteria is not exceeded	
	26	60	62	63	3	1				
	27	60	60	62	2	2				
I	28	56	56	59	3	3			Barrier not considered Criteria is not exceeded	
	29	57	55	57	0	2				
J	30	63	63	65	2	2			Barrier not considered Criteria is not exceeded	
	31	57	62	64	7	2				
	32	55	55	57	2	2				
	33	53	57	59	6	2				
	34	58	64	64	6	0				
	35	57	53	52	-5	-1				

Table IV-19: Noise Summary continued

NSA	Receptor	Adjusted Ambient Level	2020 No-Build	2020 Build Level	Change over Ambient	Change over No-Build	Barrier Analysis			
							Build with Barrier	Insertion Loss		
K	36	58	60	62	4	2	61	1	Construction of an effective barrier is not feasible	
	37	62	68	69	7	3	65	4		
	38	57	57	57	0	0	54	3		
L	39	61	66	68	7	2	59	9	Height = 22'	Benefited Residences=8
	40	61	60	63	2	3	57	6	Length = 2,780'	Cost/Residence = \$126,145
									Cost = \$1,009,157	
M	41	59	63	64	5	1	58	6	Height = 24'	Benefited Residences=10
	42	54	58	60	6	2	56	4	Length = 5,871'	Cost/Residence = \$232,477
	43	65	64	66	1	2	58	8	Cost = \$2,324,768	
	44	64	62	64	0	2	55	9		
N	45	62	60	62	0	2	56	6	Height = 24'	Benefited Residences=25
	46	59	61	64	5	3	55	9	Length = 11,217	Cost/Residence = \$177,681
	47	60	61	63	3	2	57	6	Cost = \$4,442,031	
	48	61	65	67	6	2	61	6		
	49	62	60	62	0	2	56	6		
	50	62	67	69	7	2	60	9		
	51	57	58	60	3	2	55	5		
	52	62	64	66	4	2	58	8		

M. Visual Quality

Present views from a driver's perspective along most of MD 32 from MD 108 to I-70 consists of trees along both edges of the right-of-way, which produce a rather narrow, and often closed-in, corridor. Open fields, at-grade intersections, and residential areas occasionally break this visual effect. Few expansive or distant views of the broader landscape or the horizon are available along the project route. The primary post-construction visual effect of either proposed alternative would be to produce views of a wider corridor along the main line, but not otherwise substantially different than the current view. In a few instances where presently trees form only a narrow visual buffer to adjacent open areas, project implementation would remove those trees for construction of additional lanes, such that the views of those adjacent open fields and residential areas would be available. At interchanges the removal of much of the tree cover would open the view so drivers would see approaching exit/entrance ramps, overpasses and associated signs similar to most other highway projects in the region. The overpasses or other proposed project activities would not act as visual barriers to any especially unique or picturesque view sheds. The differences in visual effects between either build alternative would not be material.

Views of MD 32 from residential sites in the area would change whereby the road may in some cases be a more dominant part of the landscape, especially at intersections where grades are raised, and overpasses and a network of access roads and ramps are installed. These would be more visible to residences/viewers located at higher elevations where trees that presently buffer views of the road would be removed. However, these consequences would apply to a limited number of situations, and are not expected to be substantial for either alternative. There are a handful of residences, upslope and surrounding Rosemary Lane for example, which might be presented with more open views of the new interchange, although actual views have not been studied. Specific site line changes would require detailed studies from individual residences.

N. Municipal, Industrial and Hazardous Waste Sites

As discussed in Section III.M, preliminary hazardous materials site assessments identified fifteen sites, located in the vicinity of the MD 32 study area, that have the potential to pose hazardous materials liabilities. That assessment concluded that four sites warrant further consideration.

Old Tyme/Ten Oaks Liquors located at Triadelphia Road and Ten Oaks Road, hosts a record of a Leaking Underground Storage Tanks (LUST). This site is located very near and upgradient to the proposed construction area for this proposal. A review of the MDE records will be completed prior to assessing the effects upon hazardous materials sites in this vicinity. If records demonstrate that the LUST is remediated and potential contamination has been contained, then this site can be removed from further consideration.

High's Dairy Store, located at 12780 Frederick Road, hosts two, one-year old USTs. These tanks contain gasoline and diesel fuel. Due to the age of the tanks and nature of the products,

these sites should pose a minimal risk of hazardous materials liability. Because this site would be affected by the proposed activity, a review of MDE records would be conducted prior to assessing the effects upon hazardous materials sites in this vicinity. If records are not found at MDE this site can be removed from further consideration.

The Allen Vasant Inc. site will experience direct impact by the proposed highway improvements. The database search indicates that this site has had up to 7 USTs, up to 37 years old. The field investigation revealed several commercial uses including a turfgrass/pesticide/herbicide business. The primary commercial complex on this property was constructed on approximately 25 feet of fill, which apparently was placed at least 20 years ago. The age and thickness of the fill, the USTs, and the varied commercial uses of the property both presently and presumably through time, are indications that further investigations may be required on this site.

The former BGE Substation site has been abandoned for some time, and is presently enclosed with a 6' high chain link fence. This site will be re-graded during the highway construction. PCBs could be present due to the probable former existence of electrical transformers. Further investigation should be considered based on this factor.

The Howard County and SHA maintenance facilities, located in Dayton on MD 32, are adjacent properties that would be impacted by the proposed activities. Both these sites contain records of multiple USTs that are currently in use, ranging in age from 6 to 16 years old and containing gasoline, diesel fuel, kerosene, heating oil, and waste oil. Many older USTs at these sites are categorized as removed. In addition both these sites are classified as RCRIS- Small Quantity Generators. A review of the MDE records would be completed prior to assessing the effects upon hazardous materials sites in this vicinity. If records of contamination are not found and if construction activities would not affect UST locations, then these sites can be removed from further consideration.

O. Energy

A comparison of the energy usage requirements for the operation, maintenance and construction of the alternatives was completed for this document. Although the energy requirements for construction do not apply to the No-Build Alternative, these savings would be off-set by the increased energy consumption due to projected traffic congestion in the design year. Both of the build alternatives would have similar energy requirements. Each would require the expenditure of energy for the manufacture of construction materials, the transportation of the materials to the site, and the construction of the roadway. Maintenance energy requirements for the build alternatives would be similar to those of the no-build. Operational energy expenditures for the build alternatives would be lower than for the no-build because the traffic congestion would be reduced and safety would be improved reducing the need for emergency services.

The No-Build Alternative would require the least amount of expended energy over the design life of this project. The build alternatives would require the greatest amount of energy to construct with Build Alternative I requiring a slightly greater amount of energy to construct than Build Alternative II as there are seven interchanges proposed under Build Alternative I as compared to the six interchanges proposed under Build Alternative II.

P. Construction Impacts

Construction activities for the build alternatives would have temporary impacts to resources, residences, businesses, and travelers within the immediate vicinity of the project. These would include traffic detours, potential air and fugitive dust emissions, increase noise levels, impacts to socio-economic and natural resources, and impacts to visual quality.

1. Traffic Detours

Detours and road closures during construction would create temporary inconveniences for residents, business owners, and travelers. Maintenance and protection of traffic plans would be developed during final design to mitigate access impacts and to minimize delays throughout the project area. These plans would include appropriate signs, pavement markings, and media announcements. Access to all businesses and residences would be maintained through construction scheduling.

2. Air Emissions

The operation of heavy equipment would have minor, temporary impacts on air quality during construction of a build alternative. The primary source of impact would be windblown soil and dust in active construction zones, and secondarily from increased levels of exhaust pollutants.

Measures would be taken to reduce fugitive dust and other emissions generated during construction by wetting disturbed soils, staging soil disturbing activities, and prompt re-vegetation of disturbed areas. The contractors, in accordance with state and federal regulations, would control emissions from construction equipment.

3. Construction Noise Impacts

Temporary noise impacts would occur in the study area during construction of either build alternative. Sources of this noise would include earth moving equipment, vibratory rollers, pavers, trucks, jackhammers, and compressors. In most cases, the effect of increased noise levels associated with construction equipment is limited to within 300 feet of the source. These effects would typically be limited to weekday, daylight hours in accordance with local ordinances.

Several mitigation procedures can be followed to minimize temporary impacts of construction noise. Adjustments to equipment, provision of temporary noise barriers, varying construction activity areas to distribute noise events, good communication with the public, and monetary incentives to contractors could be examined during final design to minimize public impacts and annoyances during construction.

Construction noise impacts are further discussed in Section IV.L.5.

4. Natural Resources

Temporary construction related impacts to soils, wetlands, and surface waters would be anticipated to occur as a result of this project. Temporary and permanent impacts to these resources have been addressed throughout this chapter.

Temporary impacts to soils include increased erosion potential from areas cleared of vegetation for construction activities. Standard sediment and erosion control measures would be implemented in accordance with state and local regulations to minimize adverse impacts.

Temporary construction related impacts to wetlands include increased sedimentation, in-stream and in-wetland work for the construction of abutments and other structures, and temporary construction crossings. The use of surface mats, clean rock fills, and other measures to be determined during final design, would be used to minimize temporary impact areas. In addition, native vegetation would be reestablished.

Temporary impacts to surface water resources would also be anticipated from construction related activities. Temporary impacts would result from temporary stream crossings, dikes and cofferdams, temporary channel relocations, and suspended solids from increased erosions and sedimentation. Runoff from disturbed areas may contain high sediment loads, which could reduce both the diversity and numbers of organisms in the aquatic environment. Physical impacts such as temporary stream crossings and cofferdams disrupt stream substrate and could affect fish migrations through these areas. This would eliminate benthic macro-invertebrate populations in this portion of the stream during the construction period, and for a short period after construction until migration and drift allow for the re-colonization of the area. Changes to the channel widths resulting from cofferdam construction may generate excessive scouring of the substrate and generate sediment impacts immediately downstream of the construction area.

As part of the Section 404 permit process, it is likely that investigations will be required to study in detail areas along streams where restoration/mitigation measures might be achieved, including bank stabilization and possible alternation of channel geometry to improve stream system equilibrium.

5. Visual Quality

Construction activity and some materials stored for the project may be displeasing to residents in the immediate vicinity of the project. This visual impact would be temporary and should pose no substantial problem in the long term.

Q. Secondary and Cumulative Effects

1. Introduction

This secondary and cumulative effect analysis (SCEA) was prepared to evaluate secondary impacts and cumulative effects associated with the proposed improvements to MD 32 from MD 108 to I-70 in Howard County, Maryland. These analyses were conducted following the Council on Environmental Quality's (CEQ) regulations (40 CFR Sections 1500 – 1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. Sections 4321 et seq.). Current guidelines, provided by the Council on Environmental Quality 1997 guidelines, *Considering Cumulative Effects Under the National Environmental Policy Act*, and by SHA, were followed.

2. Definitions

Secondary or indirect impacts are described in the Council on Environmental Quality regulation (401508.8(b)) as:

caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

The Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) define cumulative effects as:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal, or non-Federal) or person undertakes such other actions (40 CFR § 1508.7), 1997.

3. Scoping

Scoping for secondary and cumulative effects consisted of identifying the issues to be addressed, the time frame, and the geographic boundaries for the analysis. The analysis methodologies were then chosen based upon issues included in the scope and the format of available data. Both the scope and the methodologies for the secondary and cumulative effects analysis of MD 32 described below were presented to the federal and state resource agencies for comment.

a. Issues to be Addressed

Based on coordination with the federal and state resource agencies, the following resources were considered for secondary and cumulative effects:

- land use,
- cultural resources,
- farmlands,
- geology, topography, and soils,
- surface water,
- groundwater,
- floodplains,
- wetlands,
- vegetation and wildlife,
- air quality, and
- hazardous materials.

b. Temporal Boundary

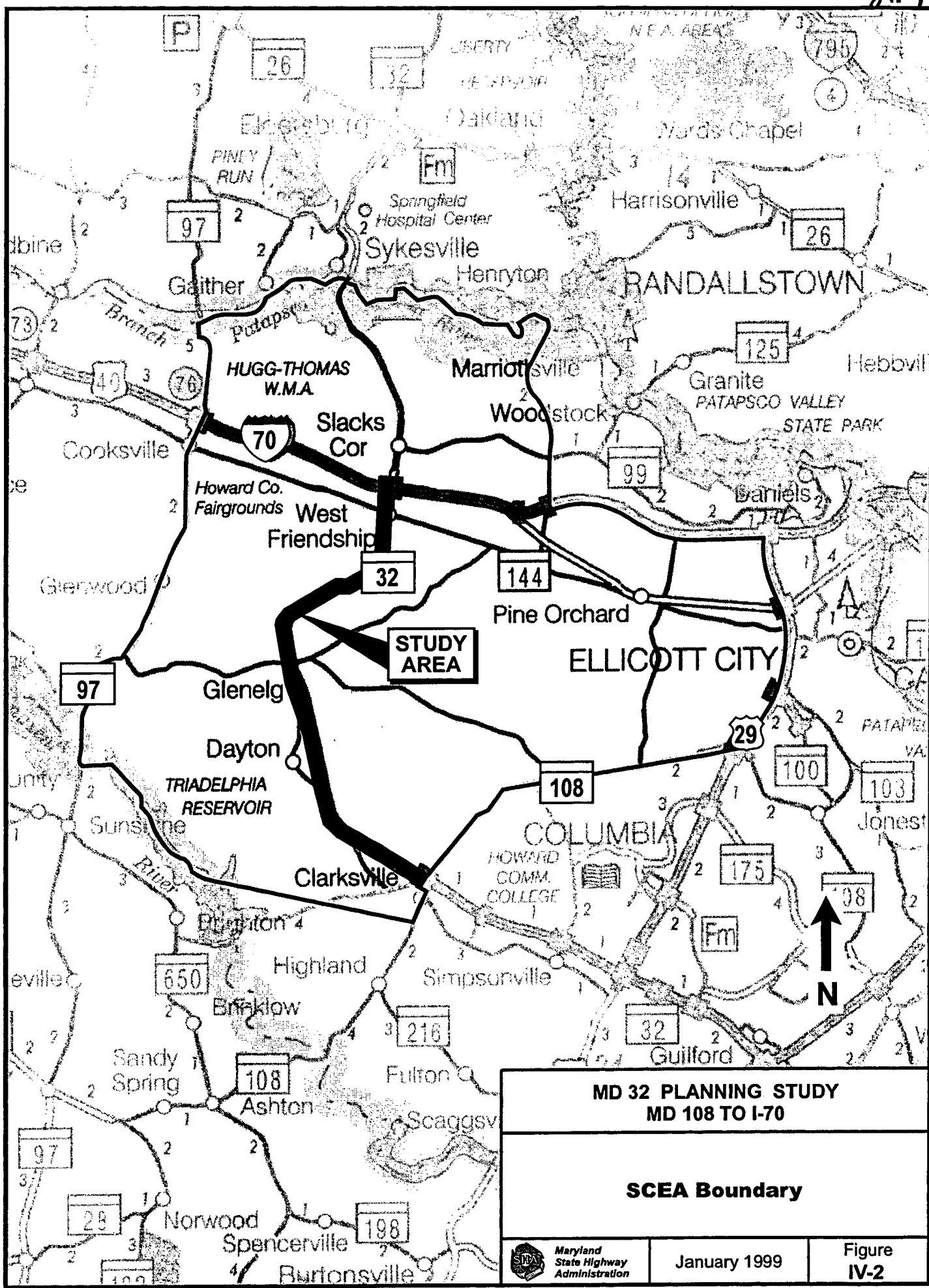
The time frame covered by this analysis is from the early 1970's through 2020, the design year for this project. This time frame covers approximately 25 years of historic development and 25 years of future development in Howard County. Review of recent and historic growth trends, the initiation of state and federal environmental protection policies; the implementation of other area transportation improvement projects; and, the project's design year determined the time frame for this study.

c. Geographic Boundary

The geographic boundary for secondary and cumulative effect analyses (referred to as SCEA boundary) is typically larger than for the analysis of direct impacts. Often information on historic trends are compiled and analyzed for areas based on political boundaries (such as countywide or census tract data) while potential future effects on natural environment resources may be analyzed by resource boundaries such as watersheds. The SCEA boundary is bounded by the Patapsco River to the north, US 29 to the east, MD 108 and the Patuxent River to the south, and MD 97 to the west (see Figure IV-2). The SCEA boundary for this project was based upon a number of factors including area of traffic influence and the extent of Howard County planned water and sewer service. As secondary and cumulative effect analyses rely upon readily available data, the geographic area studied for a particular resource may differ from that described above. For these instances, the area studied is described within the cumulative effect discussion for that particular resource.

d. Analysis Methodology

A combination of analysis methodologies has been used for this study. The secondary and cumulative effect analyses are based on data that was readily available and not necessarily based on a comprehensive data set. Therefore, conclusions drawn from this



**MD 32 PLANNING STUDY
MD 108 TO I-70**

SCEA Boundary

analysis are generally qualitative. Below is a review of the methods used for this analysis:

Trends analysis - used to identify effects over time and to project future cumulative effects. Historic data was collected, primarily from the Maryland Office of Planning, and compiled to understand past effects and the rate at which these effects occurred. This information was then used to project future effects.

Interviews - allowed the collection of information from county and agency staff not readily available in published documents. This was especially helpful in critically reviewing potential and forecasted development.

Overlays - used to combine land use projections with zoning and natural environmental constraints to create a reasonable, foreseeable, future scenario to analyze.

4. Other Projects to be Included in Analysis

Investigations were conducted to identify other actions affecting the resources, ecosystems, and human communities of concern for this secondary and cumulative effect analysis. Information based on the SHA Highway Needs Inventory (HNI), the Consolidated Transportation Program (CTP), the Constrained Long Range Plan (CLRP), the Maryland Office of Planning (MOP), Baltimore Metropolitan Council's Baltimore Regional Transportation Plan 1993 and the Draft Update, Howard County land use plans, county staff, and resource agencies. This information was reviewed to identify current, planned, and programmed development. Additional non-planned or programmed developments were also considered in creating a potential future scenario. CEQ guidelines state that "reasonably foreseeable future actions" should be included. All projects identified were reviewed for their potential to compound or increase impacts to the socio-economic, cultural, or natural environment being studied. Howard County did not identify any projects that were outside of the planned development for the region. SHA identified three projects to include in the secondary and cumulative effect analysis. Each of these projects, described below, is located outside of the SCEA boundary, however, each may have potentially impacted development within the area studied and were, therefore, reviewed. This review found that development within the SCEA boundary was not impacted by these projects. However, each of these projects influenced the traffic volumes projected for the MD 32 study area. This impact is addressed in the direct impacts of the project. Impacts other than those considered within the direct impact analyses were not identified and therefore were not further considered in this analysis.

- Relocated MD 32 from MD 108 to Pindell School Road (completed in 1996). The purpose of this project was to provide a "safe and efficient highway link that will move people, goods, and services quickly and directly" through western Howard County. It was included in the draft update of BMC's Baltimore Regional Long Range

Transportation Plan as part of long range plans to provide a continuous highway between I-70 and the city of Annapolis.

- MD 100 from US 29 east to I-95 (completed November 1998). Construction was recently completed on this combination limited and fully access controlled, six-lane highway project. This new multi-lane highway will relieve traffic conditions on the existing highway network and serve the growth areas of northern Howard County. The MD 100 project is included in the draft update of BMC's 1999-2003 Regional Transportation Improvement Program.
- US 29 from I-70 south to MD 103 (estimated year of completion, 2015). This proposed project, identified in the Highway Needs Inventory and in the 1993 Baltimore Region Long-Range Transportation Plan includes the widening from six lanes to eight lanes of this facility to improve connectivity between Baltimore and Washington metropolitan areas.

5. Secondary and Cumulative Effects Analysis

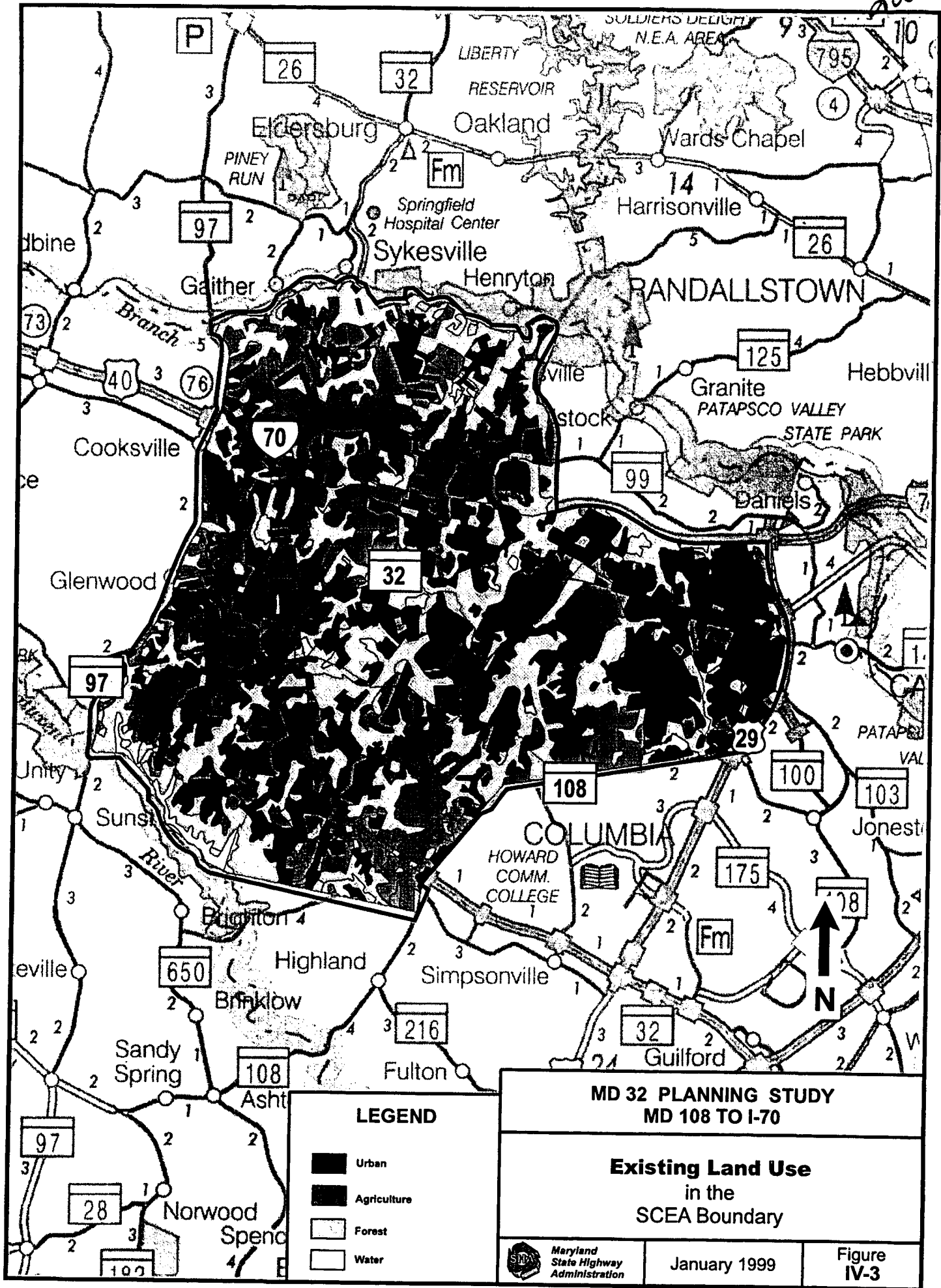
This section presents the analysis conducted for each resource. Differences between the two build alternatives were not substantial in terms of potential effects, therefore they were not differentiated within this analysis.

a. Land Use

Land use in the SCEA boundary has been identified using federal, state, county, and regional data, see Figures IV-3 and IV-4. This data included geographic information system (GIS) databases on land use, natural resources, and 1990 census information. Land in the SCEA boundary (56,167 acres) is comprised of protected lands, committed lands, and land potentially available for development.

Secondary Impacts The amount of development anticipated to occur within the SCEA boundary is not influenced by the MD 32 project, therefore, secondary effects were not anticipated to occur. In general, an improved transportation facility may result in future zoning change requests to allow higher density development in areas not currently zoned for such development. Among the indirect impacts associated with the proposed roadway improvements is the potential for secondary development. Secondary development is defined as development that could potentially occur as a result of new highway construction. Although the potential for secondary development exists, there are physical conditions and land use controls that limit this development from occurring within the region.

The MD 32 Planning Study is located in western Howard County. A majority of the land in this area is zoned rural residential, rural conservation, or agricultural. Howard County



in the 1990 Census data, see Table IV-21 and Figure IV-5. This analysis showed that there were 11,740 dwelling units in the SCEA boundary in 1990.

Table IV-20: Existing Land Use in the SCEA Boundary

Land Use	Total Existing Land Use	Percentage	Acreage Available for Development
SCEA boundary	56,167 acres	100%	
Protected Lands			
MET Easements ‡	398 acres	0.7%	0
Agricultural Easements	9,046 acres	16.1%	0
County Parks	3,409 acres	6.1%	0
DNR Lands	2,254 acres	4.0%	0
Water	123 acres		
Wetlands			
Palustrine Wetlands	805 acres	1.4%	805
Developed Land			
Urban	15,188	27.5%	0
Forest	9,823	17.5%	4,912 *
Agricultural	14,891	26.5%	11,913 **
Total Committed Land	30,648	55%	0
Total Available Acreage	25,519	45%	17,630

‡ Maryland Environmental Trust agricultural easements

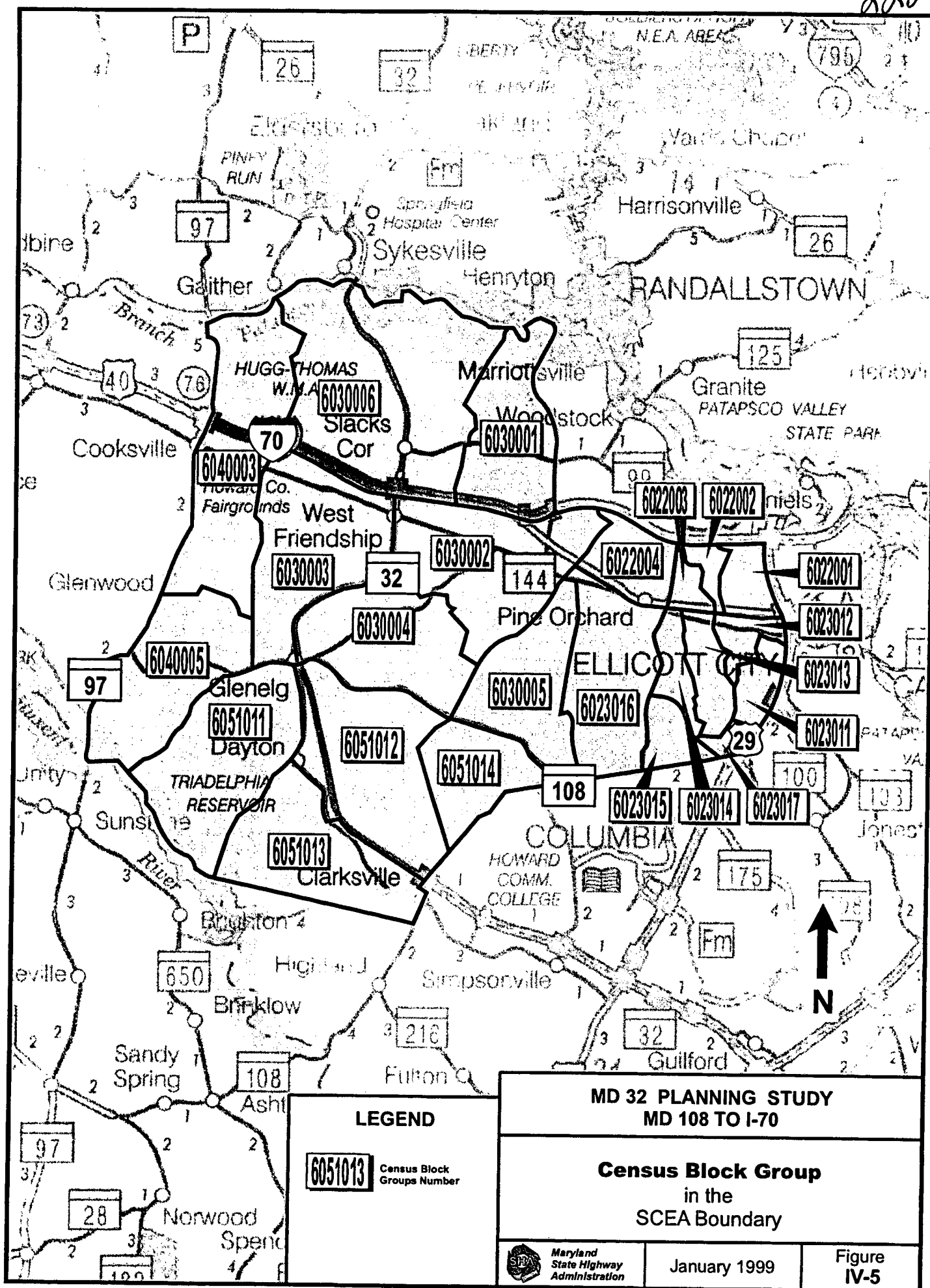
• 50 percent of forested land.

** 80 percent of agricultural land, and the palustrine wetland acreage

Potential Development

An analysis of potential development was conducted. Howard County zoning in the SCEA boundary was applied to the 17,630 acres potentially available for development as shown in Table IV-22.

The SCEA boundary was divided into a western and an eastern area to reflect the different development densities permitted in these areas. Howard County zoning in the western portion of the SCEA boundary is a combination of rural conservation (RC District), rural residential (RR District). RR and RC Districts allow for development densities of one unit for every three acres. Zoning in the eastern portion of the SCEA boundary, adjacent to Columbia, is a combination of Residential Single (R-20) and some commercial areas. R-20 zoning allows for 20,000-square foot lots, approximately two units per acre. In addition, the western (rural) portion of this area is within the County's DEO overlay district. DEO (Density Exchange Option) "provides land owners in the RC and RR Districts with opportunity and incentive to preserve significant blocks of



is committed, through their future land use plans, to maintain this zoning. In support of this commitment, no water or sewer facilities exist or are planned for this region. Additionally, Howard County has initiated and expanded an agricultural preservation program. The goal of this program is to preserve 30,000 acres (expanded from the original goal of 17,500 acres) of farmland. To date, over 17,500 acres have been preserved in Howard County west of Ellicott City and Columbia.

Existing Land Uses Total acreage of existing land uses in the SCEA boundary are listed in Table IV-20 and shown on Figures IV-3 and IV-4. Land uses include; Maryland Environmental Trust (MET) Easements, Agricultural Easements, County Parks, Department of Natural Resources (DNR) lands (natural resource management areas), water, palustrine wetlands, urban development, agricultural land and forested land.

Protected Acreage For the purposes of this analysis, Maryland Environmental Trust (MET) easements, agricultural easements, county parks, DNR lands and water were considered protected lands, that is, this acreage could not be developed.

Committed Acreage Committed land, 15,118 acres of the SCEA boundary, includes land that is already developed including residential, commercial, and industrial land uses.

Potential Land Use Land potentially available for development includes a portion of the 14,891 acres of agricultural land, 9,823 acres of forested land, and the 805 acres of palustrine wetlands in the SCEA boundary. Development within forested areas is limited through the Maryland Forest Conservation Act of 1991 that is administered on both the county and state level. The legislation sets a threshold of 50 percent for conservation of forests on forested parcels within areas zoned for resource conservation. Clearing of greater than 50 percent of the forested area on a parcel carries a penalty of 2:1 mitigation replacement through reforestation that provides a strong incentive for conservation of forested land. In addition, non-forested lands, including agricultural lands, must be planted to a level of 20 percent of the development parcel. Palustrine wetlands are protected from development, however, property owners can transfer development rights of this acreage through the Howard County Density Exchange Option zoning. For the purposes of this analysis it was assumed that the development rights of the full 805 acres would be transferred within the SCEA boundary at a density of one unit for every three acres. Therefore, the potential development of these land uses has been assumed to be 50 percent of the forested lands, 4,912 acres, 80 percent of the agricultural lands, 11,913, and all of the 805 acres of palustrine wetlands, for a total of 17,629 acres. This potential for development is not dependent upon the roadway improvements proposed for MD 32.

Existing Housing Units An analysis of housing in the SCEA boundary was conducted. The block groups, including portions of block groups were identified for the SCEA boundary. The percentage of the geographic area of each block group included in the SCEA boundary was applied to the number of housing units identified in that block group

farmland in the rural area of the county. This district is also intended to encourage clustering of residential development in areas where the development will not have an adverse impact of farm operations." The net volume of development in the county would not increase under the DEO program, however individual property density would be higher as a result of clustered subdivisions.

This analysis, as shown in Table IV-22, identified a potential for 7,567 new dwelling units in the SCEA boundary. This development represents a 64 percent increase in dwelling units over the 1990 levels.

Table IV-21: Housing Units Within the SCEA Boundary

Census Block Group	Geographic Area of Block Group (square feet)	Geographic Area within the SCEA Boundary (square feet)	Acres	Percent of Total	1990 Housing Units within the Block Group	1990 Housing Units within the SCEA Boundary
6030006	312,463,500	310,714,895	7,133	99%	600	597
6022001	29,126,360	29,079,605	668	100%	954	952
6022002	15,568,170	15,418,596	354	99%	384	380
6022003	19,840,850	19,840,848	455	100%	484	484
6022004	50,830,990	50,437,204	1,158	99%	464	460
6030005	124,403,500	124,363,033	2,855	100%	149	149
6023012	22,328,640	22,328,636	513	100%	779	779
6023013	41,151,000	41,151,003	945	100%	1,198	1,198
6023014	35,972,860	35,972,856	826	100%	872	872
6023015	34,539,700	33,812,058	776	98%	536	525
6023016	127,265,600	126,322,447	2,900	99%	892	885
6023017	8,640,743	8,616,506	198	100%	521	520
6023011	24,393,980	24,388,209	560	100%	506	506
6030001	267,315,100	119,693,249	2,748	45%	356	159
6030002	196,448,100	195,574,375	4,490	100%	522	520
6030003	174,520,600	174,520,600	4,006	100%	251	251
6030004	156,125,000	156,124,964	3,584	100%	630	630
6051011	182,378,200	181,844,007	4,175	100%	391	390
6051012	195,827,700	195,816,876	4,495	100%	299	299
6051014	74,608,500	73,341,455	1,684	98%	60	59
6040003 *	297,964,900	203,674,435	4,676	68%	558	381
6040005 *	411,227,900	161,081,673	3,698	39%	546	214
6051013 *	341,284,600	142,502,352	3,271	42%	1,267	529
Eastern Study Area	282,393,293	281,045,521	6,452	100%	6,698	6,676
Western Study Area	2,861,833,200	2,165,574,361	49,715	76%	6,521	5,063
Total Study Area	3,144,226,493	2,446,619,882	56,167	100%	13,219	11,739

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Table IV-22: Potential Development in SCEA Boundary

SCEA Boundary	Land Use	Total Acreage	Protected Acreage	Available for Development	Density Based on Zoning	Potential Development
Eastern Portion	Agricultural	431	86	345	2 unit per acre	690
	Forested	1,337	668	669	2 unit per acre	1,337
Western Portion	Agricultural	14,460	2,892	11,568	1 unit per 3 acres	3,856
	Forested	8,496	4,248	4,248	1 unit per 3 acres	1,416
Wetlands DEO	Wetlands	805	0	805	1 unit per 3 acres	268
Total		25,529	7,894	17,635		7,567

An analysis of residential building permits was conducted, as shown in Table IV-23. Building permit data for the years 1991 through 1997 was collected from Howard County. Those permits, located within the SCEA boundary, were identified. The data showed that an average of 257 building permits were issued each year during this time period. Should this trend continue the potential for build out of the SCEA boundary of 7,567 new dwelling units would be met by the year 2020.

Table IV-23: Residential Permit Activity in SCEA Boundary
1991 through 1997

Permit Year	Number of Permits Issued
1991	214 units
1992	395 units
1993	220 units
1994	243 units
1995	232 units
1996	241 units
1997	251 units
Total	1,796 units
Average Per Year	257 units

The potential development determined through this analysis (a 64 percent increase in housing units) is lower than the Maryland Office of Planning's estimate of a 79 percent increase for Howard County, and higher than the Howard County and Baltimore Metropolitan Council estimate of 58 percent for the area. The analysis completed for this study included 1998 information on preserved agricultural land in the SCEA boundary. The analysis also assumed that forested land and agricultural land would be developed to the extent possible under current legislation.

b. Cultural Resources

Cultural resources include historic structures and archeological sites. Federal actions are subject to Section 106 of the National Historic Preservation Act. Section 106 requires Federal agencies to take into account the effects of their projects on historic properties. The MD State Historic Preservation Officer and other parties with an interest in effects to historic properties are involved in the identification, determining eligibility and evaluating the effects of federal actions on historic or cultural resources. However, damage or the destruction of cultural resources can occur due to non-federal actions. Section 106 investigations associated with federal actions or projects have resulted in the recordation of important information about the history and prehistory of Howard County. Development that may occur within the SCEA boundary, with or without this project, may impact cultural resources.

The Howard County 1990 General Plan calls for the establishment of a comprehensive countywide historic preservation program. The purpose of this program would be to develop ordinances or legislation for historic preservation, protect resources from loss, and to review and extend the county's Historic Sites Inventory. The scope of the program would increase emphasis on protecting or restoring historic landscapes and settings as well as individual structures.

Properties within the SCEA Boundary that are included in the National Register of Historic Places were identified. These sites are listed in Table IV-24 and their locations are presented on Figure IV-6.

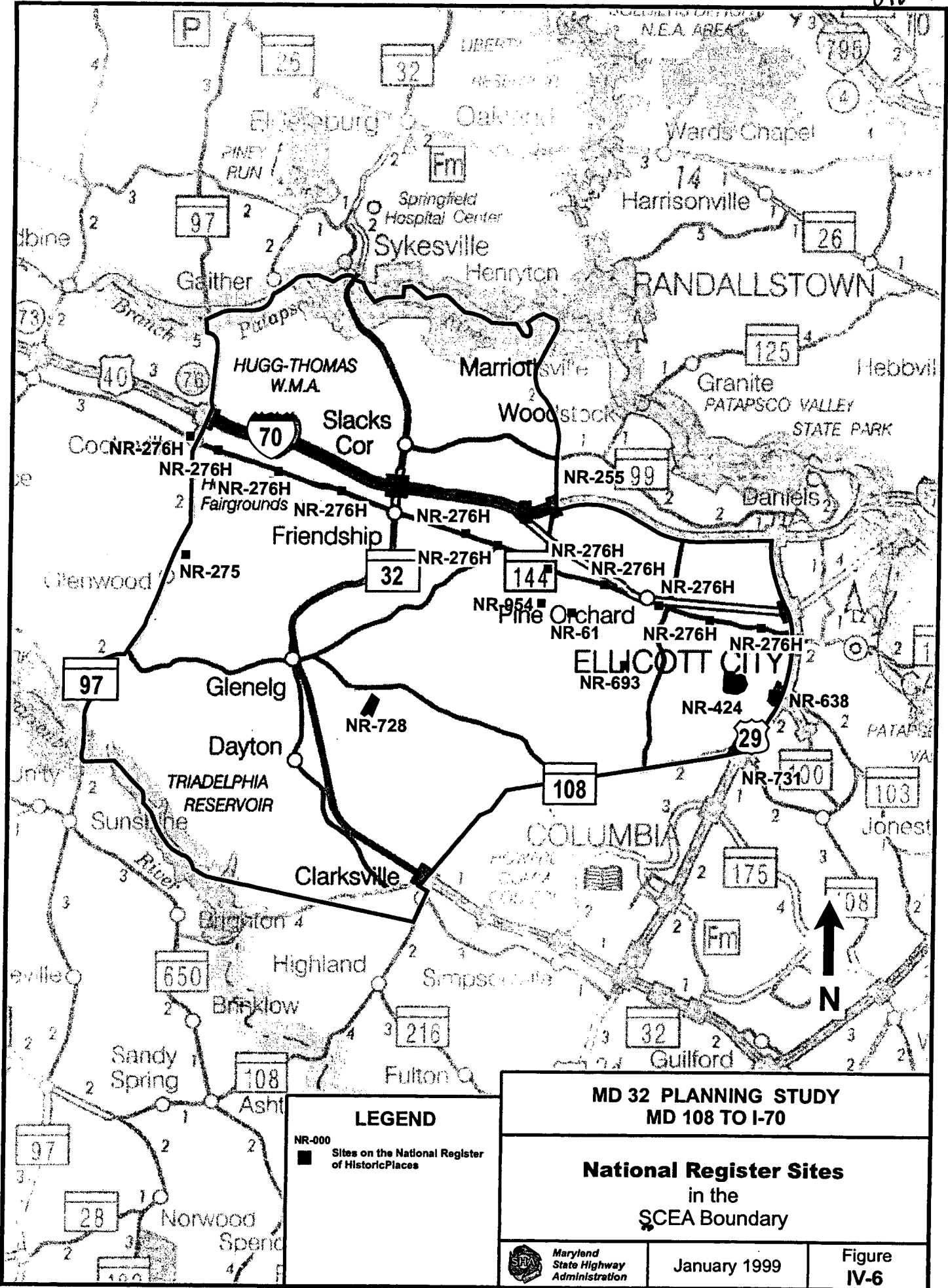


Table IV-24: Historic Properties within the SCEA

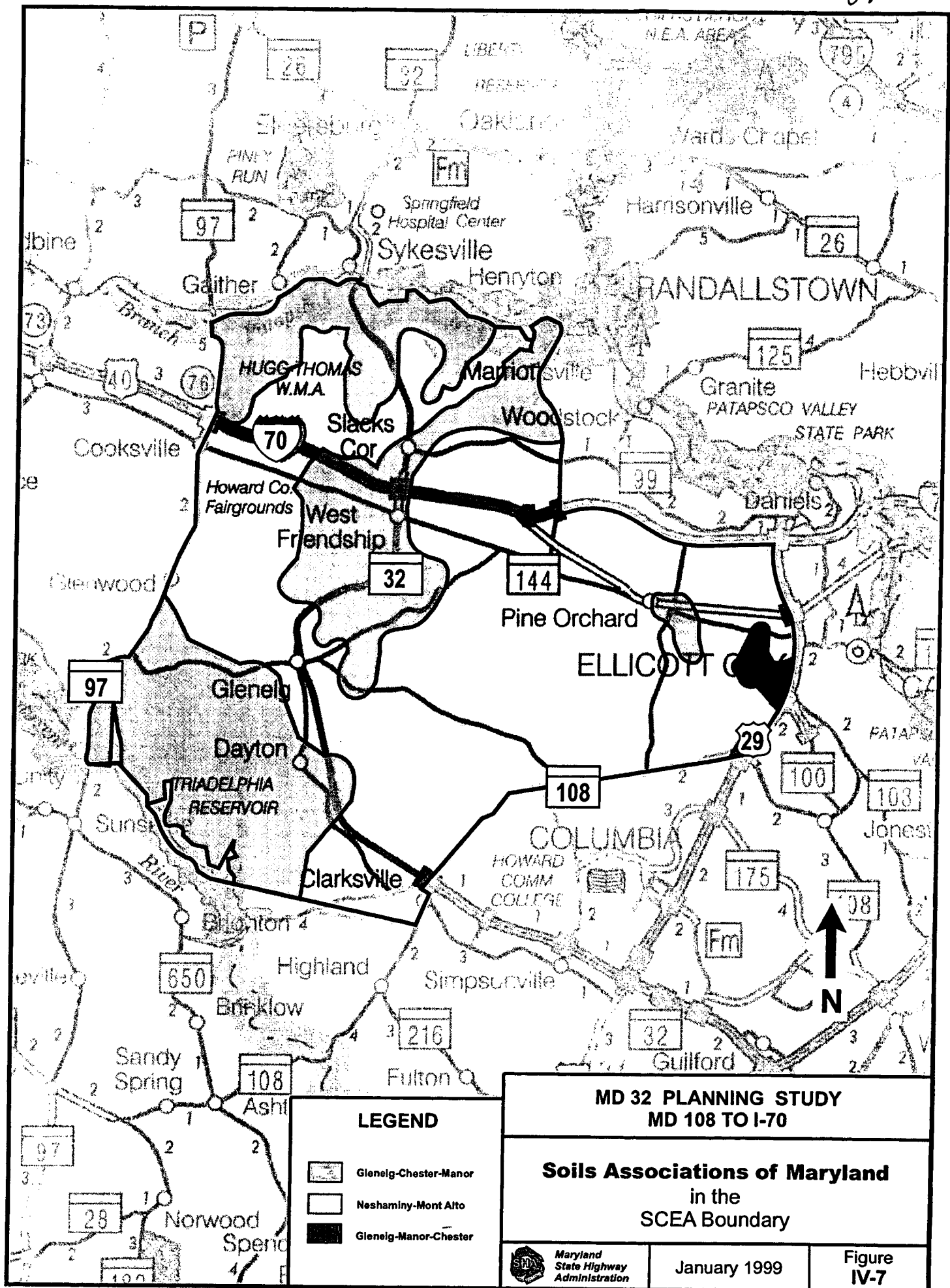
Number	Property Name	Maryland Inventory of Historic Properties Number
1145	Brick House on the Pike	HO-25
276	Old National Pike Milestones	Multiple
368	Temora	HO-47
424	White Hall	HO-394
487	Elmonte	HO-96
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
731	Woodlawn	HO-30
61	Doughoregan Manor	HO-22
954	Enniscorthy	HO-131
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
255	Waverley	HO-21
693	Burleigh	HO-23
728	Glenelg Manor	HO-15
275	Union Chapel	HO-7
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple
276	Old National Pike Milestones	Multiple

c. Geology, Topography, and Soils

A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil. Soils in one association may occur in another, but in a different pattern and in different proportions.

The SCEA boundary is dominated by the Glenelg-Chester-Manor Association and the Glenelg-Manor-Chester Association. See Figure IV-7. These soil associations are the two most common in the County, accounting for 49 percent and 22 percent of the County, respectively. Essentially all of the Glenelg, Manor, and Chester soils, except those found on extreme slopes (greater than 15 percent slope), are classified as prime agricultural soils or additional farmland of statewide importance. Nearly 72 percent of the County contains prime or additional statewide important soils.

Secondary and cumulative effects on prime and important agricultural soils are related to two major actions, erosion of soil surface through construction and agricultural activities



and the use of these soils for non-farming land uses, which effectively result in the loss of these soils.

Efforts to reduce soil erosion on agricultural lands are headed by the Maryland Department of Agriculture and the NRCS Soil Conservation Districts. These agencies implement their own erosion and sedimentation programs to protect soil resources, limit nutrient runoff, and improve water quality. These programs include participation in the USDA Conservation Reserve Enhancement Program, assistance to farmers in implementing soil conservation and water quality plans, and participation in the MDE Maryland Tributary Strategies programs.

Land use changes can pose a threat to the loss of prime and important farmland soils. From 1973 to 1990, approximately 13,734 acres of agricultural land were lost, representing a 19 percent decline and 4,672 acres of forest lands were converted, a loss of 7.3 percent. Of the total 18,406 acres of agriculture and forest resource loss, agricultural land loss accounted for 75 percent. Given that over the same period, approximately 16,500 acres of additional residential and commercial development occurred, approximately 12,375 acres of agricultural lands were assumed lost to development. This represents an average annual loss of 650 acres prime soils per year within Howard County.

Land use programs in Howard County include the protection of the rural environs of the County through growth patterns, which incorporate logical development densities and follow available infrastructure services. Clustering and density requirements will help protect viable areas of prime farmland soils. The Agricultural Land Preservation Program will also help retain large areas of prime soils.

d. Surface Water Resources

The SCEA boundary encompasses two sub-watersheds within the Patuxent River watershed, the Little Patuxent and the Middle Patuxent.

The Maryland Water Quality Inventory for 1993-1995 (DNR, 1996a) discussed past water quality and biologic parameters for each of the major and minor watersheds within the state. Preparation of this report is required under the Federal Clean Water Act, and its results are combined with other state reports into a National Water Quality Inventory. The ratings of good, fair, and poor are based on levels of use supported by the water resource (see Table IV-25). These ratings are general in nature and represent an overall assessment of the entire water resource system. Conditions at any point in a watershed may have different water quality characteristics. Use criteria for individual waterways are set by the state, and a stream may have different use criteria for different segments of the waterway. Therefore, a stream may meet use criteria in one segment but not another. Also, actual water quality differs throughout a watershed, leading to different levels of water conditions.

Table IV-25: Water Quality Ratings
(used in the National Water Quality Inventory Program)

Use Support Level	Water Quality Condition	Definition
Fully supporting	Good	Water quality meets designated use criteria.
Threatened	Good	Water quality supports beneficial uses now, but may not in the future unless action is taken.
Partially Supporting	Fair (impaired)	Water quality fails to meet designated use criteria at times.
Not Supporting	Poor (impaired)	Water quality frequently fails to meet designated use criteria.

Source: U.S. EPA National Water Quality Inventory. 1995

The following discussion presents a summary of the Maryland Water Quality Inventory 1993-1995 (DNR, 1996a) results for the sub-watersheds within the SCEA boundary.

Segment 02-13-11-05 (Patuxent River - Little Patuxent River)

There are no routine water quality monitoring stations in this segment. Based on land use and resource information, water quality in this segment is estimated as Fair (DNR, 1996a). High bacteria and nutrient levels are due to agricultural and urban runoff and municipal discharges. High suspended sediment levels are due to agricultural runoff and construction activities.

Bioassessment of four sites in the upper free-flowing sections of the Patuxent River showed that all sites had unimpaired or moderately impaired habitat conditions and moderately impacted biological communities, suggesting some water quality impact. Two of these sites (Little Patuxent and Dorsey Branch) are found within the study area and sampling results are shown in Table IV-25. These results indicate these streams generally exhibit slightly lower water quality in the Little Patuxent and Dorsey Branch, when compared to a composite stream of the Patuxent Piedmont and West Chesapeake Coastal Plain area, respectively. Both evaluations indicate that although favorable conditions exist, the effect of pollution produces some impairment in these streams.

Segment 02-13-11-06 (Patuxent River - Middle Patuxent River)

There are no routine water quality monitoring stations in this segment or on the Terrapin Branch, which is in the Middle Patuxent watershed. Based on land use and resource information, water quality in this segment probably is Good (DNR, 1996a). Elevated bacteria, nutrient and suspended sediment levels are primarily due to agricultural runoff. Bioassessment of one site (Middle Patuxent) showed a moderately impaired biological community in an unimpaired habitat, suggesting some water quality impact. Bioassessment results in the Middle Patuxent are shown in Table IV-26. These results indicate excellent habitat conditions, but some impairment from pollution.

**Table IV-26: Results from the Maryland Department of Natural Resources
Rapid Bioassessment Program**

Little Patuxent					
Year	TR	BI	Percent EPT	Percent BIO	Percent HAB
1992	10	2.84	63	43	67
1994	10	2.78	74	50	79
1996	11	2.83	42	43	71
Composite Reference	19	2.11	70	100	100

Middle Patuxent					
Year	TR	BI	Percent EPT	Percent BIO	Percent HAB
1990	10	3.03	78	43	78
1994	16	2.69	50	64	80
1996	11	2.84	62	50	91
Composite Reference	19	2.11	70	100	100

Dorsey Branch					
Year	TR	BI	Percent EPT	Percent BIO	Percent HAB
1992	8	3.03	91	60	74
1994	9	3.35	62	60	73
1996	8	3.05	87	67	70
Composite Reference	17	2.8	41	100	100

Source: Maryland DNR Rapid Bioassessment Program, 1998.

Legend: TR = Taxa Richness - measures the overall variety of macro-invertebrate assemblage - generally increases with increasing water quality
 BI = Biotic Index - measure of pollution tolerance of benthic macro-invertebrates - values range from 1 to 10 - values increase as general water quality decreases
 Percent EPT = Percent of Ephemeroptera, Plecoptera, and Trichoptera taxa (mayflies, stoneflies, caddisflies) per benthic sample percent value increases as general water quality increases
 Percent BIO = Biological Score - tolerance to pollution indicator - comparison to composite score - values increase with increasing general water quality
 Percent HAB = Habitat Score - overall estimate of conditions for water quality - comparison to composite score - values increase with increasing general water quality

The most common water quality problem in Howard County, and throughout Maryland, are the accumulation of nutrients and suspended sediment. Excessive nutrients lead to algal blooms which reduce available oxygen levels for aquatic life. Agricultural uses, urban and natural non-point source runoff, point sources, and atmospheric deposition all contribute to locally elevated nutrient levels.

Locally high suspended sediment levels affect recreation use, aquatic habitat, and nutrient cycling, and increased sedimentation of other water sources. Sources of sediment include agricultural and urban runoff, construction activities, natural erosion, forestry, and mining operations. Efforts to control sediments are centered on implementing Best Management Practices for sediment and erosion controls and stormwater management, as specified by MDE and Howard County. Such controls are best achieved through the implementation of an overall watershed management plan with source and stream-based controls. Source based controls would be aimed at reducing peak discharge and pollutant loads with vegetated medians and infiltration basins. Stream based controls would restore eroding stream reaches by stabilizing banks, for example.

