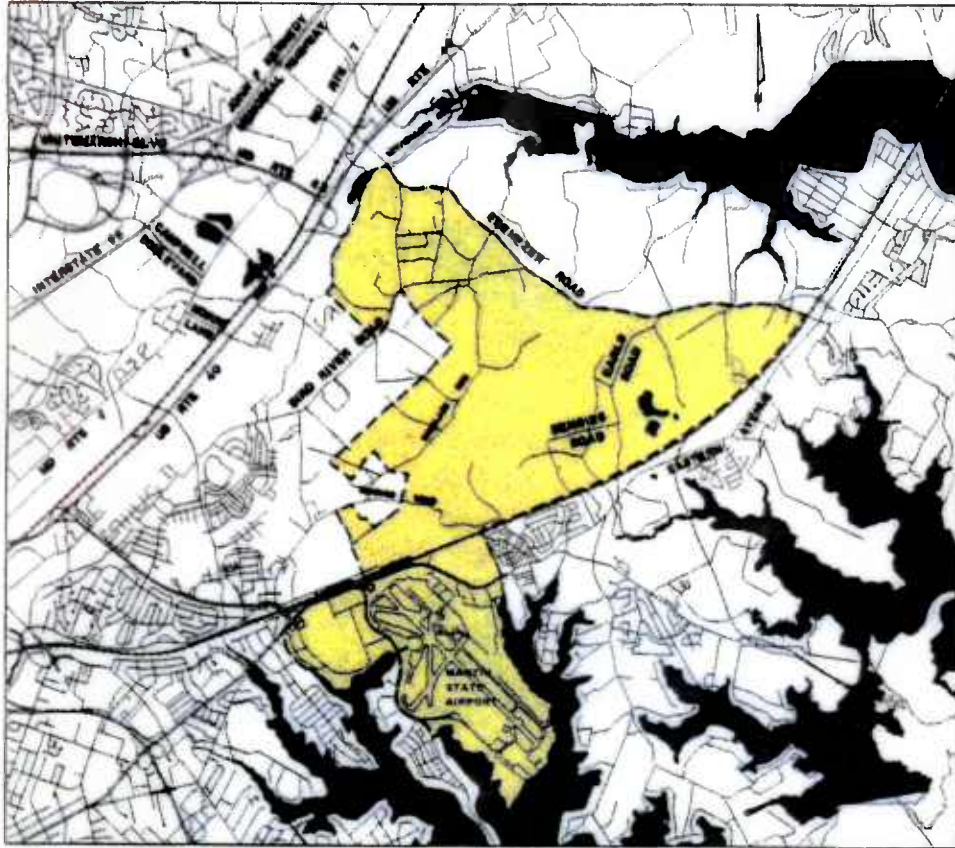


**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY  
BALTIMORE COUNTY, MARYLAND**



**FINAL ENVIRONMENTAL  
IMPACT STATEMENT AND  
FINAL SECTION 4(f) EVALUATION  
MARCH, 2001**



U.S. Department of Transportation  
Federal Highway Administration

Prepared by:

Maryland Department of Transportation  
State Highway Administration





**Maryland Department of Transportation  
State Highway Administration**

Parris N. Glendening   
Governor

John D. Porcari  
Secretary

Parker F. Williams  
Administrator


March 27, 2001

Project No. BA847A11  
Middle River Employment Center  
Access Study (MRECAS)  
Baltimore County, Maryland

Enclosed for your information is the approved Final Environmental Impact Statement (FEIS)/Section 4(f) Evaluation for the Middle River Employment Center Access Study project. This document has been prepared in accordance with the CEQ Regulations and 23 CFR 771.

Alternate Revised D Modified, which proposes a four-lane divided highway on new location between US 40 and MD 150, has been selected for the future highway improvements. Distribution of the FEIS is made on behalf of the Federal Highway Administration in accordance with 23 CFR 771.

Sincerely,

  
Douglas H. Simmons, Director  
Office of Planning and  
Preliminary Engineering

Enclosure

cc: Distribution List  
Mr. Bruce M. Grey, Deputy Division Chief, State Highway Administration  
Ms. Allison Grooms, Environmental Manager, State Highway Administration  
Ms. Amy Hribar, Project Engineer, State Highway Administration  
Mr. Dan Johnson, Environmental Program Manager, FHWA  
Mr. Joseph R. Kresslein, Assistant Division Chief, State Highway Administration  
Mr. David Malkowski, District Engineer, State Highway Administration  
Ms. Heather Murphy, Assistant Division Chief, State Highway Administration  
Mr. Neil J. Pedersen, Deputy Administrator for Planning and Engineering, State Highway Administration  
Mr. Douglas H. Simmons, Director of the Office of Planning and Preliminary Engineering, State Highway Administration  
Ms. Cynthia D. Simpson, Deputy Director of the Office of Planning and Preliminary Engineering, State Highway Administration

My telephone number is 410-545-0412

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**

Parris N. Glendening  
Governor

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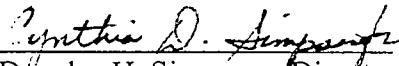
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REPORT NUMBER – FHWA-MD-EIS-99-02 (F)  
Federal Highway Administration Maryland Division Office

MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
FINAL ENVIRONMENTAL IMPACT STATEMENT  
AND FINAL SECTION 4(f) EVALUATION  
BALTIMORE COUNTY, MARYLAND

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

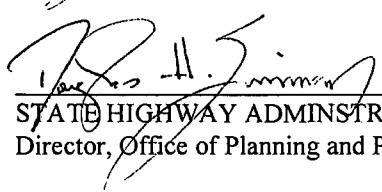
U.S. DEPARTMENT OF TRANSPORTATION      MARYLAND DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION      and      STATE HIGHWAY ADMINISTRATION  
MARYLAND DIVISION

Cooperating Agencies: U.S. ENVIRONMENTAL PROTECTION AGENCY  
U.S. ARMY CORPS OF ENGINEERS



FEDERAL HIGHWAY ADMINISTRATION  
Division Administrator

3/13/01  
DATE



STATE HIGHWAY ADMINISTRATION  
Director, Office of Planning and Preliminary Engineering

3/12/01  
DATE

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

Ms. Mary F. Huie  
Environmental Engineer  
Federal Highway Administration  
The Rotunda-Suite 220  
711 West 40<sup>th</sup> Street  
Baltimore, MD 21211  
PHONE: (410) 962-4342, ext. 148  
HOURS: 7:30 a.m.-4:30 p.m.

Ms. Cynthia D. Simpson  
Deputy Director  
Office of Planning and Preliminary Engineering  
State Highway Administration  
707 N. Calvert Street, Mailstop C-301  
Baltimore, MD 21202  
PHONE: (410) 545-8500 or 1-800-548-5026  
HOURS: 8:00 a.m.-4:30 p.m.

The purpose of this project is to provide improved access from the regional transportation network to planned major economic development opportunity sites and to foster increased utilization of established employment areas in the Middle River Employment Center. Five build alternatives, in addition to the No-Build, were studied. The SHA Selected Alternative is Revised D Modified. The potential impacts of the Selected Alternative include residential and business relocations, impacts to historic and archeological sites, and the loss of wetlands and forests.

5

SUMMARY

# SUMMARY

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

**S. SUMMARY**

**1. Administrative Action**

Federal Highway Administration

- Environmental Assessment
- Draft Environmental Impact Statement
- Final Environmental Impact Statement
- Finding of No Significant Impact
- Final Section 4(f) Evaluation

**2. Informational Contacts**

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

Ms. Mary F. Huie  
Environmental Engineer  
Federal Highway Administration  
The Rotunda – Suite 220  
711 West 40<sup>th</sup> Street  
Baltimore, MD 21211  
PHONE: (410) 962-4440  
HOURS: 7:30 a.m. – 4:00 p.m.

Ms. Cynthia D. Simpson  
Deputy Director  
Office of Planning and Preliminary Engineering  
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707 North Calvert Street  
Mail Stop C-301  
Baltimore, Maryland 21202  
PHONE: (410) 545-8500 or 1-800-548-5026  
HOURS: 8:00 a.m. – 4:30 p.m.

**3. Introduction**

This document presents the results of studies that have been completed to address both National Environmental Policy Act (NEPA) and U. S. Army Corps of Engineers Section 404 Permit requirements. NEPA focuses on environmental analysis of alternatives, whereas the Corps Section 404 Permit addresses specific impacts to wetlands and Waters of the U. S. in accordance with the Clean Water Act. In addition, the study has addressed Section 4(f) requirements of the U. S. Department of Transportation Act.

**4. Description of Proposed Action**

The purpose of the Middle River Employment Center Access Study is to provide improved access from the regional transportation network to planned major economic sites and to foster increased utilization of established employment areas in southeast Baltimore County, Maryland. The employment center was established in the County's June 2, 1997 Master Plan Amendment. Historically, the Middle River Employment Center (MREC) has been the scene of major manufacturing enterprises, primarily associated with the aircraft industry. Currently, the MREC has undergone a loss of manufacturing jobs and a decrease in the overall quality of life for its residents. Recent economic development initiatives by Baltimore County have stressed the need to reinvest in this area to revitalize its economy and provide a channel for growth, as opposed to encouraging growth in more rural parts of the County. Although Interstate 95 (I-95) passes within close proximity to the MREC, there is no direct access to the Interstate. This study has

evaluated a wide range of transportation improvements designed to provide increased access to this area. The proposed action consists of measures to provide a safe roadway that provides access to the southeast section of Baltimore County.

The Project Study area extends from I-95 to MD 150 (Eastern Boulevard) and from Martin Boulevard to Ebenezer Road (See Figure S-1). Although upgrades to the existing roadway system have been evaluated in this study, the primary emphasis has been to evaluate the direct access from I-95 that would be provided by an extension of MD 43 to the MREC. MD 43 (White Marsh Boulevard) is a four-lane partial access controlled facility that connects I-95 to the Baltimore Beltway (I-695), providing access to White Marsh, which is another County-designated growth area.

## **5. Description of Alternatives**

### **a. Description of Alternatives Retained for Detailed Study**

The following alternatives were retained for detailed study:

- *No Build*
- *Alternative D,*
- *Alternative D Modified,*
- *Alternative E,*
- *Alternative F1 Modified, and*
- *Alternative I Modified.*

The following multi-modal options were also considered. A description of specific measures included under each option and how it applies to this project are included in Section II, Alternatives Considered.

- Enhanced bus service on a new roadway alignment.
- Park and Ride lot(s).
- Enhancements to Martin State Airport MARC Station.
- Employer based Travel Demand Management (TDM) measures.
- Transportation Management Areas (TMA) for Middle River Employment Center to help implement above TDM options.
- High Occupancy Vehicle (HOV) on new roadway alignment.
- Reverse commute trains on MARC lines.
- Light Rail

The first five of the multi-modal options were incorporated in Alternatives Retained.

### **b. Alternatives Developed Subsequent to the Public Hearing**

Following the DEIS comment period and the Location Design Public Hearing, the State Highway Administration evaluated all written comments and testimony received. As a result of this evaluation, it was determined that Alternative D Modified provided the best overall response to the project's Purpose and Need, while at the same time minimizing environmental impacts. At this point, SHA initiated additional studies in an effort to further reduce impacts to the

environment as a result of implementing Alternative D Modified. This resulted in several changes to Alternative D Modified, including a reduction of the median width from 34 feet to 24 feet in areas of no proposed intersections and reduction of the outside grading by 10 feet on the southbound side. It was also determined that there would be considerable cost savings associated with a minor alignment shift of Alternative D Modified near the northern project terminus. This alignment shift resulted in the avoidance of the BGE transmission towers that run parallel to the roadway between US 40 and Bird River Road. The revised alternative is shown in detail in Section II of this FEIS (Alternatives Considered). In order to distinguish between Alternative D Modified as shown in the DEIS and the revised version of the alternative selected for implementation, *SHA's Selected Alternative* has been named Revised D Modified.

c. Alternatives Dropped or Not Preferred

The *No-Build Alternative* has been dropped because it did not meet any of the project objectives.

*Alternative D* provided direct access to the MREC, had the least amount of socio-economic impacts, and was similar to a route that the Land Use Analysis Committee recommended as being the most effective for promoting economic development activities. It was also the alternative that received the most public support, since it had the fewest displacements and community impacts. *Alternative D* was dropped from consideration, however, because it did not minimize impacts to the natural environment.

*Alternative D Modified* was similar to *Alternative D* and retained all of *Alternative D's* advantages while providing for a less environmentally-damaging crossing of Windlass Run (although it impacted more total wetlands) and improved access to the developable parcels of the MREC. It also avoided an archeological site affected by *Alternative D*. *Alternative D Modified*, however, was dropped from consideration in favor of a revised version of the same alternative (*Revised D Modified*).

*Alternative E* provided good access to the MREC, but while it avoided NRE historic sites, a greater number of residential properties were affected than in most of the other options. *Alternative E* would have also required upgrading MD 150. For these reasons, *Alternative E* was dropped from consideration.

*Alternative F<sub>1</sub> Modified* had the most displacements, affected less forest than the other alternatives, but access to the developable parcels of the MREC was less than optimal, thereby requiring additional access roads possibly through wetlands. *Alternative F<sub>1</sub> Modified* would have also required upgrading MD 150. For these reasons, *Alternative F<sub>1</sub> Modified* was dropped from consideration.

*Alternative I Modified* provided good access to the MREC and had few commercial and total displacements. It also provided for a less environmentally damaging crossing of Windlass Run, as well as reduced wetland impacts. However, it did require the acquisition of rights-of-way from forty properties and would have impacted the community in terms of visual and noise intrusion. *Alternative I Modified* would have also required upgrading MD 150. For these reasons, *Alternative I Modified* was dropped from consideration.



d. SHA's Selected Alternative

*Revised D Modified* has been selected by the State Highway Administration for design and construction. This alternative provides the best access to the developable portions of the Employment Center, crosses Windlass Run at a desired location, reduces wetland impacts (over *Alternative D Modified*), avoids the need for major upgrades to MD 150, minimizes residential displacements, minimizes community impacts and reduces construction costs associated with relocating the large BGE transmission towers.

6. Summary of Environmental Impacts

Table S-1 presents a summary of the environmental impacts for each alternative that was presented in the DEIS and at the Public Hearing held on June 16, 1999, as well as the impacts associated with *SHA's Selected Alternative*. A brief description of the impacts associated with *SHA's Selected Alternative (Revised D Modified)* and the alternatives that were dropped from consideration are provided below:

With the exception of the residential communities on Bird River Road and MD 150, the majority of the land directly affected by the MRECAS Build Alternatives is undeveloped and forested. All Build Alternatives crossed both Whitemarsh Run and Windlass Run, two tributaries of Bird River. Several of the Build Alternatives affected a historic district.

The *No Build* is being evaluated as a baseline condition and would have no environmental impacts, except noise.

*Revised D Modified (SHA Selected Alternative)* requires the acquisition of 6 residences, no businesses, and 75.6 acres of right-of-way. Also, 9.3 acres of wetlands, 53.1 acres of forest, and 3.1 to 3.6 acres right-of-way will be required from one National Register Eligible (NRE) historic district. Even though it has the second highest direct impacts on wetlands, based upon actual field verified wetland limits, the *Alternatives D Modified/Revised D Modified/I Modified* crossing was the preferred location by the regulatory/resource agencies because it crosses a previously disturbed section of Windlass Run that had the highest degree of entrenchment as compared to the other alternative's crossing locations. All of the alternatives had less direct impacts to wetlands, however, when the secondary wetland impacts associated with proposed access roads within the MREC, are added to the direct impacts, Alternative Revised D Modified would require the lowest overall impact to wetlands.

*Alternative D* required the acquisition of 4 residences, 1 business, and 81.0 acres of right-of-way (ROW). Furthermore, 8.5 acres of wetlands, 51.5 acres of forest, one National Register Eligible (NRE) historic district and two potentially NRE archeological sites would be impacted.

*Alternative D Modified* requires the acquisition of 5 residences, 1 business and 106.0 acres of ROW. Furthermore, 9.9 acres of wetlands, 59.5 acres of forest, and one NRE historic district would be impacted.

*Alternative E* requires the acquisition of 6 residences, 1 business, and 79.0 acres of ROW. Furthermore, 7.8 acres of wetlands, 55.0 acres of forest and two potentially NRE archeological sites would be impacted.

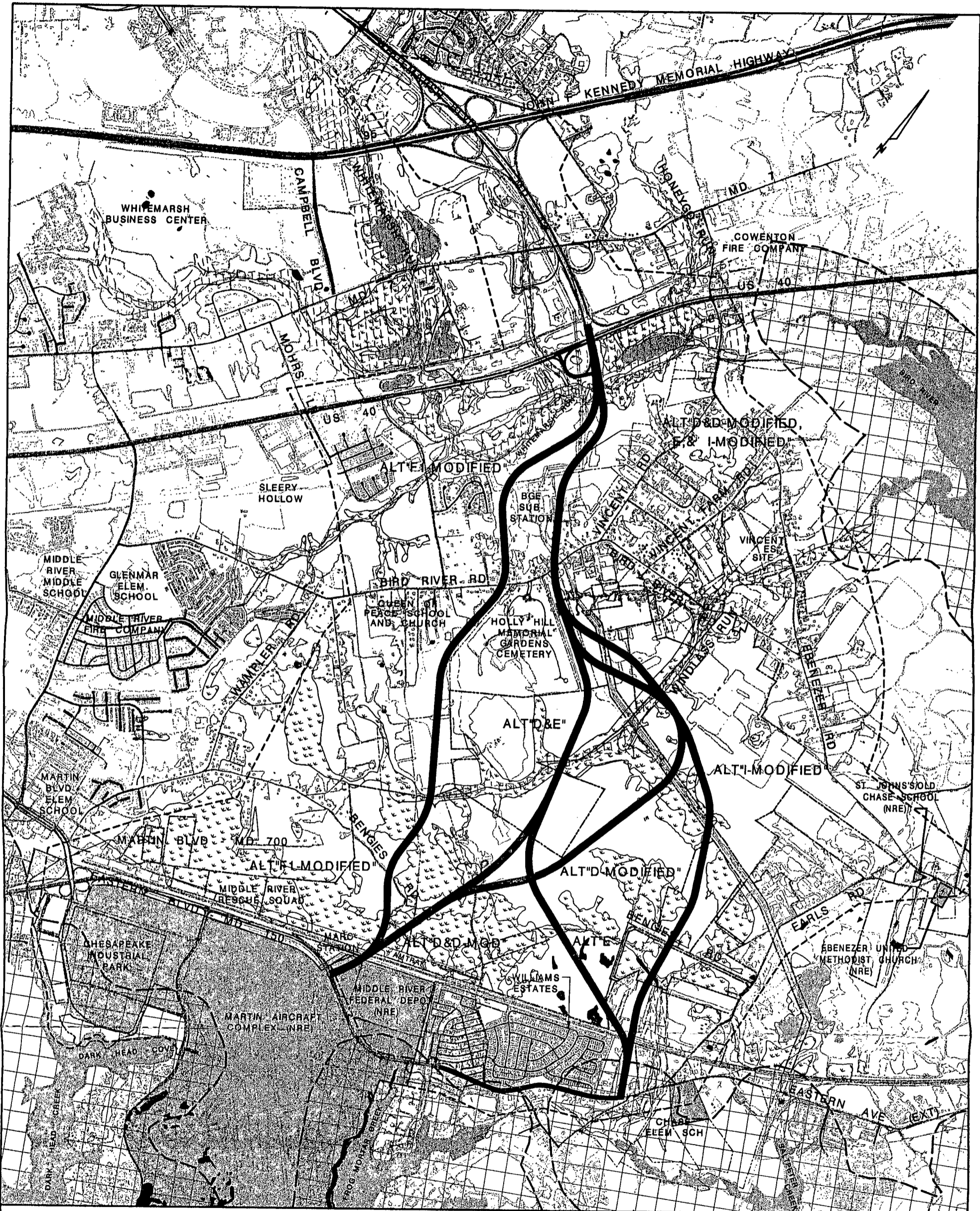
*Alternative F, Modified* requires the acquisition of 10 residences, 1 business, and 84.7 acres of ROW. Furthermore, 7.3 acres of wetlands, 38.3 acres of forest, one potentially NRE historic district and one NRE archeological site would be impacted.

*Alternative I Modified* requires the acquisition of 5 residences, 1 business and 95.3 acres of ROW. Furthermore, 6.7 acres of wetlands, 54.9 acres of forest, and one potentially NRE archeological site would be impacted.

**Mitigation (SHA Selected Alternative)**

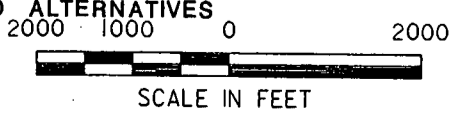
Proposed wetland impacts must be mitigated by: avoidance, minimization, mitigation, and compensation. Avoidance of wetland and stream impacts is preferred. Minimization stresses the need to reduce impacts when impacts cannot be avoided. Mitigation is pursued when avoidance and minimization efforts have been exhausted.

To meet the estimated 18.6 acres of wetland mitigation required for this project, SHA proposes a two level approach that will allow SHA flexibility and the regulatory agencies surety should one of the preferred mitigation sites be found infeasible for the creation of wetlands. The main components of the package include non-tidal wetland creation, enhancement, restoration and preservation, in addition to afforestation and preservation of forested drainage areas contributing to the creation and enhancement sites. The proposed Level 1 includes the use of preferred Site #21 (U. of MD Foundation), and the western portion of Site #25 (Back River Neck Road) which potentially may provide 14.9 acres and 4.4 acres of mitigation credit, respectively. These two sites collectively exceed the 1:1 ratio for no net loss, as well as, exceed the estimated mitigation for the project. The proposed Level 2 includes alternative sites, Site # 11 (DNR) and the entire Site # 25. These sites could provide sufficient acreage should one or all of the Level 1 sites prove to be infeasible. Wetland mitigation is discussed in detail in Section IV.J.4.



**LEGEND**

- 100 YEAR FLOODPLAIN
- DEVELOPABLE PARCELS
- PRELIMINARY WETLANDS
- HISTORIC AREA
- PFA BOUNDARY
- STUDY AREA
- PROPERTY LINE
- CRITICAL AREA BOUNDARY
- RETAINED ALTERNATIVES



MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

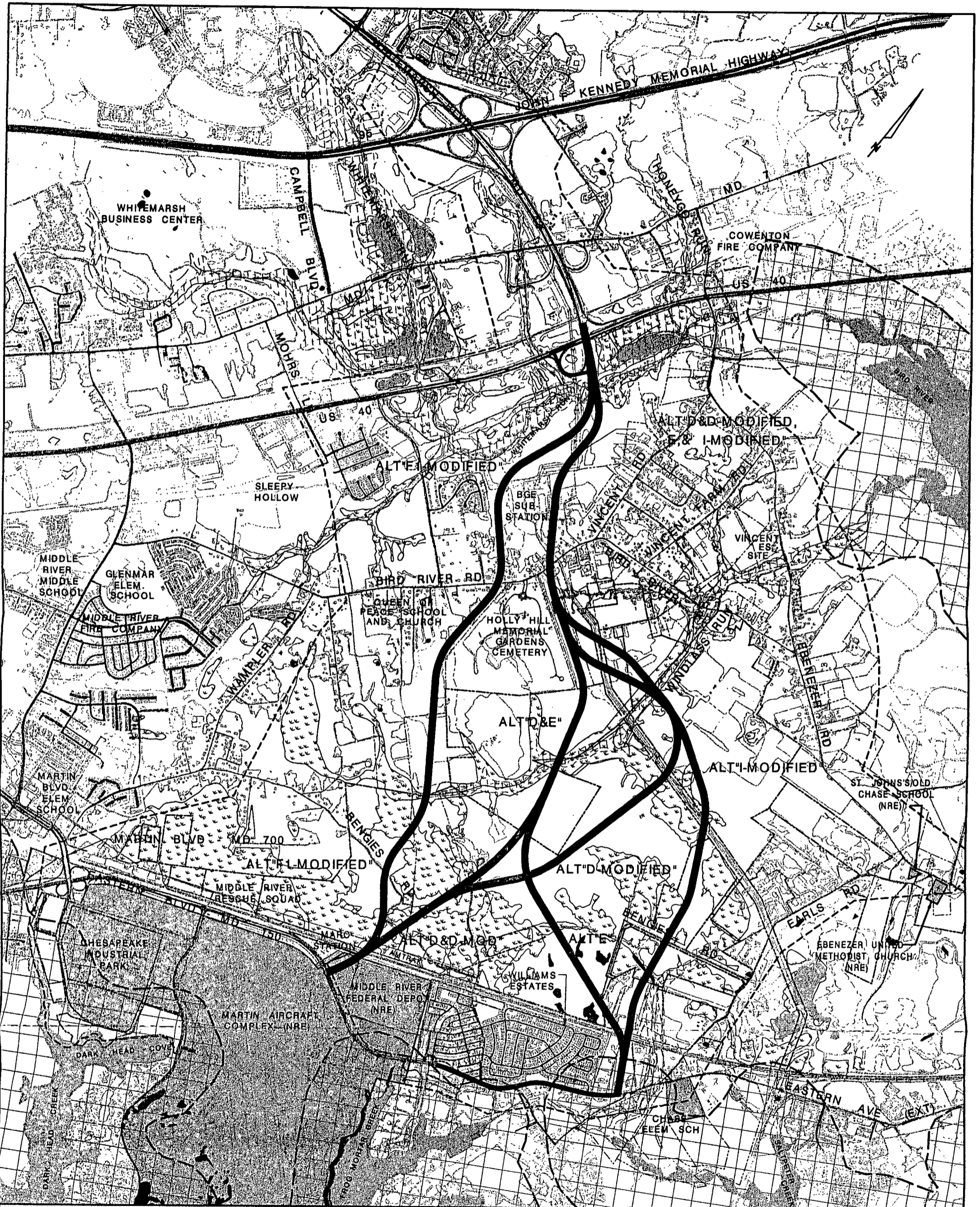
FINAL ENVIRONMENTAL IMPACT  
STATEMENT

MODIFIED ALTERNATIVES MAP










MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

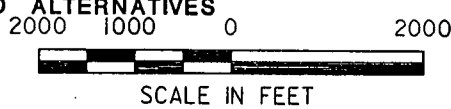
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Jan. 2001

FIGURE  
NO. S-1



**LEGEND**

-  100 YEAR FLOODPLAIN
-  STUDY AREA
-  DEVELOPABLE PARCELS
-  PROPERTY LINE
-  PRELIMINARY WETLANDS
-  CRITICAL AREA BOUNDARY
-  HISTORIC AREA
-  RETAINED ALTERNATIVES
-  PFA BOUNDARY



MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

MODIFIED ALTERNATIVES MAP



DATE:  
Jan. 2001

FIGURE  
NO. S-1

Table S-1: Summary of Impacts

Feature	DEIS Alternatives							SHA's Selected Alternative
	Unit	No Build	D	D Mod	E	F, Mod	I Mod	Revised D Mod
<b>Socio-Economic</b>								
Right-of-Way (ROW) Required	Acre	0	93.1	118.1	91.1	97.1	107.4	92.0
Currently in Private Ownership	Acre	0	81.0	106.0	79.0	84.7	95.3	75.6
# of properties affected	No.	0	23	24	41	25	40	24
Currently in State Ownership	Acre	0	12.1	12.1	12.1	12.4	12.1	12.1
Residential Displacements	No.	0	4	5	6	10	5	6
Business Displacements	No.	0	1	1	1	1	1	0
Consistent with Master Plans	---	No	Yes	Yes	Yes	Yes	Yes	Yes
Active Agricultural Land	Acre	0	0	3.4	1	23.9	11.4	3.4
Public Parks	No.	0	0	0	0	0	0	0
<b>Cultural Resources</b>								
NRE Historic Sites <sup>1</sup>	No.	0	1	1	0	1	0	1
Potential NRE Archeological Sites Impacted	No.	0	2	0	2	1	1	0
<b>Natural Environment</b>								
Critical Area	Acre	0	0	0	7.3	0	7.3	0
Wetlands <sup>5</sup>	Acre	0	8.5	9.9	7.8	7.3	6.7	9.3
Streams Crossed	No.	0	5	5	7	9	6	5
Stream Impacts	L.F.	0	420	390	585	570	495	390
Floodplain Encroachment	Acre	0	2.8	2.4	2.8	1.5	2.5	2.4
Forest Impacts	Acre	0	51.5	59.5	55.0	38.3	54.9	53.1
100+ Acres Contiguous Forest Blocks	No.	0	1	1	1	1	1	1
Rare, Threatened, or Endangered Species-Federal	No. of Sites	0	0	0	0	0	0	0
Noise Impacts <sup>2</sup>	No.	1	3	2	4	4	3	2
Air Quality Impacts <sup>3</sup>	No.	0	0	0	0	0	0	0
<b>Cost</b>								
Length	Mile	0	3.1	3.6	4.0	3.2	4.1	3.6
ROW <sup>4</sup>	\$Million	0	6.6	6.6	8.5	11.8	12.2	6.6
Potential Noise Barriers	\$Million	0	1.0	0.6	1.0	0.9	0.6	0.6
Engineering & Construction	\$Million	0	50.9	52.2	50.6	48.6	56.3	51.4
<b>Total</b>	<b>\$Million</b>	<b>0</b>	<b>58.5</b>	<b>59.4</b>	<b>60.1</b>	<b>61.3</b>	<b>69.1</b>	<b>58.6</b>

<sup>1</sup> National Register Eligible sites from which property is required.

<sup>2</sup> NSAs that approach or exceed Federal Noise Abatement Criteria or have a 10 dBA or greater increase.

<sup>3</sup> Sites Exceeding S/NAAQs.

<sup>4</sup> Does not include ROW needed from A.V. Williams Trust property.

<sup>5</sup> Additional wetlands were found west of Bird River Road, which total 0.26 acres. This amount has been added to Alternatives D-Mod, D, E and I-Mod.

Mitigation plans for impacts to the Martin State Airport/Federal Depot Historic District have also been developed. SHA, in consultation with the Maryland State Historic Preservation Officer (SHPO), will develop a plan for the public interpretation of the history of the Martin State Airport/Federal Depot Historic District, including the paint hangar, currently a MARC maintenance facility. The plan may include one or more of the following items: exhibits, markers, interpretive panels, and/or oral histories of those who worked at the Martin State Airport during its period of significance (1929-1949). The plan will be developed within one year following the completion of the highway bridge over the Amtrak railway and will be submitted to the MD SHPO for review and comment. A final Section 4(f) evaluation is included in Section V of this FEIS.

## 7. Permits Required

Construction of this 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, Approved Sediment and Erosion Control Plan, Approved Stormwater Management Plan, Water Quality Certificate, and a Nontidal/Tidal Wetland and Waterways Permit

## 8. Areas of Controversy

The regulatory/resource agency expressed concern about the direct and indirect loss of wetlands and wildlife habitat, which may occur with the Build Alternatives and associated development/redevelopment of this area.

## 9. Public Involvement Process

A public involvement program has been conducted as a part of this study. Components of this program have included:

- A series of Focus Group Meetings were held during the development of the environmental inventory and the transportation alternatives. The main purpose of the Focus Group was to provide a local perspective as transportation alternatives were being developed and evaluated. The members of the Focus Group are community leaders and political representatives who convey to SHA a community perspective on aspects of the MRECAS project between formal public meetings. Focus Group meetings were held on April 21, 1998, June 11, 1998, October 13, 1998, March 3, 1999 and July 29, 1999. A meeting was held on February 11, 1999 with the Bowleys Quarters Improvement Association. Two meetings (June 9, 1999 and October 7, 1999) were held with the Bird River Road Stakeholders concerning the impacts to the Bird River Road community. Minutes for the above discussed meetings are provided in Appendix F.
- The Alternatives Public Workshop for the MRECAS project was held on June 2, 1998 at Middle River Middle School. Approximately 300 people attended the workshop, with 87 people providing written comments and 20 people providing recorded testimony. A

summary of the Alternatives Public Workshop is provided in Section VI, Comments and Coordination.

- Presentations to community associations, civic groups, and chambers of commerce have been held throughout the planning stage. A summary of these presentations is provided in Section VI Comments and Coordination.
- Approximately 300 people attended the Location/Design Public Hearing for the MRECAS held on June 16, 1999 at Kenwood High School in Essex, Maryland. A total of 31 people participated in public or private testimony. The majority of the respondents supported Alternative D-Modified, while a number of others supported the no-build or had concerns about the other alternatives.

#### **10. Environmental Assessment Form**

The Environmental Assessment Form for the MRECAS Project is provided below. This 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 provisions of 1500.4(k) and 1506.2 and 1506.6 of the Council of Environmental Quality Regulations, effective July 31, 1979, which recommends 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, which have been considered while preparing the environmental assessment. The reviewer can refer to the appropriate section of the DEIS 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</u>
A. Land Use Considerations			
1. Will the action be within the 100 year floodplain?	<u>X</u>	<u>      </u>	<u>III-F</u>
2. Will the action require a permit for construction or alteration within the 50 year floodplain?	<u>X</u>	<u>      </u>	<u>      </u>
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	<u>X</u>	<u>      </u>	<u>III-I</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>      </u>	<u>X</u>	<u>III-M</u>
5. Will the action occur on slopes exceeding 15%?	<u>      </u>	<u>X</u>	<u>      </u>
6. Will the action require a grading plan or a sediment control permit?	<u>X</u>	<u>      </u>	<u>      </u>
7. Will the action require a mining permit for deep or surface mining?	<u>      </u>	<u>X</u>	<u>      </u>
8. Will the action require a permit for drilling a gas or oil well?	<u>      </u>	<u>X</u>	<u>      </u>



		<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
9.	Will the action require a permit for airport construction?	<u>      </u>	<u>  X  </u>	<u>      </u>
10.	Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	<u>      </u>	<u>  X  </u>	<u>      </u>
11.	Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wildland?	<u>      </u>	<u>      </u>	<u>  III-A  </u>
12.	Will the action affect the use of any natural or manmade features that are unique to the county, state, or nation?	<u>  X  </u>	<u>      </u>	<u>  III-H  </u>
13.	Will the action affect the use of an archeological or historical site or structure?	<u>      </u>	<u>      </u>	<u>  III-B  </u>
B. Water Use Considerations				
14.	Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	<u>  X  </u>	<u>      </u>	<u>  III-F  </u>
15.	Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	<u>      </u>	<u>  X  </u>	<u>      </u>

		<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
16.	Will the action change the overland flow of stormwater or reduce the absorption capacity of the ground?	<u>X</u>	<u>      </u>	<u>IV-G</u>
17.	Will the action require a permit for the drilling of a water well?	<u>      </u>	<u>X</u>	<u>      </u>
18.	Will the action require a permit for water appropriation?	<u>      </u>	<u>X</u>	<u>      </u>
19.	Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	<u>      </u>	<u>X</u>	<u>      </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>      </u>	<u>X</u>	<u>      </u>
21.	Will the action result in any discharge into surface or sub-surface water?	<u>X</u>	<u>      </u>	<u>IV-G</u>
22.	If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	<u>X</u>	<u>      </u>	<u>IV-G</u>

		<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
C. Air Use Considerations				
23.	Will the action result in any discharge into the air?	<u>X</u>	<u>      </u>	<u>IV-K</u>
24.	If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	<u>      </u>	<u>X</u>	<u>      </u>
25.	Will the action generate additional noise which differs in character or level from present conditions?	<u>X</u>	<u>      </u>	<u>IV-L</u>
26.	Will the action preclude future use of related air space?	<u>      </u>	<u>X</u>	<u>      </u>
27.	Will the action generate any radiological, electrical, magnetic, or light influences?	<u>      </u>	<u>X</u>	<u>      </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>      </u>	<u>X</u>	<u>IV-J</u>
29.	Will the action result in the significant reduction or loss of any fish or wildlife habitats?	<u>      </u>	<u>      </u>	<u>IV-J</u>

		<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
30.	Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?	<u>      </u>	<u>  X  </u>	<u>      </u>
E. SocioEconomic				
31.	Will the action result in a preemption or division of properties or impair their economic use?	<u>  X  </u>	<u>      </u>	<u>  IV-A  </u>
32.	Will the action cause relocation of activities, structures, or result in a change in the population density or distribution?	<u>  X  </u>	<u>      </u>	<u>  IV-A  </u>
33.	Will the action alter land values?	<u>  X  </u>	<u>      </u>	<u>  IV-A  </u>
34.	Will the action affect traffic flow and volume?	<u>  X  </u>	<u>      </u>	<u>  II  </u>
35.	Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	<u>      </u>	<u>  X  </u>	<u>      </u>
36.	Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	<u>      </u>	<u>  X  </u>	<u>      </u>

		<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
37	Is the action in accord regional and local comprehensive or functional plans-including zoning?	<u>X</u>	<u>      </u>	<u>IV-A</u>
38.	Will the action affect the employment opportunities for persons in the area?	<u>X</u>	<u>      </u>	<u>IV-A</u>
39.	Will the action affect the ability of the area to attract new sources of tax revenue?	<u>X</u>	<u>      </u>	<u>IV-A</u>
40.	Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?	<u>      </u>	<u>X</u>	<u>      </u>
41.	Will the action affect the ability of the area to attract tourism?	<u>X</u>	<u>      </u>	<u>IV-I</u>
F. Other Considerations				
42.	Could the action endanger the public health, safety or welfare?	<u>      </u>	<u>X</u>	<u>      </u>
43.	Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?	<u>      </u>	<u>X</u>	<u>      </u>

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
44. Will the action be of statewide significance?	_____	<u>X</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>	_____	_____
46. Will the action require additional power generation or transmission capacity?	_____	<u>X</u>	_____
47. This agency will develop a complete environmental effects report on the proposed action.	<u>X</u>	_____	<u>X</u>

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
44. Will the action be of statewide significance?	_____	<u>X</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>	_____	_____
46. Will the action require additional power generation or transmission capacity?	_____	<u>X</u>	_____
47. This agency will develop a complete environmental effects report on the proposed action.	<u>X</u>	_____	<u>X</u>

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*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration



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I.

# PURPOSE AND NEED FOR ACTION

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*

I. PURPOSE AND NEED  
FOR PROPOSED ACTION



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

## I. PURPOSE AND NEED FOR ACTION

### A. Purpose of the Project

The purpose of this project is to provide improved access from the regional transportation network to enable the planned development of major economic development opportunity sites and to foster increased utilization of established employment areas in the Middle River Employment Center (MREC). The location of this project is shown on **Figure I-1**.

### B. Need for the Project

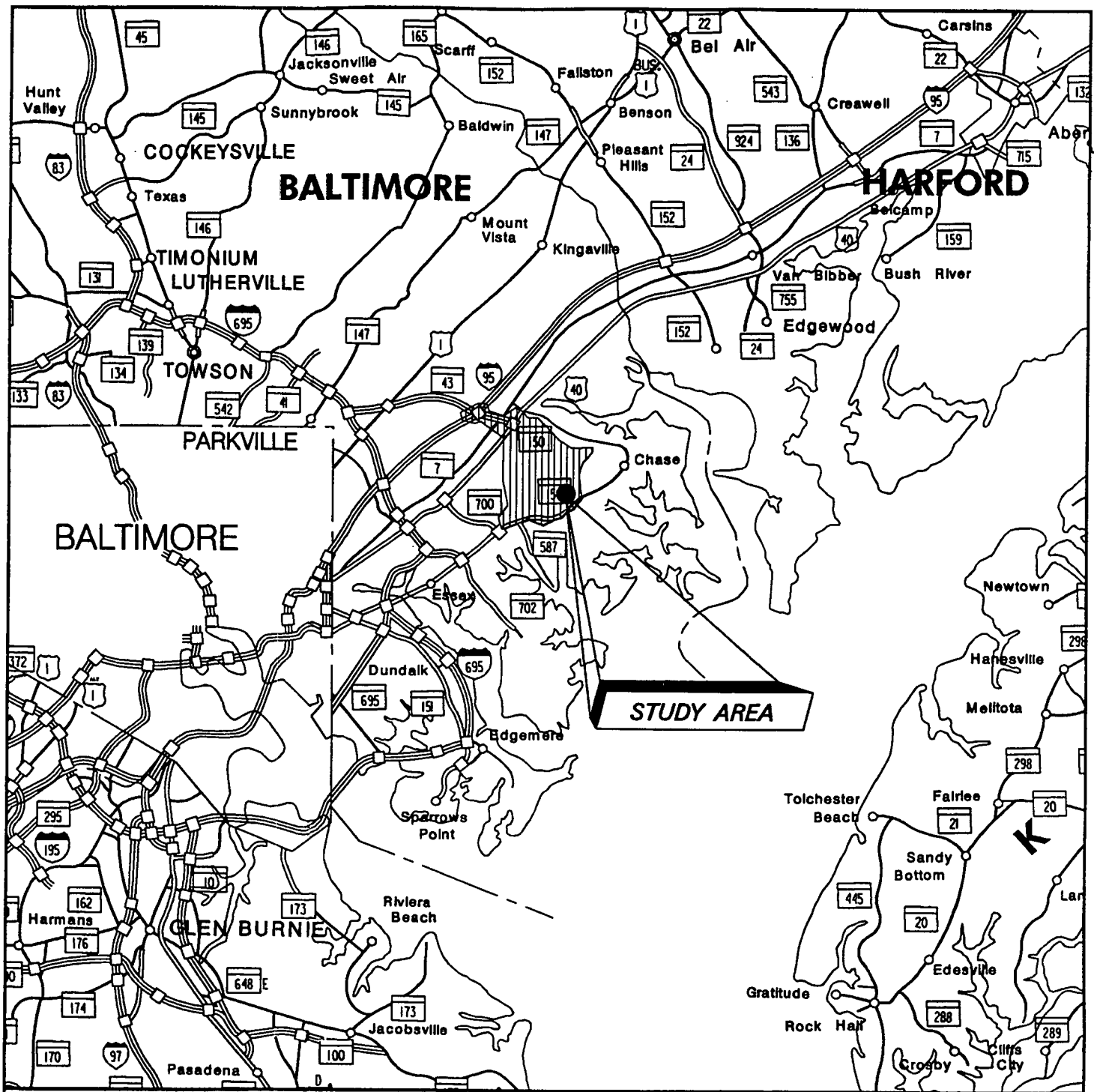
The need for this project is to provide a sufficient level of access and mobility to support economic development efforts in the Middle River Employment Center (MREC), as identified in the Eastern Baltimore County Revitalization Strategy adopted by the Baltimore County Council in July, 1996.

Baltimore County has designated a portion of the Middle River area as an Employment Center, where employment growth is planned to occur. The Middle River Employment Center (MREC) includes the 1,000-acre undeveloped A.V. Williams tract, Martin State Airport and the Chesapeake Industrial Park, which includes Middle River Aircraft Systems facility. The full development potential of the MREC is dependent on improved access to national transportation facilities that serve travel demand between the Baltimore area and other regions of the country.