The following table, Table IV-27, presents information on biological quality and fish characteristics of the Patuxent watershed. Additionally, the glassy darter (State endangered species) was identified, July 1, 1966, (DNR, July 25, 1994, V-NEPA-3) in the Middle Patuxent and Little Patuxent streams, outside the MD 32 study area.

**Table IV-27: General Fish Species Diversity and Abundance
(in the Patuxent Watershed)**

Characteristic	Patuxent Watershed
Game Species	Redfin pickerel, Chain pickerel, White perch
Non-Game Species	Blacknose dace, Eastern mudminnow, Rosyside dace, Fallfish, Tessellated darter
Estimated biomass of game fish species per stream mile	317.5 grams
Estimated biomass of non-game fish species per stream mile	9,797 grams
Fish Species Richness (mean number of species per stream segment sampled)	5.8

Source: Maryland Biological Stream Survey 1994 (Patuxent)

Note: Common Fish Species are listed in order of abundance.

A number of studies and initiatives are ongoing, including studies to determine water quality trends throughout the SCEA boundary. One of the most important initiatives in the Patuxent watershed is the Maryland DNR Tributary Strategies. These strategies were developed in response to the Chesapeake Bay Program's nutrient reduction program. In the 1987 Chesapeake Bay Agreement, a commitment was made to reduce nitrogen and phosphorus loading to the Bay from controllable sources by 40 percent by the year 2000 (US EPA, Chesapeake Bay Program, 1997). The program has been very successful, meeting the majority of its goals. However, the current rate of program implementation and improvement must be accelerated to keep pace with growth in the watershed. This will necessitate greater emphasis on regional water quality impacts through the in-place tributary strategies.

The Patuxent River Tributary Strategy has developed a series of goals to help reach water quality goals in the watershed. These include:

- Assess and upgrade wastewater treatment plants
- Implement erosion and sediment controls and stormwater management controls
- Develop education programs
- Accelerate implementation of nutrient management plans on farms
- Accelerate planting of winter cover crops
- Expand existing soil conservation and water quality programs
- Continue to plant forest buffers
- Continue existing programs to conserve forests and wetlands
- Protect sensitive areas

A recent effort by the DNR will provide an ongoing assessment of water quality and aquatic richness throughout the state. The Maryland Biological Stream Survey (DNR, 1996b, 1997a, and 1997b) will provide a basis for future status and trends analysis of water quality within the region.

Additional programs of the Chesapeake Bay Program, DNR, and federal agencies such as EPA will continue to assess water quality and search for solutions to problems. The Clean Water Act 303(d) program identifies streams for which a total maximum daily load (TMDL) has been established under the rules of the Federal Clean Water Act. A TMDL establishes the maximum allowable pollutant loading for a waterbody to meet water quality standards and allocates that load among pollution contributors. TMDLs are a tool for implementing State water quality standards and are based on the relationship between pollution sources and in-stream water quality conditions. A TMDL addresses a single pollutant or stress for each waterbody (MDE, 1998). The Patuxent River Tributary Strategy is a Priority 2 watershed within Maryland due to elevated nutrient levels attributable to point, non-point, and natural sources.

The Maryland Section 319 Program addresses waters that do not fully meet their designated uses as a result of non-point source pollution and focuses on nutrient loadings. The Patuxent, Middle Patuxent, and Little Patuxent are each included on this list.

For the placement of fill within the waters of the United States, including streams and floodplains, approval from the U.S. Army Corps of Engineers must be obtained. This approval may be obtained by the granting of a Section 404 permit as required by the Clean Water Act. Permit requirements under the Clean Water Act would require avoidance of resources and minimization of impact to water resources. Mitigation measures may also be required. Additionally, any impacts to waters designated by the U.S. Coast Guard as navigable would require additional permitting and other potential mitigation measures.

Localized adverse impacts of development upon surface waters, especially non-point pollution such as roadway and agricultural runoff, will continue as increased local, state, and federal programs and policies strive to temper this trend. The impacts of development upon surface waters are highly contingent on the actual placement of this development in the landscape. The streams in the SCEA boundary exhibit good natural characteristics, but are currently subject to some impairment from pollution. Since part of the Little Patuxent watershed is included in the eastern portion of the study area, which allows for greater development density, this resource is most likely to be impacted by secondary and cumulative effects. Waters in the western planning area are subject to lower density development. However, stream buffer policies, greenways designation, and other watershed conservation programs help direct growth away from these resources.

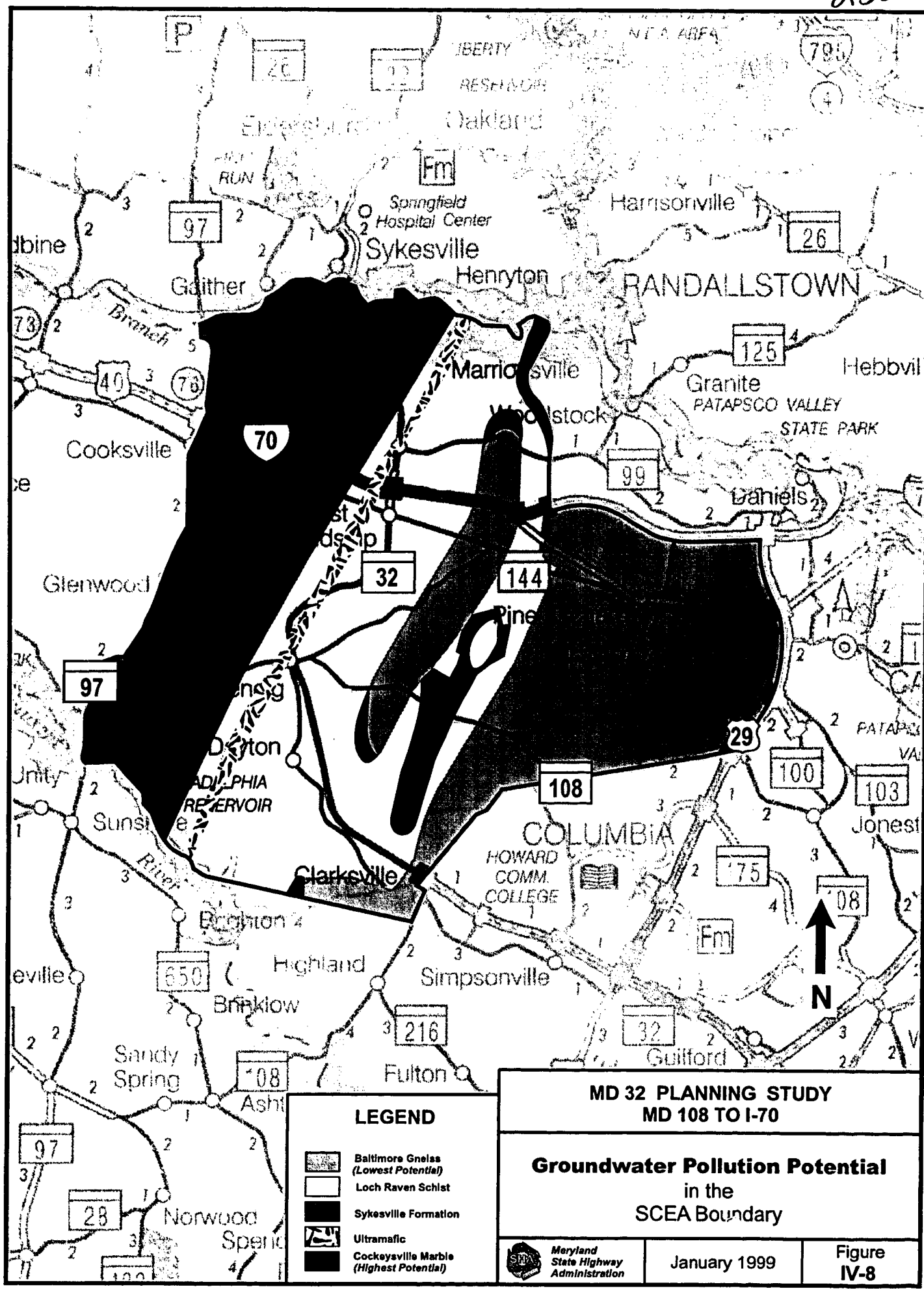
Although the build-out of the SCEA boundary would convert some acreage to development, the planning programs in place attempts to direct this impact away from surface waters. Increased emphasis on watershed protection, especially through the Maryland Tributary Strategies (based on the Chesapeake Bay Agreement of 1983), is likely to require local communities to more strictly enforce existing planning regulations or implement improved policies. For example MDE has recently developed stricter stormwater management regulations. There is currently no readily available information on the effect that these programs have had on the resources within the SCEA boundary. However, it is reasonable to expect that as these programs become further implemented, anticipated development, including the MD 32 project, will have no cumulative effects on surface water resources, including the Terrapin Branch.

e. Groundwater Resources

The geology of the SCEA boundary is composed primarily of crystalline rock, see Figure IV-8. The western part of the study area is generally composed of schists of the Sykesville Formation. The eastern part of the boundary is a mixture of the Loch Raven Schist, Baltimore Gneiss, and Cockeysville Marble formations. Natural ground water quality is fair with generally soft water and low total dissolved solids levels, while the availability of water is generally lower than in sedimentary geologic areas.

Existing or potential sources of groundwater contamination include sources such as landfills, underground storage tanks, spills, and improper storage of salt and other materials on bare ground. Other sources which are not as easily identified (non-point sources) include septic systems, application of nutrients and pesticides on agricultural and suburban lands, animal wastes, urban stormwater runoff, highway deicing, and land application of sewage sludge.

Howard County recently completed a study of the groundwater sources and relative pollution potential in the western part of the County. The results of the study ranked the hydrogeologic units of the County according to their susceptibility to contamination. The



Baltimore Gneiss, Loch Raven Schist, and Sykesville Formation were the top three least vulnerable groundwater formations; formations which are found through the majority of the study area. The Cockeysville Marble formation ranked the most vulnerable to contamination. Much of the lands underlain by vulnerable formations are included within the planned Mid-County Greenway. This will help minimize the potential for contamination from point sources in these areas. This project is not anticipated to have cumulative effects on groundwater resources.

Despite relatively good water quality and low susceptibility to contamination, the ground water sources of the SCEA boundary provide low volumes. Since the western part of the County is planned to predominantly utilize groundwater as a potable water source, protection of recharge areas and careful land use planning of cluster developments is needed to ensure an adequate supply is available. However, since the western area is planned for low density development, impact on groundwater levels will likely be affected more by natural conditions than through the cumulative effects of domestic use. Transfer of development right programs should be encouraged in the western planning area to protect a variety of natural resources and lands, including groundwater levels in areas of naturally-occurring low volumes and high contamination susceptibility.

f. Floodplains

Floodplain areas not only contain and convey excessive flows during precipitation events, but also provide valuable habitat for a host of terrestrial and aquatic species. Floodplains also help water quality by filtering pollution. Within the SCEA boundary, the largest areas of 100-year floodplains are found along Middle Patuxent, Little Patuxent, and the Patuxent River.

Impacts of development upon floodplains are largely controlled by land development and subdivision regulations. The majority of floodplains are located in areas zoned for rural conservation. Howard County has a floodplain ordinance in effect. These ordinances, as a minimum, require compliance with the regulations of the Federal Emergency Management Agency (FEMA). FEMA requires all residential structures to be elevated to the base-flood elevation and all non-residential structures to be flood proofed to the base flood elevation. In addition, no construction is permitted within any floodway that would increase the 100-year elevation. Based on these ordinances and regulations, cumulative effects on floodplains from secondary development in the SCEA boundary are not anticipated. Direct impacts of this project will add to the overall cumulative effect on floodplain areas, which have occurred historically prior to the present strong floodplain regulation. However, most of this project's impacts are the continuation or expansion of previous effects and are limited in severity and can be mitigated through typically-required design measures.

g. Wetlands

Wetland acreage in Maryland, as well as over the United States as a whole, has continued to decline since settlement of the nation. Maryland lost approximately 73 percent of its original wetland acreage between 1780 and 1980, from 65 million acres in 1780 to 440,000 acres in 1980 (USFWS, 1980). This represents an average annual loss of over 6,000 acres statewide. However, much of this loss occurred during settlement of the state in the 1700s and 1800s. Agricultural development and forestry activities were the major historical causes of the conversion of wetland acreage.

Between 1955 and 1978, about 15,100 acres of inland vegetated wetlands within Maryland were lost, representing an average annual loss of approximately 650 acres. Approximately 33 percent of these losses were attributable to land development and another 31 percent were caused by agricultural activities. Another substantial portion of wetland destruction was due to the development and alteration of ponds and lakes, accounting for approximately 27 percent of the total inland wetland loss.

A 1994 USFWS study documented changes in vegetated wetlands within the Chesapeake Bay watershed (USFWS and US EPA, 1994). Approximately 90 percent of the state of Maryland is within the Chesapeake Bay watershed. Table IV-28 shows the palustrine vegetated wetland acreage changes over the study period for the Maryland portion of the Bay.

Table IV-28: Changes in Vegetated Palustrine Wetlands
(Maryland- Chesapeake Bay Watershed: 1982-1989)

Palustrine Wetlands	Acres
1982 Wetlands	307,546
1989 Wetlands	303,223
Wetlands Changed to Other Vegetated Wetlands	397
Wetlands Gained from Other Vegetated Wetlands	315
Wetlands Gained from Other Habitats	1,115
Net Change	-4,323

Given the changes identified, the Maryland portion of the Chesapeake Bay had an annual palustrine wetland loss rate of 617 acres per year. This is similar to the rate experienced through the 1960s and 1970s. As part of the 1994 USFWS/US EPA study, an analysis was performed which described wetland changes within central Maryland from 1980/81 to 1988/89. The study analyzed wetland changes within six USGS quadrangles (Buckeystown, Kensington, Libertytown, Rockville, Urbana, and Walkersville) to establish a regional wetland trend within the rolling plains of the Upper Coastal Plain and Piedmont physical regions. Although none of the analyzed quadrangles falls within the

study area, the regional approach presents results from areas similar (both physically and socially) to central Howard County. The results of the study found that over the nine year period, approximately 88.5 acres of palustrine vegetated wetlands were converted to upland areas and effectively lost. An additional 34.3 acres were converted to other types of palustrine vegetated wetlands. Another 9.7 acres of palustrine vegetated wetlands were changed to pond or deepwater habitat. Given the changes identified, the Piedmont region, which is effectively similar to the study area, had an average annual loss/conversion of palustrine wetlands of approximately 14.7 acres. About 50 percent of these losses/conversions were attributable to agricultural activities, with another 32 percent due to road/highway construction and 12 percent due to residential and commercial development.

The MD 32 project would convert 3.5 acres of wetland under Build Alternative I and 2.2 acres for Build Alternative II. This project would therefore account for about 75 percent of the regional annual wetland conversion potentially attributable to transportation improvements. Other development projects within the SCEA boundary may potentially add to these impacts and continue the wetland conversion trend, although, specific data was not readily available to quantify such impacts from any specific project. Overall, the MD 32 project is projected to account for less than 24 percent of the expected annual average wetland loss in the Piedmont region.

According to a 1996 study of Maryland wetlands by the National Wetland Inventory of the USFWS, approximately 2,977 acres of palustrine wetlands exist in Howard County. The SCEA boundary contains approximately 805 acres of NWI and DNR palustrine wetlands.

A recent report by the National Wetlands Inventory *A Status and Trends of Wetlands in the Conterminous United States 1985-1995* (USFWS, 1997) indicates wetland losses nationwide have slowed to a rate 60 percent below that experienced during the 1970's and 1980's. This reduction in wetland conversion can be directly attributed to implementation of federal, state, and local regulatory programs, increased public awareness and support for conservation, and wetland creation and restoration programs.

Tables IV-29, IV-30, and IV-31 present information related to Section 404 permits issued by the U.S. Army Corps of Engineers for activities within the SCEA boundary from 1993 to 1997. Information on permits for prior years have been archived and are not readily available. However, during years 1993 through 1997, 35 permits were approved representing a variety of projects. Over this five year period less than 7 acres each of wetland and buffer losses were approved, with most occurring in 1995. In addition, 5,214 linear feet of stream channel disturbance was approved, with most occurring in 1995 and 1996. The majority of activities approved were issued as Nationwide Permit (NP) numbers 3 (maintenance of existing structures), 12 (utility lines installation), 26 (headwaters and isolated water discharges) and the Maryland General Permit Number 1 (MDGP-1). Other permits were issued for streambank stabilization (NP 13), road

crossings (NP 14), minor miscellaneous discharges (NP 18) and the Maryland State Programmatic General Permit Number 1 (MDSPGP-1). No Individual Permits were issued within the project area.

While there is no readily available information related to whether or not approved activities have actually been undertaken, the average wetland, as well as buffer, losses approved per year from 1993 through 1997 were 1.3 acres. In addition, an average of 1,043 linear feet of stream disturbance was approved per year. Most of the wetland and stream impacts approved also required mitigation consisting of replacement or restoration of other similarly disturbed ecosystems at 2:1 or 3:1 ratios. Thus, it seems reasonable to project that foreseeable future impacts from activities within the SCEA boundary, based on the assumption that the rate of losses over the past five years would continue, would not be extensive. This assumes mitigation would be successful in replacing wetland and stream structure and function. Verification of success or failure would be determined through multiple year monitoring. While mitigation in general has not always been successful in other areas, restoration and monitoring techniques have been improving over the past several years. It is therefore reasonable to expect that more successful mitigation projects would be achievable in the foreseeable future.

Table IV-29: Section 404 Permits Approved
(1993 through 1997)

Year	Buffer (acres)	Stream (linear feet)
1993	0.4	330
1994	0.3	776
1995	3.9	1,877
1996	1.6	2,065
1997	0.4	166
Total	6.6	5,214

Table IV-30: Allocation of Section 404 Permits
(1993 through 1997)

Permit Type	Percent Approved
NP 3	22.2
NP 12	25.0
NP 13	5.5
NP14	2.8
NP 18	2.8
NP26	16.7
MDGP-1	22.2
MDSPGP-1	2.8
Total	100.0

Table IV-31: Approved Section 404 Impacts on Land Uses
(1993 through 1997)

Land Use Type	Percent
Forest	37.1
Old Field	14.3
Cropland	8.6
Developed	20.0
Other	20.0
Total	100.0

Land use changes (including roads and urban development) within the project study boundaries which historically accounted for approximately 44 percent of wetland impacts in the region, an average annual trend of 14.7 acres of palustrine wetland loss per year. The MD 32 improvements would impact 2.3 or 3.5 acres of wetlands depending on the build alternative. Effects of other identified future actions could contribute additional wetland impacts, adding to the impacts of the MD 32 project. The Section 404 permitting process, mitigation requirements, and conservation efforts of the state and region are currently in place to help compensate for cumulative wetland impacts. However, the permitting process and mitigation cannot adequately replace the function and value of all wetlands. Therefore, avoidance and minimization of wetland impacts must be of the highest priority. The general development plan for Howard County within the SCEA boundary allows flexibility of design and lot size to allow for avoidance of a high percentage of wetland impacts.

Regulatory programs will continue to reduce the conversion of wetland areas to non wetland uses in Maryland and in the SCEA boundary. An increased emphasis on wetland

mitigation will strive to offset wetland disturbances caused by development actions. The objective of the recent Maryland wetlands initiative is to contribute to the wetlands base through restoration of some 60,000 acres of wetlands which have been lost since the 1940's. This effort will focus on an increased commitment toward wetland creation and restoration for state actions, use of enforcement action funds for creation, and development of a wetlands conservation plan to aid private sector wetland initiatives.

The Environmental Protection Agency, along with various other regulatory and resource agencies, has established a milestone goal for wetland protection. By 2005, EPA is proposing to attain an annual national net increase of at least 100,000 acres of wetlands, thereby supporting valuable aquatic life, improving water quality, preventing property damaging floods and droughts, and improving overall human health (EPA, Office of Water, 1996).

Recent analyses by the US Army Corps of Engineers described the cumulative impacts of small projects on wetland habitat losses (USACOE RAMS, 1997). The analysis indicated that approximately 62 percent of non-tidal wetland impacts were permitted under nationwide permits, rather than the more closely screened individual permits. These findings underscore the impact that small projects may pose cumulatively regardless of an individual project completion. In general, while large scale actions may impact greater wetlands areas, mitigation measures, including wetland construction, offset resource and habitat losses with any given region.

h. Vegetation and Wildlife

The cumulative effects discussion on vegetation and wildlife resources is largely based on national and regional trends, since data was not readily or specifically available for the SCEA boundary. The discussion of national and regional trends is important in order to provide a baseline of general trends that can be applied to the SCEA boundary as whole. The lands within the SCEA boundary, as a whole, are similar to other piedmont areas of the Mid-Atlantic States.

The SCEA boundary possesses a combination of mixed-hardwood forests, agricultural lands, and developed areas, which have a wide variety of habitat types. Forest land accounts for 17.5 percent of the study area, with agricultural lands covering 43.3 percent. Water bodies and wetlands cover an approximate additional 1.6 percent of the study area. The wildlife species identified within the MD 32 Corridor would be expected to occur throughout the SCEA boundary.

In order to assess cumulative impacts on animals, plants, natural habitats, and ecosystems, it is pertinent to have an understanding of their ecological status at national, state and regional levels. Accordingly, the U.S. Fish and Wildlife Service recently analyzed the status of plants, animals, and ecosystems within the nation (USFWS, 1995). The report offered a summary of distribution, abundance, and health of species and

habitats of importance to our ecological health and heritage. The results of the report offered the following findings:

Bird populations have shown an overall increase, with goose and raptor populations showing the most marked increases. Other groups, such as colonial waterbirds and songbirds, have fluctuating or decreasing populations. Much of these changes are due to habitat losses and human disturbance. Mammal populations have also been greatly affected by habitat degradation. Most species have had difficulty adapting to disturbed habitat and have therefore been continually declining, while others, such as white-tailed deer, have flourished in human-influenced habitats. Losses of wetlands and quality aquatic habitat have led to the decline in many species of reptiles and amphibians. Native fish populations have also experienced substantial adverse changes due to human influence through reduced distributions, lowered diversity, and increased numbers of species considered rare. Habitat alteration and incompatible land use are the largest threats to plant species. Land use has led to decreased plant species diversity and an increase in the number of species considered rare.

At a more regional level, a recent US EPA publication (An Ecological Assessment of the United States Mid-Atlantic Region, 1997) was produced to document changing natural conditions across the region and to provide context for community-level situations. The assessment used spatial data at the watershed level to document conditions and changes. The SCEA boundary includes portions of the Patuxent watershed. Findings of the report indicated the Patuxent watershed has higher resource cumulative impacts than most of the other watersheds in the greater region. This finding is due to the high population and road density throughout the watershed. As a result, the watershed experiences low amounts of riparian vegetation and interior forest habitat, which substantially affect wildlife populations within the watershed and, likely, the SCEA boundary. Nevertheless, the MD 32 build alternatives would not likely contribute to cumulative effects in this watershed.

Within the vicinity of the SCEA boundary, a number of resource lands exist which provide habitat for wildlife and possess integral areas of vegetation. These areas will not experience important cumulative effects.

Specific habitat areas within the study area exist which provide important habitat for a number of species. Maryland has identified nontidal wetlands of Special State Concern which receive extra protection although the MD 32 project is not expected to impact these resources from a cumulative perspective. These areas within the SCEA boundary include:

- Benson Branch - Sykesville
- Browns Bridge Crossing - Clarksville
- Henryton Woods - Sykesville
- Little Patuxent River - Laurel
- Upper Hammond Branch - Clarksville

These programs and their funding will focus on identifying and protecting significant natural resources throughout the state, including any which might be located within the SCEA boundary. Such programs should preclude cumulative effects to such resources from future projects, including the MD 32 project.

EPA's Office of Policy, Planning and Evaluation (OPPE) has been funding development of integrated ecosystem and economic models of the Patuxent watershed for the purpose of policy analysis. The models will be designed to evaluate the ecological and economic effects and benefits of various environmental problems. These include agricultural runoff of nutrients, wetland protection and restoration, county level zoning, residential development, and watershed sustainability.

Many other programs through state and federal agencies, including the Chesapeake Bay Program, are currently or will be researching and evaluating the eco-systemic resources of the study area to minimize cumulative effects from future projects.

i. Air Quality

The air quality analysis completed for MD 32 Planning Study shows that none of the alternatives or options studied would result in a violation of the State and National Air Quality Standards (S/NAAQS) for Carbon Monoxide (CO). This project is located in Howard County, which is a Severe Ozone Non-attainment area, but is not a Non-attainment area for Carbon Monoxide. This area is also currently designated as in attainment for the NAAQS of nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulates (PM₁₀), and lead (Pb). Since the project is located in an Ozone Non-attainment area, conformity to the State Implementation Plan (SIP) is determined through a regional air quality analysis performed on the Transportation Improvement Program (TIP) and Transportation Plan (TP) by the regional MPO. The MPO uses the regional model and therefore, this item was not further analyzed.

j. Hazardous Materials

Implementation of the MD 32 project and potential land use changes in the SCEA boundary present little potential for additional generation of hazardous wastes. Land use plans in the SCEA boundary provides for minimal commercial and business development. The major new source of contamination that may be generated would be the establishment of new storage tanks and small quantity (RCRIS) generators associated with new service stations. Additional hazardous waste could be affiliated with expansion of electrical sub-stations or utility transmission lines to serve residential growth.

6. Secondary and Cumulative Effects Analysis Conclusions

The analysis of potential secondary and cumulative effects for the SCEA boundary area did not identify adverse effects to resources resulting from the cumulative effect of planned land use

changes in the area. Land use is controlled by the County plans and zoning. Howard County has shown its commitment to maintenance of the rural nature of western Howard County, including the SCEA boundary area, through its comprehensive land use plan and its Agricultural Land Preservation Program. The proposed improvements to MD 32 are not anticipated to effect the future land use of the area. Historically, the area has undergone changes especially in traffic volumes. The transportation improvements proposed will improve traffic operations and are not expected to increase traffic in the region.

Statewide, the Maryland Reforestation Law has resulted in the replacement of 1,110 forested acres of the 1,550 forested acres taken for highway construction since 1988. Together with the additional programs referenced above, little or no cumulative effects on this resource should be anticipated.

Federal, State and local agencies responsible for regulating impacts to natural resources through the permitting processes together with Howard County's planning and zoning processes are in place to help in protection of these natural resources. The permitting process is also the vehicle through which mitigation measures are identified to avoid or minimize cumulative effects to resources.

R. Relationship between Local Short Term Uses of Man's Environment and the Maintenance and Enhancement of Long Term Productivity

The build alternatives would allow peak period traffic to move more efficiently through the study area, thereby improving traffic operations and safety and reducing the air pollutants emitted per vehicle. These long term benefits would occur at the expense of short term construction impacts in the immediate vicinity of the project. These short term effects would include dust, erosion, increased siltation and turbidity in affected streams, localized noise and air pollution, residential and business displacements, and, minor traffic delays. With proper controls, they would not have a lasting effect on the environment.

The local short term impacts by the construction of the dualized access-controlled highway and interchanges are consistent with the maintenance and enhancement of long term productivity for the local area, state and region. The Howard County Comprehensive Transportation Plan, 2010 Highway Element identifies this project in its lists of projects recommended for construction by 2010. The Plan calls for MD 32 to be upgraded to a Primary Arterial, and specifically as a freeway, an access controlled facility. The transportation improvements addressed in this document have been considered and proposed in accordance with the County's General Plan.

S. Irreversible and Irretrievable Commitment of Resources Which Would be Involved in the Proposed Action

The construction of a build alternative involves the irreversible and irretrievable commitment of various natural, human, and fiscal resources. The build alternatives would require the commitment of land to new highway construction, which is considered an irreversible commitment during the time period that the land is used for a highway facility. If a greater need

for the land is identified, or the highway proven no longer necessary, it is possible to re-convert the property to another use. It is not likely, however, that either of these situations would occur.

Fossil fuels, labor, and construction materials would be used in considerable quantities for the build alternatives. In addition, labor and natural resources are also used in the quarrying, manufacturing, mixing, and transporting of construction materials. The materials used in the highway construction process are irretrievable, however, they are not in short supply and their use should not have an adverse effect on continued availability of these resources.

The build alternatives for MD 32 would require an irretrievable commitment of state and federal funds for right-of-way acquisition, materials, and construction. Funds for annual maintenance would also be required. The loss of tax revenues from private land taken for highway use would be an irretrievable loss for Howard County.

The commitment of these resources is established on the premise that the local and regional residents, commuters, and business communities would benefit from the proposed highway improvements. Benefits would include increased safety, accident reduction, improvements to traffic flow, and reduction in travel time.

V.

COMMENTS AND COORDINATION

MD 32 Planning Study

MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

V. Comments and Coordination

Coordination with environmental resource agencies, elected officials, organizations/associations, and the public has been an important component of the MD 32 Planning Study. Agency coordination in the preparation of this Draft Environmental Impact Statement document was conducted throughout the study. This section of the document includes a compilation of correspondence with agencies, public groups, and elected officials. This documentation is organized into the following categories:

- Elected Officials Correspondence
- Public Involvement Correspondence
 - Focus Group Meetings
 - Community Meetings and Correspondence
- NEPA Coordination
 - Comments and Coordination on Purpose and Need
 - Comments and Coordination on Alternatives Retained for Detailed Study - 1996
 - Comments and Coordination on Alternatives Retained for Detailed Study - 1997
 - Other NEPA Coordination
 - Other Agency Correspondence

Focus Group Meetings – February through May 1996

A series of Focus Group meetings were held to solicit opinions and ideas on proposed improvement options from a representative group of citizens. The Focus Group was comprised of individuals within the study corridor, who were suggested to the study team by the County and local elected officials. The Focus Group was instrumental in the preliminary development of interchange and service road options. The Group provided local knowledge of operational deficiencies on existing MD 32, as well as suggestions as to how the alternatives might better address those deficiencies. The Focus Group met on February 8, February 29th, March 27th, April 23rd, and May 21st, 1996. Minutes of these meetings are provided, with the exception of the February 8th meeting for which minutes are not available.

Alternates Workshop – June 25, 1996

Summary of Comments

A total of 98 comments were received from mailers, letters, and citizens attending the June 25, 1996 Workshop. Comments were divided between those in favor of a No-Build and a Build Alternative. Concerns regarding the following issues were expressed:

- Through traffic, particularly truck traffic,
- Noise, existing and future
- Environmental impacts
- Bicycle safety
- Landscaping

Interim improvements
Safety conditions
Traffic speeds
Aesthetics

Community Meetings

A number of meetings were held throughout the planning phase with various community associations, groups, and residents of the study area to ensure public awareness of the project and to identify and address community concerns; related correspondence are provided.

Field Review Meetings were held to identify environmental resources and issues of concern.

Correspondence was sent to organizations in the study area to solicit participation by a wide range of area residents, including minority residents and low income residents.

Public Informational Workshop – June 16, 1998

A total of 156 written comments were received from interested citizens in response to the proposed alternatives presented at the workshop. Based on coordination with local communities and environmental resource agencies, most of the alternatives had been modified since the Alternates Workshop held in June 1996. In addition, the results of more detailed engineering and environmental analyses were presented.

Unlike the 1996 workshop, there was decidedly more support for a build alternative than a no-build alternative. While most of the same issues were raised, existing and future noise continues to be the most overwhelming concern.

Elected Officials Correspondence

MD 32 Planning Study

MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

Elected Official Correspondence

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-EO-1	Robert L. Flanagan, Maryland House of Delegates	October 1, 1996
V-EO-2	Christopher J. McCabe, Senate of Maryland	March 4, 1997
V-EO-3	Robert L. Flanagan, Maryland House of Delegates	May 1, 1997
	Robert H. Kittleman, Maryland House of Delegates	May 1, 1997
	Christopher J. McCabe, Senate of Maryland	May 1, 1997
V-EO-4	Charles I. Ecker, Howard County Executive	May 7, 1997
	Charles I. Ecker, Howard County Executive	May 19, 1997
V-EO-5	Christopher J. McCabe, Senate of Maryland	May 22, 1997
V-EO-6	Christopher J. McCabe, Senate of Maryland	June 3, 1997
V-EO-7	Charles C. Feaga, County Council of Howard County	May 22, 1998
V-EO-8	Christopher J. McCabe, Senate of Maryland	May 22, 1998
	Robert L. Flanagan, Maryland House of Delegates	May 22, 1998
	Robert H. Kittleman, Maryland House of Delegates	May 22, 1998
V-EO-9	Christopher J. McCabe, Senate of Maryland	August 5, 1998
	Robert L. Flanagan, Maryland House of Delegates	August 5, 1998
	Robert H. Kittleman, Maryland House of Delegates	August 5, 1998
V-EO-10	Christopher J. McCabe, Senate of Maryland	September 10, 1998
	Robert L. Flanagan, Maryland House of Delegates	September 10, 1998
	Robert H. Kittleman, Maryland House of Delegates	September 10, 1998
V-EO-11	Christopher J. McCabe, Senate of Maryland	September 22, 1998
	Robert L. Flanagan, Maryland House of Delegates	September 22, 1998
	Robert H. Kittleman, Maryland House of Delegates	September 22, 1998
V-EO-12	Christopher J. McCabe, Senate of Maryland	October 9, 1998
	Robert L. Flanagan, Maryland House of Delegates	October 9, 1998
	Robert H. Kittleman, Maryland House of Delegates	October 9, 1998
V-EO-13	Christopher J. McCabe, Senate of Maryland	November 5, 1998
V-EO-14	James Robey, Howard County Executive	December 2, 1998



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ROBERT L. FLANAGAN
HOWARD-MONTGOMERY COUNTY

APPROPRIATIONS COMMITTEE

DEPUTY MINORITY WHIP

HOUSE OF DELEGATES
ANNAPOLIS, MARYLAND 21401-1991

October 1, 1996

DISTRICT OFFICE:
12400 ROUTE 108
CLARKSVILLE, MARYLAND 21029-1225
(410) 988-9818 (301) 854-6020
FAX 410-988-8074

ANNAPOLIS OFFICE:
226 HOUSE OFFICE BUILDING
(301) 858-3200 (WASHINGTON AREA)
(410) 841-3200 (BALTIMORE AREA)
FAX 410-841-3850

Neil J. Pedersen, Director
State Highway Administration
Planning and Preliminary Engineering
707 North Calvert Street
Baltimore, Maryland 21202

Dear Mr. Pedersen:

I have received a letter from my constituents, Mr. and Mrs. Gerald Wessel, regarding the changes to Route 32. Mr. and Mrs. Wessel have requested that a noise study be conducted for their property at 13555 Triadelphia Road, Ellicott City. This property is adjacent to Route 32 and the interchange proposed for Burnt Woods Road. Please consider placing a berm with a planting of trees between their property and the road to help reduce the sound of the traffic.

Thank you for your consideration of this matter

Very truly yours,

Robert L. Flanagan
Delegate, District 14B

RLF/naf

cc: Parker Williams, State Highway Administrator
Charles Adams, Environmental Design
Mr. and Mrs. Wessel



Maryland Department of Transportation
State Highway Administration

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David L. Winstead
Secretary
Parker F. Williams
Administrator

October 23, 1996

The Honorable Robert L. Flanagan
Maryland House of Delegates
12400 Clarksville Pike
Clarksville MD 21029-1225

Dear Delegate Flanagan:

Thank you for your letter regarding the MD 32 project planning study, which you sent on behalf of your constituents, Mr. and Mrs. Gerald Wessel. This effort, which focuses on the section of MD 32 between MD 108 and I-70, is in the preliminary stage of project planning.

Improvement options to be considered will generally follow the existing alignment of MD 32. Early public involvement should help develop options which will accomplish our transportation goals while ensuring that local concerns are addressed. No final decisions have been made, and we plan to continue to involve the public extensively.

Our preliminary plans for MD 32 improvements were presented at an Alternates Workshop in June. We are evaluating comments we received from that meeting as we develop alternates for detailed analysis. The most frequent comments concerned noise, not only with the proposed improvements, but on the existing road since the opening of the improved section of MD 32 between Pindell School Road and MD 108.

Our Office of Environmental Design is currently looking into and measuring noise at locations throughout the project area. Please be assured that we will investigate noise mitigation once detailed alternates are completed. If you have any questions about existing noise, please feel free to call our Director of Environmental Design, Mr. Charles Adams, at (410) 545-8640.

V-EO-1

My telephone number is _____

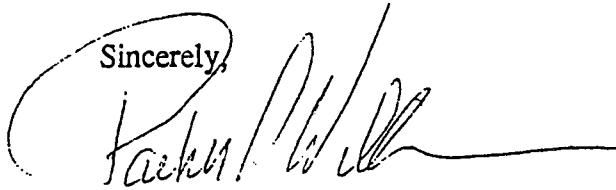
Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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The Honorable Robert L. Flanagan
October 23, 1996
Page Two

Thank you again for letting me know your constituents' concerns. I trust this letter clarifies both the status of our study and our approach to noise issues in the MD 32 corridor. If you have any further comments or questions, please feel free to call me or Mr. Neil Pedersen, our Director of Planning and Preliminary Engineering, who can be reached at (410) 545-0411.

Sincerely,

Parker F. Williams
Administrator

cc: Mr. and Mrs. Gerald Wessel
Mr. Charles B. Adams, Director, State Highway Administration
Mr. Neil J. Pedersen, Director, State Highway Administration



Maryland Department of Transportation
State Highway Administration

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David L. Winstead
Secretary

Parker F. Williams
Administrator

March 4, 1997

The Honorable Christopher J. McCabe
Senate of Maryland
404 James Senate Office Building
110 College Avenue
Annapolis MD 21401-1991

Dear Senator McCabe:

Thank you for your request for traffic volume data on MD 32 since the opening of the section from Pindell School Road to MD 108. Prior to the opening of this new roadway segment, 1995 traffic counts showed that MD 32 had an Average Daily Traffic (ADT) volume of 26,000 vehicles west of US 29, 18,850 west of Trotter Road and 14,100 south of Linden Church Road.

Truck percentages at that time ranged from 4% on MD 32 west of US 29, while both other locations showed truck percentages to be 7%. The bridges on MD 32 over the Middle Patuxent River near Trotter Road were posted for 40,000 lbs. for single unit trucks and for 66,000 lbs. for tractor-trailers as a result of the deterioration of these structures, which were built in 1924.

Since the opening of MD 32 from Pindell School Road to MD 108, an August 1996 traffic count south of Linden Church Road showed that the traffic had risen to 17,500 vehicles per day. Even though the total traffic volume had risen, the truck percentage remained at 7%. A later traffic count taken in November, 1996 has shown that the ADT had risen to 18,900 at this location. The truck percentage has also risen to 10% of the ADT. Although there are more trucks than previously counted, our counts this time showed 142 schoolbuses, which added a full 1% to the truck percentage. This is attributable to the 8 to 9 schools in the immediate vicinity.

This increase in ADT was also affected by the complete closure of Old MD 32 near Great Star Drive as a result of a bridge replacement project on both bridges over the Middle Patuxent. This has forced all local traffic to seek other routes, including New MD 32, and may have skewed the results somewhat. Our estimates show that an additional 3,000 to 5,000 trips per day are now using New MD 32 that would otherwise be using Old MD 32 because of the detour route caused by these bridge replacement projects.

V-E0-2

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

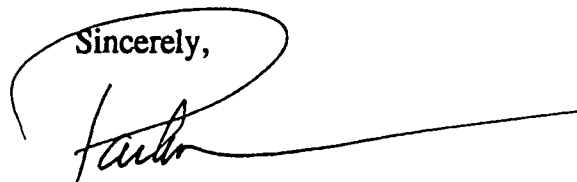
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The Honorable Christopher J. McCabe
March 4, 1997
Page Two

It is our intention to recount this location and another location between MD 108 and Pindell School Road this Summer to Fall, after the bridge replacement projects on Old MD 32 are complete. This should give us a more accurate idea of operating conditions on New MD 32 in this area.

Again, thank you for bringing your concern to our attention. If you have any questions, please call me or Mr. Neil Pedersen, our Director of Planning and Preliminary Engineering, who can be reached at (410) 545-0411.

Sincerely,



Parker F. Williams
Administrator

cc: Mr. Neil J. Pedersen, Director of Planning and Preliminary Engineering, State Highway Administration

CHRISTOPHER J. MCCABE
DISTRICT 14
HOWARD/MONTGOMERY COUNTIES

ECONOMIC AND ENVIRONMENTAL
AFFAIRS COMMITTEE

JOINT COMMITTEE ON
ADMINISTRATIVE EXECUTIVE
AND LEGISLATIVE REVIEW



SENATE OF MARYLAND

ANNAPOLIS, MARYLAND 21401-1991

DISTRICT OFFICE
12400 CLARKSVILLE PIKE
CLARKSVILLE, MD 21022-1225
(301) 854-6020 (MONTGOMERY CO.)
(410) 988-2818 (HOWARD CO.)

ANNAPOLIS
ROOM 404 SENATE OFFICE BUILDING
(410) 841-3671 (BALTIMORE)
(202) 858-3671 (WASHINGTON)
1-800-492-7122

May 1, 1997

Mr. Parker Williams
State Highway Administrator
P.O. Box 717
Baltimore, Maryland 21203-0717

Dear Mr. Williams:

We are writing to express our continued interest in learning about State plans for widening of Route 32 between MD108 and I-70. We recently met with the Citizens' Alliance for Rural Preservation regarding their organization and their concerns about the planned project.

We are requesting that you send the following information to the group:

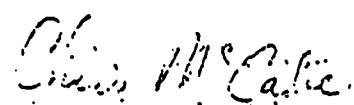
- Traffic volume data results from September 1996 and March 1997
- State and federal criteria used to warrant traffic signals
- Noise policy and abatement criteria.

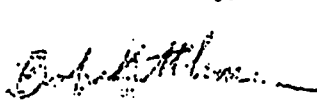
The information may be sent to:
Debbie Izzy, Citizens for Rural Preservation
3226 Parliament Place
West Friendship, Maryland 21794

We are aware that a public outreach program has been developed which will involve meetings with individual residents and community groups. The group has also met with the project manager, Mr. Robert Sanders. We share your goal to develop an environmentally sensitive transportation solution which is also responsive to local concerns and are committed to working with you on this issue.

Since this is an important project for our constituents, we wish to express our continued interest as the study progresses and would appreciate being kept up to date on the planning of the project.

Sincerely,


Christopher J. McCabe
Maryland State Senate


Robert Kittleman
House of Delegates


Robert Flanagan
House of Delegates

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May 7, 1997

Parker F. Williams, Administrator
State Highway Administration
P.O. Box 717
Baltimore, MD 21203-0717

Dear Mr. Williams:

Several months ago I wrote you requesting the establishment of a toll system for trucks on Rt. 32 from I-70 to Rt. 29. You responded and indicated that the road should not be a toll road.

Truck traffic on Rt. 32 is becoming very heavy. I would like to see trucks prohibited (except for deliveries) on Rt. 32 from I-70 to Rt. 108.

I will be glad to discuss this with you if you so desire.

Sincerely,

Charles I. Ecker
County Executive

CIE:ld

cc: James Irvin, Director, Public Works

V-EO-4



Maryland Department of Transportation
State Highway Administration

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Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

May 19, 1997

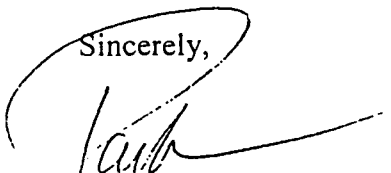
The Honorable Charles I. Ecker
Howard County Executive
3430 Courthouse Drive
Ellicott City MD 21043

Dear County Executive Ecker:

Thank you for your recent letter regarding truck traffic on MD 32. I can appreciate your concern over this issue.

A proposal to prohibit truck traffic, except for deliveries, between I-70 and MD 108 raises several concerns. Maryland Route 32 is part of both Maryland's primary highway system and the National Highway System (NHS). Funds for these networks are intended to provide for interregional transportation of goods and services and are therefore meant to accommodate truck traffic. We agree with the statement contained in Secretary Winstead's letter to you of November 20, 1996, that this distribution of goods and services should take place on our higher-function highways, such as MD 32, rather than on the local road network, which is not designed for such use. We will continue to work with Howard County officials in the development of plans for MD 32 between I-70 and MD 108 to try to minimize impacts of truck and other traffic on nearby development.

Again, thank you for your letter. If you or your staff have any questions, please feel free to call me or Mr. Neil Pedersen, our Director of Planning and Preliminary Engineering, who may be reached at (410) 545-0411.

Sincerely,

Parker F. Williams
Administrator

cc: Mr. Neil J. Pedersen, Director of Planning and Preliminary Engineering, State Highway Administration

V-E0-4

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



*Maryland Department of Transportation
State Highway Administration*

262
Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

May 22, 1997

The Honorable Christopher J. McCabe
Senate of Maryland
12400 Clarksville Pike
Clarksville MD 21029-1225

Dear Senator McCabe:

Thank you for your letter regarding the project planning studies which are currently underway on MD 32 between MD 108 and I-70. We appreciate your interest in this project.

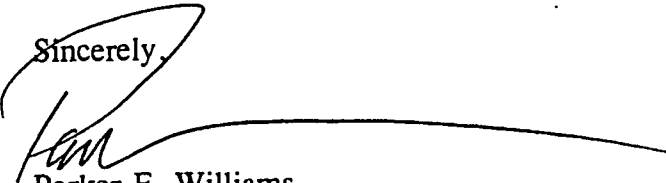
In response to your request, we have sent a package of information to Ms. Debbie Izzi of the Citizen's Alliance for Rural Preservation. Specifically, we included the following:

- ◆ 1994 Average Daily Traffic and intersection turning counts.
- ◆ Volumes and turning counts at East Linden Church Road intersection taken in July, 1996 and May, 1997.
- ◆ Federal and State signal warrant criteria from the Manual for Uniform Traffic Control Devices.
- ◆ SHA Noise Policy information.

New traffic data is currently being collected in the MD 32 study area. The information will be forwarded to both you and Ms. Izzi as soon as it is available.

Again, thank you for your continued involvement in the MD 32 planning effort. We will keep you informed as the study progresses. In the meantime, if you have any comments or questions, please feel free to call me or the project manager, Mr. Robert Sanders, at (410) 545-8513.

Sincerely,


Parker F. Williams
Administrator

cc: The Honorable Robert Flanagan, Member, Maryland House of Delegates
The Honorable Robert Kittleman, Member, Maryland House of Delegates
Mr. Robert Sanders, Project Manager, State Highway Administration
V-EO-5

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



Maryland Department of Transportation
State Highway Administration

263

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

June 3, 1997

The Honorable Christopher J. McCabe
Senate of Maryland
12400 Clarksville Pike
Clarksville MD 21029-1225

Dear Senator McCabe:

Thank you for forwarding Thomas Rush's letter to the editor of the Howard County Times regarding safety on MD 32 at Linden Church Road and his suggestion for a demand-activated traffic signal at that location.

The State Highway Administration (SHA) is very sensitive to the safety issues with regard to access to and from MD 32. The MD 32 study team representatives recently met with members of the communities that use East Linden Church Road to access MD 32 and presented the upcoming safety and resurfacing project on MD 32 in advance of the larger planning study. This project includes a protected center left turn lane which will be provided on MD 32 for each of the Linden Church Road intersections. This type of improvement, without traffic signals, has been used successfully at several locations on highways around the state.

The Linden Church Road intersections do not currently meet signal warrants; however, SHA is planning to install intersection lighting, flashing beacons (yellow to MD 32 traffic and red to Linden Church Road traffic), raised reflective pavement markers and signing for the voluntary use of headlights during the day to increase vehicle visibility.

Upon completion of the project during this Summer, these intersections will continue to be monitored by SHA to ensure that they are operating safely. In the meantime, SHA has ordered new traffic counts on MD 32 which should be completed shortly. Once those counts are collected, the intersections with Linden Church Road will be re-evaluated.

V-EO-6

My telephone number is (410) 545-0411

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

2621

The Honorable Christopher J. McCabe
Page Two

The MD 32 study team is continuing to explore lower-cost interchange options at Linden Church Road which could be compatible with the ultimate dualization plan for the highway. It is our goal to develop a strategic plan for MD 32 which prioritizes and implements improvements, consistent with a larger, long-term vision plan. Please be assured that provisions are being made to improve the safety and operations on MD 32 at Linden Church Road, considering both current and future needs.

We thank you for your continued involvement in the MD 32 planning study. We will keep you informed as the study progresses. In the meantime, if you have any comments or questions, please feel free to call me or the project manager, Mr. Bob Sanders, at (410) 545-8513.

Very truly yours,

Neil J. Pedersen

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

cc: Mr. Robert Fisher, District Engineer, State Highway Administration
Mr. Robert Sanders, Project Manager, State Highway Administration
Mr. Parker F. Williams, Administrator, State Highway Administration



Maryland Department of Transportation
State Highway Administration

265

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

May 22, 1998

The Honorable Charles C. Feaga
Howard County Council
George Howard Building
3430 Courthouse Drive
Ellicott City MD 21043

Dear Councilman Feaga:

This letter is sent to update you on our ongoing review of operations along the MD 32 corridor, between MD 108 and I-70, particularly at the MD 32 intersections with East and West Linden Church Roads.

In response to the concern of residents over safety at the East and West Linden Church Roads intersections, we have implemented numerous curative measures at this location. These have included flashing beacons, protected center left-turn lanes, left-turn acceleration lanes, intersection lighting, and raised reflective pavement markers. Despite these efforts, concerns remain over the relatively high speed of MD 32 traffic and the inadequacy of the gaps for entering traffic. In addition, our most recent analyses documented a significant increase in rolling backups during the evening at this location.

Given these present conditions, it seems prudent to take further action. Specifically, we will replace the flashing beacons with fully actuated traffic signals. These signals will operate in full function during the morning and evening peak hours and will flash during other times of the day. The new signals will be installed sometime this Summer. Of course, we will continue to monitor safety and operations along MD 32 to identify other improvements that may be needed. If you have any questions related to the Linden Church Road intersections or other short-term improvements, please feel free to call me or Mr. Bob Fisher, our District Engineer, who can be reached at 301-624-8101 or 1-800-635-5119.

RECEIVED

MAY 29 1998

V-EO-7

My telephone number is 410-545-0400/1-800-206-0770 **RUMMEL, KLEPPER & KAHL, LLP**

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



Maryland Department of Transportation
State Highway Administration

266
Parris N. Glendening
Governor

David L. Winstead
Secretary

Parker F. Williams
Administrator

May 22, 1998

The Honorable Christopher J. McCabe
Senate of Maryland
12400 Clarksville Pike
Clarksville MD 21029-1225

The Honorable Robert L. Flanagan
Maryland House of Delegates
12400 Clarksville Pike
Clarksville MD 21029-1225

The Honorable Robert H. Kittleman
Maryland House of Delegates
411 Lowe House Office Building
6 Governor Bladen Boulevard
Annapolis MD 21401-1991

Dear Senator McCabe and Delegates Flanagan and Kittleman:

This letter is sent to update you on our ongoing review of operations along the MD 32 corridor, between MD 108 and I-70, particularly at the MD 32 intersections with East and West Linden Church Roads.

In response to the concern of residents over safety at the East and West Linden Church Roads intersections, we have implemented numerous curative measures at this location. These have included flashing beacons, protected center left-turn lanes, left-turn acceleration lanes, intersection lighting, and raised reflective pavement markers. Despite these efforts, concerns remain over the relatively high speed of MD 32 traffic and the inadequacy of the gaps for entering traffic. In addition, our most recent analyses documented a significant increase in rolling backups during the evening at this location.

Given these present conditions, it seems prudent to take further action. Specifically, we will replace the flashing beacons with fully actuated traffic signals. These signals will operate in full function during the morning and evening peak hours and will flash during other times of the day. The new signals will be installed sometime this Summer. Of course, we will continue to monitor safety and operations along MD 32 to identify other improvements that may be needed. If you have any questions related to the Linden Church Road intersections or other short-term improvements, please feel free to call me or Mr. Bob Fisher, our District Engineer, who can be reached at 301-624-8101 or 1-800-635-5119.

V-EO-8

RECEIVED

My telephone number is 410-545-0400/1-800-206-0770

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

MAY 29 1998

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202
RUMMEL, KLEPPER & KAHL, LLP

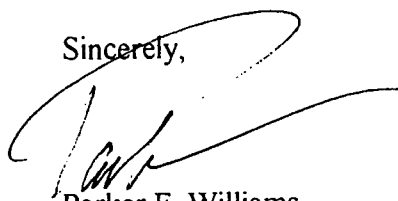
267

The Honorable Christopher J. McCabe
The Honorable Robert L. Flanagan
The Honorable Robert H. Kittleman
May 22, 1998
Page Two

In the meantime, the MD 32 project planning study from MD 108 to I-70, intended to address the long-term needs of the corridor, is moving forward. An informational public workshop is scheduled for June 16 at Glenelg High School from 5:30 - 8:00 p.m. to provide an update on the status of the study, the alternates under consideration, and the short-term improvements in the corridor. A combined location and design public hearing is tentatively scheduled for late 1998 or early 1999.