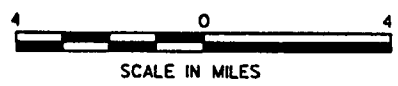
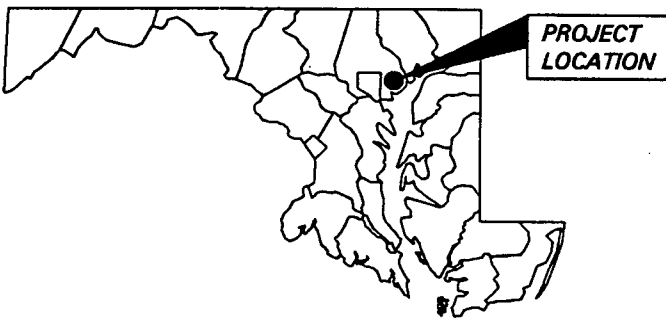
The Amtrak northeast corridor railroad line is one such national transportation facility that already serves the MREC. The Amtrak line cuts through the MREC, providing access to the Chesapeake Industrial Park and the General Services Administration (GSA) building via spurs. However, the Amtrak line also acts as a hindrance to movement between the developed section of the MREC south of the railroad and the undeveloped section of the MREC north of the railroad and is a *de facto* line of demarcation between the two sections of the MREC. The hindrance effect of the railroad inhibits non-railroad movement within the MREC and between the MREC and other regional transportation facilities, such as the Interstate highway system.

Of the two sections of the MREC, the northern section, which contains the 1,000-acre A.V. Williams parcel and some smaller parcels, has a much greater potential for employment growth. The northern section of the MREC also suffers from much more deficient multi-modal access than the southern section of the MREC.

The existing roads throughout the study area are deficient in that they lack the capacity and continuity to provide adequate future freight, employee, and customer access to the entire MREC from the national highway network. The substandard alignment and design features of many of the roads within the study area contribute to current accident rates that are significantly higher than the statewide average.



**STUDY AREA**



**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT  
STATEMENT**

**LOCATION MAP**



**DATE:**  
Jan. 2001

**FIGURE  
NO. I-1**

## C. Long-Term Planning Context

### 1. Growth Management and the Urban Rural Demarcation Line (URDL)

For many suburban jurisdictions throughout the county, decisions regarding land use and growth management are now being debated and discussed. Baltimore County took on these important questions twenty years ago. After intensive analysis and discussion, the County then embarked upon an aggressive Growth Management Program based on the assumption that communities should make conscious decisions about the scope and direction of growth. The Program was embodied in the *Baltimore County Master Plan 1979-1990*, adopted by the County Council in November, 1979. It created an urban service boundary – the “Urban Rural Demarcation Line” (URDL) – which defines the limit of public water and sewer service, as well as the major transportation system. It also established growth areas in White Marsh and Owings Mills and asserted that rural areas should remain rural.

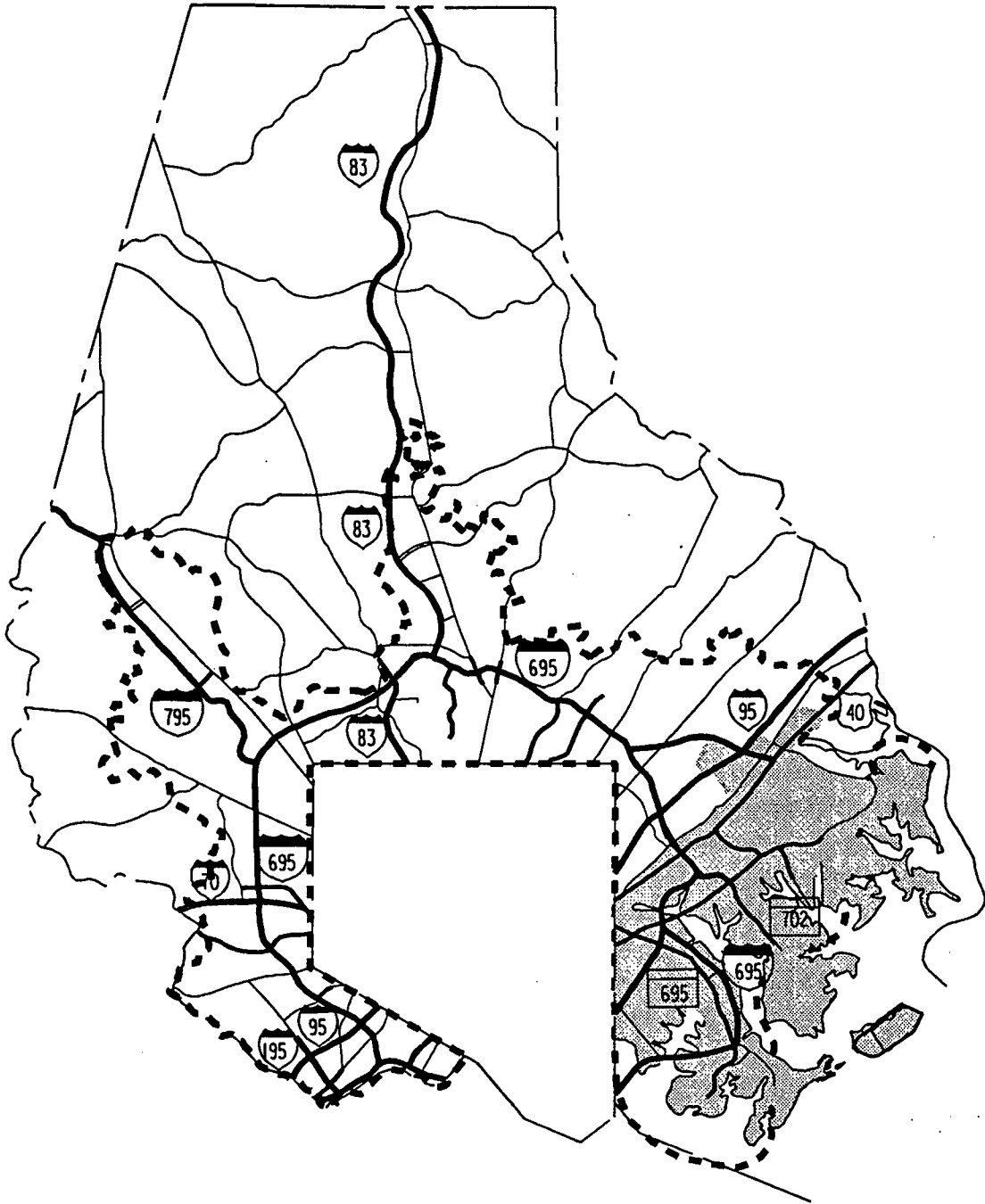
Since the URDL was created in 1979, capital projects, transportation improvements, zoning changes and development actions must conform to this clear separation between the County’s developable areas and its rural areas. Only one-third of Baltimore County’s land area is zoned for higher density residential and industrial uses.



### 2. Eastern Baltimore County Revitalization Strategy


The strong need for an economic development initiative in this area can be demonstrated by the five indicators of economic and community health identified in the Eastern Baltimore County Revitalization Strategy. **Figure I-2** indicates the relationship between the URDL and the Eastern Baltimore County Revitalization Area.

- *Population* – the study area has lost 15,000 residents since 1970
- *Employment* – the study area was the only regional employment area (exclusive of Baltimore City) to experience net loss of jobs. Good paying manufacturing jobs have been replaced by lower paying retail and service jobs
- *Income* – the study area has the highest concentration of poverty in Baltimore County, with a majority of the area below the County’s median household income
- *Education* – only 65% of area residents have a high school diploma. Less than 10% have advanced degrees
- *Crime* – the study area has the highest concentration of violent crime, drug-related crime, juvenile arrests and order maintenance calls in the County





 EASTERN BALTIMORE REVITALIZATION AREA  
 URBAN - RURAL DEMARCATION LINE / PFA BOUNDARY

MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY		
FINAL ENVIRONMENTAL IMPACT STATEMENT		
EASTERN BALTIMORE REVITALIZATION AREA		
 MARYLAND STATE HIGHWAY ADMINISTRATION	DATE: Jan. 2001	FIGURE NO. 1-2

**D. Economic Development**

1. Employment Centers

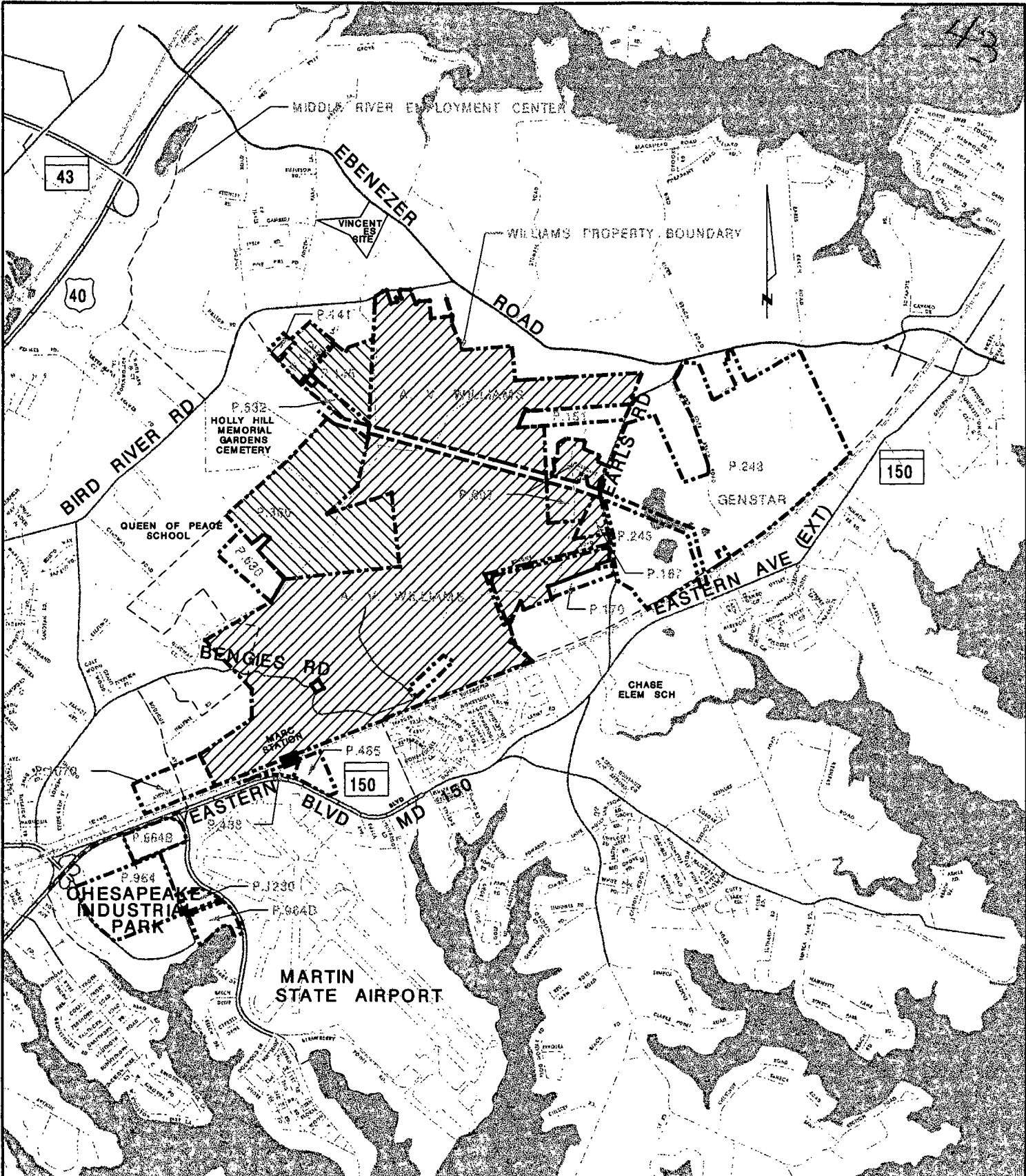
Baltimore County has targeted much of the study area for future employment growth through its countywide Growth Management Plan. An objective of the plan is to maintain an adequate supply of prime industrial land served by public infrastructure to encourage employment-generating development and redevelopment, while still preserving the rural character of 2/3 of the County's land area. Toward this end, the County designated several areas, including Middle River, as *Employment Centers*. The Employment Center classification is defined as "existing and proposed retail office and manufacturing areas which provide significant County-wide service and employment opportunities" (June 2, 1997, Master Plan Amendment).

The Middle River Employment Center includes the Martin State Airport, the Chesapeake Industrial Park, the Middle River Aircraft Systems facility, the former US Army Publications Depot, and the 1,000-acre undeveloped A.V. Williams tract (See **Figures I-3 and I-4**).

The economic anchor was Lockheed Martin Aircraft/ General Electric (LMA/GE) operation, which during the 1930's and 1940's, as the Glenn L. Martin Company, became a leading aircraft manufacturer. Because of corporate downsizing and consolidation in the defense and commercial jetliner industries, production at this facility has decreased dramatically in the past 50 years from a peak of 50,000 jobs during World War II to less than 1,200 jobs in 1996. This has had a negative impact on the surrounding communities which depended on the company for employment.

The newly renamed "Middle River Aircraft Systems," formerly Lockheed Martin Aerostructures and recently purchased by General Electric (GE), has experienced considerable growth in the last 18 months. In 1997, the company has expanded their aircraft parts machining and manufacturing business having been awarded a number of new contracts. New activity to the plant includes an additional jet engine thrust reverser project for the Air Force, a military aircraft components bonding contract and an aerostructures sub-contract for Boeing. This new activity has expanded the workforce by over 700 employees, up from 1,000 in December of 1996. GE has signed a 15 year lease with Lockheed Martin Properties (lessor of the land and buildings), and has committed to keep the existing management in place, which holds open the potential for additional business expansion at the facility in the future.

Lockheed Martin Properties also owns and represents nearly 80 acres of industrial property, known as Chesapeake Industrial Park, that is distributed among 6 parcels and available for development. The development of these parcels is zoned to include manufacturing, warehouse/distribution and office uses. Access to this undeveloped land will be greatly enhanced with improved transportation service. (See **Figures I-5 and I-6** for the Land Bay Analysis and the Master Plan for the Chesapeake Industrial Park.)



**LEGEND**



WILLIAMS PROPERTY



EMPLOYMENT CENTER

3000 1500 0 3000



MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

MIDDLE RIVER EMPLOYMENT CENTER








MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

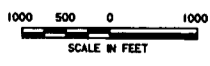
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Jan. 2001

FIGURE  
NO. I-3



**LEGEND**

-  PREVIOUS DELINEATED WETLANDS (1996) BY OTHERS
-  OTHER WETLANDS WITHIN STUDY AREA
-  STUDY AREA
-  PROPERTY LINE
-  URDL/PFA LINE



MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

LAND USE STUDY MAP

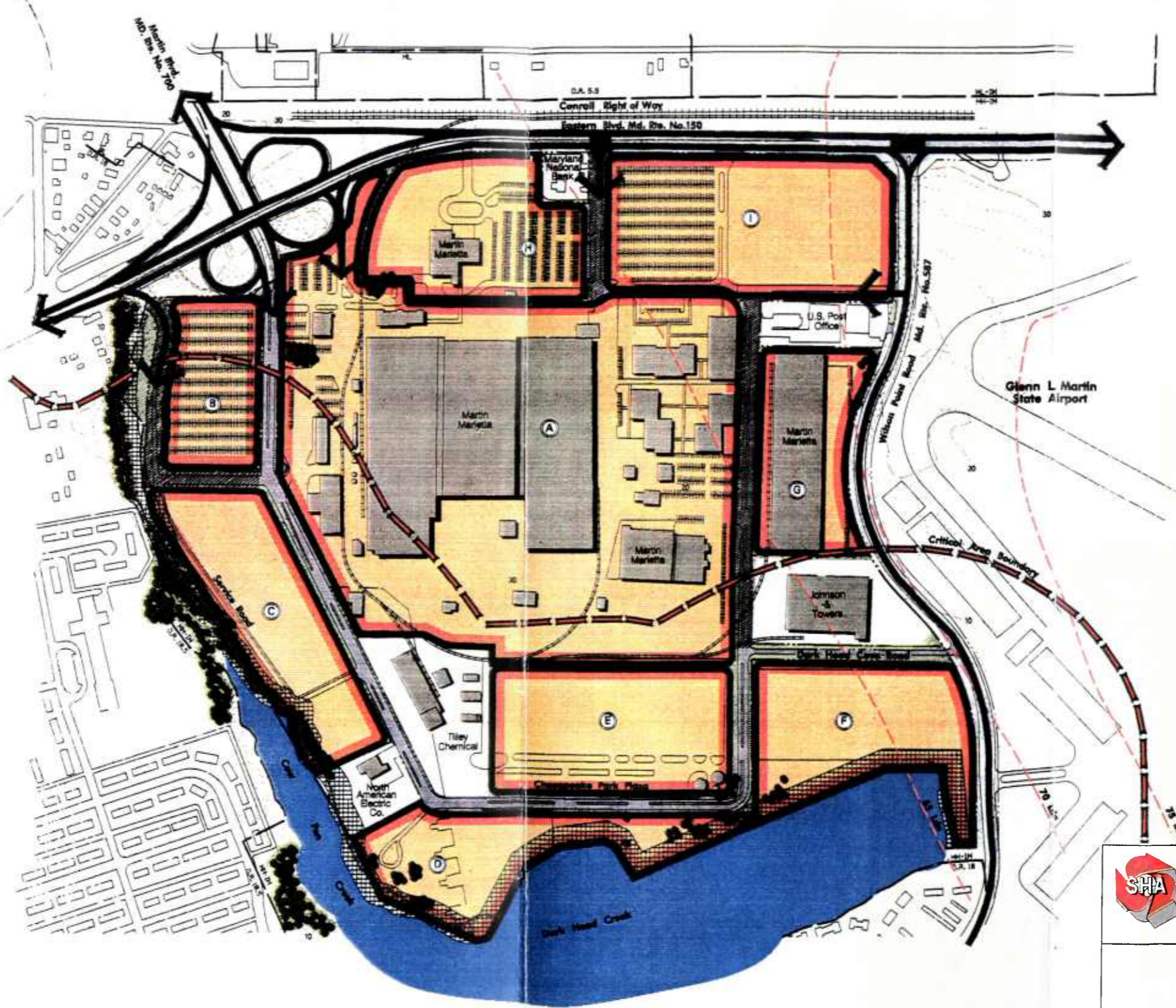
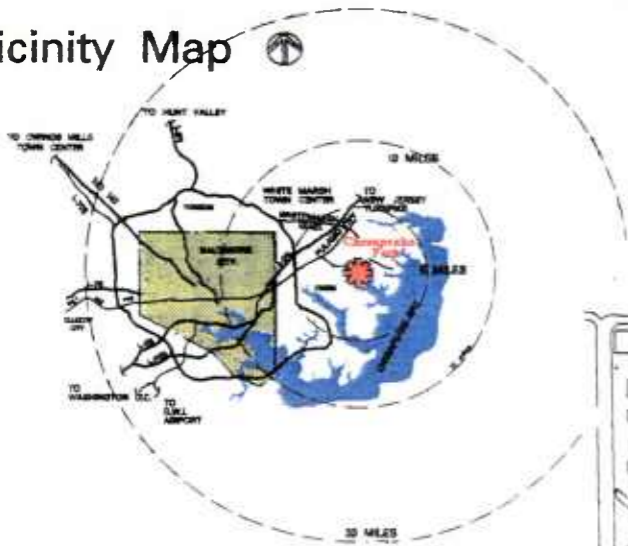


DATE:  
Jan. 2001

FIGURE  
NO. I-4

45

Vicinity Map



- Legend**
- Code Description
- Existing Building and Parking
  - Existing Trees
  - Major Road Access
  - Existing Rail Line
  - Site Access
  - Critical Area Boundary
  - Critical Area 100' Buffer
  - 100 Year Flood Plain Elev. 6.00'
  - Airport Noise Zone LDN (Day - Night Average Sound Level)

**Development Areas**

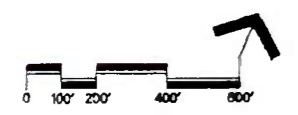
Code	Gross Acres	Buildable Acres
A	+/- 71.7 Acres	+/- 71.7 Acres
B	+/- 7.2 Acres	+/- 7.2 Acres
C	+/- 13.5 Acres	+/- 11.3 Acres
D	+/- 11.9 Acres	+/- 7.3 Acres
E	+/- 14.5 Acres	+/- 14.5 Acres
F	+/- 12.7 Acres	+/- 10.5 Acres
G	+/- 8.7 Acres	+/- 8.7 Acres
H	+/- 12.7 Acres	+/- 12.7 Acres
I	+/- 18.5 Acres	+/- 18.5 Acres
Sub-total	+/- 171.4 Acres	+/- 162.4 Acres
Circulation Parcels	+/- 7.0 Acres	
<b>Total Acres</b>	<b>+/- 178.4 Acres</b>	

\* Note: Net Acres Excludes Critical Area 100' Buffer & 100' Year Floodplain

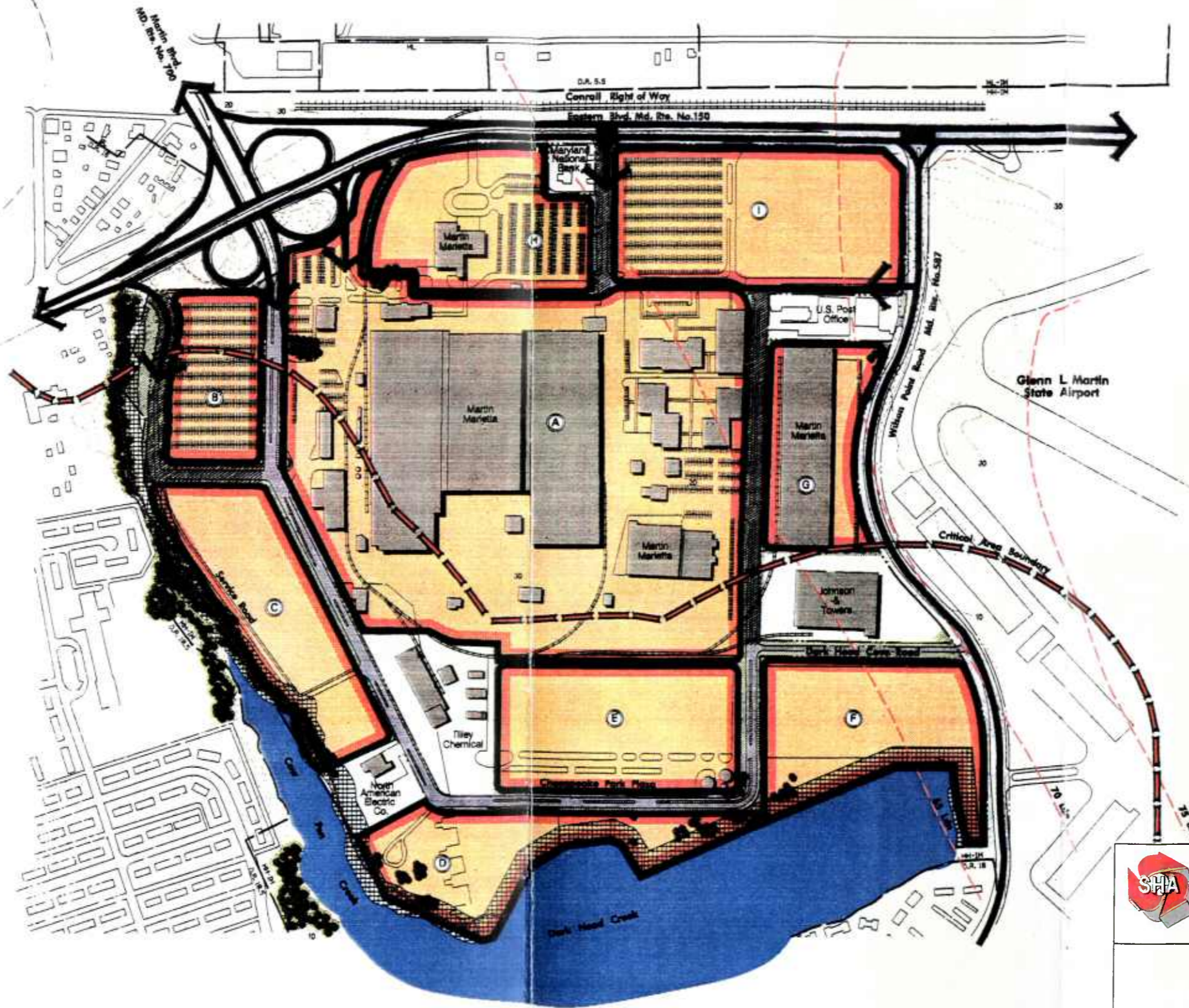
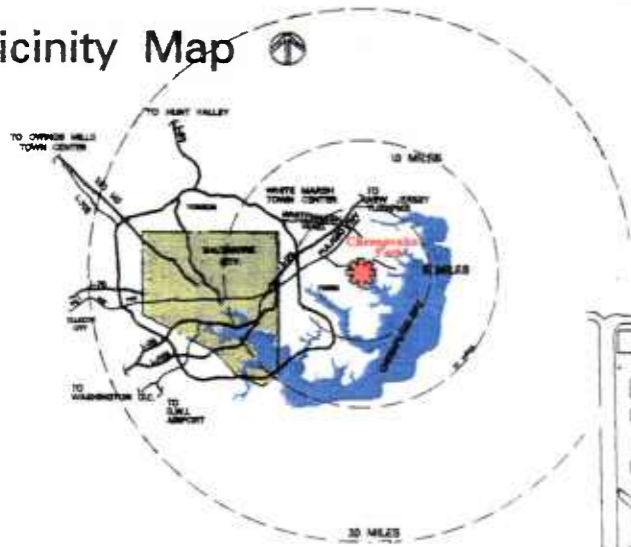
	Middle River Employment Center Access Study
	Final Environmental Impact Statement
<b>Chesapeake Park Land Bay Analysis</b>	
FIGURE I-5	January, 2001

# Land Bay Analysis Chesapeake Park

Prepared For: Chesapeake Park, Inc.  
A Subsidiary of Martin  
Marietta Corporation  
Baltimore, Maryland



Vicinity Map



45

**Legend**

Code	Description
	Existing Building and Parking
	Existing Trains
	Major Road Access
	Existing Rail Line
	Site Access
	Critical Area Boundary
	Critical Area 100' Buffer
	100 Year Flood Plain Elev. 5.00'
	Airport Noise Zone LDN (Day - Night Average Sound Level)

**Development Areas**

	Gross Acres	Buildable Acres
	+/- 71.7 Acres	+/- 71.7 Acres
	+/- 7.2 Acres	+/- 7.2 Acres
	+/- 13.5 Acres	+/- 11.3 Acres
	+/- 11.9 Acres	+/- 7.3 Acres
	+/- 14.5 Acres	+/- 14.5 Acres
	+/- 12.7 Acres	+/- 10.5 Acres
	+/- 8.7 Acres	+/- 8.7 Acres
	+/- 12.7 Acres	+/- 12.7 Acres
	+/- 18.5 Acres	+/- 18.5 Acres
Sub-total	+/- 171.4 Acres	+/- 162.4 Acres
	+/- 7.0 Acres	
Total Acres	+/- 178.4 Acres	

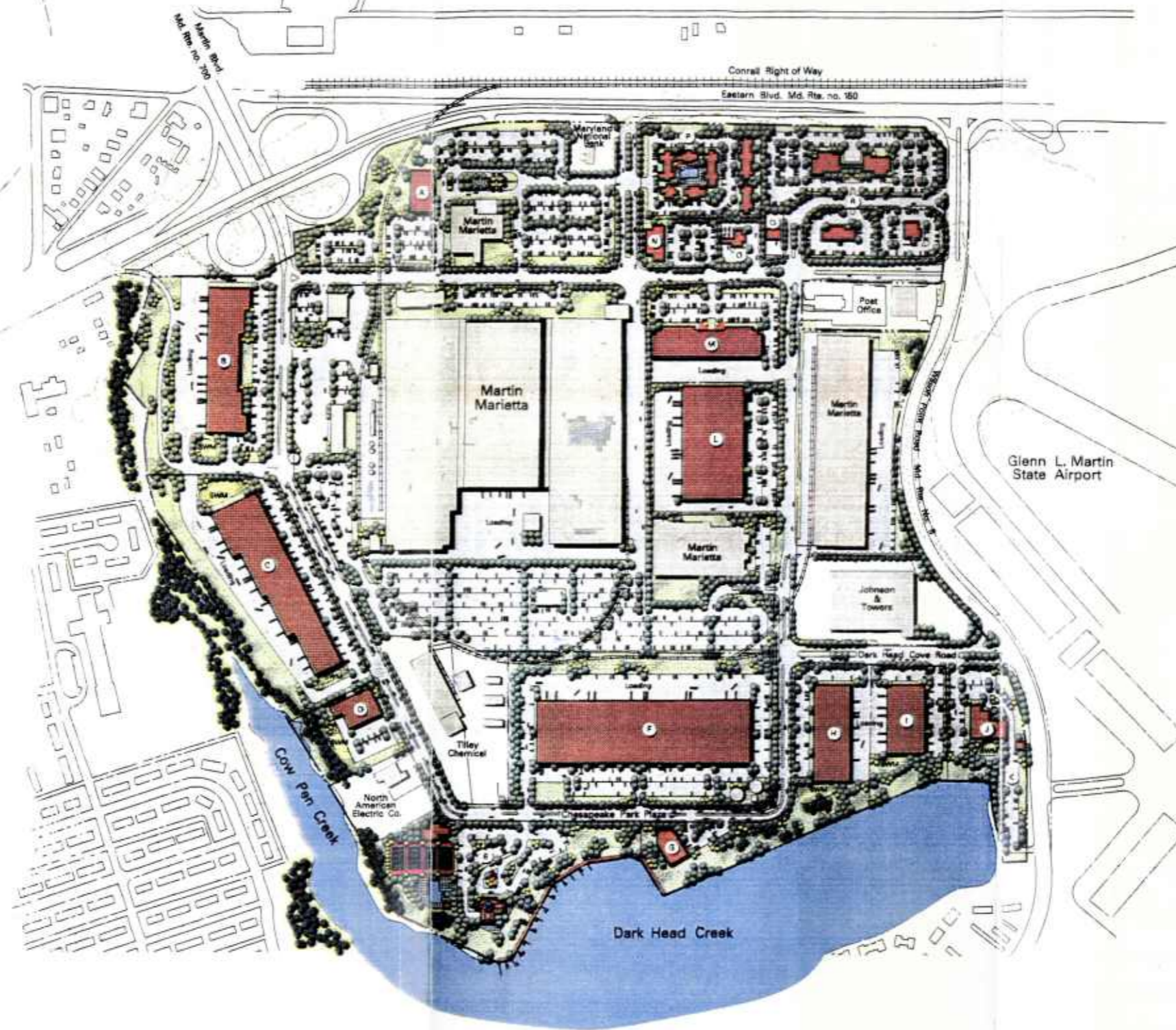
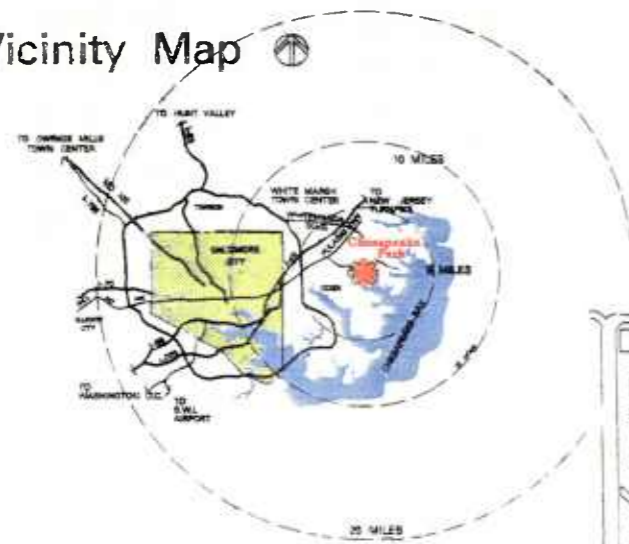
\* Note: Net Areas Excludes Critical Area 100' Buffer & 100' Year Floodplain

	Middle River Employment Center Access Study
	Final Environmental Impact Statement
<b>Chesapeake Park Land Bay Analysis</b>	
FIGURE I-5	January, 2001

# Land Bay Analysis Chesapeake Park

Prepared For: Chesapeake Park, Inc.  
A Subsidiary of Martin Marietta Corporation  
Baltimore, Maryland

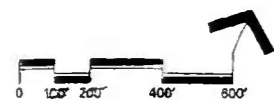
Vicinity Map



Legend

Code	Description
	Existing Building and Parking
	Existing Outparcels
	Storm Water Management
	Existing Trees
	Boat Slips for use by patrons of restaurant only
	Office ± 40,000 sf. ± 2 story 132 parking spaces
	Office Warehouse ± 50,000 sf. ± 7.2 ac. ± 180 parking spaces, for 3
	Office Warehouse ± 128,000 sf. ± 10.7 ac. ± 176 parking spaces, for 27
	Office ± 20,000 ± 1 story, for 18 2.8 ac. ± 68 parking spaces
	Restaurant and Health Club
	Office Warehouse ± 223,000 sf. ± 15.6 ac. ± 632 parking spaces, for 28
	Office ± 10,000 sf. 1 story, for 33 ± 2.8 ac. ± 27 parking spaces
	Office Warehouse ± 81,500 sf. ± 5 ac. ± 120 parking spaces, for 28
	Office Warehouse ± 42,000 sf. ± 3.8 ac. ± 108 parking spaces, for 26
	Office ± 30,000 sf. ± 4.5 ac. ± 18 parking spaces, for 12
	Car Rental 60 cars
	Office Warehouse ± 120,000 sf. ± 6.7 ac. ± 190 parking spaces, for 4
	Office Warehouse ± 64,000 sf. ± 6.2 ac. ± 270 parking spaces, for 23
	Medical Office Center ± 24,000 sf. ± 66 parking spaces
	Bank with Drive Thru Teller ± 3,900 sf. ± 12 parking spaces
	Hotel 150 Rooms ± 180 parking spaces
	Service Station
	Restaurant

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Deft McCune Walker, Inc.  
Land Planners Landscape Architects  
Engineers Surveyors Computer Graphics

	Middle River Employment Center Access Study
	Final Environmental Impact Statement
<b>Chesapeake Park Master Plan</b>	
FIGURE I-6	January, 2001

# Master Plan Chesapeake Park

Prepared For: Chesapeake Park, Inc.  
A Subsidiary of Martin  
Marietta Corporation  
Baltimore, Maryland





Next to the GE facility is Martin State Airport (MTN), which is presently undergoing development. MTN has 265,000 square feet of office/industrial and hangar space available for lease, with a current occupancy rate of 95%. A number of area businesses maintain flight operations and office facilities at MTN, including Black & Decker Corporation, Crown Central Petroleum, USF&G, PHH, Ward Machinery and Lockheed Martin. A new 40,000 square foot hangar for Lockheed Martin Flight Operations is proposed, as well as a new Midfield Terminal.

Across the street from Martin State Airport is the 1.7 million square foot General Services Administration (GSA) building. This building, owned by GSA, was the site of a major Army Publications Depot facility until that operation was relocated in 1996 as part of the Base Realignment and Closing (BRAC) process. The building is presently 53% leased and houses the Social Security Administration, an Air Force Publications facility, and the State Department as tenants. The remaining 47% is being actively marketed by GSA, with the potential of an additional 200,000 square feet being leased in the immediate future. GSA plans to maintain control of the facility for lease to government entities, for the remaining 800,000 square feet unoccupied.

Nottingham Properties, the primary developer of the White Marsh Town Center has experienced considerable growth over the past decade. Today, the Town Center has nearly 3.7 million square feet of commercial space. When the 250 undeveloped acres are brought on-line, total potential build-out will be 5.0 million square feet. The development of the Town Center has been most dramatic since the extension of Route 43 from I-695 to Route 40. The road extension has contributed to the development of many projects, specifically the Warner Bros., Danfoss Automatic Controls, CSS Power and Metris facilities.

## 2. Economic Development Potential of the MREC: Conservative and Expected Scenarios

The Middle River Employment Center has tremendous economic development potential with its existing industrial uses, waterfront access, airport, railroad, and large inventory of undeveloped, industrially-zoned land. To estimate the development potential and fiscal impact of likely commercial development in the study area resulting from increased access in the area, Baltimore County created a development model including all vacant parcels with five or more acres in the study area that would likely be developed for commercial or industrial uses. (Figure I-7 identifies the development parcels considered in the model and an early graphical depiction of wetlands in the study area.) The County evaluated two alternative scenarios – the first assuming the most conservative development factors, and the second assuming development factors that more closely represent what is expected to happen. Because of the extensive nature of the environmental constraints within the study area, both development models assume that only 50% of the available land will be developable.

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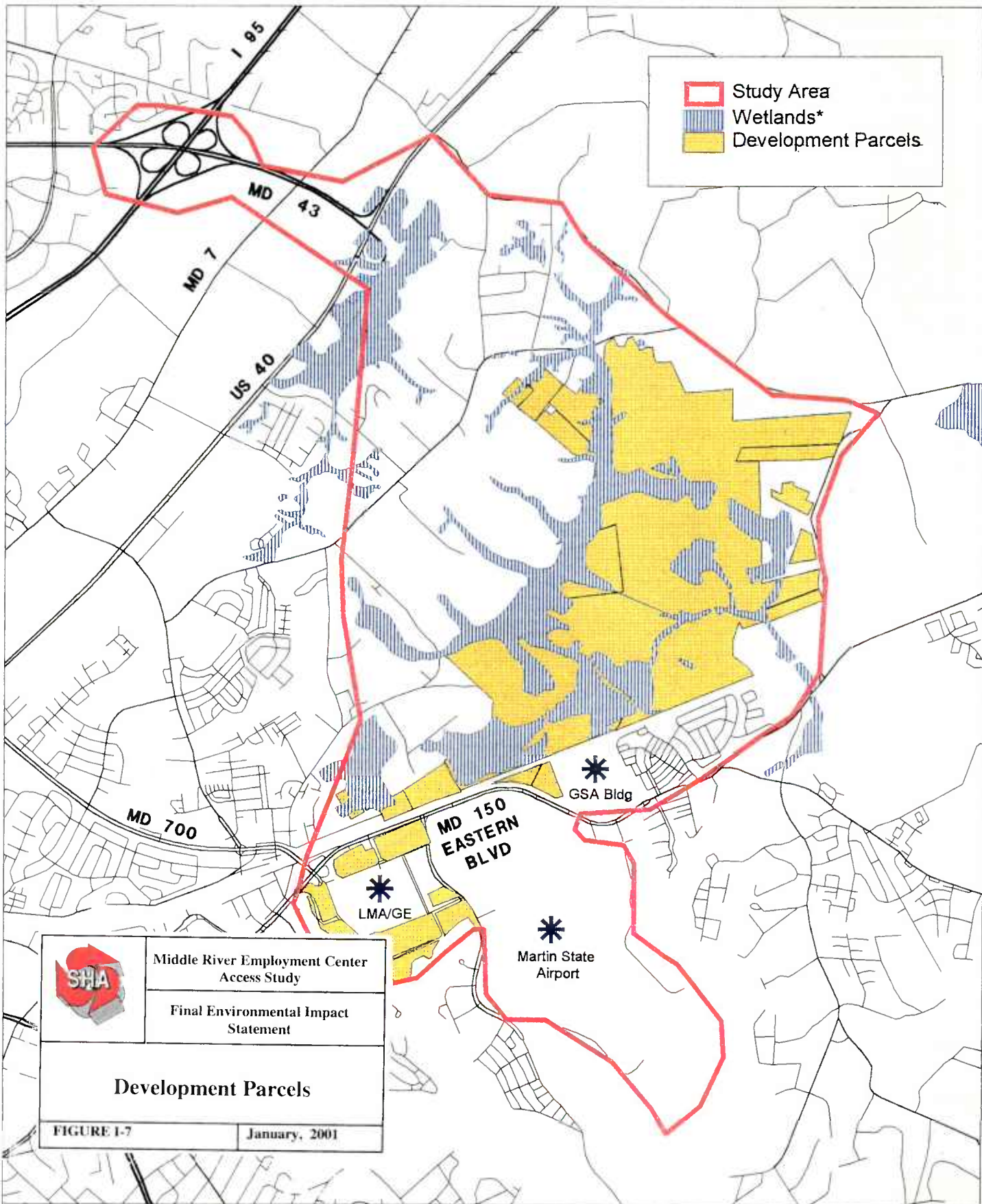
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# MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY

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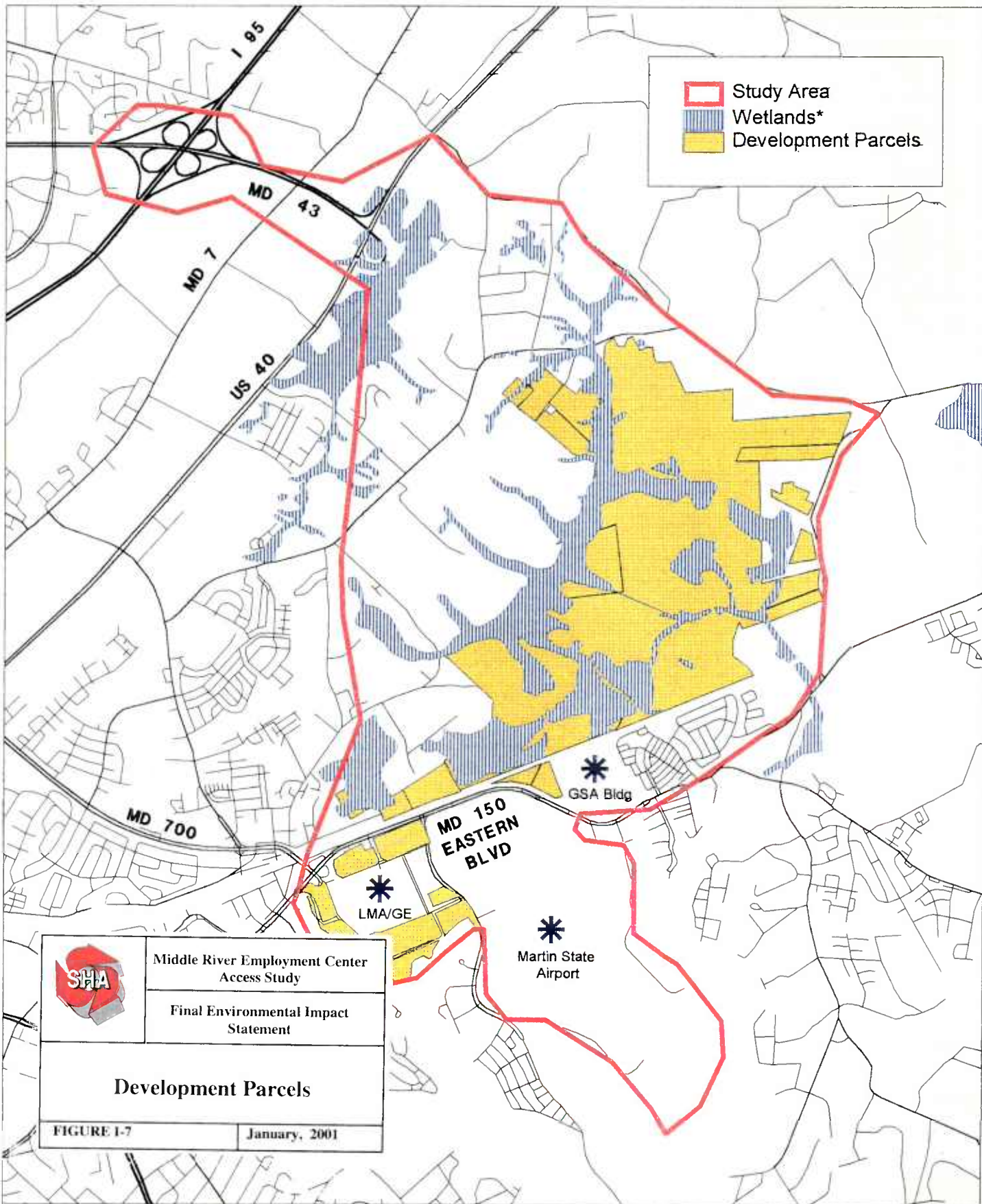


	Middle River Employment Center Access Study
	Final Environmental Impact Statement
<b>Development Parcels</b>	
FIGURE I-7	January, 2001

\*Wetlands information provided by the Baltimore County Department of Environmental Protection & Resource Management

# MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY

48



\*Wetlands information provided by the Baltimore County Department of Environmental Protection & Resource Management

Assumptions for the Expected Scenario differ from those for the Conservative Scenario in the following ways:

- The Expected Scenario assumed that for the A.V. Williams Tract alone, a somewhat higher proportion of manufacturing and flex space and a lower proportion of warehouse distribution development would occur than did the Conservative Scenario, resulting in more employees per square foot developed, (see Table I-1). The assumed use distribution for all other parcels in the study area was the same under both scenarios.
- The Expected Scenario assumed a less conservative coverage ratio for the development expected to occur on the target parcels than the Conservative Scenario used (see Table I-2).
- The Expected Scenario used a less conservative estimate of the construction costs per square foot for the various types of development than did the Conservative Scenario (see Table I-3).
- The Expected Scenario assumed a somewhat denser employee/square foot ratio than did the Conservative Scenario (see Table I-4).

Table I-1 represents the assumed development breakdown of the A.V. Williams tract. Note that the remaining parcels were all assumed to be developed in the same manner under both scenarios.

	<i>Conservative</i>	<i>Expected</i>
Warehouse Distribution	50%	33%
Flex Space	30%	33%
Manufacturing	20%	33%

Table I-2 represents the expected coverage ratios for the development expected to occur on the target parcels. The coverage ratios represent the expected amount of building space in relation to the total area of the parcel. These ratios take into account the County’s standard development regulations for setbacks, reforestation, stream buffers, parking, etc. The coverage ratios were derived by examining other similar developments in the area.

	<i>Conservative</i>	<i>Expected</i>
Light Industrial	0.23	0.28
Office	0.33	0.40
Commercial	0.27	0.32
Distribution Warehouse	0.20	0.24
Manufacturing	0.20	0.24
Flex Space	0.23	0.28

Table I-3 represents the estimate construction cost per square foot to build each development type. These figures were derived by examining comparable development costs for various building types in the area.

Table I-3 – Construction Costs per Square Foot (entire area)		
	<i>Conservative</i>	<i>Expected</i>
Light Industrial	\$60	\$70
Office	\$90	\$100
Commercial	\$70	\$80
Distribution Warehouse	\$40	\$45
Flex Space	\$60	\$65
Exhibition Space	\$50	\$50
Manufacturing	\$65	\$70

Table I-4 represents the expected allocation of square feet per employee to derive an expected total employment for each development parcel. These figures were developed by examining other similar business operations in the area.

Table I-4 – Estimated Square Feet per Job (entire acreage)		
	<i>Conservative</i>	<i>Expected</i>
Light Industrial	500	400
Office	300	200
Commercial	300	300
Distribution Warehouse	1,000	800
Flex Space	625	500
Exhibition Space	2,000	1,500
Manufacturing	500	400

Table I-5 summarizes the results of the model, as well, as well as the level of development expected under a “no-build” scenario, i.e., if improved access is not provided. Based on the above stated assumptions, the development of the parcels in the study area is expected to yield between 9,600 and 15,500 new jobs for the area, and result in new private investment of \$330 million to \$460 million if improved access is proved. If improved access is not provided, the parcels are expected to yield only 2,000 new jobs and \$58 million in private investment.

Table I-5 – Development Model Results Summary			
	<i>Conservative</i>	<i>Expected</i>	<i>No-Build</i>
Acres Developed*	647	647	84
Square Feet Built	6,080,639	7,307,479	890,117
Employment	9,638	15,564	2,052
Capital Investment	\$331,052,435	\$462,395,964	\$58,197,822
Estimated County Taxes	\$28,304,897	\$41,745,056	\$5,351,895

\*The potential developable acreage may be less due to the presence of wetlands, streams, floodplains and forest conservation areas and their applicable buffers and the spatial distribution of these natural resources.

The following conditions were used in estimating the intensity of development if no improvements were to be made to the existing roadway network:

- The undeveloped land within the study area has either limited or remote access to two 2-lane roadways, Bird River Road and Ebenezer Road, which serve residential areas and are not designed to accommodate large trucks or tractor-trailers.
- Ebenezer Road connects to US 40, however access to the Interstate system is circuitous.
- No direct access to MD 150 now exists from the land parcels north of the Amtrak line because the line acts as a barrier and an above-grade crossing would be required.
- Windlass Run and associated wetland areas make access to all parcels difficult.
- Bird River Road does not now connect with a major highway facility. (Campbell Boulevard is a master-planned road that was assumed to be extended from MD 7 to Bird River Road in the future).

The A.V. Williams property is the largest industrial tract of land under single ownership in the County (1,000 acres), but has not been developed to its planned potential primarily because of poor highway access, although sewer service is also needed. With over 7,500 feet of frontage on Amtrak's northeast corridor, rail access is excellent. However, the Amtrak railroad acts as a barrier, preventing access between this property and MD 150. The Master Sewer and Water Plan was amended in 1996 to designate this property as a capital facilities area, which means that water and sewer services would be made available within the framework of the six-year capital program. Over the past few years, the A.V. Williams parcel has been proposed at different times for development as an automobile assembly plant, an amusement park with a foreign trade zone, and an automobile raceway with a 100,000-seat stadium. Each of these proposals was critically dependent on considerably improved regional highway access to accommodate large volumes of freight, employees and/or customers.

In addition to the Williams tract, the Chesapeake Industrial Park has about 80 acres of developable land with access to MD 150, a rail spur to the Amtrak line, and shoreline frontage along Dark Head Creek. The site has been proposed as a mixed use waterfront conference and convention center. Across from the Martin State Airport is 800,000 square feet of warehouse space available in the GSA building. Development of these sites, located in the southern portion of the MREC, is not dependent on improved access, but they will be enhanced by additional access. Recent experience shows that new business attraction to the area has been slow or non-existent. It is a real estate judgement that the area is being by-passed for other regional areas that have advantageous highway access.

Baltimore County has also identified a potential for developing nearly 1,200 residential units within the study area. Four parcels indicate a potential for re-zoning from residential to zoning that would allow light industrial uses. The traffic generated by the residential development will contribute markedly to congestion on existing local roads that currently provide access to the northern section of the MREC.

### E. Potential Benefits and Fiscal Impacts

The following Table I-6 displays growth projections of population, households, labor force and employment for the Middle River Employment Center and the study area. (For the location of the transportation zones that encompass the MRECAS area, see **Figure I-8.**) Round 5A is the most recent projection which includes an assumption that a new four-lane highway would be constructed between US 40 and MD 150 with access to the A.V. Williams parcel, in accordance with the Baltimore Metropolitan Council's Constrained Long Range Plan. Round 5A takes into account employment growth due to the new roadway, but does not take into account Population, Household and Labor Force changes. This will be corrected in the next update.

	1995	2020	% Change
Population	16,273	16,021	-1.5%
Households	6,236	6,524	4.6%
Labor Force	8,681	8,561	-1.4%
Employment	12,186	23,528	93.1%

Source: Baltimore County Office of Planning, Round 5A projections  
For transportation zones 411, 441, 442, 486 487, and 499

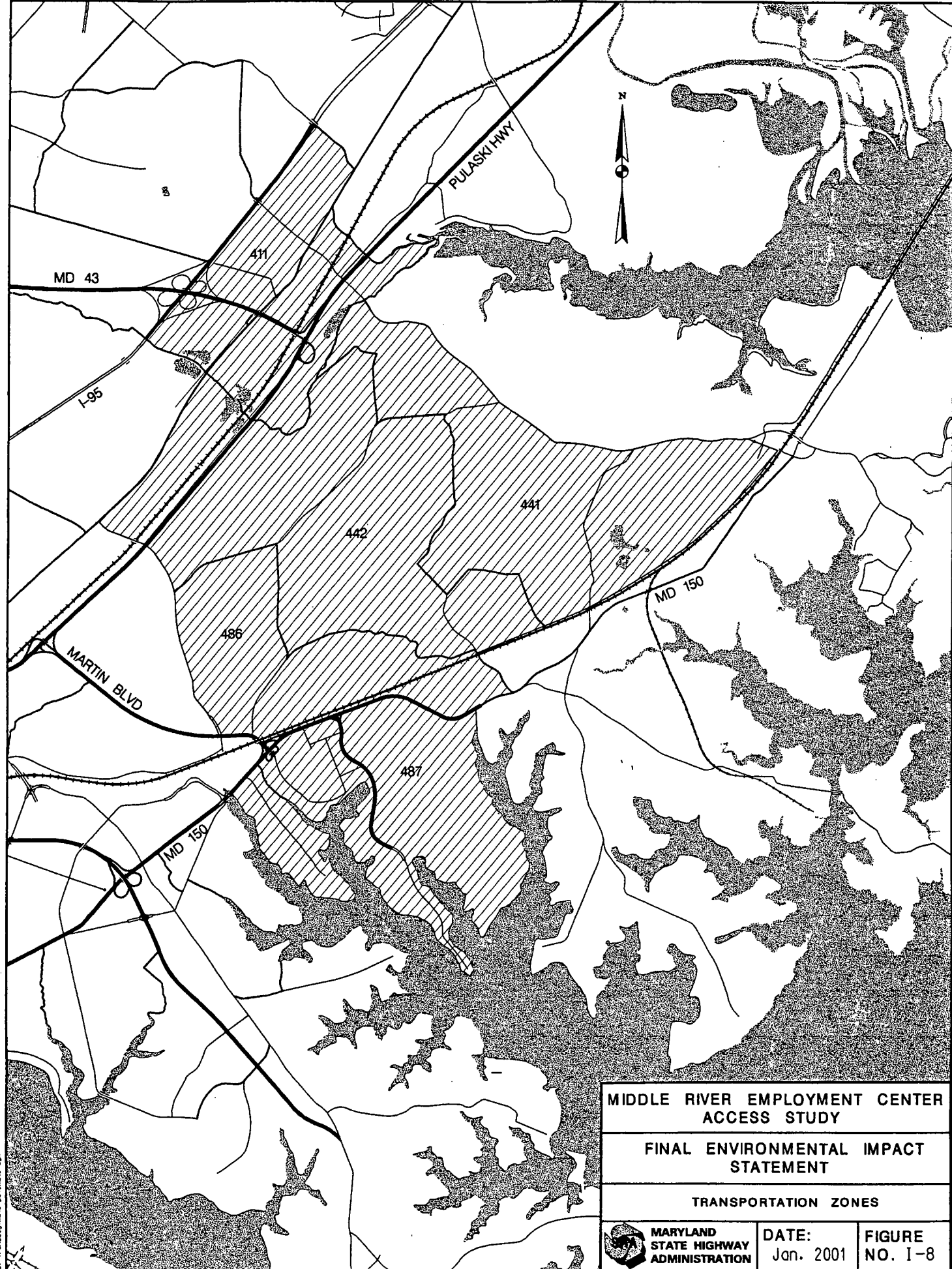
The growth projections show that employment is expected to increase significantly with the highway network assumptions. Households are expected to increase slightly, and population and labor force are expected to remain near the current level. This data indicates that the future need for employees living outside the Middle River Employment Center to commute to jobs within the Middle River Employment Center will be greater in the future than it is today.

Transportation improvements in the study area are the critical element of realizing the economic development potential for the Middle River Employment Center. Specifically, transportation improvements would:

- Allow the A.V. Williams tract to develop as planned,
- Improve freight access to the under-utilized Lockheed Martin/GE facility and to the GSA building,
- Advance the additional planned development in the Chesapeake Industrial Park
- Provide convenient access to Baltimore County's waterfront sites and shoreline,
- Provide convenient access to the MARC station and Martin State Airport from I-95, facilitating intermodal transfers between highway, rail and air transportation systems.

Of the 1,760 acres of commercially and industrially zoned land that was studied, it is estimated that 647 acres would be developed over a 30-year period. On these 647 acres, there is a potential for 6.1 million to 7.3 million square feet of commercial and industrial space, representing between \$330 million and \$460 million in new investment. This development is expected to create between 9,600 and 15,500 new jobs in Baltimore County with associated wages of \$270 million to \$440 million annually.





MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

TRANSPORTATION ZONES

 MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

DATE:  
Jan. 2001

FIGURE  
NO. I-8

The projected impact of the expected development on Baltimore County revenues is very significant. New real property tax revenue is expected to be between \$3.8 million and \$5.3 million annually at buildout. Baltimore County income tax revenues resulting from the new jobs created are expected to be between \$2.1 million and \$3.4 million annually at build-out. Based on straight-line 30-year build-out, the net present value of the county tax revenues to be received over the 30-year period is expected to be between \$28 million and \$42 million. This figure does not take into account any spin-off or multiplier effects of the development.

If regional access is not provided, it is estimated that only 87 acres of the nearly 1,800 acres of industrially zoned land in the Study Area would be developed due to an inadequate transportation infrastructure serving the area. The total fiscal impact is expected to be less than one-fourth of what it would be if a major transportation facility providing direct access became a reality. New real property tax revenue would be just under \$665,000 annually with less development at build-out. Income tax revenues resulting from the 2,000 new jobs created will be only \$449,000 annually. Based on straight-line 30-year build-out, the net present value of the county tax revenues to be received over the 30-year period would result in little more than \$5 million. This is \$23 million to \$36 million less than the full build-out scenario if a transportation facility were constructed.

#### **F. Existing Transportation Infrastructure**

The existing infrastructure includes the Martin State Airport, an Amtrak rail line, Mass Transit Administration service and a joint County/State highway network. (see **Figure I-9**).

##### **1. Martin State Airport**

Martin State Airport (MTN) is Maryland's largest general aviation facility. The airport is located eight miles east of the City of Baltimore and occupies 707 acres in the Middle River area of Baltimore County. MTN is owned by the State of Maryland and is operated by the Maryland Aviation Administration (MAA). With its control tower and long runway, it is capable of handling additional corporate air traffic.

Martin State Airport is the home base for the Maryland Air National Guard (MANG), the Maryland State Police Aviation Division, the Baltimore City Police Helicopter Unit, the Baltimore County Police Marine/Aviation Unit, a number of aviation sections of major Maryland corporations and 262 general aviation aircraft.

The MAA conducted a Master Plan Study in 1994 to identify improvements required to ensure the airport is capable of satisfying expected demand over the next twenty years; and update forecasts on the airport's activities. The number of general aviation aircraft registered in the Baltimore Region is projected to grow at approximately 0.25 percent annually to 1,510 by the year 2000, slightly increasing to 0.75 percent to 1,627 in the year 2010. These growth rates reflect the continued good health of the Region's economy over the long-term. The objectives of the Martin Master Plan are to preserve the airport as a general aviation facility in the Baltimore Region and protect its capacity to accommodate existing and future levels of demand, ensuring

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MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

TRANSPORTATION INFRASTRUCTURE

MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

DATE:  
Jan. 2001

FIGURE  
NO. I-9

1500 750 0 1500  
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that the airport will continue to operate as a general aviation reliever for Baltimore-Washington International Airport (BWI), and ensuring a continuing base for the MANG.

2. Amtrak Rail Service

Amtrak, the high speed rail line serving the Northeast Corridor, traverses the study area along the west side of MD 150, however, no service is provided within the area. Amtrak is currently investigating the possibility of locating a new station within the study area between Earls Road and the MARC Station. Improved highway access is critical to the feasibility of the new Amtrak station to provide adequate attraction potential from a larger area than exists today to justify station use.

3. MTA Service

a. Rail

The Maryland Rail Commuter Service (MARC) operated by MTA initiated service to eastern Baltimore County, within the study area, in 1991 when the Penn Line service was extended from Baltimore City to Perryville in Cecil County. The MTN Station was established at that time on MD 150 across from MTN. The Penn Line provides commuter rail service over the Amtrak northeast corridor between Union Station in Washington, DC and Perryville. Although this line serves Baltimore's Penn Station, its primary function is to provide commuter service to Washington, DC.

b. Bus

Bus service within the study area is provided by the MTA's #24 bus line. This a core bus route that operates via Pulaski Highway, Kelso Road, Martin Boulevard and Middle River Road to Eastern Boulevard. It provides service between Oliver Beach/Tidewater Village and Middle River/Franklin Square Hospital.

4. Highway Network

The MREC area is serviced by a mixed network of highways and local roads on the State Highway and Baltimore County road systems.

US 40 is a four-lane divided arterial highway providing east-west movement for both local and through traffic between Baltimore City and Harford County. I-95, located approximately one mile west of US 40, is the principle north-south interstate highway on the east coast\* MD 7(Philadelphia Road), a secondary two-lane roadway situated parallel to, and between US 40 and I-95, provides additional north-south movement, primarily serving local traffic needs. MD 150 (Eastern Avenue) is a two to four-lane highway leading to, and providing access from, the

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\* Although I-95 is designated a north-south highway and US 40 is designated an east-west highway, they run parallel to each other between Baltimore and New Castle, Delaware, and actually have a northeast-southwest orientation through eastern Baltimore County.

predominantly residential areas of Bowleys Quarters and Carroll Island, Middle River, the Martin State Airport, Essex, and Baltimore City. Major east-west traffic movements within the MREC area between US 40 and MD 150 are provided by Ebenezer Road and Earls Road. Additional traffic circulation within the area is provided primarily by Bird River Road, and Vincent Road.

Ebenezer Road located along the northern boundary of the MREC area is maintained and owned by Baltimore County. The roadway has a two-lane section with 11-foot lanes, no shoulders or access controls with twelve at-grade intersections and approximately 115 driveways accessing the roadway. A cemetery is located close to the roadway just east of Earls Road. Land use is predominantly residential with agricultural and local service businesses also present.

Vincent and Bird River Roads are located in the western portion of the MREC area. These roadways are primarily older, established residential streets with some evidence of new development along the western end of Bird River Road. The two-lane roadways have 10 foot lanes and no shoulders or access controls.

Earls Road, a connecting link between MD 150 and Ebenezer Road, has severe design deficiencies in both horizontal and vertical alignments. The roadway section includes two 10-foot lanes with no shoulders. Land use is predominantly commercial with a sand and gravel plant, nursery, auto junkyard and other similar uses. Scattered residential uses are also evident. The existing land use results in considerable truck traffic along the roadway. The bridge on Earls Road crossing Amtrak is restricted, with a maximum weight limit of five tons and a speed limit of 30 miles per hour. The bridge is currently ( as of April, 1999) undergoing in-kind replacement. Completion of the replacement project is scheduled for Spring, 2000. The deficiencies, in both the road and bridge crossing, contribute to a high accident rate on Earls Road.

## 5. Safety

An accident analysis was performed for the MREC Area for the three-year period of January 1, 1994 to December 31, 1996. The analysis indicated there was a total of 336 reported accidents on the network of roads in the study area during this period. The following roadways were included:

- MD 150; Martin Blvd. (MD 700) to Ebenezer Road
- MD 43; I-95 to US 40
- Ebenezer Road; US 40 to MD 150
- Bird River Road; Ebenezer Road to Middle River Road
- Vincent Road; Ebenezer Road to Bird River Road
- Earls Road; MD 150 to Ebenezer Road

The results of the analysis reveal that Earls Road, Vincent Road, Bird River Road and MD 150 are operating with accident rates that are statistically significantly higher than the statewide average rate for similar type and design highways. Of the 336 reported accidents on the study

area road network, there were six fatalities, 352 personal injuries and 140 accidents involving only property damage.

Ebenezer Road, MD 150, Earls Road, Bird River Road and Vincent Road have significantly higher rates of rear end, opposite direction, sideswipe, fixed object, pedestrian and parked vehicle type accidents than the statewide average. There were no High Accident Intersections identified in the study area. Additional accident statistics are found in the "Middle River Employment Center Access Study Purpose and need Statement" in Appendix A.

**G. Summary**

The Middle River Employment Center Area (MREC) is targeted for revitalization and for additional employment growth through its Eastern Baltimore County Revitalization Strategy and its countywide Growth Management Plan. The MREC is planned for considerable economic growth that can not be accommodated with the existing transportation infrastructure. In order for this development to occur, as Baltimore County has planned, additional multi-modal access needs to be examined. The need for this study is to examine ways to enable development to occur that can result in the 10,000 – 15,000 proposed new jobs for the area.

# II. ALTERNATIVES CONSIDERED

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*

II. ALTERNATIVES  
CONSIDERED



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

## II. ALTERNATIVES CONSIDERED

### A. Overview

#### 1. Project History

The history of this project is extensive. The original transportation concept for the area was a freeway between MD 150 (Eastern Boulevard) and a proposed northern extension of the Perring Freeway. The first piece of this freeway, I-95 to US 40, was constructed in the early 1960's concurrently with the construction of I-95. This roadway, identified as MD 43, was examined again in the late 1970's/early 1980's as part of the Northeast Sector Transportation Study (NSTS). In 1982, at the conclusion of this study, it was determined that the westernmost connection should be I-695.

MD 43 was studied in greater detail than the NSTS by the SHA in the early 1980's. The culmination of that study, in 1985, was a recommendation to construct MD 43 between I-95 and I-695. Also, it was decided that the roadway be constructed not as a freeway, but instead as an urban type arterial highway. That project was completed in 1993.

The section of MD 43 from US 40 to MD 150 was studied in the late 1980's. The study was put on hold in 1990 when a major development planned in the area failed to materialize.

In 1995, a Task Force was established by Governor Glendening to study access improvements for a proposed raceway. In July 1996, that Task Force came out with recommendations for a four-lane divided roadway from US 40 to MD 150. That concept is similar to one of the alignments considered in this study. However, the proposed racetrack is no longer being considered at this location.

In July 1997, SHA officially started a Project Planning study to examine the best way to access the developable parcels in the Middle River Employment Center (MREC) as identified in Baltimore County's Master Plan (discussed below). This study was intended to examine all possible access improvements to the MREC and to gain the environmental approvals necessary to construct a transportation improvement in the study area. In response to the Purpose and Need of the project SHA examined a full range of conceptual alternatives, which were displayed at the Public Workshop on June 2, 1998. These alternatives were refined based on engineering constraints, environmental agency comments and public responses. Five alternatives were retained for detailed study as a result of this process of refinement.

#### 2. Proposed Land Use Plan

Baltimore County has designated a portion of the Middle River area as an *Employment Center*, where employment growth is planned to occur. The MREC includes the 1000-acre undeveloped A.V. Williams tract, Martin State Airport and the Chesapeake Industrial Park, which includes the Middle River Aircraft Systems facility. The full development potential of the MREC is



dependent on improved access to national transportation facilities that serve travel demand between the Baltimore area and other regions of the country.

Much of the study area is targeted for future employment growth through the countywide Growth Management Plan. An objective of the plan is to maintain an adequate supply of prime industrial land served by public infrastructure while encouraging development and redevelopment to provide employment opportunities. Toward this end, the County designated several areas, including Middle River, as *Employment Centers*. The Employment Center classification is defined as "existing and proposed retail, office and manufacturing areas which provide significant Countywide service and employment opportunities" (June 2, 1997, Master Plan Amendment).

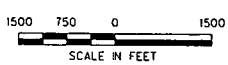
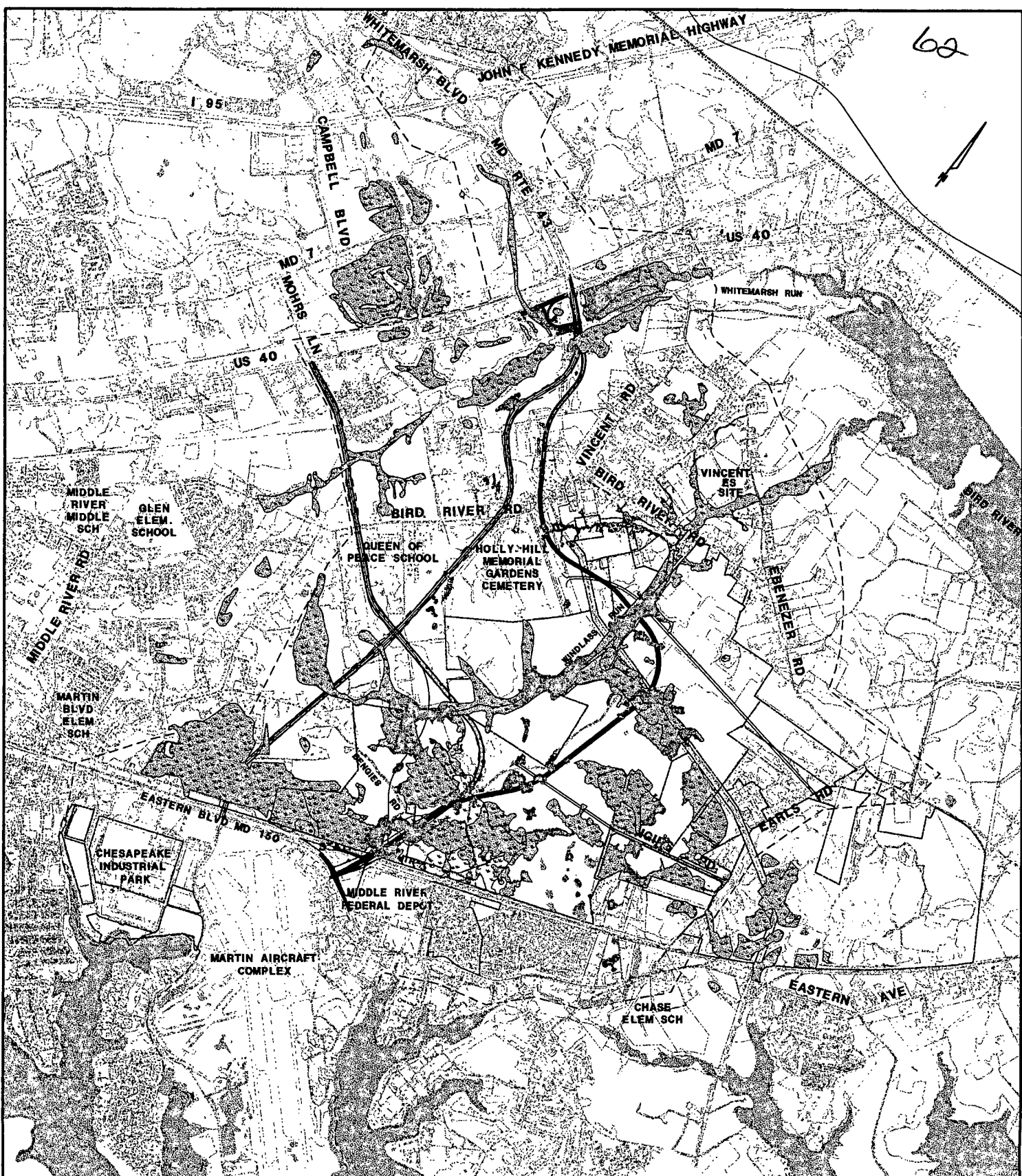
Campbell Boulevard currently extends from White Marsh Town Center to MD 7. The County's plan for Campbell Boulevard would provide a direct link from the proposed residential neighborhoods to the White Marsh Town Center. The Master Plan calls for a boulevard-type roadway, which would consist of an approximately 70-foot typical section including sidewalks, bicycle trails, and trees. This arterial would connect area neighborhoods to the White Marsh Town Center and US 40. The goal for the local area is to not only provide an aesthetically pleasing and convenient connection to points north of US 40 for local residential traffic, but to also separate heavy truck traffic from residential areas. This separation of commercial and residential traffic can be achieved using the County's plan for Campbell Boulevard for residential traffic in conjunction with a roadway with more significant truck traffic to serve the employment center.

There are two development proposals north of Bird River Road on either side of the proposed Campbell Boulevard. The Alma Smith Property is located west of Campbell Boulevard and has already begun construction. This property has 59 single-family homes with direct access to Campbell Boulevard via a proposed public road. The Tito Inc. Property is located to the east of Campbell Boulevard. It has an approved development plan for a total of 172 units. This development proposes two access points onto Campbell Boulevard. One point of access is a court with 39 single family homes, the other point is a small court with 7 single family homes. There are also two homes between these access points with their driveways directly accessing Campbell Boulevard. This totals to 107 single-family homes with their only access being via Campbell Boulevard.

### 3. Existing Conditions

A mixed network of highways and local roads on the State highway and Baltimore County road systems service the MREC area. The study area map is shown as Figure II-1. In the project area, MD 7 is classified as a minor arterial, while US 40 and MD 150 are classified as other principal arterials. Existing MD 43 is classified as an expressway/freeway. The extension of MD 43 could be classified as a principal arterial, consistent with US 40 and MD 150. The existing road network adequately handles the existing travel demand, but would not be adequate to foster increased utilization of established employment areas in the MREC. The existing infrastructure

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- LEGEND**
- DELINEATED WETLANDS
  - OTHER WETLANDS WITHIN STUDY AREA
  - STUDY AREA
  - PROPERTY LINE

**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT  
STATEMENT**

**STUDY AREA MAP**



DATE: Jan. 2001

FIGURE NO. II-1

also does not provide adequate access to a large portion of the undeveloped industrially zoned land north of the Amtrak line. Thus, the existing road network will not support the planned development of this site. In addition, recent accident statistics show that the average accident rates on the local roads in the study area are above the statewide average for similarly designed roadways. These roadways include MD 150, Ebenezer Road, Earls Road, Bird River Road and Vincent Road. These roadways have substantially higher rates of rear end, opposite direction, sideswipe, fixed object, pedestrian, and parked vehicle type accidents than the statewide average.

The existing infrastructure, including Martin State Airport, an Amtrak rail line, Mass Transit Administration service and a joint County/State highway network, cannot handle or induce the additional development planned for the MREC. Additional infrastructure is needed to provide the A.V. Williams and surrounding tracts of land with proper industrial access and to enhance access to areas south of the Amtrak including commercial, industrial and residential development. Without this additional infrastructure, development and land lease values would be limited to near existing conditions. The full development potential of the MREC is dependent on improved access to regional transportation facilities that serve travel demand between the Baltimore area and other regions of the country.

The planned major economic development efforts identified in the Purpose and Need statement include accommodating the desired economic development & redevelopment potential for these designated employment areas. The statement "major economic development" as defined by both the County and SHA refers to the types of businesses that can not only bring higher revenues for the County, but can also provide higher paying jobs for its employees. However pursuant to Section 404(b)(1) of the Clean Water Act, alternatives that are less damaging to the aquatic environment must be considered, provided the project is economically practicable. Based on an independent Land Use Panel's findings, it is necessary to provide direct Interstate access to a location that is attractive to major companies looking to locate their operations within this region. Industrial areas with direct access to the Interstate are more attractive to industry because of their accessibility to major markets. Direct access to the Interstate can also have a number of positive effects on the existing community and the property values within the area. These include increased competition for the land, higher land values, and an increased number of job opportunities provided to the area economy that both the proposed businesses & roadway would provide for the community. All surrounding land values would increase as the demand for the real estate increases. Providing a direct connection has a greater potential for increased local employment, as well as greater interstate access for commuters.

Although the roadway is primarily intended to serve traffic for industrial areas, it also has the potential to benefit the residential and commercial areas east of Eastern Boulevard (MD 150). These areas would also have direct access to large commercial centers and improved access to the Baltimore Beltway. Close proximity to the waterfront and convenient access to the Whitmarsh Town Center would make the surrounding area a more desirable place to live and would potentially increase area land values. Typically, waterfront areas that have good access to the transportation network have higher real estate values.

**B. SHA's Selected Alternative (Revised Alternative D Modified)**

1. Identification of *SHA's Selected Alternative* and Basis for Decision

Revised Alternative D Modified is *SHA's Selected Alternative*. It consists of a 4-lane divided roadway on a new location extending from the existing US 40 / MD 43 interchange, over Bird River Road and the Amtrak railroad, and terminating at MD 150, opposite the main entrance to the Maryland Air National Guard Complex.

Revised Alternative D Modified was selected because it best meets the project purpose and need while being one of the alternatives having the least overall environmental impacts, when taking into account the location of future access roads. The specific rationale for its selection is provided below. Also see Table S-1: Summary of Impacts and Cost matrix for a detailed comparison of all alternatives.

- Revised Alternative D Modified provides the most direct access to key undeveloped upland parcels of land currently zoned for development in the Middle River Employment Center, therefore best addresses the purpose and need of the project.
- Revised Alternative D Modified provides direct access to additional developable parcels as well as existing development at the Chesapeake Industrial Park, the Federal Depot and the Martin State Airport complex; it is one of three alternatives that provides this access.
- Revised Alternative D Modified impacts a range of 9.6 to 9.8 acres of wetlands for both the alternative and its associated future access roads, the second least of all the alternatives. (See Table IV-18).
- Revised Alternative D Modified directly impacts 390 linear feet of streams, the least of all the alternatives.
- Revised Alternative D Modified construction results in two Noise Sensitive Areas that approach or exceed Federal Noise Abatement Criteria or have a 10 decibel or greater increase.
- Revised Alternative D Modified provides access to the MTA MARC Station and Martin State Airport for inter-modal connectivity with I-95.
- Revised Alternative D Modified incorporates the US Army Corps of Engineers' second choice preferred crossing of Windlass Run. (F1 Modified's crossing location was their first choice.)
- Revised Alternative D Modified requires six residential and no business displacements.

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- Revised Alternative D Modified is estimated to cost \$58.6 million, which includes right of way, potential noise barriers, engineering and construction.
- Revised Alternative D Modified avoids potential NRE archeological sites.
- Revised Alternative D Modified avoids impacts to BGE transmission towers.
- Revised Alternative D Modified has an adverse effect on the Martin State Airport/Federal Depot Historic District. SHA feels that this is an unavoidable impact. A retaining wall has been incorporated into the design to minimize proximity impacts to the paint hanger that is a contributing element for the historic district, although the wall does not eliminate the need for property acquisition from this parcel. SHA has committed to additional mitigation measures with the Maryland Historical Trust through the Section 106 process (See Section V and Appendix E).

## 2. Development of *SHA's Selected Alternative*

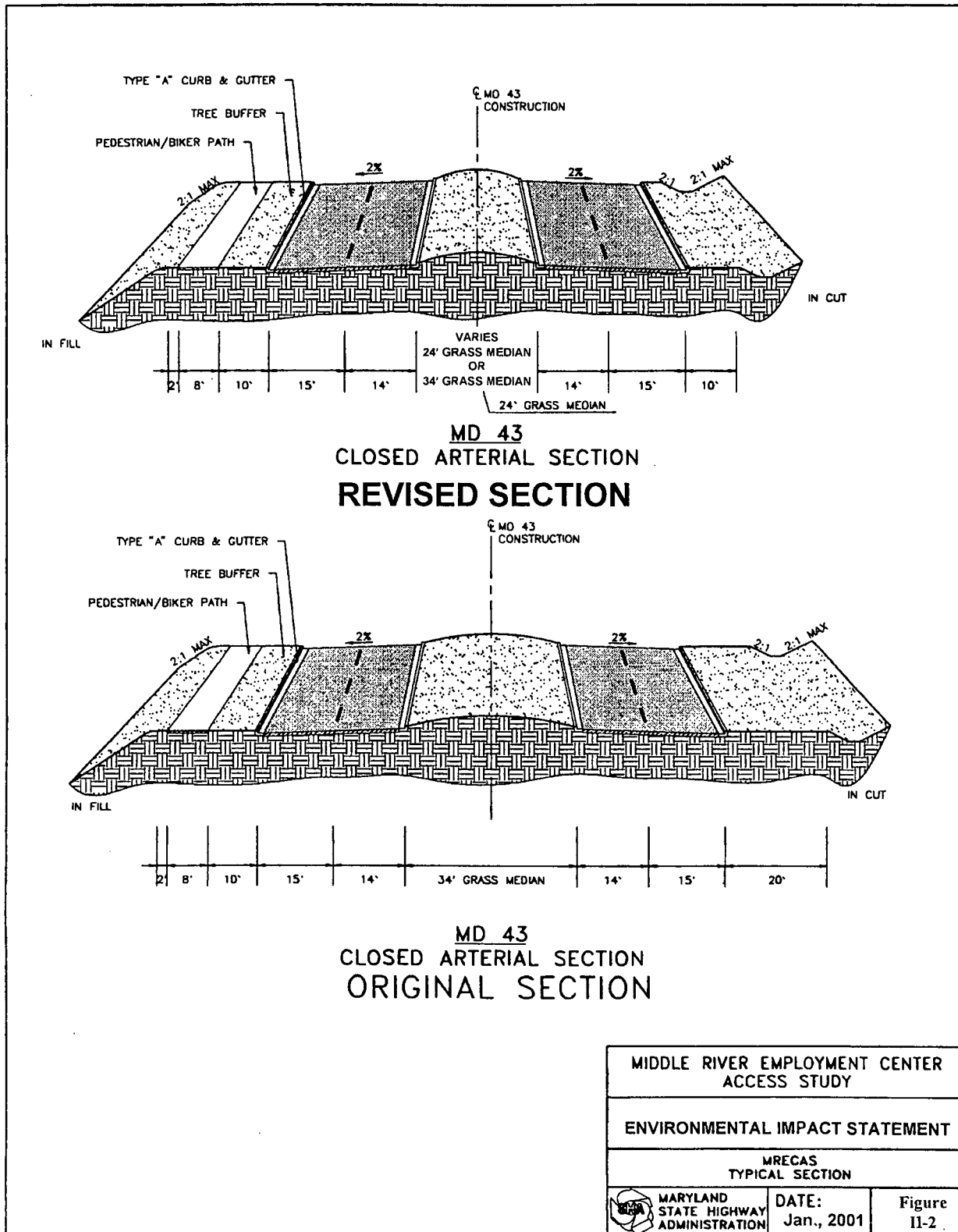
*SHA's Selected Alternative* (Revised D Modified) evolved from an original concept developed during the initial phases of the MRECCAS. Alternative D was one of eleven initial alternatives developed during Stage I. During the detailed study phase (Stage II), Alternative D was modified and carried forward as a new alternative named Alternative D Modified. Alternative D-Modified was similar to Alternative D and retained all of Alternative D's advantages while providing an agency preferred crossing of Windlass Run (although it impacted more total wetlands) and provides for more direct access to the developable parcels of the MREC. It also avoided a potentially NRE eligible archeological site affected by Alternative D.

Alternative D Modified was refined further as a result of written comments and testimony received at the Location Design Public Hearing and concerns raised by the regulatory agencies after their review of the proposed typical section included in the DEIS. This revised alternative, Revised D Modified, has been selected by SHA for design and construction.

The typical section for Revised D Modified was modified in order to minimize impacts to the environment. The median was reduced in width from 34 feet to 24 feet in areas of no proposed intersections. Also the 20 feet of grading originally proposed on one side of the roadway was reduced to 10 feet. This will allow for the construction of a future sidewalk.

Incorporating those changes, the typical section for the *SHA Selected Alternative* consists of a 14 foot inside lane and a 15 foot outside lane in each direction with a variable-width raised median that ranges from 24 feet in areas of potential impact to 34 feet in the vicinity of proposed intersection locations. The roadway will be constructed with a closed drainage system, i.e. curb and gutter along the median and outside roadway edges. On one side of the roadway there is a ten foot graded buffer between the roadway and an eight foot pedestrian/bike path. The other side of the roadway will have a 10 foot landscape area to accommodate a future sidewalk. The

design speed of the road is 45 miles per hour. Figure II-2 shows the originally proposed and modified typical sections.



In addition to the changes to the typical section discussed above, it was determined that a shift in the alignment of Alternative D Modified would avoid the need to relocate several BGE transmission towers. It was estimated that the four towers would have cost nearly \$5,000,000 to relocate and would have required a lead-time of over twelve months. In order to avoid the towers, two shifts within the alignment were required between US 40 and Bird River Road. The alignment south of Bird River Road was also changed in order to avoid impacts to Holly Hill Cemetery.

Table II-1 compares the environmental impacts of originally proposed Alternative D Modified and Revised D Modified. As indicated on Table II-1, the reduction in environmental impacts is due to the reduction of the typical section between proposed intersections for each alternative (D Modified and Revised D Modified). Although those alternatives not selected for design were not evaluated with a reduced typical section, similar reductions of environmental impacts would most likely occur.

### 3. Multi-modal Enhancements to be Implemented With SHA's Selected Alternative

In addition to the proposed roadway improvements, multi-modal enhancements will be implemented along with the highway improvements. They include enhanced bus service, a possible park and ride lot, enhancements to the Mass Transit Administration (MTA) Maryland Rail Commuter Service (MARC) station, Transportation Demand Management (TDM) measures for future development and pedestrian/bicycle accommodations.

Extension of local bus service, adding commuter bus service and adding local circulator service will be planned for Revised D Modified to be coordinated with the opening of the roadway. Shuttle service from the MTA MARC Station to the proposed employment center could be included with the local circulator bus service, if demand warrants this service once development plans are finalized.

The possibility for additional park and ride capacity will be considered in final design. Although space may be limited, if there are areas where excess land is available after we acquire entire properties we will examine their potential for a park and ride lot as well as develop possible locations within the development.

Potential enhancements to the MTA MARC Station will be examined after the design of the roadway. Preliminary studies show that the potential to expand the MTA MARC Station may be limited due to property limitations and potential wetland impacts on the north side of the AMTRAK rail line. However there is some land available at the existing site south of the rail line to expand parking if necessary. MTA expects to examine increases in ridership once the new roadway is open to traffic to determine what types of enhancements are necessary.