Thank you for your continued interest in the MD 32 corridor. If you have any comments or questions, please feel free to call me or Mr. Neil Pedersen, our Director of Planning and Preliminary Engineering, who can be reached at 410-545-0411 or 1-888-204-4828.

Sincerely,



Parker F. Williams
Administrator

cc: Mr. Robert L. Fisher, District Engineer, State Highway Administration
Mr. Neil J. Pedersen, Director of Planning and Preliminary Engineering,
State Highway Administration

CHRISTOPHER J. MCCABE
DISTRICT 14
HOWARD/MONTGOMERY COUNTIES

ECONOMIC AND ENVIRONMENTAL
AFFAIRS COMMITTEE

JOINT COMMITTEE ON
ADMINISTRATIVE EXECUTIVE
AND LEGISLATIVE REVIEW



SENATE OF MARYLAND

ANNAPOLIS, MARYLAND 21401-1991

268
DISTRICT OFFICE
12400 CLARKSVILLE PIKE
CLARKSVILLE, MD 21033-1325
301 344-4020 MONTGOMERY CO.
301 288-8813 HOWARD CO.

ANNAPOLIS
ROOM 404 SENATE OFFICE BUILDING
(410) 341-3671 (BALTIMORE)
(301) 363-3671 (WASHINGTON)
1-800-482-7122

August 5, 1998

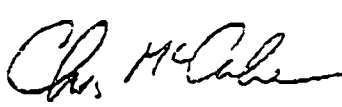
Mr. Parker Williams
State Highway Administrator
707 North Calvert Street
Baltimore, MD 21202

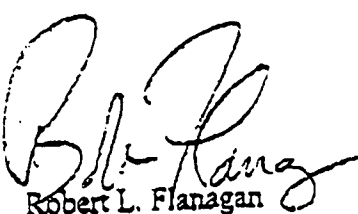
Dear Mr. Williams:

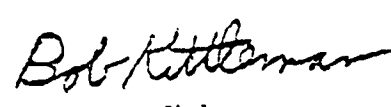
Since the early 1990's, there has been a consensus among the members of the Howard County Delegation that the expansion of Route 32 from Route 108 to Interstate 70 should be done in a way which discourages the use of Route 32 as a short cut for interstate trucking. Mr. Hal Kassoff, when he was State Highway Administrator, believed that it would be feasible, using leading edge technology, to impose a toll on such traffic.

The purpose of this letter is to emphasize the importance we attach to solving the problem of such cut through traffic. Since the opening of redirected Route 32 between Pindell School Road and Route 108, truck traffic on the Howard County portion of Route 32 has grown significantly. As you are well aware we have a long history of working co-operatively with State Highway Administration in constructing highway improvements. Unlike many other counties, we have not attempted to defeat roads which were needed to build the state highway system. In order to insure such continued co-operation we hope we can count on your support to devise a plan to discourage interstate trucking using Route 32 as a short cut. We look forward to discussing this further with you at an appropriate time.

Very truly yours,


Christopher J. McCabe
Senator District 14


Robert L. Flanagan
Delegate District 14B


Robert H. Kittleman
Delegate District 14B

CJM/RLF/RHK/naf



Maryland Department of Transportation
State Highway Administration

August 28, 1998

2169
Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

The Honorable Christopher J. McCabe
Member, Senate of Maryland
The Honorable Robert L. Flanagan
The Honorable Robert H. Kittleman
Members, Maryland House of Delegates
12400 Clarksville Pike
Clarksville MD 21029-1225

Dear Senator McCabe and Delegates Flanagan and Kittleman:

Thank you for your recent letter regarding truck traffic on MD 32. We appreciate your concern with this issue.

Your suggestion to discourage truck traffic on MD 32, between MD 108 and I-70, raises several concerns. Maryland 32 is part of both the State's primary highway system and the National Highway System (NHS). Funds for these networks are intended to provide for the interregional transportation of goods and services and are therefore meant to accommodate truck traffic. The transportation system in general, and the communities in Howard County in particular, are better served if the necessary distribution of these goods and services takes place on our higher-function highways, such as MD 32. Providing disincentives to the use of MD 32 would encourage trucks to use roads that are functionally less appropriate for truck traffic.

In 1997 trucks, not including school buses, comprised 9 percent of the total volume of traffic on MD 32 between MD 108 and I-70. This represents a two percent increase since the 1996 opening of MD 32 between Pindell School Road and MD 108, when a weight-restricted bridge was effectively removed from the system. We do not expect a further increase in that percentage if MD 32 is widened. In fact, the completion of MD 100 from I-95 to US 29 will provide an alternative route for truck traffic destined for the Baltimore Washington International Airport and the Baltimore region.

While new technologies may make it feasible to impose tolls on trucks using MD 32, this approach presents significant financial and legal issues. It would be difficult to impose a toll on trucks without also imposing a similar toll on cars; current law prohibits such discrimination. In addition, the need for widening MD 32 is in part based on the function of this segment within the region's transportation network, the volume of traffic and the economic importance of this connection between I-70 and Annapolis. Restricting or discouraging truck traffic on this segment could undermine the argument for the importance of this project to connect regional growth areas. Further, the potential diversion of truck traffic from MD 32 could create or compound problems elsewhere in the system.

My telephone number is 410-545-0400 / 1-800-206-0700

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

V-EO-9

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717

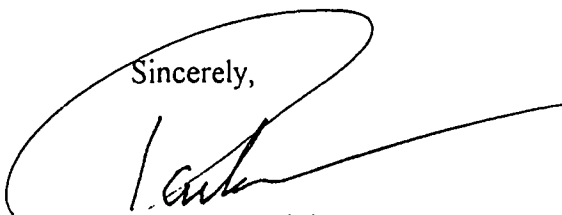
270

The Honorable Christopher J. McCabe
The Honorable Robert L. Flanagan
The Honorable Robert H. Kittleman
Page Two

The State Highway Administration (SHA) recognizes the safety and noise concerns raised by truck traffic along MD 32. We are working with Howard County officials and local communities in an effort to minimize impacts of trucks and other traffic on nearby development. As you are aware, SHA has implemented numerous safety improvements throughout the MD 32 corridor recently. More short-term safety improvements are planned, including traffic signals at the MD 32 intersections with East and West Linden Church Roads. We are also interested in continuing dialogue with you, the County and the trucking industry to discuss long-range strategies for addressing truck traffic issues.

Thank you again for your letter, as well as for your continued involvement in and support for the MD 32 planning study. We will keep you informed as the study progresses. In the meantime, if you have any comments or questions, please feel free to call me or our Director of Planning and Preliminary Engineering, Mr. Neil J. Pedersen, who can be reached at 410-545-0411 or 1-888-204-4828.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Williams', with a large, sweeping flourish extending from the end of the signature.

Parker F. Williams
Administrator

cc: Mr. Neil J. Pedersen, Director of Planning and Preliminary Engineering, State Highway Administration

271

The Honorable Christopher J. McCabe
The Honorable Robert L. Flanagan
The Honorable Robert H. Kittleman
Page Three

bcc: Mr. Carl Balser, Howard County Department of Planning and Zoning
Ms. Liz Calia, Howard County Department of Public Works
Mr. David Wallace, RK&K
Mr. Charles B. Adams, Director, State Highway Administration
Mr. John Concannon, D-7 Traffic, State Highway Administration
Mr. Louis H. Ege, Jr., Deputy Director, State Highway Administration
Mr. Robert L. Fisher, District Engineer, State Highway Administration
Ms. Allison Grooms, Environmental Manager, State Highway Administration
Mr. Mike Haley, Regional Planner, State Highway Administration
Mr. Tom Hicks, Director, State Highway Administration
Mr. John M. Lewis, State Legislative Officer, Maryland Department of Transportation
Mr. Robert Ritter, Project Manager, State Highway Administration
Mr. Douglas Rose, Chief Engineer, State Highway Administration
Mr. Robert Sanders, Assistant Division Chief, State Highway Administration

Drafted b: Vaughn Lewis, Project Engineer, 410-545-8511

CHRISTOPHER J. MCCABE
DISTRICT 14
HOWARD/MONTGOMERY COUNTIES

ECONOMIC AND ENVIRONMENTAL
AFFAIRS COMMITTEE

JOINT COMMITTEE ON
ADMINISTRATIVE EXECUTIVE
AND LEGISLATIVE REVIEW



SENATE OF MARYLAND

ANNAPOLIS, MARYLAND 21401-1991

272
DISTRICT OFFICE
12400 CLARKSVILLE PIKE
CLARKSVILLE, MD 21029-1225
(301) 854-6020 (MONTGOMERY CO.)
(410) 989-9818 (HOWARD CO.)

ANNAPOLIS
ROOM 404 SENATE OFFICE BUILDING
(410) 841-3671 (BALTIMORE)
(301) 858-3671 (WASHINGTON)
1-800-492-7122

September 10, 1998

COPY

Mr. Neil Pedersen
Office of Planning and Preliminary Engineering
State Highway Administration
707 North Calvert Street
P.O. Box 717
Baltimore, MD 21203

Dear Mr. Pedersen:

Several weeks ago we visited Ms. Teresa Stonesifer of West Friendship, and were given a riding tour of her property, located on Route 144 near the Howard County Fairgrounds. The family has lived on their farm for generations and want to preserve the land. During our visit we reviewed current State Highway Administration (SHA) project maps for the expansion of Route 32 between Route 108 and I-70. If this project goes forward as is now planned, it would remove the water trough and the family's ability to water the cattle in that pasture, which would limit their ability to continue farm operations. The family would also likely be forced to withdraw the farm from farmland preservation.

Ms. Stonesifer has previously written SHA and the response she has received, in our view, was less than responsive. Accordingly, we request that you or a representative of SHA directly inspect the site in question, with the Stonesifer family. We would be prepared to participate in this visit, as well, so we can all have an open discussion on various interchange alternatives.

We look forward to your timely response to this letter.

Sincerely,

Robert Flanagan
Delegate

Robert Kittleman
Delegate

Christopher J. McCabe
State Senator

V-EO-10

CJM:lb

cc: Mr. Robert K. Sanders, Project Engineer
Ms. Teresa Stonesifer



Maryland Department of Transportation
State Highway Administration

213

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

September 22, 1998

The Honorable Christopher J. McCabe
The Honorable Robert L. Flanagan
The Honorable Robert H. Kittleman
12400 Clarksville Pike
Clarksville MD 21029-1225

Dear Senator McCabe, and Delegates Flanagan and Kittleman:

Thank you for your recent letter regarding impacts to the property of Ms. Teresa Stonesifer associated with the MD 32 project planning study between MD 108 and I-70. A portion of Ms. Stonesifer's property would be impacted by the interchanges currently being studied at MD 32 and MD 144.

The MD 32 study team is aware of the stream crossing and water trough issues on the Stonesifer property. As noted in previous correspondence with Ms. Stonesifer and Mr. Jim Hudson, her father, the current interchange options were modifications of previous concepts that were presented at a June 1996 Alternates Public Workshop. Those modifications were based on extensive coordination with the U.S. Army Corps of Engineers and other environmental resource agencies, who had concerns about impacts to the Terrapin Branch and associated wetlands. Unfortunately, the changes that resulted had an adverse impact to the Stonesifer property.

As you have requested, the MD 32 team has scheduled a field visit with Ms. Stonesifer to review the issues first hand. Please be assured that every effort will be made to minimize and avoid impacts to the wetland and stream system as well as to preserve the farming operation on the Stonesifer property.

V-E0-11

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Carvert Street • Baltimore, Maryland 21202

274

The Honorable Christopher J. McCabe
The Honorable Robert L. Flanagan
The Honorable Robert K. Kittleman
Page Two

Thank you again for forwarding the concerns of your constituents. We appreciate your continued involvement in, and your support for, the MD 32 project. We will keep you informed of any developments related to the Stonesifer property. In the meantime, if you have any comments or questions, please feel free to call me. I may be reached at 410-545-0411 or toll free at 888-204-4828.

Very truly yours,



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

cc: Ms. Teresa Stonesifer
Mr. Robert Sanders, Assistant Division Chief, State Highway Administration
Mr. Parker F. Williams, Administrator, State Highway Administration



Maryland Department of Transportation
State Highway Administration

October 9, 1998

275
Parris N. Glendening
Governor

David L. Winstead
Secretary

Parker F. Williams
Administrator

The Honorable Christopher J. McCabe
Senate of Maryland
12400 Clarksville Pike
Clarksville MD 21029-1225

The Honorable Robert L. Flanagan
Maryland House of Delegates
12400 Clarksville Pike
Clarksville MD 21029-1225

The Honorable Robert H. Kittleman
Maryland House of Delegates
411 Lowe House Office Building
6 Governor Bladen Boulevard
Annapolis MD 21401-1991

Dear Senator McCabe, and Delegates Flanagan and Kittleman:

Recently, you sent a letter regarding impacts to the property of Ms. Teresa Stonesifer associated with the MD 32 project planning study between MD 108 and I-70. After a field visit with Ms. Stonesifer and Senator McCabe on September 21, the MD 32 study team initiated a hydraulics study of the watering system and trough that is used for streaming livestock on the Stonesifer property. The results of the hydraulics study, which will be completed in December, will determine if there are any viable options for relocating the trough outside of the footprint of the proposed interchanges at MD 32 and MD 144.

Relocating the water trough would be a preferable option to modifying the interchange configurations. Any modification to the interchanges as they are currently proposed would most likely have a significant adverse effect on the Terrapin Branch and its associated wetland system (see attached maps).

The study team will coordinate closely with the Howard County Soils Conservation District and the U.S. Army Corps of Engineers (USACE) in this effort. The USACE and other environmental resource agencies have been involved throughout the planning process to ensure that the proposed improvements have minimal impact to the stream and wetland systems in the MD 32 corridor.

V-EO-12

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

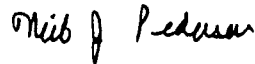
Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717

276

The Honorable Christopher J. McCabe
The Honorable Robert L. Flanagan
The Honorable Robert K. Kittleman
Page Two

Thank you for your interest in this issue. We will notify you of any developments with regards to the hydraulics study and subsequent analysis. In the meantime, if you have any comments or questions, please feel free to call me. I may be reached at 410-545-0411 or toll free at 888-204-4828.

Very truly yours,

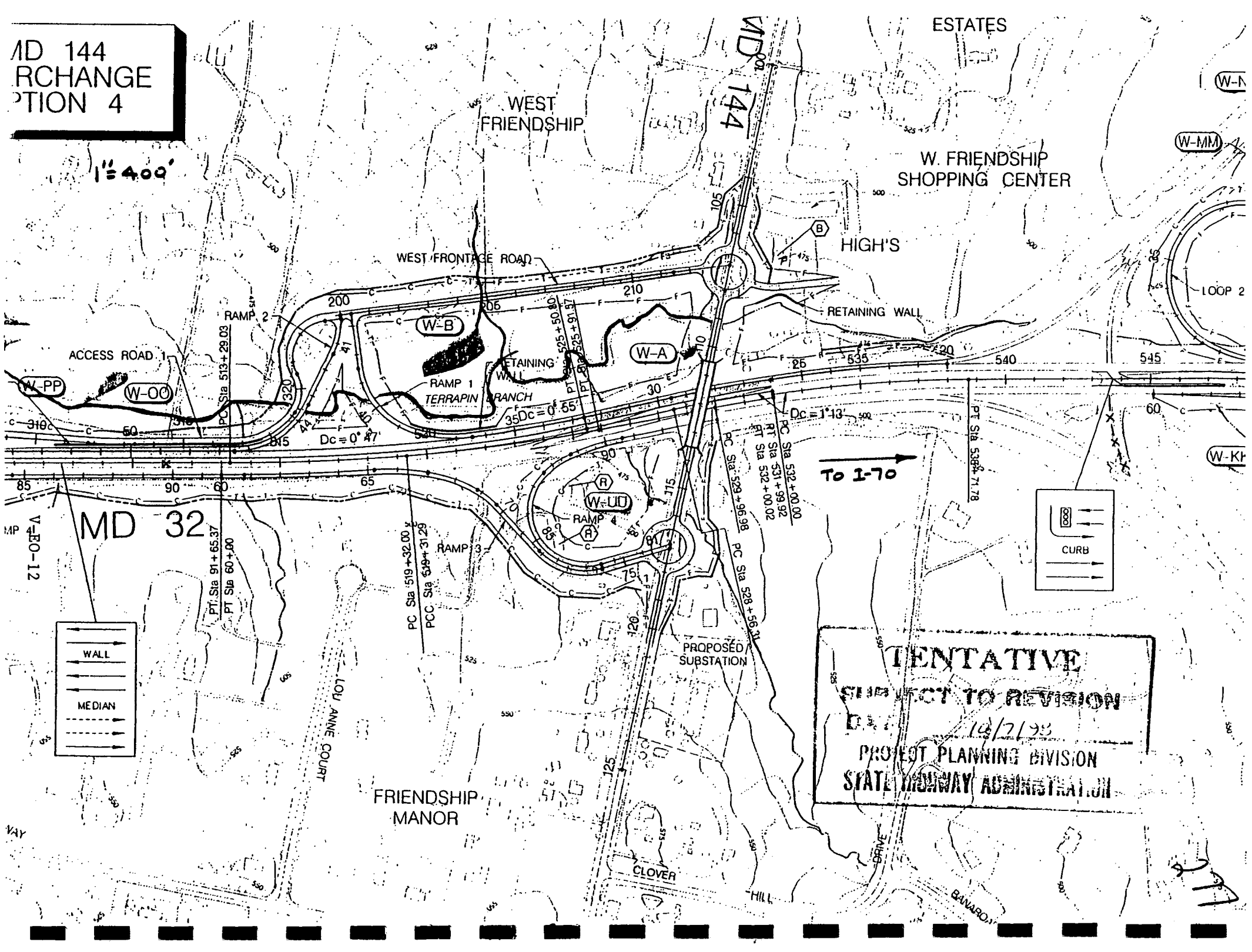


Neil J. Pedersen, Director
Office of Planning and
Preliminary Engineering

cc: Mr. Parker F. Williams, Administrator, State Highway Administration

MD 144
INTERCHANGE
OPTION 4

1" = 400'



YAF... WEST...
FRIENDSHIP

INTERCHANGE
OPTION 3M

11-400

TO I-70

CURB

(W-NN)

(W-MM)

(W-KK)

- LOOP 2

BUTTERCUP
ESTATES

W. FRIENDSHIP
SHOPPING CENTER

HIGH'S

- RETAINING WALL

(W-A)

W-B

$$W = UU^T$$

RAMP 4

PROPOSED
SUBSTATION

FRIENDSHIP
MANOR

...VE COURT

V-EO-12

32

PT. Sla: 89 + 91.73

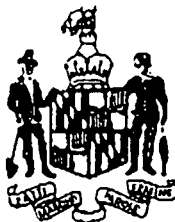
PT. Sla: 89 + 91.73

PT. Sla: 89 + 91.73

CHRISTOPHER J. McCABE
DISTRICT 14
HOWARD/MONTGOMERY COUNTIES

ECONOMIC AND ENVIRONMENTAL
AFFAIRS COMMITTEE

JOINT COMMITTEE ON
ADMINISTRATIVE EXECUTIVE
AND LEGISLATIVE REVIEW



SENATE OF MARYLAND

ANNAPOLIS, MARYLAND 21401-1991

279
DISTRICT OFFICE
12400 CLARKSVILLE PIKE
CLARKSVILLE, MD 21029-1225
(301) 854-6020 (MONTGOMERY CO.)
(410) 988-9818 (HOWARD CO.)

ANNAPOLIS
ROOM 40A SENATE OFFICE BUILDING
(410) 641-3671 (BALTIMORE)
(301) 858-3671 (WASHINGTON)
1-800-492-7122

November 5, 1998

Mr. Robert Sanders
Project Manager
Project Planning Division
State Highway Administration
707 North Calvert Street
Baltimore, MD 21202

Dear Bob:

Thank for your responsiveness on the Route 32 project. Attached, is a letter from Ms. Debbie Izzi 301-217-7989, President Citizens Alliance for Rural Preservation. I'd like you to read it as the basis for a meeting I'd like set up with you to discuss the issues mentioned in the letter.

Since the Environmental impact analyses is continuing, a meeting in early December would be the most appropriate. I would appreciate if Mr. Robert Fisher and other appropriate county officials would be present similar to the meeting we had in early 1998 at St. James Church. My Legislative Assistant, Lily Bengfort will be contacting you to discuss the best time for the meeting.

Sincerely,

A handwritten signature in cursive script that reads "Chris".

Christopher J. McCabe
State Senator

CJM:lb

280

Citizen's Alliance for Rural Preservation

P.O. Box 225 Glenelg, MD 21737

Dear Senator McCabe,

CARP is very grateful for all of the time and assistance that you have given to us over the last two years on the issue of Rt. 32. We believe your honesty and consistent efforts have been very beneficial in helping us navigate through unfamiliar territory.

Our attention has, again, been turned back to the long term planning of Rt. 32. CARP still holds that an interstate type freeway is unnecessary, especially since the paralleling Rt. 29 is only six miles away, with 695 only six miles further east. We believe that a parkway or boulevard type road with four lanes, a small landscaped median and traffic lights instead of massive bridges would be more cost effective, move rush hour commuter traffic efficiently, afford residents safe and easy access to Rt. 32, be more environmentally sound, and be much more esthetically pleasing.

None the less, however the highway is redesigned, it is irresponsible and unacceptable not to plan and budget for sound mitigation up front. Unaddressed noise pollution from roadways is equally as dysfunctional as a road planned without guardrails or lane markings painted on it. Engineers with sophisticated equipment at their disposal who do not incorporate in their planning phase noise mitigation for current residents as well as for future homes (since highways of this magnitude are catalysts for development) are doing at best a C minus job. We should be striving for excellence and, also, to set a new standard for roads, one which includes function and safety as well as beauty and conservation.

After reading in the Sun on September 29th about the solution for the noise from traffic polluting River Hill, we were somewhat alarmed. Trees, indeed, are merely a psychological barrier. The reason cited for this minuscule effort was that these homes were built after that section of Rt. 32 had been started. Ethically, the question must be raised "Who gave the developers permits to build there since the SHA claims their predictions of traffic volume and noise levels are 90% accurate?" Therefore, government officials should have been privy to how bad the sound problem would be and permits should not have been issued.

Ironically, though, at every community meeting in 1996 regarding the expansion of Rt. 32 the SHA claimed they were very surprised at the major increase in traffic on Rt. 32 after the opening of the Clarksville section. Clarksville already has a major noise problem and the traffic causing that noise is continuing along Rt. 32. If the next section is changed into a major freeway there should be no surprises that the volume of traffic and the percentage of trucks will drastically increase. It is obvious that sound barriers for Rt. 32 should be included from the start as they were with Rt. 100 where there was no history of sound problems, just a prediction that the sound level would be high.

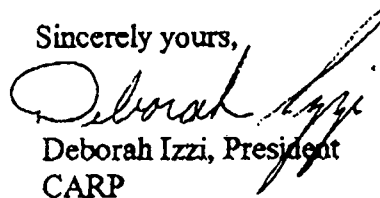
281

In addition, we feel it is a weak argument that at one million dollars per mile sound barriers are too expensive, considering if barriers were put up for the entire 7 or 8 miles of the next section of Rt. 32 it would only be six or seven percent of the \$180 million plus projected for this project. This is minor considering what it would cost to add them after the project is completed.

Since we have seen time and time again the SHA interpret and apply their own rules to their advantage, CARP is fearful that there will be some rule or regulation which they will bring to light at a strategic moment preempting us from receiving sound barriers as we rightfully should. As our elected representative to the state senate, and hopefully reelected in November, we come to you again for insight into any obstacles that we might not foresee and guidance as to who has the final decision making power so we can pursue this problem vigorously and effectively.

CARP appreciates your written response, but, also, if possible, we would like to meet with you and perhaps invite the residents of communities which directly abut Rt. 32 to discuss this issue. I do realize that logistics can present major obstacles, especially with your election coming up, but meeting in person with your representatives is a very effective, although underutilized, mechanism within our government. Please let us know your thoughts.

Sincerely yours,



Deborah Izzi, President
CARP

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**Maryland Department of Transportation
State Highway Administration**

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

November 23, 1998

The Honorable Christopher J. McCabe
Senate of Maryland
12400 Clarksville Pike
Clarksville MD 21029-1225

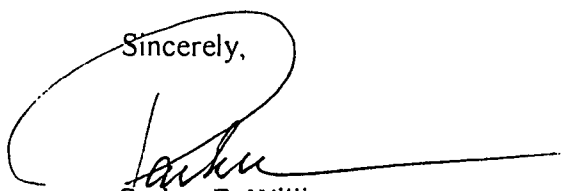
Dear Senator McCabe:

Thank you for your recent letter in which you forwarded the concerns of Ms. Deborah Izzi regarding the MD 32 improvement study between MD 108 and I-70. State Highway Administration (SHA) staff is available to meet with you and Ms. Izzi to discuss her concerns regarding the noise analysis. We suggest that the meeting also include staff from the Howard County Department of Planning and Zoning.

Mr. Charles Adams, our Director of Environmental Design, will coordinate with your office to establish a date and time for this meeting. The meeting should take place after revisions to the Draft Noise Analyses for the MD 32 project, currently undergoing review, have been completed. It is anticipated these revisions will be completed within the next two weeks.

Thank you for your continued involvement in and support for the MD 32 planning study. We look forward to meeting with you and members of the Citizen's Alliance for Rural Preservation. In the meantime, if you have any comments or questions regarding the MD 32 planning study, please feel free to call me or our Director of Planning and Preliminary Engineering, Mr. Neil Pedersen, who can be reached at 410-545-0411 or 1-888-204-4828.

Sincerely,



Parker F. Williams
Administrator

cc: The Honorable Robert L. Flanagan, Maryland House of Delegates
The Honorable Robert K. Kittleman, Maryland House of Delegates
Mr. Charles B. Adams, Director of Environmental Design, State Highway Administration
Mr. Neil J. Pedersen, Director of Planning and Preliminary Engineering, State Highway Administration
Mr. Robert K. Sanders, Assistant Division Chief, State Highway Administration

My telephone number is 410-545-0400 or 1-800-206-0770

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

V-EO-13

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



December 2, 1998

Secretary David L. Winstead
Department of Transportation
Post Office Box 8755
BWI Airport, MD 21240-0755

Dear Secretary Winstead:

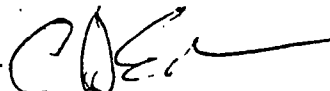
I respectfully request that the widening of Rt. 32 in Howard County, between Clarksville (Rt. 108) and either I-70 or the Carroll County line be put on the fast track. There have been numerous accidents and the numbers are increasing due to the high volume of traffic during commute times.

In addition, the number of fatalities is very high. In fact, there was another fatality just yesterday on Rt. 32. Although the fatality was blamed on driver error, too many serious accidents have occurred on this leg of Rt. 32.

Any improvements to Rt. 32 should include some type of grade separation at Rt. 144 (the site of yesterday's accident) and Rt. 99. These grade separations will present a challenge to the engineers because of the grade separation nearby at Rt. 32 and I-70.

I realize I am leaving office shortly, but I would be remiss if I did not write and urge that the widening of Rt. 32 be started and completed within the next three to five years.

Sincerely,


Charles I. Ecker
County Executive

CIE:ld

cc: ☒ Neil Pedersen, Director, Office of Planning and Preliminary Engineering
James Robey, County Executive-Elect
James Irvin, Director, Department of Public Works
Joseph Rutter, Director, Planning and Zoning

V-EO-14



Maryland Department of Transportation

The Secretary's Office

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Parris N. Glendening
Governor

David L. Winstead
Secretary

John D. Porcari
Deputy Secretary

December 14, 1998

The Honorable James Robey
Howard County Executive
3430 Courthouse Drive
Ellicott City MD 21043

Dear County Executive Robey:

First, congratulations on your election as Howard County's County Executive. I am responding to a December 2 letter received from former County Executive Charles Ecker. Mr. Ecker requested that the State Highway Administration (SHA) expedite the planning study for improvements to MD 32 in Howard County from MD 108 to I-70.

The SHA is conducting project-planning studies for the proposed reconstruction of MD 32 from MD 108 to I-70. The proposed alternatives include the dualization of MD 32 and the construction of interchanges and service roads. The results of the detailed planning studies will be made available in the Draft Environmental Impact Statement (DEIS) which is currently being reviewed by the Federal Highway Administration (FHWA). After the hearing, a preferred alternative will be selected; designed and construction can begin when funding is available. We expect to complete the DEIS and hold a Location/Design Public Hearing in March 1999 and we anticipate selecting a final alternative in the Summer of 1999.

Again, congratulations on your election. The Department looks forward to working with you on Howard County's transportation assets. If you have any questions, do not hesitate to contact me or Mr. Neil J. Pedersen, SHA's Director of Office of Planning and Preliminary Engineering. Neil can be reached at 410-545-0411 or 1-888-204-4828.

Sincerely,

David L. Winstead
Secretary

cc: Mr. James Irvin, Director, Howard County Department of Public Works
Mr. Joseph Rutter, Director, Howard County Planning and Zoning
Mr. Neil J. Pedersen, Director, Office of Planning and Preliminary Engineering,
State Highway Administration

V-E0-14

865-1000

My telephone number is (410)-

Toll Free Number 1-888-713-1414 TTY For the Deaf: (410) 865-1342

Post Office Box 8755, Baltimore/Washington International Airport, Maryland 21240-0755

Public Involvement Correspondence

Focus Group Meetings

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

Public Involvement

Focus Group Meetings

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-FG-1	Charles C. Feaga, County Council of Howard County	June 29, 1995
V-FG-2	Carl Balser, Chief, Howard County, Division of Transportation Planning	July 5, 1995
V-FG-3	Focus Group Meeting	February 29, 1996
V-FG-4	Focus Group Meeting	March 27, 1996
V-FG-5	Focus Group Meeting	April 23, 1996
V-FG-6	Focus Group Meeting	May 21, 1996

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County Council of Howard County

GEORGE HOWARD BUILDING
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043-4392

COUNCILMEMBERS

Charles C. Feaga, Chairman
District 5
Darrel E. Drown, Vice Chairman
District 1
C. Vernon Gray
District 2
Mary C. Lorsung
District 4
Dennis R. Schrader
District 3

M E M O R A N D U M

June 29, 1995

MEMO TO: Joseph Rutter, Director
Department of Planning and Zoning

SUBJECT: Appointments to SHA MD-32 Study Group

I have listed five individuals whom I believe the State Highway Administration should have on their MD 32 Study Group.

Randy Nixon
2800 Rt. 32
West Friendship, MD 21794
442-2151 office

Jim Pfefferkorn
2797 Pfefferkorn Rd.
West Friendship, MD 21794
442-2027

Kirk Breedon
2820 Pfefferkorn Rd.
West Friendship, MD 21794
442-2612

Sherry Ramsburg-Smith
14120 Rover Mill Rd.
West Friendship, MD 21794
489-5048


Laurie Ballantine
2153 McKendree Rd.
West Friendship, MD 21794
442-1079

RECEIVED

JUN 30 1995

DEPT. OF PLANNING
AND ZONING
OF HOWARD COUNTY

If you have any questions, please contact me at your convenience.


Charles C. Feaga
Chairman



288
PROJECT
DEVELOPMENT
DIVISION

JUL 7 4 19 PM '95

DEPARTMENT OF PLANNING & ZONING

Joseph W. Rutter, Jr., Director

July 5, 1995

Neil Pedersen, Director
Office of Planning & Preliminary Engineering
State Highway Administration
707 North Calvert Street
Baltimore, MD 21202

Dear Mr. Pedersen: *Neil*

I am writing in response to your recent request for suggested citizen representatives to assist and provide feedback to SHA on the major investment study (MIS) of MD 32 from MD 108 to I-70.

Since the study area falls within County Council District 5, we asked Council Chairman Charlie Feaga for his recommendations regarding citizen representatives. Accordingly, we have received the attached list of individuals which we are forwarding to you for your use.

If we may be of further assistance, please let me know.

Sincerely,

Carl Balser, Chief
Division of Transportation Planning

Attachment: A/S

CB/kkr/SHA Pedersen

cc: Charles C. Feaga, Chairman, Howard County Council
Doug Simmons, SHA
Ray Moravec, SHA
James Irvin, Director, DPW
Joseph W. Rutter, Jr., Director, DPZ
Marsha S. McLaughlin, Deputy Director, DPZ
Benjamin Pickar, Section Chief, Division of Transportation Planning
Brian Muldoon, Planner, Division of Transportation Planning
File: MD 32

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Maryland Department of Transportation
State Highway Administration

David L. Winstead
Secretary
Hal Kassoff
Administrator

MEMORANDUM

TO: MD 32 Focus Group

FROM: Bob Sanders *Bob*
Project Manager
Project Planning Division

DATE: March 13, 1996

SUBJECT: MD 32 - From MD 108 to I-70
Contract No. HO 756-101 P

RE: February 29 Focus Group Meeting Minutes

A focus group meeting was held at the Maryland State Highway Administration's (SHA) Dayton Shops in Howard County on Thursday, February 29, 1996. The purpose of this meeting was to update the community on the progress of the MD 32 project planning study and receive citizen input. SHA representatives briefed the community on the progress in identifying preliminary alternates to improve MD 32 between MD 108 and I-70. Bob Sanders presented preliminary concepts for mainline improvements and interchange configurations at Linden Church Road, the Dayton Shops, Burnt Woods Road, and MD 144. A list of meeting attendees is attached.

Bob Sanders began with a brief summary of the study status and reported SHA's progress since the last focus meeting on February 7, 1996. The plan for this corridor is to provide dualization of MD 32 from Route 108 to I-70 with full access controls. This would complete the Patuxent Freeway with full 4-lane dualization from Annapolis to I-70.

MD 32 between MD 108 and Burnt Woods Road (almost 2/3 of the corridor) has an existing right-of-way of 300'. This part of the corridor also has full residential access control, meaning that no private drives exit directly out onto MD 32. The only local roads that currently intersect MD 32 in this area are at Linden Church Road and the entrance to the Dayton Shops.

V-FG-3

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

MD 32 Focus Group
Page Two

The project team has been examining options for the mainline improvements and interchanges at Linden Church Road, Burnt Woods Road, MD 144 and the Dayton Shops. Three mainline options are currently being examined: 54' median with ultimate grading and full typical section, a 54' median with the south(east) side undisturbed, and a 34' median with ultimate grading and the full typical section. The width of these sections is approximately 142'-162' from hinge point to hinge point before transitioning back to the existing grade.

A policy directive from the Director of the Office of Planning and Preliminary Engineering has instructed the project team to provide full access control for the corridor, therefore no existing right-in/right-out movements from residential driveways will be planned at this time. Direct right-in/right-out access from local roads may still be included under some options.

Some citizens expressed concern over why there was a need for the project. Roger Jorss provided figures from traffic analyses that indicate the current average daily traffic (ADT) on MD 32 ranges from approximately 13,000 to 18,000 vehicles per day at different points in the corridor. Under a no-build condition (where MD 32 stays a 2-lane road), the ADT will grow to 24,000 to 28,000 by the year 2020, which would be very congested. If a 4-lane roadway is built, the ADT will grow to 36,000 to 39,000, but the additional lane capacity will be better able to accommodate the vehicles. Questions were directed as to why the analysis is for the year 2020. Mr. Jorss explained that SHA designs highways to be able to accommodate expected traffic many years into the future in order to provide citizens with facilities that serve a long useful life, thereby delaying the need for additional capital improvements.

Citizens asked why demand is expected to increase even though no major changes to Howard County zoning rules are expected in the study area. Roger explained that the travel demand increases are due to a projected increase in through traffic.

The study team displayed color plans of the corridor with some conceptual designs to the group. Following an explanation of each of the alternatives, the citizens were encouraged to provide comments and suggestions at an informed work session. Markers and tracing paper were provided to allow citizens to depict their solutions for the study team.

Mr. Nixon said that due to the amount of traffic his banquet/event facility generates, any frontage road provided to serve his property and adjacent neighbors should access MD 32 directly in front of his parcel, so as to avoid routing traffic in front of his neighbors properties. SHA agreed to study the feasibility of relocating this access point.

MD 32 Focus Group
Page Three

Citizens exchanged ideas with SHA involving modifying the Burnt Woods interchange so that the overpass was more centrally located between Burnt Woods Road and Pfefferkorn Road. This plan would reduce the total area of impact, but may result in the displacement of two more properties adjacent to Ivory Road East. SHA agreed to investigate the feasibility of this option.

Concern was expressed by the property owners off MD 144 concerning the potential impacts of an overpass adjacent to their property. As the design progresses, there may be the potential to lessen any impacts by building retaining walls or modifying the vertical profile.

Mr. Endy said that the recent construction at Linden Church Rd. caused trash and debris to build up in the pond on his property. He asked why the dualization of MD 32 couldn't be moved further south(east) away from his property. The current alignment with a 54' median and typical section does not encroach outside of the existing SHA 300' right-of-way, so there would be no direct impact to his property.

SHA representatives agreed to review the various comments and suggestions and report the results at the next focus group meeting. An information booklet describing the draft alternatives was distributed, and the meeting was adjourned.

The next focus group meeting will be held on March 26 at 6:00 p.m. at the Dayton Shops. If you have any questions, please feel free to call me at (410) 545-8513.

RKS:GMC:as

cc: Mr. Louis H. Ege, Jr.
Mr. Robert Fisher
Mr. Neil J. Pedersen
Mr. Alan Straus



Maryland Department of Transportation
State Highway Administration

292
David L. Winstead
Secretary
Hal Kassoff
Administrator

MEMORANDUM

TO: MD 32 Focus Group

FROM: Bob Sanders *Bob Sanders*
Project Manager
Project Planning and Preliminary Engineering

DATE: April 16, 1996

SUBJECT: MD 32 - From MD 108 to I-70
Contract No. HO 756-101 P

RE: Minutes of 3/27/96 Citizen Focus Meeting

A focus group meeting was held at the Maryland State Highway Administration (SHA) Dayton Shops in Howard County on Tuesday, March 26, 1996. The purpose of this meeting was to update the community on the progress of the development of preliminary alternatives under consideration and receive citizen feedback. A copy of the agenda and a list of attendees is attached.

Bob Sanders began with a brief summary of the status of the study and what has been done since the last citizen focus meeting on February 29, 1996. The goal of this meeting was to gain input from the local community on improvement options that have been developed for presentation at the Alternates Public Workshop. The meeting date has been moved until June 25, 1996 to allow for additional public input and coordination with property owners who are potentially displaced under full access control options for the corridor. Full access control simply means that there will be no direct private driveway access to MD 32, but access will be via frontage roads and interchanges.

Mr. Sanders explained that SHA has four phases in highway development projects. The current phase, is project planning. Once this phase is completed, additional monies may or may not be allocated for subsequent phases. The other phases are: engineering, right-of-way acquisition, and construction. Funding for this project is currently available for the project planning phase only. Project planning concludes with the selection of a build alternate which will later be carried forward to design.

V-FG-4

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street Baltimore, Maryland 21202

Focus Group Meeting Minutes
Page two

The original plan for this corridor was to dualize MD 32 from Route 108 to I-70 with access controls. This would complete the Patuxent Freeway with full 4-lane dualization from Annapolis to I-70. MD 32 between MD 108 and Burnt Woods Road (almost 2/3 of the corridor) has an existing right-of-way of 300'. This part of the corridor also has full access control, meaning that no private drives exit directly out onto MD 32. The only local roads that currently intersect MD 32 in this area are at Linden Church Road and the Dayton Shops.

Since the last citizen focus meeting, the project team has examined providing full access controls in the area north of Burnt Woods Road. With the help of input from citizens at the February 29 focus meeting, additional options for interchanges at Linden Church Road and Burnt Woods Road have been developed. An additional option that adds cloverleaf ramps to the I-70 interchanges and revises the MD 144 interchange are currently being developed and will be available for the next focus meeting.

Bob Sanders presented color plans of the corridor with some conceptual designs prepared by the project team showing improvements in the corridor, including the full access control option and the new interchanges at Linden Church Road and Burnt Woods Road. An information booklet showing the alternatives and a brief description of each was later distributed.

A Congestion Management Study for the Corridor is currently underway. This report will examine strategies to manage travel demand in a corridor from Frederick to Annapolis, which includes the MD 32 project. Although not complete, the preliminary findings show that even with demand management strategies and minor improvements to MD 32 in the study area, there is still a need for improvements on this section of MD 32.

Concerns were raised on the ability of the state to afford converting MD 32 to a 4-lane divided highway with full interchanges, and whether low-cost interim improvements could be implemented quickly to address current needs. Mr. Sanders explained that the project planning process is examining traffic numbers for the year 2020, and that the long-range planning must accommodate this volume. However, he agreed to contact the SHA District Engineer, for this area to attend the next focus meeting to address more immediate concerns.

The issue of how much additional traffic would be attracted by a dualized MD 32. Roger Jorss said that the no-build condition will have failing levels of service and many intersections, and that although the dualization of MD 32 will attract additional traffic, the capacity of a 4-lane section would be able to accommodate the projected growth in 2020.

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Focus Group Meeting Minutes
Page three

The improvement plan for access to the Dayton Shops includes right-in / right-out movements on northbound MD 32 and an elevated "T" intersection with ramps accessing the southbound lanes of MD 32.

A concern was raised over the ability to preserve the aesthetics of the corridor. Mr. Sanders stated that every attempt will be made to keep the rural characteristics of the area. As the project moves from conceptual planning into more detailed design at a later date, designs will address ways that earthen berms, plantings and other features can be used to maintain the aesthetics of the area.

An idea was discussed regarding the possibility of depressing MD 32 in the area near Burnt Woods Road to utilize the existing topography of the adjacent areas and minimize the height of any structure used in an overpass. Paul Elman replied that although the assumption for the bulk of the corridor is that the existing lanes of MD 32 would be kept at approximately the same location and elevation, there are certainly places such as the Burnt Woods Road area that would be candidates for altering the vertical profile of the existing lanes of MD 32. This can be addressed in later phases of the project planning process, when more detailed engineering takes place.

The access at River Valley Chase was shown as right-in / right-out, primarily to provide for access for emergency vehicles. The concept of putting an interchange in this area was examined but not developed due to the major impacts on the properties in this area. It was suggested to possibly study a concept that would have an overpass connecting River Valley Chase with a frontage road on the east side of MD 32. This would reduce the need for full frontage roads on both sides of MD 32, but would require an additional overpass. The project team will evaluate the feasibility of this option to see if it merits further consideration.

A question was raised as to how SHA would be handling any of the potential building displacements that may arise from impacts of some of the alternatives. Mr. Sanders said he has been directed to personally contact the owners of properties which may have building displacements prior to the Alternates Public Workshop.

It was asked whether a flyover ramp at the I-70 interchange would be an option. Roger Jorss replied that the traffic warrants for a flyover are approximately 3,000 to 4,000 cars an hour, which far exceeds the amount projected for the I-70 / MD 32 interchange. Mr. Sanders did state that an option will be developed at I-70 that adds four loop ramps to eliminate the conflicts that occur with left turning movements.

Focus Group Meeting Minutes
Page four

The next citizen focus meeting will be held on April 23 at 6:00 p.m. at the Dayton Shops. If you have any questions, please feel free to call me at (410) 545-8513 or toll-free at 1-800-548-5026.

RKS:GMC:as
Attachments

cc: Mr. Louis H. Ege, Jr.
Mr. Robert Fisher
Mr. Neil J. Pedersen
Mr. Ed Stollof
Mr. Alan Straus



Maryland Department of Transportation
State Highway Administration

296
David L. Winstead
Secretary

Hal Kassoff
Administrator

MEMORANDUM

TO: MD 32 Focus Group

FROM: Bob Sanders *Bob Sanders*
Project Manager
Project Planning Division

DATE: May 29, 1996

SUBJECT: MD 32 from MD 108 to I-70
Contract No. HO 756-101 P

RE: April 23 Focus Group Meeting Minutes

A meeting was held at the Maryland State Highway Administration's (SHA) Dayton Shops in Howard County on Tuesday, April 23, with the MD 32 Focus Group. The purpose of the meeting was to update the community on progress in developing preliminary alternates for MD 32 between MD 108 and I-70. A list of meeting attendees is attached (Attachment A).

I began with a brief summary of the status of the study and accomplishments since the last focus group meeting. I also distributed a sheet which provided answers to frequently asked questions.

This meeting was the latest in a series of gatherings designed to gain input from local community representatives on developing the build options that will be presented at the Alternates Public Workshop. The Workshop will be held on June 25, at Glenelg High School. These focus group meetings give the planning team a greater understanding of local issues and concerns. The goal is to be able to develop an improvement plan for MD 32 that meets the transportation needs while being sensitive to the surrounding community.

The planning team has examined a number of options for improving MD 32. If a build option is selected, this portion of MD 32 will complete the 40-mile Patuxent Freeway, which is planned to extend from I-97 near Annapolis to I-70. Several new interchanges have been studied at Linden Church Road, the Dayton Shops, Ten Oaks Road, Burnt Woods Road/Pfefferkorn Road, Rosemary Lane, Nixon's Farm Road, MD 144, and I-70.

V-FG-5

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

MD 32 Focus Group
Page 2
May 29, 1996

Paul Elman, from DeLeuw Cather, displayed plans showing options that have been studied for the Dayton Shops and MD 144/I-70 interchanges (an information booklet containing these plans was distributed later in the meeting and is included as Appendix C). These options have been developed in response to comments received at the March 26 focus group meeting.

The goal of the new Dayton Shops option is to remove turning movement traffic from through travel lanes and allow for their safe acceleration and deceleration. Option 2 shows an overpass connecting the Dayton Shops (at a new entrance) with the southbound lanes of MD 32. The existing right-in/right-out movement would be preserved, but long acceleration/deceleration lanes would be built with a four foot painted divider to separate the merging traffic (which includes many trucks) with the high speed through traffic. Tom Rush stated that he thought that this was a great expense just for the truck traffic. Roger Jorss said that this would actually be one of the least expensive ways of providing safe separation of traffic, as compared to a more expensive full diamond interchange.

Two options were presented for the MD 144/MD 32 and I-70/MD 32 interchange improvements. Options 2 and 3 show four additional cloverleaves at the I-70 interchange to eliminate conflicting movements from the I-70 ramps to MD 32. Both of these options include the MD 144 overpass crossing MD 32 that was previously shown as Option 1.

Option 2 is identical to Option 1 except for the addition of low speed ramps connecting MD 32 and MD 144 in all four quadrants; the right-in/right-out movements would still be permitted. Option 3 is a traditional diamond interchange with the right-in/right-out movements eliminated and elevated ramps provided for all movements. It was generally agreed by all focus group members that the extensive ramps and elevated structures needed to design Option 3 safely were too complex and would alter the rural nature of the corridor. The group did not support Option 3.

The project team met earlier in the day with representatives of the Howard County Fairgrounds and discussed the potential for an additional option for MD 144/MD 32 and I-70/MD 32 interchanges. Two cloverleaves on the south side of MD 144 would provide most turning movements at MD 32 and MD 144. A shorter, straight bridge of MD 144 over a depressed MD 32 will also be studied. To improve the flow of traffic from I-70 to MD, a connection will be examined with the entrance road to the West Friendship Shopping Center. This option appears to be a less expensive, safer option than previous concepts. It will be studied in detail and presented at the next focus group meeting.

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MD 32 Focus Group
Page 3
May 29, 1996

The Linden Church Road interchange was discussed next. To date, three options have been developed for this area. Option 1 is a traditional diamond that relocates W. Linden Church Road 200 feet south, the Greenberry Lane movement off MD 32 eliminated, and a connection is made to Broadwater Lane. Option 2 is a T-interchange that allows a right-in/right-out movement from MD 32 southbound to W. Linden Church Road and provides a connection from Broadwater Lane to Greenberry Lane. Option 3 is a variation on Option 1, with W. Linden Church Road moved about 350 feet south, toward the Baltimore Gas & Electric parcel.

Citizens asked why W. Linden Church was depressed within the last few years. I agreed to look into the reasons for this modification. It was also questioned why all options realign Linden Church Road to the south. Paul Elman explained that one goal is to minimize the amount of fill impact to adjacent properties. By relocating Linden Church Road, the grades are safer and less fill is required. Property owners on Ten Oaks Road expressed concern with interchange options that would require right-of-way to be obtained from their properties. Also, they expressed concern with the horizontal sight distance on Ten Oaks Road and how a new interchange would affect it. I agreed to examine the potential for shifting the location of the Linden Church Road intersection with Ten Oaks Road to address these concerns. The group brainstormed several alternative options. First, it was suggested that an interchange connection be made directly from Highland Road to MD 32. This idea was found not to be feasible because this option would require the displacement of homes on Talon Court. The group discussed closing access from W. Linden Church Road to MD 32 or modifying W. Linden Church to make it a one-way road. Although these concepts lessen the traffic impact on W. Linden Church Rd., they could not be accepted because they would slow emergency vehicle response times and provide insufficient access for local residents to MD 32.

I introduced George Miller from SHA District 7 Traffic to the group. Although the purpose of this study is to develop long-term solutions for MD 32, Mr. Miller was invited because of the many short-term concerns expressed by citizens at earlier meetings. Mr. Miller discussed two projects that will be implemented soon. At the intersection of Ten Oaks Road and Burnt Woods Road with MD 32, the shoulder along MD 32 will be upgraded to create separate left turn lanes for each intersection. SHA will also be making safety improvements, consisting of pavement resurfacing, new markings and delineations, and overhead lighting to illuminate the Linden Church intersections. In response to citizen's requests, Mr. Miller agreed to initiate a signal warrant study of the MD 32/Linden Church Road intersections. Citizens

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MD 32 Focus Group

Page 4

May 29, 1996

also inquired as to whether the speeds have increased on the section of MD 32 near Linden Church Road since the new section of MD 32 opened. Roger Jorss replied that preliminary studies show that speeds have not changed significantly.

The next citizen focus meeting was Tuesday, May 21. This will be the last focus group meeting before the June 25 Alternates Workshop. If you have any questions or comments, please feel free to contact me at (410) 545-8513.

RKS:GMC:as

Attachments

cc: Mr. Gregory Cohen
Mr. Louis H. Ege, Jr.
Mr. Robert Fisher
Mr. George Miller
Mr. Neil J. Pedersen
Mr. Alan Straus



Maryland Department of Transportation
State Highway Administration

300
David L. Winstead
Secretary
Hal Kassoff
Administrator

MEMORANDUM

TO: MD 32 Focus Group

FROM: Bob Sanders *Bob Sanders*
Project Manager
Project Planning Division

DATE: June 4, 1996

RE: Minutes of 5-21-96 Citizen Focus Meeting

SUBJECT: MD 32 - From MD 108 to I-70
Contract No. HO 756-101P

A citizen focus group meeting was held at the Maryland State Highway Administration (SHA) Dayton Shops in Howard County on Tuesday, May 21, 1996. The purpose of this meeting was to present the progress toward development of a set of preliminary alternatives to the community and to receive citizen feedback. A copy of the agenda, the information booklet, and a list of attendees is attached.

Bob Sanders began with a brief summary of the status of the study and what has been accomplished since the last citizen focus meeting on April 23, 1996. The goal of this meeting was to gain additional input from the local community on improvement options developed for presentation at the Alternates Public Workshop. The date of the Alternates Public Workshop has been moved to June 25, 1996 to allow for additional public input and coordination with property owners who might be displaced under full access control options for the corridor. The full access control concept means that there will be no direct private driveway access to MD 32. Instead access will be provided from frontage roads and interchanges.

Mr. Sanders explained that the SHA has four phases in the highway development process, project planning, engineering, right-of-way acquisition, and construction. This project is in the project planning phase of the process and funded in the Maryland Department of Transportation's Consolidated Transportation Program for 1996-2001. Once complete, additional funds may, or may not, be allocated for subsequent phases. The project planning phase will conclude with the selection of a preferred alternate which will later be carried forward to design. The Howard County Executive has expressed support for this project planning study.

V-FG-6

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Focus Group Meeting Minutes
Page two

The original plan for this corridor was to widen MD 32 to a four lane divided highway between MD 108 and I-70 with full access controls. This would complete the Patuxent Freeway as a four lane limited access divided highway between Annapolis and I-70. MD 32 from MD 108 to Burnt Woods Road (almost 2/3 of the project corridor) has an existing right-of-way of 300 feet and full access control. The only local roads that intersect MD 32 in this segment are Linden Church Road and the SHA/Howard County Dayton Shops access road.

New interchange options for Linden Church Road were presented as alternatives to those shown at earlier focus groups meetings. Option 4 is a modification of an earlier option based on citizen input. The Linden Church Road bridge over MD 32 is skewed, and the road connects to Ten Oaks Road at their original point of intersection. Greenberry Lane is relocated to connect to Linden Church Road opposite Broadwater Lane. This adds an element of safety as vehicles entering the on-ramp will not encounter two-way traffic. A segment of Ten Oaks Road may be placed on fill to gain sufficient elevation so the proposed Linden Church Road overpass will clear MD 32. It would be difficult to depress MD 32 more than a few feet because of the cover requirements of a natural gas transmission line which runs through the area.