Table II-1: Summary of Impacts for Alternatives D-Modified and Revised D-Modified (Based on a Reduced Typical Section)

Feature	Unit	Alternative	
		D-Mod	Revised D-Mod
<b>Socio-Economic</b>			
Right-of-Way (ROW) Required	Acre	118.1	92.0
Currently in Private Ownership	Acre	106.0	75.6
Number of properties affected	No.	24	24
Currently in State Ownership	Acre	12.1	12.1
Residential Displacements	No.	5	6
Business Displacements	No.	1	0
Consistent with Master Plans	---	Yes	Yes
Active Agricultural Land	Acre	3.4	3.4
Public Parks	No.	0	0
<b>Cultural Resources</b>			
NRE Historic Sites <sup>1</sup>	No.	1	1
Pot. NRE Archeological Sites Impacted	No.	0	0
<b>Natural Environment</b>			
Critical Area	Acre	0	0
Wetlands (Direct Impacts)	Acre	9.9	9.3
Streams Crossed	No.	5	5
Stream Impacts	L.F.	390	390
Floodplain Encroachment	Acre	2.4	2.4
Forest Impacts	Acre	59.5	53.1
100+ Acres Contiguous Forest Blocks	No.	1	1
Rare/Threatened/Endangered Species (Federal)	No. of Sites	0	0
Noise Impacts <sup>2</sup>	No.	2	2
Air Quality Impacts <sup>3</sup>	No.	0	0
<b>Cost</b>			
Length	Mile	3.6	3.6
ROW <sup>4</sup>	Million \$	6.6	6.6
Potential Noise Barriers	Million \$	0.6	0.6
Engineering & Construction	Million \$	52.2	51.4
Total Cost	Million \$	59.4	58.6

<sup>1</sup> National Register Eligible sites from which property is required.

<sup>2</sup> NSAs that approach or exceed Federal Noise Abatement Criteria or have a 10 dBA or greater increase.

<sup>3</sup> Sites Exceeding S/NAAQs.

<sup>4</sup> Does not include ROW needed from A.V. Williams Trust property.

The implementation of an employer-based Transportation Demand Management program for the employers locating within the MREC area will be examined. Employers applying for a development permit within the MREC could be held responsible through the County development process for developing and implementing a transportation demand management program to encourage carpooling, use of public transportation and flex time to reduce single



occupancy demand during the peak periods. This strategy has been successful in other areas of the state, but has never been used in Baltimore County.

A pedestrian network connecting from MD 150 through the Employment Center and over to White Marsh and Perry Hall will be accommodated by the design. Plans for the pedestrian network have been coordinated with SHA and Baltimore County and will be discussed with various developers as their development enters the Baltimore County planning process.

#### 4. Issues Relevant to SHA's Selected Alternative

Subsequent to the Public Hearing, a meeting was held with the Bird River Road residents to obtain input concerning the configuration of the MD 43/Bird River Road crossing. The intent of the meeting was to assure that the impacts of the proposed roadway would be minimized for area residents.

Two options were considered. Option A would incorporate the horizontal and vertical alignment of MD 43 as originally conceived, leaving Bird River Road at its existing grade. With this option the vertical alignment of MD 43 would bridge approximately twenty-five (25) feet over Bird River Road. Option B would lower Bird River Road approximately ten (10) feet below existing ground, with MD 43 vertically aligned approximately ten (10) feet over existing Bird River Road.

The consensus was that Option A should be carried forward to final design, leaving Bird River Road at its existing grade. Residents were concerned about loss of property due to the cuts required on both sides of MD 43. During the meeting citizens also expressed concerns regarding traffic-related noise following construction (See meeting minutes in Appendix F). SHA will take all of these concerns into consideration during the next phase of the project, which is Final Design. Furthermore, close communication will be maintained with these stakeholders through Final Design to assure that any other concerns are heard and properly addressed.

For the Windlass Run crossing SHA prefers the construction of a 100-foot long simple span bridge. This will have 0.4 acres of direct wetland impact, 0.2 acres of wetlands under the bridge and 0.5 acres of floodplain impact. This option costs approximately \$1.2 million. This option is preferred over a culvert or 200 foot long bridge because it has fewer impacts than the culvert and costs \$1.3 million less than the 200 foot long bridge. Further details about these bridge and culvert options are contained in the Wetlands portion of the Environmental Consequences section (Section IV.J.2.) of this document.

Access road locations and where they intersect the new roadway have not been finalized. The Baltimore County Department of Economic Development provided to SHA conceptual access road locations for each alternative for comparison purposes only. A map of conceptual locations and tables providing comparison information are included in the Secondary and Cumulative Effects portion (Section IV.Q.) of this document. SHA, Baltimore County and the regulatory

agencies will work with the developers to determine the locations of future intersection access points in order to minimize natural environmental impacts.

### **C. Other Alternatives Considered But Not Selected**

The development of alternatives consisted of a consideration of more than twenty alternatives or modifications of alternatives to reach a final decision on five build alternatives to include for detailed study. The description of the alternatives and the potential benefits or impacts of each alternative are discussed in this chapter.

The "Initial Alternatives" were derived from initial public input, the MRECAS project team, and several state, federal, and regulatory agencies. These alternatives were shown on a display board at the Alternatives Retained Public Meeting held on June 2, 1998. This display showed that SHA recommended dropping some of these Initial Alternatives from further consideration. A separate display showing "Preliminary Alternatives" was shown at the meeting and included in the brochure. The Preliminary Alternatives consisted of eleven alternatives that were derived from the Initial Alternatives or modifications of the Initial Alternatives.

The Preliminary Alternatives were refined and modified to minimize wetland impacts based on wetland mapping, field reviews and agency input. All available wetland boundary data was used to provide "worst-case" estimates of wetland impacts to evaluate the alternatives to be retained for detailed study. The maximum potential wetland areas were based on a compilation of data from NWI mapping, wetlands from the Williams property delineated in conjunction with COE preliminary jurisdictional determination activities for a proposed NASCAR racetrack, a Baltimore County GIS database of wetland boundaries, and corridor field identification by SHA. In addition, SHA and the agencies participated in a number of field reviews where the potential crossings of Whitemarsh and Windlass Runs were looked at to identify a number of areas where it would be less damaging to provide a crossing of the sensitive area. This process was used to develop five alignments that have the least environmentally damaging wetland crossings.

As part of the refinement of alternatives from Preliminary Alternatives to Alternatives Retained for Detailed Study, the alternatives were modified, based on discussions with the COE, to minimize wetland impacts while maintaining desirable design and safety criteria. The Final Alternatives cross Windlass Run and the associated wetlands in specific locations suggested by COE based on field reviews and wetland mapping verification. The alignments were developed in an attempt to balance the many conflicting issues involved with the project. These issues included geometric feasibility, potential environmental impacts, information obtained from field visits, limited disruption of the developable area, and impacts to the community.

#### **1. Initial Alternatives**

The Initial Alternatives are shown in Figure II-3. Table II-2 shows a comparison of the potential impacts associated with these alternatives based on a 150-foot disturbance bandwidth.



Table II-2: Middle River Employment Center Access Study Summary of Initial Alternatives (Based on a 150 ft. Band Width)

Alternative	No Build	A	B	C	D	E	F	G	H	I	J
Project Length (mi)	0	3.6	3.5	3.4	3.2	3.2	3.1	2.9	3.2	2.9	4.6
<b>Properties Affected</b>											
Residential	0	109	12	4	1	1	3	6	5	3	9
Business	0	30	1	4	0	0	1	0	5	1	2
<b>Displacements</b>											
Residential	0	30	14	11	5	7	10	13	6	4	6
Business	0	1	0	2	1	0	0	0	0	0	0
<b>Environmental Impacts (AC)</b>											
C. B. C. B. A. <sup>1</sup>	0	5	5	5	0	5	0	0	0	5	5
Historic <sup>2</sup>	0	0	0	0	3	0	2	2	3	0	3
Wetland	0	1	4	5	11	4	13	8	11	10	11
Woodland	0	11	32	35	48	44	34	48	22	46	52
Stream Crossings (#)	0	3	4	5	5	5	3	2	2	5	3

<sup>1</sup>Chesapeake Bay Critical Boundary Area

<sup>2</sup>Number of acres of acquisition, not number of properties affected.

**No-Build Alternative**

The No-Build Alternative consisted of regular maintenance, safety and operational improvements to existing roadways in the study area. This alternative contained no major improvements in the Middle River area and, therefore, does not meet the stated purpose and need of the project.

**Initial Alternative A**

Alternative A proposed an upgrade of existing Ebenezer and Earls Roads. Beginning at US 40, this alignment would have followed Ebenezer Road, then turned towards the south to follow Earls Road until intersecting MD 150 across from Chase Elementary School. MD 150 would have been widened east of the dualization to accommodate the new intersection and possible increase in traffic volumes.

**Initial Alternative B**

Alternative B proposed a MD 43 extension that initially heads east crossing Vincent Road and Vincent Farm Road. The alignment paralleled Ebenezer Road behind most of the residences that line the road. Alternative B would have then followed Earls Road, beginning at Mulecart Lane and follow Alternative A to terminate at MD 150 across from Chase Elementary School. This alternative also required the widening of MD 150 east of the dualization to accommodate the new intersection and possible increases in traffic volumes.

***Initial Alternative C***

Alternative C proposed a four-lane divided roadway section, which would have served as a MD 43 extension into the study area. The alignment would have extended east of the BGE Substation and the Holly Hill Memorial Gardens Cemetery, with a grade separated crossing of Bird River Road. Alternative C would have terminated at MD 150 (Eastern Ave.) across from the Chase Elementary School. MD 150 would be widened east of the dualization to accommodate the new intersection and possible increase in traffic volumes.

***Initial Alternative D***

Alternative D proposed a four lane divided section, which would connect to the MD 43/US 40 interchange. The alignment would extend east of the BGE Substation and the Holly Hill Memorial Gardens Cemetery, with a grade separated crossing of Bird River Road. The proposed roadway would then tie into MD 150 between the MARC Station and the Federal Depot directly across from the Maryland Air National Guard entrance. This alternative was very similar to the suggested feasibility study alignment from the previous MD 43 Task Force. Alternative D required a minor upgrade of Eastern Boulevard east of the dualization to compensate for possible increased traffic volumes. This issue was looked at in more detail during the subsequent phases of project planning.

***Initial Alternative E***

Alternative E followed the same alignment as Alternative D except for its connection with MD 150. Instead of connecting between the MARC Station and the Federal Depot, Alternative E tied into MD 150 just east of the Williams Estates community, utilizing the clearing just west of Chase Elementary School, which is currently owned by the County. This proposed alternative would have required an Eastern Boulevard upgrade east of the dualization.

***Initial Alternative F***

Alternative "F" proposed a four lane divided section, which would have connected to the MD 43/US 40 interchange. The alignment would extend west of the BGE Substation and west of the Holly Hill Memorial Gardens Cemetery, with a grade separated crossing of Bird River Road. The proposed roadway would have then tied into MD 150 between the Federal Depot and Williams Estates at the end of the dualization. This alternative may have required a minor upgrade of Eastern Boulevard (MD 150) east of the dualization to compensate for possible increased traffic volumes.

***Initial Alternative G***

Alternative G proposed a four lane divided section, which would have connected to the MD 43/US 40 interchange. The alignment would have followed Alternative F until the southern end of the cemetery where it would have headed southwest and tied into MD 150 between Martin State Airport and Chesapeake Industrial Park at Wilson Point Road.

***Initial Alternative H***

Alternative H proposed a four-lane divided roadway originating at US Route 40 and extending south from Mohrs Lane. Baltimore County is proposing to extend Campbell Boulevard to Mohrs

Lane that would have connected with this alternative, if chosen. The alignment would have traveled south through the study area passing to the west of the Queen of Peace School, with an at-grade intersection at Bird River Road. The proposed roadway would have then tied into MD 150 between the MARC Station and the Federal Depot directly across from the Maryland Air National Guard entrance. This alternative may have required a minor upgrade of Eastern Boulevard (MD 150) east of the dualization to compensate for possible increased use.

#### ***Initial Alternative I***

Alternative I followed the same alignment as Alternative C except for its connection with MD 150. Instead of connecting in front of the Chase Elementary School, Alternative I would have tied into MD 150 just east of the Williams Estates Community, utilizing the clearing just west of Chase Elementary School, which is currently owned by the county. This proposed alternative would have also required an Eastern Boulevard (MD 150) upgrade east of the dualization.

#### ***Initial Alternative J***

Alternative J proposed a four lane divided section, which would have connected to the MD 43/US 40 interchange. This alignment parallels Ebenezer Road to the east with two Ebenezer Road crossings. The first crossing was just north of the Vincent Elementary School site and is proposed to be grade separated. The other crossing was closer to the Earls Road intersection and was proposed to be an at-grade crossing. Alternative J would terminate at MD 150 between the MARC Station and the Federal Depot directly across from the Maryland Air National Guard entrance. Alternative J required a minor upgrade of Eastern Boulevard (MD 150) east of the dualization to compensate for possible increased traffic volumes.

#### ***Martin Boulevard Upgrade Alternative***

This alternative proposed an upgrade to the existing partial access controlled roadway of Martin Boulevard (MD 700). Access would have been improved at US 40 and MD 150, with the possibility of additional lanes if needed. In addition, SHA considered the possibility of connecting the A.V. Williams property to Eastern Boulevard (MD 150) with a bridge across Amtrak Tracks. Details of the study of this option are described in the *Preliminary Alternatives Section* of this Chapter.

#### ***Rossville Boulevard and MD 702 Upgrade Alternative***

This alternative proposed to upgrade the existing Rossville Boulevard from US 40 to its existing terminus. Then it proposed to extend the roadway to MD 702, with the addition of an interchange onto MD 702 and upgrades to the existing interchange at MD 150.

#### ***Multi-modal Concepts***

The following multi-modal options were considered. A description of specific measures included under each option and how it applies to this project are included in the Major Investment Study section (Section II-C) of this document.

- Enhanced bus service on a new roadway alignment.
- Park and Ride lot(s).
- Enhancements to Martin MARC Station.

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- Employer-based Travel Demand Management (TDM) measures.
- Transportation Management Areas (TMA) for Middle River Employment Center to help implement above TDM options.
- High Occupancy Vehicle (HOV) on new roadway alignment.
- Reverse commute trains on MARC lines.
- Light Rail

2. Preliminary Alternatives

Studies of the Initial Alternatives resulted in recommendations to eliminate some alternatives from further consideration. A separate display showing "Preliminary Alternatives" was shown at the Alternates Public Meeting and included in the brochure. The Preliminary Alternatives consisted of eleven alternatives that were derived from the Initial Alternatives or modifications of the Initial Alternatives. Table II-3 shows the comparative impacts of these alternatives and a map of the Preliminary Alternatives is shown in Figure II-4. The impacts shown in Table II-3 are also based on a 150 foot disturbance band width.

Table II-3: Middle River Employment Center Access Study Summary of Preliminary Alternatives (Based on a 150 ft. Band Width)

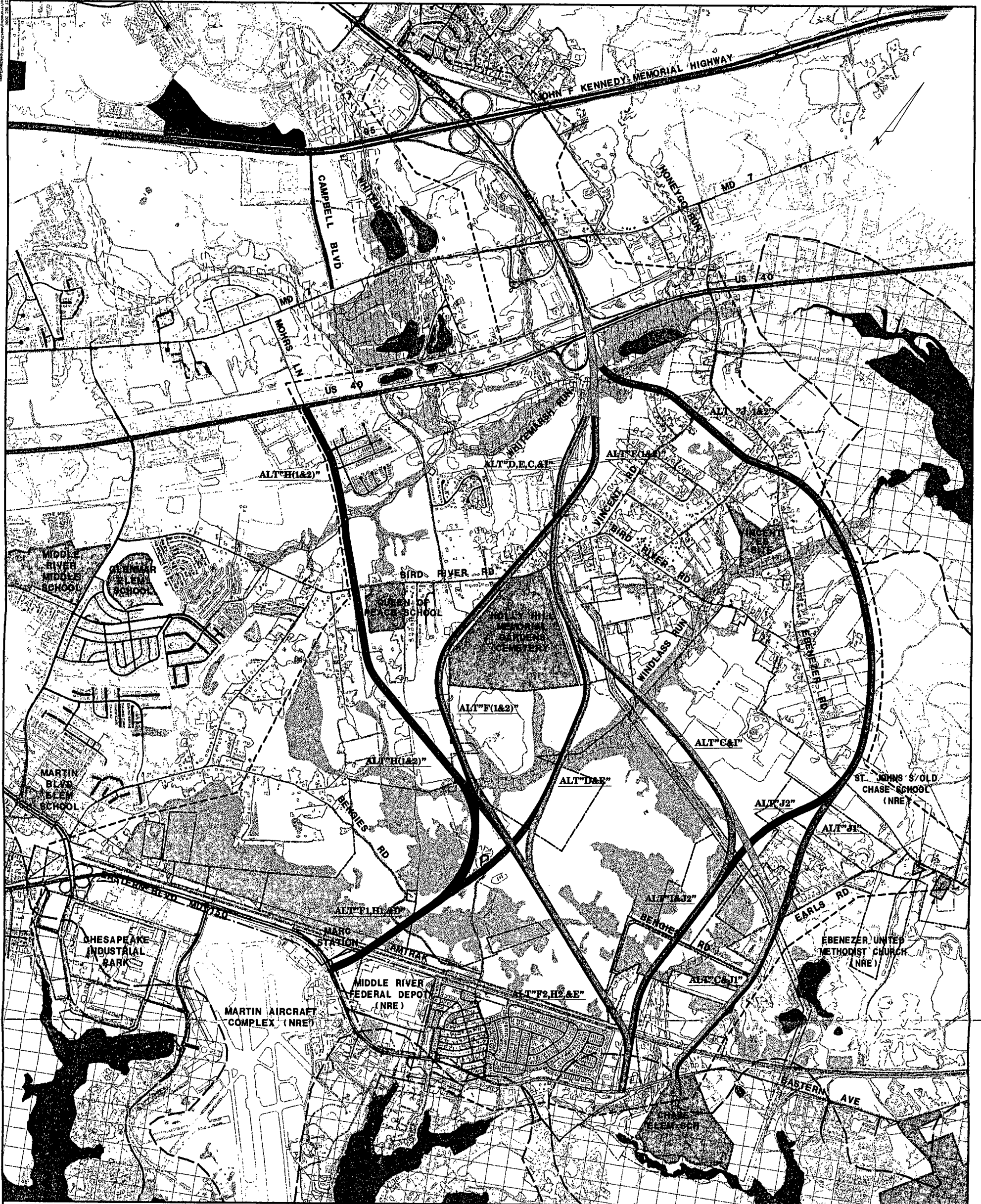
Alternative	No Build	H <sub>1</sub>	H <sub>2</sub>	D	E	F <sub>1</sub>	F <sub>2</sub>	C	I	J <sub>1</sub>	J <sub>2</sub>
Project Length (mi)	0	2.7	3	3.2	3.2	3	3.4	3.4	3.3	3.7	3.9
Total Cost (\$Million) <sup>1</sup>	0	\$40-50	\$41-51	\$49-59	\$48-58	\$38-48	\$40-50	\$51-61	\$45-55	\$51-61	\$53-63
<b>Properties Affected</b>											
Residential	0	15	25	1	11	2	12	13	14	24	25
Business	0	6	13	2	9	2	18	15	9	15	8
<b>Displacements</b>											
Residential	0	0	2	5	7	16	18	12	5	12	5
Business	0	0	0	1	1	0	0	2	1	1	0
<b>Environmental Impacts (AC)</b>											
C. B. C. B. A. <sup>2</sup>	0	1	4	1	4	1	4	2	4	7	9
Historic <sup>3</sup>	0	3	0	3	0	3	0	0	0	0	0
Wetland	0	9	3	10	4	11	4	4	8	4	8
100 Year Flood Plain	0	<1	<1	2	2	2	2	2	2	3	3
Woodland	0	23	30	39	42	30	37	30	56	32	48
Stream Crossings (#)	0	2	2	5	5	3	3	4	5	4	5

<sup>1</sup>Cost assuming a donation of the required right-of-way needed from the A. V. Williams parcel.

<sup>2</sup>Chesapeake Bay Critical Boundary Area

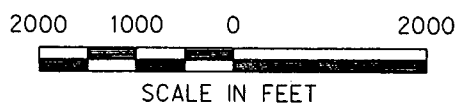
<sup>3</sup>Number of acres of acquisition, not number of properties affected.

Alternatives recommended for detailed study



**LEGEND**

- 100 YEAR FLOODPLAIN
- DEVELOPABLE PARCELS
- CRITICAL AREA BOUNDARY
- PROPERTY LINE
- STUDY AREA
- PRELIMINARY WETLANDS
- HISTORIC AREA



**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT  
STATEMENT**

**PRELIMINARY ALTERNATIVES MAP**



**DATE:**  
Jan. 2001

**FIGURE  
NO. II-4**

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a. Initial Alternatives Not Included in the Preliminary Alternatives Study

*Initial Alternative A*

Alternative A was not recommended because it cut through residential areas and did not address the Purpose and Need.

Impacts to the residential areas along Ebenezer and Earls Roads would occur due to partial property acquisitions, displacements, the increase in traffic volumes, particularly truck traffic, into the center of residential neighborhoods and potential noise impacts to residences and businesses. Alternative A also had an unacceptably high direct and indirect socio-economic impact with 31 displacements and 170 properties affected (See Table II-2). In addition, heavy industrial and truck traffic would be introduced along residential roadways. Alternative A passed near the residences on Ebenezer Road and Earls Road and in front of the proposed Vincent Elementary School. There are many residences and businesses along these roads and no access control. The increased truck traffic associated with the development would have increased conflicts between truck traffic and entering vehicles thus compromising safety. The noise levels at residences located in close proximity to the roadway could have increased above existing levels with the improvements to the existing roadways and as a result of expected truck traffic.

There were also potential noise impacts to non-displaced residences that are located within 200 feet of the centerline of the Alternatives alignment. On Ebenezer Road a total of 56 residences fall within this impact area, while on Earls Road, 8 residences had the potential for noise impacts. The increased noise could have had a detrimental effect to quality of life of the neighborhood.

Alternative A did not address the Purpose and Need since the improvements would not have supported the planned development of major economic development opportunity sites and would not have fostered the increased utilization of established employment areas in the MREC. This alternative did not provide direct access to I-95.

Additionally, this concept tied into MD 150 across from Chase Elementary School which could have resulted in safety concerns for the public. In addition, the alternative would not have provided direct access to the industrial areas along MD 150.

Because the existing road was utilized by this alternative, there were fewer impacts to wetland and woodland areas. The magnitude of the wetland and woodland impacts was at least half that of the other alternatives. Although this is a notable advantage, the use of the existing road would have had a devastating effect on the community as previously described. For these reasons, it was unreasonable to further study this alternative.

**SHA did not recommend this alternative for further study, because it does not meet the Purpose and Need, it traverses existing residential areas, and would require 31 displacements in 3.6 miles.**

***Initial Alternative B***

Alternative B was not recommended because it passes close to residential neighborhoods along its entire length resulting in proximity damage including right-of-way acquisition from residences along Ebenezer Road. It also affected the area of a proposed elementary school. There were 14 displacements associated with this alternative (See Table II-2). Alternative B passes behind the residences on Ebenezer Road to the east. Additionally, noise levels at residences located close to the proposed alignment would have potentially increased above existing levels. Proximity damage would have resulted from the amount of right-of-way required to support the proposed alignment. Potential noise impacts may have occurred to non-displaced residences that are located within 200 feet of the centerline of the new alignment. A total of 27 residences fell within this impact area, primarily located adjacent to the eastbound lane of Ebenezer Road. Along Earls Road, 8 residences may have been affected by potential noise increases. Following Earls Road from Mulecart Lane, Alternative B had the same safety concerns as Alternative A. Residents along Ebenezer Road could potentially be located in an area with a major industrially based roadway west of their property and the existing Ebenezer Road towards the east, both in very close proximity. Alternative B would have provided access to only a portion of the planned developable area.

Alternative B impacted 4 acres of wetlands and 32 acres of woodlands. These numbers are relatively low in comparison to the other alternatives, however Alternative B had the same number of wetland impacts as Alternative E. The woodland impacts of this alternative were slightly less than Alternative E, yet the impacts to existing neighborhoods are double. For these reasons, Alternative E seemed to be a more reasonable alternative for study.

**SHA did not recommend this alternative for further study. It has the same wetland impacts Alternative E but, unlike Alternative E, it passes close to residential neighborhoods along its entire length. Alternative B displaced 14 residences.**

***Initial Alternative G***

Alternative G was not recommended because the bridge over the Amtrak tracks could have hindered the flight path for Martin State Airport and it resulted in 13 residential displacements (See Table II-2). This alternative also passed through BGE's proposed substation expansion and bisected the Bengies Road Community. Alternative G also had potentially the highest adverse historical site impact, due to the close proximity of Eastern Boulevard and the Amtrak bridge crossing associated with an interchange that would be needed on the Martin State Airport property.

Alternative G impacted 8 acres of wetlands and 48 acres of woodlands. These natural environmental impacts were greater than or comparable to the impacts associated with the Alternatives Retained for Detailed Study. Considering the additional issues associated with this alternative, it was not reasonable to retain this alternative for detailed studies.

**SHA did not recommend this alternative for further study, because the bridge over the Amtrak tracks could be located in the flight path for Martin State Airport. Alternative G also had 13 residential displacements.**

***Martin Boulevard Upgrade Alternative***

The Martin Boulevard Upgrade was not recommended because it did not support the planned development. It did not address the purpose and need since the improvements would not have enabled the planned development of major economic development opportunity sites and would not have fostered the increased utilization of established employment areas in the MREC. This alternative also had the potential to impact proposed historic sites.

The goal of roadway improvements is to provide an enhanced road network that will better attract new businesses as well as make the area attractive to a variety of industries. The Land Use Market Analysis concluded that this could only be accomplished fully with a direct connection to I-95. Assuming that the A.V. Williams property is sold and developed, it would be in the best interest of the County and the local residents to develop the area in such a way as to provide for the full economic potential. The area might be developed without direct access from I-95 but the market demand for the property will be less pronounced without a direct access. A bridge from MD 150 over the railroad will not meet the Purpose and Need for the project since it would not enable the planned development of major economic development opportunity sites and foster increased utilization of established employment areas in the MREC.

The Martin Boulevard Alternative, despite access into the MREC from the south, would have done nothing for the existing businesses along MD 150. The infrastructure proposed with this alignment would have been virtually the same as that of the No-Build Alternative, especially along Eastern Boulevard. Therefore, this alternative did not support the second part of the Purpose and Need because it did not increase the utilization of established employment areas in the MREC.

**SHA did not recommend this alternative for further study, because it does not meet the Purpose and Need for the project since it would not enable the planned development of major economic development opportunity sites and would not foster the increased utilization of established employment areas in the MREC.**

***Upgrade to Rossville Boulevard and MD 702***

The upgrade to Rossville Boulevard and MD 702 was not recommended because it provided no support for development. It did not address Purpose and Need since the improvements would not have enabled the planned development of major economic development opportunity sites and would not have fostered the increased utilization of established employment areas in the MREC. This alternative also traversed an existing community, had potential for wetland impacts and stream crossings, and could have impacted a potential historic district.

**SHA did not recommend this alternative for further study, because it does not address Purpose and Need since the improvements would not enable the planned development of**

**major economic development opportunity sites and would not foster the increased utilization of established employment areas in the MREC.**

b. **Alternatives Included in the Preliminary Alternatives Study**

The preliminary alternatives were shown to the public at the Alternatives Public Workshop on June 2, 1998 (See Figure II-4). A team meeting and focus group meeting were held after the public workshop. Recommendations were then made, considering comments from the public meeting, and input from the project team and focus group, as to which alternatives to carry forward for detailed study.

***No-Build Alternative***

This alternative was recommended to be taken forward as part of the Preliminary Alternatives study as a base case scenario to compare with the build options.

***Alternative C***

This concept provided direct access to I-95 and good access to proposed developable areas, within the MREC. It avoided some wetland areas by utilizing the existing pavement along Earls Road. (See Table II-3).

***Alternative D***

Alternative D was recommended because it had the least amount of socio-economic impacts. It also enabled the planned development and fosters the increased utilization of established employment areas in the MREC. This concept was very similar to the proposal by the MD 43 Task Force. It was also similar to the alignment recommended by the Land Use Expert Panel that would best promote economic development. Alternative D provided direct access to I-95 for development north and south of MD 150. (See Table II-3).

***Alternative E***

Alternative E was recommended because it provided good access to the MREC and had relatively low natural environmental impacts. This alignment followed Alternative D until it approached MD 150 where it tied in east of the Williams Estate Community along MD 150 including the Martin State Airport/Federal Depot Historic District. This divergence from Alternative D provided an avoidance alternative for the Historic District. This alternative also had direct access to I-95 and comparatively low socio-economic impacts. (See Table II-3).

***Alternatives F<sub>1</sub> and F<sub>2</sub>***

A modification of the Initial Alternative F was taken forward as part of the Preliminary Alternatives study. Alternatives F<sub>1</sub> and F<sub>2</sub> would have traveled on the east side of BGE's substation, then continued west of Holly Hill Memorial Gardens Cemetery similar to the initial Alternative F. The Initial Alternative F alignment was modified to have two ending locations. The first, Alternative F<sub>1</sub>, would tie into MD 150 between the MARC Station and Federal Depot across from the Maryland Air National Guard entrance. This tie in location required minor improvements to Eastern Boulevard (MD 150) east of the dualization to compensate for possible

increased traffic volumes. The second, Alternative F<sub>2</sub>, would tie into MD 150 just east of Williams Estates Community. This proposed alternative required an Eastern Boulevard (MD 150) upgrade east of the dualization. (See Table II-3).

#### ***Alternatives H<sub>1</sub> and H<sub>2</sub>***

Alternative H (Campbell Boulevard Extended) was part of the study of Preliminary Alternatives because it represented the best opportunity for inducing development without a direct connection to I-95 or MD 43. For further study, this alternative was referred to as Alternative H<sub>1</sub>. An alternative ending location (Alternative H<sub>2</sub>) had the alignment tie into MD 150 just east of the Williams Estates community. This proposed alternative would have also required an Eastern Boulevard upgrade east of the dualization. (See Table II-3).

#### ***Alternative I***

Alternative I was recommended because it provided good access to the MREC and had one of the lowest residential and commercial displacements. This alternative also had direct access to I-95 for development north and south of MD 150. (See Table II-3).

#### ***Alternative J***

Alternative J was modified and included in the study of Preliminary Alternatives. The first modification, Alternative J<sub>1</sub>, followed Earls Road from Mulecart Lane and tied into MD 150 across from Chase Elementary School. It may have been necessary to widen MD 150 east of the dualization to accommodate the new intersection and possible increase in traffic volumes. Alternative J<sub>2</sub>, the second option, tied into MD 150 just east of the Williams Estates Community, utilizing the clearing just west of Chase Elementary School. The county currently owns this area. This alternative would have also required an Eastern Boulevard (MD 150) upgrade east of the dualization. (See Table II-3).

#### ***Multi-Modal Options***

A consideration of multi-modal options was recommended as part of the consideration of Preliminary Alternatives. Section II.E. contains more detail on the multi-modal options.

3. Final Alternatives for Detailed Study
  - a. Preliminary Alternatives Not Recommended for Detailed Study

The following describes the reasoning for eliminating these Preliminary Alternatives from further study. It includes a description of all the advantages and disadvantages for each alternative. A short summary of the major reasons for dropping the alternative is provided in bold at the end of each discussion to make the information easier to use as a quick reference as well as a source of detailed documentation.

#### ***Alternative C***

Alternative C provided access to the MREC but was not recommended because it proposed major reconstruction and widening of Earls Road for the last half of the alignment. The

alternative would have changed the nature of this two-lane rural residential roadway and impacted the quality of life for the Earls Road community where 6 displacements would be required. There would have been a total of 14 displacements associated with this alternative. (See Table II-3).

There was the potential for noise impacts to these residences as a result of the expected truck traffic. Noise impacts could be expected to increase above existing levels with the addition of a roadway within such a close proximity to the residential areas. There were potential noise impacts to 8 non-displaced residences that are located within 200 feet of the centerline of the Alternative.

There are many residences and businesses along Earls Road and no access control. The increased truck traffic associated with the development could result in increased conflicts between truck traffic and entering vehicles thus decreasing safety.

This concept tied into MD 150 across from Chase Elementary School resulting in safety concerns by the public. Along Earls Road, this alternative would displace 6 homes and a business. In addition, the alternative would also not provide direct access to the industrial areas along MD 150.

There were also potential noise impacts to non-displaced residences that are located within 200 feet of the centerline of the Alternative. On Ebenezer Road a total of 56 residences fall within this impact area, while on Earls Road, 8 residences have the potential for noise impacts. The increased noise could have affected the quality of life for the entire neighborhood.

**SHA did not recommend this alternative for further study, because it results in more wetland impacts than Alternative E but, unlike Alternative E, it uses Earls Road for the last portion of the alignment. Both Alternative E and C pass through residential areas, but Alternative C passes through an additional mile of residential areas along Earls Road. With the environmental impacts being approximately equal, SHA would choose to study an alternative that preserves the quality of life for more local residents.**

***Alternative F,***

Alternative F<sub>1</sub> provided limited access to the MREC and was not recommended because of its relatively high number of residential displacements especially in the Bird River Road Community. There are 16 residential displacements associated with this alternative. This alternative also bisected currently utilized farms in the study area and had the highest amount of wetland impacts. A spur road would be required to access the developable areas, which could have potentially bisected currently utilized farms and it would have made access into the MREC a relatively circuitous movement. (See Table II-3).

A modified version of this alternative with less environmental and residential impacts was retained for detailed study.

**SHA did not recommend this alternative for further study, because it crosses Windlass Run in an area of comparable wetland impacts to the Alternatives Retained for Detailed Study yet does not serve the MREC as directly as the other alternatives and has greater impacts to residential communities.**

*Alternative F<sub>2</sub>*

Alternative F<sub>2</sub> provided access to the MREC but was not recommended because it had the highest number of residential displacements. There are 18 residential displacements associated with this alternative. It affected both the Bird River Road community and a minority community near MD 150. The alternative displaced two homes in the minority community, impacted 4 acres of wetlands and introduced industrial truck traffic in a predominately residential area just north of MD 150. This alternative also bisected active farmland south of the Holly Hill Cemetery. In addition, the alternative did not provide direct access to the industrial areas along MD 150. (See Table II-3).

**SHA did not recommend this alternative for further study, because it crosses Windlass Run in an area of comparable wetland impacts to the Alternatives Retained for Detailed Study yet does not serve the MREC as directly as the other alternatives and has greater impacts to residential communities.**

*Alternative I*

A modified version of Alternative I was recommended for detailed study.

*Alternative H<sub>1</sub>*

Alternative "H<sub>1</sub>" was not recommended because it did not provide direct access to I-95 and did provide limited access to the MREC. It did not address the Purpose and Need since the improvements would not enable the planned development of major economic development opportunity sites and would not foster the increased utilization of established employment areas in the MREC. This alternative did not access all of the developable parcels and may not have provided an acceptable level of economic development potential for the MREC. This alternative has an at-grade intersection with Bird River Road in accordance with future development plans near the intersection. An at-grade intersection may increase traffic along Bird River Road and was opposed by the community. All other alternatives except Alternative "H<sub>2</sub>", were grade separated with Bird River Road. This alternative was located in a primarily residentially zoned portion of the study area, and a through highway for industrial traffic would be inconsistent with the County's Master Plan. This alternative was located furthest from the proposed developable parcels, which would have resulted in the longest spur road connection, which could have potentially increased environmental impacts and would have bisected an active family farm in existence since the early 1900's.

**SHA did not recommend this alternative for further study, because it does not meet the Purpose and Need and would be inconsistent with the County's Master Plan.**

### ***Alternative H<sub>2</sub>***

Alternative H<sub>2</sub> was not recommended because it did not provide direct access to I-95. It did not address Purpose and Need since the improvements would not have enabled the planned development of major economic development opportunity sites and would not foster the increased utilization of established employment areas in the MREC. This alternative also includes an at-grade intersection with Bird River Road in accordance with future development plans near the intersection. This at-grade intersection may increase traffic along Bird River Road and was opposed by the community. All other alternatives except Alternative H<sub>1</sub> are grade separated with Bird River Road. This alternative is also located in a primarily residentially zoned portion of the study area, and a through highway for industrial traffic would be inconsistent with the County's Master Plan. This alternative is located furthest from the proposed developable parcels, which would result in the longest spur road connection, which could potentially increase environmental impacts and would bisect an active family farm in existence since the early 1900's. The alternative potentially displaces two homes in a minority community and introduces industrial truck traffic in a predominately residential area. In addition, the alternative would also not provide direct access to the industrial areas along MD 150. (See Table II-3).

**SHA did not recommend this alternative for further study, because it does not meet the Purpose and Need, would mix truck traffic in an area that the county intends to serve residential traffic, and would be inconsistent with the County's Master Plan.**

### ***Alternative H<sub>1</sub> (Modified)***

A modification of the Alternative H<sub>1</sub> alignment was studied as part of the Preliminary Alternatives. This alternative crossed Windlass Run at the same point as Alternative F<sub>1</sub> (Modified) which was retained for detailed study. COE selected a specific location for the crossing of this alternative through field inspection and preliminary mapping. The location for the Windlass Run crossing was selected because it crossed at a point where the wetlands associated with Windlass Run are most narrow. The stream channel entrenchment is minimal compared to the other Alternatives. The associated valley is steeper and results in a narrow floodplain that provides moderate flood abatement and water quality functions.

This alternative was not retained for detailed study because it did not meet the Purpose and Need for the project and did not meet the land use objectives for the local area.

There is a significant difference between the County's proposal for Campbell Boulevard and the Purpose and Need for SHA's MRECAS project. The County plans to extend Campbell Boulevard into the White Marsh Town Center for the use of residential traffic; not truck traffic. The County's plan for Campbell Boulevard would provide a direct link from the proposed residential neighborhood to the White Marsh Town Center. The Master Plan calls for a boulevard-type roadway, which would consist of an approximately 70' typical section including sidewalks, bicycle trails, and trees. This arterial would connect area neighborhoods to the White Marsh Town Center and US 40. The goal for the local area is to not only provide an aesthetically pleasing and convenient connection to points north of US 40 for local residential traffic, but to also separate heavy truck traffic from residential areas. This separation of commercial and



residential traffic can be achieved using the County's plan for Campbell Boulevard for residential traffic in conjunction with a roadway with more significant truck traffic to serve the employment center extending MD 43 to MD 150.

There are two development proposals north of Bird River Road on either side of the proposed Campbell Boulevard. The Alma Smith Property is located west of Campbell Boulevard and has already begun construction. This property has 59 single family homes with direct access to Campbell Boulevard via a proposed public road. The Tito Inc. Property is located to the east of Campbell Boulevard. It has concept plans into the County for approval (as of November 1998). This development proposes two access points onto Campbell Boulevard. One point of access is a court with 39 single family homes, the other point is a small court with 7 single family homes. There are also two homes between these access points with their driveways directly accessing Campbell Boulevard. This totals to 107 single family homes with their only access being via Campbell Boulevard.

There is 60 feet of right-of-way reserved between these developments. If Alternative H<sub>1</sub>-Modified were constructed there will be direct impacts to proposed homes as a result of the approximately 210 feet needed for SHA's right-of-way requirements. Twenty-four proposed homes in the Tito development would be relocated or not allowed to be built. Also, there would be indirect impacts to the 24 homes remaining in this section of the Tito Property and to the 59 homes in the Alma Smith property with their only access onto Campbell Boulevard.

In addition, there are many smaller developments underway or proposed along Bird River Road. These total over 150 single family homes to be built that access Campbell Boulevard indirectly via Bird River Road. Also, there are additional parcels that are zoned residential but plans have not been submitted, this would include an additional 200 - 250 single family homes.

The marketability of the land is a significant issue with regards to this study. The roadway is being built to bring economic development and jobs to this depressed area within a designated growth area for the Baltimore region. The infrastructure should be built to support the economic activity necessary to sustain the economy and the population within designated growth areas, consistent with the goals of the recent Smart Growth legislation. The proposal for MRECAS would provide a direct connection to the interstate and make the industrial area more attractive to major companies looking to locate their operations within the region. Industrial areas with direct access to the interstate are more attractive to industry because of their accessibility to major national markets. Direct access to the interstate can also have a number of positive effects on the existing community and the property values within the area. These include increased competition for the land, higher land values, and an increased number of local job opportunities provided to the area economy that roadway would provide for the community.

Subsequent discussions with land use experts revealed that with a connection to the undeveloped land such as with Alternative H<sub>1</sub>-Modified the uses of the land would dramatically change. Due to the longer travel time and circuitous route, the high value, high employment producing businesses would not locate in the undeveloped land. The uses that would be attracted would be

similar to what is currently located along Earls Road. These are businesses with few jobs and even fewer “family sustaining jobs”, which is the goal of the proposed employment center.

Detailed studies will provide more natural and socio-economic information about this alternative, but these studies will not change the reasons for eliminating this alternative. SHA does not want to conduct unnecessary detailed studies on Alternatives when it is known at a preliminary stage that they will not meet the purpose and need for the project and will be inconsistent with the land use objectives for the local area.

There is less than one acre difference in the wetland impacts between Alternative F-Modified and Alternative H<sub>1</sub>-Modified. Both alternatives crossed Windlass Run at the same point. A comparison of the impacts is shown in Table II-4. Alternative F<sub>1</sub>-Modified had slightly more wetland impacts than H<sub>1</sub>-Modified due to the different crossing of Whitemarsh Run. The alternatives SHA proposed to retain for detailed study were the least environmentally damaging alternatives that met the purpose and need for the project and provided adequate land use development patterns for the area. They are also alternatives that are consistent with the existing and future desirable land use configuration for the local area as spelled out in the Baltimore County Master Plan

There would be wetland impacts due to Baltimore County’s extension of Campbell Boulevard, however the County project would also require a separate Section 404 and MDE permit. Both the county and state projects will comply with applicable regulations. The construction of both projects is consistent with the land use plans for the local area.

**Table II-4: Comparison of Alternatives F<sub>1</sub>- Modified and H<sub>1</sub>-Modified (Based on a 150 ft. Band Width)**

Alternative	H <sub>1</sub> - Modified	F <sub>1</sub> -Modified
Project Length (miles)	2.7	3
Total Cost (\$million) <sup>1</sup>	\$40-50	\$38-48
<b>Properties Affected</b>		
Residential	15	2
Business	6	2
<b>Displacements</b>		
Residential	0	16
Business	0	0
<b>Environmental Impacts (AC)</b>		
C. B. C. B. A. <sup>2</sup>	1	1
Historic <sup>3</sup>	3	3
Wetland	9	11
100-Year Flood Plain	<1	2
Woodland	23	30
<b>Stream Crossings (#)</b>	2	3

<sup>1</sup>Cost assuming a donation of the required right-of-way needed from the A.V. Williams parcel.

<sup>2</sup>Chesapeake Bay Critical Boundary Area

<sup>3</sup>Number of acres of acquisition, not number of properties affected.

Eliminating Alternatives that utilize Campbell Boulevard from future study will allow for a separation of residential land uses and industrial truck traffic, which is consistent with the land use plans for the local area. Alternatives H<sub>1</sub> and H<sub>2</sub> are inconsistent with the Baltimore County Master Plan.

**SHA did not recommend this alternative for further study, because it does not meet the Purpose and Need, would mix truck traffic in an area that the county intends to serve residential traffic, and would be inconsistent with the County's Master Plan.**

*Alternative J<sub>1</sub>*, (See Table II-3).

Alternative J<sub>1</sub> was not recommended because it did not address Purpose and Need since the improvements would not have enabled the planned development of major economic development opportunity sites and would not have fostered the increased utilization of established employment areas in the MREC. This alternative adversely impacted the communities along Ebenezer, Bird River, Vincent, Vincent Farm, and Earls Roads. This alternative also impacted 7 acres of the Chesapeake Bay Critical Area. The crossing of Alternatives J<sub>1</sub> and J<sub>2</sub> at Windlass Run would have affected wetlands that are within a Resource Conservation Area of the Chesapeake Bay Critical Area. It would have bisected active farms east of Ebenezer Road. This alternative called for multiple crossings of Ebenezer Road both at-grade and grade separated. It also follows Earls Road for the last half of the alignment. There was a potential for noise impacts to these residences as a result of the expected truck traffic and strong public opposition from area residents. Noise impacts would have been expected to increase substantially above existing levels with the addition of a roadway within this close proximity to the residential areas. There were potential noise impacts to 8 non-displaced residences that are located within 200 feet of the centerline of the alignment. There are many residences and businesses along Earls Road and no access control. The increased truck traffic associated with the development would increase conflicts between truck traffic and entering vehicles thus decreasing safety. This concept tied into MD 150 across from Chase Elementary School raising safety concerns by the team and the public. Along Earls Road, this alternative would have displaced 6 homes and a business in addition to the noise and safety issues associated with increased truck traffic along the roadway. In addition, the alternative would also not have provided direct access to the industrial areas along MD 150. Alternatives J<sub>1</sub> and J<sub>2</sub> are the most expensive of all the options.

**SHA did not recommend this alternative for further study, because is has comparable wetland impacts to the Alternatives Retained for Detailed Study but has impacts to residential areas and does not serve the MREC as adequately.**

*Alternative J<sub>2</sub>*, (See Table II-3).

Alternative J<sub>2</sub> provided access to the MREC but was not recommended for detailed study. This alternative had the highest impacts to the Chesapeake Bay Critical Area and would have bisected active farms east of Ebenezer Road. The crossing of Alternatives J<sub>1</sub> and J<sub>2</sub> at Windlass Run would affect wetlands that are within a Resource Conservation Area of the Chesapeake Bay Critical Area. Alternative J<sub>2</sub> would affect portions of a Limited Development Area within the

Chesapeake Bay Critical Area. This alternative adversely impacted the communities along Ebenezer, Bird River, Vincent, Vincent Farm, and Earls Roads. This alternative called for multiple crossings of Ebenezer Road both at-grade and separated. This alternative also had the highest impacts to the Chesapeake Bay Critical Area and would have bisected active farms east of Ebenezer Road. The alternative potentially displaced two homes in a minority community and introduces industrial truck traffic in a predominately residential area. Alternatives J<sub>1</sub> and J<sub>2</sub> are the most expensive of all the options. Based on preliminary county coordination, a significant portion of Alternatives J<sub>1</sub> and J<sub>2</sub> could fall outside the Priority Funding Area (PFA) currently being developed, which would have been inconsistent with Smart Growth initiatives.

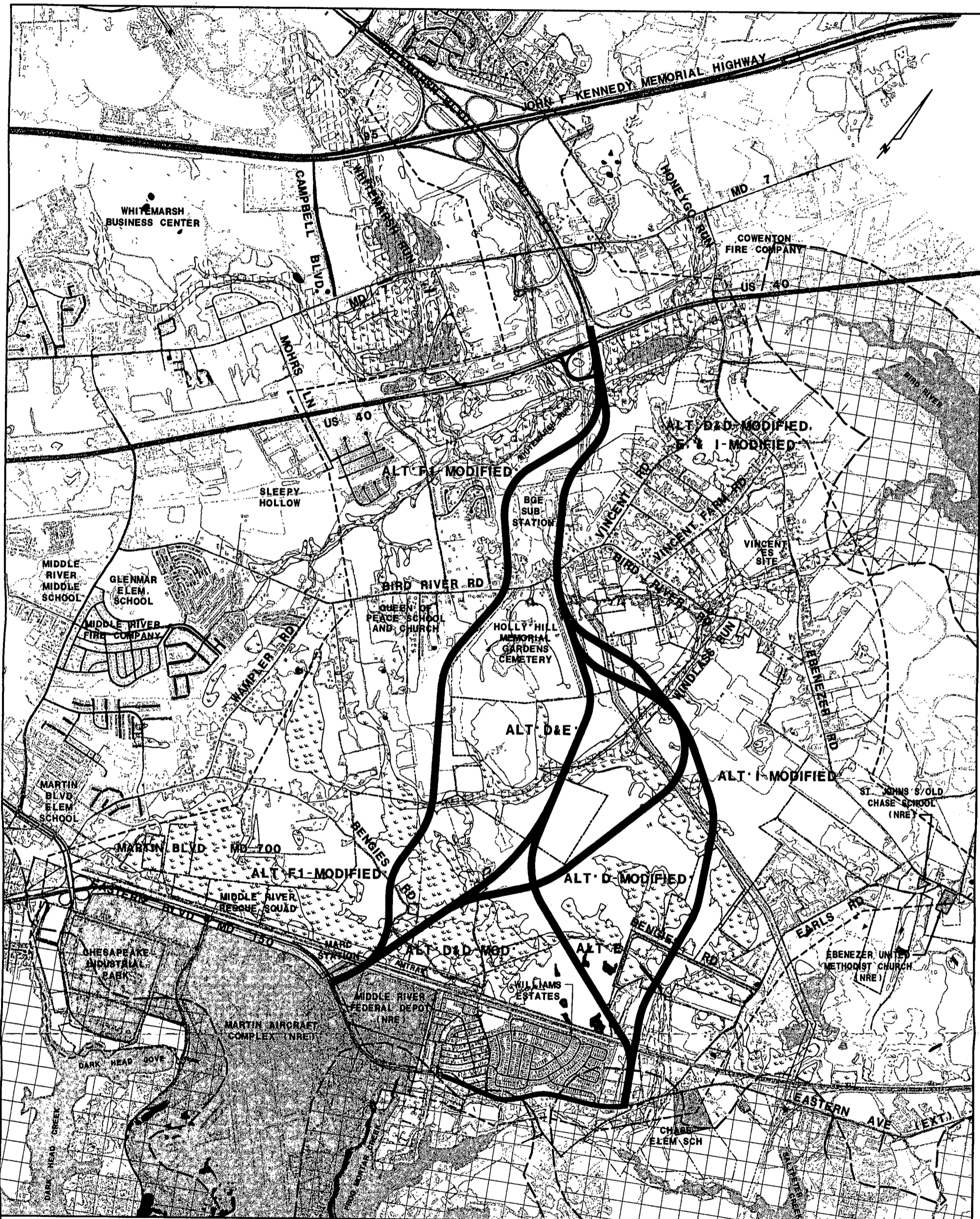
**SHA did not recommend this alternative for further study, because it has comparable wetland impacts to the Alternatives Retained for Detailed Study but has impacts to residential areas and does not serve the MREC as adequately.**

b. Alternatives Retained for Detailed Study










The following modifications and decisions were made based on SHA and Environmental Agency field walks and decisions made at the September 3, 1998 meeting involving SHA, Baltimore County and Environmental Agency representatives. The Alternatives Retained for Detailed Study, also referred to as "Modified Preliminary Alternatives" are shown in Figure II-5, and an impacts comparison is shown in Table II-5. The impacts shown in Table II-5 are based on a bandwidth of 150 feet. The impacts were adjusted during the detailed study phase (See Table S-1 for final impacts). Detailed mapping for these alternatives is shown at the end of this Section in Figures II-7 through II-19.

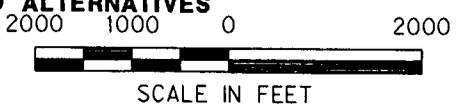
***No-Build Alternative***

This alternative was recommended to be taken forward into detailed study as a base case scenario to compare with the build options.



**LEGEND**

-  100 YEAR FLOODPLAIN
-  STUDY AREA
-  DEVELOPABLE PARCELS
-  PROPERTY LINE
-  PRELIMINARY WETLANDS
-  CRITICAL AREA BOUNDARY
-  HISTORIC AREA
-  RETAINED ALTERNATIVES
-  PFA BOUNDRY



**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT  
STATEMENT**

**MODIFIED ALTERNATIVES MAP**



DATE: Jan. 2001

FIGURE NO. II-5

**Table II-5: Middle River Employment Center Access Study Summary of Modified Preliminary Alternatives Impacts (Based on a 150 ft. Band Width)**

Alternative	No Build	D	D-Modified	E	F <sub>1</sub> -Modified	I-Modified
Project Length (mi)	0	3.2	3.6	3.2	2.9	3.4
Total Cost (\$Million) <sup>1</sup>	0	\$49-59	\$55-65	\$48-58	\$37-47	\$46-56
<b>Properties Affected by changes in access</b>						
Residential	0	1	1	11	2	14
Business	0	2	2	9	3	9
<b>Displacements</b>						
Residential	0	5	5	7	6	5
Business	0	1	1	1	0	1
<b>Environmental Impacts (AC)</b>						
C. B. C. B. A. <sup>2</sup>	0	1	1	4	1	4
Historic <sup>3</sup>	0	3	3	0	3	0
Wetland	0	8	9	4	5	5
100 Year Flood Plain	0	2	2	2	1	2
Woodland	0	39	43	42	28	38
Stream Crossings (#)	0	5	5	5	4	5

<sup>1</sup>Cost assuming a donation of the required right-of-way needed from the A. V. Williams parcel.

<sup>2</sup>Chesapeake Bay Critical Boundary Area

<sup>3</sup>Number of acres of acquisition, not number of properties affected.

<sup>4</sup>Due to field-verified wetland information preliminary NWI Mapping has been removed from the southern end of the study area near the MARC station.

**Alternative D**

Alternative D was recommended because it provided good access to the MREC and it had the least amount of socio-economic impacts. The entire alternative affected only 3 properties and had 6 displacements. (See Table II-5). It is also similar to the alignment recommended by the Land Use Expert Panel that would best promote economic development. As an extension of MD 43, Alternative D provided direct access to I-95 for development north and south of MD 150. As a secondary advantage the alternative would support potential upgrades to the GSA Complex, Martin State Airport, and the Chesapeake Industrial Park. Alternative D also received the greatest amount of public support. There are approximately 8 acres of non-tidal wetlands impacted with this alignment.

The crossing of Windlass Run for this alternative had moderate channel entrenchment with a floodplain that is much broader and exhibits a seasonally saturated condition. As a result, flood abatement and water quality functions at this location appear to be the greatest. There is a potential that this crossing may affect more jurisdictional wetland area. Alternative D will require a Section 4(f) Evaluation, because it requires right-of-way from the Martin State

Airport/Federal Depot Historic District. Alternative D will be grade separated over Bird River Road.

### ***Alternative D Modified***

Alternative D Modified was added to the Alternatives Retained for Detailed study. This alternative would traverse through all three of the upland areas that are included as part of the developable area. The developer would have access to the upland areas directly, without the need to seek permits for service roads crossing additional wetland areas. Consequently, the secondary impacts associated with this alternative are less than many of the other alternatives. The crossing of Windlass Run for this alternative was suggested by COE through field visits, because this alternative crossed at the narrowest crossing *of the most disturbed stream section of Windlass Run*. The I Modified and D Modified alignments seemed to have a more desirable stream crossing than Alternatives D and E, with potentially fewer impacts to the environment. At the crossing for Alternatives D Modified and I Modified, the stream channel exhibits the highest degree of entrenchment in comparison to the other Alternatives. As a result, out of bank flow is generally less frequent and adjacent wetlands are only temporarily flooded. Consequently, the flood abatement and water quality functions provided at this crossing are minimal. A Global Positioning System was used to ensure that the centerline being studied will cross at the point suggested by COE. Alternative D Modified will require a Section 4(f) Evaluation, because it requires right-of-way from the Martin State Airport/Federal Depot Historic District. Alternative D Modified will be grade separated over Bird River Road.

Similar to Alternative D, this new alignment also had relatively minimal socio-economic impacts, with six displacements and three-properties from which right-of-way would be required. This alternative also improved access to the developable parcels within the MREC, in comparison with the original Alternative D alignment. With this alternative, the spur roads needed to access the developable portion of this site could avoid additional crossings of Windlass Run, therefore reducing the amount of cumulative impacts associated with development. As an extension of MD 43, Alternative D Modified would also provide direct access to I-95 for development north and south of MD 150. As a secondary advantage the alternative would support potential upgrades to the GSA Complex, Martin State Airport, and the Chesapeake Industrial Park. There are approximately 9.9 acres of non-tidal wetlands impacted with this alignment. (See Table II-5)

### ***Alternative E***

Alternative E was recommended because it provided good access to the MREC and had relatively minimal natural environmental impacts. It has 4 acres of wetland impacts and only Alternative H<sub>2</sub> has fewer impacts. (See Table II-5) Similar wetland impacts occur with both Alternatives E and C, but impacts to the communities along Earls Road are avoided with Alternative E. This alignment follows Alternative D until it nears MD 150 where it ties in east of the Williams Estate community. This divergence from Alternative D avoids effects to historic properties along MD 150 including the Martin State Airport/Federal Depot Historic District. This alternative also has direct access to I-95.

The crossing of Windlass Run for this alternative has moderate channel entrenchment with a floodplain that is much broader and exhibits a seasonally saturated condition. As a result, flood abatement and water quality functions at this location appear to be the greatest. There is a potential that this crossing may affect more jurisdictional wetland area. Alternative E will cross over Bird River Road. Alternative E will be grade separated over Bird River Road.

#### ***Alternative F<sub>1</sub> Modified***

The Preliminary Alternative F<sub>1</sub> was modified to minimize wetland impacts at the crossing of Windlass Run. A specific location for the crossing of this alternative was selected by COE through field inspection and use of the preliminary mapping. The location for the Windlass Run crossing for Alternative F<sub>1</sub> Modified was selected because it would cross at a point where the wetlands associated with Windlass Run are most narrow. The stream channel entrenchment is minimal compared to the other Alternatives. The associated valley is steeper and results in a narrow floodplain that provides moderate flood abatement and water quality functions. A Global Positioning System was used to identify that the preliminary engineering for the centerline of the alternative will cross at the point suggested by COE.

Alternative F<sub>1</sub> Modified was recommended because it had minimal socio-economic impacts and provided a less environmentally damaging crossing of Windlass Run based on agency field reviews. As shown on Table II-5, this alternative also impacted 5 acres of wetlands. Regarding the socio-economic impacts, this alternative had 6 displacements and 5 properties affected. Alternative F<sub>1</sub> Modified did provide access into the MREC, but due to its proximity to the developable parcels an access road approximately one mile in length would potentially be required to access the development. Bird River Road would be constructed over Alternative F<sub>1</sub> Modified. Alternative F<sub>1</sub> Modified required a Section 4(f) Evaluation, because it required right-of-way from the Martin State Airport/Federal Depot Historic District.

#### ***Alternative I Modified***

The alignment of Alternative I was modified to minimize wetland impacts. This minimization was based on the preliminary wetland mapping and COE field reviews. The curve just east of Windlass Run was modified so that the alignment crosses the wetlands surrounding the Windlass Run tributary in a more upland area that may have less wetland impacts. COE identified this area during one of their field reviews and the modification was incorporated into this alternative. This modification has reduced the preliminary estimates of wetland impacts to 3 acres.

Alternative I Modified was recommended because it provided direct access to the MREC and had a relatively low number of residential (5) and commercial (1) displacements (See Table II-5). The same 6 displacements associated with Alternative D are also displaced by this alternative. COE suggested the location for crossing of Windlass Run for this alternative through field visits. The I Modified and D Modified alignments seemed to have a more desirable stream crossing than Alternatives D and E, with potentially fewer impacts to the environment. At the crossing for Alternatives D Modified and I Modified, the stream channel exhibits the highest degree of entrenchment in comparison to the other Alternatives. As a result, out of bank flow is generally less frequent and adjacent wetlands are only temporarily flooded. Consequently, the flood



abatement and water quality functions provided at this crossing are minimal. A Global Positioning System was used to ensure that the centerline being studied will cross at the point suggested by COE. This alternative also provides direct access to I-95 for development along MD 150. Right-of-way would be acquired from 23 properties with this alignment. Alternative I Modified would require the closure of Bengies Road, west of the Amtrak rail line. Access will be provided by constructing a 20 foot wide driveway from one side of MD 43, under the mainline near MD 150, to the other side of MD 43 (See Figure II-17). Alternative I-Modified will be grade separated over Bird River Road. Alternative I Modified also avoids the Martin State Airport/Federal Depot Historic District.

4. Alternatives Retained for Detailed Study, but not SHA's Selected Alternative

SHA is not recommending to carry forward Alternative D, Alternative E, Alternative F1 Modified or Alternative I Modified.

***Retained Alternative D (See Table S-1)***

- Alternative D has most of the same advantages as D Modified in terms of roadway location, but does not access the developable parcels as directly and consequently is estimated to require additional secondary impacts to wetlands and forested areas when access is provided to these parcels.
- Alternative D requires four residential displacements and one business.
- Alternative D's crossing of Windlass Run impacts 1.2 acres of wetlands and 0.9 acres of floodplain directly. The Corps felt this was a highly impactful location.
- Alternative D impacts 8.2 (recently increased to 8.5 acres) acres of wetlands directly and impacts a range of 9.2 to 9.6 for both the alternative and its associated access roads.
- Alternative D impacts two potentially National Register Eligible archeological sites.
- Alternative D has an adverse effect to the historic district of the Martin State Airport/Federal Depot Historic District, similar to that of Alternative D Modified.

***Retained Alternative E (See Table S-1)***

- Alternative E's crossing of Windlass Run (the same as Alternative D) impacts 0.2 acres of wetlands and 0.9 acres of floodplain, again the Corps did not like this crossing location.
- Alternative E terminates East of Williams Estates and West of the Chase Elementary School near a minority community that has been identified. Impacts to this community could include right-of-way acquisition and visual and noise intrusion.

- Alternative E also would require upgrading of MD 150 from near the termination point to Carroll Island Road. This will result in impact to utilities, additional properties and the Chesapeake Bay Critical Area.
- Alternative E impacts two potentially National Register Eligible archeological sites.

***Retained Alternative F1 Modified (See Table S-1)***

- Alternative F1 Modified has the most residential displacements with 10.
- Alternative F1 Modified provides the worst access to the developable land resulting in large secondary and cumulative impacts. This Alternative requires the greatest length and number of additional access roadways and therefore the third worst cumulative wetland impacts and the highest additional forest impacts.
- Alternative F1 Modified has the most active agricultural land impacted.
- Alternative F1 Modified has Bird River Road crossing over the roadway, resulting in more direct and indirect residential impacts, except for No Build.
- Alternative F1 Modified has the least forest impacts.
- Alternative F1 Modified has the second highest direct stream impact.
- Alternative F1 Modified requires the most additional stream crossings in order to access development parcels.
- One potential National Register Eligible archeological site impacted

***Retained Alternative I Modified (See Table S-1)***

- Alternative I Modified has the longest overall length and the highest cost.
- Alternative I Modified has the highest secondary and cumulative impacts to wetlands and forests.
- Alternative I Modified has the highest active agricultural farmland impacts.
- Alternative I Modified terminates East of Williams Estates and West of the Chase Elementary School indirectly impacting a minority community.

- Alternative I Modified requires the second greatest length of additional access road construction
- Alternative I Modified also would require upgrading of MD 150 from its termination at MD 150 to Carroll Island Road. This will impact utilities, additional properties and the Chesapeake Bay Critical Area.
- One potential National Register Eligible archeological site impacted
- There will be increased traffic on MD 150 from terminus at MD 150 Martin State Airport.

#### **D. Congestion Management System (CMS) Study**

In 1996, MDOT conducted a Congestion Management System (CMS) analysis of the Middle River Employment Center Access Study area. The CMS analysis focused on ways to manage congestion and reduce Single Occupancy Vehicle (SOV) travel to improve the efficiency and effectiveness of the transportation network in the study area. If an increase in SOV capacity is warranted, strategies appropriate both to manage the SOV facility and to improve mobility in the corridor in which the project occurs will be identified. This analysis refers to the *MD CMS Corridor#17 Report: Harford County to Baltimore (December, 1996)*, which includes the Middle River Employment Center Access Study area.

CMS Corridor #17 analysis findings show that in this corridor moderate to severe peak period congestion can be expected to occur under all conditions. None of the congestion management strategy packages independently addresses congestion problems; it was shown that combinations of various strategies tested and proactive growth management are needed. We can expect similar conclusions to apply to the MRECAS area of Corridor #17. The *MD CMS Strategies Identification Guidance Document* was consulted in selecting the most appropriate congestion mitigation strategies.

In Corridor #17, the Travel Demand Management (TDM) and Transportation Systems Management (TSM) measures along with transit service improvements would be helpful but are insufficient to relieve congestion. In the MRECAS area, employer based TDM measures such as vanpool/carpool support or preferential parking might help employers with large concentrations of employees making trips to and from the area. The establishment of a Transportation Management Association (TMA) in the study area would facilitate the implementation of these TDM measures. TSM measures such as access management would be useful in controlling direct access into the study area, and traffic signalization would be beneficial, especially on roadways that have heavy volumes of traffic flowing predominately in one direction.

Regarding transit, existing rail service helps by providing an alternative mode of travel, but the transit market does not justify northbound Maryland Rail Commuter (MARC) service in the morning peak period, or southbound in the evening peak period. The viability of additional

MARC service during special events should be studied to determine the expected number of events per year, alignment, patronage, etc. [This information was taken from the *CMS Corridor #17 Report: Harford County to Baltimore (December 1996).*]

As part of a test package of the Corridor #17 Study, light rail service from Baltimore to White Marsh attracted daily ridership of approximately 16,000 passengers, and was recommended for additional study in that report due to its potential for helping to manage congestion. Bus or shuttle service connected to rail service in the study area would provide the flexibility to serve many trip patterns in a case where sufficient demand for such service is demonstrated. For example, on the segment of MD 43 that is a part of the Middle River Employment Center Access Study, bus service should be available to any major activity centers where people movement is an issue. In this case, bus bays would be a useful design feature along the main thoroughfare to facilitate smooth traffic flow, and land uses would need to be designed to allow pedestrians easy access to building entrances. Shuttle service from the Martin State Airport MARC Station to major activity centers, such as an employment center, should be studied as part of the project planning process as a way to enhance existing bus service. [This information was taken from the *CMS Corridor #17 Report: Harford County to Baltimore (December 1996).*]

The conversion of an existing lane along I-95 to a High Occupancy Vehicle (HOV) lane would result in a reduction of general purpose lanes, and operating conditions would deteriorate slightly from the base case scenario. However, overall capacity would be increased by requiring the HOV lane to carry high occupancy vehicles. A complementary HOV lane with transit/HOV preference along MD 43 could help manage travel demand and could be a positive reinforcement to the mainline I-95 HOV lane. HOV lanes on MD 43 should be studied as part of project planning if HOV lanes on I-95 is determined to be a viable, imminent strategy. [This information was taken from the *CMS Corridor #17 Report: Harford County to Baltimore (December 1996).*]

The addition of highway capacity enhancements will have a significant impact on congestion levels in the entire corridor, and will have corresponding impacts in the MRECAS area. SOV strategies are likely to be the primary, most effective transportation solutions due to the character of planned land use in the Middle River Employment Center area, including warehousing, office, or other industrial use, and the need to accommodate SOVs and trucks. General-purpose lanes will be needed to support this high-growth area and effectively manage travel demand.

Given the types of developments planned for the MRECAS area, the private vehicle will continue to be the dominant travel mode. In addition, there is current and projected goods movement activity due to existing industrial uses, and the large tracts of industrial zoned land. Approximately 3-13 percent of the average daily traffic (ADT) on the local roadways is truck traffic. [This information was taken from the *CMS Corridor #17 Report: Harford County to Baltimore (December 1996).*]

## **E. Major Investment Study (MIS)**

The Major Investment Study was conducted as part of the preliminary studies of alternatives for the Middle River Employment Center. This analysis eliminated some alternatives from further study and recommended that implementation of some measures be further considered. Coordination with the Baltimore Metropolitan Council (BMC) and the Mass Transit Administration (MTA) was ongoing throughout the project development.

A number of multi-modal options were considered. The reasons for recommending implementation of these measures are summarized in the following section.

### **1. Multi-modal Options Not Recommended for Detailed Study**

Detailed studies of HOV lanes, rail transit connecting from the MARC Penn Line to west of I-95, and reverse commute trains on the MARC Line were not recommended for further study. The reasons for removing these options from further study are explained below. [This information was taken from the *CMS Corridor #17 Report: Harford County to Baltimore (December 1996)*.]

#### ***High Occupancy Vehicle Lanes***

Implementation of HOV lanes on I-95 is not expected to occur soon, therefore HOV lanes will not be included in the design of the MRECAS since there will be no connectivity of the road network. The conversion of an existing lane along I-95 to an HOV lane would result in a reduction of general purpose lanes, and operating conditions would deteriorate slightly from the base case scenario.

The addition of highway capacity enhancements will have an impact on congestion levels in the entire corridor, and will have corresponding impacts in the MRECAS area. SOV strategies are likely to be the primary, most effective transportation solutions due to the character of planned land use in the Middle River Employment Center area, including warehousing or other industrial use, and the need to accommodate SOVs and trucks. General-purpose lanes will be needed to support this high-growth area and effectively manage travel demand.

#### ***Rail Transit within the Employment Center***

Several Mass Transit Administration (MTA) bus lines and the MARC Penn Line provide transit service in or near the MRECAS area. Detailed studies include a consideration of transit and its connectivity to the transportation network and a description of these is included in the next section, however additional fixed-guideway transit options will not be further considered. The feasibility of widening the median or reserving right-of-way for a fixed guideway transitline within the proposed corridor was considered during the study of preliminary alternatives. It was decided that it would be unreasonable to reserve space for a future transitway as part of the MRECAS highway improvements. Reserving the right-of-way would provide space only for a three-mile transitway and would not provide for system connectivity. No right-of-way is reserved to connect a transit corridor to other parts of the region outside the study area. In

addition, a rail connection in this area is not contained in the Constrained Long Range Plan and is not part of the recommendations detailed in the Corridor#17 Congestion Management Report. As congestion worsens in the entire corridor, the availability of the existing transit service will become more important and could help manage travel demand in the study area.

If light rail service is built between downtown Baltimore and White Marsh, bus feeder service from the Middle River area will connect the MREC to the light rail service.

### ***Reverse Commute Trains***

In the corridor as a whole, rail capacity is high compared to ridership, which is relatively low at the northern end (including the MRECAS area) because the trains are destined for Washington, D.C. and most riders board in or south of Baltimore City. The MARC Penn Line does serve approximately 400 daily riders at the stations from the Martin State Airport north to Perryville. There is substantial excess capacity available to accommodate additional riders at the Martin State Airport Station and other stations in the CMS corridor. However, the service is entirely directional, serving southbound traffic in the morning and northbound traffic in the evening. There may be a lack of demand for reverse commute trains, however more detailed studies will be required. These studies are outside the scope of study for the MRECAS. [This information was taken from the *CMS Corridor #17 Report: Harford County to Baltimore (December 1996).*]

## 2. Multi-modal and Congestion Mitigation Options Retained for Further Study

The following multi-modal options were recommended for further study to be included with the highway build alternatives.

### ***Transportation Management Area***

The new roadway will potentially contribute to the congestion currently experienced in the local area. This includes daily peak hour congestion experienced on the Beltway and on I-95. SHA would encourage the implementation of a Transportation Demand Management Area program for the employers locating within the MREC area. Employers applying for a development permit within the MREC area *could* be held responsible for developing and implementing a transportation demand management program. The list below details the elements that could be included in the program.

- preferential parking for carpools
- carpool/vanpool/rideshare matching
- access to transit fare information, guaranteed ride home
- staggered and/or compressed work schedules and participation in surveys to measure program effectiveness
- establishment of Transportation Management Associations or program coordinators
- telecommuting
- shuttles to the MARC Station
- discounted or fully subsidized transit fares
- bicycle racks and shower facilities

The agreed upon effectiveness of each of these measures to reduce trips can be estimated and measures would be implemented as chosen by the employer to meet an established trip-reduction quota. A Memorandum of Understanding (MOU) can be established with the county and area employers. Trip reduction measures such as these are being implemented on an increasing basis. MOU's have been developed for the National Institutes of Health and the Walter Reed Army Medical Center in Montgomery County. The implementation of these programs can be used as an example for the development of this parcel.

### ***Access Management***

TSM measures such as access management would be useful in controlling land development patterns and direct access into the study area. The alignment proposes to have at-grade intersections at the US 40 interchange, at MD 150, and potentially two to three intersections to serve the developable area. Traffic signalization and traffic calming measures would also be beneficial.

### ***Park-n-Ride Lots***

Usage of park and ride lots in the corridor is relatively good, averaging 51 % of capacity. The park-n-ride facilities in the area are served by bus transit. A description of the park-n-rides in the area is listed below:

- in White Marsh at Perry Hall Boulevard and Honeygo Boulevard with a capacity of 200 spaces and 50 percent usage rate, and
- on MD 150 at Back River with a capacity of 100 spaces and 50 percent usage rate.
- The Martin State Airport MARC Station Park-n-Ride lot, with 175 spaces, has a 75 percent usage rate.

### ***Bus***

Several Mass Transit Administration (MTA) bus lines provide bus transit service in or near the MD 43 area. In the CMS Corridor #17 as a whole, the ratio of bus ridership to capacity is fairly high. MTA #15 operates between White Marsh and Security Square Mall. MTA #24 operates between Tidewater Village and Franklin Square Hospital and intersects other bus routes and the MARC Penn Line. MTA #35 operates between Franklin Square Hospital and the University of Maryland Transit Center. MTA #120, a premium express service, operates between White Marsh and Downtown Baltimore.

Bus or shuttle service connected to rail service in the study area would provide the flexibility to serve many trip patterns in a case where sufficient demand for such service is demonstrated. For example, on the segment of MD 43 that is a part of the Middle River Employment Center Access Study, bus service should be available to any major activity centers where people movement is an issue. In this case, bus bays would be a useful design feature along the main thoroughfare or within the development to facilitate smooth traffic flow, and land uses would need to be designed to allow pedestrians easy access to building entrances. Shuttle service from the Martin State Airport MARC Station to major activity centers such as an employment center, is included in the plans for the Transportation Management Area as a way to enhance existing bus service.

Extension of local bus service, adding commuter bus service and adding local circulator service will be planned for any build alternative to be coordinated with the opening of the roadway. This analysis has been coordinated with the Mass Transit Administration. In terms of local bus service they intend to extend the proposed Route 66 into the employment center, extend the Route 23 to meet with the Route 66 at the same location and have the Route 24 make a stop at that same location. In terms of the commuter bus service the MTA will investigate locating a park and ride lot near the intersection of US 40/MD 43 and extend the Route 120 to serve the lot. In terms of local circulator service they will examine the implementation of a local circulator bus service to transport people through the study area on the new road to locations such as the White Marsh Mall, Martin State Airport, the Martin State Airport MARC station, and the proposed employment center.

### ***Enhancements to the Martin MARC Station***

Potential enhancements to the Martin State Airport MARC Station can be looked at as part of the design of the roadway. Preliminary studies show that the potential to expand the MARC Station may be limited due to space constraints and wetland impacts on the north side of the rail line. Pedestrian access to the station could be improved with the construction of a pedestrian connection associated with Alternatives D, D-Modified, or F<sub>1</sub>-Modified. Potential use of the park-n-ride may also increase with these alternatives, as they would provide fast access to I-95 and provide a good meeting place for carpools and vanpools in the Middle River area. An enhanced waiting area and ticketing facility will be examined in the next phase of the study.

### ***Pedestrian Facilities***

The proposed cross-section includes a 15-foot outside lane and room to include sidewalks. It would be prudent at this stage to make sure that enough cross-section width is included in the 404 permit to include pedestrian facilities as a final design detail.

A pedestrian/bike connection between White Marsh to the MARC Station or to the waterfront development is needed for the future development of the area. The entire route from White Marsh Town Center to the waterfront would be less than five miles. There are difficulties associated with crossing I-95 and US 40 but the demand for pedestrian facilities may be significant if the area becomes developed with an alternative that extends MD 43. In accordance with the Americans With Disabilities Act, the project will accommodate, to the maximum extent feasible, all pedestrians (including the disabled) on the proposed facility.

Pedestrian facilities are needed along existing White Marsh Boulevard (MD 43). People actually climb down the slopes to cross the roadway and there are pedestrian crossings along existing MD 43 in areas that the county never anticipated a need for. There is also a good amount of pedestrian and bicycle traffic along the route. A connection between MD 43 and Eastern Boulevard (MD150) should be provided. The pedestrian coordinators for both SHA and Baltimore County recommend it.



For the recreational biker and pedestrian movements, a vision plan was developed using county and developer roadways as a safer and more efficient way to allow for these movements through the area. (See Figure II-6)

From MD 150, the first major hurdle to a bike or pedestrian movement is the crossing of the Amtrak rail line. The bridge to be constructed over Amtrak will include a five foot sidewalk on both sides of the bridge. As a part of SHA's project a five-foot sidewalk will be constructed from MD 150 until the first intersection north of MD 150 on the west side. The proposed design speed and presumable speed limit in this section will be 40 mph.

From this first intersection with a county/developer roadway the recreational biker and pedestrian accommodations will be located on a separate alignment. In this section, the new roadway will be designed at a 45 mph design speed and is expected to be posted as such.

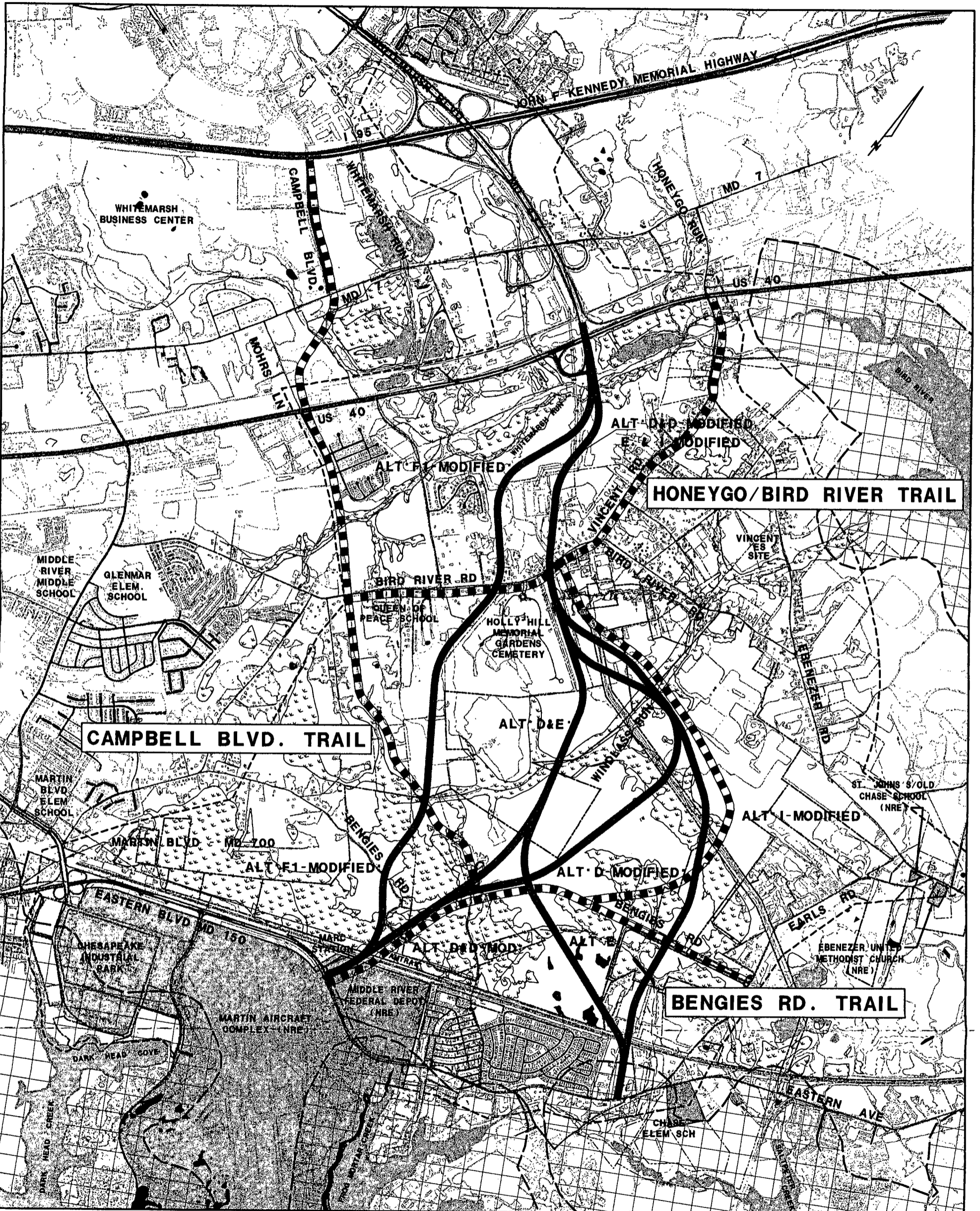
On the west side it is assumed that recreational bikers and pedestrians will be accommodated along a county/developer roadway up to Bird River Road. These movements will then be accommodated on Campbell Boulevard to White Marsh Mall and surrounding development, the major destination.

On the east side it is assumed that recreational bikers and pedestrians will be accommodated through easement from the developer. A path could cross Windlass Run on SHA's bridge/culvert (design the same as the Amtrak bridge) then extend through the Bird River Road/Vincent Road/Ebenezer Road network to Cowenton Boulevard over I-95, ending up in the Perry Hall and Honeygo areas.

As a contingency to the planned County/developer network, SHA will leave room in the right-of-way for the section from where the sidewalk ends, up to Bird River Road to allow for a retrofitted pedestrian accommodation in the landscaped area adjacent to the new roadway. This area will allow for a buffer between the roadway and the sidewalk. Therefore a curbed section can be constructed and still maintain SHA aesthetic considerations and the possibility to accommodate pedestrians and bikers. The recreational bikers and pedestrians, if they must be accommodated along the corridor, will be as far from the travel lanes as possible to keep them as safe as possible.

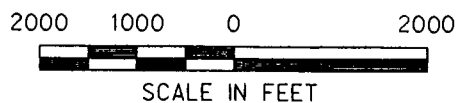
From Bird River Road to US 40 the design speed will be 50 mph and there will be an open section, therefore SHA will not make any plans for additional pedestrian and recreational biker accommodations as part of their study. The recreational bikers and pedestrians will be accommodated on existing and planned (the extension of Campbell Boulevard) county network of roads.

In addition, the commuter biker will be accommodated by an extra wide outside lane, currently proposed as a maximum of 15 feet. This width will not be signed or marked as a bike lane, but will allow enough buffer for the commuter biker to safely operate in the travel lane. The highway designation for the build alternative will be MD 43.