A resident asked for possible solution to traffic speeding through the Linden Church Road - Ten Oaks Road intersection. The speed zone in advance of the intersection approach is 45 mph and drops to 35 mph near the intersection. People don't slow down. Would placing stop signs on Ten Oaks Road solve the problem? This would be referred to the SHA District Traffic Engineer. An alternate suggestion was to realign Linden Church Road with Ten Oaks Road west of the intersection, and have Ten Oaks Road east of the intersection for the leg of a T-intersection. The major traffic flow on Ten Oaks Road is the through movement across the top of the T-intersection. This suggestion would force westbound traffic to make a left turn across traffic to travel through the intersection. This is a less desirable from a safety point of view.

A traffic circle was suggested for this location by Project Planning Division staff. There was some concern expressed regarding the practicality of a traffic circle at this location due to the steep topography. To clear MD 32, the West Linden Church Road approach to the overpass is on a 7% grade. It may be difficult to satisfy geometric design guidelines for a traffic circle; however, the concept will be investigated

The second Linden Church Road presented, Option 5, is based on Option 3 except no access is provided to West Linden Church Road. The general opinion of those gathered at the meeting was that reduced access to MD 32 might not be acceptable to adjacent homeowners. This would be especially true of those farther away, toward Triadelphia, who would have to backtrack to Burnt Woods Road to get on to MD 32. The residents felt that fire and emergency response time would increase because Ten Oaks Road is slower. An idea of running a frontage road from the Dayton Shops was proposed for the west side of MD 32. However, it would cause

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Focus Group Meeting Minutes
Page three

significant residential and environmental impacts and the consensus of the meeting was that it wouldn't solve the access issue.

Concern was expressed that cut and fill work associated with reconstruction of Ten Oaks Road at Linden Church Road would significantly impact the woodlands of the properties fronting on Ten Oaks Road.

A concern was raised that since the opening of the MD 32 freeway section to MD 108, traffic volumes on the section of MD 32 in this study have increased as well as the number of trucks using the road. Rogers Jorss of the SHA Traffic Forecasting Division stated that the freeway section had opened in March. New traffic volume and turning movement counts are scheduled for June/July once the traffic volumes have stabilized.

A related concern with the additional truck traffic is the additional traffic noise since the opening of the freeway section of MD 32. Would the baseline noise analysis be before or after the freeway opening? Bob Sanders indicated that the baseline noise data is based on traffic volumes by type of vehicle and that the traffic volume counts are (will be) available for both before and after the MD 32 freeway section opening for comparison.

A question was raised about why the project team has not investigated using a different vertical profile for the new eastbound lanes while maintaining the vertical profile of the existing roadway. Doug Noble replied that the assumption for the majority of the corridor was that the existing and proposed lanes of MD 32 would be at the same elevation. There are locations which would lend themselves to this type of design, but this can be addressed in later phases of the process when detailed engineering takes place.

Two new options for the MD 144 / I-70 interchange were presented. Both options include four cloverleaf ramps at the MD 32 / I-70 interchange to eliminate at grade left turn movements. Option 3 involves compressing and lowering MD 32 through the MD 144 interchange and partial cloverleaf diamond ramps. A preliminary concept for Option 4 was presented which was similar to Option 3 except the ramp intersections with MD 144 would use roundabout geometry. The consultant agreed to look at a simplified roundabout option with low speed ramps.

Project Planning Division staff asked what type of public notification would be best for the Public Alternates Workshop. The meeting suggested homeowners' associations newsletters, the Howard County Times, cable access channel, and local stores and markets (Hughes, Exxon, etc.).

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Focus Group Meeting Minutes
Page four

The Public Alternates Workshop will be held on June 25, 1996 at 5:00 p.m. at Glenelg High School. If you have any questions in the meantime, please feel free to call me at (410) 545 - 8513 or toll-free in Maryland at 1-800-548-5026.

RKS:GMC

Attachments

cc: Mr. Louis H. Ege, Jr.
Mr. Robert Fisher
Mr. Neil J. Pedersen
Mr. Ed Stollof
Mr. Alan Straus

304

Public Involvement Correspondence

Community Meetings and Correspondence

MD 32 Planning Study

MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

Public Involvement

Community Meetings and Correspondence

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-CM-1	Howard County Fairgrounds Representatives Meeting Notes	May 22, 1996
V-CM-2	Pine Meadows Community Correspondence	August 6, 1996
V-CM-3	Citizens' Alliance for Rural Preservation Meeting Notes and Correspondence	April 30, 1997
V-CM-4	Citizens' Alliance for Rural Preservation	May 22, 1997
V-CM-5	Citizens' Alliance for Rural Preservation	May 23, 1997
V-CM-6	Pine Meadows Meeting Notes and Correspondence	July 8, 1997
V-CM-7	Citizens' Alliance for Rural Preservation	May 20, 1998



Maryland Department of Transportation
State Highway Administration

366
David L. Winstead
Secretary
Hal Kassoff
Administrator

MEMORANDUM

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

FROM: Bob Sanders *Bob Sanders*
Project Manager
Project Planning Division

DATE: May 22, 1996

SUBJECT: MD 32 from MD 108 to I-70
Contract No. HO 756-101 P

RE: April 23 Meeting With Howard County Fairgrounds
Representatives

A meeting was held at the Howard County Fairgrounds on April 23, 1996. The purpose of the meeting was to update the fairground representatives on the progress of the MD 32 Project Planning study and to solicit feedback on the interchange concepts at MD 32/MD 144 and MD 32/I-70. A list of those in attendance is attached.

Bob Sanders began the meeting with a brief explanation of the project planning study and where we are in the process. Funding currently exists for the planning phase of this project only. If a build option is selected, the project would be eligible for final design, right-of-way acquisition and construction in a future Consolidated Transportation Program.

The Howard County Fairgrounds is a major seasonal traffic generator. A study team goal is to develop interchange concepts on MD 32 that will serve the fairgrounds acceptably. Paul Elman of DeLeuw Cather explained the various options that have been developed for the MD 32/MD 144 and MD 32/I-70 interchanges to date. Option 1 is a skewed overpass bridge of MD 144 over MD 32, with the right-in/right-out movement allowed from MD 144 to MD 32. The through movement on MD 144 and all left turns would be via the overpass. Option 2 is similar to Option 1, except 25 MPH ramps would be added on all four

V-CM-1

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Mr. Louis H. Ege, Jr.
Page Two

quadrants of the interchange. Option 3 is the same as Option 2, but four cloverleafs are added to the I-70/MD 32 interchange, and I-70 will be widened one lane to provide a merge area (which may require bridge widening on I-70), and the left-turns to/from MD 32 to the I-70 ramps will be eliminated. Option 4 is more of a traditional diamond at MD 144, with four legs of on/off-ramps. The four cloverleafs will be added at I-70, and a series of braided (elevated) ramps would be added to connect MD 144 with MD 32 and separate out the weaving areas to I-70.

The representatives of the fairgrounds indicated that during special events, the off-ramp from I-70 heading eastbound to MD 144 heading westbound (towards the fairgrounds) backs up all the way onto I-70. The current options do not improve the traffic flow for this movement. It was agreed that Option 4 was too costly with its elevated ramps and would alter the rural, scenic nature of the area.

Several new options were discussed. First, the idea of building a MD 144 overpass at MD 32 was discussed, with no direct connection to I-70 or MD 32. If this was done, traffic wishing to get to MD 144 from I-70 would have to exit off I-70 at MD 97 or at Rt. 40, both several miles away. The West Friendship Fire Station #3 is also located on MD 144, and this would eliminate their access to MD 32. This idea was dismissed as impractical. The other concept was to make a new interchange at I-70 near the existing weigh station that would connect to where Pfefferkorn Rd. intersects MD 144. Besides being very expensive, this option would conflict with the internal traffic circulation pattern of the fairgrounds site. This idea was also dismissed.

Another idea discussed was to provide two cloverleafs on the south side of MD 144. These would provide most turning movements at MD 32 and MD 144. A shorter, straight bridge over a depressed MD 32 would be built and a slip ramp would connect with the entrance road to the West Friendship Shopping Center. The slip ramp would improve access to the fairgrounds and the West Friendship Shopping Center from eastbound I-70. Although this option may have more impacts to residential properties, it appears to be safer, more efficient and less expensive than previous concepts. The project team will develop this option to evaluate the impacts and the function of such an interchange.

Mr. George Miller was asked if traffic counts could be done for the weekend of May 4 and 5. Traffic on these days would be typical of most fairground festivals and would give SHA reliable peak volume figures. Mr. Miller said he would look into providing loop detectors for traffic counts.

Mr. Louis H. Ege, Jr.
Page Three

All attendees were invited to the upcoming Alternates Public Workshop which will be held on June 25, 1996 at Glenelg High School. If you have any questions, please feel free to contact me at ext. 8513.

RKS:GMC:as

cc: Mr. Gregory M. Cohen
Mr. Robert Fisher
Mr. George Miller
Mr. Neil J. Pedersen
Mr. Alan Straus

309

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Dario J. Agnolutto
John P. McKenna, Jr.
Gerald W. Ueckermann, Jr.
Michael L. Lefkowitz

John D. Gilmore, Jr.
Sally Presler McCash
Mark G. Levin
Vernell B. Arrington
W. Patrick Kelly, Jr.
Charles M. James, III

Tyler G. Webb
S. Randall Cohen
John P. Davey
Marilyn J. Brasier
Michael L. Dailey

John P. McDonough
Matthew D. Osnos
André J. Gingles
John K. Nilan
Bridgett Garrett Smith

Of Counsel:
Peter F. O'Malley

August 12, 1996

RECEIVED

AUG 14 1996

Mr. Neil J. Pederson, Director
707 N. Calvert Street
Baltimore, Maryland 21202

SECRETARY DEPARTMENT
OF TRANSPORTATION

RE: Expansion of MD Route 32 Between MD 108 and
Interstate 70

Dear Neil:

Thank you and Bob Sanders for meeting with Bill Kennedy and his neighbors to discuss the expansion of MD Route 32. Your explanations and recommendations were appreciated and well maintained by the group. As you are well aware, providing accurate information is a significant first step to assuring the citizens that their concerns will be considered by the State Highway Administration. You and Bob were most helpful.

The community makes the following suggestions and questions as were discussed on August 6th:

1) Eliminate the overpass bridge into the Dayton Shop or in the alternative, redesign the overpass so that the bridge only crosses the westbound lanes and the access ramp is from the inner lane coming eastbound. This would enable you to use the existing entrance into the facility and to preserve much more of the treeline on the eastbound right of way.

2) Equally as important is the overall objective of preserving or recreating the treeline between the proposed eastbound lanes and the homes on Ten Oaks Road. Everyone is willing to work with State Highway to build a berm or replant substantial trees. Additionally, we are seeking your advise on how best to maintain or improve the line of site and noise levels.

3/10

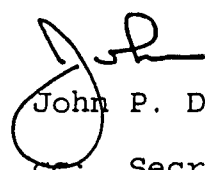
Mr. Neil J. Pederson, Director
August 12, 1996
Page 2

3) As you heard the other evening, the noise levels from Route 32 continue to increase and is interfering with a country environment. We would appreciate a review of the noise levels and request sound barriers to be included as part of the project.

On a more general nature, would you consider two other items. First, would the State consider an emergency phone system along this road. Several times a year, Mr. & Mrs. Kennedy are awakened in the night by travelers who have car trouble and cross the property to seek assistance. Secondly, can the security lights at the Dayton Shop facility be re-directed or somehow shielded to reduce the light reflecting on to the neighbors' properties. All are aware that during snow emergencies the yard must be well lighted to assist the workers, however, on a regular basis if the lights could be adjusted, it would be most helpful.

Thank you again for your assistance. I have marked my calendar to follow-up and schedule another meeting after the first of the year.

Sincerely,


John P. Davey

cc: Secretary David L. Winstead
Project Manager Robert K. Sanders
William J. Kennedy
Marc W. Jaffe

JPD:cs

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MAY 6 7 1997

311

Citizens' Alliance for Rural Preservation

P.O. Box 225 Glenelg, MD. 21737

Mr. Robert K. Sanders
State Highway Administration
P.O. Box 717
Baltimore, Maryland 21203

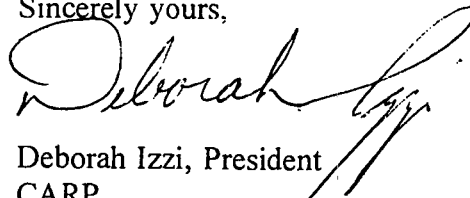
Dear Mr. Sanders:

On behalf of the Citizens' Alliance for Rural Preservation, we would like to thank you and your colleagues for taking the time to meet with us on Wednesday, April 30. We appreciated the opportunity to see new alternatives being considered for interchanges and access roads based on citizen input, and to hear about some safety ideas under consideration. Although not traffic engineers, people who live in the community and use the road every day around the clock can offer valuable insights into traffic patterns and hazards.

As we thought we had articulated, our request for the meeting with our group was to be able to ask questions regarding the stage of development of this project, to learn about any changes being considered and to again present ongoing safety concerns and offer additional suggestions. We did feel that the unfortunate emotional interjection by a few was an unnecessary distraction that stifled this process. We hope that in the future we can meet with you and the State Highway Administration on a more professional level where open dialogue and exchange of information and ideas is accepted in the spirit of cooperation.

Thank you again for spending several hours with us.

Sincerely yours,



Deborah Izzi, President
CARP

312

cc: Ms. Debbie Izzy
Mr. Robert Fisher
Mr. Neil Pedersen
Mr. Robert Sanders



Maryland Department of Transportation

The Secretary's Office

313
Parris N. Glendening
Governor

David L. Winstead
Secretary

John D. Porcari
Deputy Secretary

May 22, 1997

Ms. Deborah Izzi
President
Citizens' Alliance for Rural Preservation
P.O. Box 225
Glenelg MD 21737

Dear Ms. Izzi:

Thank you for your letter to Governor Glendening regarding MD 32 between MD 108 and I-70. The Governor has asked me to respond to you on his behalf.

The MD 32 project-planning initiative is, first and foremost, addressing long-term corridor transportation needs, looking out to the year 2020. The actual improvement recommendations for MD 32 have considered all other reasonable and feasible transportation strategies identified in a regional Congestion Management Study report completed by the Maryland Department of Transportation within a 40-mile wide area from Frederick to Annapolis. The alternative transportation strategies evaluated in this study included heavy rail, light rail, high occupancy vehicle lanes (HOV), new or enhanced bus service and Park and Ride facilities. This report ensures a properly coordinated plan for transportation improvements which are consistent with current and future land uses.

Please be assured the proposed improvements are being developed in such a manner as to be sensitive to both the natural and human environments. Coordination has been ongoing between the project team and the County, local residents, businesses and the environmental agencies who comment on, and issue permits for, our highway projects.

The MD 32 project is funded for project planning only at this time. No decisions have been made regarding whether or not design, right-of-way acquisition, and construction will be funded. Prior to proceeding to construction, this project will be evaluated for its consistency with the Governor's Smart Growth initiative as provided for in the recently enacted legislation.

The County and State share your concerns about the need for interim improvements to address more immediate issues in the MD 32 corridor. To that end, the State Highway Administration and the County are developing a series of lower-cost improvement options which could be designed and built well in advance of the larger corridor-level improvements.

865-1000

My telephone number is (410) _____

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Post Office Box 8755, Baltimore/Washington International Airport, Maryland 21240-0755

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Ms. Deborah Izzi
Page Two

Again, thank you for your letter. The Governor appreciates hearing from you, and on his behalf, I also thank you for the interest which prompted you to write. If you need additional information regarding this matter, please do not hesitate to contact me or Mr. Neil Pedersen, Director of Planning and Preliminary Engineering, State Highway Administration, who can be reached at (410) 545-0411 or, toll-free within Maryland, at 1-800-548-5026.

Sincerely,



David L. Winstead
Secretary

cc: Mr. Neil J. Pedersen, Director, State Highway Administration
Mr. Parker F. Williams, Administrator, State Highway Administration

315



Maryland Department of Transportation
State Highway Administration

David L. Winstead
Secretary

Parker F. Williams
Administrator

May 23, 1997

Ms. Debbie Izzi, President
Citizen's Alliance for Rural Preservation
3226 Parliament Place
West Friendship MD 21794

Dear Ms. Izzi:

Enclosed is information prepared in response to your request to Senator Christopher McCabe regarding the MD 32 planning study. Specifically, we have included the following:

- 1994 Average Daily Traffic and intersection turning counts.
- Volumes and turning counts at East Linden Church Road intersection taken in July, 1996 and May, 1997.
- Federal and State signal warrant criteria from the Manual for Uniform Traffic Control Devices.
- SHA Noise Policy information.

We are currently collecting new traffic data in the MD 32 study area. The information will be forwarded to you as soon as it is available.

We thank you for your continued involvement in the MD 32 planning study. We will keep you informed as the study progresses. In the meantime, if you have any comments or questions, please feel free to call me or the project manager, Mr. Bob Sanders, at (410) 545-8513.

Very truly yours,

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

(410) 545-0411

My telephone number is _____

V-CM-5

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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Ms. Debbie Izzi
Page Two

Enclosures

cc: The Honorable Christopher McCabe, Senator, Senate of Maryland
The Honorable Robert Flanagan, Delegate, Maryland House of Delegates
The Honorable Robert Kittleman, Delegate, Maryland House of Delegates
Mr. Louis H. Ege, Jr., Deputy Director, State Highway Administration
Mr. Robert Fisher, District Engineer, State Highway Administration
Mr. Robert Sanders, Project Manager, State Highway Administration
Mr. Jim Wynn, Assistant Division Chief, State Highway Administration

317

Mr. Robert K. Sanders
Project Manager
Project Planning Division
State Highway Administration
707 N. Calvert Street
Baltimore, MD 21202

SEP 10 1997

Dear Mr. Sanders:

Bob

This is a follow up to our meeting with you and Mr. Vaughn Lewis on July 8, 1997 and is a synopsis of our comments and concerns.

The meeting was requested by the State to illustrate to us the result of work by you and your staff as a response to our request to investigate various options to the proposed Dayton Shop alternative. You indicated that the alternatives we suggested at our meeting last Fall would not be workable for various reasons and presented an alternative that is a revision of the original alternative. It incorporates an extensive berm for the ramps to and from the overpass to the Dayton Shop.

This alternative does appear to be promising in attenuating some of the noise from both the north and south bound lanes. The concept is acceptable to us. However, we do ask that during design you consider the following:

- That the location of the ramps be as **close to the south bound lanes** as possible so that as many existing trees as possible can be saved along our property lines. These trees can afford additional noise attenuation as well as a visual buffer from the bright lights of the existing SHA maintenance facility;
- That the berm for the ramps be constructed as **high** as possible so that it affords as much noise attenuation as possible;
- That the **top** of the berm for the ramps be designed to **incorporate a planting area**, along our property lines, for two rows of evergreen trees;
- That **extensive plantings** be incorporated as part of the restoration of the site. To this end we would agree to the creation of planting easements on our properties adjacent to the SHA right of way;
- That the design of the ramps **not incorporate lighting**, except lights for emergency use [lighting of the ramps for non emergency use would defeat all of our efforts to buffer our residences].

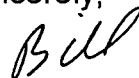
We also discussed the existing lighting at the Dayton Shop and you stated that you would contact the supervisor of the Dayton maintenance facility to discuss our earlier request to shield the yard lights.

We appreciate the efforts that have been made by you and your staff to respond to our concerns and comments on the proposed project. We feel that the meetings and the exchange of information have been valuable and that all parties better understand each other's concerns and needs.

Please keep us informed of the progress of this project and let us know when "limits of disturbance" can be staked along our property. We want to commence our own buffer plantings as soon as possible and need to know how much of a set back to allow.

If you need to contact any of the residents at the meeting, you can call me on 301-206-8081 during the day.

Sincerely,



William Kennedy
4491 Ten Oaks Road
Dayton, MD 21036

Residents:

Mike & Susie Kelly, 4511 Ten Oaks Road

Marc Jaffe & Evan Crierie 4501 Ten Oaks Road

William Mitchell 4451 Ten Oaks Road

William & Arlene Kennedy 4491 Ten Oaks Road

Gary Kramer 4243 Ten Oaks Road

Wayne & Denise Kramer 4315 Ten Oaks Road



**Maryland Department of Transportation
State Highway Administration**

May 20, 1998

319
Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

Ms. Deborah Izzi, President
Citizens' Alliance for Rural Preservation
P.O. Box 225
Glenelg MD 21737

Dear Ms. Izzi:

The State Highway Administration (SHA) understands that safety and operations along the MD 32 corridor, between MD 108 and I-70, have been a primary concern of the Citizens' Alliance for Rural Preservation. SHA is pleased to inform you that fully actuated traffic signals will be installed at the MD 32 intersections with East and West Linden Church Roads by Spring 1999.

Numerous safety measures have been implemented at this location within the past year, including flashing beacons, protected center left turn lanes, left turn acceleration lanes, intersection lighting and raised reflective pavement markers. We recognize, however, that safety concerns at the intersections remain. Our analysis indicates that by counting the traffic at East and West Linden Church Roads as one intersection, traffic signal warrants are met. The flashing beacons will be replaced by fully actuated traffic signals. These signals will operate in full function during the morning and evening peak hours and flash during other times of the day.

The SHA will continue to monitor safety and operations along MD 32 in order to identify other improvements that would address the needs of the corridor. If you have any questions related to the Linden Church Road intersections or other short term improvements, please call Mr. Bob Fisher, our District 7 Engineer. Bob can be reached at (301) 624-8101 or toll-free at (800) 635-5119.

In the meantime, the MD 32 Project Planning study from MD 108 to I-70, intended to address the long term needs of the corridor, is moving forward. An Informational Public Workshop is scheduled for June 16 at Glenelg High School from 5:30 - 8:00 p.m. to provide an update on the status of the study, the alternates under consideration and the short term improvements in the corridor. A Combined Location and Design Public Hearing is tentatively scheduled for late 1998 or early 1999.

RECEIVED

V-CM-7

My telephone number is _____

MAY 26 1998

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1-800-735-2258 Statewide Toll Free

FUMMEL, KLEPPER & KAHL, LLP

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717

Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

320

Ms. Deborah Izzi, President
Citizens' Alliance for Rural Preservation
Page Two

Hopefully this letter brings welcome news to both you and your neighbors. If you have any comments or questions, please feel free to call me or Mr. Neil Pedersen, our Director of Planning, who can be reached at 410-545-0411 or toll-free at (888) 204-4828.

Very truly yours,

Neil J. Pedersen

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

cc: Mr. Robert Fisher, District 7 Engineer, State Highway Administration
Mr. Robert Ritter, Project Manager, State Highway Administration

NEPA Coordination

Comments and Concurrence on Purpose and Need

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

NEPA Coordination

Comments and Concurrence on Purpose and Need

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-P&N-1	US Environmental Protection Agency	August 25, 1995
	<i>Comments</i>	October 4, 1995
V-P&N-2	Maryland Historical Trust	August 25, 1995
	<i>Comments</i>	September 28, 1995
V-P&N-3	Federal Highway Administration	August 31, 1995
	<i>Concurrence</i>	October 3, 1995
V-P&N-4	US Army Corps of Engineers	September 25, 1995
V-P&N-5	Maryland Office of Planning	October 6, 1995
V-P&N-6	US Department of the Interior, Fish and Wildlife Service	September 5, 1995
	<i>Concurrence</i>	September 23, 1995
V-P&N-7	Maryland Department of the Environment	September 26, 1995
V-P&N-8	US Army Corps of Engineers	March 28, 1996
	<i>Concurrence</i>	April 8, 1996
V-P&N-9	US Environmental Protection Agency	August 29, 1996
	<i>Concurrence</i>	October 23, 1996



**Maryland Department of Transportation
State Highway Administration**

David L. Winstéad
Secretary
Hal Kassoff
Administrator

August 25, 1995

RE: Contract No. HO 756-101-370
MD 32: MD 108 to I-70
Howard County, Maryland

Mr. Roy Denmark, Chief
NEPA Compliance Section
Environmental Protection Agency
Region III
841 Chestnut Avenue
Philadelphia PA 19107

Dear Mr. Denmark:

In accordance with the combined NEPA/404 process, the Maryland State Highway Administration seeks your concurrence on the signature line below indicating your agreement with the Purpose and Need for the MD 32 project. The Purpose and Need was presented at the Interagency Review meeting held on August 16, 1995 and is documented in the attached summary.

Please provide us with your concurrence or response by October 9, 1995, addressed to the attention of Ms. Gay L. Olsen in the Project Planning Division. If you have any questions, please feel free to call me at (410) 333-1180.

Very truly yours,

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

RECEIVED
AUG 31 1995
NEPA COMPLIANCE
SECTION (3ES43)

by: Joseph R. Kresslein
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

V-P&N-1

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

324

Mr. Roy Denmark
Page Two

Concurrence:

Environmental Protection Agency

Date

LHE:AEG

Attachment

cc: Ms. Mary Ann Boyer
Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Mr. Alan Straus
Ms. Cynthia D. Simpson
Mr. Jim Wynn



PROJECT
DEVELOPMENT
DIVISION
OCT 13 10:42 AM '95
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

325

October 4, 1995

Ms. Gay L. Olsen
Project Planning Division
Maryland State Highway Administration
P.O. Box 717
Baltimore, MD 21203-0717

RE: MD 32: MD 108 to I-70 Comments on Purpose and Need Statement

Dear Ms. Olsen:

In a letter dated August 25, 1995, your office requested agency comments or concurrence on the Purpose and Need Statement for MD 32. Before reaching concurrence, we have provided our comments as written in the margins of the attached Purpose and Need Statement. Most of the comments relate to clarifying information (providing additional dates, percentages, etc.). We recommend that these comments be addressed in a revised Purpose and Need Statement.

Thank you for the opportunity to comment on this statement. Should you have questions about our comments, please contact Mary Ann Boyer at (215) 597-3634.

Sincerely,

Roy E. Denmark, Jr.

Roy E. Denmark, Jr.
NEPA Review Coordinator

Attachment



Maryland Department of Transportation
State Highway Administration

326
David L. Winstead
Secretary
Hal Kassoff
Administrator

OCT 2 9 59 AM '95

August 25, 1995

MARYLAND HISTORICAL TRUST

RE: Contract No. HO 756-101-370
MD 32: MD 108 to I-70
Howard County, Maryland

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville Maryland 21032-2023

Dear Mr. Little:

In accordance with the combined NEPA/404 process, the Maryland State Highway Administration is providing you with a copy of the Purpose and Need for the MD 32 project. The Purpose and Need was presented at the Interagency Review meeting held on August 16, 1995 and is documented in the attached summary for your information.

Should you have any questions, please feel free to call me at (410) 333-1180.

Very truly yours,

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

by:

Joseph R. Kresslein
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

"MHT HAS NO OBJECTION TO THE
P & N STATEMENT"

E. J. Code 9/28/95

V-P&N-2

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

2pe
Arrival: BC 9/27/95

Structures 2pe
FAX 9/27/95

327

Mr. J. Rodney Little
Page Two

LHE:AEG
Attachment

cc: Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Cynthia D. Simpson
Mr. Alan Straus
Mr. Jim Wynn



Maryland Department of Transportation
State Highway Administration

328
David L. Winstead
Secretary
Hal Kassoff
Administrator

August 31, 1995

RE: Contract No. HO 756-101-370
MD 32: MD 108 to I-70
Howard County, Maryland

Mrs. Susan J. Binder
Division Administrator
Federal Highway Administration
The Rotunda-Suite 220
711 West 40th Street
Baltimore MD 21211

Attention: Mr. David Lawton

Dear Mrs. Binder:

In accordance with the combined NEPA/404 process, the Maryland State Highway Administration seeks your concurrence on the signature line below indicating your agreement with the Purpose and Need for the MD 32 project. The Purpose and Need was presented at the Interagency Review meeting held on August 16 and is documented in the attached summary.

Please provide us with your concurrence or response by October 13 addressed to the attention of Ms. Gay L. Olsen in the Project Planning Division. If you have any questions, please feel free to call Joe Kresslein at (410) 333-1180.

Sincerely,

Hal Kassoff
Administrator

by:

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

V-P&N-3

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717

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Mrs. Susan J. Binder
Page Two

Concurrence:

for George K. Frick, Jr.
Federal Highway Administration
Division Administrator

Oct 3, 1995
Date

HK:NJP
Attachment

cc: Ms. Christina Dutch (w/Distribution List)
Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Ms. Mary Huie
Mr. Joseph Kresslein
Mr. Ray Moravec
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Cynthia D. Simpson
Mr. Alan Straus
Mr. Jim Wynn



REPLY TO
ATTENTION OF

Operations Division

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-0715
PERMIT
DIVISION

SEP 25 8 47 AM '95

330
SEP 29 1995

Maryland State Highways Administration
Attn: Ms. Gay Olsen
Project Planning Division
707 North Calvert Street
Baltimore, Maryland 21202

Dear Ms. Olsen:

This is in response to your letter dated August 25, 1995, requesting concurrence with the Purpose and Need for MD 32. Based upon the information provided, we have the following concerns:

a. The Purpose and Need summary must clearly state that the need for the MD 32 project is to provide conformance with local land use plans, provide system linkage and continuity, serve future transportation capacity, and improve safety.

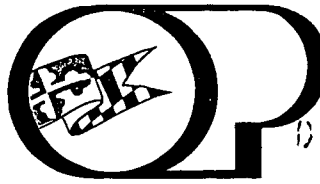
b. The summary states that the level of service for 6 of the 11 intersections in the study area will fail by the year 2020. In addition, the accident information indicates that sections 4 and 6 of MD 32 are significantly higher than the statewide average rates. The accident rates for the remaining sections are significantly lower than the statewide average rates. Are improvements to these sections being considered and if so, have these improvements been included in the design year level of service and safety needs?

c. Please clarify the population and employment growth figures. Specifically, where is the employment and population growth projected to occur along MD 32 and how will this affect the travel demand on MD 32. It would be useful if current figures and projected growth figures were depicted on MD 32.

If you have any questions concerning this matter, please call Ms. Meg Gaffney-Smith of this office at (410) 962-6083.

Sincerely,

Meg Gaffney-Smith
For Keith A. Harris
Chief, Special Projects
Permit Section



MARYLAND Office of Planning

OCT 10 10 21 AM '95
October 6, 1995

Parris N. Glendening
Governor

Ronald M. Kreitner
Director

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

Dear Mr. Ege:

Staff at the Maryland Office of Planning have reviewed the information on the **Purpose and Need for the MD 32 project from MD 108 to I-70**. Our comments follow.

The purpose of the project is not explicitly stated. We understand it to be to provide more efficient east-west movements and to complete system linkage for the Patuxent Freeway.

There should be reference to how the proposed project will support growth and development in suitable areas as called for in the Planning Act of 1992. This is important since the project area includes western Howard County which is designated in the land use plan for rural preservation. Since it can be misleading, it is important that the area for which the household and population growth applies be clearly identified. The geographic boundaries (TAZ or other designated area) of the project "vicinity " or "surrounding area" are not clear. It would also be better if the growth projections and the traffic projections on which the need is based covered the same periods of time.

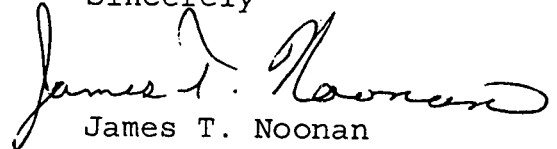
More information should be presented on Congestion Management System (CMS) Analysis. The coordination between NEPA process, the Major Investment Study and the CMS analysis should be discussed in the background information. It will be important that this project meet the transportation system need while supporting growth management objectives. The Office of Planning will be particularly interested in the measures of effectiveness intended to address consistency with land use plans. The 1990 Howard County General Plan identifies the need for capacity improvements on MD 32 from MD 108 to the northern Howard County line. (1990 Howard County Plan, p.245). It calls for roadway improvements, further engineering, and study of environmental and community impacts.

V-P&N-5

The background information should also note that the project is also included in the 1993 Long-Range Plan for The Baltimore Region.

We will look forward to further review on this project as the planning process continues. Please contact me or Christine Wells if there are any questions about these comments.

Sincerely


James T. Noonan



**Maryland Department of Transportation
State Highway Administration**

PROJECT
DEVELOPMENT
DIVISION

David L. Winstead
Secretary
Hal Kassoff
Administrator

SEP 27 9 11 AM '95

September 5, 1995

Re: Contract No. HO 756-101-370
MD 32: MD 108 to I-70
Howard County, MD

Mr. Robert Zepp
U.S. Department of Interior
Fish and Wildlife Service
Chesapeake Field Office
177 Admiral Cochrane Drive
Annapolis MD 21401

Attention: Mr. William Schultz:

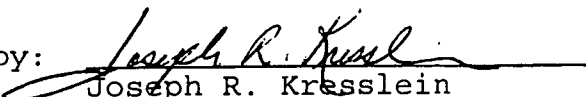
Dear Mr. Zepp:

In accordance with the combined NEPA/404 process, the Maryland State Highway Administration seeks your concurrence on the signature line below indicating your agreement with the Purpose and Need for the MD 32 project. The Purpose and Need was presented at the Interagency Review Meeting held on August 16, 1995 and is documented in the attached summary.

Please provide us with your concurrence or response by October 16, 1995. Please return your response to the attention of Ms. Gay L. Olsen in the Project Planning Division. If you have any questions, please feel free to call me at (410) 333-1180.

Very truly yours,

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

by: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

V-P&N-6

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

334

Mr. Robert Zepp
Page Two

Concurrence:

William Schub
US Fish and Wildlife Service

9/23/95
Date

Rt 32 - MD108 to I-70

LHE:AEG
Attachment

cc: Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Cynthia D. Simpson
Mr. Alan Straus
Mr. Jim Wynn

335



MDE

MARYLAND DEPARTMENT OF THE ENVIRONMENT
2500 Broening Highway • Baltimore, Maryland 21224
(410) 631-3000
DIVISION

Parris N. Glendening
Governor

SEP 27 9 25 AM '95

Jane T. Nishida
Secretary

September 26, 1995

Mr. Louis H. Ege, Jr., Deputy Director
Office of Planning and Preliminary Engineering
Maryland Department of Transportation
State Highway Administration
P. O. Box 717
Baltimore, MD 21203-0717

Attention: Mr. Joseph R. Kresslein

Re: MD 32 from MD 108 to I-70, Contract # HO 756-101-370, Howard County

Dear Mr. Kresslein:

Thank you for the opportunity to comment on your purpose and need study for the above-referenced project. We find the study to be acceptable.

So as to provide a more efficient water quality and stormwater management review later in the process, we recommend that, when an alignment is eventually selected and plans are provided, the Plan Review Division, Nonpoint Source Program also receive the plans as soon as possible.

I look forward to working with you on the next phase of the project proposal. Thank you for your cooperation. If you have any questions, please contact me at (410) 631-3609.

Sincerely,

Andrew T. Der
Environmental Specialist
Nontidal Wetlands and Waterways Division

cc: Gary Setzer
Ken Pensyl

V-P&N-7

"Together We Can Clean Up"





**Maryland Department of Transportation
State Highway Administration**

David L. Winstead
Secretary
Hal Kassoff
Administrator

March 28, 1996

RE: Contract No. HO 756-101-370
MD 32: MD 108 to I-70
Howard County, Maryland

Mr. Kelth Harris
Special Projects Section
US Army Corps of Engineers
P.O. Box 1715
Baltimore MD 21201

Attention: Ms. Meg Gaffney-Smith

Dear Mr. Harris:

Thank you for your comments dated October 13, 1995 on the MD 32 Purpose and Need Statement. The Purpose and Need for the MD 32 project was presented at the Interagency Review meeting on August 16, 1995 and was distributed for comment and concurrence on August 25, 1995. In response to agency comments, the Purpose and Need has been revised and your individual comments have been summarized and addressed. They are enclosed as attachments to this letter.

In accordance with the combined NEPA/404 process, the Maryland State Highway Administration again seeks your concurrence on the signature line below indicating your agreement with the revised Purpose and Need Statement.

Please provide us with your concurrence or response by April 29, addressed to the attention of Ms. Gay L. Olsen in the Project Planning Division. If you have any questions, please feel free to call Joe Kresslein at (410) 545-8550.

Very truly yours,

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

by: 
Joseph Kresslein
Assistant Division Chief
Project Planning Division

V-P&N-8

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

337

Mr. Keith Harris
MD 32: MD 108 to I-70
Purpose and Need
Page Three

Concurrence:

Meg Haffney - Smith
US Army Corps Of Engineers

4/8/96
Date

LHE:AEG

Enclosures

cc: Mr. Greg Cohen
Mr. Louis H. Ege, Jr.
Ms. Allison Grooms (w/enclosures)
Mr. Joseph Kresslein
Ms. Gay Olsen
Mr. Robert Sanders (w/enclosures)
Ms. Cynthia D. Simpson
Mr. Alan Straus



338

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

AUG 29 1996

Mr. Joseph Kresslein
Assistant Chief
Project Planning Division
Maryland State Highway Administration
Post Office Box 717
Baltimore, Maryland 21202

Re: Purpose and Need Statement for the MD 32: MD 108 to I-70 Project

Dear Mr. Kresslein:

We have completed our review of the Purpose and Need Statement for the referenced project. We submit the following comments for your consideration.

As our first general comment, we again recommend that concurrence forms be developed in a format similar to the example enclosed. Such forms, when completed, serve to explicitly define that which reviewers are or are not concurring with by their signatures. The concurrence form provided with this package contains no information other than the project title and signature line.

Our second general comment deals with the supporting maps for this concurrence request and others we have received in the past. The poor quality of some of the maps in the concurrence request packages makes their evaluation very difficult in many cases, which delays the concurrence determination. For example, the regional map listed as Attachment I in this package was so illegible that it was of little use in the evaluation.

Our detailed comments are expounded in the following bullets.

- It is not clear if Route 32 between Holiday Hills (the end of the 4 lane section) to Route 108 has been upgraded. Moreover, it is not clear if the section from MD 108 to I-70 is the only unimproved section of MD 32. The map that shows the corridor from Annapolis to I-70 is illegible.
- The accident analysis is a little confusing. From one perspective, the analysis shows that the overall accident rate for MD 32 is 10% lower than the statewide average.

V-P&N-9

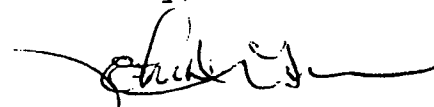
Celebrating 25 Years of Environmental Progress

However, when the route is viewed in segments, all segments are above the statewide average. The reason for this outcome is unclear. It appears that specific accident types are higher in some areas. These may be indicative of specific transportation deficiencies. The analysis does not bring out the significance of the specific accident types.

- Growth rates for the area are high. The project area is just west of Baltimore and is probably a prime area for growth because of Baltimore and Washington.
- Uncontrolled access appears to be the most significant problem involved in the high accident rate. Also, the small lane size and the lack of a divider probably contribute to the accident problems.
- Typically, a project with an ADT above 7,000 is a candidate for a 4 lane improvement. It appears that the ADT is high enough for a 4-lane roadway but the LOS is A. The truck mix is approximately 7% and is projected to increase significantly in the future.
- There is no discussion of the geometric deficiencies of the existing facility except that it is 24' wide with 10' shoulders. There is no discussion of not meeting design standards or unsafe roadway conditions.
- It appears that there is a right-of-way for the southern portion of the project. The northern third of the project would be new right-of-way. There is very little information on the resources in that area.
- From the information provided and some of the inconsistencies, it appears the predominate purpose of this project is growth (real or anticipated).

Thank you for the opportunity to comment on this purpose and need package. We would appreciate receiving a response to our comments. Once received, your response will be reviewed and our concurrence determination will be delivered in a timely manner. In the meantime, please feel free to contact me should you have questions regarding our comments.

Sincerely,



John D. Forren
NEPA Program Manager

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SAMPLE CONCURRENCE FORM FOR PROJECT PURPOSE AND NEEDS

Name of Project
SR Number & Section Number
County (where project is located)
Date of ACM

Definition of Concurrence:

"Written determination by the agency that information to date is adequate and the agency agrees that the process can be advanced to the next stage. Agencies agree not to revisit the previous process steps unless conditions change."

Project Description:

Provide a brief one-paragraph description of the project.

Project Purpose Statement:

Provide a concise statement of broad project objectives.

Project Needs Statement:

List project needs in a problem statement format. The problem statement should list the specific transportation problems and deficiencies which have prompted this search for improvements.

Request for Concurrence:

Having discussed the project purpose and needs presented above, the following agencies, by their signature to this document, signify concurrence with the (add name of project) Project Purpose and Need.

Concur as Presented _____ Concur with Comments _____ Do Not Concur _____

Comments/Reasons for Non-Concurrence: _____

Additional Information Needed: _____

Signature: _____ Agency: _____ Date: _____

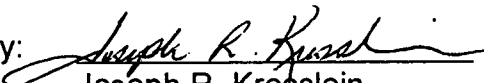
341

Mr. John D. Forren
MD 32: MD 108 to I-70
Purpose and Need
Page Three

We hope that this letter answers all of the questions which you had regarding the MD 32 project planning study. Please address your concurrence on the Purpose and Need document to the attention of Ms. Gay Olsen in the Project Planning Division. If you have any questions, please feel free to call Mr. Joseph Kresslein at (410) 545-8550.

Very truly yours,

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

by: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

Concurrence:


Environmental Protection Agency

10-23-96
Date

LHE:RKS

cc: Ms. MaryAnn Boyer
Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph Kresslein
Mr. Robert Sanders
Ms. Cynthia Simpson
Mr. Alan Straus

NEPA Coordination
Comments and Concurrence on
Alternatives Retained for Detailed Study-1996

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

NEPA Coordination

Comments and Concurrence on Alternatives Retained for Detailed Study - 1996

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-AR96-1	US Department of Commerce, National Marine Fisheries Service <i>Comments</i>	November 6, 1996
V-AR96-2	Maryland Historical Trust <i>Comments</i>	December 2, 1996
V-AR96-3	Federal Highway Administration <i>Concurrence</i>	October 25, 1996 December 4, 1997
V-AR96-4	Maryland Department of the Environment <i>Concurrence</i>	October 25, 1996 March 25, 1997
V-AR96-5	Maryland Office of Planning <i>Comments</i>	December 5, 1996
V-AR96-6	Maryland Department of Natural Resources <i>Concurrence</i>	December 12, 1996 December 10, 1996
V-AR96-7	US Department of the Interior, Fish and Wildlife Service <i>Comments</i>	January 7, 1997
V-AR96-8	US Army Corps of Engineers <i>Comments</i>	Date Unknown
V-AR96-9	US Army Corps of Engineers <i>Comments</i>	Date Unknown



344

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Habitat And Protected
Resources Division
Oxford, Maryland 21654

November 6, 1996

Louis H. Ege, Jr.
Deputy Director, Office Of Planning &
Preliminary Engineering
State Highway Administration
P.O. Box 717
Baltimore, Maryland 21203-0717

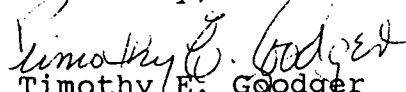
Attn: Gay Olsen, Project Planning Division

Dear Mr. Ege:

This pertains to your request for concurrence on the Alternates Retained for Detailed Study for the MD Route 32 project (from MD Route 108 to Interstate 70) in Howard County.

This proposal will affect portions of the Patuxent River drainage basin lying upstream of the fall line, and therefore, will not impact resources of concern to our agency. Consequently, we will not be involved in the NEPA/404 review process for this proposal.

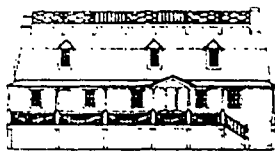
Sincerely,


Timothy E. Goodger
Assistant Coordinator



345

MARYLAND
HISTORICAL



TRUST

Parris N. Glendening, Governor
Patricia J. Payne, Secretary

December 2, 1996

Office of Preservation Services

Ms. Gay Olsen
Project Planning Division
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Project No. HO 756B11
MD 32: MD 1108 to I-70
Howard County, MD

Dear Ms. Olsen:

Thank you for your letter, dated 25 October 1996 and received by the Trust on 31 October 1996, requesting our comments on the Alternatives Retained for Detailed Study for the above-referenced project.

The Trust has no specific comments regarding the alternatives retained for detailed study. The build alternates have the potential to affect significant historic and archeological properties. SHA has not yet conducted archeological surveys of the build alternates. Thus, we are unable to make informed comments regarding effects to historic properties (including standing structures and archeological properties) until we have received the results of SHA's identification and evaluation of archeological resources within the proposed alternatives.

We are concerned about the basis for the numbers SHA included for environmental impacts to historic properties listed in the Summary of Impacts and Costs table. The table gives precise numbers for impacts to historic properties. SHA and the Trust have not yet assessed the project's effects to those resources or archeological properties. Under Section 106, effects may encompass more than direct impacts or taking of eligible properties. In our opinion, it is premature and misleading to include precise number of impacts when SHA and the Trust have not yet progressed to that stage of the Section 106 process.

V-AR-96-2



EQUAL HOUSING
OPPORTUNITY

Division of Historical and Cultural Programs
100 Community Place • Crownsville, Maryland 21032 • (410) 514-7631/7636
The Maryland Department of Housing and Community Development (DHCD) pledges to foster the letter and spirit of the law for achieving equal housing opportunity in Maryland.


346

Ms. Gay Olsen
December 2, 1996
Page 2

We trust that SHA will undertake the archeological investigations and assessment of effects to historic properties before project plans have developed to an extent that would preclude the avoidance of significant archeological sites. Further consultation with our office will be necessary to complete the project's Section 106 review.

If you have questions or require additional information, please call Ms. Elizabeth Hannold (for structures) at (410) 514-7636 or me (for archeology) at (410) 514-7631. Thank you for providing us this opportunity to comment.

Sincerely,


Elizabeth J. Cole
Administrator
Archeological Services

EJC/EAH
9603919

cc: Mr. Bruce Grey
Dr. Charlie Hall
Ms. Renee Sigel
Mr. Keith Harris
Mrs. Phillip St.C. Thompson
Mr. William O'Brien

347



Maryland Department of Transportation
State Highway Administration

David L. Winstead
Secretary
Parker F. Williams
Administrator

October 25, 1996

Re: Project No. HO 756B11
MD 32: MD 108 to I-70
Howard County, Maryland

Mrs. Susan J. Binder
Division Administrator
Federal Highway Administration
The Rotunda - Suite 220
711 West 40th Street
Baltimore MD 21211

Attention: Ms. Renee Sigel

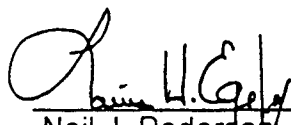
Dear Mrs. Binder:

Consistent with the NEPA/404 process, the Maryland State Highway Administration seeks your concurrence on the signature line below, indicating your agreement with the Alternates Retained for Detailed Study for the MD 32 project. The Alternates Retained for Detailed Study were presented at the Interagency Review meeting held on October 16 and are documented in the attached summary.

Please provide us with your concurrence by December 9, addressed to the attention of Ms. Gay L. Olsen in the Project Planning Division. If you have any questions, please feel free to call Joseph Kresslein at (410) 545-8550.

Sincerely,

Parker F. Williams
Administrator

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

V-AR96-3

(410) 545-0411

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

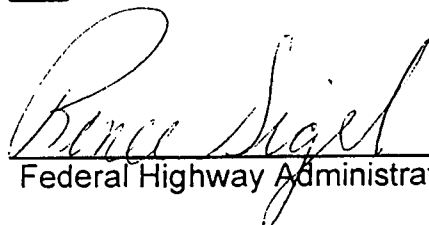
348

Mrs. Susan J. Binder
MD 32: MD 108 to I-70
Page Two

Alternates Retained for Detailed Study

Please check one:

- ☒ Concur (without comments)
☐ Concur (comments attached)
☐ Do not concur (comments attached)


Federal Highway Administration

Date:

12/4/96

Attachment

cc: Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Ms. Pam Stephenson
Mr. Robert Sanders
Ms. Cynthia D. Simpson
Mr. Alan Straus



Maryland Department of Transportation
State Highway Administration

David L. Winstead
Secretary
Parker F. Williams
Administrator

October 25, 1996

Re: Project No. HO 756B11
MD 32: MD 108 to I-70
Howard County, Maryland

RECEIVED

Mr. Elder Ghigiarelli
Maryland Department of the Environment
Water Management Administration
Non-Tidal Wetlands and Waterways Division
Tawes State Office Building, E-2
Annapolis MD 21401

NOV 1 1996

WATER MANAGEMENT ADMIN.
WETLANDS & WATERWAYS PROGRAM


Dear Mr. Ghigiarelli:

Consistent with the NEPA/404 process, the Maryland State Highway Administration requests your concurrence on the attached description of the Alternates Retained for Detailed Study for the MD 32 project. The Alternates Retained for Detailed Study were presented at the Interagency Review meeting on October 16.

Please provide us with your concurrence by December 9. Your response should be addressed to the attention of Ms. Gay Olsen in the Project Planning Division. If we do not hear from you within 30 days we will assume that you have no concerns. Should you have any questions, please call Joseph Kresslein at (410) 545-8550.

Very truly yours,

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

by: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

My telephone number is (410) 545-8500

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

V-AR96-4

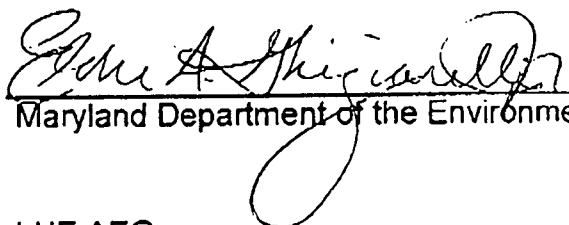
350

Mr. Elder Ghigiarelli
MD 32: MD 108 to I-70
Page Two

Alternates Retained for Detailed Study

Please check one:

- ☒ Concur (without comments)
☐ Concur (comments attached)
☐ Do not concur (comments attached)


Maryland Department of the Environment

Date:

3/25/97

LHE:AEG
Attachment

cc: Mr. Gould Charsee
Mr. Terry Clark
Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Renee Sigel
Ms. Cynthia D. Simpson
Mr. Alan Straus



MARYLAND *Office of Planning*

Parris N. Glendening
Governor

December 5, 1996

Ronald M. Kreitner
Director

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

Attention: Gay Olsen

Dear Mr. Ege:

Staff at the Maryland Office of Planning have reviewed the information provided on the Alternates Retained for Detailed Study on the MD 32 project. We note for your information that in April, 1996 Howard County adopted an amendment to the General Plan Highway Map which changed the functional classification of MD 32 from MD 108 to I-70 from an Intermediate Arterial to a Principal Arterial. That map amendment did not show any specific locations for interchanges.

We support the selection of the 34 foot wide median for the mainline widening rather than the 54 foot wide median, since it will reduce the socio-economic and environmental impacts.

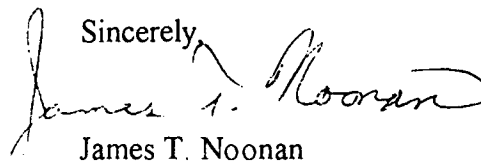
The information provided here is not adequate in describing an overall access management or access consolidation policy intended for the MD 32 project north of Burnt Wood Road. We do not fully understand the options under consideration with regard to the proposed Rosemary Lane and Nixon Farm Interchanges. Since the summary table presents them together, it is not clear whether these interchanges are proposed as a package or whether one could be considered without the other. We share the concerns noted in SHA's document regarding the potential of increased through traffic on Rosemary Lane. We urge that the impacts of the interchange on the community be thoroughly considered in the detailed study of this interchange.

The Nixon Farm area of Howard County (west of MD 32) is designated in the General Plan for rural conservation. Given that designation, it is important that SHA give very careful consideration to the land use impacts of providing access to areas west of MD 32. An interchange at this location should be accompanied by access control policies that are supported by SHA and the County.

We had also understood that the CMS corridor study report, would be completed by now, but we have not yet seen it. We are expecting that report to describe the TSM/TDM strategies

V-AR96-5

considered for the whole corridor and the results of that analysis provided with recommendations that should be considered before any alternate is selected for this project. Should you wish to discuss our comments, please contact Christine Wells at 767-4562.

Sincerely,

James T. Noonan

cc: Christine Wells, OP
Mala Rao, OP Regional Planner

353



Parris N. Glendening
Governor

Maryland Department of Natural Resources
Environmental Review
Tawes State Office Building
Annapolis, Maryland 21401

John R. Griffin
Secretary
Carolyn D. Davis
Deputy Secretary

December 12, 1996

Gay Olsen
Project Planning Division
Maryland Department of Transportation
State Highway Administration
P.O. Box 717
Baltimore, Maryland 21203-0717

Dear Ms. Olsen:

This letter is in response to a letter of request from Louis H. Ege, Jr., dated October 25, 1996, asking for Maryland Department of Natural Resources concurrence on the Alternates Retained for Detailed Study for the MD 32 project (MD 108 to I-70, Howard County).