**LEGEND**

- CONCEPTUAL TRAIL LOCATION
- DEVELOPABLE PARCELS
- PRELIMINARY WETLANDS
- HISTORIC AREA
- STUDY AREA
- PROPERTY LINE
- CRITICAL AREA BOUNDARY
- RETAINED ALTERNATIVES



MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

PEDESTRIAN/BIKER VISION PLAN

MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

DATE:  
Jan. 2001

FIGURE  
NO. II-6

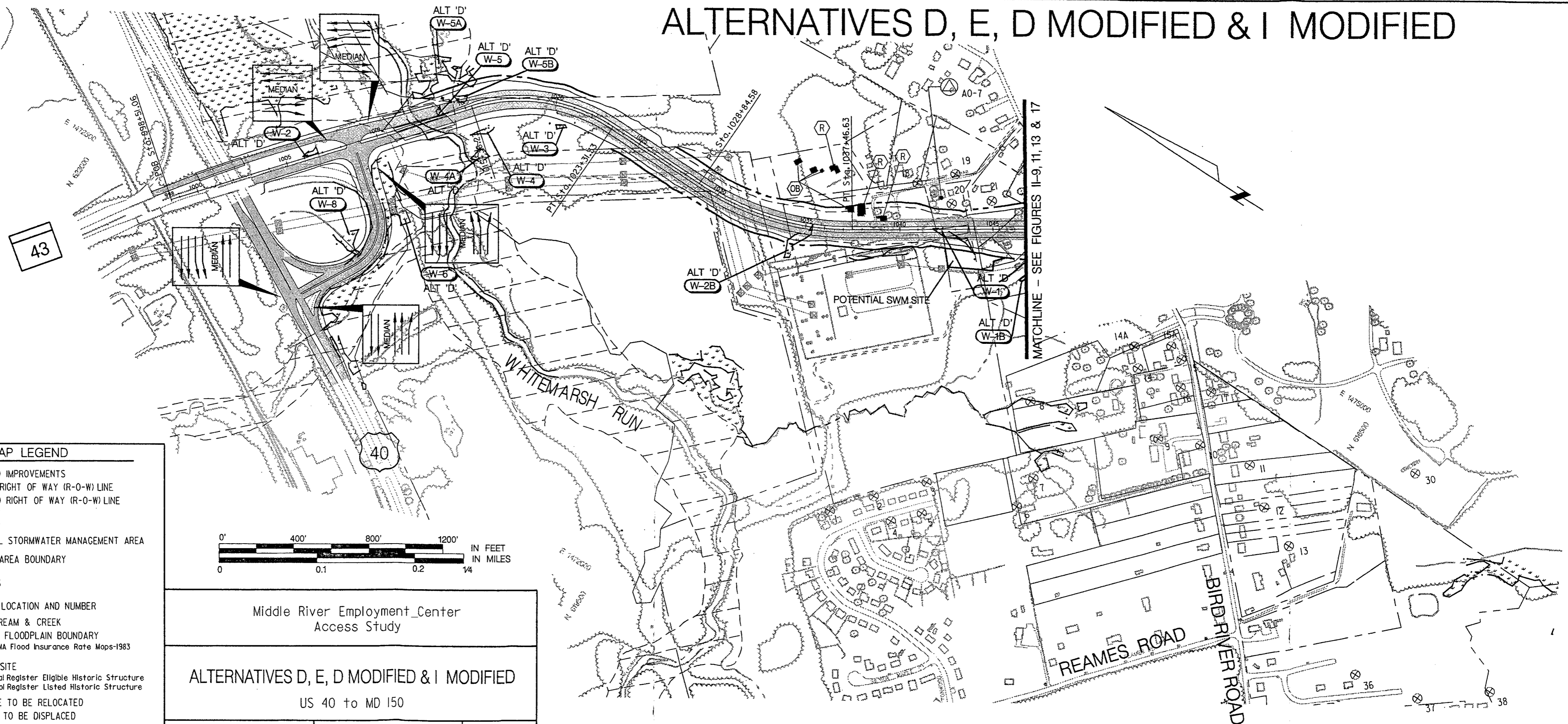
**F. References**

*Eastern Baltimore County Revitalization Strategy, Baltimore County Council, July 1, 1996*

*CMS Corridor#17 Report: Harford County to Baltimore (December 1996)*

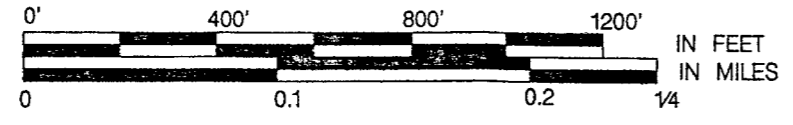
*Maryland Congestion Management System Analysis*

# ALTERNATIVES D, E, D MODIFIED & I MODIFIED



**MAP LEGEND**

- PROPOSED IMPROVEMENTS
- EXISTING RIGHT OF WAY (R-O-W) LINE
- PROPOSED RIGHT OF WAY (R-O-W) LINE
- CUT LIMIT
- FILL LIMIT
- POTENTIAL STORMWATER MANAGEMENT AREA
- CRITICAL AREA BOUNDARY
- WETLANDS
- WETLAND LOCATION AND NUMBER
- RIVER STREAM & CREEK
- 100 YEAR FLOODPLAIN BOUNDARY
- Source: FEMA Flood Insurance Rate Maps-1983
- HISTORIC SITE  
E - Notional Register Eligible Historic Structure  
R - Notional Register Listed Historic Structure
- RESIDENCE TO BE RELOCATED
- BUSINESS TO BE DISPLACED
- OUTBUILDING
- AIR RECEPTOR SITES
- NOISE RECEPTOR SITES



Middle River Employment Center  
Access Study

**ALTERNATIVES D, E, D MODIFIED & I MODIFIED**

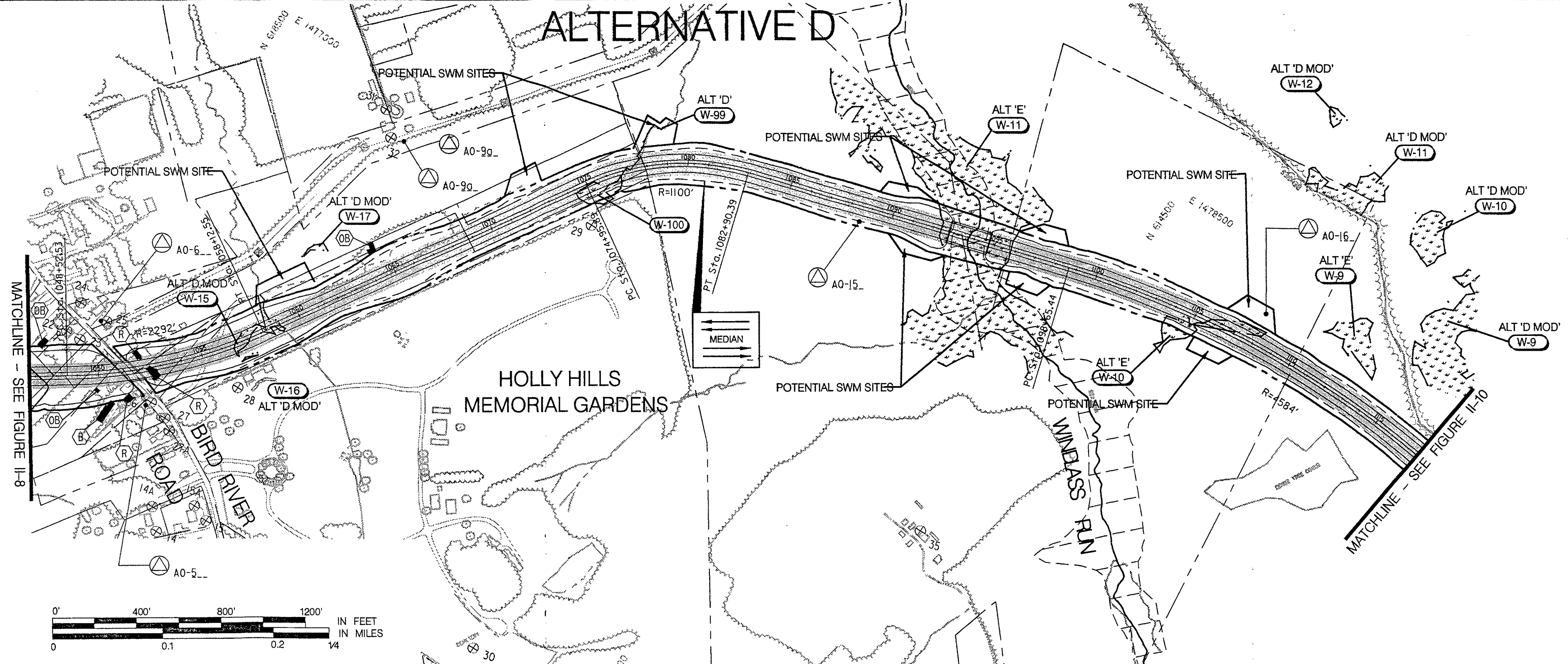
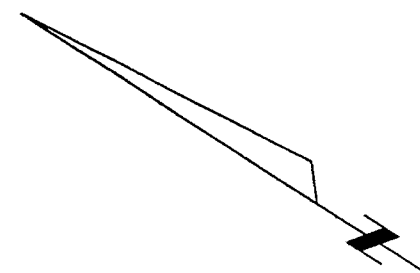
US 40 to MD 150

State Highway Administration	September, 2000	Figure No. II-7
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MATCHLINE - SEE FIGURES II-9, 11, 13 & 17

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# ALTERNATIVE D

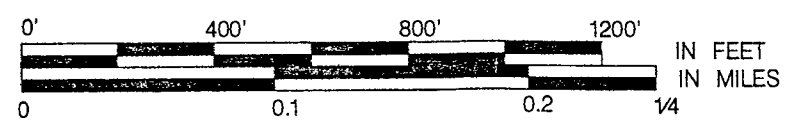


MATCHLINE - SEE FIGURE II-8

MATCHLINE - SEE FIGURE II-10

### MAP LEGEND

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- EXISTING RIGHT OF WAY (R-O-W) LINE
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Middle River Employment Center  
Access Study

## ALTERNATIVE D

US 40 to MD 150



September, 2000

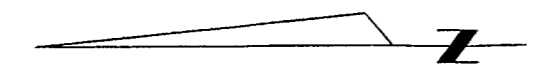
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II-8

Alternative D

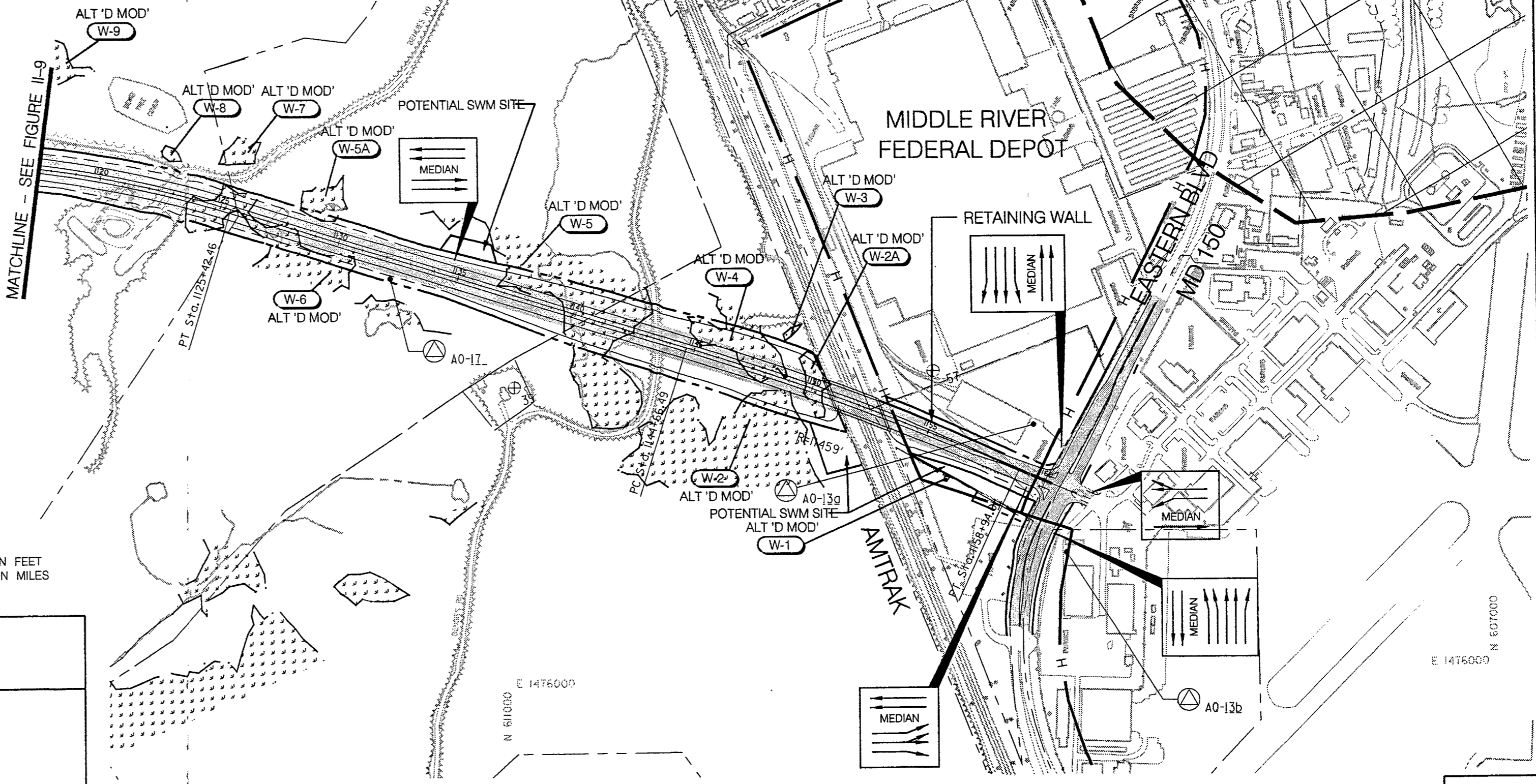
Figure No.  
II-8

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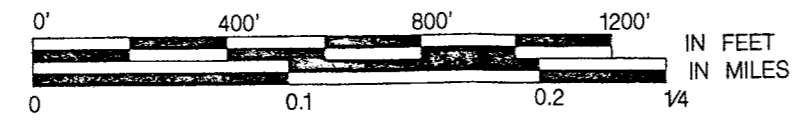
# ALTERNATIVE D



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N 612500



MAP LEGEND	
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	PROPOSED RIGHT OF WAY (R-O-W) LINE
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	FILL LIMIT
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Middle River Employment Center  
Access Study

**ALTERNATIVE D**  
US 40 to MD 150

State Highway Administration

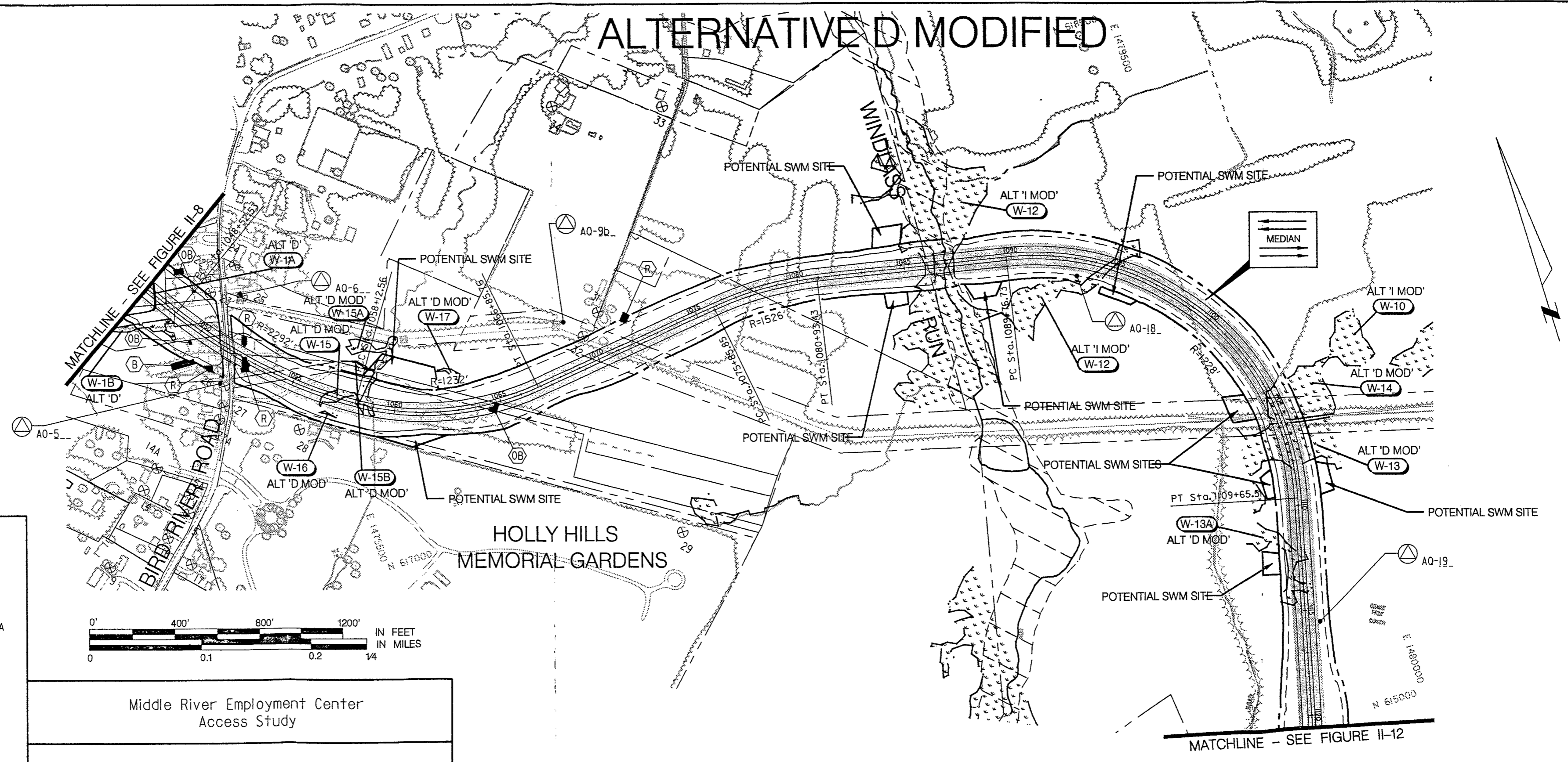
September, 2000

Figure No. II-9

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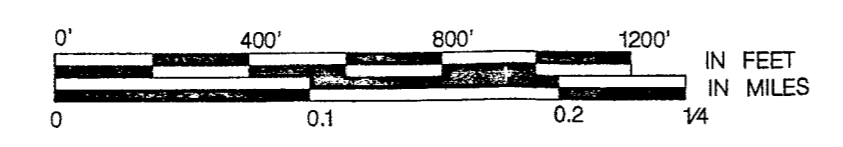
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107



**MAP LEGEND**

- PROPOSED IMPROVEMENTS
- EXISTING RIGHT OF WAY (R-O-W) LINE
- PROPOSED RIGHT OF WAY (R-O-W) LINE
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Middle River Employment Center  
Access Study

**ALTERNATIVE D MODIFIED**

US 40 to MD 150

State Highway Administration

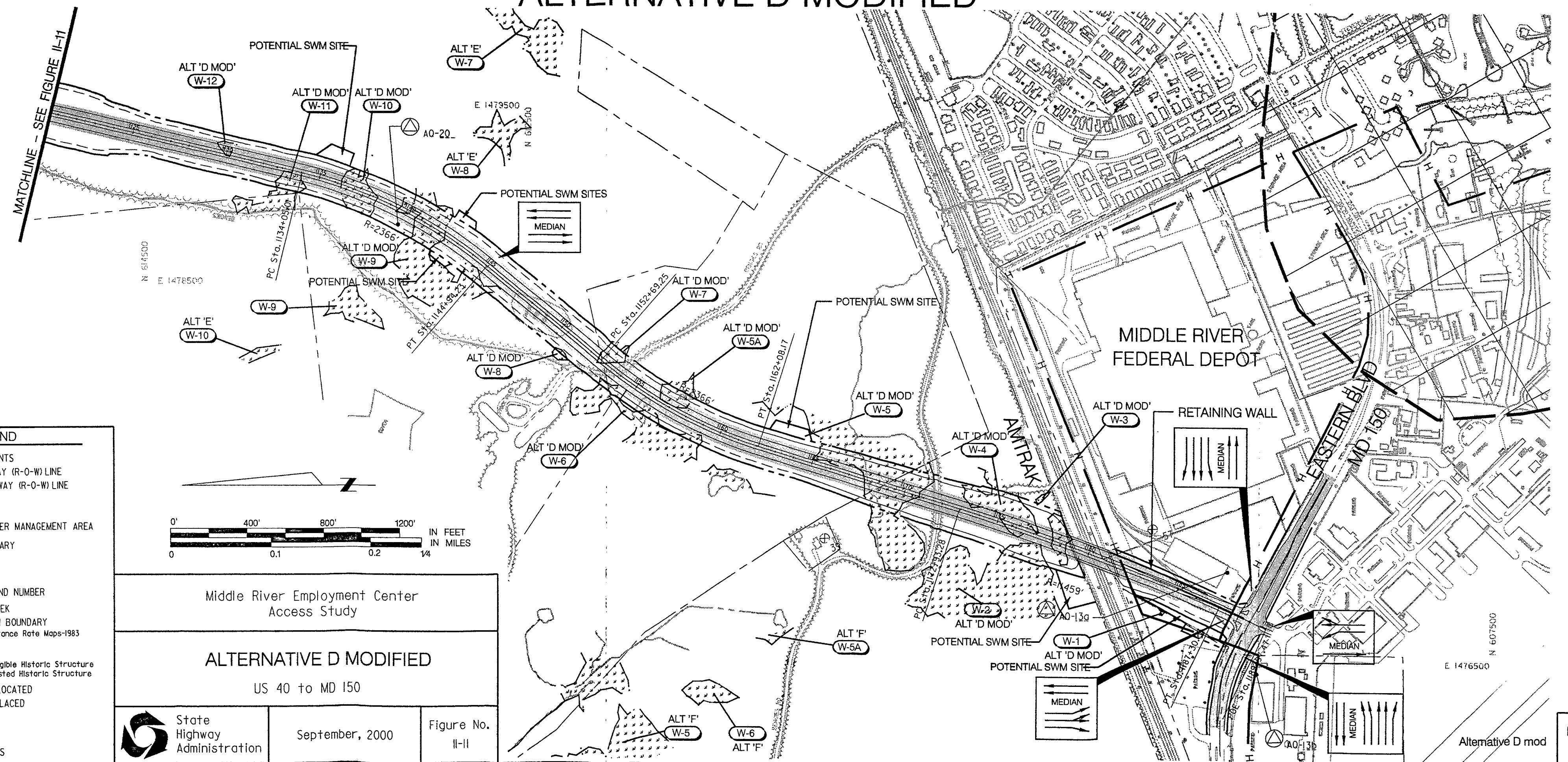
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Figure No. II-10

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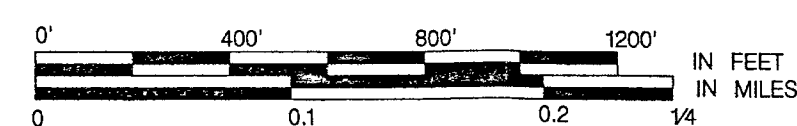
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# ALTERNATIVE D MODIFIED



**MAP LEGEND**

- PROPOSED IMPROVEMENTS
- EXISTING RIGHT OF WAY (R-O-W) LINE
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Middle River Employment Center  
Access Study

**ALTERNATIVE D MODIFIED**

US 40 to MD 150

State Highway Administration

September, 2000

Figure No. II-II

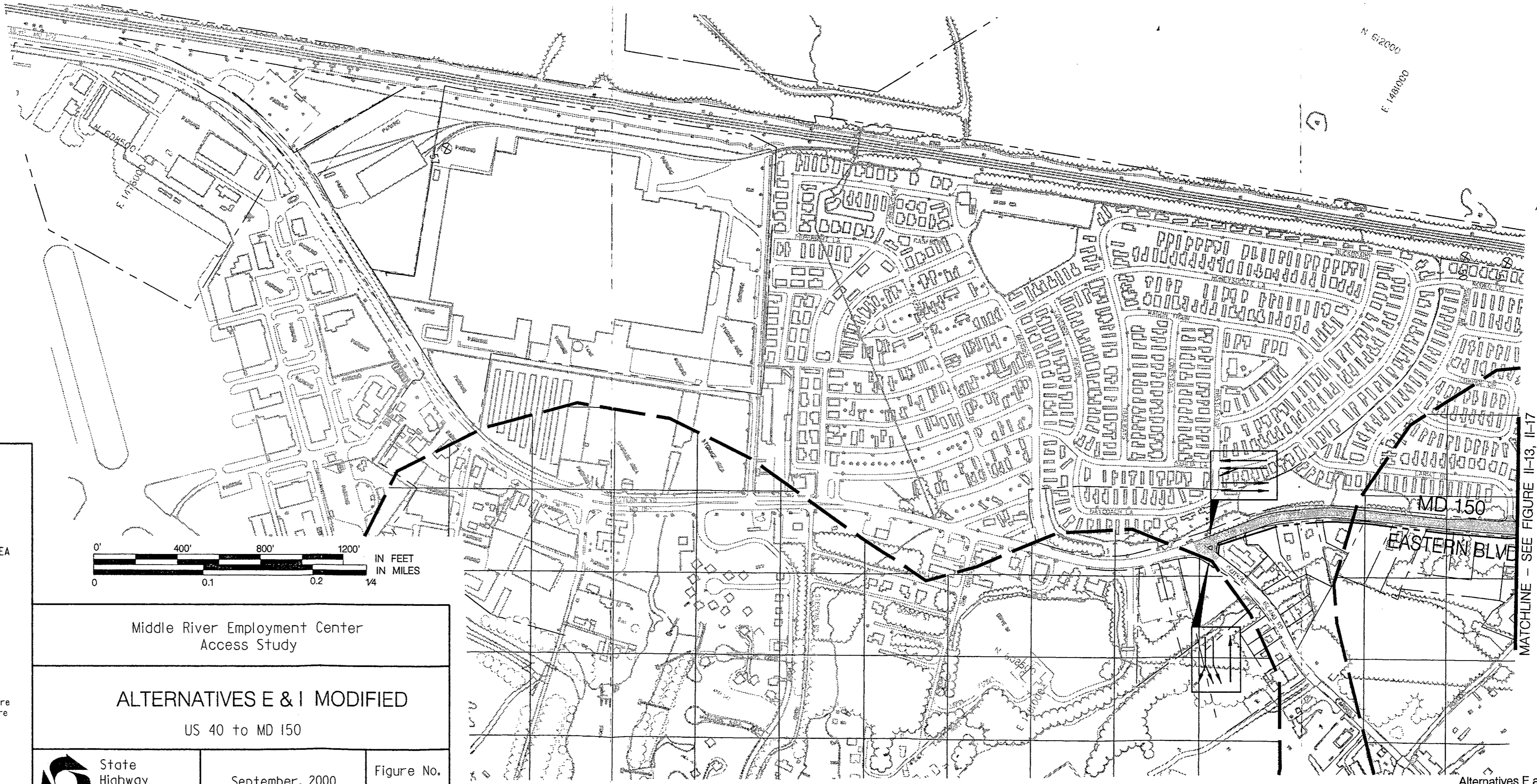
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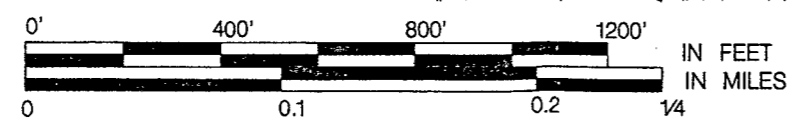


# ALTERNATIVES E & I MODIFIED



### MAP LEGEND

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- PROPOSED RIGHT OF WAY (R-O-W) LINE
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Middle River Employment Center  
Access Study

## ALTERNATIVES E & I MODIFIED

US 40 to MD 150



September, 2000

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II-13

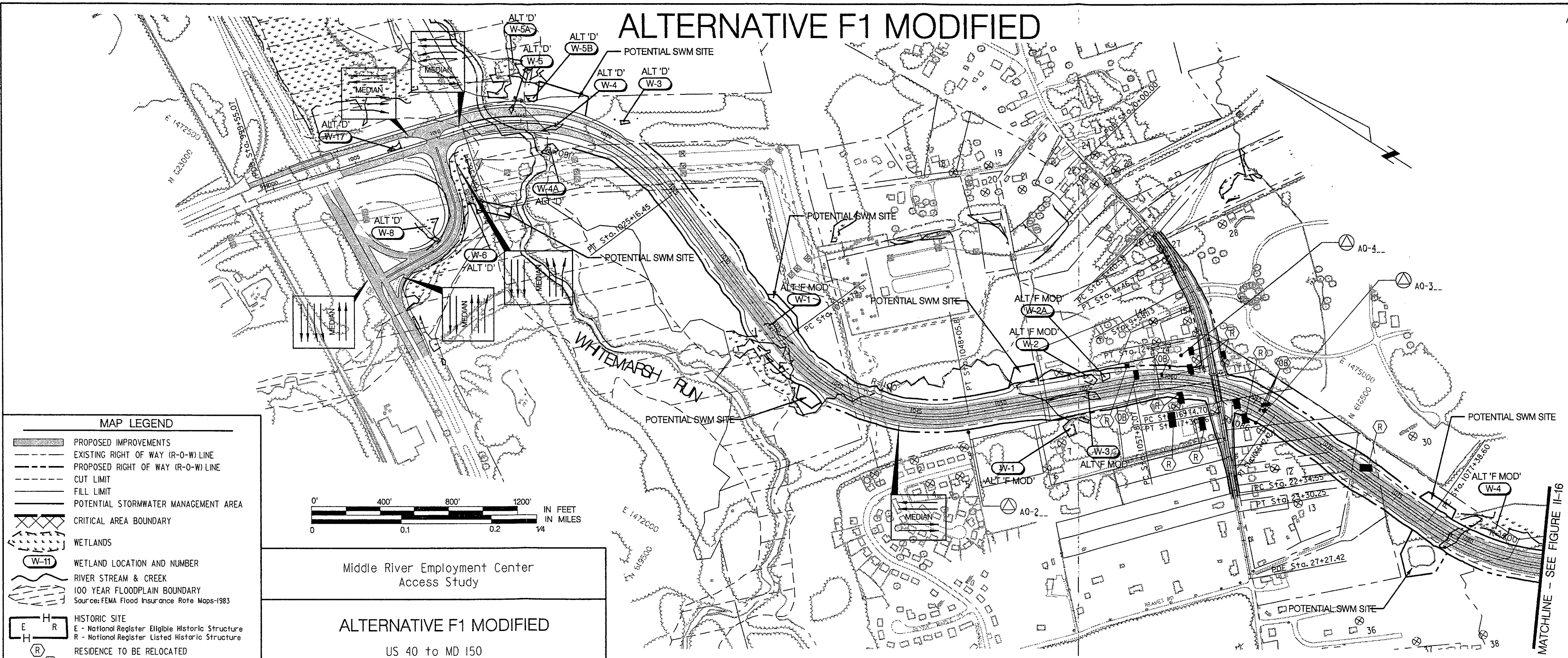
MATCHLINE - SEE FIGURE II-13, II-17

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Alternatives E and I Mod

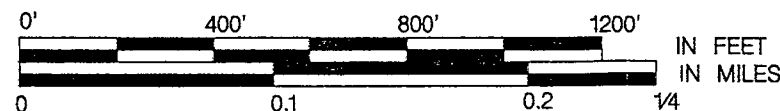
Figure No.  
II-13

# ALTERNATIVE F1 MODIFIED



### MAP LEGEND

- PROPOSED IMPROVEMENTS
- EXISTING RIGHT OF WAY (R-O-W) LINE
- PROPOSED RIGHT OF WAY (R-O-W) LINE
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Middle River Employment Center  
Access Study

## ALTERNATIVE F1 MODIFIED

US 40 to MD 150

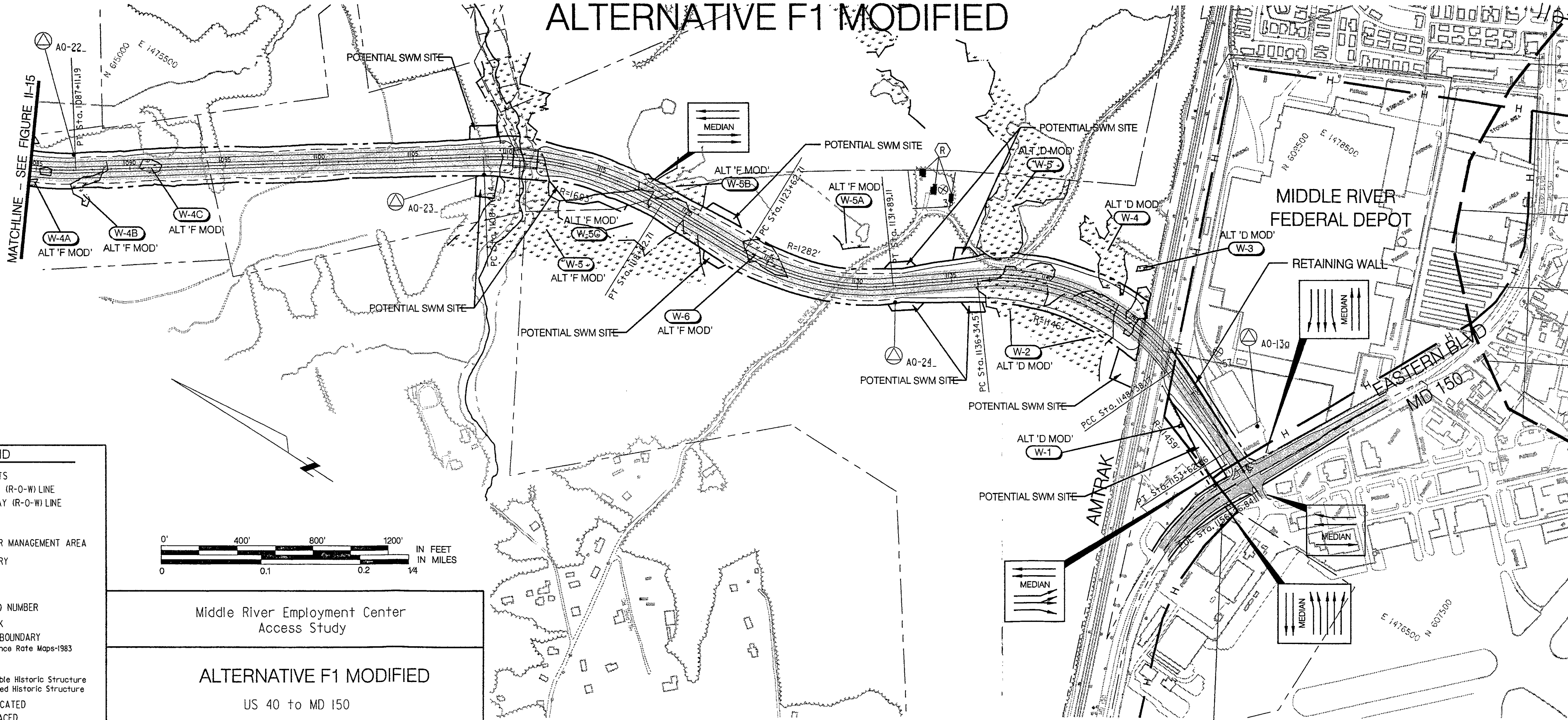


September, 2000

Figure No.  
II-14

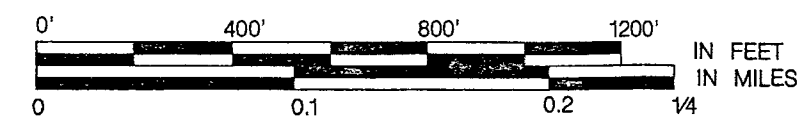
MATCHLINE - SEE FIGURE II-16

# ALTERNATIVE F1 MODIFIED



## MAP LEGEND

- PROPOSED IMPROVEMENTS
- EXISTING RIGHT OF WAY (R-O-W) LINE
- PROPOSED RIGHT OF WAY (R-O-W) LINE
- CUT LIMIT
- FILL LIMIT
- POTENTIAL STORMWATER MANAGEMENT AREA
- CRITICAL AREA BOUNDARY
- WETLANDS
- WETLAND LOCATION AND NUMBER
- RIVER STREAM & CREEK
- 100 YEAR FLOODPLAIN BOUNDARY  
Source: FEMA Flood Insurance Rate Maps-1983
- HISTORIC SITE  
E - National Register Eligible Historic Structure  
R - National Register Listed Historic Structure
- RESIDENCE TO BE RELOCATED
- BUSINESS TO BE DISPLACED
- OUTBUILDING
- AIR RECEPTOR SITES
- NOISE RECEPTOR SITES



Middle River Employment Center  
Access Study

## ALTERNATIVE F1 MODIFIED

US 40 to MD 150



September, 2000

Figure No.  
II-15

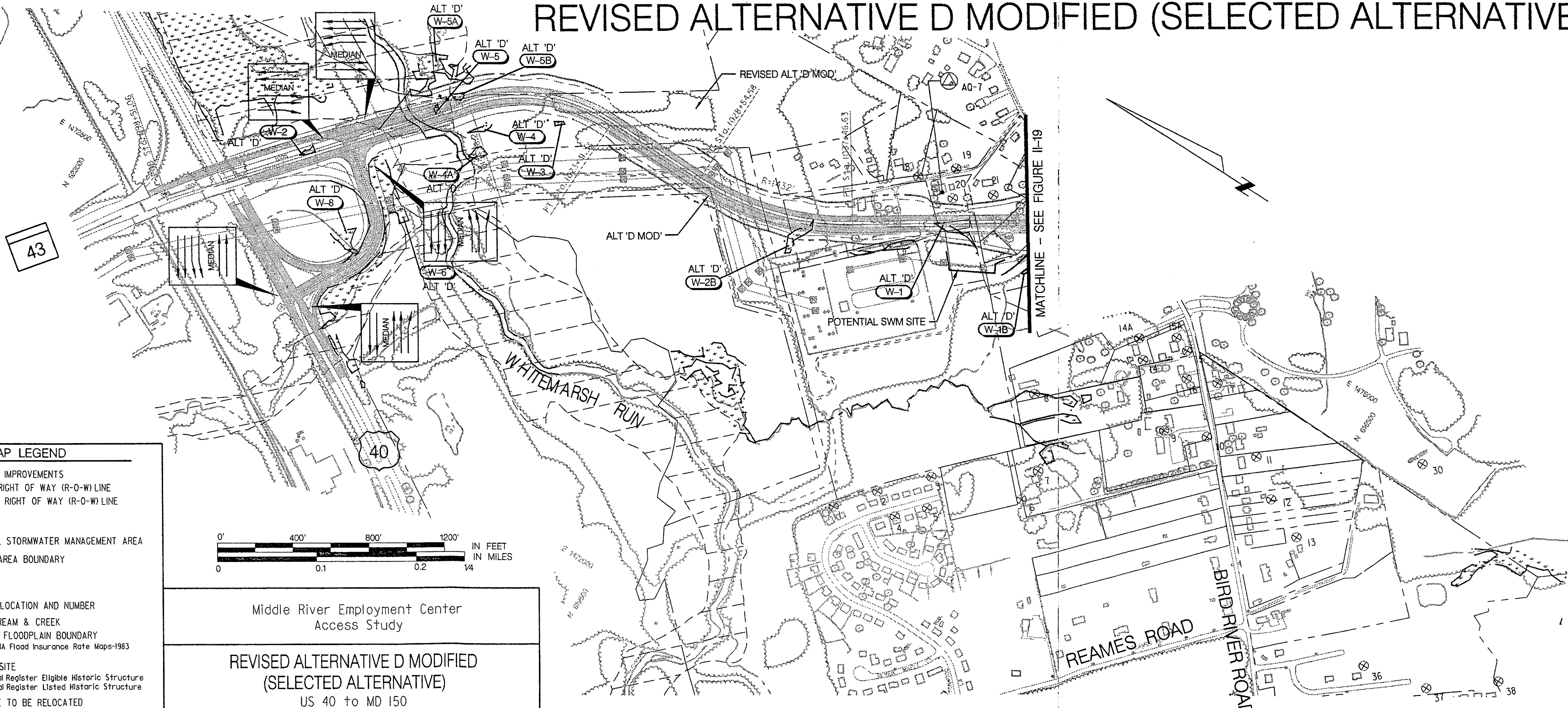
Alternative F1 mod

Figure No.  
II-15

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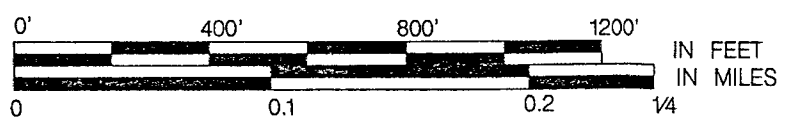


# REVISED ALTERNATIVE D MODIFIED (SELECTED ALTERNATIVE) 114



## MAP LEGEND

- PROPOSED IMPROVEMENTS
- EXISTING RIGHT OF WAY (R-O-W) LINE
- PROPOSED RIGHT OF WAY (R-O-W) LINE
- CUT LIMIT
- FILL LIMIT
- POTENTIAL STORMWATER MANAGEMENT AREA
- CRITICAL AREA BOUNDARY
- WETLANDS
- WETLAND LOCATION AND NUMBER
- RIVER STREAM & CREEK
- 100 YEAR FLOODPLAIN BOUNDARY  
Source: FEMA Flood Insurance Rate Maps-1983
- HISTORIC SITE  
E - National Register Eligible Historic Structure  
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- RESIDENCE TO BE RELOCATED
- BUSINESS TO BE DISPLACED
- OUTBUILDING
- AIR RECEPTOR SITES
- NOISE RECEPTOR SITES



Middle River Employment Center  
Access Study

## REVISED ALTERNATIVE D MODIFIED (SELECTED ALTERNATIVE)

US 40 to MD 150



September, 2000

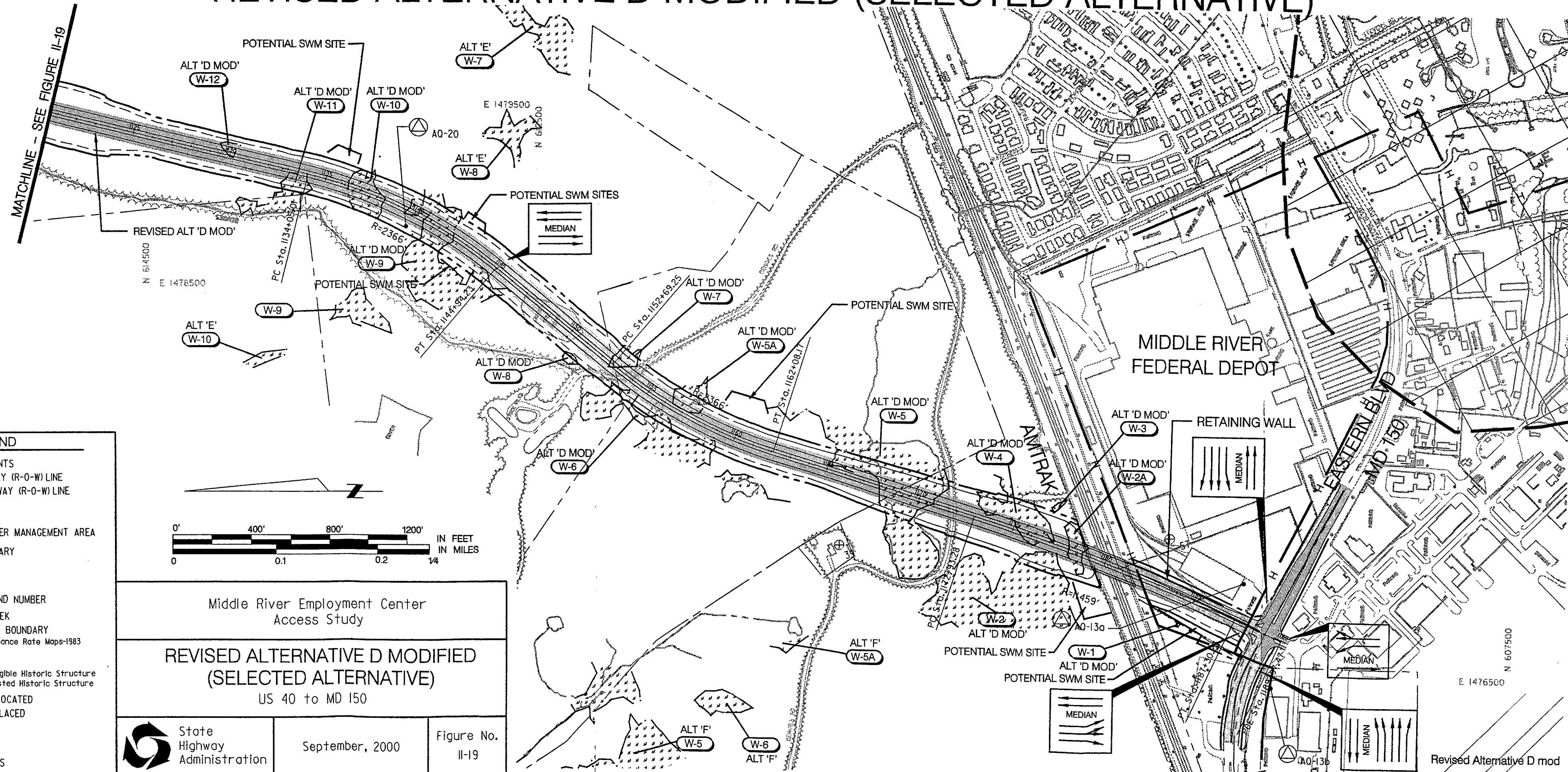
Figure No.  
II-17

Revised Alternative D mod

Figure No.  
II-17

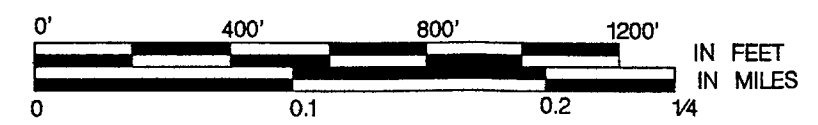
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# REVISED ALTERNATIVE D MODIFIED (SELECTED ALTERNATIVE)



**MAP LEGEND**

- PROPOSED IMPROVEMENTS
- EXISTING RIGHT OF WAY (R-O-W) LINE
- PROPOSED RIGHT OF WAY (R-O-W) LINE
- CUT LIMIT
- FILL LIMIT
- POTENTIAL STORMWATER MANAGEMENT AREA
- CRITICAL AREA BOUNDARY
- WETLANDS
- WETLAND LOCATION AND NUMBER
- RIVER STREAM & CREEK
- 100 YEAR FLOODPLAIN BOUNDARY
- Source: FEMA Flood Insurance Rate Maps-1983
- HISTORIC SITE  
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- OUTBUILDING
- AIR RECEPTOR SITES
- NOISE RECEPTOR SITES



Middle River Employment Center  
Access Study

**REVISED ALTERNATIVE D MODIFIED  
(SELECTED ALTERNATIVE)**

US 40 to MD 150

State Highway Administration

September, 2000

Figure No. II-19

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Revised Alternative D mod

Figure No. II-19

# III. AFFECTED ENVIRONMENT

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration



**III. AFFECTED ENVIRONMENT**

**A. Social, Economic and Land Use**

**1. Social Environment**

**a. Population**

The area of study for the MRECAS is located entirely within Baltimore County. Population statistics for Baltimore County are shown in Table III-1. As shown in the table, the population of Baltimore County has been increasing steadily over the last 25 years, although the rate of increase has declined over the last five to eight years. The data also indicates that the largest increase among age groups is the 65+ age group, which increased by more than 130% from 1970 to 1995.

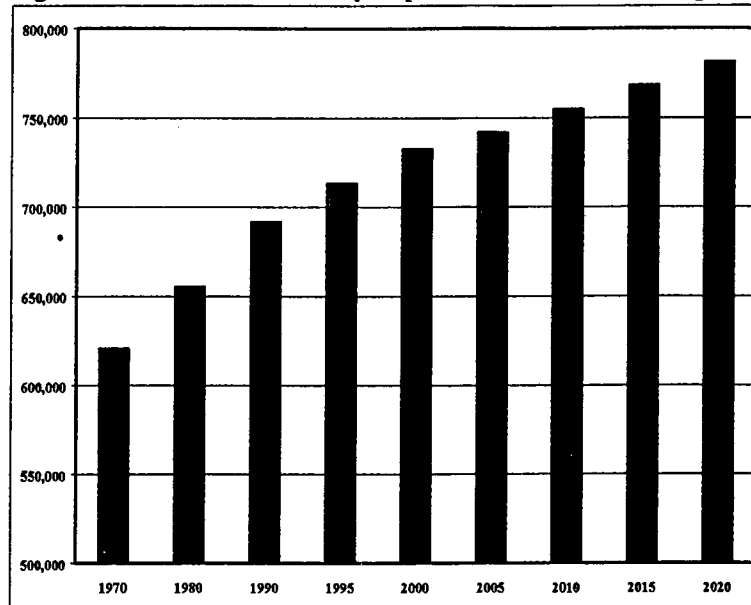
**Table III-1: Baltimore County Population Characteristics**

	1970	1980	1990	1995
<b>Individuals:</b>				
<b>Total Population</b>	621,077	655,615	692,134	713,600
<b>Male</b>	302,364	314,749	330,288	340,050
<b>Female</b>	318,713	340,866	361,846	373,550
<b>White</b>	599,027	590,283	589,346	580,100
<b>Non-white</b>	22,050	65,332	102,788	133,500
<b>Selected Age Groups:</b>				
<b>0-4</b>	49,065	34,721	47,965	50,190
<b>5-19</b>	181,935	147,339	121,539	126,510
<b>20-44</b>	206,099	250,684	284,558	279,360
<b>45-64</b>	138,280	152,507	141,618	152,250
<b>65+</b>	45,698	69,364	96,454	105,290
<b>Households:</b>				
<b>Total Household Population</b>	607,282	642,354	678,424	699,042
<b>Total Households</b>	184,890	237,371	268,280	283,900
<b>Average Household Size</b>	3.28	2.71	2.53	2.46

Source: Planning Date Services, Maryland Office of Planning, March 1998 Revision

Maryland Office of Planning projections through the year 2020 call for continued population growth throughout the County, with total populations increasing to 781,500, an increase of 9.5% (Figure III-1). The 65+ age group will continue to increase at a high rate, attaining a 43.0% increase over the 1995 level for that group. The 45-64 age group will increase nearly as fast (42.3%), while all other age groups are expected to decline in numbers during the period.

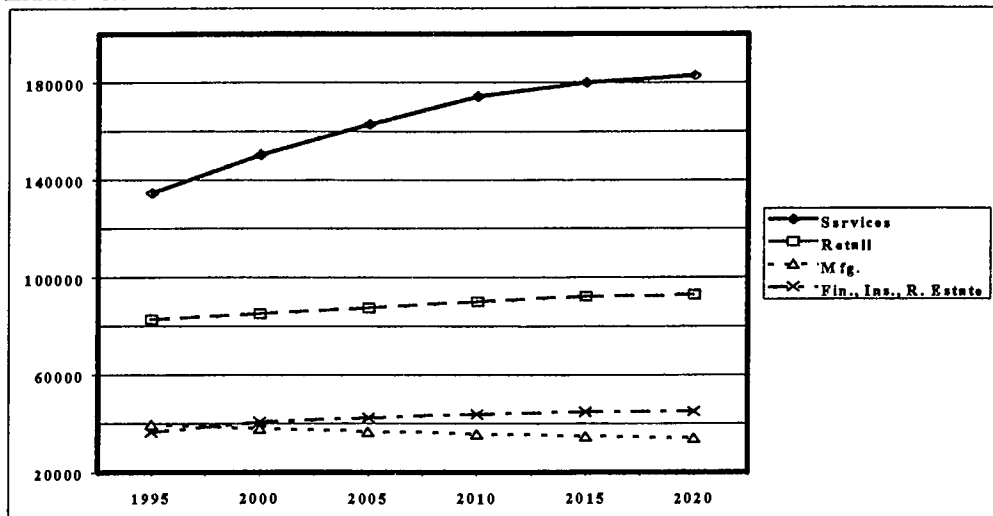
Figure III-1: Baltimore County Population from 1970 through 2020



Source: Planning Data Services, Maryland Office of Planning, March 1998 Revision

The number of jobs available to Baltimore County workers is expected to increase from 409,600 to 476,000 by the year 2020 (a 16.2% rise), with the largest number of new positions being in the Services industry (Figure III-2). The services industry is currently the leading job provider in the County (134,700 jobs in 1995) and will continue in its position well into the twenty-first century. By 2020 it is expected to account for 38.4% of all Baltimore County jobs. Retail sales jobs and jobs in finance, insurance, and real estate will also increase, but not nearly as fast, accounting for 18,900 new jobs in aggregate. Meanwhile, jobs in manufacturing are expected to decrease in number by 14.1% or 5600 jobs, and the number of jobs in all other categories are expected to remain at or near current levels.

Figure III-2: Trends in the Number of Available Jobs Within Selected Baltimore County Industries.



Source: Planning Data Services, Maryland Office of Planning, March 1998 Revision.

The study area is included within the boundaries of nine contiguous Baltimore County Census Tracts (See Figure III-3). Table III-2 provides selected 1990 population characteristics for the nine census tracts that comprise the MRECA study area. The study area contained 37,715 persons in 1990, which represented a little over five percent of the County's total population. The poverty level for 1989 was defined by the Department of Health and Human Services as \$6,310 for an individual or \$12,674 for a four-person household. Approximately five percent of the families in the study area were below the poverty level in 1990. This is approximately the same ratio as in the rest of the County.

**Table III-2: Study Area Population Characteristics**

Census Tract #	4113.02	4113.04	4113.05	4507	4514	4516	4517.01	4517.02	4518.02	Total
Size (Sq. Mi.)	8.06	5.09	1.75	0.12	1.35	2.69	6.39	3.83	14.55	43.83
Families	524	1,694	1,983	545	2,036	716	538	538	2,051	10,625
All Persons	1,849	5,506	7,164	2,254	7,483	2,549	1,790	1,820	7,300	37,715
Persons Below Poverty <sup>1</sup> Level	18	24	20	6	313	94	0	20	72	567
<b>Ethnicity:</b>										
White	1,762	5,522	6,478	2,059	6,485	2,476	1,730	1,815	7,040	35,367
Black	79	75	350	124	780	60	55	0	202	1725
Amer. Indian, Eskimo, Aleut	1	15	5	25	34	6	1	4	23	114
Asian, Pacific Islander	1	187	315	18	120	60	4	1	30	736
Other	6	7	16	28	14	1	0	0	5	77

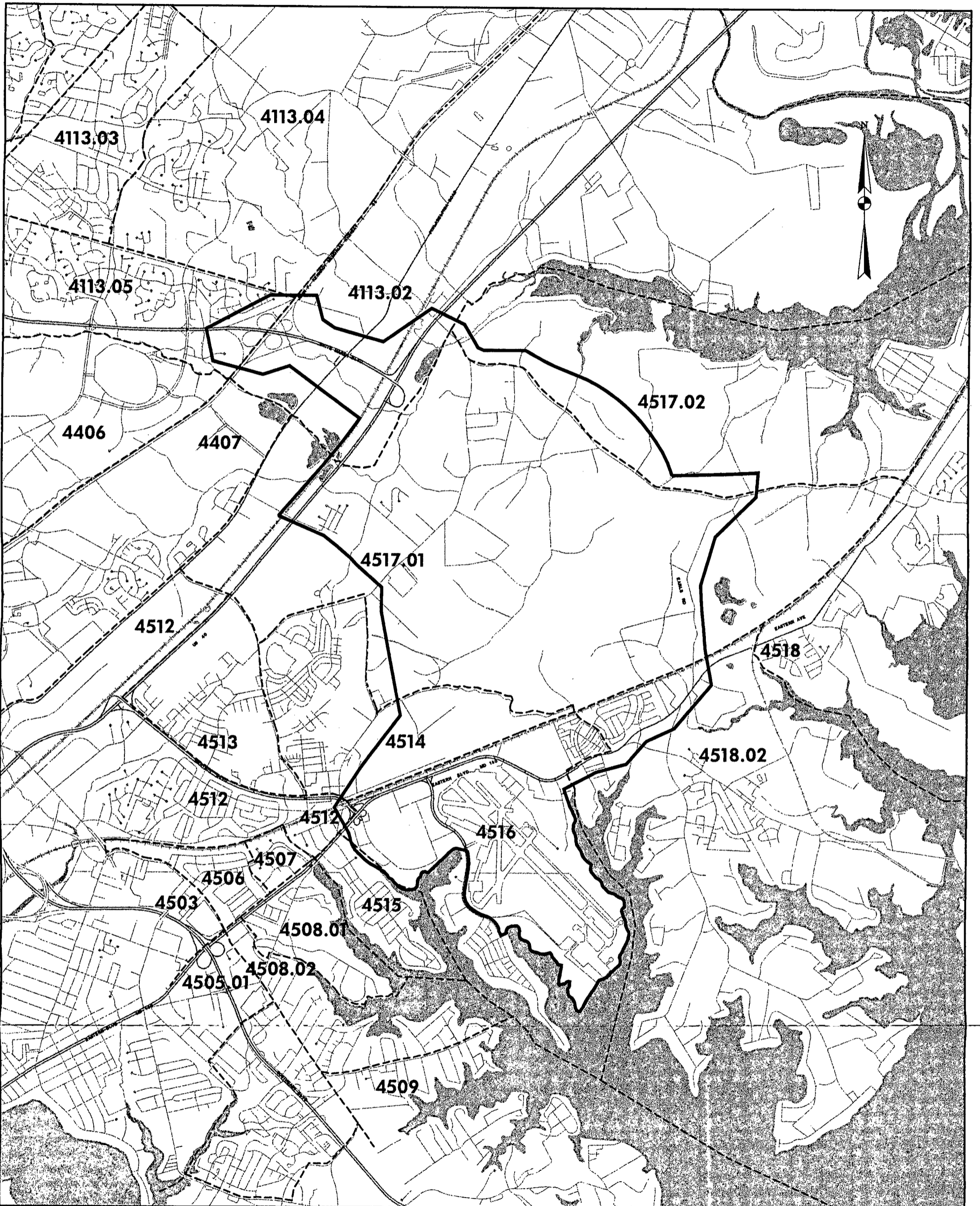
Source: 1990 Census of Population and Housing, US Department of Commerce

<sup>1</sup> \$12,674 for a family of four in 1989 dollars

Section I-E of this document provides a discussion and supporting data that projects population, households, labor force, and employment trends for the study area through the year 2020. Employment is expected to increase significantly due to the development of the employment center. Meanwhile the population and the labor force are expected to remain near the current level, necessitating recruitment of employees from outside the study area in order to staff the new employment positions. The number of household are expected to increase, but only slightly.

b. Ethnic Characteristics

Table III-2 also shows the ethnic make-up of the study area. Ethnic minorities represented 6.22% of the study area's population compared to nearly 15% County-wide. The two largest ethnic minorities are the African-American community that makes up 4.56% of the study area population and the Asian, Pacific Islander group that constitutes 1.95%. Native Americans and others make up the remaining 0.50%.



**LEGEND**

- 4515  
----- CENSUS TRACTS
- MRECAS STUDY AREA BOUNDARY



MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

CENSUS TRACTS



DATE :  
Jan. 2001

FIGURE  
NO. III-3

c. Neighborhoods

Residences in the MRECAS are primarily of two types: older single-family homes scattered among commercial and agricultural properties, or newer single-family homes clustered within high-density planned communities. The older homes tend to be located either on larger, scattered lots or on smaller, clustered lots that line main roadways for short distances, and consequently a community structure is not apparent. One notable exception, however, is a community on Bengies Road, west of Earls Road, where a distinct community has been apparent since the mid 1800's. Historically an African-American community, it has retained its character to the present day. A meeting was held on June 18, 1999 with the minority communities, to update them on the upcoming Public Hearing and to solicit comments. See community meeting minutes in the Appendix. See Figure II-4 for a map showing communities.

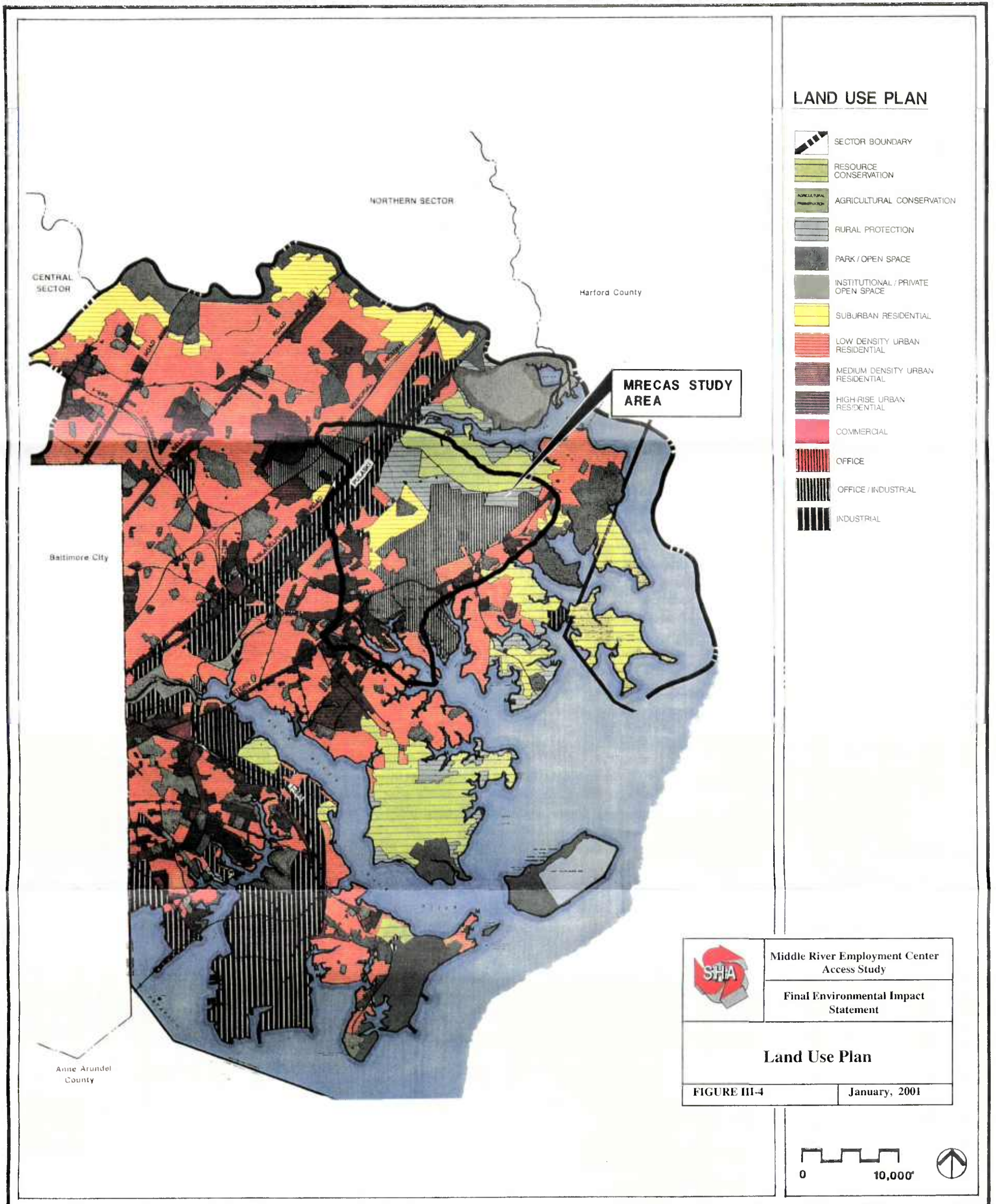
Planned communities are located along the edges of the MRECAS and are associated with either MD 150 or US 40. One planned community, Wampler Village, is located just outside of the study area on Wampler Road but it will likely benefit from the improved highway access, depending on final routing and intersection placements. It is closely connected to an older townhouse community, Maple Crest, which lies just west of it, and to Middle River which lies still further west. Northwest of Wampler Village is the Sleepy Hollow Mobile Home Park, a small community that extends eastward from US 40 and is bounded by Mohrs Lane to the south and Reames Road to the north. Just north of Reames Road is the community of White Marsh Estates. Immediately east of Martin State Airport and south of MD 150 the new waterfront community of Fairwinds consists of upscale housing overlooking Frog Mortar Creek. The Chesapeake Yachting Center is located creek-side within this community. On the west side of MD 150 and opposite the Fairwinds community are two adjoining mobile home communities: Peppermint Woods and Williams Estates. These properties extend westward to the Amtrak railway.

d. Community Facilities and Services

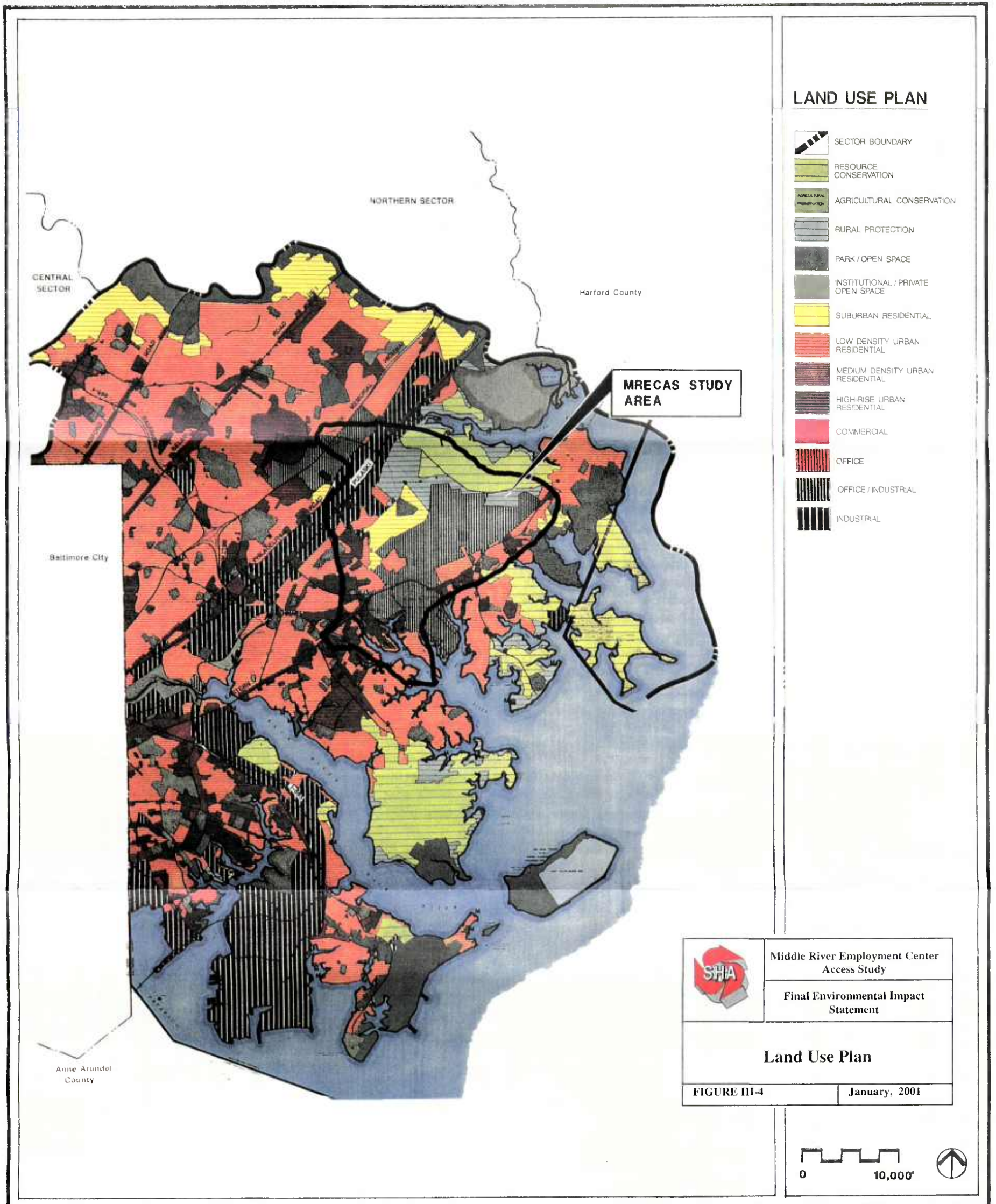
(1) Schools and Churches


Two schools are located within the study area: Chase Elementary School and Our Lady Queen of Peace School. Chase Elementary is located on MD 150 and shares a common property with the Chase Middle School site. The middle school site is located just east of the elementary school and lies just outside the MRECAS area boundary. Our Lady Queen of Peace School is located on Bird River Road near Wampler Village and White Marsh Estates. Both of these schools have outdoor recreational facilities. A third school, Vincent Elementary School, is planned for the area and will be built at a designated site on Ebenezer Road, northeast of White Marsh Estates.

Our Lady Queen of Peace Catholic Church is located with Our Lady Queen of Peace School and is affiliated with it. Shining Star Baptist Church and Sharp Street United Methodist Church are located immediately outside of the MRECAS area on MD150, and Ebenezer United Methodist Church is located on the MRECAS boundary line at the junction of Ebenezer and Earls Roads.



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 Middle River Employment Center Access Study  
 Final Environmental Impact Statement  
**Land Use Plan**  
 FIGURE III-4 January, 2001



201

Schools and churches are shown in Figure II-6 in Section II of this document.

(2) Emergency Response and Medical Facilities

Eight fire and/or emergency ambulance companies are located within or around the perimeter of the MRECAS area:

- Middle River Volunteer Ambulance Rescue Squad is located within the MREC on Leland Avenue, near the Chesapeake Industrial Park. Leland Avenue runs parallel to and immediately west of MD 150.
- Middle River Fire Company #12 is located to the west of the MREC at Compass and Henderson Roads, one block east of Middle River Road.
- Cowenton Fire Company #200 is on Ebenezer Road, just west of US 40 and the Amtrak railway and north of the MREC.
- Chase Fire Company #54 is located on Eastern Avenue at Ebenezer Road and lies east of the MREC.
- Bowley's Quarters Fire Company #210 is located on Bowleys Quarters Road at Susquehanna Avenue, an intersection which lies to the southeast of the MREC.
- Middle River Volunteer Fire Company #220 is located directly on the southwestern perimeter of the MREC at 1100 Wilson Point Road, just east of Martin State Airport.
- Middleborough Fire Company #230, is located to the southwest of the MREC, and although it is further away than the others, it is in close enough proximity to effectively back up the closer units.
- Essex Fire Company #7 is also located in close enough proximity to effectively back up the closer units.

Only one medical facility operates within the MRECAS area, it being a medical center located within the Chesapeake Industrial Park and operating as a service to General Electric's Middle River Aircraft Systems complex.

The nearest hospital, Franklin Square, is located west of the MRECAS area at Rossville Boulevard and Franklin Square Drive. It is a 405-bed, full-service hospital with emergency room facilities. Franklin Square is the sixth largest hospital in the Baltimore Metropolitan Area and serves eastern Baltimore County, Harford County, and parts of Baltimore City.

A nursing and rehabilitation facility, owned and operated by Manor Care Health Services, is located on Ridge Road, near the intersection of MD 7 and Rossville Boulevard and in close proximity to Franklin Square Hospital.

The MREC is located within the jurisdictions of two Baltimore County Police Department precincts: the 11th Precinct, located on Marlyn Avenue in Essex, and the 9th Precinct, located on Perry Hall Boulevard in White Marsh.



(3) Transportation Services

Transportation facilities within the study area include Martin State Airport and the Martin Airport Train Station for the MARC commuter rail system. The MARC trains utilize the Amtrak rail lines through this area and provide commuters with local rail passenger service to Edgewood, Aberdeen, and Perryville to the north and to communities within the Baltimore-Washington corridor to the south. The airport and the MARC station are both owned by the State of Maryland and operated by the Maryland Aviation Administration and Mass Transit Administration, respectively. Amtrak trains pass through the area on a regular schedule to points all along the east coast, but Amtrak does not have a station in or near the area. The nearest Amtrak stops are in Aberdeen to the north and Baltimore City's Pennsylvania Station to the south.

(4) Other Facilities

The Maryland National Guard has facilities at Martin State Airport.

Holly Hill Memorial Gardens cemetery is located on Bird River Road. It is comprised of 99 acres lying to the west of Vincent Road near White Marsh Estates.

Two baseball fields are located along the east side of MD 150, within the Chesapeake Industrial Park area.

2. Economic Environment

a. Employment Characteristics

Table III-3 contains selected statistical information compiled from the 1990 census for the nine census tracts that include the MRECAS area. The selected topics include the number of residents attaining specific educational thresholds and the number of residents employed within specific industries, job categories, and job classes. A breakdown of the household incomes for the area is also provided.

As the table shows, 35% of the area's adult residents 25 years of age and older have obtained high school diplomas but have not received any college education. And whereas 27.5% of the population have not obtained a high school diploma, the remaining 37.5% have gone on to college, with 19% earning college degrees at Associates level or higher. Only 4.3% have advanced degrees.

The leading industries employing the area's residents are retail trade (17.8%) and non-durable goods manufacturing (12.0%), followed by the construction (9.9%) industry and the combined areas of finance, insurance and real estate (7.9%). The remaining workers are fairly evenly distributed among the remaining industry categories.

The occupation categories describe the type of work performed by area workers. The leading one is a combined category for all precision production, crafts, and repairs occupations.

**Table III-3: Study Area Education and Employment Characteristics**

Category	Persons	%
<b>Education (All Persons, Age 25 and Over)</b>		
Less than 9th Grade	2613	10.60%
9th to 12th Grade - No Diploma	4156	16.86%
High School Graduate	8813	35.75%
Some College - No Degree	4373	17.74%
Associate Degree	1240	5.03%
Bachelor's Degree	2398	9.73%
Graduate or Professional Degree	1062	4.31%
<b>Total Education</b>	<b>24655</b>	<b>100.00%</b>
<b>Industries (Employed Persons, Age 16 or Over)</b>		
Agriculture, Forest, Fisheries	212	1.07%
Mining	33	0.17%
Construction	1967	9.91%
Manufacturing, Durable Goods	1103	5.55%
Manufacturing, Non-durable Goods	2398	12.08%
Transportation	1056	5.32%
Communications	619	3.12%
Wholesale Trade	962	4.84%
Retail Trade	3520	17.73%
Finance, Insurance, and Real Estate	1551	7.81%
Business Services and Repair Services	1031	5.19%
Personal Services	431	2.17%
Entertainment and Recreation	254	1.28%
Health Services	1544	7.78%
Educational Services	1070	5.39%
Other Professional Services	913	4.60%
Public Administration	1193	6.01%
<b>Total Industries</b>	<b>19857</b>	<b>100.00%</b>
<b>Occupations (Employed Persons, Age 16 or Over)</b>		
Executive, Administrative, Managerial	2482	12.50%
Professional Specialties	1852	9.33%
Technicians	723	3.64%
Sales	2467	12.42%
Administrative Support	3425	17.25%
Private Household Services	41	0.21%
Protective Services	563	2.84%
Other Services	1693	8.53%
Farming, Forestry, Fishing	237	1.19%
Precision Production, Crafts, Repairs	3468	17.47%
Machine Operators, Assemblers, Inspectors	1290	6.50%
Transportation, Material Handling	937	4.72%
Equipment Cleaners, Helpers, Laborers	678	3.41%
<b>Total Occupations</b>	<b>19856</b>	<b>100.00%</b>

(continued on next page)

**Table III-3: Study Area Education and Employment Characteristics (cont'd.)**

Category	Persons	%
<b>Worker Classes (Employed Persons, Age 16 Or Over)</b>		
Private For Profit	15261	76.85%
Private Not For Profit	981	4.94%
Local Government	1447	7.29%
State Government	558	2.81%
Federal Government	676	3.40%
Self Employed	839	4.23%
Unpaid Family Workers	95	0.48%
<b>Total Worker Classes</b>	<b>19857</b>	<b>100.00%</b>
<b>Household Income (All Households)</b>	<b>Households</b>	<b>%</b>
Less than \$5,000	636	4.36%
\$5,000-\$9,999	820	5.62%
\$10,000-12,499	444	3.04%
\$12,500-\$14,999	512	3.51%
\$15,000-\$17,499	554	3.80%
\$17,500-\$19,999	344	2.36%
\$20,000-\$22,499	691	4.74%
\$22,500-\$24,999	491	3.37%
\$25,000-\$27,499	763	5.23%
\$27,500-\$29,999	567	3.89%
\$30,000-\$32,499	685	4.70%
\$32,500-\$34,999	489	3.35%
\$35,000-\$37,499	742	5.09%
\$37,500-\$39,999	637	4.37%
\$40,000-\$42,499	708	4.85%
\$42,500-\$44,999	510	3.50%
\$45,000-\$47,499	525	3.60%
\$47,500-\$49,999	445	3.05%
\$50,000-\$54,499	773	5.30%
\$55,000-\$59,999	731	5.01%
\$60,000-\$74,999	1345	9.22%
\$75,000-\$99,999	835	5.73%
\$100,000-\$124,999	235	1.61%
\$125,000-\$149,999	52	0.36%
\$150,000 or more	50	0.34%
<b>Total Household Income</b>	<b>14584</b>	<b>100.00%</b>

Source: 1990 Census of Population and Housing, US Department of Commerce

It accounted for 17.5% of the population. Right behind it is the administrative support category (17.3 %). Managers and executives together account for 12.5% of the population and 12.4% of the workers are sales staff.

In regards to the worker class, an overwhelming 77% work for private, for-profit companies, whereas only 5% work for non-profits, only 4% are self-employed, and the remaining 10% work within various levels of government. About 0.5% are unpaid family workers.

All income levels are represented in the study area. In fact, household incomes are very evenly distributed among the income level categories. The highest number of households were in the \$60,000-\$74,999 income range, but this amounted to less than 10% of the population. Only 2.3% of the population, or 237 homes, had household incomes of more than \$100,00 dollars, whereas 31% had household incomes of less than \$25,000.

Not shown in the table are statistics comparing the MRECAS area with other areas and other times. When those comparisons are made, some significant facts come to light, and especially three facts of major importance to this study. First, the area was the only regional employment area outside of Baltimore City that had a net loss of jobs. Good paying manufacturing jobs have been replaced by lower paying retail and service jobs. Second, the area has lost 15,000 residents since 1970, and third, the area has the highest concentration of poverty in Baltimore County, with a majority of the area below the County's median household income.

b. Industrial Facilities

The Glenn L. Martin plant, founded in 1929, was the industrial anchor for the area during the 1930's and 1940's. Employment peaked at this facility during World War II, when more than 50,000 workers were engaged in the manufacture of military aircraft. Over the last fifty years, however, corporate downsizing and consolidation in the aircraft industries has resulted in a considerable decline of the workforce, which reached a low of 600 workers in 1996. Today, the plant is owned and operated by the Middle River Aircraft Systems (MRAS), a subsidiary of General Electric Company. Formerly known as Lockheed Martin Aerostructures, MRAS is currently involved in a substantial expansion project that has already grown its workforce from 600 employees to 1,200 in just two years. By the year 2001 MRAS expects to add at least another 250 jobs and invest \$30 million on plant upgrades. (Governor's Press Office, May 1998 Press Release)

Chesapeake Industrial Park is comprised of nearly 80 acres of industrial property distributed among six parcels. The site has access to MD 150, to an AMTRAK rail spur, and to shoreline footage along Dark Head Creek. Currently the parcels are undeveloped, but they are zoned to include manufacturing, warehouse/distribution, and office uses. The economic development potential for the parcels will be considerably higher with improved transportation access.

Martin State Airport has 265,000 square feet of office, industrial, and hanger space available for lease, with a current occupancy rate of 95%. A number of area businesses maintain flight operations and office facilities, including Black & Decker Corporation, Crown Central Petroleum, USF&G, PHH, Ward Machinery, and Lockheed Martin.

The Federal General Services Administration (GSA) facility was the site of a major U.S. Army Publications Depot facility until 1996. The building is presently 53% leased and houses the Social Security Administration, a US Air Force Publications facility, and the US State Department. The remaining 47% is being actively marketed by GSA, with the potential of an additional 400,000 square feet being leased in the immediate future. GSA plans to maintain control of the facility for lease to government entities.

The 1000-acre A.V. Williams property is the largest industrial tract of land under single ownership in the County but is undeveloped because it lacks highway access and sewer service. Over the past few years the A.V. Williams parcel has been proposed at different times for development as an automobile assembly plant, an amusement park with a foreign trade zone, and an automobile raceway with a 100,000 seat stadium. Each of these proposals was critically dependent on significantly improved regional highway access to accommodate large volumes of freight, employees, and/or customers.

c. Commercial Facilities

Nearly all of the commercial development within the MRECAS area has been concentrated in two strips. One strip lines both sides of MD 40 at its junction with Ebenezer Road. It is comprised of gas stations, restaurants, an automobile dealer, auto repair/parts shops, and several other small businesses. The other strip lines the eastern side of MD 150 from immediately north of Martin State Airport to beyond the MRECAS boundary. It is comprised of numerous restaurants, retail stores, beauty parlors, and a variety of other shops and services. Within both of these strips a significant number of the businesses are relatively new enterprises. Outside of these strips commercial facilities are generally old and scattered, being largely interspersed between residential and agricultural properties.

3. Land Use

a. Existing Land Use

Land use in the northern portion of the study area is dominated by existing highways, including the I-95/MD 43 interchange, the MD 43/MD 7 interchange, and the MD 43/US 40 interchange. Land use along MD 7 and US 40 is primarily commercial/industrial. MD 43 between I-95 and US 40 is access controlled and vacant. High-tension electrical transmission lines enter the MRECAS area via the MD 43 corridor and exit as they cross Earls Road, north of New Bengies Road. The transmission lines extend entirely across the MRECAS, running in a northwest-southeast direction.

Ebenezer Road and Earls Road land use is predominantly residential, with some scattered commercial sites. Vincent Road, Vincent Farm Lane, and cross streets between them comprise an area of new and significant residential development.

Land use along Bird River Road is predominantly residential, with some scattered commercial and industrial uses. Our Lady Queen of Peace School is located on Bird River Road to the west

of Alternative F<sub>1</sub> Modified. South of Bird River Road, the alternative routes pass to the east and west of Holly Hills Memorial Gardens Cemetery. Land use south of the cemetery is predominantly open and undeveloped. There is an active farm operation just south of the cemetery. The 1000-acre Williams tract is located between the farm and MD 150. With the exception of a few widely scattered residences, the Williams tract is completely undeveloped and, for the most part, densely wooded. Amtrak's Northeast Corridor rail line forms the southern border of the Williams tract.

The Wampler Road area is primarily residential with some agriculture and light industrial areas and isolated commercial enterprises.

MD 150, south of the Amtrak rail line, is intensely developed, primarily for industrial uses with some residential and commercial uses.

b. Future Land Use

Baltimore County has established an aggressive county-wide growth management program, which is embodied within its *Baltimore County Master Plan 1979-1990*. The plan, adopted by the County Council in 1979, created an urban service boundary, the Urban Rural Demarcation Line (URDL), which defines the limit of public water and sewer service and the limit of the major transportation system. The MREC is located within the URDL, which means that development requiring water and sewer extensions would be allowed, and the County's major transportation system could be extended to the area. In fact, the County has targeted the area for future employment growth, and the stated means for achieving that end are the development of prime industrial properties and the serving of public infrastructure. For instance, the County's *Master Sewer and Water Plan* was amended in 1996 to designate the A.V. Williams property as a capital facilities area, which means that water and sewer services would be made available to that property within the framework of a six-year capital program.

Future land use includes office/industrial use within the MREC, surrounded by suburban and residential uses and rural protection. Resource protection areas will adjoin Bird River. This land use configuration is depicted in Figure III-4, which shows Page 111 of the 1990 Baltimore County Master Plan. The Master Plan calls for extensive land development within the employment center boundaries for commercial and industrial uses. Outside of the employment center the land is designated for primarily urban residential use in the western and southern portions of the study area. Along the northern and eastern fringes development will be largely curtailed because the northern portion is zoned for rural protection and the eastern edge lies within the Chesapeake Bay Critical Area.

Within an area encompassing the urban residential land use areas and extending into a portion of the employment center, the Baltimore County Planning Department database indicates that twenty-one private development projects were in either the proposal, approval, or construction phases at the time of this writing. These projects include commercial, industrial, and residential development types. All of the residential development projects are approved for single-family, detached homes (SFD). A breakdown of the projects according to development type is presented in Table III-4 and details of all the known private projects are shown in Table III-5.

**Table III-4: Active and proposed development within MRECAS by type**

<b>Development Type</b>	<b>No. of Projects</b>	<b>No. of Units</b>	<b>Acreage</b>
<b>Residential</b>	12	330	169.5
<b>Industrial</b>	4	10	152.2
<b>Commercial</b>	3	3	10.9
<b>Mixed</b>	1	2	5.0
<b>Office</b>	1	1	1.5

Source: Baltimore County Office of Planning

**Table III-5: Known Active and Proposed Private Development Projects within the MRECAS**

Tax Map	Census Tract	Parcel	Proj. No.	Project Name	Status 11/24/98	Development Type	No. of Units	Acres
82	411302	6 699	X1-775	Aldabere Warehouse (Redland Genstar-Monier) Industrial Site	plat recorded	Industrial	2	7.3
91	451802	24	XV-651	Armstrong, Joseph	plan approved	Residential	2	1.4
91	451802	29	XV-643	Brown, Raymond K.	plan approved	Residential	2	1.2
91	451802	18 400	XV-629	Carroll Island Park	plan approved	Office	1	1.5
82	411302	16	XI-738	Cellular Systems Supply (Knight, Wayne)	plat recorded	Industrial	1	16.7
91	451802	213	XV-669	Chase Auto Care (PUD-C) (Rons Auto & Transmission)	plan approved	Commercial	1	4.2
83	451701	152	XV-633	Earls Road (516)	plat recorded	Mixed	2	5.0
82	451701	706	XV-273-01	Forty East Business & Industrial Park	plat recorded	Industrial	2	58.6
90	451400	951	XV-693	Harvey, Sharon & Robinson, Winifred	plan approved	Residential	3	2.7
82	451701	801	XV-702	Holt, Rosanda Property	plan approved	Residential	34	9.6
82	411302	107	XI-611	I-95 North Business Center	plan approved	Industrial	5	69.6
82	451701	87	XV-724	Kimble, Daniel	plan approved	Residential	2	1.0
90	451400	558	XV-598	Ruby, Philip (Lot 28)	plan approved	Residential	2	4.1
82	451701	151 186 260	XV-687	Smith, Alma Property	plat recorded	Residential	78	46.4
82	451701	148	XV-580-02	Smith, Joseph - phase 2	plan approved	Residential	2	5.4
82/83	451701	148	XV-580-01	Smith, Joseph and Mary Property - phase 1	plan approved	Residential	1	2.6
83	451701	102	XV-630	Tanner, Wayne	plan approved	Residential	2	12.7
90	451600	1209	XV-579	Tilley Chemical Company	plan approved	Commercial	1	6.0
82	451701	149 152 706	XV-273-03	Tito Inc. Property (40 East Business and Industrial Park) - 4/2/98	concept plan for review	Residential	183	73.5
82	451400	806 825	XV-706	Wampler Woods	concept plan for review	Residential	19	8.9
82	451701	659	XV-657	White Marsh Car Wash	plan approved	Commercial	1	0.7

Source: Baltimore County Office of Planning



## B. Cultural Resources

SHA has completed identification and evaluation of historic structures and archeological resources for the study area. Coordination letters from the State Historic Preservation Office acknowledging completion of cultural resource identification are included in Section VI of this document. Cultural resource studies were undertaken in compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA) as amended in 1992.

The NHPA represents the cornerstone of federal preservation law, and was passed to address the widespread disturbance of historic properties. The law provides for identification, evaluation, and protection of cultural resources. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties, and provides the Advisory Council on Historic Preservation, an independent agency created by the NHPA, the opportunity to comment on undertakings that affect historic properties. Properties that qualify for inclusion on the National Register of Historic Places are considered historic for the purposes of Section 106. To qualify for the National Register, districts, sites, buildings, structures, and objects must have significance in American history, architecture, or archeology, and possess integrity of location, design, setting, materials, workmanship, feeling, and association. Additionally, properties must do one of the following:

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

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

### 1. Historic Sites

Previous coordination with Maryland Historical Trust (MHT) in 1987 indicated that no known historic standing structures existed within the project area. Based on the amount of time that had lapsed and the expansion of the earlier study area, the Maryland State Highway Administration (SHA) completed full inventory documentation and National Register of Historic Places eligibility determinations for 32 properties within the Area of Potential Effect (APE) and abbreviated documentation for approximately 60 less-significant sites.