We concur with the submitted Alternates Retained for Detailed Study, subject to the following comment:

The Department has strong concern for the potential impacts to Terrapin Branch from the MD 32 project. We strongly support all efforts to minimize impacts to the stream and avoid relocation of the existing channel. If some channel relocation cannot be avoided, we will support analysis of designs that would limit the length of stream to be relocated. The "Alternates Retained" document states that transition from widening to the west to widening to the east will be considered where it may minimize effects to the human and natural environments. This confirms that shifting the alignment will be considered. In addition, we advocate the consideration of narrowing the proposed typical section of the roadway where necessary if this might result in avoidance of stream relocation. It is important to clarify that we are only asking for this consideration after stream impacts and potential relocation are assessed. At that time, any feasible measure to minimize stream impacts should be evaluated. Site specific impact avoidance designs should not be limited by "typical" designs identified early in the planning phases.

V-AR96-6

Telephone: (410) 974-2788
DNR TTY for the Deaf: (410) 974-3683

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Gay Olsen
December 12, 1996
Page 2

If you have any questions concerning these comments, you may contact Greg Golden of my staff at (410) 974-2788.

Sincerely,



Ray C. Dintaman, Jr., Director
Environmental Review Unit

RCD:GJG

cc: Terry Clark, Maryland Department of the Environment
Vance Hobbs, U.S. Army Corps of Engineers
Bill Schultz, U.S. Fish and Wildlife Service
John Nichols, National Marine Fisheries Service
J. Rodney Little, Maryland Historical Trust
Christine Wells, Maryland Office of State Planning
Renee Sigel, Federal Highway Administration
Danielle Algazi, U.S. Environmental Protection Agency

355

Mr. Ray Dintaman
MD 32: MD 108 to I-70
Page Two

Alternates Retained for Detailed Study

Please check one:

- ☐ Concur (without comments)
- ☒ Concur (comments attached)
- ☐ Do not concur (comments attached)

Ray C. Dintaman, Jr.
Department of Natural Resources

Date: 12-10-96

LHE:DW
Attachment

cc: Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Renee Sigel
Ms. Cynthia D. Simpson
Mr. Alan Straus

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office

177 Admiral Cochrane Drive

Annapolis, MD 21401

January 7, 1997

Parker F. Williams
Administrator
Maryland Department of Transportation
State Highway Administration
P.O. Box 717
Baltimore, MD 21203

Attn: Ms. Gay Olsen

Re: MD 32 and MD 108 to I-70
#HO756B11

Dear Mr. Williams:

The U.S. Fish and Wildlife Service (Service) is providing comments on highway project MD 32: MD 108 to I-70, number HO 756B11. These proposed alternatives will have significant impacts to anadromous fish.

The Middle Patuxent River and its tributaries are documented anadromous fish spawning and nursery areas for river herring and other species. Because these critical areas near the headwaters have already received some impact from development in the area, more restraint is necessary when considering additional impacts to these resources. Maryland's Tidewater Administration ten year plan is to restore passage to some sites that block migration. Restoring additional fish passage to historic spawning areas is still needed and other restoration opportunities are available in the Middle Patuxent and other nearby rivers.

The Service is concerned with interchange locations and position of secondary roads and does not concur with present design. Specific comments are listed below:

- Rosemary interchange should be moved to the east. This will avoid the impacts to the Middle Patuxent River wetlands and floodplain.
- From the Nixon's Farm Interchange, to I-70, the newly constructed MD-32 lanes should be located on the east side of existing lanes. This shift in lane position will avoid channelization of Terrapin Branch. Additionally, the secondary road at the Nixon Farm interchange should be moved to the west, out of the Terrapin Branch floodplain.
- MD 144/I-70 (Option 1) would be acceptable if the crossings are more perpendicular to Terrapin Branch and minimize the impacts to the stream.
- MD 144/I-70 (Option 2) Interchange has too many impacts to Terrapin Branch and is not acceptable to the Service.

357

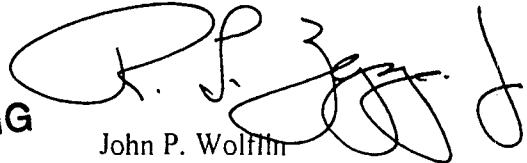
2

- MD 144/I-70 (Option 3) Interchange has too many impacts to Terrapin Branch and is not acceptable to the Service.

We appreciate the opportunity to provide information relevant to fish and wildlife resources. If you have any questions on these comments, please contact David W. Sutherland at (410) 573-4535.

Sincerely,

ACTING



John P. Wolf
Supervisor
Chesapeake Bay Field Office



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

REPLY TO
ATTENTION OF

Operations Division

Subject: CENAB-OP-RX(MD SHA/MD 32 from 108 to I-70)95-01083-2

Maryland State Highway Administration
Attn: Ms. Gay Olsen
707 North Calvert Street
Baltimore, Maryland 21202

Dear Ms. Olsen:

I am writing in response to your request for concurrence on Alternatives Retained for Detailed Study for the subject project. I continue to have concerns regarding the options being carried forward for the MD 144/32 interchange. Your letter dated January 28, 1997, indicates that Options 1 and 2 are not being carried forward due to issues such as cost, access, and safety issues. I am withholding my concurrence on alternates retained for detailed study pending the outcome of the jurisdictional field review. The jurisdictional field review was originally scheduled for May 22 and 23, however, it was cancelled. Please coordinate the re-scheduling of the jurisdictional field review with this office.

If you have any questions concerning this matter, please contact Ms. Gaffney-Smith at (703) 503-2062.

Sincerely,

Keith A. Harris
Keith A. Harris
Chief, Special Projects
Permit Section

Copy Furnished
FWS (Sutherland)
EPA (Algazi)
DNR (Golden)
MDE



359

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

REPLY TO
ATTENTION OF

Operations Division

Subject: CENAB-OP-RX(MD SHA/MD 32 from 108 to I-70)95-01083-2

Maryland State Highway Administration
Attn: Ms. Gay Olsen
707 North Calvert Street
Baltimore, Maryland 21202

Dear Ms. Olsen:

I am writing in response to your request for concurrence on Alternates Retained for Detailed Study for the subject project. We have the following comments and concerns:

1. The improvements proposed at MD 144/MD32 involve three options. However only option 3 is being carried forward for detailed study. Please clarify how this option which includes roundabouts will minimize impacts to Terrapin Branch and why option 1 or 2 cannot maintain the traffic flow. In addition, option three will involve 10 stream crossings but it is not clear where these crossings will occur. The information you have provided does not clearly state the benefits of option 3 over options 1 or 2 and does not appear to be the option that will minimize impacts to both the human and natural environments. It is unclear how option 3 will address impacts and access issues at the MD 32/MD 144 interchange. Option 1 appears to address these issues and offers fewer displacements, less property affected, less right of way, and fewer stream crossings. Options 1 and 2 should continue to be studied unless it can be clearly demonstrated that they do not achieve the purpose and need of the project and do not minimize impacts to the human and natural environments.

2. Widening on the east side of MD 32 near the proposed Rosemary Lane/Nixon Farm interchanges should be considered to reduce impacts to Terrapin Branch and the floodplain.

If you have any questions, please call Ms. Meg Gaffney-Smith of this office at (410) 962-6083.

Sincerely,

Keith A. Harris
Chief, Special Projects
Permit Section

360

-2-

Copy Furnished:

US FWS (Schultz)
MD DNR (Golden)
EPA (Algozzi)
MDE (Der)

NEPA Coordination

Comments and Concurrence on Alternatives Retained for Detailed Study- 1997

*MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland*



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

NEPA Coordination

Comments and Concurrence on Alternatives Retained for Detailed Study - 1997

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-AR97-1	US Environmental Protection Agency	May 8, 1997
	<i>Concurrence</i>	May 9, 1997
V-AR97-2	US Environmental Protection Agency	June 9, 1997
V-AR97-3	Maryland Department of the Environment	September 26, 1997
	<i>Concurrence</i>	October 2, 1997
V-AR97-4	Maryland Historical Trust	October 14, 1997
V-AR97-5	Maryland Department of Natural Resources	October 23, 1997
V-AR97-6	US Army Corps of Engineers	September 26, 1997
	<i>Concurrence</i>	October 24, 1997
V-AR97-7	US Fish and Wildlife Service	November 20, 1997
V-AR97-8	Federal Highway Administration	November 28, 1997
V-AR97-9	Maryland Office of Planning	June 10, 1998



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

May 8, 1997

Louis H. Ege, Jr.
Deputy Director
Office of Planning and
Preliminary Engineering
P.O. Box 717
Baltimore, MD 21203-0717

RE: MD 32 (MD 108 to I-70, Howard County) Alternates Retained for Detailed Study

Dear Mr. Ege:

EPA is responding to your request for comments on the above referenced project document. We apologize for the delay.

Subject to the following revisions to the document, we concur with the study:

- Each alternative that has the potential to impact the Terrapin Branch should include a clause stating SHA's commitment to avoid and minimize impacts to the stream in the design stages of the project.
- Information regarding the coordination with Howard County Planning and Zoning should be included to determine if the alternatives are in accordance with their growth plan.
- EPA would like to be kept informed of the final CMS corridor study report and how the report effects the alternatives presented in this package.

Thank you for the opportunity to comment on this project. Please advise that Mary Ann Boyer should be taken off your concurrence list and replaced by Danielle Algazi. If you have any questions, please contact Danielle Algazi. She can be reached by phone at (215) 566-2722, by facsimile at (215) 566-2782 or by E-Mail at Algazi.Danielle@EPAMAIL.EPA.GOV.

Sincerely,

A handwritten signature in black ink, appearing to read "John Forren".

John Forren
NEPA Program Manager

cc: William Schultz, FWS
Vance Hobbs, COE
Renee Sigel, FWA
Christine Wells, MOP
Gregg Golden, MD DNR

V-AR97-1

369

Mr. John Forren
MD 32: MD 108 to I-70
Page Tw/o

Alternates Retained for Detailed Study

Please check one:

- ☐ Concur (without comments)
- ☒ Concur (comments attached) - *with Revisions Requested*
- ☐ Do not concur (comments attached)



Environmental Protection Agency

Date:

5/9/97

LHE:AEG
Attachment

cc: Ms. Barbara D'Angelo
Mr. Louis H. Ege, Jr.
Ms. Allison Grooms
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Renee Sigel
Ms. Cynthia D. Simpson
Mr. Alan Straus



Maryland Department of Transportation
State Highway Administration

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Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

June 9, 1997

Re: Project No. HO756B11
MD 32: MD 108 to I-70
Howard County, Maryland

Mr. John D. Forren
NEPA Program Manager (3EP30)
Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia PA 19107-4431

Dear Mr. Forren:

Thank you for your May 8 letter in which you offered concurrence and comments on Alternates Retained for Detailed Study for the MD 32 project between MD 108 and I-70.

Since the Alternates Retained for Detailed Study presentation in October, 1996 the study team has modified, or in some cases developed new alternatives in response to citizen and agency comments. In particular, a new option that would shift MD 32 to the east and away from Terrapin Branch and new interchange options at MD 144 and Nixon's Farm has been developed to minimize impact to Terrapin Branch. Modifications to the Alternatives for Detailed Study will be presented at the July Interagency Review meeting. The State Highway Administration study team will make every effort to avoid or minimize impacts to the Terrapin Branch during the planning and design phases of the project and will include such a statement in future descriptions of these alternates.

The development of the MD 32 project has been closely coordinated with Howard County's Office of Planning and Zoning. Mr. Brian Muldoon, Senior Transportation Planner with Planning and Zoning, is included as a member of the MD 32 study team to ensure that alternatives are consistent with Howard County growth plans. The upgrading and widening of MD 32 is identified in the 1990 Howard County General Plan.

V-AR97-2

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

366

Mr. John D. Forren
MD 32: MD 108 to I-70
Purpose and Need
Page Two

The final CMS corridor study report is due in July. The study team has been coordinating with the Maryland Department of Transportation in advance of the completion of the report to ensure that the alternatives that have been developed will be consistent with the report's recommendations. The CMS study team has indicated that mass transit systems or HOV lanes are not viable alternatives in our study section, MD 108 to I-70. We will forward a copy of the final report to you when it becomes available.

Very truly yours,

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

by: Joseph R. Kresslein
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

LHE:RKS

cc: Ms. Danielle Algazi, EPA
Mr. Louis H. Ege, Jr.
Mr. Joseph Finkle
Mr. Greg Golden, DNR
Ms. Allison Grooms
Mr. Vance Hobbs, COE
Mr. Joseph Kresslein
Ms. Susan Jacobs
Ms. Cathy Rice
Mr. Robert Sanders
Mr. David Sutherland, USFWS
Ms. Renee Sigel, FHWA
Ms. Cynthia Simpson
Ms. Christine Wells, MOP
Mr. James Wynn



Maryland Department of Transportation
State Highway Administration

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

September 26, 1997

Re: Project No. HO 756B11
MD 32: MD 108 to I-70
Howard County, Maryland

Mr. Elder Ghigiarelli
Maryland Department of the Environment
Water Management Administration
Wetlands and Waterways Programs
Coastal Zone Consistency
2500 Broening Highway
Baltimore MD 21224

RECEIVED

OCT 1 1997

**WATER MANAGEMENT ADMIN.
WETLANDS & WATERWAYS PROGRAM**

Dear Mr. Ghigiarelli:

Consistent with the combined NEPA / 404 process, SHA presented conceptual alternatives to be retained for detailed study to the review agencies in October, 1996, followed by a formal submission of an informational package to the agencies for comments/concurrence as appropriate. Concurrence was received from all agencies except the Corps of Engineers and U.S. Fish and Wildlife Service, who expressed concern over potential impacts to the floodplains of the Middle Patuxent River and the direct impacts to the Terrapin Branch. Concurrence from these agencies was contingent on development of alternatives which minimized these impacts and the results of a future agency field review.

A second Interagency presentation was made at the August Interagency Meeting. Revised concepts which greatly reduced impacts to both the floodplains of the Middle Patuxent River and the direct impacts to the Terrapin Branch were included. The presentation also included a new element, the Triadelphia Road interchange, which was developed in response to citizen suggestions. The Triadelphia Road interchange could result in closing the Ten Oaks Road Connector and reducing the size and impact of the Burntwoods interchange. The revised concept package was subsequently mailed to the agencies in advance of a field review.

An Interagency Field Review was held on September 15th. The alternative modifications which were made to reduce impacts to the floodplains of the Middle Patuxent River and the direct impacts to the Terrapin Branch were presented.

V-AR97-3

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. Elder Ghigiarelli
September 26, 1997
Page 2

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The following is a summary of improvement elements included in the revised package of Alternatives Retained for Detailed Study:

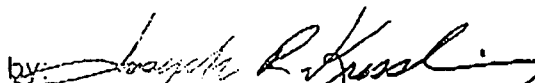
- Dualize existing MD 32 with a 34 foot open median
- Provide full controls of access throughout the study section
- Develop interchange options at Linden Church Road, Dayton Shops, Triadelphia Road, Burntwoods Road, Rosemary Lane, Nixon's Farm, MD 144 and upgrade the existing MD 32 / I-70 interchange.

As a follow-up to the September 15th field review for the MD 32 project, we are seeking concurrence to proceed with the development of detailed study alternates for the MD 32 project. Concurrence to proceed with detailed study is based on the concept designs, as presented. Further modifications will be made to these options based on citizen and agency input as detailed design options are developed.

Please provide us with your concurrence by October 24. Your response should be addressed to the attention of Ms. Gay Olsen in the Project Planning Division. If we do not hear from you within 30 days we will assume that you have no concerns. Should you have any questions, please feel free to call Joe Kresslein at (410) 545-8500.

Very truly yours,

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

by 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

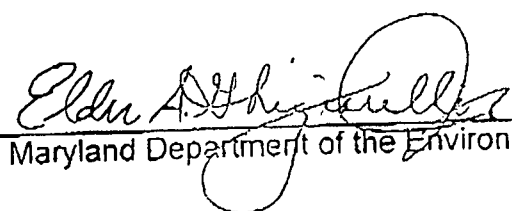
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Mr. Elder Ghigiarelli
September 26, 1997
Page 3

Alternates Retained for Detailed Study

Please check one:

- ☒ Concur (without comments)
☐ Concur (comments attached)
☐ Do not concur (comments attached)


Maryland Department of the Environment

Date:

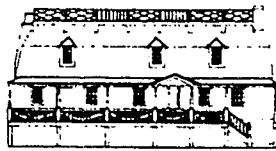
10/2/97

LHE:HVL

cc: Mr. Louis H. Ege, Jr.
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Renee Sigel
Ms. Cynthia D. Simpson
Mr. James Wynn

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MARYLAND
HISTORICAL



TRUST

Parris N. Glendening, Governor
Patricia J. Payne, Secretary

October 14, 1997

Office of Preservation Services

Ms. Gay Olsen
Project Planning Division
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Project No. HO 756B11
MD 32: MD 108 to I-70
Howard County, MD

Dear Ms. Olsen:

Thank you for your letter, dated 26 September 1997 and received by the Trust on 1 October 1997, requesting our concurrence to proceed with the development of detailed study alternates for the MD 32 project. We appreciated receiving a project update at the SHA/MHT Quarterly meeting held on 9 October 1997.

Based on the recent meeting, we understand that SHA is studying a proposed interchange at Triadelphia Road in the vicinity of the Westwood Methodist Episcopal Church (HO-207) which our agencies concurred was eligible for inclusion in the National Register of Historic Places. During the study phase, we ask SHA to explore all feasible alternatives which would avoid or minimize adverse effects to this historic property. As drawn, SHA's current proposal for the connecting roads between Triadelphia Road and MD 32 would introduce visual and audible elements, as well as isolate the Church from its neighborhood. The Trust would consider all of these items to be adverse effects on the Church.

We look forward to receiving the results of SHA's efforts to identify and evaluate archeological resources within the study area and await SHA's assessment of the project's effects on historic properties. We trust that SHA will undertake the archeological investigations and assessment of effects to historic properties before project plans have developed to an extent that would preclude the avoidance of significant cultural resources. Further consultation with our office will be necessary to complete the project's Section 106 review.

V-AR97-4

Division of Historical and Cultural Programs
100 Community Place • Crownsville, Maryland 21032 • (410) 514-1331/2251

*The Maryland Department of Housing and Community Development (DHCD) pledges to foster
the letter and spirit of the law for achieving equal housing opportunity in Maryland.*



EQUAL HOUSING
OPPORTUNITY

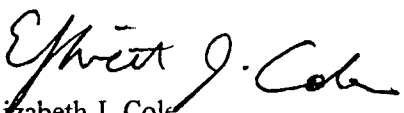


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Ms. Gay Olsen
October 14, 1997
Page 2

If you have questions or require additional information, please call Ms. Anne Bruder (for structures) at (410) 514-7636 or me (for archeology) at (410) 514-7631. Thank you for providing us this opportunity to comment.

Sincerely,


Elizabeth J. Cole
Administrator, Archeological Services

EJC/AEB
9702849

cc: Mr. Bruce Grey
Dr. Charlie Hall
SHA IAR Group
Mrs. Phillip St. C. Thompson
Mr. William O'Brien

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Parris N. Glendening
Governor

Maryland Department of Natural Resources

ENVIRONMENTAL REVIEW

Tawes State Office Building
Annapolis, Maryland 21401

October 23, 1997

John R. Griffin
Secretary

Carolyn D. Davis
Deputy Secretary

Gay Olsen
Project Planning Division
Maryland Department of Transportation
State Highway Administration
P.O. Box 717
Baltimore, Maryland 21203-0717

Dear Ms. Olsen:

This letter is in reply to Joseph Kresslein's letter of request, dated September 26, 1997, for Maryland Department of Natural Resources (DNR) concurrence to proceed with the development of detailed study alternates for Project No. HO 756B11, MD 32: MD 108 to I-70, Howard County.

The Department participated in discussions of this project at Interagency Meetings. We concur with the State Highway Administration's intention to proceed with the development of detailed study alternates, with the following comments, which were presented in our previous comments:

1. We continue to advocate avoidance or strict minimization of impacts to streams and wetlands for this project. Specifically, we support design considerations which will avoid the relocation or channelization of any reach of Terrapin Branch and other tributaries in the study area.
2. The typical design sections for the project, especially standard median widths, should not override the need to retain design flexibility in order to avoid or minimize natural resource impacts at specific locations. While further planning could indicate that typical design sections achieve adequate impact minimization, this cannot be determined or confirmed at this early planning stage.

If you have any questions concerning these comments, you may contact Greg Golden of my staff at (410) 260-8334.

Sincerely,

A handwritten signature in cursive script that reads "Ray C. Dintaman, Jr.".

Ray C. Dintaman, Jr., Director
Environmental Review Unit

V-AR97-5

373

Alternates Retained for Detailed Study
(MD 32)

Please check one:

- ☐ Concur (without comments)
☒ Concur (comments attached)
☐ Do not concur (comments attached)

Ray C. Dintaman Jr.
Department of Natural Resources

Date: 10.23.97

LHE:HVL

cc: Mr. Louis H. Ege, Jr.
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Renee Sigel
Ms. Cynthia D. Simpson
Mr. James Wynn

374



Maryland Department of Transportation
State Highway Administration

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

September 26, 1997

Re: Project No. HO 756B11
MD 32: MD 108 to I-70
Howard County, Maryland

Mr. Keith Harris
U.S. Army Corps of Engineers
CENAB-OP-RX
P.O. Box 1715
Baltimore MD 21201

ATTN: Mr. Vance Hobbs

Dear Mr. Harris:

Consistent with the combined NEPA / 404 process, SHA presented conceptual alternatives to be retained for detailed study to the review agencies in October, 1996, followed by a formal submission of an informational package to the agencies for comments/concurrence as appropriate. Concurrence was received from all agencies except the Corps of Engineers and U.S. Fish and Wildlife Service, who expressed concern over potential impacts to the floodplains of the Middle Patuxent River and the direct impacts to the Terrapin Branch. Concurrence from these agencies was contingent on development of alternatives which minimized these impacts and the results of a future agency field review.

A second Interagency presentation was made at the August Interagency Meeting. Revised concepts which greatly reduced impacts to both the floodplains of the Middle Patuxent River and the direct impacts to the Terrapin Branch were included. The presentation also included a new element, the Triadelphia Road interchange, which was developed in response to citizen suggestions. The Triadelphia Road interchange could result in closing the Ten Oaks Road Connector and reducing the size and impact of the Burntwoods interchange. The revised concept package was subsequently mailed to the agencies in advance of a field review.

An Interagency Field Review was held on September 15th. The alternative modifications which were made to reduce impacts to the floodplains of the Middle Patuxent River and the direct impacts to the Terrapin Branch were presented.

V-AR97-6

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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Mr. Keith Harris
September 26, 1997
Page 2

The following is a summary of improvement elements included in the revised package of Alternatives Retained for Detailed Study:


- Dualize existing MD 32 with a 34 foot open median
- Provide full controls of access throughout the study section
- Develop interchange options at Linden Church Road, Dayton Shops, Triadelphia Road, Burntwoods Road, Rosemary Lane, Nixon's Farm, MD 144 and upgrade the existing MD 32 / I-70 interchange.

As a follow-up to the September 15th field review for the MD 32 project, we are seeking concurrence to proceed with the development of detailed study alternates for the MD 32 project. Concurrence to proceed with detailed study is based on the concept designs, as presented. Further modifications will be made to these options based on citizen and agency input as detailed design options are developed.

Please provide us with your concurrence by October 24. Your response should be addressed to the attention of Ms. Gay Olsen in the Project Planning Division. If we do not hear from you within 30 days we will assume that you have no concerns. Should you have any questions, please feel free to call Joe Kresslein at (410) 545-8500.

Very truly yours,

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

by: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division


Mr. Keith Harris
September 26, 1997
Page 3

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Alternates Retained for Detailed Study

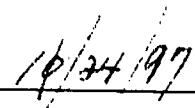
Please check one:

- ☐ Concur (without comments)
☒ Concur (comments attached)
☐ Do not concur (comments attached)



U.S. Army Corps of Engineers

Date:



10/24/97

LHE:HVL

cc: Mr. Louis H. Ege, Jr.
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Renee Sigel
Ms. Cynthia D. Simpson
Mr. James Wynn

377



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

REPLY TO
ATTENTION OF

001 - 1 1997

Operations Division

Subject: CENAB-OP-RX(MD SHA/MD 32 FROM MD 108 TO I-70/ALTERNATIVES
RETAINED FOR DETAILED STUDIES)95-01083-12

Mr. Joseph Kresslein
Maryland State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203-0717

Dear Mr. Kresslein:

This is in response to the Alternatives Retained for Detailed Studies package dated September 26, 1997 (enclosed). The U.S. Army Corps of Engineers (Corps) concurs with the Alternatives Retained for Detailed Study conditionally. By conditionally concurring with the alternatives package, the Corps reserves the right to require that MD SHA incorporate modifications to the alternatives retained for detailed studies that would avoid or minimize impacts to waters of the United States including jurisdictional wetlands (waters). Modifications could include compressed medians, reduced safety grading widths, interchange designs, etc., in areas where the alignment would impact aquatic resources such as Terrapin Branch or adjacent wetlands. Section 404(b)(1) of the Clean Water Act requires an applicant to consider and demonstrate all practicable and feasible alternatives that will avoid or minimize impacts to waters.

If you have any questions concerning this matter, please call Mr. Steve Elinsky of this office at (410)962-4503.

Sincerely,

A handwritten signature in black ink, appearing to read "Keith A. Harris", is written over the word "Sincerely,".

Keith A. Harris
Chief, Special Projects
Permits Section

Enclosure

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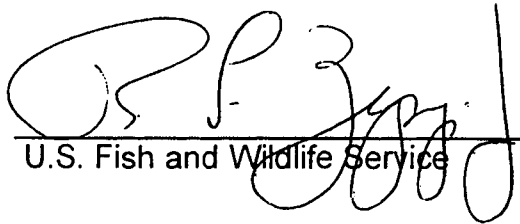
cc: Danielle Algazi, EPA Region 3
Dave Sutherland, USFWS CBFO
John Nichols, NMFS
Pam Stevenson, FHWA
Ali Mir, MDE WMA
Thomas Folse, MD SHA

Alternates Retained for Detailed Study

Project No: HO 756B11 - MD 32

Please check one:

- ☒ Concur (without comments)
☐ Concur (comments attached)
☐ Do not concur (comments attached)



U.S. Fish and Wildlife Service

Date: 11-20-97

LHE:HVL

cc: Mr. Louis H. Ege, Jr.
Mr. Joseph R. Kresslein
Ms. Gay Olsen
Mr. Robert Sanders
Ms. Renee Sigel
Ms. Cynthia D. Simpson
Mr. James Wynn

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November 28, 1997

Project No. HO756B11
MD 32: MD 108 to I-70
Howard County, Maryland

Mr. Parker F. Williams
State Highway Administrator
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

Attention: Ms. Gay Olsen

Dear Mr. Williams:

FHWA has received your request dated September 24 for concurrence on alternatives to be retained for detailed study for the referenced project. We concur with the concept package of alternatives as presented during the Interagency Field Review held on September 15 and summarized in your letter request.

However, we wish to note our concerns with the proposed new interchange at MD 32 and Triadelphia Road involving impacts to planned community facilities and properties protected under Section 4(f) of the US Department of Transportation Act of 1966. First, the proposed interchange will impact land under development by Howard County for the location of a new elementary school and a new middle school and would require considerable revisions to the existing school site plan. Such revisions include loss of ballfields for the physical education program; loss of bus loop egress and service access to the middle school; septic and well water plans; and the removal of a wooded buffer from MD 32. The detailed analyses of the proposed alternatives for MD 32 will need to examine both the direct and indirect impacts to the school site.

Second, the Section 4(f) resources affected include the National Register eligible Westward Methodist Episcopal Church, and potentially, the ballfields planned for the Howard County middle school at that location. These planned ballfields may be Section 4(f) resources if they are to be used by the public for organized or walk-on activities and are determined to be significant for recreational purposes by the local officials with jurisdiction over the facility. Please note that use of Section 4(f) lands may not be approved unless there is no prudent or feasible alternative and the project includes all possible planning to minimize harm resulting from that use.

We would be happy to meet with you and representatives of the Howard County Board of Education to discuss these concerns as we continue working with you on the development of the alternatives during detail study. If you have any questions, please call Pam Stephenson of my staff at 962-4342, ext 145.

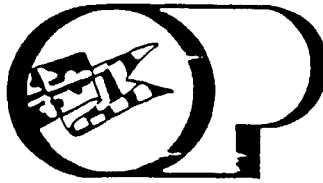
Sincerely yours,

RENEE SIGEL

Susan J. Binder
Division Administrator

cc: Allison Grooms, SHA C-301
Danielle Algazi, EPA
Steve Elinsky, COE
David Sutherland, FWS
William Grau, Howard County Public School System

Pstephenson: s:\pstephen\md32alt.con



MARYLAND *Office of Planning*

s N. Glendening
Governor

June 10, 1998

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JUN 15 1998 10:21 AM
Ronald Kreitzer
Director

Mr. Louis H. Ege, Jr., Deputy Director
Office of Planning & Preliminary Engineering
State Highway Administration
P.O. Box 717
Baltimore, MD 21203-0717

Dear Mr. Ege:

This is in response to the request for OP's preliminary assessment of the Alternatives Retained for Detailed Study on the MD 32 project (MD 108 to I-70) for consistency with the Maryland Economic Growth, Resource Protection and Planning Act of 1992. Our assessment is based on the information described in a package we received from SHA entitled "Alternates Currently Under Consideration" dated 5/27/98. We have also reviewed the Project Consistency Checklist completed by SHA staff and offer comments on those responses.

We understand that the three Alternatives remaining for consideration are the Build Alternatives I and II and the No Build Alternative. Each of the Build alternatives would provide a full access controlled four-lane highway with a 34' median and variations in the interchanges. The No-Build alternative is described as a number of safety, lighting, resurfacing, re-striping, and signal improvements.

The 1990 Howard County General Plan and the 1993 Baltimore Region Long-Range Plan call for capacity improvements on the segment of MD 32 from I-70 to MD 108. We also note that this segment of MD 32 runs through the area designated in the 1990 Howard County General Plan for Rural Residential and Rural Conservation.

The need for completion of a Patuxent Freeway type of facility was identified by SHA in the Purpose and Need Statement for the project. With the full access controls as described, both of the Build Alternatives can meet the identified need without facilitating strip development along MD 32. When we consider the different land use, environmental and cost-benefit impacts of the two Build Alternatives described in SHA's May 27th transmittal we find that Build Alternative II is more consistent with the intent of the Planning Act to minimize environmental impacts because it has less direct environmental impacts, and more specifically, because it does not include a separate interchange at the Nixon's Farm site, a sensitive environmental and agricultural area.

An assessment of whether the build alternatives support development in areas "specifically designated for growth" and whether it would "facilitate changes to the existing pattern of growth" is less clear. The MD 32 project area is outside Howard County's recently certified Priority Funding Area. While full controls of access can minimize the strip commercial and residential development along the state highway within Howard County, the secondary development impacts that may occur as a result of the expanded capacity and reduced travel times enabled by a dualized MD 32 have yet to be addressed. With reference to the Tier 2 questions on the Project Checklist, we do not agree that the project supports development in a suitable area, a designated development area or a redevelopment area, nor that the project promotes compact growth in existing population centers since the average residential density of .33 units/acre in that part of Howard County cannot be described as compact.

A facility of this type can encourage more long distance commuting from rural areas of Howard, Carroll and Frederick Counties which is not consistent with the Planning Act elaborations. It has not yet been determined whether the project serves to connect priority funding areas in Carroll County to the Columbia, Fort Meade and Annapolis areas. That seems to be based in part on what happens to the segment of MD 32 north of I-70. Although not a part of this project, we recently learned of SHA's feasibility study for this segment. Other matters which should be clarified: What is Howard County's priority for MD 32? Mr. Rutter's recent letter indicates that the section of MD 32 from Cedar Lane to I-95 is of higher priority than the segment considered in this study.

The improvements described in the No Build Alternative appear to OP staff to be transportation system management improvements and would address safety and maintenance, but according to SHA are not expected to address the long term needs of the corridor. We are not clear whether the phasing of signalization and other improvements included in the "no build" alternative and described by Mr. Rutter have been given adequate consideration. We question whether it makes sense to proceed with selecting a build alternative on this middle section of MD 32 without addressing the planning issues to the south and the north on MD 32.

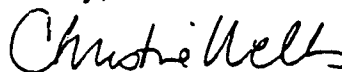
Given:

- the recent feasibility study completed by SHA for a section of MD 32 north of I-70 which may soon prompt another project planning study on MD 32;
- the higher priority concern expressed by Howard County's Planning Director for congestion problems on the section of MD 32 between Cedar Lane and I-95;
- the potential for this project to have secondary land use impacts, and
- the fact that to proceed with this project would require an exception under the Smart Growth Act;

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OP suggests that SHA wait to select a build alternative until these planning issues have been given thorough consideration. If you would like to discuss these matters further, please contact me at (410) 767-4620.

Sincerely,



Christine Wells
Principal Planner

cc: Joseph W. Rutter, Howard County
Renee Sigel, FHWA
Keith Harris, COE (Attn: Vance Hobbs)
John Forren, EPA
Robert Zepp, USFWS
Timothy Goodger, NMFS (Attn. John Nichols)
Jeffrey Knoedler, NPS
Cynthia Wilkerson, NPS
Ray Dintaman, DNR
Elder Ghigiarelli, MDE
J. Rodney Little, MHT

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Maryland Department of Transportation
State Highway Administration

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

July 28, 1998

Ms. Christine Wells
Principal Planner
Maryland Office of Planning
301 W. Preston Street
Baltimore MD 21201

Dear Ms. Wells:

This is in response to the Office of Planning's (OP) preliminary assessment of the Alternatives Retained for Detailed Study on the MD 32, MD 108 to I-70, project. We appreciate your comments.

In response to your concerns, Howard County has clarified their position on this project and its relation to potential changes in land use. Please refer to the enclosed letter from Joe Rutter, Director of the Department of Planning and Zoning and Jim Irvin, Director of the Department of Public Works. As you can see from this letter, Howard County strongly supports this project. This project will not change the existing zoning in the study area and, by gaining access controls along MD 32, will help efforts to limit development.

The State Highway Administration has conducted a feasibility study for MD 32 north of I-70. This project, however, is not included in the region's Constrained Long-Range Plan or the Department of Transportation's Consolidated Transportation Program. Since there are currently no plans to develop a project north of I-70, and since I-70 represents a logical terminus for this segment of MD 32 based on the extent of the Patuxent Freeway and travel patterns, it is not appropriate to withhold judgement on this project.

The MD 32 Team will be working with OP to determine the potential for this project to proceed under an exception to the Smart Growth Act. While we appreciate your concerns, we do not believe it reasonable to delay the study at this time.

V-AR97-9

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

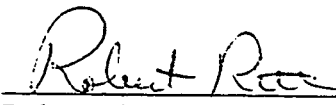
386

Ms. Christine Wells
Page Two

Thank you, again, for your comments on this project. If you would like to discuss these issues further, please feel free to call 410-545-8513 or toll-free in Maryland at 1-800-548-5026.

Very truly yours,

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

By: 
Robert Ritter
Project Manager
Project Planning Division

Enclosure

cc: Mr. Joseph Rutter
Mr. Jim Irvin
Ms. Pam Stephenson
Mr. Keith Harris
Mr. John Forren
Mr. Robert Zepp
Mr. Timothy Goodger
Mr. Jeffrey Knoedler
Ms. Cynthia Wilkerson
Mr. Ray Dintaman
Mr. Elder Ghigiarelli
Mr. J. Rodney Little
Ms. Allison Grooms

NEPA Coordination

Other NEPA Coordination

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

NEPA Coordination***Other NEPA Coordination***

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-NEPA-1	US Department of the Interior, Fish and Wildlife Service	February 2, 1989
V-NEPA-2	Maryland Department of Natural Resources - Fish, Heritage and Wildlife Administration	July 15, 1994
V-NEPA-3	Maryland Department of Natural Resources - Tide Water Administration	July 25, 1994
V-NEPA-4	Maryland State Highway Administration, Interagency Field Review	October 31, 1995
V-NEPA-5	Maryland State Highway Administration, Interagency Field Review and Jurisdictional Wetland Field Review	August 15, 1997
V-NEPA-6	November 20 and 21, 1997 - Minutes Jurisdictional Wetland Field Reviews	January 5, 1998
V-NEPA-7	US Army Corps of Engineers November 20 and 21, 1997 Jurisdictional Wetland Field Reviews	April 23, 1998
V-NEPA-8	Federal Highway Administration	February 26, 1998
V-NEPA-9	SHA Jurisdictional Wetland Field Reviews	February 26-27, 1998
V-NEPA-10	US Army Corps of Engineers	August 7, 1998



United States Department of the Interior

PROJECT
DEVELOPMENT
DIVISION

389

FISH AND WILDLIFE SERVICE
DIVISION OF ECOLOGICAL SERVICE
1825 VIRGINIA STREET
ANNAPOLIS, MARYLAND 21401

FEB 6 12 26 PM '89

February 2, 1989

Ms. Cynthia D. Simpson
Maryland Department of Transportation
707 North Calvert Street
Baltimore, MD 21203-0717

Dear Ms. Simpson:

This responds to your January 27, 1989 request for information on the presence of species which are Federally listed or proposed for listing as endangered or threatened within the area of the proposed MD 32/MD 97/I-70 connection in Howard and Carroll Counties, Maryland. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species are known to exist in the project impact area. 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.

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) 269-5448.

Sincerely,

John P. Wolflin
Supervisor
Annapolis Field Office



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JUL 17 1994

William Donald Schaefer
Governor

Maryland Department of Natural Resources

Tawes State Office Building
Fish, Heritage and Wildlife Administration
580 Taylor Avenue
Annapolis, Maryland 21401

Torrey C. Brown, M.D.
Secretary

July 15, 1994

Mr. Donald Sparklin
State Highway Administration
P. O. Box 717
707 North Calvert Street
Baltimore, MD 21203-0717

RE: Contract #HO 756-101-770, MD 32, MD 108 to North of I-70,
Howard County

Dear Mr. Sparklin:

This is in regards to the above referenced project. The Fish, Heritage and Wildlife Administration has no records for Federal or State rare, threatened or endangered plants or animals within this project site. This statement should not be interpreted as meaning that no rare, threatened or endangered species are present. Such species could be present but have not yet been documented because an adequate survey has not been conducted or because survey results have not been reported to us.

Sincerely,

Janet McKegg, Director
Natural Heritage Program

JM:db

cc: Cynthia Sibrel
Robert Miller
ER#94706.HO

V-NEPA-2

Telephone: (410) 974-2870
DNR TTY for the Deaf: 301-974-3683



391

RECEIVED
DEVELOPMENT
JUL 26 3 55 PM '94

William Donald Schaefer
Governor

Maryland Department of Natural Resources

Tidewater Administration
Power Plant and Environmental Review Division
Tawes State Office Building
Annapolis, Maryland 21401

Torrey C. Brown, M.D.
Secretary

Peter M. Dunbar, Ph.D., P.E.
Director

July 25, 1994

Donald Sparklin
Project Planning Division
Maryland Department of Transportation
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203-0717

Dear Mr. Sparklin:

This letter is in response to your letter of request, dated June 16, 1994, for information on the presence of finfish species in the vicinity of Contract No. HO 756-101-770; MD 32: MD 108 to North of I-70, Purpose and Need Study; Howard County.

According to our review of topography maps of your study area, your entire study area drains to the Middle Patuxent River and its tributaries, including Benson Branch and numerous unnamed tributaries. Note that the extreme northern extent of your study area is a short distance from the upper watersheds of several unnamed tributaries to the South Branch Patapsco River, and some western portions of the study area are a short distance from the upper watersheds of several tributaries to Triadelphia Reservoir on the Patuxent River.

The Middle Patuxent River and its tributaries (Patuxent River Area) are classified as Use I-P streams. Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year.

In August and September of 1977, several fish surveys were conducted by University of Maryland biologists in the Middle Patuxent River from the MD 108 crossing to the MD 32 (at West

V-NEPA-3

Telephone: (410) 974-2788
DNR TTY for the Deaf: 301-974-3683

Friendship) crossing. The following fish species were documented during these surveys:

COMMON NAME	SCIENTIFIC NAME
American Eel	<u>Anguilla rostrata</u>
Blacknose Dace	<u>Rhinichthys atratulus</u>
Bluegill Sunfish	<u>Lepomis macrochirus</u>
Common Shiner	<u>Notropis cornutus</u>
Creek Chub	<u>Semotilus atromaculatus</u>
Cutlip Minnow	<u>Exoglossum maxilliqua</u>
Fallfish	<u>Semotilus corporalis</u>
Golden Shiner	<u>Notemogonus crysoleucas</u>
Longnose Dace	<u>Rhinichthys cataractae</u>
Margined Madtom	<u>Noturus insignis</u>
Northern Hogsucker	<u>Hypentelium nigricans</u>
Redbreast Sunfish	<u>Lepomis auritus</u>
River Chub	<u>Nocomis micropogon</u>
Rosyface Shiner	<u>Notropis rubellus</u>
Rosyside Dace	<u>Clinostomus funduloides</u>
Satinfin Shiner	<u>Notropis analostanus</u>
Shield Darter	<u>Percina peltata</u>
Smallmouth Bass	<u>Micropterus dolomieu</u>
Swallowtail Shiner	<u>Notropis procne</u>
Tessellated Darter	<u>Etheostoma olmsted</u>
White Sucker	<u>Catostomus commersoni</u>

Our files do not contain fish species information for Benson Branch or the unnamed tributaries in the vicinity of your project, but all of the species listed above could potentially reside in the perennial portions of each of the tributaries within your study area.

The spawning periods for all of these fish species and any other fish species likely to reside near your project site, except for American eels, will be protected by the Use I instream work restriction period referenced above. American eels do not spawn within Maryland waters.

C. Tsai and S.L. Golembiewski of the Center for Estuarine and Environmental Studies, University of Maryland, reported in a 1979 paper that one glassy darter (Etheostoma vitreum) was captured during fish sampling in the Middle Patuxent River at Triadelphia Road on July 1, 1966. We do not have any additional information to further document or confirm this record.

Historically, the glassy darter has only been documented in a few locations in Maryland. In 1988, the species was listed as "highly rare" by the Maryland Natural Heritage Program. After the

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Donald Sparklin
July 25, 1994
Page 3

species apparently disappeared from several of the sites where it was previously known to exist, the species was listed as "endangered extirpated" (no longer believed to exist in the State) in 1990. Extensive surveys were conducted in 1991 by Natural Heritage Program contractors to search for the glassy darter in Maryland. The species was found to still exist in Maryland, but only two populations were identified; one in the Little Patuxent River and the other in the Marshyhope Creek drainage to the Nanticoke River.

In the Little Patuxent River, the glassy darter habitat was described as the reach of the river from Savage to the confluence with the Patuxent River. Glassy darters were found to be relatively common in the Little Patuxent River immediately below the Fort Meade dam at Route 198. While the Middle Patuxent River flows into the Little Patuxent River near the upper end of the known current range of the glassy darter in that river, your study area is located a significant distance upstream.

For additional information on the current status of the glassy darter in Maryland and the habit requirements of the species, you may contact the Natural Heritage Program of the Maryland Department of Natural Resources at (410) 974-2870.

Anadromous fish species do not reach the Middle Patuxent River or any of its tributaries in the vicinity of your study area.

If you have any questions concerning these comments, you may contact Greg Golden of my staff at (410) 974-2788.

Sincerely,

Ray C. Dintaman, Jr.

Ray C. Dintaman, Jr., Chief
Environmental Review Program

RCD:GJG



Maryland Department of Transportation
State Highway Administration

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David L. Winstead
Secretary
Hal Kassoff
Administrator

MEMORANDUM

TO: MD 32 Study Team Members

FROM: Bob Sanders *Bob Sanders*
Project Manager

DATE: October 31, 1995

SUBJECT: MD 32 - MD 108 to I-70
Contract No. HO 756-101
PDMS No. 132088

RE: MD 32 Interagency Field Review Minutes

Introductory Comments

This meeting provided participants the opportunity to view the corridor and observe the significant environmental features, socio-economic considerations, new construction, and the MD 32/MD 108 interchange.

Project Background

The purpose of the project is to improve transportation in the MD 32 study corridor. Among the alternatives being considered are widening options for MD 32, focusing on the original alignment for improvement. Within the southern section a 300' right-of-way exists with access controls. North of Linden Church Road the right-of-way is 150' wide with no access controls. When the highway was originally constructed, the two-lane roadway was intended to be the westbound lanes of a future dualized freeway. The present alignment eastward from MD 108 reflects this design.

The project team has been meeting for two months on the Major Investment Study process. The team is evaluating multi-modal options in the corridor including "Park and Ride" facilities, bus and rail transit options, and bicycle and pedestrian amenities. Measures of Effectiveness for the project are now being established. A congestion management system to evaluate non-SOV solutions is under examination by MDOT with a report to be issued by the end of 1995. This work will be incorporated into the alternatives examined in this study.

Access control is an issue with this project. Scenarios will range from TSM improvements to full access control. Possible interchange locations include Linden Church Road, the Burnt Woods Road/Pfefferkorn Road area, and MD 144 / I-70. There is limited commercial development in the NW quadrant of the MD 144/ MD 32 intersection and in Glenelg near the intersection of Ten Oaks Road and Triadelphia Road, adjacent to MD 32.

V-NEPA-4

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Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

The present project schedule calls for an Alternates meeting in the Spring of 1996 and public hearings in the Spring of 1997. MD SHA will arrange meetings with local stakeholders in November/December to provide input into the development of project alternatives.

Opening Meeting

Prior to beginning the field review, the participants met at the SHA's Dayton Shop and introduced themselves. A list of attendees is attached. Mr. Moravec briefed the group on the study's progress to date and copies of the draft Purpose and Need statement were distributed. Also, MD SHA provided an environmental features map for the corridor. The map identified flood plains, streams and wetlands, two known archeological sites in the corridor and National Historic Register sites (both eligible and declared sites).

Field Review

This section notes comments and concerns of the attendees voiced during the field review. Some comments pertain to specific locations, others were general for the entire corridor. The field review began at the MD 108 interchange and proceeded north.

- The Corps of Engineers requested a copy of the wetland inventory from the Project Planning Division prior to the next meeting.

- Much of the existing roadway is on fill through the project limits with relatively steep embankments on either side and culverts for water flow.

- The cross section may need to be narrower in some areas to minimize impacts on environmental features.

- The area surrounding the right-of-way is zoned for three to five acre lots. These lots have already been developed between Chamblis Drive and Linden Church Road.

- Along the west side of the roadway near Ten Oaks Road and Smallwood Court, one residential structure is very close to the right of way line.

- Columbia Gas Company natural gas pipeline crosses under roadway just to the east of Linden Church Road.

- Right-of-way widens for a short distance around the Linden Church Road intersection. This right of way provision was made for a future interchange at this location.

- All streams in the corridor are Use I with in stream restrictions from March 1 to June 15.

- The section of roadway between Triadelphia Road and Pfefferkorn Road will be examined for access controls (right in/right out channelization).

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- An old church which is on the Maryland Historic Register (now an antique shop) adjacent to the Triadelphia Road bridge over MD 32 may be impacted by widening of the Triadelphia Road bridge. Two historic sites east of MD 32 on Triadelphia Road are unlikely to be impacted: 1) fox hunting club declared for the National Register of Historic Places, and 2) an 18th century corn crib which is eligible for the Register.
- Eyre Bus Company, the major commuter bus contract carrier in Howard County, operations and maintenance facility is located on Ten Oaks Road behind the shopping plaza in Glenelg.
- Beginning at Pfefferkorn Road north through I-70 there are many driveway access points to MD 32 serving both individual and multiple properties to a single driveway apron.
- Just to the north of Pfefferkorn Road the roadway crosses a gasoline pipeline.
- At the Fox Valley development MDSHA is working with developer to limit access to one entrance onto MD 32 opposite Parliament Place. At this location, the developer has provided a 300' setback to the development entrance. A back entrance to the development is off Pfefferkorn Road.
- The Glassy Darter finfish, an endangered fish species, had been sighted once in the early 1970's in the Middle Patuxent River. Subsequently the species was noted as being established in the Little Patuxent River outside of the study area. The initial sighting may have been a misidentification.
- North of Middle Patuxent River two houses are very close to the roadway on the east side where the roadway crosses the Terrapin Branch. The Terrapin Branch parallels the roadway to I-70. A four lane divided cross section here could affect the creek, especially due to the steep embankment (near a 2:1 slope) and private property on the east side.
- Nixon's Farm, formerly the Glenwood Country Club (private), is located between the Terrapin Branch crossing and MD 144. It has a banquet hall for meetings and receptions.
- At MD 144, the roadway widens to a four lane divided section. Grade separation & an interchange possibility exists at MD 144, though it might be difficult due to the proximity of the I-70 interchange and vertical alignment of MD 144. The MD 144 crossing of Terrapin Branch is at a low elevation.
- On MD 144 west of MD 32, a gas station and convenience store may be impacted by an overpass, interchange or other MD 32 improvements.
- The Howard County Fairgrounds are west of MD 32 on MD 144 which suggests special event traffic will use this intersection.

LIST OF MEETING ATTENDEES

NAME	AGENCY	TELEPHONE
Bob Sanders	MDSHA, Planning	(410) 545 - 8513
Ray Moravec	MDSHA, Planning/OCE	(410) 333 - 1200
Douglas Noble	DeLeuw, Cather, & Co.	(202) 775 - 6029
Roger Jorss	MDSHA, Traffic Forecasting	(410) 545 - 5649
Mike Callahan	MDSHA, Environmental Program Division	(410) 545 - 8616
Meg Gaffney-Smith	Corps of Engineers, Special Projects	(410) 962 - 6083
Mary Huie	FHWA	(410) 962- 4342 x148
Brian Muldoon	Howard County Department of Planning and Zoning	(410) 313 - 2357
Leslie J Wright-Small	FHWA	(410) 962- 4342 x146
Greg Cohen	MDSHA, Planning	(410) 545 - 8511
Allison Grooms	MDSHA, Project Planning	(410) 545 - 8568
Greg Golden	MD Dept. of Natural Resources, Environmental Rev.	(410) 974 - 2788

If you have any questions or comments with regard to these meeting minutes, please feel free to contact me at (410) 545-8513.



Maryland Department of Transportation
State Highway Administration

398
David L. Winstead
Secretary

Parker F. Williams
Administrator

MEMORANDUM

TO: Distribution List

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


DATE: August 15, 1997

SUBJECT: Project No. HO756B11
MD 32: MD 108 to I-70
Howard County, Maryland

A combined Interagency Field Review and Jurisdictional Wetland Field Review has been scheduled for the MD 32 project on September 15 and 16. Participants will meet at 10:00 a.m. at the State Highway Administration's Maintenance Shop in Dayton (see attached map).

A wetland delineation report is enclosed for the appropriate representatives.

We will spend the morning reviewing the project area and conceptual alternatives and then proceed with the Wetland Jurisdictional Review. If you have any questions, please contact the project engineer, Mr. Vaughn Lewis at (410) 545-8511 or the environmental manager, Ms. Allison Grooms at (410) 545-8568.

by: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

LHE:AEG:sc

Enclosure

cc: Ms. Allison Grooms
Mr. Vaughn Lewis
Mr. Wesley Mitchell
Mr. Robert Sanders
Ms. Cynthia D. Simpson

V-NEPA-5

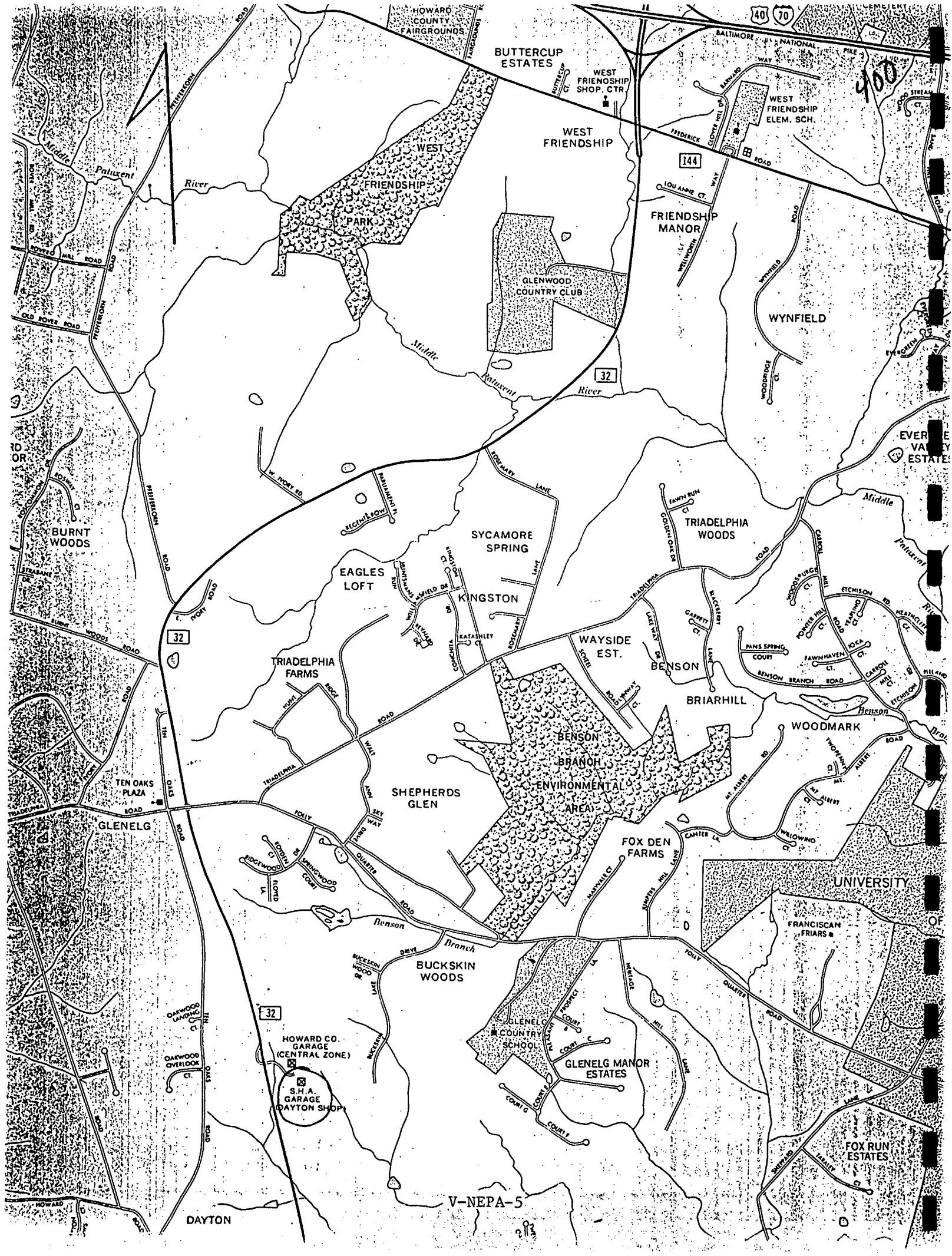
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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

DISTRIBUTION LIST

Ms. Vanessa Braddy	Highway Design
Mr. Joe Caloggero	Office of Traffic and Safety
Mr. John Concannon	District 7-R/W
Mr. D. Doherty	Engineering Access Permits
Mr. Jim Dooley	Regional and Intermodal Planning
Mr. Robert Fisher	District 7
Ms. Allison Grooms	Project Planning
Mr. Mike Haley	Regional and Intermodal Planning
Mr. Rogers Jorss	Travel Forecasting
Mr. R. Killian	Office of Traffic and Safety
Mr. Vaughn Lewis	Project Planning
Mr. George Miller	District 7
Mr. Patrick Minnick	District 7
Mr. Wesley Mictchell	Project Planning
Mr. Robert Sanders	Project Planning
Mr. Mark Smith	Environmental Programs (Wetland Delineation Report Attached)
Mr. Harvey Muller	Regional and Intermodal Planning
Mr. Ken Polcak	Landscape Architecture
Mr. John Schultz	Bridge Hydraulics
Mr. James Wynn	Project Planning



V-NEPA-5



Maryland Department of Transportation
State Highway Administration

(ENCL 1) 401

Parris N. Glendening
Governor

David L. Winstead
Secretary

Parker F. Williams
Administrator

MEMORANDUM

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

ATTN: Mr. Robert Sanders
Project Manager

FROM: Joseph R. Kresslein *K*
Assistant Division Chief
Project Planning Division

DATE: January 5, 1998

SUBJECT: Project No. HO756B11
MD 32: I-70 to MD 108
Howard County, MD

RE: Minutes of the Jurisdictional Wetland Field Reviews

The Jurisdictional Wetland Field Reviews for the MD 32 project were held on November 20 and 21, 1997.

The list of attendees at the November 20 field review, included:

Mark Smith	SHA-Environmental Planning Division (SHA/EPD)
Wesley Mitchell	SHA, Project Planning Division (SHA/PPD)
Steve Elinsky	US Army Corps of Engineers (COE)
Steve Harman	US Army Corps of Engineers (COE)
John Hurt	MD Department of the Environment (MDE)
Aaron Keel	Gannett Fleming (GF)
Aura Stauffer	Gannett Fleming (GF)
Karen Kahl	Rummel, Klepper & Kahl (RK&K)
Sally Kishter	Rummel, Klepper & Kahl (RK&K)

Wetland locations along Terrapin Branch were field checked (visually and /or through soil borings) and verified. The group broke into two teams. Team 1, led by Steve

V-NEPA-6

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Harman, verified the eastern side of Terrapin Branch (along MD 32) and Team 2, led by Steve Elinsky, verified the western side of Terrapin Branch.

Team 1 began at Wetland A and moved south. **Wetland A was accepted as delineated.** Steve Harman noted that two small areas, designated as Waters of the US, occur on the eastern side of Terrapin Branch, and requested that these areas be field surveyed to accurately depict them on the mapping. **A portion of Wetland C, located outside of the pasture, was accepted as delineated.**

Team 2 found that insufficient flagging remained at Wetland B to verify the boundary, this area was entirely redelineated on-site, using 10 flags. Steve Elinsky collected data sheet information. **Wetland B was accepted as delineated in the field.** To the north of Wetland B and south of Wetland A, on the west side of Terrapin Branch the COE felt that a small wetland had been missed. The group agreed that this area should be field delineated at a later time. **Wetlands OO and PP were accepted as delineated.**

Teams 1 and 2 regrouped at the "Potential Prior Converted Cropland area" near Wetland C south of Wetland PP (see attached mapping). This area had not been thoroughly delineated due to its questionable agricultural status as pasture. The COE determined that for an area to qualify as Prior Converted Cropland it must either: 1) be planted for harvest with a cash crop (livestock is not considered a cash crop), or 2) be a participating member in a NRCS farm management program. The COE expressed that this area is probably jurisdictional and should be field delineated. It was agreed that Gannett Fleming would coordinate with the NRCS to determine whether this area was a participant in a farm management program, and if not, the area would be field delineated (on both sides of Terrapin Branch). Coordination with NRCS is currently underway to resolve the issue.

Wetland D/E, were accepted as delineated and a small linear wetland was added next to Terrapin Branch (2 flags). In the section of Terrapin Branch located near the MD 32 proposed toe of slope, south of Wetland D/E, the COE and MDE requested avoidance of stream encroachment.

Wetland X was expanded beyond the study area and a fringe wetland was added to the adjacent stream. The existing flagging at Wetland X was accepted as delineated, however, the mapping was incorrect. This area has been changed in the following manner. The back of Wetland X was extended to the east (beyond the study area, a notation will be added to the mapping) for a total of 200 feet. In addition, a non-tidal

Mr. Louis H. Ege, Jr.
MD 32 Wetland JD Reviews
Page Three

wetland shelf was added to both sides of the perennial tributary located adjacent to Wetland X. This wetland stream fringe was delineated in the field with 8 flags.

Wetland W was accepted as delineated with the following notation to be included on the mapping, "Wetlands extend beyond the study area". Team 2 proceeded to review and discuss the area designated "wetland mitigation", located to the south of Wetland W. This area was obviously man-made and its status as true mitigation or a stormwater management basin is questionable. It was agreed that Gannett Fleming would review SHA's prior wetland delineation report for the "Dualization of MD 32 from MD 108 to Pindell School Road" to determine whether this is a stormwater management pond or mitigation area.

Wetland V is located outside of the proposed right-of-way, therefore the COE only concurred on the channel of **Wetland V** which was located within the right-of-way.

The list of attendees at the November 21 field review, included:

Bob Sanders	SHA, PPD
Mark Smith	SHA, EPD
Wesley Mitchell	SHA, EPD
Steve Elinsky	COE
Joe DaVia	United States Environmental Protection Agency (EPA)
John Hurt	MDE
Aaron Keel	GF
Aura Stauffer	GF
Karen Kahl	RKK
Sally Kishter	RKK

The group again split into two teams with Steve Elinsky and Joe DaVia leading team 1 and John Hurt, MDE, leading team 2. Team 1 began the day by verifying wetlands in the vicinity of the MD 32/I-70 interchange. Team 2 began at Wetland F and worked south.

Wetland NN was accepted as delineated.

Wetland MM was expanded (6 additional flags) to the southwest by approximately 50 feet. A channel connecting Wetlands MM and NN was added. ✓

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Mr. Louis H. Ege, Jr.
MD 32 Wetland JD Reviews
Page Four

Wetland KK was accepted as delineated.

Wetland LL was expanded (flag 1 moved 10 feet).

Wetland M was accepted as delineated. At Wetland M a riverine channel was added to the mapping within the wetland.

Wetlands J, K, GG, Q, AA, and P were accepted as delineated. The COE determined that a riverine tributary located east of Wetland GG was also jurisdictional.

Wetland Y was accepted as delineated, however the riverine channel in this area was mapped incorrectly and will be revised.

Wetland F was expanded. The southern end of Wetland F was reduced by 80 feet, connecting flag F-1 to flag F-16; the central portion of the wetland was expanded by 80 feet (flag F-4 was deleted, connecting F-3 to F-4A).

Wetland G was determined to be part of the riverine channel and not a wetland.

Wetland H was accepted as delineated. A small isolated pocket wetland was discovered north of Wetland H. This wetland is named **Wetland HA**, and its limits were marked with 6 flags.

Wetland J was accepted as delineated. A small linear channel wetland was added to the northwest corner of wetland JJ (not contiguous with JJ). This area was named **Wetland JJ1** and was identified with 2 flags. In addition, a riverine channel located perpendicular to Wetland JJ on the west side of MD 32, was added.

Wetland QQ was reduced in size. This area is previously disturbed and did not display hydric soils throughout the entire wetland.

Wetland I was accepted as delineated.

Wetland L was accepted as delineated.

Wetlands N, O, and BB was accepted as delineated. However, small riverine channels were added connecting these areas with other Waters of the US.

Mr. Louis H. Ege, Jr.
MD 32 Wetland JD Reviews
Page Five

Wetlands P, Q, AA, R and Z were accepted as delineated.

Two linear riverine bodies, designated as Waters of the US, must be added to the mapping near Wetland Z.

Wetland T was accepted as delineated. A small riverine channel branches off from the main channel near Wetland T.

Wetlands CC, DD, EE, FF, HH, II, and S were not verified by the COE because they were located outside of the proposed right-of-way.

SUMMARY & OUTSTANDING ISSUES

Forming two teams was a highly effective method to cover a large study area in a time effective manner. The attached maps reflect the results of the November 20 and 21, 1997 jurisdictional field views.

The following wetland boundaries were accepted as delineated: Wetlands A, B, portion of C, D/E, F, HA, H, I, J, K, L, M, N, O, P, Q, R, T, V channel, W; X, Y, Z, AA, BB, GG, JJ, JJ1, KK, LL, MM, NN, OO, PP, and QQ. Wetland G was eliminated.

Wetlands CC, DD, EE, FF, HH, II, and S were not verified by the COE because they were located outside of the proposed right-of-way.

The following summarizes the mapping changes at previously identified wetlands:

- Wetland B was redelineated.

- Numerous riverine channels were added to the mapping.

- Wetland G was eliminated, captured within riverine channel.

- Wetland X was remapped, and a non-tidal wetland shelf was added to both sides of the adjacent tributary.

- Wetland F was slightly adjusted.

- Wetland QQ was reduced.

- Wetland MM was expanded.

- Wetlands HA and JJ1 were added.

- Wetland LL, flag 1 was moved 10 feet (too small a change to see on the mapping).

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Mr. Louis H. Ege, Jr.
MD 32 Wetland JD Reviews
Page Six

Where appropriate, notations will be added indicating wetlands extending beyond the study area.

It was agreed that Gannett Fleming would review SHA's wetland delineation report for MD 32: MD 108 to Pindell School Road (completed Summer 1995) project to determine whether the "wetland mitigation area" located to the northwest of the MD 32/MD 108 is a stormwater management pond or mitigation area.

A small wetland located north of Wetland B and a small linear wetland was added near Wetland D/E and must be delineated and subsequently field verified by the COE. These areas will be delineated within the next 2-4 weeks.

Wetland C and the potential Prior Converted Cropland area must be resolved by coordination with the NRCS and may require field delineation. Coordination with NRCS is currently underway.

The New England Method of Wetland Function and Value Assessment Forms remain to be verified for the study area.

Agencies are requested to review these minutes and indicate your concurrence on the signature line below or provide comments by January 26, 1998. If you have any questions or comments, regarding these minutes, please contact Allison Grooms at (410) 545-8568.

CONCURRENCE:

Agency: _____

22 APR 98
Date

Enclosures

Attendees

cc: Mr. Greg Golden
Ms. Allison Grooms
Mr. David Sutherland
Mr. Vaughn Lewis
Ms. Cynthia D. Simpson
Mr. James Wynn



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 1715
BALTIMORE, MARYLAND 21203-1715

REPLY TO
ATTENTION OF:

Operations Division

APR 23 1998

Subject: CENAB-OP-RX(MD SHA/MD 32: MD 108 TO I-70/JD & NEW
ENGLAND FUNCTIONAL ASSESSMENT RESPONSE)95-01083-12

Maryland State Highway Administration
Attn: Mr. Joseph R. Kresslein
Assistant Division Chief
Project Planning Division
707 North Calvert Street
Baltimore, Maryland 21202

Dear Mr. Kresslein:

I am replying to your letter dated October 30, 1997, requesting a jurisdictional determination and verifications of the delineation of waters of the United States, including jurisdictional wetlands, and, the New England Functional Assessment associated with the proposed subject project located in Howard County, Maryland.

Field inspections were conducted on November 20th & 21st, 1997, and, February 26th & 27th, 1998. Minor changes were made to both the delineation and the New England Functional Assessment during the inspections. The changes to each were accurately reflected in the meeting minutes submitted by your office. This office therefore concurs with, and has signed the enclosed meeting minutes (Encls 1 & 2). Those areas indicated as streams or non-tidal wetlands, as stated in the meeting minutes, are regulated by this office pursuant to Section 404 of the Clean Water Act. An authorization from this office will be required prior to any impact. State and local authorizations may also be required. This verification is valid for five years from the date of this letter, unless new information warrants a revision before the expiration date.

You are reminded that any grading or filling of waters of the United States, including jurisdictional wetlands, is subject to Department of the Army authorization. In addition, the Interstate Land Sales Full Disclosure Act may require that prospective buyers be made aware, by the seller, of the Federal authority over any waters of the United States, including jurisdictional wetlands, being purchased.

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-2-

If you have any questions concerning this matter, please call Mr. Steve Elinsky of this office at (410) 962-4503.

Sincerely,



Keith A. Harris
Chief, Special Projects Section

enclosures

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Maryland Department of Transportation
State Highway Administration

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

February 26, 1998

Mrs. Susan Binder
Federal Highway Administration
The Rotunda
Suite 220
711 West 40 Street
Baltimore MD 21211

Attention: Mr. Peter Kleskovic

Dear Mrs. Binder:

This letter is to follow-up on our recent meeting regarding the MD 32 project planning study from MD 108 to I-70. Your assistance in reviewing the preliminary designs is appreciated.

Our Office of Traffic and Safety has completed a Level of Service (LOS) analysis for traffic data in 2020. The analysis of the partial cloverleaf interchange concept at I-70 shows that the signalized intersections on MD 32 will work well. Please be assured that the traffic in the major movement direction (southbound in the AM, northbound in the PM) will not be stopped. Only the minor direction movement will be stopped. Traffic from the I-70 ramps will turn left into a median acceleration lane until merging with mainline MD 32. This arrangement is similar to a Florida "T" design which keeps the heavy movement unimpeded through the interchange.

The intersection to the north of I-70 will operate at LOS B (v/c ratio 0.71) in the AM and LOS A (0.59) in the PM. The intersection to the south of I-70 will operate at LOS A (0.31) in the AM and LOS B/C (0.82) in the PM. We have completed analysis of the storage length needed for the left turns off the ramp going onto MD 32. We are designing the ramps to provide queuing distance for the northern intersection (the off-ramp from I-70 WB) of 400 feet. The queuing distance for the southern intersection (the off-ramp from I-70 EB) will be 150 feet.

In addition, the weaving distance required to achieve LOS D on MD 32 between the loop ramps of the full cloverleaf interchange concept at I-70 was analyzed. The distance between the loops on northbound MD 32 would need to be extended from 780 feet to 1600 feet and on southbound MD 32 from 700 feet to 1200 feet. Increasing the distance between the loops would greatly increase the size and cost of the interchange and require that the interchange be completely reconstructed. Further, the partial cloverleaf option operates at a more acceptable level of service in the design year and would cost far less to implement. Therefore, we do not plan to further develop the full cloverleaf option.

V-NEPA-8

My telephone number is _____

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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Mrs. Susan Binder
Page Two

Thank you again for your input on our design plans. Please call the project manager, Robert Ritter, at (410) 545-8513 if you have any concerns regarding our approach.

Sincerely,

Parker F. Williams
Administrator

By:

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

MD 32 WETLAND FIELD REVIEWS
FEBRUARY 26 & 27
MD 32 DAYTON SHOP

ALL TIMES ARE ESTIMATES

9:00-11:00

REVIEW MAPPING
VISIT/DELINEATE 2 ADDITIONAL WETLAND AREAS

11:00-12:00

REVIEW VALUATION SHEETS

LUNCH (APPROX. 1 HOUR)

1:00-3:00

ASSES DELINEATED WETLAND USING NEW ENGLAND METHOD

3:00

DISCUSS AGENDA FOR FRIDAY

MD 144-ALTERNATE -ISSUES (MEET at 9:00 am @ Dayton Shop—Conference Room*

TEAM

PHONE

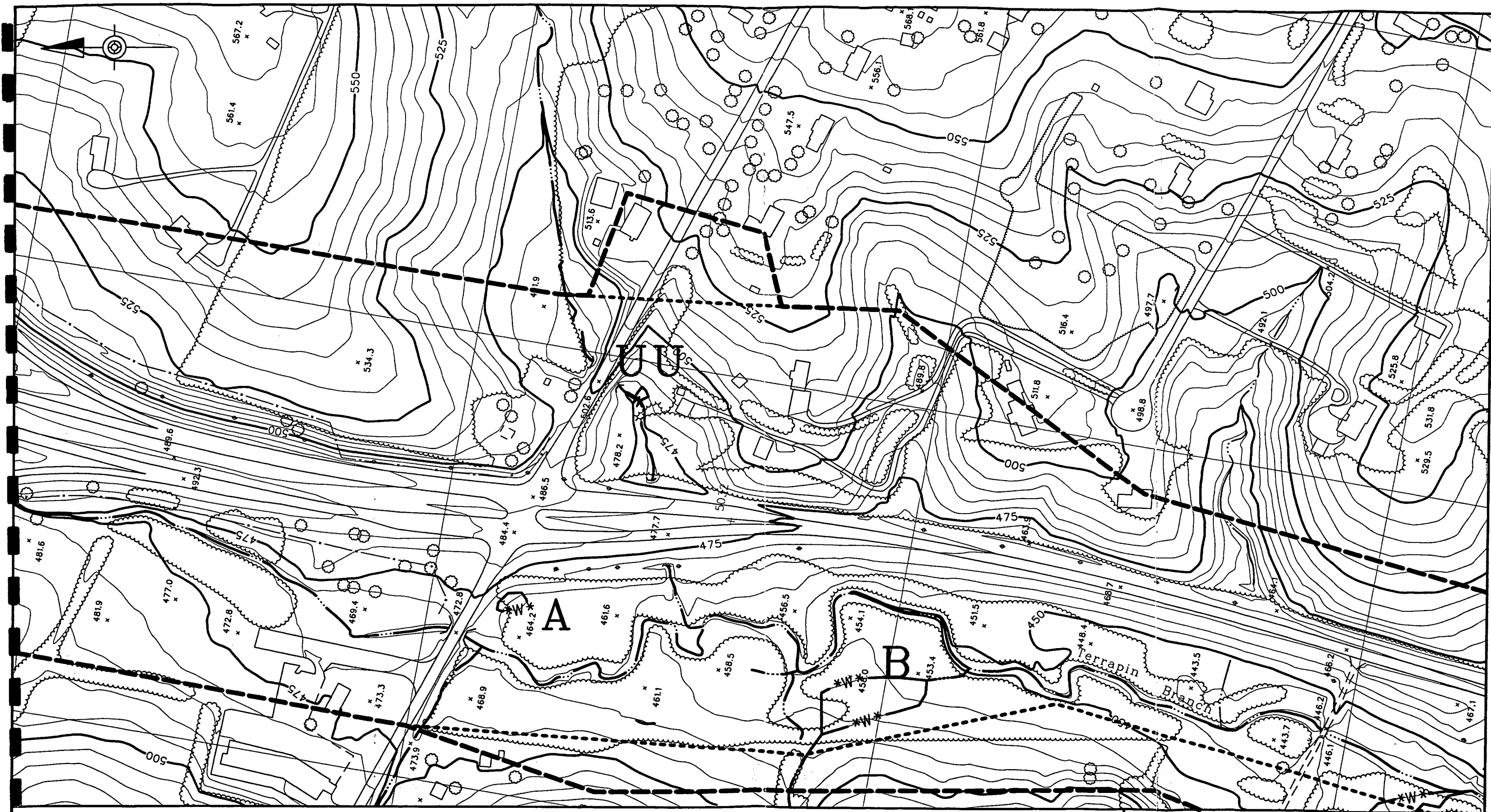
*DAYTON MAINTENANCE SHOP 410-531-5533 OR 410-333-7589

VAUGHN LEWIS	(SHA) 410-545-8511
ALLISON GROOMS	(SHA) 410-545-8568
ROBERT RITTER	(SHA) 410-545-8513
MARK SMITH	(SHA) 410-545-8632

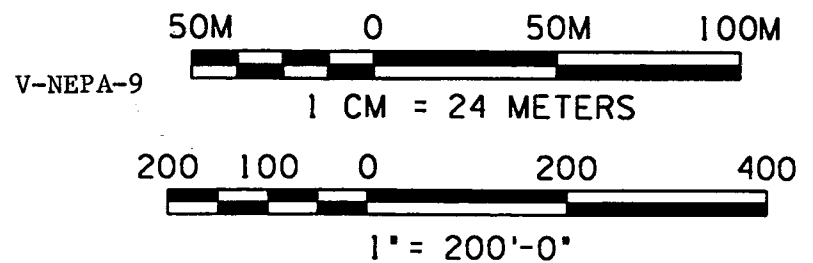
KAREN KAHL (RK&K)	410-728-2900
AARON KEEL (GANNETT)	410-433-8832

STEVE ELINSKY (COE)	410-962-4503
GREG GOLDEN (DNR)	410-260-8334
JOHN HURT (MDE)	410-631-8094

4112



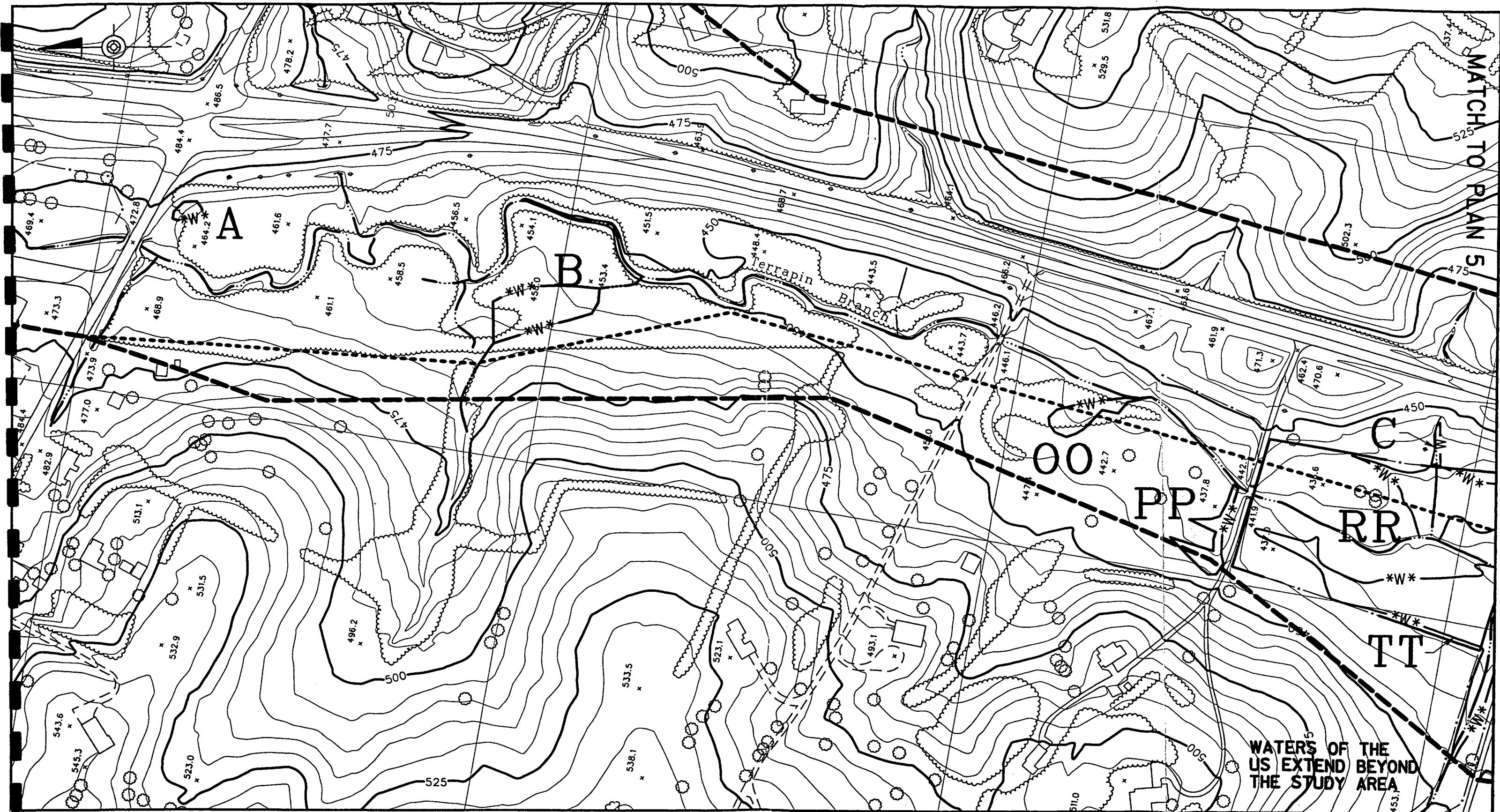
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PHOTOGRAMMETRIC DATA SERVICES, INC.
22611 MARKEY COURT SUITE 114
STERLING, VIRGINIA 20166
GRID BASED ON MARYLAND STATE PLANE
COORDINATE SYSTEM. VERTICAL CONTROL
BASED ON MEAN SEAL LEVEL 1929 GENERAL
ADJUSTMENT.



LEGEND	
	STUDY AREA LIMITS (CURRENT)
	STUDY AREA LIMITS (PREVIOUS)
	WETLAND BOUNDARY (SURVEYED)
	WETLAND BOUNDARY (ESTIMATED)
	WATERS OF THE U.S.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
MD 32 FROM MD 108 TO I-70
SHA PROJECT 94-44B
PLAN 4A
WETLANDS

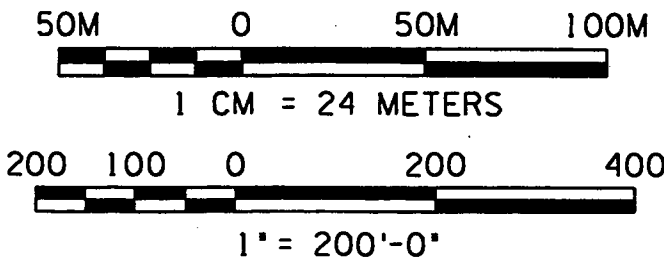
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MATCH TO PLAN 5

PHOTOGRAMMETRY BY:
PHOTOGRAMMETRIC DATA SERVICES, INC.
22611 MARKEY COURT SUITE 114
STERLING, VIRGINIA 20166
GRID BASED ON MARYLAND STATE PLANE
COORDINATE SYSTEM. VERTICAL CONTROL
BASED ON MEAN SEAL LEVEL 1929 GENERAL
ADJUSTMENT.

V-NEPA-0



LEGEND

- STUDY AREA LIMITS (CURRENT)
- STUDY AREA LIMITS (PREVIOUS)
- W- WETLAND BOUNDARY (SURVEYED)
- *W*- WETLAND BOUNDARY (ESTIMATED)
- WATERS OF THE U.S.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
MD 32 FROM MD 108 TO I-70
SHA PROJECT 94-44B

PLAN 4 WETLANDS



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

Operations Division

AUG 07 1998

Subject: CENAB-OP-RX (MD SHA/MD 32: MD 108 to
I-70/RECOMMENDED REMOVAL FROM NEPA/404) 95-01083-12

Federal Highway Administration
Attn: Pamela Stevenson
711 W. 40th St., Ste. 220
Baltimore, MD 21211

Dear Mrs. Stevenson:

This letter addresses the applicability of the MD NEPA/404 combined process to the subject project. Our preliminary review suggests that the projected impacts to the aquatic environment associated with the construction project would make it eligible for processing under the Maryland State Programmatic General Permit (MDSPGP). Environmental documentation has been addressed programmatically for the MDSPGP; thus it is not necessary that this office participate in the development of additional NEPA documentation for the subject project at this time. Therefore, the project should be removed from the combined NEPA/404 process.

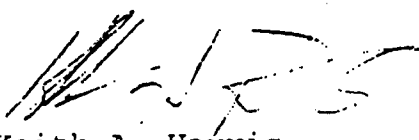
However, processing these projects under the MDSPGP does not alleviate the responsibilities of the State Highway Administration (SHA) to further avoid or minimize impacts to jurisdictional waters of the United States, including wetlands. It is also the SHA's responsibility to provide documentation to insure that this office can determine that this project is in compliance with the National Historic Preservation Act, section 106; the Endangered Species Act, section 7; and Section 103 of the Marine Protection, Research, and Sanctuaries Act.

At the completion of the design phase of each project, the SHA should submit a joint application to the Maryland Department of the Environment (MDE). We will review any application forwarded by the MDE to insure compliance with the terms and conditions of the MDSPGP. Otherwise, the Maryland Department of the Environment by way of the MDSPGP will confirm the Federal authorization for these projects.

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My staff is available for pre-application consultation on this project. If you have any questions concerning this or any other matter please do not hesitate to contact Mr. Steve Elinsky or me at (410) 962-1843.

Sincerely,



Keith A. Harris
Chief, Special Projects
Permit Section

cc: EPA, Danielle Algazi
FWS, Bob Zepp
NMFS, John Nichols
MDE, Elder Ghigiarelli
MHT, Beth Cole
DNR, Greg Golden
MOP, Christine Wells
SHA, Lou Ege ✓

NEPA Coordination

Other Agency Correspondence

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

NEPA Coordination*Other Agency Correspondence*

<u>Letter Number</u>	<u>Correspondent</u>	<u>Date</u>
V-OA-1	Maryland Historical Trust	June 16, 1995
V-OA-2	Maryland Historical Trust	August 8, 1995
V-OA-3	Maryland Historical Trust	September 25, 1995
V-OA-4	Maryland Historical Trust	December 5, 1995
V-OA-5	Maryland Historical Trust	February 26, 1996
	<i>Concurrence</i>	March 6, 1996
V-OA-6	Maryland Historical Trust	June 18, 1996
V-OA-7	Division of Historic and Cultural Programs	October 11, 1996
V-OA-8	Maryland Historical Trust	November 21, 1996
V-OA-9	Howard County Public School System	December 18, 1996
V-OA-10	State of Maryland, Public School Construction Program	January 3, 1997
V-OA-11	Maryland Historical Trust	February 18, 1997
V-OA-12	Howard County Public School System	February 19, 1997
V-OA-13	Howard County Fire Department	April 10, 1998
V-OA-14	Howard County Department of Police	May 8, 1998
V-OA-15	Howard County NAACP	June 1, 1998
V-OA-16	Howard County Department of Planning and Zoning	June 3, 1998
V-OA-17	Howard County Department of Recreation and Parks	July 21, 1998
V-OA-18	Howard County Department of Planning and Zoning	July 20, 1998
V-OA-19	Howard County Department of Public Works and Transportation	August 11, 1998
V-OA-20	Howard County Planning and Zoning	October 8, 1998
V-OA-21	Maryland Department of Housing and Community Development, Division of Historical and Cultural Programs	October 14, 1998
V-OA-22	Howard County Department of Police	October 28, 1998
V-OA-23	Howard County Department of Fire and Rescue Services	November 5, 1998
V-OA-24	Howard County Department of Public Works	November 20, 1998
V-OA-25	Maryland Historical Trust	December 4, 1998



*Maryland Department of Transportation
State Highway Administration*

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David L. Winstead
Secretary
Hal Kassoff
Administrator

June 16, 1995

Re: Contract No. HO 756-101-770 (P)
MD 32 from MD 108 to I-70
Howard County, Maryland

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Mr. Little:

This project consists of the proposed widening of MD 32, which currently consists of two ten-foot lanes and ten foot shoulders, and additional acceleration and turn lanes. Other congestion management strategies such as transit or HOV lanes may be evaluated. The project limits are coterminous with the interchange with I-70 to the north and the new interchange at MD 108 which is currently under construction (Attachment 1).

Built in the early 1960's, existing MD 32 was planned and constructed as the future northbound roadway of a four lane divided highway. From MD 108 to Burnt Woods Road, it is access controlled, generally within a 300 foot wide right-of-way. From Burnt Woods Road to I-70, MD 32 has no access controls and is within a 150 foot band of previously purchased and improved right-of-way. Tridelphia Road bridges the existing roadway. However, almost all of the roadway was constructed on fill. All proposed improvements would occur in the area immediately adjacent to the existing roadway and probably within existing SHA right-of-way.

The southern terminus of the project at MD 108 in Clarksville is the location of a new interchange associated with the relocated MD 32 between Pindell School Road and MD 108 (currently under construction). Our offices concluded Section 106 review for this interchange in 1992.

As discussed in our May 11, 1995 meeting, the area of potential effect (APE) is confined to the frontage properties on either side of MD 32, roughly coterminous with the band as shown on Attachment 2, which bubbles out at the locations of possible interchanges.

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

V-OA-1

Mr. J. Rodney Little
June 16, 1995
Page 2

In the vicinity of the construction for the MD 108/MD 32 interchange, currently underway, numerous historic sites are no longer extant. These are HO-470, Zepp Farm, HO-481, the Easter House and HO-478, the Picket House.

We have identified historic standing structures within the APE for the widening of existing MD 32, as shown on the Attachment 2. The site locations are indicated on the attached maps, and inventory forms for the four newly identified sites which are included as Attachments 3 through 6. Attachment 7 is a discussion of each site as they relate to National Register eligibility criteria. Photographs of the four previously identified historic standing structures are included as Attachment 8. The eight (8) sites within the APE are:

1)	HO-562	Roby House	13100 Greenberry Lane	Not NRE
✓ 2)	HO-207	Westwood ME Ch	13554 Tridelphia Rd.	Not NRE
✓ 3)	HO-14	Howard Cty Hunt Club	13402 "	NRE
4)	HO-643	Warfield-Sullivan House	3625 MD 32	Not NRE
5)	HO-644	Ridgely Tenant House	3615 Ivory Road	Not NRE
✓ 6)	HO-645	Milton Shipley House	2920 MD 32	Not NRE
7)	HO-646	Mary Selby Burgess House	3075 MD 32	Not NRE
8)	HO-564	Williams Tenant House	13105 Greenberry Lane	Not NRE

We have determined that the sole historic resource within the APE which would likely meet the criteria for listing in the National Register of Historic Places is the Howard County Hunt Club. There are two original nineteenth century structures which date to the use of the site as a farm owned by the Culhums and the Peddicords in the last half of the nineteenth century--a large, frame ell-shaped dwelling and a large bank barn. Despite the abundance of large metal structures on the site, which are out of keeping with the property as a remnant of a nineteenth century farm, the site retains significance as the new structures are integral to the use of the property as a center of fox-hunting.

Mr. J. Rodney Little
June 16, 1995
Page 3

The site in fact accrues its significance as one of only two clubs remaining in Howard County actively involved with fox-hunting. In this respect, it would qualify under criterion A, as it is associated with events that have made a significant contribution to the broad patterns of our history--the carryover of fox-hunting from the English tradition and its attendant long history as a popular sport among the landed gentry in Howard County and Maryland. We believe the parcel outlined on the tax map included as Attachment 10 is an appropriate boundary.

We have assessed the general project area for archeological resources. The vast majority of the project area appears undisturbed. It is composed primarily of rolling pasture and farmsteads. There are several very low density subdivisions in or near the proposed APE, but these have caused little disturbance within what is an unusually pristine setting. Other development that has resulted in minor, localized disturbance consists only of the West Friendship Shopping Center, the SHA Dayton Shop facility, and a radio tower/transmitting station in the Dayton vicinity.

To define the prehistoric archeological potential for the proposed project area, and construct the variables important in the prediction of as yet unidentified resources, we have consulted a settlement and subsistence model developed by Gardner (1978) for the Piedmont physiographic province, and applicable to the eastern Piedmont uplands region. Locations of identified sites in the Maryland Archeological Site Survey files are also considered. On a very general level, variables important to prehistoric site prediction are proximity to surface water, topographic setting, soil drainage, and availability of lithic resources.

Lithic sources utilized by prehistoric peoples in the Piedmont uplands consist of vein quartz and steatite outcrops, and cobbles and gravels of a variety of materials carried by streams cutting through the Piedmont as part of their bed load (Gardner and Haynes 1977). Most of these cobbles and gravels were deposited by the ancestral Potomac River during the Pliocene Epoch and range in thickness from several feet to a thin surface capping. They may include quartz, quartzite, silicified sandstone, rhyolite, chert, and jasper. However, because the project area occupies a headwater zone where deposition of cobbles by the rivers has never been likely, quartz veins and surface outcrops of steatite were the primary sources utilized in the near region.

Changing environmental conditions determined by climatic and edaphic factors since early post-glacial times have influenced the abundance and diversity of plant and animal foods available to prehistoric populations of the Piedmont uplands. A mixed

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Mr. J. Rodney Little
June 16, 1995
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grassland/deciduous forest biome supported deer - primarily a mixed forest and meadow dweller - and turkey, and provided a variety of nuts and non-arboreal plant foods. Fish was available in the larger rivers and streams. The greatest abundance and diversity of food resources were found in ecotones, or areas of habitat overlap. Greater resource potential and consequent prehistoric utilization is demonstrated by the increased number of prehistoric sites at the Piedmont/Coastal Plain transition, and in the southern portion of Montgomery County near the Potomac River. The few ecotones that are present within this region of the Piedmont are located relative to the major rivers - the Patuxent and Patapsco - and their higher order tributaries. With the rare exceptions of higher order streams, and at the junctions of lower order and higher order streams, floodplain development is not extensive; a factor important for prehistoric agriculture (Gardner and Haynes (1977)).

Viewed from a large-scale, regional perspective, prehistoric archeological sites are expected to decrease in number away from major rivers and secondary sources of lithic raw material (Gardner 1978). Though rare, primary lithic sources consisting of vein quartz outcrops were attractive to transitory hunters of the Piedmont uplands, with small campsites located near surface water. Sites increase dramatically as the Potomac River is approached, where the quantity of secondary lithic raw material increases. In the wide floodplains of major rivers that are dissected by numerous creeks and/or containing poorly drained areas, the variety of sites increases because available resources are maximized (Gardner 1978). Gardner and Haynes (1977) have also observed that especially in the Piedmont, as the headwaters of low-order streams are approached and distance from higher order streams is increased, prehistoric sites are less likely to occur, especially in the absence of other inducements such as natural shelter (i.e. rockshelters), outcrops of highly desirable lithic material, or especially attractive game habitats.

At the scale of the current project area, this general model would predict that site density, size, and diversity, would be low, with sites concentrated primarily along perennial streams. The locations of previously recorded sites near the project area indicate that perennial low-order streams, higher order streams, and stream junctions, are most heavily utilized during the prehistoric period. However, numerous sites are also recorded in headwater and interfluvial zones where water sources consist of springs and seeps. These areas were attractive to game, and their periodic or perennially wet conditions could have provided a wider range of plant resources. More reliable springs and seeps may have been the focus of temporary or short-term camps tied to seasonal exploitation of nuts and acorns in otherwise interfluvial zones. The proximity of the wide serpentine belt

Mr. J. Rodney Little
June 16, 1995
Page 5

west of the project area provided further inducement to utilize what would otherwise be considered marginal settings.

Based upon current knowledge, we would expect prehistoric sites in the project area to be small and representative of transitory or ephemeral use. However, the diversity in artifact assemblages from 18HO39, 18HO54, and 18HO107 suggest the potential for more extensive sites with greater time depth and functional diversity. The location and preservation of Site 18HO129 suggests that inner floodplain margins and colluvially buried surfaces may contain intact deposits and require deep subsurface testing. Sites in elevated settings which have been previously plowed have the least potential for intact deposits. Current settlement models for Paleo-indian and Early Archaic settlement (Gardner 1974) would argue little likelihood for representation of these periods in the project area. However, given the paucity of survey coverage, their presence cannot be ruled out. As indicated by Middle Archaic representation at Site 18HO13, that period as well as all other later periods may be represented in the project area.

Review of historic maps (Griffith 1795; Martenet 1860, 1865, 1885; Hopkins 1878; USGS 1906, 1926, 1957) indicates the presence of roads north and south of the project area as early as 1795. Although no roads or structures are indicated on Griffith's Map of Maryland (Griffith 1795) within the project area, Old Frederick Road (MD 99), the alignment of the Frederick Turnpike, and MD 108 from Snells Bridge to Clarksville, are depicted. The later Martenet maps (1860, 1865, 1985) and Hopkins' Atlas (1878) show that existing MD 32 followed the alignment of 19th century Sykesville Road between I-70 and the Frederick Turnpike (MD 144) at West Friendship. The alignment of existing MD 32 south of West Friendship does not appear on historic maps until 1878 (Hopkins 1878), where it is shown extending to just north of Glenelg, at extant Burnt Woods Road. As indicated on the USGS 15' Ellicott (1906) and Laurel (1926) topographic quadrangles, existing MD 32 does not follow the alignment of a historic road south of Burnt Woods Road. The lower section into Clarksville does not appear on available maps until 1957 (USGS 1957).

Several historic map indicated structure locations and community aggregates are depicted on Martenet's (1860) map and Hopkins' (1878) Atlas in or very near to this project's area of potential effects.

Several high historic potential areas are indicated at historic road and stream crossings. At MD 144, which has been extant since the late 18th century, there are numerous structures depicted between 1860 and 1906. Two mills are indicated as early

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Mr. J. Rodney Little
June 16, 1995
Page 6

as 1860 at the stream junctions where tributaries enter the main stem of the Middle Patuxent. This general area also contains map indicated structures in 1878. An area associated with Pfefferkorn Road where several maps indicated structures are present as early as 1860. The intersection of Burnt Woods Road, extant at least by the early 20th century, may contain the remains of map indicated resources that appear on maps by 1860. Ivory Road, extant since 1860, intersects Burnt Woods Road within the project area, suggesting that 19th century or earlier resources are also possible at this intersection. Numerous structures are depicted along Tridelpia Road as early as 1860. That portion of the project area also contains two identified historic structures that may contain potentially significant archeological resources. All of the area bordering Ten Oaks Road, depicted as early as 1860, has high potential. Numerous structures are depicted there in the middle and later 19th centuries. All areas at the Clarksville interchange that have not been previously disturbed, including the yard areas of standing structures, are considered to have high archeological potential.

Because the project area contains numerous ecological settings where prehistoric resources are likely, as well as two known prehistoric sites within the APE, it is considered to have high prehistoric archeological potential. The presence of numerous historic map indicated structure locations throughout the project area indicates high historic archeological potential as well. A Phase IB identification survey is recommended to ascertain the full range of resources.

We seek your signature on the concurrence line below documenting your agreement with our proposed levels of significance and historic site boundary for the Howard County Hunt Club by July 30, 1995. Please call Ms. Suffness on 333-1183 should you have any questions concerning standing structures and Ms. Barse on 321-2213 concerning archeology.

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Mr. J. Rodney Little
June 16, 1995
Page 7

Very truly yours,

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

by: Cynthia D. Simpson
Cynthia D. Simpson
Deputy Division Chief
Project Planning Division

Concurrence:

State Historic Preservation Office

Date

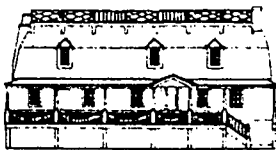
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Attachments(9)

cc: Ms. Mary C. Barse (w/attachments)
Mr. Bruce M. Grey
Dr. Charles Hall
Ms. Allison Grooms (w/attachments)

426

MARYLAND
HISTORICAL



TRUST

PROJECT
DEVELOPMENT
DIVISION

Parris N. Glendening, Governor
Patricia J. Payne, Secretary

AUG 11 9 07 AM '95

August 8, 1995

Office of Preservation Services

Ms. Cynthia D. Simpson
Deputy Division Chief
Project Planning Division
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

Re: Contract No. HO 756-101-770 (P)
MD 32 from MD 108 to I-70
Howard County, Maryland

Dear Ms. Simpson:

Thank you for your recent letter, dated June 16, 1995 and received June 20, 1995, initiating Section 106 coordination for the above referenced project. The proposed project involves widening MD 32 from MD 108 to I-70. Other congestion management strategies, such as transit or HOV lanes, may be evaluated. As noted in your letter, the southern terminus of the project at MD 108 in Clarksville is the location of a new interchange associated with the relocated MD 32 between Pindell School Road and MD 108. Our offices concluded Section 106 coordination for this project in 1992 and construction is currently underway.

According to your letter, the area of potential effect (APE) for the project is confined to the frontage properties on either side of MD 32. We assume this APE is sufficient to encompass all the impacts that could be expected for the project, including any related to the alternative congestion management strategies. State Highway Administration (SHA) identified eight historic standing structures within the APE. Four of these were previously identified and had completed inventory forms. SHA prepared inventory forms for the remaining four and evaluated all eight for National Register eligibility. Based on the available information, we concur that the following five properties would not meet the criteria for inclusion in the National Register of Historic Places:

HO-562	Roby House - 13100 Greenberry Lane
HO-643	Warfield-Sullivan House - 3625 MD 32
HO-644	Ridgely Tenant House - 3615 Ivory Road
HO-646	Mary Selby Burgess House - 3075 MD 32
HO-564	Williams Tenant House - 13105 Greenberry Lane

Division of Historical and Cultural Programs
100 Community Place • Crownsville, Maryland 21032 • (410) 514-_____

*The Maryland Department of Housing and Community Development (DHCD) pledges to foster
the letter and spirit of the law for achieving equal housing opportunity in Maryland.*



Ms. Cynthia D. Simpson
August 8, 1995
Page 2

Regarding HO-645, the Milton Shipley House, located at 2920 MD 32, we concur with SHA that the much-altered house and several associated outbuildings are not eligible, **except for** the oval corncrib made of perforated and corrugated metal, located just to the north of the house. In our opinion, the ~~corncrib is eligible~~ under Criterion C as a rare example of type and method of construction. Maryland Historical Trust staff is not aware of any other such structures within the state, but knows of an apparently identical example in the midwest. The design of the corncrib is unusual for its use of perforated corrugated metal and its oval shape. It probably dates to the early 20th century and may possibly have been obtained from a mail order catalog. It appears to be representative of the growing use of standardized designs and mass marketed products, including small structures, on American farms in the early 20th century, a development which paralleled the national trend toward mass consumption and standardization. The historic property boundary for the Milton Shipley Corncrib need only extend several feet beyond the footprint of the structure.

NRE

Regarding HO-207, the Westwood ME Church, located at 13554 Tridelphia Road, we are unable to concur at this time with SHA's determination that the property is not eligible. As noted in the Attachment 7 included with your letter, the two church buildings, while perhaps not individually eligible, attain significance **as an ensemble**: "with ca. 60 years separating them, they illustrate the evolving tastes on the part of the architects and/or builders and their client, in this case the Methodist Church." We believe SHA has effectively made a case for eligibility under Criterion C for architecture. We do not believe the fact that the property is no longer used for religious purposes diminishes its integrity under the aspects of feeling or association. Based on the definition of these aspects of integrity found in National Register Bulletin #15, we believe the property is still able, through the retention of its significant physical features, to convey a sense of its original historic character. Moreover, the National Register does not require that all seven aspects of integrity be present in an eligible property, but rather that it "possess several, and usually most, of the aspects" (Bulletin #15, page 44). Based on the photographs provided, the exteriors of both buildings are largely intact. The connecting link, while unfortunate, does not significantly diminish the property's ability to convey a sense of its original historic character. Key to the question of the property's eligibility is the issue of interior integrity. Without interior photographs, it is very difficult for us to concur that the property lacks sufficient integrity for listing. We note that both buildings are being used for commercial purposes. Surely interior photographs could be obtained.

Ms. Cynthia D. Simpson
August 8, 1995
Page 3

Regarding HO-14, Howard County Hunt Club, located at 13402 Tridelphia Road, we concur that the property is eligible for the National Register of Historic Places under Criterion A for its association with the sport of fox hunting in Maryland and as one of only two remaining hunt clubs in Howard County. However, to enhance our understanding of the property, we would appreciate additional information and clarification on several matters. If possible, please provide some additional information concerning the Howard County Hunt Club and its association with this property. When was the Howard County Hunt Club established? Did it have a clubhouse prior to the 1930 acquisition of 13402 Tridelphia Road, or was the clubhouse a 20th-century development in the ancient tradition? What activities take place at the property? What are the various buildings on the property used for? When were they built? Which are contributing and which are non contributing? Please provide a site map showing the location of the various buildings on the property. In addition, please indicate the location of the buildings in relation to the historic property boundary.

Regarding the boundary for the Howard County Hunt Club, we must reiterate our long-stated position: historic property boundaries should be governed by visual setting and historic associations rather than by existing property ownership or right-of-way considerations. Unless otherwise demonstrated, we assume that the property historically extended to the edge of the roadway. It is not clear from the map provided where the edge of the historic property is in relation to the edge of the existing roadway. Please confirm that the historic district boundary extends to the edge of the existing roadway so that we may concur with the proposed boundary.

Please confirm that SHA considered the possibility of the presence of historic districts, both rural districts and crossroads communities, within the APE.

The four new Maryland Inventory forms will be a welcome addition to our library. We have forwarded them to Ms. Marcia Miller, Architectural Survey Administrator for her review. She will notify you if any revisions are required.

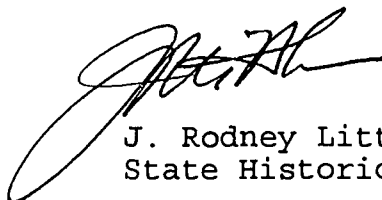
Regarding archeology, we concur that Phase IB identification survey is warranted and look forward to reviewing the results.

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Ms. Cynthia D. Simpson
August 8, 1995
Page 4

Should you have any questions, please contact Ms. Beth Cole (for archeology) at (410) 514-7631 or Ms. Elizabeth Hannold (for standing structures) at (410) 514-7636.

Sincerely,



J. Rodney Little
State Historic Preservation Officer

JRL/EJC/EAH/
9501588

cc: Mrs. Phillip St.C. Thompson
Mr. William F. O'Brien
Ms. Marcia Miller

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Maryland Department of Transportation
State Highway Administration

David L. Winstead
Secretary
Hal Kassoff
Administrator

September 25, 1995

Re: Contract No. HO 756-101-770
MD 32 from MD 108 to I-70
Howard County, Maryland

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Mr. Little:

Thank you for your August 8, 1995 letter. As you know from our coordination on this project as well as the project immediately located to the south and currently underway (to construct MD 32 from Simpsonville to Clarksville), the area traversed by MD 32 is characterized by rapidly expanding suburban housing in the form of large subdivisions which are displacing Howard County farms at breakneck speed. This ever-accelerating development is so pronounced in the Glenelg area that the Howard County Hunt Club (HO-14) is no longer used as a starting point for fox hunting because it is hemmed in by new housing. This development has radically changed the area. For example, the hounds located at the Hunt Club now have to be transported by vehicle to other areas, such as parks, in order to participate in the hunts. Previously the hunts would start at the Hunt Club and progress in almost any direction over open farmland and through extensive woods, most of which have been obliterated.

The area of potential effect (APE) for this project is largely within these heavily developed areas. In our historic sites reconnaissance of the area of potential effect we considered the full range of historic resources, but the possibility for historic districts of any kind was nullified by these existing conditions, such as the ubiquitous and extensive development.

Our two offices agreed that the following sites are not eligible for listing in the National Register: HO-562, Roby House; HO-643, Warfield-Sullivan House; HO-644, Ridgely Tenant House; HO-645, Milton Shipley House (the corncrib is eligible); HO-646, Mary Selby Burgess House and HO-564, Williams Tenant House.

Furthermore, we agree that the following sites would likely meet the criteria for listing in the National Register: the Westwood ME Church (HO-207) and the Milton Shipley Farm Corncrib,

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717

V-OA-3

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Mr. J. Rodney Little
Page Two

which is a component of HO-645. We agree that the appropriate boundary for the cornerrib would extend several feet beyond the footprint of the structure. Also, the proposed boundary for the Westwood ME Church is indicated on Attachment 1. Because of the extremely limited hours in which it was open for business, confined to weekends at the time of our survey, we were unable to photograph the interior of the church.

We further agree that the ~~Howard County~~ Hunt Club (HO-14) is eligible for inclusion in the Register with the tax parcel boundary appropriate as the historic site boundary, as indicated on Attachment 2, with the boundary along Tridelphia Road extending to the edge of pavement. On Attachment 3 we have provided a sketch map delineating the locations of the buildings on the Hunt Club property. Most of the property is wooded, with a few open and fenced fields in the immediate environs of the cluster of buildings. Only two structures predate the purchase of the property by the club in 1932--the barn and the dwelling. All of the other structures postdate that time, and most have been constructed within the last thirty years. There are three large metal structures, two of very recent date and a couple of frame sheds. Most of the newer metal and frame buildings would be non-contributing elements, but the kennel, barn and frame dwelling contribute to the significance of the site. A discussion of the Hunt Club in relation to fox-hunting in Howard County is included as Attachment 4.

We seek your signature on the concurrence line below documenting your agreement with the boundaries of the Westwood ME Church and the Howard County Hunt Club by November 3, 1995. Please call Ms. Suffness on 333-1183 should you have any questions concerning standing structures.

Very truly yours,

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

by: Cynthia D. Simpson
Cynthia D. Simpson
Deputy Division Chief
Project Planning Division

Mr. J. Rodney Little
Page Three

Concurrence:

State Historic Preservation Office

Date

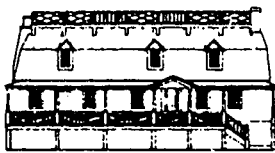
LHE:RMS

Attachments (5)

cc: Ms. Mary C. Barse
Ms. Allison Grooms
Mr. Bruce Grey (w/attachments)
Dr. Charles Hall (w/attachments)

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MARYLAND
HISTORICAL



TRUST

PROJECT
DEVELOPMENT
DIVISION

DEC 11 9 52 AM '95

Parris N. Glendening, Governor
Patricia J. Payne, Secretary

December 5, 1995

Office of Preservation Services

Ms. Cynthia D. Simpson
Deputy Division Chief
Office of Planning and
Preliminary Engineering
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203-0717

Re: Contract No. HO 756-101-770
MD 32 from MD 108 to I-70
Howard County, Maryland

Dear Ms. Simpson:

Thank you for your September 25, 1995 letter regarding the above referenced project. The letter requested our concurrence with the historic property boundaries for Westwood ME Church (HO-207) and the Howard County Hunt Club (HO-14).

We regret that we are unable to concur at this time. Our previous letter to SHA on this project, dated August 8, 1995, sought clarification regarding the boundary of the Hunt Club as it related to roadways. Your recent letter provided clarification with respect to the boundary along Triadelphia Road, but failed to address the more pertinent question of how the western boundary relates to existing MD 32. We now have this same question regarding Westwood ME Church. As explained in our August 8, 1995 letter, historic property boundaries should be governed by visual setting and historic associations rather than by existing property ownership or right-of-way considerations. Unless otherwise demonstrated, we assume that the property historically extended to the edge of the roadway. It is not clear from the mapping provided where the edges of the historic properties are in relation to the edge of the existing MD 32 roadway. Please confirm that the historic property boundaries extend to the existing MD 32 roadway or, if that is not the case, explain why not.

Thank you for providing the additional information we had requested in our August 8, 1995 letter concerning the Hunt Club and likelihood of historic districts. We will be more than happy to complete the identification and evaluation phase of the coordination for this project once we have received the information requested above.



Division of Historical and Cultural Programs

100 Community Place • Crownsville, Maryland 21032 • (410) 514-7636

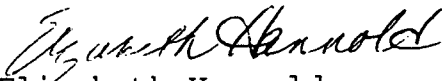
The Maryland Department of Housing and Community Development (DHCD) pledges to foster the letter and spirit of the law for achieving equal housing opportunity in Maryland.

V-QA-4

435
Ms. Cynthia D. Simpson
December 4, 1995
Page 2

Thank you for providing us this opportunity to comment.
Should you have any questions, please contact me at (410) 514-7636.

Sincerely,


Elizabeth Hannold
Preservation Officer
Project Review and Compliance

EAH
9502552
cc: Mr. Bruce Grey
Ms. Rita M. Suffness
Dr. Charles Hall
Mrs. Phillip St. C. Thompson
Mr. William F. O'Brien



Maryland Department of Transportation
State Highway Administration

MAR 12 10 53 AM '96

436
David L. Winstead
Secretary
Hal Kassoff
Administrator

7000271

February 26, 1996

Re: Contract No. HO 756-101-770 (P)
MD 32 from MD 108 to I-70
Howard County, Maryland

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Mr. Little:

Thank you for your December 5, 1995 letter. In clarifying the boundaries for both the Hunt Club and the Westwood Church it is important to note that for the length of the roadway in the vicinity of these two resources MD 32 is depressed below grade, and the right-of-way line we indicated as the boundary on the western edges of these two sites is located at the top of the cut line generally where the roadway is below grade. This boundary is also coterminous with an extensive woods which extends almost the entire length of the western edge of the property line. These areas and the grade separated intersection are shown in the photographs (Attachment 3), the locations of which are indicated on Attachment 2.

With this clarification we again request your signature on the concurrence line below documenting your agreement with our proposed levels of significance and historic site boundary for the Howard County Hunt Club and the Westwood M. E. Church, as stated in our September 25, 1995 letter. We request your concurrence immediately by facsimile and a return of the correspondence by mail on or before March 30, 1996. Please call Ms. Rita M. Suffness on 545-8561 should you have any questions concerning standing structures and Ms. Chris Barse on 321-2213 concerning archeology.

already given 5-11-96

Structure given - 3/6/96

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

V-OA-5

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Mr. J. Rodney Little
February 26, 1996
Page 2

Very truly yours,

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

by: Cynthia D. Simpson
Cynthia D. Simpson
Deputy Division Chief
Project Planning Division

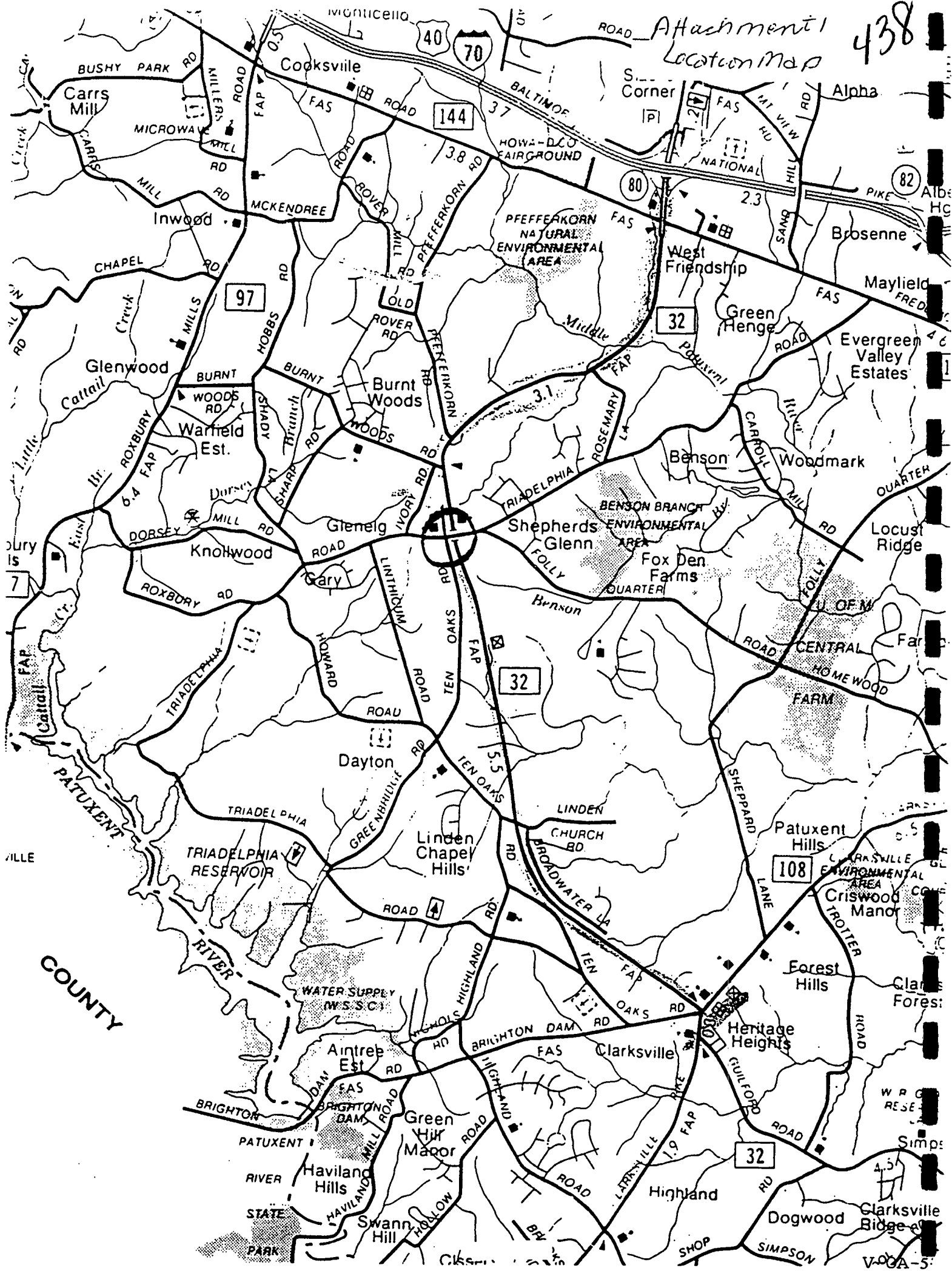
Concurrence:

J. Ellen Freese
State Historic Preservation Officer

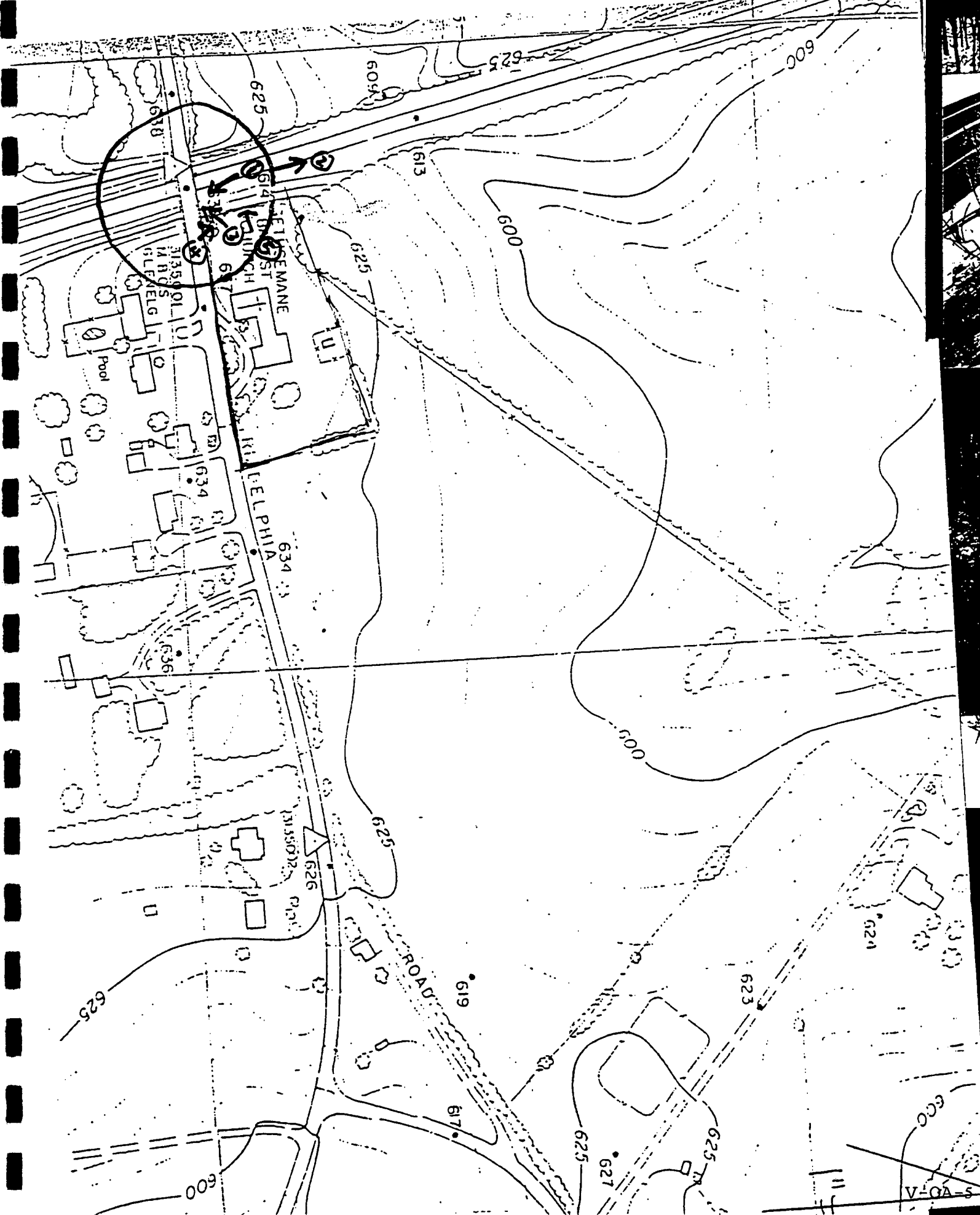
3/6/96
Date

LHE:RMS:fb
Attachments

cc: Ms. Mary C. Barse (w/attachments)
Mr. Bruce M. Grey
Ms. Allison Grooms (w/attachments)
Dr. Charles Hall



- Attachment 2 - Urban -
Separated Intersection
429





① TRIDELPHIA RD
OVER MD 32
LOOKING SOUTH



② EDGE OF R of W along
East Side of MD 32
along Hunt Club property

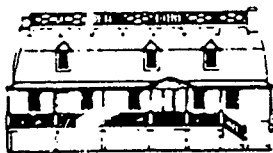


V-GA-5

③ View of bridge over MD 32
looking SW from Westwood
M.E. Church.

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MARYLAND
HISTORICAL



TRUST

Parris N. Glendening, Governor
Patricia J. Payne, Secretary

June 18, 1996

JUN 21 1996

Office of Preservation Services

Ms. Barbara Strein
Public School Construction Program
Office of Planning
301 West Preston Street
Baltimore, MD 21201-2365

Re: Proposed Western Elementary
School #3, Howard Co. MD960513-
0320

Dear Ms. Strein:

On 20 May 1996, this office received a request from the Maryland State Clearinghouse regarding the project listed above. We have also received your recent letter concerning Western Elementary School #3. We understand that the Howard County Board of Education (Board) is seeking financial assistance from the Public School Construction Program (PSCP) for the development of the Western Elementary School #3. The Trust has reviewed this undertaking with respect to effects on historic properties, in accordance with the Maryland Historic Preservation Law.

The Maryland Inventory of Historic Properties notes the existence of the Howard County Hunt Club (HO-14) located on the proposed school property. Enclosed you will find the Inventory Form for the Hunt Club which was prepared in 1977. This documentation is limited and needs updating. The dwelling dates from about 1860 and was associated with a J. Peddicord on the Hopkins atlas of 1878 (see enclosures). Our files record no inventoried archeological sites on the parcel proposed for school construction. However, to our knowledge, no professional archeologists have ever surveyed the tract to identify archeological sites. We believe that one portion of the parcel has high potential for containing historical archeological resources. This area is the land adjacent to the existing Hunt Club building.

From the Site Masterplan of 9 November 1995, it appears that school construction would entail destruction of the nineteenth-century Club house and grading of the grounds. This historic property has never been evaluated for its eligibility for the Maryland Register of Historic Properties. Since the law only protects those properties listed in or determined eligible for the Maryland Register, this is the next step in the review process.

If construction activities cannot be relocated (e.g., to the untouched north end), we would recommend that PSCP ensure the following cultural resource investigations be conducted in the early stages of project planning: a Phase I archeological investigation of the house lot and an intensive architectural survey of all above ground buildings/structures. The archeological survey should be carried out within a 200-ft radius of the house by a qualified professional archeologist prior to construction, and performed in accordance with the Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994). The intensive architectural survey should also be conducted by a qualified architectural historian and produce an updated and revised Maryland



Division of Historical and Cultural Programs
100 Community Place • Crownsville, Maryland 21032 • (410) 514- 7637

*The Maryland Department of Housing and Community Development (DHCD) pledges to foster
the letter and spirit of the law for achieving equal housing opportunity in Maryland.*

V-OA-6

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Ms. Barbara Strein
June 18, 1996
Page 2

Inventory of Historic Properties Form and a written determination of eligibility. The Inventory Form must be done in conformance with the Guidelines for Completing the Maryland Inventory of Historic Properties Form. We strongly recommend that the cultural resource investigations take a multi-disciplinary approach to the property to evaluate the significance of the architecture in concert with the archeology. This approach, whether by one cultural resource firm or two individual professionals, should be more economical and more comprehensive. Draft documentation should be provided to the Trust for review. We believe that the Board has a copy of our consultants' list and the reference materials noted above. Upon request, this office would be happy to provide additional copies and guidance.

Please be aware that the Maryland Inventory lists the existence of two historic properties located adjacent to the school site: the Westwood M.E. Church (HO-207) and the Francis Shipley House (HO-182) located at 13523 Tridelphia Road. The proposed school construction could affect these properties as well.

Based upon the results of the cultural resource survey, we will be able to determine if the existing resources are eligible for the Maryland Register and make appropriate recommendations. Further consultation with our office will be necessary to comply with Article 83B, §§ 5-618, of the Annotated Code of Maryland. If you have any questions or require further information, please contact Ms. Lauren Bowlin (structures, 410-514-7637) or Dr. Gary Shaffer (archeology, 410-514-7638).

Thank you for your cooperation and assistance.

Sincerely,



Elizabeth J. Cole
Administrator
Archeological Services

EJC/GDS/LLB
9602196/2201

cc: Mr. William Grau
Ms. Myra Barnes
Mrs. Phillip Thompson
Mr. William O'Brien

Enclosures

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October 11, 1996

Lauren Bowlin, Preservation Officer
Division of Historic and Cultural Programs
100 Community Place
Crownsville, MD 21032-2023

RE: HO-14, Howard Hunt Club
Proposed Western Elementary School #3
MD960513-0320

Dear Ms. Bowlin,

Based on MHT's request (Elizabeth Cole's letter, dated 6/18/96), the Howard County Board of Education has authorized me to conduct an intensive architectural survey of the Howard Hunt Properties, Inc. land near Glenelg. The need for this survey evolves from the School Board's plans to demolish the club house and barn for grading associated with the proposed elementary school use of the property.

Enclosed please find the **ROUGH DRAFT** for a revised inventory form, including:

- Capsule Summary
- Description
- Statement of Significance
- List of Major Bibliographic Resources
- Appendix F -- Comprehensive Plan Data
- 3 1/2" x 5" B&W prints (5" x 7" enlargements are being made and will be properly labeled for the next submission)
- (30) slides, appropriately labeled
- 8 1/2" x 11" floor plans of first and second levels *in barn*
- copies of labeled historic maps for reference

I intend to provide a resource sketch map with the structures numbered and views identified, and appropriately labeled 5" x 7" photos with the final submission. When you return the 3 1/2" x 5" photos, could you also send along about a dozen sleeves for the negatives, which I can then label and include with the final submission.

The results of the intensive architectural survey indicate the property would be ineligible for the National Register of Historic Places.

As a qualified professional whose credentials meet the standards in 36 CFR 61, Appendix A, I have studied the architecture and the history of the site. In my opinion, this farm represents a typical mid-19th century, central Maryland, vernacular farmstead, but is not outstanding in its architecture nor its associations.

In applying National Register Criterion C, although the house and barn embody distinctive characteristics of a type, period, and

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method of construction, they fail to meet the National Register criteria of being an "important" example of building practices of the time. They are typical of many built across the Piedmont region during the mid-19th century, exhibiting a common pattern of features, such as the spatial relationship of house-to-barn, banked type of barn, timber frame construction of the barn, and the architectural style, original floor plan, materials and detailing of house. In terms of the defined characteristics of a middle-class farmstead, the structures have not been moved, and the farmstead does retain its rural setting, ~~however~~ modified design, most materials, workmanship, farm feeling and association. However, the loss of the corn crib, meat house, and possibly other farm outbuildings, and the renovation of the house for club use have detracted from the pristine integrity of the farmstead.

The significance of the historical association with the occupants of the farm is insufficient to warrant National Register listing. The Peddicord and Iglehart family names continue to be quite common in Howard County, but the Cullum (the assumed owner/builder) name does not appear to have influenced the region. This property was not a particularly large working farm, nor one of the large estates, such as Doughergan Manor or Glenelg Manor. There has been no evidence uncovered that this farm was of particular agricultural significance to the county.

The historic context for this property is mid-20th century fox hunting in Howard County. The property's significance lies in its 65 year use as the home of the fox hunting club. The contribution made to the pattern, although not broad, of local history reflects a lifestyle of some wealthy ^{Howard County} landowners. To quote one of the club's members, "It takes a lot of time and money to hunt." For some, it is a way of life, a sport that takes much of three or more days a week, seven months each year.

This farmstead has represented the local core of this activity, thereby utilizing National Register Criterion A. National Register Bulletin 15 offers the example of "A building used by an important local social organization" as a property associated with a pattern of events. However, many of the physical manifestations of the use of the property as a hunt club, such as the kennels, barn addition, modern outbuildings and large club room addition to the house, are less than 50 years of age.

Although it is easy to point out the Club's association with the historic trend of fox-hunting in Maryland, it is difficult to analyze the property's retention of historic integrity as the Hunt's period of significance continues through to the present and changes have continued to be made to the property as part of the Hunt's evolution. Furthermore, there is insufficient justification for invoking Criteria Consideration G: that the property's achievement of significance within the last 50 years is of "exceptional importance." Therefore, I conclude that the property is not eligible for National Register listing.

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The School Board has determined that the buildings must be removed. The triangle of land from the cluster of buildings southwest out to Tridelphia Road and east to the property line is the largest area that reasonably could be graded for modern school use. Saving the house and/or barn presents a two-fold problem. First, the programmatic design necessitates lowering the shallow hill under the house and using the fill to raise the surrounding areas, permitting the school and playing fields to be relatively level. Second, the School Board has no use for the structures should they be retained. They have no need for a caretaker's house. Renovating the house for use by elementary school children would be expensive as the house would have to be abated of lead paint.

Please note, I have also included slides of both the Westwood M.E. Church (HO-207) and the Francis Shipley House (HO-182), and a 5" x 7" print of the church is being processed, both taken from Tridelphia Road. These can be used to update your archival records of those sites. The proposed construction of School #3 should not directly affect these properties. Should a second school be constructed at the southern corner of the Howard Hunt property at a later time, this construction may impact the surroundings of these historic sites, but not the properties themselves. It should be noted that the church has been adaptively used as a residence and antique store.

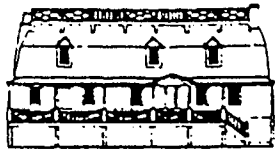
We would appreciate it if you would review this information at your earliest convenience. Please feel free to call me at 465-3121 with your comments, or they can be faxed to the same number.

Sincerely,

Lisa Jensen Wingate

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MARYLAND
HISTORICAL



TRUST

Parris N. Glendening, Governor
Patricia J. Payne, Secretary

November 21, 1996

Office of Preservation Services

NOV 25 1996

Dr. Yale Stenzler, Executive Director
Public School Construction Program
200 West Baltimore Street
Baltimore, MD 21201-2595

Re: Proposed Western
Elementary School #3,
Howard County; MD960513-
0320


Dear Dr. Stenzler:

Howard County Public Schools (HCPS) has undertaken cultural resource investigations at the Western Elementary #3. Site in Glenelg and forwarded the resulting documentation to the Trust. Heritage Resources, Inc., prepared A Phase I Intensive Archaeological Survey of the Howard County Hunt Club Site (18HO217) for the Proposed Western Elementary School #3, Howard County, Maryland (31 October 1996). Lisa Jensen Wingate completed the revised Maryland Inventory of Historic Properties Form for the Howard Hunt Club (HO-14). This office has completed its review of each report; our comments are outlined below.

The archeology report comprehensively describes the survey's goals, methods, and results. It contains a well articulated research design and addresses the Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994). In our opinion, the level of background research and fieldwork was sufficient to identify the full range of archeological properties in the area of potential effects.

Shovel testing around the mid-nineteenth-century Howard Hunt Club house identified a historic archeological site. This site, 18HO217, measures about 140 x 140 m and yielded a generally light scatter of 452 late nineteenth through late twentieth-century artifacts. One concentration of artifacts was found northwest of the standing house. This cluster appears to represent a twentieth-century trash dump. A feature of rocks in the same area may be the foundation ruins of an outbuilding, which was demolished in the 1970s. Twentieth-century disturbances of trash deposition and grading indicate the site lacks integrity. Further, the discovery of artifacts (e.g., redware and whiteware) with long date ranges



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100 Community Place • Crownsville, Maryland 21032 • (410) 514-7637

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V-OA-8

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Dr. Yale Stenzler
November 21, 1996
Page 2

impedes important research into mid-nineteenth century lifeways. We concur, therefore, that site 18HO217 is ineligible for the Maryland Register of Historic Properties. The site warrants no additional study.

We have several minor comments on the draft archeological report that the consultant should address in a revised volume:

- 1) Editing of typographical and grammatical errors is needed on pages iv, 11, 14, 23, 29, 33, 35, 36, and 51.
- 2) The Table of Contents should indicate that the References begin on page 42.
- 3) Original photographs or halftones should replace photocopied photographs.
- 4) Appendix C should include a more detailed resume for the principal investigator outlining at least a sample of her past archeological projects as supervisor and student (cf. Standards and Guidelines, p. 57).

Regarding the Howard Hunt Club, the consultant updated the existing Maryland Inventory form with a more comprehensive description of the property, a detailed history of the fox hunting club and extensive photographic coverage of the property. In terms of format, the draft submittal appears to meet the Guidelines for Completing the Maryland Inventory of Historic Properties Form. We request that the final, original form be submitted to Ms. Marcia Miller of the Trust.

The Trust focused our review on the history of the Howard Hunt Club and its significance. The documentation in the Maryland Inventory form supports that the property is significant for its association with the Hunt Club. The social/recreational organization was established in 1930 and purchased the Glenelg property the following year for its headquarters. The consultant concluded that the property was not eligible due to a lack of integrity because several of the buildings on the property are less than fifty years old.

The Trust disagrees with this conclusion. We believe that the two most important features which define the significance of the property are the house and the barn, both of which retain integrity of location, design, and materials from the 1930s when the Hunt Club originated. The ca. 1950 addition to the house does not overwhelm the earlier section. Major alterations to the landscape have not occurred so that the physical environment of the property

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Dr. Yale Stenzler
November 21, 1996
Page 3

also exhibits its significance. The continuing use of the property as a hunt club is illustrated through its evolutionary development. In our opinion, the submitted documentation supports Maryland Register eligibility for the Howard Hunt Club under Criterion A.

An alternative location for this educational complex would provide the preferred outcome for the project's historic preservation issues. However, it is our understanding that PSCP and HCPS have determined that this site is suitable for its educational needs and that further consideration of alternative sites will not occur. Because the Howard Hunt Club is eligible for the Maryland Register, the proposed demolition and school construction constitutes an adverse effect under the Maryland Historic Preservation Law. The consultant has presented a brief written discussion why the site design cannot accommodate the retention of the clubhouse and barn on the property. This office would appreciate receiving a more detailed justification why the 78 acre site cannot accommodate the elementary school and the Hunt Club. Once this issue is clarified, appropriate measures must be negotiated to mitigate the adverse effect of demolition. As you are aware, the development of a Memorandum of Agreement will be necessary to formalize the mitigation measures.

We look forward to working with you and Howard County Public Schools to resolve the historic preservation issues satisfactorily. If you have any questions, please contact Dr. Gary Shaffer (archeology, 410-514-7638) or Ms. Lauren Bowlin (structures, 410-514-7637).

Sincerely,



J. Rodney Little
Director

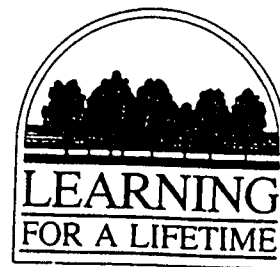
JRL/GDS/LLB
9603680

cc: Mr. William Grau (HCPS)
Ms. Lori Frye (Heritage Resources)
Ms. Myra Barnes (MOP)
Ms. Lisa Jensen Wingate
Mrs. Phillip Thompson
Mr. William O'Brien

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The Howard County Public School System

10910 Route 108 Ellicott City, Maryland 21042-6198 (410) 313-6600



December 18, 1996

Mr. J. Rodney Little, Director
Maryland Historical Trust
Office of Preservation Services
Division of Historical and Cultural Programs
100 Community Place
Crownsville, Maryland 21032

RE: Western Elementary School #3, Howard County

Dear Mr. Little:

This letter is in response to your correspondence to Dr. Yale Stenzler dated November 21, 1996 in regard to the above referenced school site.

Your comments related to Heritage Resources, Inc.'s archeological report are being addressed and the revisions will be submitted to your office as soon as they are complete. We appreciate Dr. Shaffer's thorough review of the report and we certainly concur with his conclusion that the site warrants no further archeological study.

We are providing to you a complete justification as to why the structures (i.e.-the house and barn) must be demolished as proposed by the School System. I have enclosed a site plan indicating both the initial (elementary school) area of development and the future development of the middle school, currently scheduled for a 2003 opening. This plan also shows the significant environmental features and development related constraints on the property.

The justification as to why the site can not accommodate the schools and the Hunt Club can be summarized as follows:

- 1) Access to the site can only be derived from Triadelphia Road and not Maryland Route 32 pursuant to State Highway Administration regulations. This factor is important to understand the proposed development of the site as shown on the plan. Access from a local road such as Triadelphia Road is also desirable from the School System's perspective for safety of both bus and car traffic and pedestrian movements. This restriction played a large part in locating the schools and the associated parking areas and play fields in the most visible and developable area of the site.
- 2) There are significant environmental features on the site. The site plan indicates in light blue the wetland areas on the site which are undevelopable. These wetland areas and the steep slopes which surround them have created "islands" of developable ground in the wooded portion of the property, but because these areas are not accessible, they basically are also rendered undevelopable. The area of existing woodland is shaded green and the green striped area indicates the only wooded portion of the site which may be used for future middle school play fields. There is potential to use these environmental features as an educational tool, and they encompass approximately 40 acres of the overall 78 acre site.
- 3) The elementary school play fields must be located directly adjacent to the school for safety and educational program reasons. Because the house and barn (colored in orange behind the proposed elementary school) are in a location which must accommodate the fields, their demolition has been

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PARRIS N. GLENDENING
GOVERNOR

STATE OF MARYLAND
PUBLIC SCHOOL CONSTRUCTION PROGRAM
200 W. BALTIMORE STREET
BALTIMORE, MARYLAND 21201
(410) 767-0610

INTERAGENCY COMMITTEE ON SCHOOL CONSTRUCTION

YALE STENZLER
EXECUTIVE DIRECTOR
NANCY S. GRASMICK
CHAIRPERSON

January 3, 1997

Mr. J. Rodney Little
Director
Maryland Historic Trust
Office of Preservation Services
Division of Historical and Cultural Programs
100 Community Place
Crownsville, MD 21032

Re: Western Elementary School #3
Howard County

Dear Mr. Little:

The Public School Construction Program concurs with the Howard County Board of Education's conclusion that the above referenced site cannot accommodate the elementary school and the Howard Hunt Club.

We have reviewed the justifications outlined in the December 18, 1996 letter from the Board of Education to the Maryland Historic Trust. Although the property consists of 78 acres, the site plan clearly illustrates the constraints of the property for siting the elementary school and a future middle school. Based on our review of this material and on our discussions with the Board of Education, we have determined that it is in the best interests of the children and the school system that the house and barn be demolished.

We are prepared to work with you and the Board of Education to develop a Memorandum of Agreement to formalize the mitigation measures which the Trust will require.

If you have any questions, please contact me at (410) 767-0610.

Sincerely,

Yale Stenzler
Executive Director

BS:reb

cc: Mr. Bill Grau

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) is entered into this 10th day of FEBRUARY, 1997, by and between the Public School Construction Program (PSCP), the Maryland Historical Trust (Trust) and Howard County Board of Education (BCE).

WHEREAS, the BOE will undertake the construction of Western Elementary School #3, which necessitates the demolition of two contributing resources of the Howard Hunt Club, HO-14, (13402 Tridelphia Rd., Glenelg, MD) hereinafter referred to as the Project;

WHEREAS, the Project is a nonstate capital project to be funded in part by state funds from the State of Maryland PSCP;

WHEREAS, prior to the approval of the Project, PSCP as the responsible state unit is required under Article 83B, §5-618 of the Annotated Code of Maryland (the Act) to consult with the Trust;

WHEREAS, in consultation with the Trust, PSCP acknowledges that the Project has adverse effects on the Howard Hunt Club, a property eligible for the Maryland Register of Historic Properties;

WHEREAS, in accordance with the Act, PSCP has consulted with the Trust to determine means of avoiding, mitigating or satisfactorily reducing the adverse effects of the Project; and the Whereas clauses form a substantive part of this Agreement;

NOW, THEREFORE, PSCP, the BOE and the Trust agree that the BOE will implement the Project in accordance with the following stipulations as a condition of state funding.

Stipulations

I. Public Interpretation: In consultation with the Trust, the BOE will prepare an exhibit for the new school which demonstrates the history of the school site with particular focus on the Howard Hunt Club. To be displayed in a highly visible location, the exhibit will draw on the documentation contained within the Maryland Inventory of Historic Properties Form prepared by Lisa Jensen Wingate. The BOE is encouraged to draw from the archeological documentation as well. The BOE will formulate a written proposal for the exhibit which includes subject headings for the text, suggested illustrations and/or salvaged material, and information about exhibit layout and design. The proposal must be submitted to the Trust within nine months from the execution of this agreement. If the BOE has not received written comments on the proposal within 45 days of receipt by the Trust, the BOE may proceed with said proposal. Execution and display of the exhibit must occur within the first semester of the school's opening and remain on display for at least three months. The Office of Preservation Services of the Trust should be notified in writing when the exhibit is on display.

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Memorandum of Agreement
Western Elementary School #3
Page 2

II. Dispute Resolution: In the event that the BOE and the Trust are unable to resolve any dispute under this MOA, in accordance with this Act, PSCP shall either present the disputed matter to the Maryland Advisory Council on Historic Preservation (Council) for the Council's review or permit the Trust to present the matter to the Council for review. The Council's determination shall be binding on all parties to this MOA.

The execution of the MOA and implementation of its terms evidences that PSCP has complied with the requirements of the Act.

BY: [Signature] DATE: 2-10-97
Howard County Board of Education

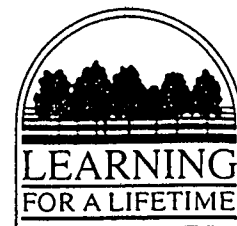
BY: [Signature] DATE: 2-10-97
Maryland Historical Trust

BY: [Signature] DATE: 2/11/97
Public School Construction Program

453

The Howard County Public School System

10910 Route 108 Ellicott City, Maryland 21042-6198 (410)313-6600



February 19, 1997

Dr. Yale Stenzler, Executive Director
State of Maryland Public School Construction Program
200 W. Baltimore Street
Baltimore, Maryland 21201

Dear Yale:

Enclosed is a fully executed copy of the Memorandum of Agreement for the Western Elementary School #3 project as prepared by the Maryland Historical Trust. A copy has also been sent to Lauren Bowlin of the Trust.

I am pleased that we have been able to come to an amicable conclusion regarding this issue. Thank you for your assistance and cooperation in finalizing the agreement.

Sincerely,

William Grau
Office of Planning and Construction

cc: Ms. Lauren Bowlin, Maryland Historical Trust



Maryland Department of Transportation
State Highway Administration

454

Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

April 10, 1998

Re: Project No. HO756B11
MD 32: MD 108 to I-70
Howard County, Maryland

Chief James Heller
Howard County Fire Department
6751 Columbia Gateway Drive, Suite 400
Columbia MD 21046

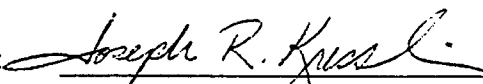
Dear Chief Heller:

The Maryland State Highway Administration is currently performing Project Planning activities for the widening of MD 32 from MD 108 to I-70. Enclosed are mapping and descriptions of the proposed alternatives which we have included for your review. We are requesting your input in determining whether emergency services and response times are affected by our proposed alternatives.

We ask that you provide a response by May 4. Thank you for your attention in this matter. Please feel free to contact Mr. Robert Ritter, Project Manager at 410-545-8513, if you have any questions or need additional information.

Very truly yours,

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

by: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

LHE:AEG
Enclosures

cc: Ms. Allison Grooms
Mr. Vaughn Lewis
Mr. Robert Ritter
Mr. Robert Sanders

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

V-OA-12

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Nixon's Farm Interchange (Option 2)

Nixon's Farm Option 2, would provide a tight loop ramp and an outer ramp connection to both northbound and southbound MD 32 with a bridge crossing at the existing Nixon's Farm driveway. Access would be provided to the properties on the east side of MD 32 through the interchange or from Wellworth Way.

MD 144 Interchange (Option 3 Modified)

Access would be provided to MD 144 with tight loop ramps and outer ramps from both northbound and southbound MD 32. The ramps would be located in the southeast and southwest quadrants of the interchange in order to provide adequate weave distances from the I-70 ramps.

MD 144 Interchange (Option 4)

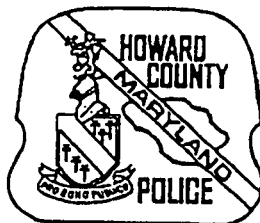
This interchange would provide one interchange for all of the movements at MD 144 and Nixon's Farm. The ramp configuration is similar to that used for Option 3 Modified, however, a driveway access would be provided on the west side of MD 32 connecting the right-in/right-out access point with Nixon's Farm. Roundabouts would be provided at the intersection of the ramps and MD 144. The properties located east of MD 32 would have access from either MD 32 or Wellworth Way.

I-70 Interchange (Option 2)

This interchange would provide for all movements being made on the south side of MD 144 to allow for sufficient weave distances between the I-70 ramps and the proposed ramps at MD 144. Roundabouts and ramp connections would be constructed at MD 144.

454

MAY 14 '98 AM 10:16 OPPE



DEPARTMENT OF POLICE

May 8, 1998

Robert Ritter
Project Manager
State Highway Administration
P.O. Box 717
Baltimore MD 21203-0717

Dear Mr. Ritter:

I am writing in response to your letter to me dated April 10, 1998, regarding the proposed improvements to Maryland Route 32 between Clarksville and Route 70 (Project# HO756B11). I have reviewed the material provided and would provide the following information:

- I find nothing in the proposal (Alternative I or II) which would adversely effect police emergency response times. As I am sure you are aware, the current 2-lane configuration in this area results in long lines of traffic, particularly during rush hours, thus slowing emergency responses. Either proposed improvement would enhance both the safety and timeliness of emergency responses.
- The current plans do not specify emergency crossovers. I would recommend that crossovers be installed at regular intervals to reduce the time required for emergency equipment to reach incidents in the opposing lanes of travel.

I hope that you find this information helpful. I would ask that you keep me informed as to the progress of this important project. Please feel free to contact me during business hours at (410) 313-3207 if you have further questions relating to this topic.

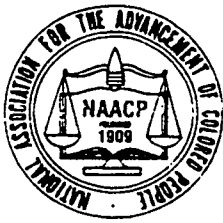
Sincerely,

A handwritten signature in black ink, appearing to read "Major Jeffrey Spaulding".

Major Jeffrey Spaulding
Deputy Chief for Operations

cc: Chief G. Wayne Livesay
Sgt Donahue - TES

NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE



HOWARD COUNTY NAACP
POST OFFICE BOX 622
COLUMBIA, MD 21045
(410) 792-3706

June 1, 1998

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Mr. Elhart E. Flurry

Mr. Louis H. Ege, Jr.
Deputy Director
Maryland Department of Transportation
707 North Calvert Street
Baltimore, MD 21203 - 0717

RE: Project No. HO756b11
MD32: MD 1089 to I-70
Howard County, MD


Dear Mr. Ege:

The Howard County Branch of the National Association for the Advancement of Colored People, NAACP, would like to extend our appreciation for being included in the referenced growth and development project. We are particularly pleased that your organization recognizes that the true project for growth and development is including the entire community. The Howard County NAACP have surveyed the project areas and have endeavored to contact as many people and business as practical. We did not encounter any minority churches or groups in the impacted area who were unaware of the project. We therefore believe that your present methods of notification are apparently sufficient. We are also pleased by your expressed commitment to foster public involvement and we are confident that this will reflect in minority and women representation in the construction and contract phase of the project. It is that manner of involvement that will unite our community into the 21-century and make this project a success. Please keep us apprised of your hiring statistics for this project.

Thank you for your time and consideration.

Sincerely,

Jenkins Odoms, Jr.
President
Howard County Branch NAACP


David W. Lindsey
Labor and Industry Chair

457
JUN 11 1998
FBI - BALTIMORE



DEPARTMENT OF PLANNING & ZONING

Joseph W. Rutter, Jr., Director
June 3, 1998

Mr. Joseph R. Kresslein
Assistant Division Chief
Project Planning Division, Maryland State Highway Administration
P.O. Box 717
Baltimore, MD 21203-0717

Re: Project No. HO756B11 Route 32
Agricultural Land Preservation Impacts

Dear Mr. Kresslein:

Thank you for your information regarding the possible impact of the proposed Route 32 expansion, and the possible effect on several properties which are subject to Howard County Agricultural Land Preservation Program easements. Howard County's rights as a holder of an Agricultural Land Preservation easement are subject to the State Highway Administration's power of eminent domain. Section 2.515 "Condemnation of land under agricultural preservation" of the Agriculture Article Annotated Code of Maryland provides a definition of the compensation due to the landowner and easement holder, and specifically includes county agricultural land preservation programs.

The State Highway Administration should pursue every alternative to the condemnation of agriculturally preserved property for right-of-way or easements. Should the final design and construction of the road improvements require condemnation proceedings, the County would not be hostile to such an action, provided that all feasible efforts to minimize or eliminate the impacts to preserved parcels have been made. The County requests that SHA keep the Agricultural Land Preservation Program advised of the ongoing engineering design and right-of-way requirements of this project, including any offsite easements which affect agriculturally preserved properties.

If you should have any questions, please give me a call at (410) 313-5407.

Sincerely,

William T. Pickens, A.I.C.P.
Agricultural Land Preservation Program Administrator

cc: Joseph W. Rutter, Director, DPZ
Carl Balser, Chief, Transportation Planning
Ruth Fahrmeier, Senior Asst. County Solicitor
AgRead File

T:\AGPRES\SHA0520.LT2



Department of Recreation and Parks
BUREAU OF PARKS & PROGRAM SERVICES

John R. Byrd, Chief

Mr. Robert Ritter
Project Manager, Project Planning Division
Maryland State Highway Administration
Mailstop C-301, 707 North Calvert Street
Baltimore, MD 20202
cc: G. Arthur, J. Byrd, M. Raab, J. Brock

Dear Mr. Ritter:

As the agency responsible for managing county land within the Middle Patuxent watershed, the department is concerned about the potential impacts of widening MD 32. As I am sure you are well aware, ecosystems are not closed systems but are influenced by both biotic and abiotic factors that often originate outside what we deem an ecosystem boundary. The expansion of MD 32 will impact such factors at the site of the expansion and potentially downstream.

The Middle Patuxent Environmental Area (MPEA) has several tributaries leading into it that receive runoff from MD 32. The department would like to know what the proposed impacts of widening MD 32 would have on these tributaries and how this may in turn impact waterways in the MPEA. Specifically, what is the proposed immediate impact, both adjacent to the site of construction and downstream, from increased sedimentation as a result of this expansion? Also, although there is undoubtedly automobile fuel and oil on MD 32 that gets into these waterways at present, with the widening of MD 32 there will be increased traffic and thus an increase in the amount of these pollutants getting into these waterways. What long-term impacts from this type of runoff are expected?

I would like to thank you for your time and look forward to your reply. You may reach me at (410) 313-4726.

Sincerely,

Jeffrey P. Duguay, Ph.D.
Manager, Middle Patuxent Environmental Area

459
JUL 21 1990 PM 3:14 OFFICE



Maryland Department of Transportation
State Highway Administration

460
Parris N. Glendening
Governor

David L. Winstead
Secretary

Parker F. Williams
Administrator

July 29, 1998

Jeffrey P. Duguay, Ph.D.
Manager, Middle Patuxent Environmental Area
Howard County
Department of Recreation and Parks
Bureau of Parks and Program Services
7120 Oakland Mills Road
Columbia MD 21046-1677

Dear Dr. Duguay:

Thank you for your recent correspondence regarding the MD 32 planning study and for attending the June 16 Informational Workshop at Glenelg High School. You expressed concerns about downstream impacts, specifically to the Middle Patuxent Environmental Area (MPEA), associated with proposed improvements to MD 32 between MD 108 and I-70.

As part of the MD 32 planning study, impacts to waterways and associated wetlands resulting from the proposed alternatives are currently being assessed and the results will be incorporated in the Draft Environmental Impact Statement (DEIS) being prepared for the project. The DEIS will be made available to the public prior to a Combined Location and Design Public Hearing, tentatively scheduled for January 1999.

In addition, an analysis of the Secondary and Cumulative Effects of the project will be conducted and documented in the DEIS. The State Highway Administration is coordinating with Federal and State resource agencies on the Secondary and Cumulative Effects analysis for this project. I have asked Ms. Allison Grooms, Environmental Manager for the MD 32 project, to seek your input in this regard as it relates to the MPEA.

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21202-0717

V-OA-17

461
Jeffrey P. Duguay, Ph.D.
Page Two

Again, thank you for your letter. We will keep you informed as the study progresses. In the meantime, if you have any questions or comments, please contact the project manager, Robert Ritter, at 410-545-8513 or Ms. Grooms at 410-545-8568. Both Robert and Allison may be reached toll-free within Maryland at 1-800-548-5026.

Very truly yours,

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

By: Robert Ritter
Robert Ritter
Project Manager
Project Planning Division

cc: Ms. Allison Grooms, Environmental Manager, SHA (w/incoming)



DEPARTMENT OF PLANNING & ZONING

Joseph W. Rutter, Jr., Director

July 20, 1998

Neil J. Pedersen, Director
Office of Planning & Preliminary Engineering
State Highway Administration
Mail Stop C-411
707 North Calvert Street
Baltimore, MD 21202

Dear Mr. Pedersen:

We are writing as a follow-up to recent correspondence and conversations with regard to the SHA Project Planning Study of Maryland Route 32 from MD 108 to I-70. In particular, we would like to rectify any misperceptions with respect to Howard County's position concerning this project.

Howard County strongly and unequivocally supports the continuation and completion of this study. This project is consistent with all of the County's planning activities and is critically important to us and this region of the State. As indicated by SHA's analysis, traffic volumes on this segment of MD 32 have been rising steadily and are anticipated to continue rising well into the next century. These increased traffic levels have caused a deterioration of level of service throughout the study corridor especially during morning and evening peak periods. More importantly, there has been a marked rise in accidents, some resulting in fatalities. Furthermore, as a direct result of increasing traffic volumes, access to and from the communities adjacent to MD 32 has become increasingly time consuming and hazardous.

The recent increases in traffic on this highway segment as well as projected future increases are due primarily to development growth beyond the project boundaries. Based on data from SHA and the Baltimore Metropolitan Council (BMC), much of this traffic is enroute from areas north and west of the study area (e.g. Westminster, Frederick, etc.) to areas south and east of the study area (e.g. Columbia, Fort Meade, BWI Airport, etc.). Since MD 32 is a part of the National Highway System (NHS), we believe that it is appropriate for this roadway to serve as a regional connector, providing an important linkage among urbanized areas within the State and the Mid Atlantic region. It is worth noting in this regard that a portion of the through traffic movement on MD 32 is by large commercial vehicles, including significant interstate travel.

Conversely, it is clear that the dramatic growth in traffic within the corridor is not due to existing or projected development within the study area. The attached map explicitly illustrates the fact that most of the land in the study area is committed to the State and County's Agricultural Preservation Programs, dedicated environmental easements, homeowner's open space parcels and land developed for rural residential use or subdivided for rural residential use. There is simply no opportunity for new development from within the study area which could generate substantial traffic growth. The fact that this project is outside of the Howard County priority funding area under Smart Growth should not, therefore, based on the above, be a determinant in implementation of this improvement.

463

Neil J. Pedersen

July 20, 1998

2


As you are no doubt aware, the upgrading of this section of MD 32 to a four lane freeway segment is included in the adopted 1990 Howard County General Plan and the adopted 1994 Baltimore Regional Transportation Plan. These documents consider the needs for a balanced regional highway network which provides for both mobility of through traffic and access to vicinal land uses. Further, by limiting access to this section of MD 32 through construction of a limited number of interchanges and the purchasing of access controls where they do not currently exist, the reconstruction of MD 32 will help in our efforts to limit development in this area.

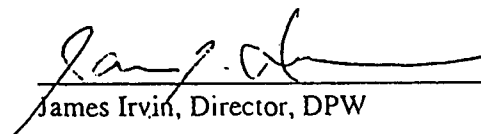
The long range implications of not building this vital link in the regional network are severe. Certainly, one would expect the current congestion levels and accident rates within the study area to escalate further. Since the existing rural collector roads in western Howard County are inadequate to accommodate the growth in through traffic, significant traffic diversion will occur. The regional traffic thus diverted from MD 32 will add to the already high traffic volumes projected for other regional facilities such as I-70, US 40, US 29, MD 100 and the west side of the Baltimore Beltway (I-695). In Howard County's view, this is an unacceptable alternative.

In conclusion, we urge SHA to complete this project expeditiously in order to mitigate these escalating safety and congestion concerns.

We would be happy to meet with your or your staff to discuss these clarifications in greater detail.

Sincerely,


Joseph W. Rutter, Jr., Director, DPZ


James Irvin, Director, DPW

cc: Charles I. Ecker, Howard County Executive
David Winstead, Secretary, MDOT
Parker Williams, Administrator, SHA
Ronald Kreitner, Director, MOP
Paul Farragut, Executive Director, BMC
Harvey Bloom, Director of Transportation, BMC
TSC Members
Carl Balser, Chief, Division of Transportation Planning
File: MD 32



Maryland Department of Transportation
State Highway Administration

464
Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

August 11, 1998

Mr. Jim Irvin
Director
Howard County
Department of Public Works and Transportation

Mr. Joseph Rutter
Director
Howard County
Department of Planning and Zoning
3430 Courthouse Drive
Ellicott City MD 21043

Dear Mr. ^{Jim}Irvin and Mr. ^{Joe}Rutter:

Thank you for your recent letter regarding the project planning study of MD 32 from MD 108 to I-70. I appreciate your interest and support for this project.

Please be assured that the State Highway Administration is committed to expeditious completion of the project planning phase of this project. The support and assistance of Howard County is essential in working with state and federal regulatory agencies to reach a successful conclusion to the National Environmental Policy Act (NEPA) process. We look forward to your continued cooperation.

Thank you again for your letter. If you have any questions or further comments, please feel free to call me or the Project Manager, Robert Ritter, who may be reached at 410-545-8513 or toll free at 1-800-548-5026.

Very truly yours,

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

cc: The Honorable Charles I. Ecker, County Executive, Howard County

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 207 North Calvert Street • Baltimore, Maryland 21202

V-OA-19



Maryland Department of Transportation
State Highway Administration

October 8, 1998

465
Parris N. Glendening
Governor
David L. Winstead
Secretary
Parker F. Williams
Administrator

Mr. Carl Balser
Transportation Planning
Howard County Planning and Zoning
3430 Courthouse Drive
Ellicott City MD 21043

Attention: Mr. Brian Muldoon

Dear Mr. Balser:

As you are aware, the Maryland State Highway Administration is currently performing Project Planning activities for the widening of MD 32 from MD 108 to I-70. In response to a number of recent citizen requests, we are investigating the feasibility of eliminating the through connection between Fox Valley Estates and Rosemary Lane, as proposed under the current Rosemary Lane interchange option (see attached map). Under this scenario, all access between MD 32 and the Fox Valley subdivision would occur at the proposed Burntwoods Road interchange, approximately 1.3 miles south of the one proposed at Rosemary Lane.

We ask that you review the attached map and provide comments to this office by November 13. Thank you for your attention in this manner. Please feel free to contact me or the Project Engineer, Mr. Vaughn Lewis, at 410-545-8511 or toll-free at 800-548-5026 if you have any questions or need additional information.

Very truly yours,

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

By: Heather Murphy
Heather Murphy
Project Manager
Project Planning Division

Attachment

cc: Mr. Vaughn Lewis, Project Engineer, State Highway Administration

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
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Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717

V-OA-20



**Maryland
Department of
Housing and
Community
Development**

*Division of Historical and
Cultural Programs*

100 Community Place
Crownsville, Maryland 21032

410-514-7600

1-800-756-0119

Fax: 410-987-4071

Maryland Relay for the Deaf:

1-800-735-2258

<http://www.dhcd.state.md.us>

Parris N. Glendening
Governor

Patricia J. Payne
Secretary

Raymond A. Skinner
Deputy Secretary

4666
October 14, 1998

Ms. Cynthia D. Simpson
Deputy Division Chief
Project Planning Division
State Highway Administration
707 North Calvert Street
P.O. Box 717
Baltimore, Maryland 21203-0717

RE: Project No. HO756B11
MD 32: MD 108 to I-70
Howard County, Maryland

Dear Ms. Simpson:

Thank you for your recent letter, dated 5 October 1998 and received by the Trust on 6 October 1998, regarding the above-referenced project. Your letter transmitted the results of SHA's archeological identification and evaluation efforts for this project. In addition, it presented SHA's determination of effect for the undertaking for Trust concurrence. Our comments and concurrence are presented below.

IDENTIFICATION AND EVALUATION

Archeology: We have reviewed a copy of the following draft report, prepared by Archaeological & Historical Consultants, Inc., submitted with your letter: *Phase I Archeological Identification Survey for the Proposed Dualization of Maryland Route 32 from Maryland Route 108 to Interstate 70, Howard County, Maryland* (Rue 1998). The draft presents detailed documentation on the survey's goals, methods, results, and recommendations. It is well written and contains numerous clear illustrations to document the fieldwork results. The draft meets the reporting requirements of the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). Our only comments on the draft are that the consultant should prepare and submit a completed NADB - Reports Recording form and an inventory update form for previously recorded site 18HO139. We look forward to receiving a copy of the final report, when available.

The survey examined previously recorded site 18HO139 and identified 7 new archeological sites (18HO230 through 18HO236) in the area of potential effects. The survey confirmed that site 18HO139 consists of a widely dispersed lithic scatter. Sites



Ms. Cynthia D. Simpson
October 14, 1998
Page 2

18HO230 and 18HO236 represent very low density lithic scatters, consisting of 4 artifacts at each site. Site 18HO231, situated on a steep sided knoll, includes a sparse scatter of 4 flakes and one Late Archaic period point. Site 18HO233 contains the remains of a small stone foundation and a few (10 items) scattered artifacts dating from the late 19th - early 20th c. The site likely represents an ancillary outbuilding for a nearby farm illustrated on the 1878 atlas. Site 18HO234 includes a displaced wooden frame shed and scatter of late 19th - early 20th c. artifacts, predominantly architectural items. The site was likely associated with a nearby farmstead illustrated on the 1878 atlas. Site 18HO235 consists of a moderate scatter of domestic and architectural artifacts dating from the late 19th - 20th c. Testing recovered the artifacts from a disturbed fill context and revealed evidence of extensive disturbance to the site area from former roadway construction. Based on the survey results, we agree that the above-mentioned six sites do not have the potential to yield important information given the nature of the deposits and loss of integrity. Thus, we concur with SHA that sites 18HO139, 18HO230, 18HO231, 18HO233, 18HO234, 18HO235, and 18HO236 are not eligible for the National Register of Historic Places.

The remaining site, 18HO232, consists of a moderate scatter of lithic artifacts located on a small knoll. Testing recovered 52 artifacts, including three projectile points dating from the Late Archaic period and a variety of lithic debitage. We agree that Phase II investigations would be warranted to conclusively evaluate the site's eligibility for the National Register of Historic Places. According to your letter, the site is situated outside the limits of proposed construction for this undertaking, and SHA intends to erect temporary protective fencing of the site during construction. We concur that fencing is an appropriate protection for this potentially significant resource.

Architecture: As a result of past coordination between the Trust and SHA, our agencies identified two National Register-eligible properties in the APE: Westwood M.E. Church (HO-207) and the Milton Shipley Farm Corncrib (HO-645). Both of these properties remain eligible for the National Register of Historic Places. SHA states in its letter that the work on MD 32 will have no impact on the Westwood Church, and will have no adverse impacts on the Shipley Corncrib, primarily because of the topography and landscaping surrounding each site. The Trust would encourage SHA to seek ways to maintain as much of the landscaping buffer as possible in the vicinity of the Shipley Corncrib.

ASSESSMENT OF EFFECTS

Based on the documentation presented in your letter, we concur that construction of the Build Alternatives I or II would have no adverse effect on historic properties. If SHA is not able to avoid impacts to site 18HO232 and protect the site during construction, Phase II investigation of the site to determine its eligibility for the National Register of Historic Places would be warranted, along with additional consultation with the Trust for Section 106 purposes.

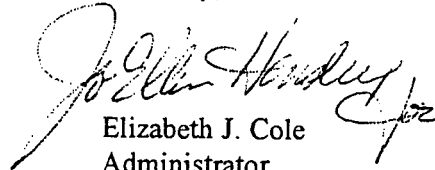
468

Ms. Cynthia D. Simpson
October 14, 1998
Page 3

If you have questions or require additional information, please call Ms. Anne Bruder (for structures) at (410) 514-7636 or me (for archeology) at (410) 514-7631.

Thank you for your cooperation and assistance.

Sincerely,



Elizabeth J. Cole
Administrator
Archeological Services

EJC/AEB

cc: Mr. Bruce Grey
Dr. Charles Hall
Ms. Rita Suffness
Ms. Pam Stephenson



4169

DEPARTMENT OF POLICE

October 28, 1998

Louis H. Ege, Jr.
Deputy Director
Office of Planning and Preliminary Engineering
State Highway Administration
P.O. Box 717
Baltimore, MD 21203-0717

Dear Mr. Ege:

I have reviewed the proposed alignment of the MD Rt. 32 and Rosemary Lane interchange, Option 2. This proposal would eliminate access to and from Fox Valley Estates via West Frontage Road.

The Police Department is opposed to this option which would serve to extend emergency response time to residences in Fox Valley Estates for emergency units responding from the north. These units would be forced to use the Burntwoods Road interchange and "double back" into Fox Valley Estates, extending the distance traveled by nearly 3 miles. I am aware that the Department of Fire and Rescue Services shares this concern. They will be forwarding their written comments in the near future.

Please feel free to contact me should you have any questions or additional concerns.

Sincerely,

Major Jeffrey Spaulding
Major Jeffrey Spaulding
Deputy Chief for Operations

CC: Chief G. Wayne Livesay
Chief James Heller, DFRS

WJS/KEF
foxvalley.sha



DEPARTMENT OF FIRE & RESCUE SERVICES

Chief James E. Heller

November 5, 1998

Louis H. Ege, Jr., Deputy Director
Office of Planning and
Preliminary Engineering
Maryland Department of Transportation
State Highway Administration

Dear Mr. Ege:

The Department of Fire & Rescue Services has reviewed the proposal to eliminate the through connection between Fox Valley Estates and Rosemary Lane—Rosemary Lane Option #2.

The Department is opposed to the proposal because it would increase the emergency response time to the River Valley Chase area. Our primary response to that area is from the north. The road closing would add 3 to 5 miles travel distance as well as additional intersections. The addition of 3 to 5 minutes to a medical or fire situation could have a negative impact to the citizens.

If you have any questions please contact me at (410)313-6042.

Sincerely yours,

Deputy Chief W. Raymond Faith
Bureau of Life Safety

WRF:cls

pc: roads file

Ref: F:\WP\WRFCORRS\lege-Rt 32 widening.wpd



Department of Public Works
BUREAU OF ENGINEERING

Ronald G. Lepson, Chief

November 20, 1998

Ms. Heather Murphy
Project Manager
Office of Planning and Preliminary Engineering
Maryland State Highway Administration
P.O. Box 717
Baltimore, MD 21203-0717

Dear Ms. Murphy:

This is in response to your request for our review of the proposed elimination of the through connection between Fox Valley Estates and Rosemary Lane.

We reviewed the concept and also received comments from the Development Engineering Division of DPZ. We recommend that the connection remain open for the following reasons:

1. The emergency response time would increase to the Fox Valley Estates because most often the emergency vehicles would be coming from the north. This is a concern for both the Department of Police and Fire and Rescue Services.
2. If an incident occurred on MD 32 between Burntwoods Road and Rosemary Lane, it would allow for a temporary alternate route.
3. It does not appear that this route would attract a lot of cut through traffic.
4. If an incident occurred at the Burntwoods Road interchange, it would allow the traffic from the Pfefferkorn Road and Fox Valley Estates access to MD 32.

If you have any questions, please contact LeAnn Parmenter Kniskern at (410) 313-4003.

Very truly yours,

Elizabeth A. Calia, P.E., Chief
Transportation Projects & Watershed Management Div.

LPK:rmi

cc: Tom Auyeung
Brian Muldoon
File: doc\murphy.nov

V-OA-24



Maryland Department of Transportation
State Highway Administration

December 4, 1998

RE: Project No. HO756B11
MD 32: MD 108 to I-70
Howard County, Maryland

472
Parris N. Glendening
Governor

David L. Winstead
Secretary

Parker F. Williams
Administrator

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Mr. Little:

We are pleased to submit two copies of the final technical report entitled **Phase I Archeological Identification Survey for the Proposed Dualization of Maryland Route 32 from Maryland Route 108 to Interstate 70, Howard County, Maryland**, and a completed NADB Reports Recording Form (Enclosure). The report was prepared for the State Highway Administration by Archaeological and Historical Consultants, Inc., for the subject project. All previous comments and suggested revisions have been addressed.

We look forward to working with you in the future. Should you have any questions or wish additional information, please feel free to contact Ms. Mary F. Barse at (410) 321-3236.

Very truly yours,

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

by: Cynthia D. Simpson
Cynthia D. Simpson
Deputy Division Chief
Project Planning Division

V-0A-25

My telephone number is (410) 545-8510

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

473

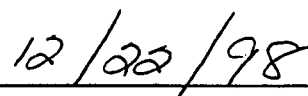
Mr. J. Rodney Little
MD 32: MD 108 to I-70
Page 2

Enclosure

cc: Mr. Bruce M. Grey
Ms. Allison Grooms
Dr. Charles L. Hall
Mr. Joe Kresslein
Ms. Pam Stephenson
Ms. Rita Suffness

Accepted by:


State Historic Preservation Office


Date

474

VI. LIST OF PREPARERS

*MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland*



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

VI. List of Preparers

A. Federal Highway Administration

Pamela Stephenson
Environmental Protection Specialist

Edwin Okonkwo
Area Engineer

B. Maryland State Highway Administration

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

Cynthia D. Simpson
Deputy Division Chief, Project Planning Division

Robert K. Sanders
Assistant Division Chief, Project Management

Joseph R. Kresslein
Assistant Division Chief, Environmental Management

Charles Hall
Archeology Group Leader

Heather Murphy
Project Manager

Allison E. Grooms
Environmental Manager

Vaughn Lewis
Project Engineer

Mary F. Barse
Archeologist

Rita M. Suffness
Architectural Historian

C. Rummel, Klepper and Kahl Team

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MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



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The Honorable James Robey
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3430 Courthouse Drive
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MD 108 to I-70, Howard County, Maryland



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IX. APPENDICES

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

IX. Appendices

Appendix A

Build Alternatives Mapping, at 1" = 400' Scale

- | | |
|-----------|---|
| Figure 1 | MD 108 to south of Linden Church Road Interchange (Build Alternatives I and II) |
| Figure 2 | Linden Church Road Interchange Option 2 and Dayton Shop Interchange Option 1M (Build Alternatives I and II) |
| Figure 3 | Burntwoods Road Interchange Option 2 (Build Alternatives I and II) |
| Figure 4 | Rosemary Lane Interchange Option 2 (Build Alternatives I and II) |
| Figure 5 | Nixon Farm Lane Interchange Option 2, MD 144 Interchange option 3M, and I-70 Interchange Option 2 (Build Alternative I) |
| Figure 5A | MD 144 Interchange Option 4, and I-70 Interchange Option 2 (Build Alternative II) |

Appendix B

Relocation Act

Appendix C

Farmland Conversion Rating Form

Appendix D

Glossary

Appendix A

Build Alternatives Mapping

Figures 1 through 5A

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MD 108 to I-70, Howard County, Maryland

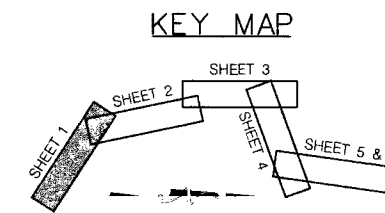
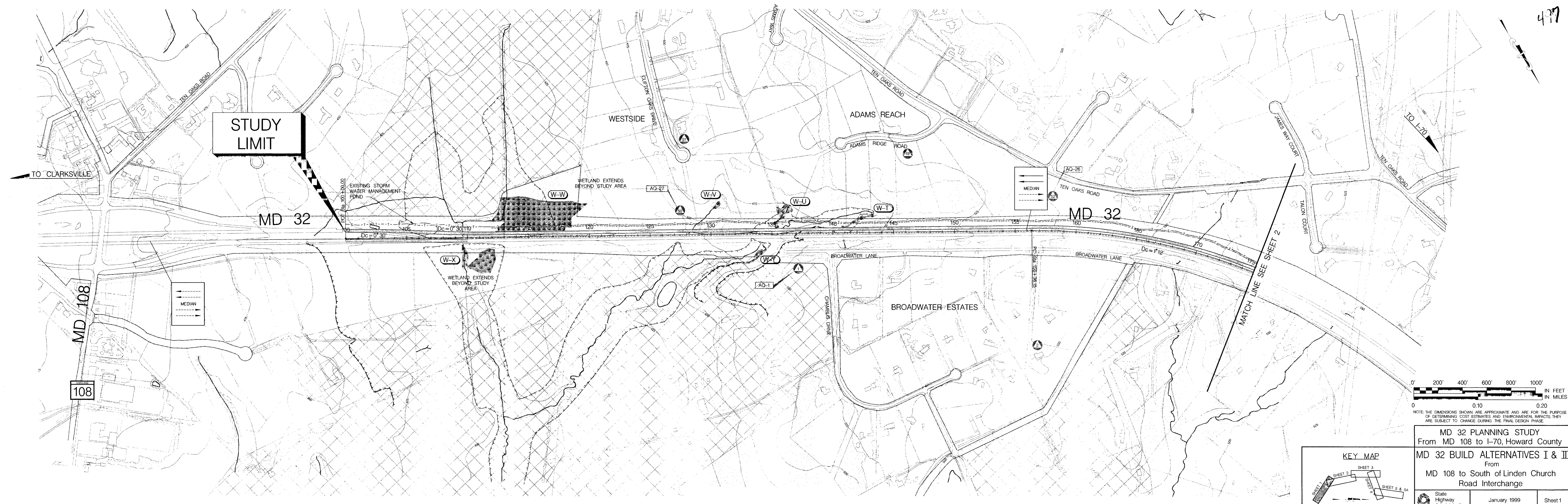


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- PROPOSED IMPROVEMENTS
- PAVEMENT/ACCESS TO BE REMOVED
- PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- 100-YEAR FLOODPLAIN BOUNDARY
Source: FEMA Flood Insurance Rate Maps - 1986
- FIELD VERIFIED WETLANDS (1997)
- TREELINE
- WATERWAY
- WETLAND LOCATION AND LETTER
- AGRICULTURAL EASEMENT
- RESIDENCE TO BE RELOCATED
- BUSINESS TO BE DISPLACED
- NOISE RECEPTOR SITE
- AIR RECEPTOR SITES
- LIMIT OF DISTURBANCE CUT
- LIMIT OF DISTURBANCE FILL
- LIMIT OF DISTURBANCE TRANSITION



MD 32 PLANNING STUDY
From MD 108 to I-70, Howard County

MD 32 BUILD ALTERNATIVES I & II
From
MD 108 to South of Linden Church
Road Interchange

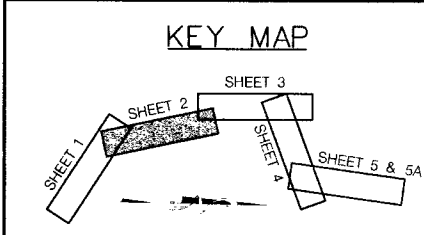
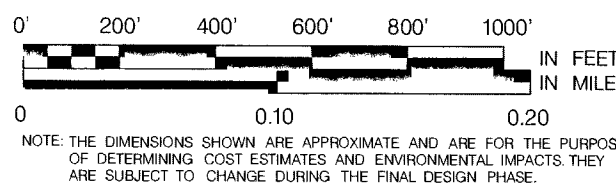
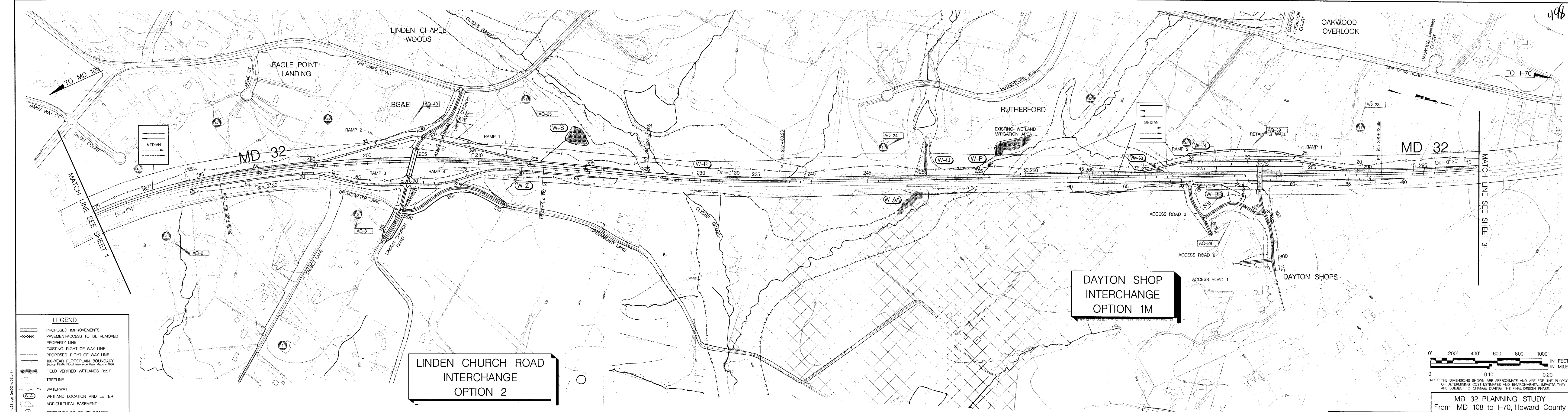
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January 1999

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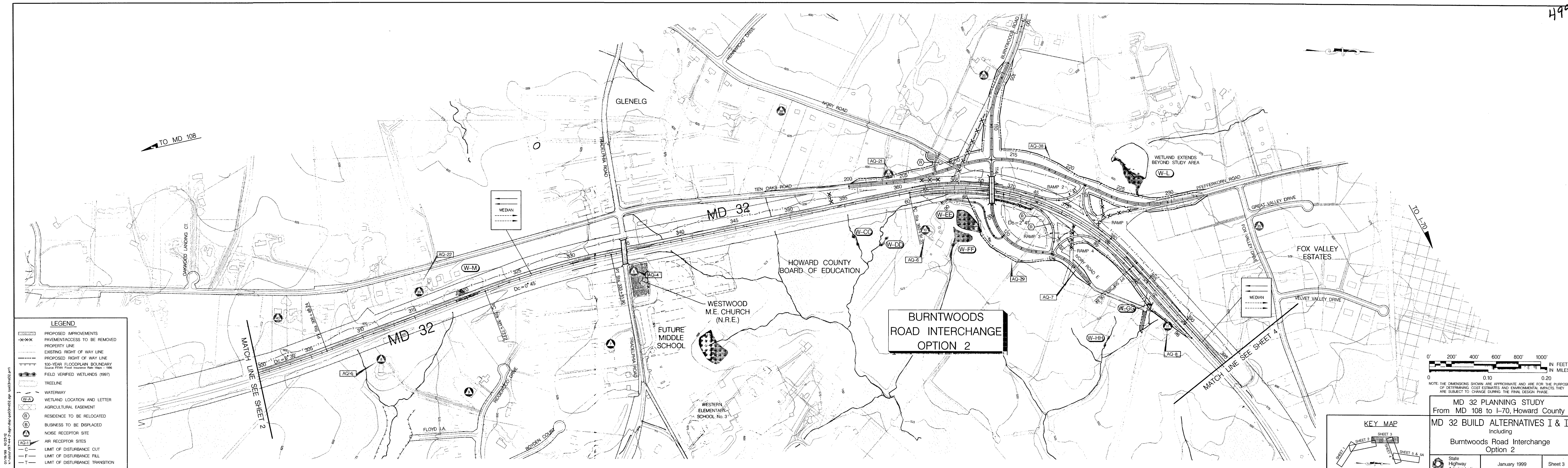
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- TREELINE
- WATERWAY
- WETLAND LOCATION AND LETTER
- AGRICULTURAL EASEMENT
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- NOISE RECEPTOR SITE
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- LIMIT OF DISTURBANCE FILL
- LIMIT OF DISTURBANCE TRANSITION



MD 32 PLANNING STUDY		
From MD 108 to I-70, Howard County		
MD 32 BUILD ALTERNATIVES I & II		
Including		
Linden Church Road Interchange - Option 2		
and Dayton Shop Interchange - Option 1M		
State Highway Administration	January 1999	Sheet 2

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- NOISE RECEPTOR SITE
- AIR RECEPTOR SITES
- LIMIT OF DISTURBANCE CUT
- LIMIT OF DISTURBANCE FILL
- LIMIT OF DISTURBANCE TRANSITION

KEY MAP

SHEET 1 SHEET 2 SHEET 3 SHEET 4 SHEET 5 & 5A

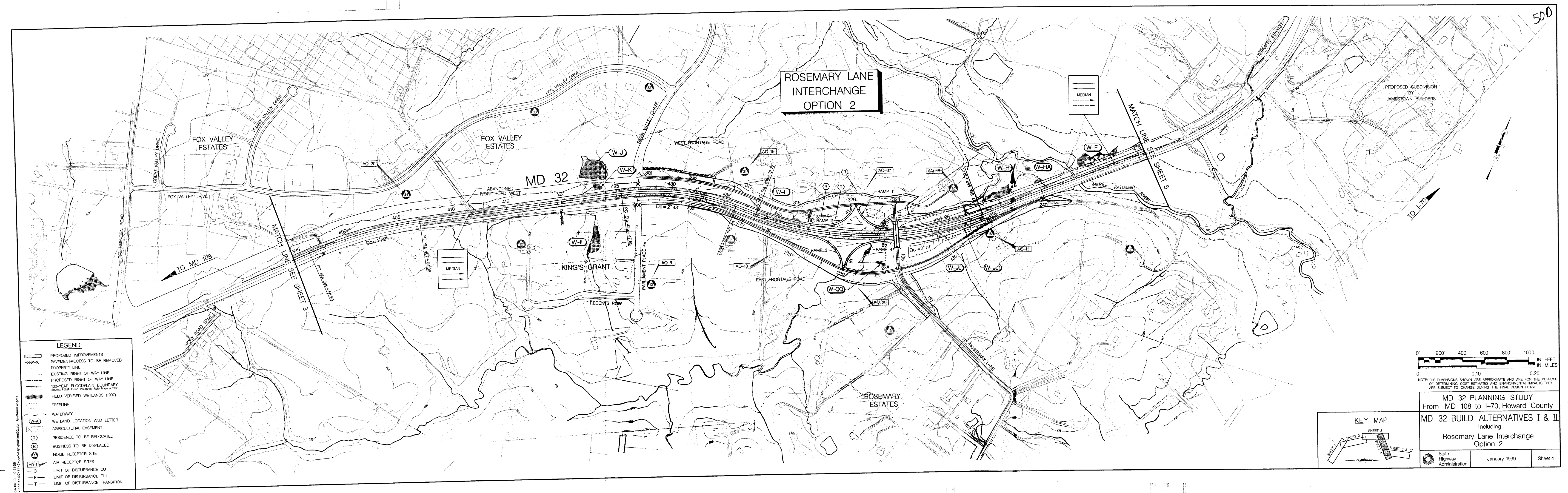
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From MD 108 to I-70, Howard County

MD 32 BUILD ALTERNATIVES I & II
Including
Burntwoods Road Interchange
Option 2

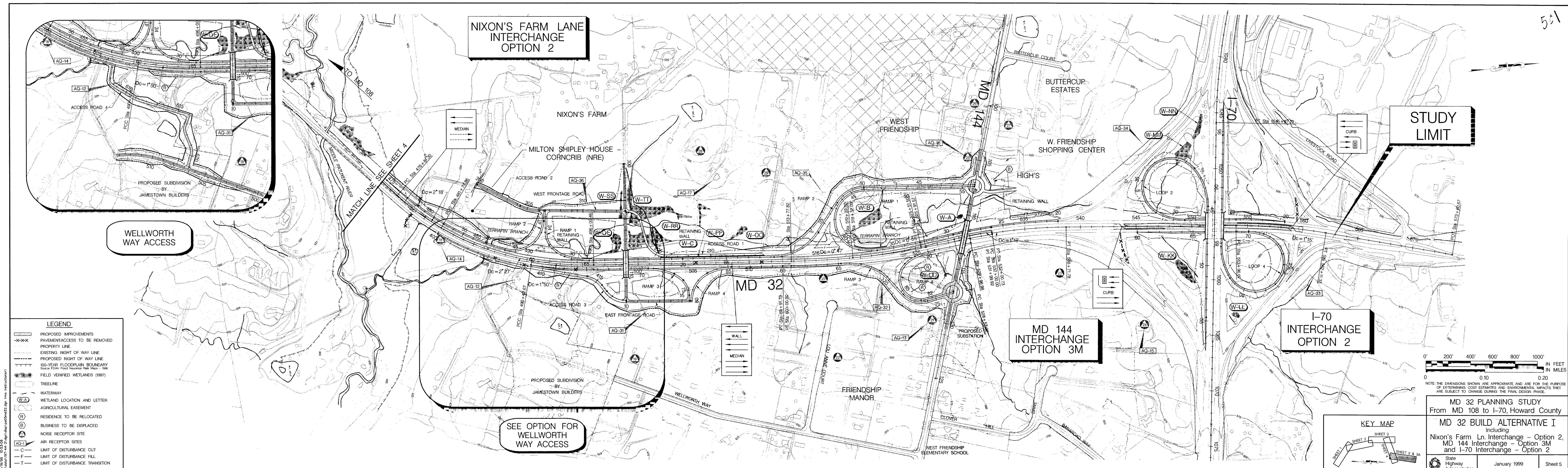
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Sheet 3



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LEGEND

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- PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- 100-YEAR FLOODPLAIN BOUNDARY
- FIELD VERIFIED WETLANDS (1997)
- TREELINE
- WATERWAY
- WETLAND LOCATION AND LETTER
- AGRICULTURAL EASEMENT
- RESIDENCE TO BE RELOCATED
- BUSINESS TO BE DISPLACED
- NOISE RECEPTOR SITE
- AIR RECEPTOR SITES
- LIMIT OF DISTURBANCE CUT
- LIMIT OF DISTURBANCE FILL
- LIMIT OF DISTURBANCE TRANSITION

01/19/99 10:53:08
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0' 200' 400' 600' 800' 1000'
IN FEET
0 0.10 0.20
IN MILES

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

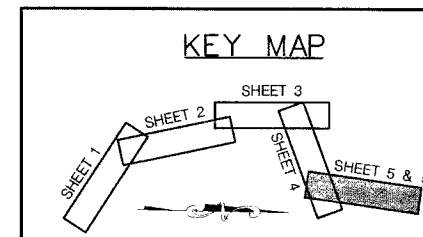
MD 32 PLANNING STUDY
From MD 108 to I-70, Howard County

MD 32 BUILD ALTERNATIVE I
Including
Nixon's Farm Ln. Interchange - Option 2,
MD 144 Interchange - Option 3M
and I-70 Interchange - Option 2

State
Highway
Administration

January 1999

Sheet 5



WELLWORTH
WAY ACCESS

NIXON'S FARM LANE
INTERCHANGE
OPTION 2

STUDY
LIMIT

MD 144
INTERCHANGE
OPTION 3M

I-70
INTERCHANGE
OPTION 2

SEE OPTION FOR
WELLWORTH
WAY ACCESS

Appendix B

Relocation Act

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

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

All State Highway Administration projects must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601) as amended by Title IV of the Surface Transportation & Uniform Relocation Assistance Act of 1987 (P.L. 100-17), the Annotated Code of Maryland entitled "Real Property Article" Section 12-112 and Subtitle 2, Sections 12-201 to 12-212. The Maryland Department of Transportation, State Highway Administration, Office of Real Estate administers the Transportation Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State laws require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments include replacement housing payments and 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 other incidental expenses. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to these payments, there are also moving expense payments to persons, businesses, farms and non-profit organizations. Actual but reasonable moving expenses for residences are reimbursed for a move of up to 50 miles or a schedule moving payment of up to \$1,300 may be used.

In the event comparable replacement housing is not available within the monetary limits for owners and tenants to re-house persons displaced by public projects or available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the re-housing. Detailed studies must be completed by the State Highway Administration before relocation "housing as a last resort" can be utilized.

The moving cost payments to businesses are broken down into several categories, which include actual moving expense payments, reestablishment expenses limited to \$10,000 or fixed payments "in lieu of" actual moving expenses of \$1,000 to \$20,000. Actual moving expenses may also include actual direct losses of tangible personal property and expenses for searching for a replacement site up to \$1,000.

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 State determines a longer distance is necessary. The expenses claimed for actual cost 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. The allowable expenses of a self-move may include amounts paid for equipment hired, the cost of using the business vehicles or equipment, wages paid to persons who 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.

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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 not to move or to discontinue the use of an item, 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.

If an item of personal property which is used as part of a business or farm operation is not moved and is promptly replaced with a substitute item that performs a comparable function at the replacement site, payment shall be 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.

In addition to the moving payments described above, a business may be eligible for a payment up to \$10,000 for the actual reasonable and necessary expenses of reestablishing at the replacement site. Generally, reestablishment expenses include certain repairs and improvements to the replacement site, increased operating costs, exterior signing, advertising the replacement location and other fees paid to reestablish. Receipted bills and other evidence of these expenses are required for payment. The total maximum reestablishment payment eligibility is \$10,000.

In lieu of all moving payments described above, a business may elect to receive a fixed payment equal to the average annual net earnings of the business. This 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 are not being acquired; and the business contributes materially to the income of a displaced owner during the two taxable years prior to the year of the displacement. A business operated at the displacement site solely for the purpose of renting to others is not eligible. 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 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, owner's spouse, or 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

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tax returns, or certified financial statements, for the tax years in question.

Displaced farms and non-profit organizations are also eligible for actual reasonable moving costs up to 50 miles, actual direct losses of tangible personal property, search costs up to \$1,000 and reestablishment expenses up to \$10,000 or a fixed payment "in lieu of actual moving expenses of \$1,000 to \$20,000. The State may determine that a displaced farm may be paid 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 a fixed payment or an "in lieu of" actual moving cost 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 "Relocation Assistance" brochure that will be distributed at the public hearing for this project and be given to displaced persons.

Federal and state laws require that the State Highway Administration shall not proceed with any phase of a 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.

Appendix C

Farmland Conversion Impact Rating Form

*MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland*



**Office of Planning and Preliminary Engineering
Maryland State Highway Administration**

Farmland Conversion Impact Rating Form

A Farmland Conversion Rating form (Form AD-1006) and rationale for evaluation of site assessment criteria were completed for the MD 32 Planning Study and evaluated by the Howard County Natural Resources Conservation Service (NRCS) in May 1998 for the three alternatives under consideration (No Build, Build Alternative I, and Build Alternative II). This appendix includes a copy of the evaluated May 1998 AD-1006 form and rationale for the alternatives that would impact farmland.

FARMLAND CONVERSION IMPACT RATING

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PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request May 13, 1998	
Name Of Project MD 32 Planning Study MD 108 to I-70		Federal Agency Involved Federal Highway Administration	
Proposed Land Use Highway		County And State Howard County, Maryland	

PART II (To be completed by SCS)		Date Request Received 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>		Acres Irrigated None	Average Farm Size
Major Crop(s) Corn, Small Grain, Soybeans, Hay	Farmable Land In Govt. Jurisdiction Acres: 86,200 % 54	Amount Of Farmland As Defined in FPPA Acres: 70,600 % 44	
Name Of Land Evaluation System Used Howard Co. LESA System	Name Of Local Site Assessment System Howard Co. LESA System	Date Land Evaluation Returned By SCS 6/19/98	

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	23.6	21.8		
B. Total Acres To Be Converted Indirectly	0	0		
C. Total Acres In Site	23.6	21.8		

PART IV (To be completed by SCS) Land Evaluation Information	
A. Total Acres Prime And Unique Farmland	17.91
B. Total Acres Statewide And Local Important Farmland	8.02
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.04
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	30.9

PART V (To be completed by SCS) Land Evaluation Criterion	
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	94

PART VI (To be completed by Federal Agency)	Maximum Points	Build Alt. I	Build Alt. II
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))			
1. Area In Nonurban Use	15	0	0
2. Perimeter In Nonurban Use	10	0	0
3. Percent Of Site Being Farmed	20	20	20
4. Protection Provided By State And Local Government	20	20	20
5. Distance From Urban Builtup Area	N/A	N/A	N/A
6. Distance To Urban Support Services	N/A	N/A	N/A
7. Size Of Present Farm Unit Compared To Average	10	10	10
8. Creation Of Nonfarmable Farmland	25	0	0
9. Availability Of Farm Support Services	5	5	5
10. On-Farm Investments	20	14	14
11. Effects Of Conversion On Farm Support Services	25	0	0
12. Compatibility With Existing Agricultural Use	10	0	0
TOTAL SITE ASSESSMENT POINTS	160	64	64

PART VII (To be completed by Federal Agency)			
Relative Value Of Farmland (From Part V)	100	80	80
Total Site Assessment (From Part VI above or a local site assessment)	160	144	144
TOTAL POINTS (Total of above 2 lines)	260	224	224

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>
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Reason For Selection:

Farmland Conversion Impact Rating Form AD-1006
Rational for Evaluation of Site Assessment Criteria
7 CFR 658.5 (b)
MD 32 from MD 108 to I-70, Howard County, Maryland

1. How much land is in a non-urban use within a radius of one mile from where the project is intended?

More than 90 percent -	15 points
90 to 20 percent -	14 to 1 point(s)
Less than 20 percent -	0 points

Aerial photographs and land use maps were reviewed and a field review of the study area was conducted to determine non-urban land use within a one mile radius of the project area. I was estimated that more than 90 percent of the land is in non-urban use for all of the alternatives.

Rating: Build Alternative I - 0 points
Build Alternative II - 0 points

2. How much of the perimeter of the site borders on land in non-urban use?

More than 90 percent -	10 points
90 to 20 percent -	19 to 1 point(s)
Less than 20 percent -	0 points

Aerial photographs and land use maps were reviewed and a field review of the study area was conducted to determine non-urban land use bordering on the site. It was estimated that more than 90 percent of the land bordering the alternatives is in non-urban use.

Rating: Build Alternative I - 0 points
Build Alternative II - 0 points

3. How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last ten years?

More than 90 percent -	20 points
90 to 20 percent -	19 to 1 point(s)
Less than 20 percent -	0 points

Historically, western Howard County land has been used for agricultural activities. Based on review of aerial photographs and land use maps, it is estimated that more than 90 percent of the land area for each alternative has been farmed more than five of the last 10 years.

Rating: Build Alternative I - 20 points

Build Alternative II - 20 points

4. Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmlands?

Site if protected - 15 points
Site is not protected - 14 to 1 point(s)

Howard County has an Agricultural Preservation Program to preserve sufficient agricultural land in order to maintain a viable local base of food and fiber production and to maintain the rural character of western Howard County for the citizens of Howard County. Two sites impacted by the build alternatives impact land included in the Howard County Agricultural Preservation Program.

Both build alternatives would impact 0.12 acres of preserved agricultural land on the east side of MD 32 just south of Dayton Shops. It is expected that this impact could be avoided by reducing the clear zone and provided a steeper slope and traffic barrier in this location.

A second preserved agricultural parcel would be impacted by both alternatives. This 3.27 acres parcel is located west of MD 32 south of MD 144.

Rating: Build Alternative I - 15 points
Build Alternative II - 15 points

5. Criterion 5 is not considered applicable for corridor type projects.
6. Criterion 6 is not considered applicable for corridor type projects.
7. Is the farm unit(s) containing the site (before the project) as large as the average-size farming unit in the county?

As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average,
down to 0 points if 50 percent or more below average - 9 to 0 points

Rating: Build Alternative I - 10
Build Alternative II - 10

8. If this site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acres equal to more than 25 percent of acres directly converted by the project - 25 points

Acreage equal to between 25 and 5 percent of acres directly converted by the project –

14 to 1 point(s)

Acreage equal to less than 5 percent of acres directly converted by the project - 0 points

The build alternatives are designed to parallel existing MD 32. Farmland will be impacted in the parcels adjacent to MD 32 and in locations required for the proposed interchanges. Accessibility to remaining farmland is expected to remain intact with all alternatives. None of the remaining farmlands would become non-farmable because of interference with land patterns.

Rating: Build Alternative I - 0 points

Build Alternative II - 0 points

9. Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities, and farmer's markets?

All required services are available - 5 points

Some required services are available - 4 to 1 point(s)

No required services are available - 0 points

All required services are available to the farms in the area for each alternative.

Rating: Build Alternative I - 5 points

Build Alternative II - 5 points

10. Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation waterways or other soil and water conservation measures?

High amount of on-farm investment - 20 points

Moderate amount of on-farm investment - 19 to 1 point(s)

No on-farm investment - 0 points

Most of the farms in the study area appear to have a moderate amount of on-farm investment in the form of barns, fencing, and other outbuildings.

Rating: Build Alternative I - 14 points

Build Alternative II - 14 points

11. Would the project at this site, by converting farmland to non-agricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted - 25 points

Some reduction in demand for support services if the site is converted - 24 to 1 point(s)

No significant reduction in demand for support services if the site is converted - 0 points

None of the alternatives being considered would reduce the demand for farmland support services.

Rating: Build Alternative I - 0 points

Build Alternative II - 0 points

12. Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to non-agricultural use?

Proposed project is incompatible with existing agricultural use of surrounding farmland - 10 points

Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)

Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

The proposed project is fully compatible with existing agricultural use of surrounding farmland. The build alternatives include full access control thereby inhibiting potential secondary development. A majority of the study area is zoned rural residential (one unit per two to five acres). Should existing farmland be converted to residential development it would conform to these densities. In addition, Howard County is committed to maintaining the rural nature of western Howard County and to encouraging new development projects to locate in or near existing population centers.

Rating: Build Alternative I - 0 points

Build Alternative II - 0 points

Appendix D

Glossary

MD 32 Planning Study
MD 108 to I-70, Howard County, Maryland



Office of Planning and Preliminary Engineering
Maryland State Highway Administration

Glossary

Access Control	<p>The restriction of direct access between a roadway and an immediate adjacent property. These restrictions generally are categorized as full control of access, partial control of access and access management.</p> <p>Full control of access allows access to the highway facility via interchange only (i.e., no at grade crossings), eliminates private driveway access.</p> <p>Partial control of access allows access to the facility only from public roads (no private driveways) through intersections or interchanges.</p> <p>Uncontrolled access limited only to safe locations dependent upon horizontal and vertical features of the facility. All crossroads, driveways, et., may have points of ingress or egress to the facility.</p> <p>Access Management limits and/or removes the number of points at which a vehicles may enter or exit a highway. Access management may include combining entrances and parking lots and adding service roads.</p>
ADT	<p>Average Daily Traffic - The total volume of auto and truck traffic passing a given point during a given time period (greater than one day and less than one year) is whole days, divided by the number of days in that time period. A commonly used measure of traffic flow.</p>
Aerial Photography	<p>High resolution photographs taken from aircraft which are used to assess features in a study area, which are also used to produce topographic base maps of varying scales for alignment studies, engineering, and final design work.</p>
Affected Environment	<p>The physical features, land area, or areas to be influences, affected, or created by an alternative alignment under consideration; also includes various social and environmental factors and conditions pertinent to an area.</p>
Alignment	<p>The actual location of an existing or proposed highway.</p>
Alternative	<p>One of a number of specific transportation improvement proposals, alignments, options, design choices, etc., in a study. Following detailed analysis, one improvement alternative is selected for implementation. Sometimes, the term "alternate" is used interchangeably with the term "alternative".</p>
Aquatic	<p>Living or growing in or on the water.</p>

Avoidance	Any alignment proposal that has been developed, modified, shifted, or
Alternative	downsized specifically in order to avoid affecting one or more resources regarded as significant.
Best Management Practice	(BMPs) Measures to control the quantity and quality of stormwater leaving a drainage basin. Local and state jurisdictions have adopted BMPs to counteract physical development and construction activity that may concentrate stormwater or produce soil erosion.
CAAA	Clean Air Act Amendments of 1990 is federal legislation passed to change both federal and state approaches to regulating air quality, mandating programs to curb acid rain, urban air pollution, and toxic emissions. The CAAAs call for emission reductions measures in air quality non-attainment areas, including the consideration of transportation control measures (TCMs) as part of transportation improvement projects. Projects in non-attainment areas may not increase the number of vehicle miles traveled (VMTs): the number of cars on the roadways must be reduced by encouraging drivers to use mass transit, ride sharing, and car pooling.
CEQ Regulations	Directives issued by the Federal Council on Environmental Quality (40 CFR 1500-1508) that govern the development and issuance of environmental policy and procedure for federal aid actions by public agencies. The regulations contain definitions, spell out applicability and responsibilities, and mandate certain processes and procedures to be followed by state agencies that administer federally funded programs.
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System is a compilation of sites EPA has investigated or is currently investigating for a release of hazardous substances pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act.
Champion Tree	The largest tree of its species within the United States, the state, county, or municipality as determined by the Maryland Department of Natural Resources.
Clear Zone	The clear zone is the unobstructed, relatively flat area provided beyond the edge of the traveled way for the recovery of errant vehicles. The width of the clear zone is influenced by the traffic volumes, speed, and side slopes.
CMS	Congestion Management Strategies

Comment Period	Usually two weeks or longer during which a document (e.g., the Draft and Final Environmental Impact Statements) is reviewed by agencies and the public, who may submit verbal or written comments. It can be applicable to all types of engineering and environmental documents which are circulated, as well as to formal presentations such as those which may be given by Transportation Department officials at a Public Hearing.
Commenting Agency	Agency responsible for reviewing and commenting on Environmental Impact Statements (EIS's). Their comments are considered by the lead agency in the preparation of the Final EIS and Record of Decision.
Conceptual Mitigation	The early, generalized identification of design, operational, or construction measures that would minimize or avoid anticipated environmental consequences. Typically, conceptual mitigation ideas are discussed prior to the concluding stages of an environmental study, well before many of the ideas are further worked upon, refined, or committed.
Conformity	The US Clean Air Act stipulates that any approved transportation project, plan, or program must conform to the State Implementation Plan (SIP), a document which prescribes procedures for the implementation, maintenance, and enforcement of primary and secondary pollutants.
Constraints	More commonly described as 'environmental features'. Significant resources, facilities, or other features or study areas located in or adjacent to an existing or proposed transportation corridor that serve to restrain, restrict, or prevent the ready implementation of proposed transportation improvements in a given area; may include natural or physical resources, important structures, community facilities, or topographic features.
Cooperating Agency	As defined in the Council of Environmental Quality's <i>Regulations for Implementing the Procedural Provisions of the NEPA</i> ., "any organization other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in...[a] major Federal action significantly affecting the quality of the human environmental." The CEQ emphasizes that agency cooperation should begin early in the NEPA process.
Cumulative Effects	The sum of all direct, indirect, and secondary impacts resulting from a transportation improvement.
DBH	Diameter of trees at breast height (about 4.5 feet from the ground).
DEIS	Draft Environmental Impact Statement

Design Criteria	Established state and municipal standards and procedures that guide the establishment of roadway layouts, alignments, geometry, and dimensions for specified types of highways in certain defined conditions. The principal design criteria for highways are traffic volume, design speed, the physical characteristics of vehicles, the classification of vehicles, and the percentage of various vehicle classification types that use the highway.
Design Hour	(DHV) The percent of average daily traffic (ADT) generally accepted as
Volume	criterion used in the geometric design of rural and urban highways. Ideally, the 30 th highest hourly volume during a year, the DHV is commonly found to vary from 8 percent to 12 percent of the ADT.
Design Speed	The design speed is the maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern. This speed correlates to the geometric features of a facility, such as curvature and sight distance, which govern safe vehicle operations. A design speed is selected for the proposed facilities prior to design. The speed limit and the operating speed should be less than the design speed.
Discharge	Stream flow, defined as the volume rate of flow of water and includes any sediment or other solids that may be dissolved or mixed with it.
DNR	Maryland Department of Natural Resources
Ecosystem	A functional system which includes the organisms of a total community together with their environment.
Endangered	An organism of very limited numbers that may be subject to extinction and is protected by law under the endangered species Act.
EPA	U.S. Environmental Protection Agency
EIS	Environmental Impact Statement is a document which must be prepared for major federal actions significantly affecting the quality of the environment.
Fauna	The animal life of an area.
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration

FIRM	Floodplain Insurance Rate Maps provided by the Federal Emergency Management Agency (FEMA).
Floodplain	A flat or nearly flat lowland that borders a stream and is covered by its waters at flood stage.
Flora	The plant life of an area.
Geography	Science of the earth's crust and the arrangement and internal structure of rocks.
Gleying	The process by which wet soils develop a characteristic grey color through the reduction of iron and other elements.
Grade Separation	Bridge structure such as an underpass or overpass that vertically separates two or more intersecting roadways, thus permitting traffic to cross without interference.
Groundwater	Naturally occurring water that moves through the earth's crust, usually at a depth of several feet to several hundred feet below the earth's surface.
Habitat	The physical natural environment, along with its characteristic array of organisms, in which a species lives and reproduces.
Hazardous Waste	Wastes identified by characteristics, sources, or specific substance as found in CFR 40 Chapter 261. A hazardous waste may: 1) cause or significantly contribute to an increase in mortality or morbidity in either an individual or the total population; and 2) pose a substantial present or potential hazard to human health or the environmental when improperly treated, stored, transported, disposed, or otherwise managed.
Housing of Last Resort	A Maryland SHA Program to re-house people who are displaced by right-of-way acquisition for highway projects when the cost to do so exceeds the limits of the Uniform Relocation Act. (See Appendix B.)
Impervious Surfaces	Any surface which cannot be penetrated freely by water.

Levels of Service Levels of Service are a measure of the conditions under which a roadway operates as it accommodates various traffic volumes. Influencing factors include speed, travel time, traffic interruptions, maneuvering freedom, safety, driving comfort, economy and, the volume of traffic.

Levels of Service on expressways and freeways with uninterrupted flow conditions are ranked from A to F (best to worst) as follows:

- Level A: free traffic flow; low traffic volumes; high speeds
- Level B: stable traffic flow; some speed restrictions
- Level C: stable traffic flow; increasing traffic volumes;
- Level D: approaching unstable traffic flow; heavy traffic volumes; decreasing speeds
- Level E: high traffic volumes approaching roadway capacity; temporary delays; low speeds
- Level F: forced traffic flow at low speeds; high traffic volumes and densities; frequent delays

For interrupted flow conditions, such as major highways and arterials with traffic signals, the following Levels of Service apply:

- Level A: free traffic flow; no delay at traffic signals
- Level B: occasional delays at traffic signals
- Level C: increasing traffic volumes; moderate delays at traffic signals
- Level D: increasing traffic volumes; frequent delays at traffic signals; lower speeds
- Level E: high traffic volumes; signal backups almost to the previous light; low speeds
- Level F: forced traffic flow; successive backups between signals

MBSS	Maryland Biological Survey of MDNR Monitoring & Non-Tidal Assessment Division.
MDE	Maryland Department of the Environment
Median	The center portion of a divided highway separating opposing lanes of traffic.
MGS	Maryland Geological Survey
MHT	Maryland Historical Trust

Mitigation Measures	Specified design commitments made during the environmental evaluation and study process that serve to moderate or lessen impacts deriving from the proposed action. These measures may include planning and development commitments, environmental measures, right of way improvements, and agreements with resource or other agencies to effect construction or post construction action.
MSHA	Maryland State Highway Administration
NR	National Register. Cultural Resources (e.g., historic or archeological sites) which are on the National Register of Historic Places.
NRE	National Register Eligible. Cultural resources (e.g., historic or archeological sites) which are eligible for listing on the National Register of Historic Places.
NEPA	National Environmental Policy Act of 1969 establishes a legislative mandate to federal agencies to consider the environment in all major federal actions. The NEPA process involves the detailed study of alternatives and the evaluation of environmental impacts and mitigation measures.
NMFS	National Marine Fisheries Service (U.S. Department of Commerce)
NRCS	Natural Resources Conservation Service
Operating Speed	The operating speed is the highest overall speed at which a driver can travel on a given highway under favorable weather conditions and under prevailing traffic conditions without exceeding the safe speed as determined by the design speed.
Option	Alternative designs for a specific project location.
Peak Hour	Time when a highway carries its highest volume of traffic, usually the morning or evening 'rush' period when commuters travel to and from work.
Project Limits	The physical end points of a proposed project, usually designated at geographic or municipal boundaries, at intersections, at roadway segments where cross sections change, or at the beginning or end of numbered state traffic routes.
Public Hearing	A meeting designed to afford the public the fullest opportunity to express support of or opposition to a transportation project in an open forum at which a verbatim record (transcript) of the proceeding is kept.

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Public Involvement	Coordination events and informational materials geared at encouraging the public to participate in the Transportation Project development Process. A successful Public Involvement Plan facilitates the exchange of information among project sponsors and outside groups and the general public, and may include meetings, surveys, committees, presentations, etc.
Public Meeting	A meeting conducted by transportation officials designed to facilitate participation in the decision making process and to assist the public in gaining an informed view of a proposed project at any level of the Transportation Project development Process. Also, such a gathering may be referred to as Public Information Meeting.
RCRA	Resource Conservation and Recovery Act program identifies and tracks hazardous wastes from the point of generation to the point of disposal.
Record of Decision	A document prepared by the Division Office of the Federal Highway Administration that presents the basis for selecting a specific transportation proposal that has been evaluated through the various environmental and engineering studies of the Transportation Project Development Process. Typically, the Record of Decision (ROD) identifies the alternative selected in the Final EIS, the alternatives considered, measures to minimize harm, monitoring or enforcement programs, and itemized commitments and mitigation measures.
Riffle	Shallow rapids where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.
Right-of-Way	Land purchased by state and/or local jurisdictions that is used to accommodate construction, drainage, and proper maintenance of transportation or other public facilities.
Riparian	Pertaining to anything connected with or immediately adjacent to the banks of a stream.
RTE	Rare, threatened, or endangered plant and animal species.
Section 106 Procedures	Derived from Section 106 of the National Historic Preservation Act of 1996 which governs the identification, evaluation, and protection of historical and archeological resources affected by state and federal transportation projects. Principal areas identified included required evaluations to determine the presence or absence of sites, the eligibility based on National Register of Historic Places criteria and the significance and effect of a proposed project upon such site.

Shoulder	The portion of a highway adjacent and parallel to the traveled roadway for the accommodation of stopped vehicles for emergency use and for lateral support of the travel lanes. May or may not be fully paved.
Side Slope	The earth slope permissible outside of the roadway pavement in a given location, as a ratio of the horizontal to vertical measurement (2:1, 4:1, 6:1).
Slope	The degree of deviation from horizontal, measured by rise/run for a particular distance.
Specimen Tree	A tree with greater than 30 inch Diameter at Breast Height (DBH) or at least 75 percent of the DBH of the state champion of that species.
Stream Relocation	The process involving the movement of a flowing stream from its present channel to a different channel.
Study Area	A geographic area selected and defined at the outset of engineering or environmental evaluations, which is sufficiently adequate in size to address all pertinent project matters occurring within it.
System Linkage	Interconnection of roadway segments that comprise an overall transportation network. Also, a discussion of how a proposed project fits into the existing and future transportation system (network) and how it contributes to developing a sound transportation network in an area or region. The terms connector road, missing link, gap completion, circumferential link, or beltway segment are sometimes used to describe this concept.
Terrestrial	Living or growing on land.
Topography	The configuration of the surface features of the region including relief, position of streams, lakes, roads, cities, etc.
TSM	Transportation System Management. A transportation alternative which seeks to reduce traffic congestion without altering the existing roadway. This alternative considers options such as improvements to the mass transit system, minor intersection improvements, and traffic management. These are non-capital intensive strategies that seek to reduce travel demand.
USF&WS	U.S. Fish & Wildlife Service
USGS	United States Geological Survey (Department of the Interior)
Watershed	The area of land which drains to a particular body of water.

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Wetlands

Lands that are inundated or saturated by surface or groundwater with a frequency and duration sufficient to support and, under normal circumstances, do support a prevalence of vegetation typically adapted for life un saturated soil conditions. Wetlands generally include swamps, marches, bogs, and similar areas.