Subsequently, SHA and MHT agreed on the eligibility of four architectural resources in the study area. These include three National Register Eligible historic structures: St. John's/Old Chase School (BA-1852), the Ebenezer Methodist Church (BA-1180), and the Middle River (Federal) Depot (BA-2824); and one National Register Eligible historic district, the Martin State Airport Complex (BA-2081), which includes Martin State Airport. In addition to these sites, the

Chase Elementary School exists on Eastern Avenue at the southeastern edge of the area of potential effects, and was previously determined National Register eligible by the SHPO in 1997. The locations of these resources are shown on plates at the end of Section II of this document.

a. BA-1852 St. John's/Old Chase School

St. John's/Old Chase School was constructed as one of the first schools in response to the 1858 act authorizing County Commissioners to levy a tax used to divide Baltimore County into school districts and to erect new schoolhouses. The standardized, modest, one-story wood frame building has windows piercing the side walls to afford light and ventilation, typical of purpose-built structures during the campaign to replace substandard school buildings. In 1890, a new Queen Anne style wing was built at the original east elevation of the school, allowing the building to evolve from typical mid-19th century schoolhouse form. A more contemporary but sympathetic one-story addition has since been added on the rear of the building. The building has served as a meeting hall and church owned by St. John Apostolic Church since 1994.

b. BA-1180 Ebenezer Methodist Church

The Ebenezer Methodist Church, built in 1894, is an example of a rural Gothic Revival style church typical of many rural churches of the region. Built by the Trustees of the Methodist Episcopal Church, which established a presence in the Bird River area as early as 1790, the church represents church plan No. 43A from the Methodist Episcopal catalog of 1889. The structure replaced an earlier meeting house and was sited on a ½ acre parcel 500 feet south of Bird River Beach Road. Reportedly named for Ebenezer Blackstone, a local resident, Ebenezer means "stone of help" in Hebrew and was a common congregation name.

c. Martin State Airport (BA 2081) and Middle River (Federal) Depot (BA 2824)

The Martin Aircraft Complex, or Martin State Airport, developed in three building campaigns that took place between 1938 and 1943. Aviation pioneer Glenn L. Martin located his company in Middle River to take advantage of proximity to the federal government and access to ice-free water. Plant #1 was constructed in 1929 and expanded through 1943; Plant #2 was built between 1940 and 1941, and repeated the design utilized in Plant #2 additions. Martin State Airport was begun in 1938 and completed in 1941. The complex is significant for its relation to aviation history, its importance as a production facility during World War II, and for several engineering and architectural considerations. Built by the noted industrial architectural firm of Albert Kahn Associated Architects, the Depot's system of 300-foot trusses allowed the greatest flat span in a building to date. The total plant accommodated the making of machines at an unprecedented scale, with its transportation connection expressed through use of streamline modern-stylistic elements. By employing nearly 60,000 workers during wartime, the facilities also played a critical role in local development. Area neighborhoods with names such as Victory Villa and Aero Acres were built to accommodate the influx of workers necessary to meet wartime production demands.

SHA has recommended, and MHT has concurred, that the Middle River (Federal) Depot and the Martin State Airport together constitute the Martin State Airport/Federal Depot Historic District.

The total area of the Martin State Airport/Federal Depot Historic District is over 900 acres. The total area of the Federal Depot portion of the Martin State Airport/Federal Depot Historic District is 50.93 acres. The property is owned by the United States of America and is operated by the Federal General Services Administration (GSA). The buildings, constructed in the 1940's, are low-lying horizontal blocks, 1-2 stories in height. The facility was the site of a major U.S. Army Publications Depot facility until 1996. The building is presently 53% leased and houses the Social Security Administration, a US Air Force Publications facility, and the US State Department. The remaining 47% is being actively marketed by GSA, with the potential of an additional 400,000 square feet being leased in the immediate future. GSA plans to maintain control of the facility for lease to government entities.

The building closest to *SHA's Selected Alternative* (Revised D Modified) is the one-story, flat roofed rectangular Paint Hangar, which was constructed in 1941. It's three large openings on the northeastern elevation accommodated railroad cars transferring components from Plant #1 for painting.

d. Chase Elementary School

Located on Eastern Avenue Extended, Chase Elementary School is significant for its association with the development of public education in Baltimore County. Known originally as the Chase Consolidated School, the earliest section of the building was constructed of stone in the Colonial Revival style in 1939. The school brought together students from the Chase and Bengies communities, and was expanded in 1943 to meet the demands of families migrating to the area for World War II manufacturing jobs. Maryland Historical Trust determined the Chase Elementary School National Register in July 1997.

2. Archeological Resources

The project area was also surveyed for archeological resources. The investigation recorded four archeological sites and two isolated finds. Site 18BA468 and the two isolates are not considered eligible for the National Register of Historic Places, and no further work is warranted at those resources. Sites 18BA467, 18BA469, and 18BA470 are considered potentially eligible for the National Register under Criterion (d), and Phase II investigations will be conducted if the sites will be impacted by the project.

The Phase I investigations indicate that sites 18BA467, 18BA469, and 18BA470 may be important chiefly because of what can be learned from data recovery. At this stage of work, we have no indications to suggest that the sites warrant preservation in place. Confirmation of this must await completion of the Phase II investigations (See Appendix E).

C. Topography, Geology and Soils

1. Topography

The topography of the study area consists of gently rolling hills with elevations ranging from less than 20 to over 130 feet above sea level. The area is dissected by three streams, which form the

hills and valleys and give the area its topographic characteristics. Whitemarsh Run drains the northwestern portion of the study area, Windlass Run the central portion, and Saltpeter Creek the southeastern portion. In general, the area slopes down from higher elevations in the northwest section to the southeast where the land approaches sea level near the shorelines of Chesapeake Bay tributaries.

## 2. Geology

The study area lies over sedimentary formations of the Atlantic Coastal Plain Physiographic Province. The Coastal Plain consists of a series of Lower Cretaceous to Recent unconsolidated sedimentary formations that overlie pre-Cambrian crystalline basement rock. The study area is situated at the edge of the Coastal Plain, adjacent to the Piedmont Plateau Physiographic Province. Depths to the basement rock range from approximately fifty feet at the extreme western edge of the site area to over five hundred feet at the eastern edge of the site area. Crystalline basement rock beneath the study area probably consists of gneisses and amphibolites.

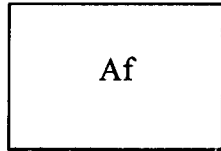
The study area lies directly on the Lower Cretaceous Potomac Group of Formations (see Figure III-5, which include the Patuxent Formation, the Arundel Formation and the Patapsco Formation. These formations consist of various unconsolidated sediments that dip and thicken to the southeast. Deposits of recent sediments are located along flood plains of streams in the area. The following paragraphs describe these three formations. The descriptions are synopses of information contained in the Geologic Map of Baltimore County and City, 1976, a publication of the Maryland Geological Survey. All of the descriptions enclosed within quotation marks are direct quotes from that publication.

The Patuxent Formation is the oldest of the group and lies directly over the crystalline basement rock. This formation contains both a clay and sand facies units, but only the sand facies is present in the study area. The sand facies of the Patuxent Formation is described as "highly variable, intercalated sand, gravel, silt and clay with hematite-limonite cements." The environment of deposition is described as "a high gradient braided and meandering stream complex."

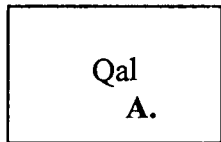
The Arundel Formation overlies the Patuxent Formation and is described as "gray, brown, black and red kaolinitic and illitic clays with quartz silt locally interbedded with quartz sand lenses and pods." The formation contains lignitized wood and other fossil tree and plant remains encased and preserved in the clay. The environment of deposition is described as a "flood plain-back swamp complex." The Arundel Formation is overlain by the younger but similar in appearance and constituency, Patapsco Formation.

The Patapsco Formation contains a sand facies unit and a clay facies unit, both of which are present in the study area. The sand facies is described as "a well sorted, medium to fine grained quartz sand with locally abundant quartz gravel and clay clasts." Ferruginous cemented sands form ledges and spheroids at sand-clay interfaces at many locations in the formation. According to the MGS these sediments were probably deposited in and around channels of low-gradient streams. The clay facies is described as "buff, red-yellow, and brown mottled kaolinitic clays...[with] variable amounts of quartz sand and silt as pods and interbeds dispersed throughout

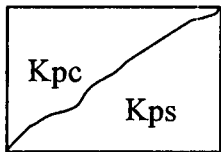
**Legend for Figure III-5: Geologic Map of MRECA Study Area**



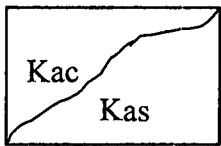
Artificial Fill – Composed of unconsolidated materials such as; rock, unconsolidated sediment, slag, refuse, and dredge spoil.



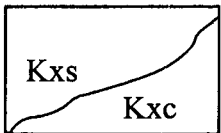
Alluvium - Interbedded gravel, sand, silt and clay of variable composition. Typically confined to floodplains of perennial streams.



Patapsco Formation – Clay facies (Kpc) – Typically buff, red-yellow, and brown mottled kaolinitic clays. Variable amounts of quartz sand and silt as pods and interbeds, dispersed throughout the clay. Sand facies (Kps) – Well sorted medium to fine grained quartz sand with locally abundant quartz gravel and clay clasts.



Arundel Formation – Clay facies (Kac) – Gray, brown, black and red kaolinitic and illitic clays with quartz silt locally interbedded with quartz sand lenses and pods. Sand facies (Kas) – Well-sorted, medium to fine-grained quartz sand with locally abundant lignite fragments.



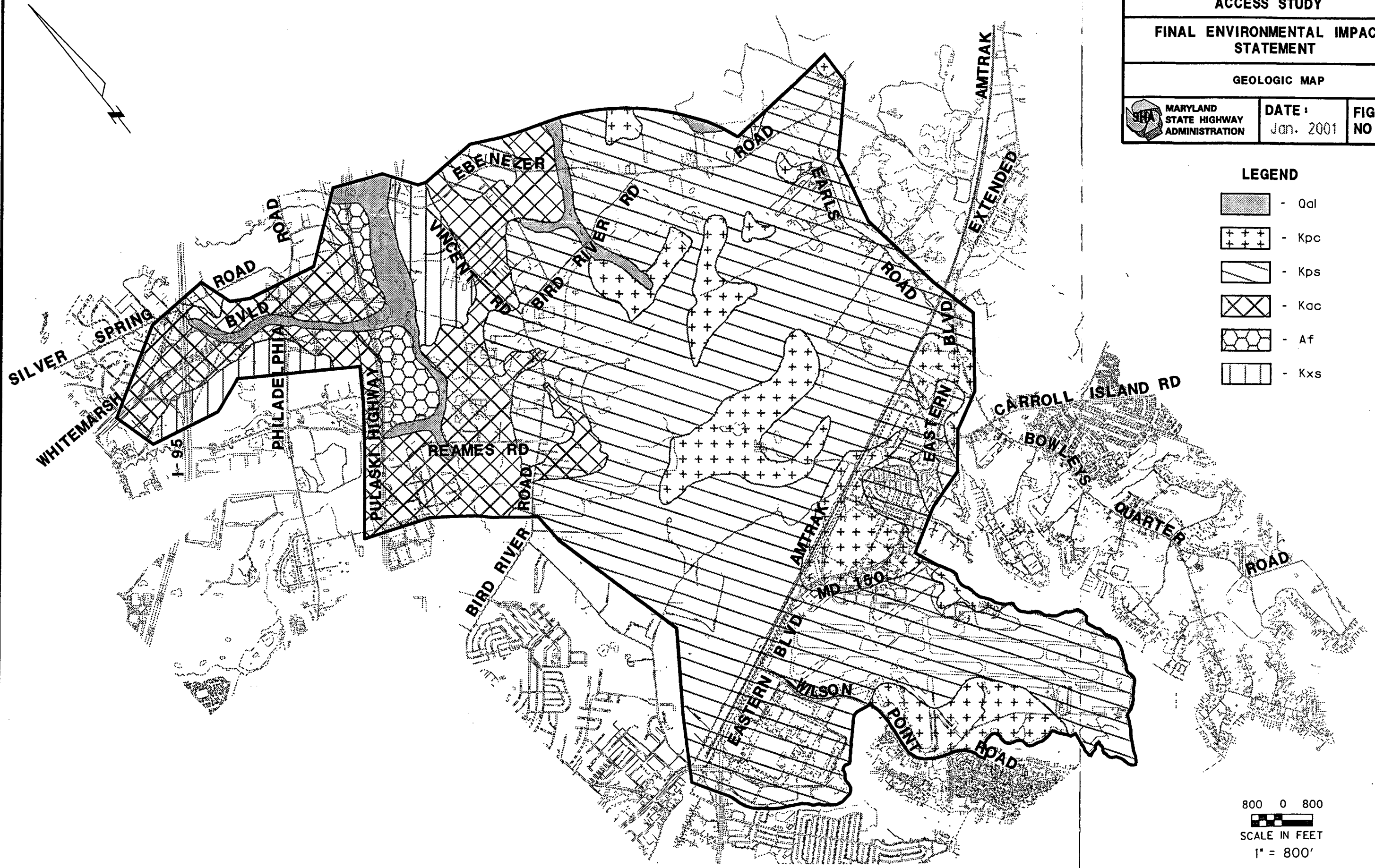
Patuxent Formation – Sand facies (Kxs) – Highly variable, intercalated sand, gravel, silt, and clay with hematite-limonite cements. Sands and gravels are typically quartzose and well-rounded. Clay facies (Kxc) – Light gray to black and brown clay containing variable amounts of quartz silt, gravel, local concentrations of lignitic, partially pyritized wood, or macerated leaf and cone debris; locally siderite concretions.

MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

GEOLOGIC MAP

MARYLAND STATE HIGHWAY ADMINISTRATION  
DATE: Jan. 2001  
FIGURE NO. III-5



- LEGEND**
- Qdl
  - Kpc
  - Kps
  - Kac
  - Af
  - Kxs

800 0 800  
SCALE IN FEET  
1" = 800'

the clay". The environment of deposition is postulated by the MGS as an "oxidized flood plain-mud flat."

Other depositions in the study area include recent (Quaternary) alluvium (flood plain deposits) and artificial fill. Alluvium depositions are found along existing flood plains of streams in the study area, and artificial fill has been deposited near highways in low lying areas along stream valleys.


### 3. Soils

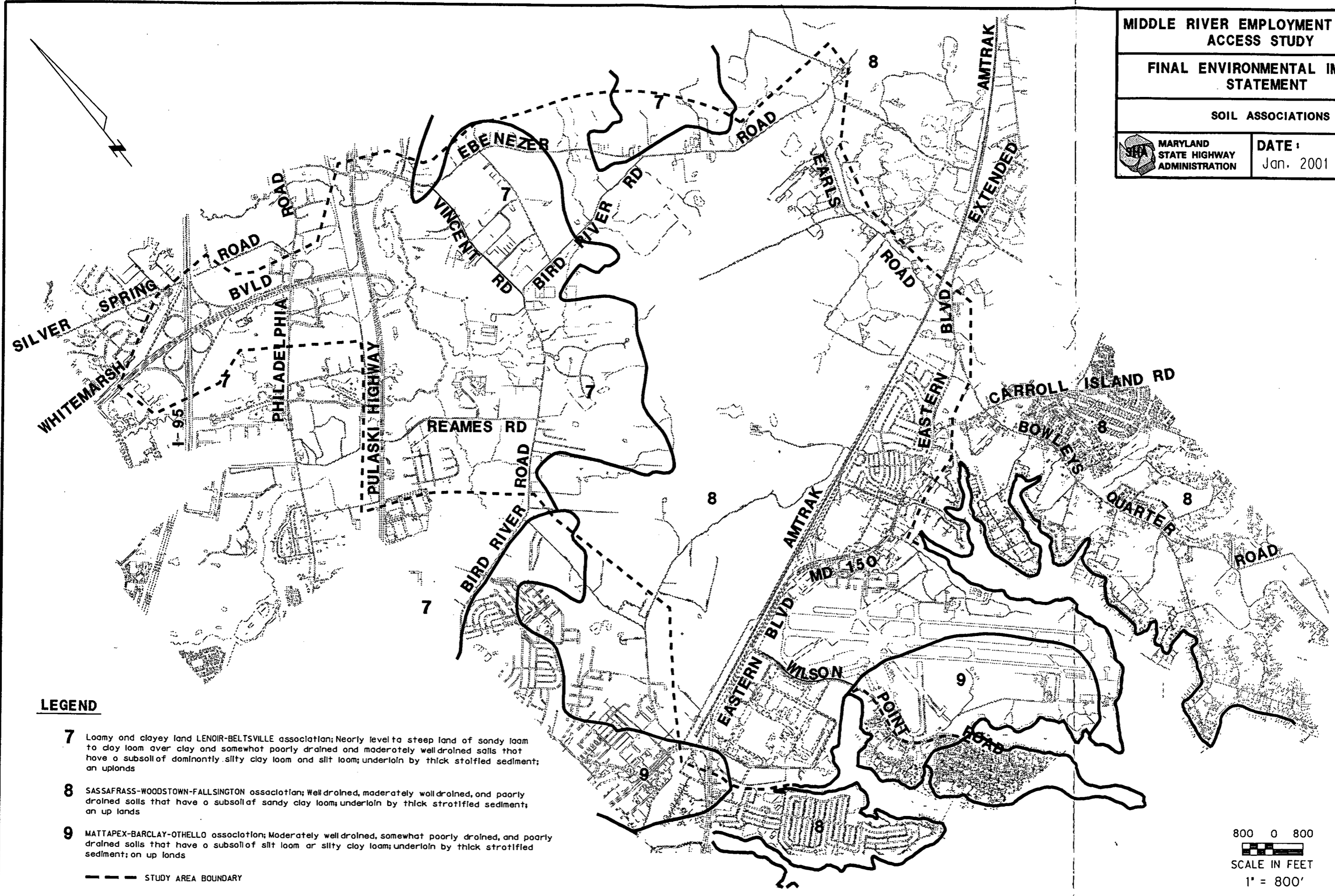
#### a. Soil Associations and Series

Three Soil Associations occur in the study area (see Figure III-6). The portion of the study area west of Windlass Run lies within the Loamy and Clayey Land-Lenoir-Beltsville Association. These soils are characterized by their occurrence on nearly level to steep lands and by their composition, which is sandy loam to clay loam over clay. They range from somewhat poorly drained to moderately well drained. Subsoils are silty clay loam to silt loam underlain by thick, stratified sediment. The Windlass Run drainage area lies within the Sassafras-Woodstown-Fallsington Association. These soils occur on nearly level to gently sloping sites within the study area. They range from well drained to poorly drained. Subsoils are sandy clay loam underlain by thick, stratified sediment. The Mattapex-Barclay-Othello Association occurs from the vicinity of the AMTRAK railroad to MD 150. These soils range from poorly drained to moderately well drained. They have a subsoil of silt loam or silty clay loam underlain by thick, stratified sediment.

Thirty-eight soil types occur within the study area, representing fifteen soil series. The fifteen soil series are described below.

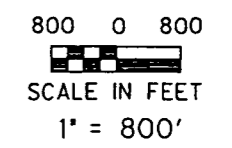
- Alluvial land consists of soil materials washed from uplands and deposited on floodplains. Soils of this series are hydric and occur within the Whitemarsh Run and the Windlass Run floodplains. They are sandy and poorly drained.
- Soils of the Barclay Series occur east of Bird River Road. These soils are deep, somewhat poorly drained, nearly level silt loams with moderate permeability. The water table is near the surface and is sometimes at the surface for short periods.
- Soils of the Beltsville Series occur west of Bird River Road. These are acid soils, which contain a fragipan (an impermeable layer), generally at a depth of less than 30 inches. Beltsville soils are often saturated near the surface while being dry in and below the fragipan.
- Soils of the Christiana Series occur adjacent to MD 150. These soils are deep, well drained and gently sloping. They formed in thick deposits of plastic clay and are red in color.
- Soils of the Elkton Series occur in scattered locations near the AMTRAK tracks. These hydric soils are deep, nearly level and poorly drained.
- Soils of the Fallsington Series occur in the wetlands adjacent to Bengies Road. These hydric soils are deep, poorly drained, level and grey in color. They formed in old marine deposits of sandy materials with low to moderate amounts of silt and clay.
- Soils of the Fort Mott Series occur east of Bird River Road and east of Windlass Run. These soils are deep and well drained. They have a very thick, sandy surface layer.

MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY		
FINAL ENVIRONMENTAL IMPACT STATEMENT		
SOIL ASSOCIATIONS		
 MARYLAND STATE HIGHWAY ADMINISTRATION	DATE: Jan. 2001	FIGURE NO. III-6



**LEGEND**

- 7** Loamy and clayey land LENOIR-BELTSVILLE association; Nearly level to steep land of sandy loam to clay loam over clay and somewhat poorly drained and moderately well drained soils that have a subsoil of dominantly silty clay loam and silt loam; underlain by thick stratified sediment; on uplands
  - 8** SASSAFRASS-WOODSTOWN-FALLSINGTON association; Well drained, moderately well drained, and poorly drained soils that have a subsoil of sandy clay loam; underlain by thick stratified sediment; on up lands
  - 9** MATTAPEX-BARCLAY-OTHELLO association; Moderately well drained, somewhat poorly drained, and poorly drained soils that have a subsoil of silt loam or silty clay loam; underlain by thick stratified sediment; on up lands
- STUDY AREA BOUNDARY





- Soils of the Galestown Series occur east of Windlass Run. They are very deep, somewhat excessively drained, very sandy soils. They formed in old marine deposits of sand and have been reworked by wind.
- Soils in the Lenoir Series occur west of Bird River Road, east of Windlass Run, along the power lines, and adjacent to AMTRAK. These are hydric soils and are deep, somewhat poorly drained, and nearly level. They formed in old deposits of highly clayey marine sediment.
- Loamy and Clayey Land soils occur at Bird River Road. These are very old clay deposits overlain by more recent deposits of sandy loam, loam, or silt loam.
- Soils of the Mattapex Series occur north of the power lines. These soils formed in old deposits of silty materials underlain by coarser sediments.
- Soils of the Pocomoke Series occur in the Bengies Road-Earls Road area. These are hydric soils that are deep, very poorly drained, and nearly level. They occur in flats and depressions, having formed in sandy marine sediments with little silt or clay.
- Sand and Gravel Pits occur east of Whitmarsh Run in areas from which materials were excavated.
- Soils of the Sassafras Series occur east of Whitmarsh Run, east of Bird River Road, and east of Windlass Run. The soils of this series are the most commonly encountered non-hydric soils in the study area. They are deep, well drained, and formed in unconsolidated deposits of very old sandy sediments.
- Woodstown Series soils are the most commonly encountered hydric soils in the study area. They occur in scattered locations throughout the study area and large areas east of Windlass Run. They formed in unconsolidated deposits of very old sandy materials containing moderate amounts of silt and clay.

b. Ecological Considerations for Affected Soil Series

With the exception of Sand and Gravel Pits, ecological considerations for the pertinent soil series are discussed below.

- Soils of the Alluvial Land Series are unsuited for farming, and special problems arise in other uses. The native vegetation consists of water-tolerant hardwoods, such as river birch, yellow poplar, sweetgum and maples. These soils are good for woodland wildlife. They are generally poor for wetland and open-land wildlife.
- Soils of the Barclay Series are fair for farming if drained. Native vegetation consists of hardwoods that tolerate wetness, including red maple, sweetgum, holly and certain oaks.
- Soils of the Beltsville Series are important in farming, but they are difficult to manage. Special problems occur on these soils in residential areas, particularly related to drainage for septic systems.
- Fragipans yield fair to good stands of hardwoods mixed with some Virginia pines. They produce good crops of open-land and woodland wildlife, but are poor for wetland wildlife production.
- Christiana Series soils are acid and low in natural fertility. The clayey subsoil limits the use of these soils. The native vegetation is consists of upland hardwoods and Virginia pine.

These soils are rated good for woodland and open-land wildlife and unsuitable for wetland wildlife.

- Elkton Series soils are useful for many crops if artificially drained. These soils are difficult to work and manage, even when drained. Native vegetation consists of mixed hardwoods that tolerate wetness. These soils are rated good for woodland wildlife, fair for open-land wildlife and good for wetland wildlife.
- Fallsington Series soils are easy to work if artificially drained. Native vegetation consists of mixed, water-tolerant hardwoods and pond pine. These soils are fair for open-land wildlife and good for woodland and wetland wildlife.
- Fort Mott soils are easily worked and are among the earliest to be ready for planting. Native vegetation consists of scrub hardwoods and Virginia pine. These soils are rated fair for open-land and woodland wildlife and unsuited for wetland wildlife.
- Galestown Series soils are similar to Fort Mott soils. Main limitations are low moisture retention and loose, blowing sand. Native vegetation consists of scrub oaks, other hardwoods and Virginia pine. These soils are poor for open-land and woodland wildlife and unsuited for wetland wildlife.
- Lenoir Series soils limitations include impeded drainage and slow permeability in the subsoil. Native vegetation consists of water-tolerant hardwoods. These soils are rated fair for open-land wildlife, good for woodland wildlife and unsuited for wetland wildlife.
- Loamy and Clayey Land is unsuited for farming and most other uses. Native vegetation consists of red oak and Virginia pine. These soils are rated fair for open-land and woodland wildlife and unsuited for wetland wildlife.
- Pocomoke Series soils need artificial drainage for practically all uses. Native vegetation consists of water-tolerant hardwoods. These soils are rated good for woodland and open-land wildlife and poor for wetland wildlife.
- Sassafras Series soils are extensive in the County and are important for farming and residential and industrial development. Native vegetation consists of mixed upland hardwoods and Virginia pine. These soils are rated good for woodland and open land wildlife and are unsuited for wetland wildlife.
- Woodstown Series soils are limited in their usefulness by seasonal wetness. Native vegetation consists of mixed, water-tolerant hardwoods. These soils are good for open-land and poor for woodland wildlife.

c. Soil Types

Table III-6 lists the thirty-eight soil types found in the study area, describes some of their attributes, and provides information regarding specific features that might restrict highway construction activities.

Table III-6: Attributes of Soil Types in Study Area.

Map Symbol	Soil Mapping Unit	Erosion Potential	Depth to High Water Table (ft)	Drainage Class	Potential Frost Action	Restrictive Soil Features Affecting Highway Construction
Av	Alluvial Land	Slight	N/A	N/A	N/A	N/A
Br	Barclay Silt Loam	Slight	1	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action, local ponding
BtB	Beltsville Silt Loam, 2 to 5% Slopes	Slight	1.5 to 2.5	Seasonally perched water table, slow permeability	High	Seasonally perched water table, frost action, seepage in cuts, cuts and fill needed
BtC	Beltsville Silt Loam, 5 to 10% Slopes	Slight	1.5 to 2.5	Seasonally perched water table, slow permeability	High	Seasonally perched water table, frost action, seepage in cuts, cuts and fill needed
CmB	Christiana Loam, 2 to 5% Slopes	Slight	>5	Well drained	Moderate	Frost action, cuts and fills needed, cut slopes tend to be unstable, plastic materials
CmC	Christiana Loam, 5 to 10% Slopes	Slight	>5	Well drained	Moderate	Frost action, cuts and fills needed, cut slopes tend to be unstable, plastic materials
Em	Elkton Loam	Slight	0 to 1	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action, plastic, local ponding
En	Elkton Silt Loam	Slight	0 to 1	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action, plastic, local ponding
Eo	Elkton-Urban Land Complex	N/A	0 to 1	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action, plastic, local ponding
Fa	Fallsington Sandy Loam	Slight	0	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action, running sand substratum, local ponding
Fs	Fallsington Loam	Slight	0	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action, running sand substratum, local ponding
FtB	Fort Mott Loamy Sand, 0 to 5% Slopes	Slight	>4	Well drained	Low	Generally favorable, cuts and fills needed
GaB	Galestown Loamy Sand, 0 to 5% Slopes	Slight	>10	Well drained	Low	Loose sand, hauling hindered, subject to soil blowing, cuts and fills needed, droughty

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Map Symbol	Soil Mapping Unit	Erosion Potential	Depth to High Water Table (ft)	Drainage Class	Potential Frost Action	Restrictive Soil Features Affecting Highway Construction
GaC	Galestown Loamy Sand, 5 to 10% Slopes	Slight	>10	Well drained	Low	Loose sand, hauling hindered, subject to soil blowing, cuts and fills needed, droughty
JpC	Joppa Gravelly Sandy Loam, 5 to 10% Slopes	Slight	>5	Well drained	Low	Favorable, cuts and fills needed
LIB	Lenoir Loam 0 to 5% Slopes	Slight	1.5 to 2.5	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action, plastic material
LmC	Lenoir Silt Loam, 5 to 12 % Slopes	Slight	1.5 to 2.5	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action, plastic material
LnC	Lenoir Silty Clay Loam, 5 to 12% Slopes	Slight	1.5 to 2.5	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action, plastic material
LyB	Loamy and Clayey Land, 0 to 5% Slopes	Slight	>5	Well drained	Low	Cut slopes unstable, hard to vegetate, plastic materials
LyD	Loamy and Clayey Land, 5 to 15% Slopes	Moderate	>5	Well drained	Low	Cut slopes unstable, hard to vegetate, plastic materials
Ma	Made Land	N/A	N/A	N/A	N/A	N/A
MkA	Matapeake Silt Loam, 0 to 2% Slopes	Slight	>4	Well drained	Moderate	Frost action, cuts and fills needed
MkB	Matapeake Silt Loam, 2 to 5% Slopes	Slight	>4	Well drained	Moderate	Frost action, cuts and fills needed
MIA	Mattapex Silt Loam, 0 to 2% Slopes	Slight	1.5 to 2.5	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action
MIB	Mattapex Silt Loam, 2 to 5% Slopes	Slight	1.5 to 2.5	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action
MmB	Mattapex-Urban Land Complex, 0 to 5% Slopes	N/A	1.5 to 2.5	Seasonal high water table, slow permeability	High	Seasonal high water table, frost action
Po	Pocomoke Sandy Loam	Slight	0	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action, thick organic surface layer, local ponding
Sg	Sand and Gravel Pits	N/A	N/A	N/A	N/A	N/A

Map Symbol	Soil Mapping Unit	Erosion Potential	Depth to High Water Table (ft)	Drainage Class	Potential Frost Action	Restrictive Soil Features Affecting Highway Construction
ShA	Sassafras Sandy Loam, 0 to 2% Slopes	Slight	>4	Well drained	Low	Features are favorable, cuts and fills needed
ShB	Sassafras Sandy Loam, 2 to 5% Slopes	Slight	>4	Well drained	Low	Features are favorable, cuts and fills needed
ShC	Sassafras Sandy Loam, 5 to 10% Slopes	Slight	>4	Well drained	Low	Features are favorable, cuts and fills needed
SnB	Sassafras-Urban Land Complex, 0 to 5% Slopes	N/A	>4	Well drained	Low	Features are favorable, cuts and fills needed
SsD	Sassafras and Joppa Soils, 5 to 15% Slopes	Slight	>4	Well drained	Low	Features are favorable, cuts and fills needed
SuB	Sunnyside Fine Sandy Loam, 0 to 5% Slopes	Slight	>5	Well drained	Low	Features are favorable, cuts and fills needed
WdA	Woodstown Sandy Loam, 0 to 2% Sandy Slopes	Slight	1.5 to 2.5	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action
WdB	Woodstown Sandy Loam, 2 to 5% Slopes	Slight	1.5 to 2.5	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action
WoA	Woodstown Loam, 0 to 2% Slopes	Slight	1.5 to 2.5	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action
WoB	Woodstown Loam, 2 to 5% Slopes	Slight	1.5 to 2.5	Seasonal high water table, moderate permeability	High	Seasonal high water table, frost action

#### D. Farmlands

The Baltimore County Soil Conservation District was consulted to determine which soils within the study area are classified as Prime Farmland, Unique Farmland, Soils of Statewide Importance or Locally Important Soils.

Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is also available for these uses (the land could be cropland, pasture land, forest land, or other land, but not urban built-up or water). It has the soil quality, growing season and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. Prime Farmland Soils generally have an adequate and dependable

water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt content, and few or no rocks. They are permeable to water and air. Prime Farmland Soils are not excessively erodible or saturated with water for a long period of time and they either do not flood frequently or are protected from flooding. The Prime Farmland Soils within the study area include:

- MkA Matapeake silt loam, 0 to 2% slopes
- MkB Matapeake silt loam, 2 to 5% slopes
- MIA Mattapex silt loam, 0 to 2% slopes
- MIB Mattapex silt loam, 2 to 5% slopes
- ShA Sassafras sandy loam, 0 to 2% slopes
- ShB Sassafras sandy loam, 2 to 5% slopes
- SIB Sassafras loam, 2 to 5% slopes
- WdA Woodstown sandy loam, 0 to 2% slopes
- WdB Woodstown sandy loam, 2 to 5% slopes
- WoA Woodstown loam, 0 to 2% slopes
- WoB Woodstown loam, 2 to 5% slopes

Statewide Importance Soils are for the production of food, feed, fiber, forage and oilseed crops. Criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies. Additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. The Soils of Statewide Importance within the study area include:

- BtB Beltsville silt loam, 2 to 5% slopes
- BtC2 Beltsville silt loam, 5 to 10% slopes, moderately eroded
- CmB Christiana loam, 2 to 5% slopes
- CmC2 Christiana loam, 5 to 10% slopes, moderately eroded
- Fa Fallsington sandy loam, 0 to 2% slopes
- Fs Fallsington loam, 0 to 2% slopes
- FtB Fort Mott loamy sand, 0 to 5% slopes
- LIB Lenoir loam, 0 to 5% slopes
- LmC2 Lenoir silt loam, 5 to 12% slopes, moderately eroded
- ShC2 Sassafras sandy loam, 5 to 10% slopes, moderately eroded

Prime Farmland soils and Soils of Statewide Importance are shown on Figure III-7. There are no unique or locally important soils in Baltimore County. A farmland assessment has been conducted to identify the potential impacts to farmland and prime and statewide importance soils by the proposed build alternates. Coordination with the Natural Resources Conservation Service (NRCS) has been initiated and Farmland Conversion Impact Rating Forms have been submitted for completion by NCRS.

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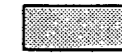
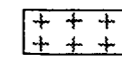
FARMLAND SOIL

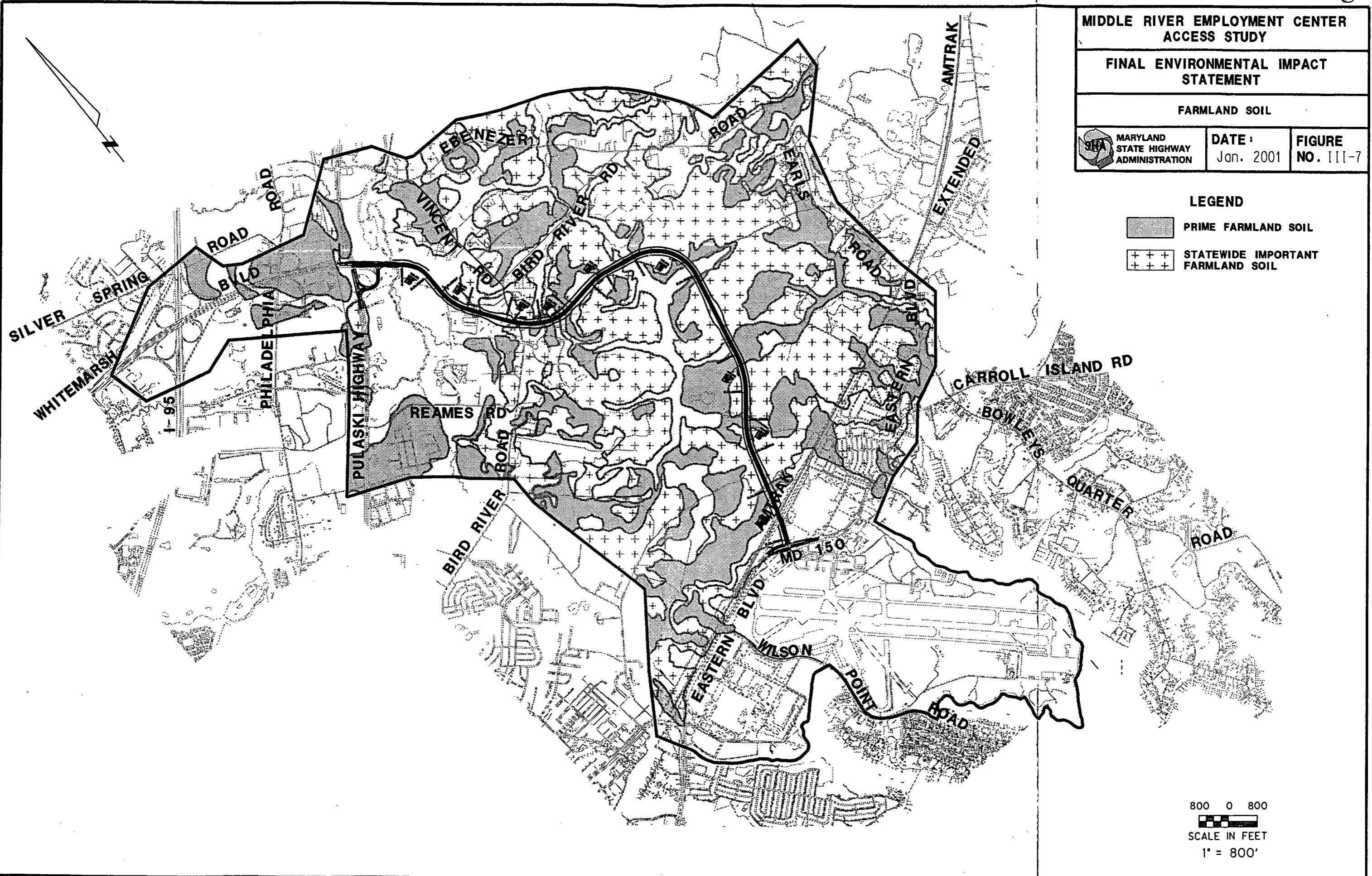



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Jan. 2001

FIGURE  
NO. III-7

LEGEND

-  PRIME FARMLAND SOIL
-  STATEWIDE IMPORTANT FARMLAND SOIL



800 0 800  
  
 SCALE IN FEET  
 1" = 800'

## **E. Groundwater Resources**

Groundwater in the Coastal Plain is found in two types of aquifers, unconfined or "water table" aquifers and confined or "artesian" aquifers. Unconfined aquifers are located nearest the surface and by definition do not lie under a confining layer or formation. These aquifers discharge to surface waters through springs and seepage to streams. Water in the unconfined aquifer not discharged to surface waters recharges the aquifer and supplies water to deeper portions of the aquifer. It eventually becomes confined as it moves under other less permeable formations. In Maryland this occurs to the southeast.

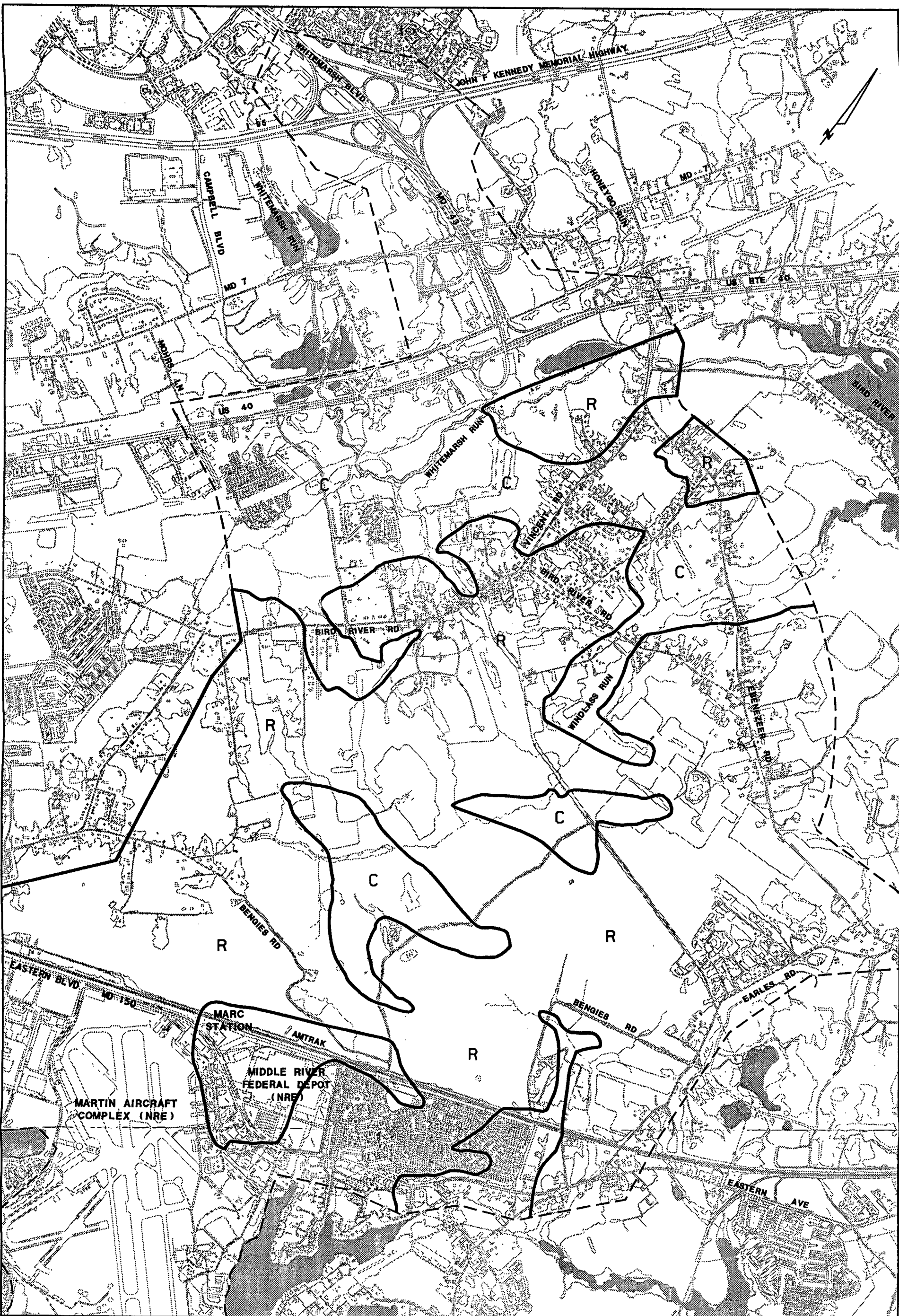
Unconfined aquifers were used in the past as major sources of domestic water supplies. A relatively shallow well can usually penetrate the aquifer and produce usable quantities of water. However, the unconfined aquifer is very susceptible to contamination from surface activities such as crop fertilization, road salting and septic systems. For this reason, permits to install wells into the unconfined aquifer for potable water supplies are no longer approved by most Maryland jurisdictions.

Confined aquifers are located below formations or layers of material (confining layers) that inhibit the downward movement of water from above. The confining layer isolates the water in the aquifer from contaminants applied to the surface. The confined aquifers are acceptable potable water supplies.

Groundwater resources in the study area consist of two aquifers, the Patuxent Aquifer and the Patapsco Aquifer. Recharge areas for these aquifers are shown in Figure III-8. The Patuxent Aquifer is expressed as both an unconfined and confined aquifer in the study area. The Patapsco Aquifer is unconfined in the study area. The Patuxent and Patapsco Formations contain aquifers in the sand facies units of each formation, while the Arundel Formation does not generally carry an aquifer and acts as an aquiclude or confining layer where it overlies the Patuxent Formation. The Patuxent aquifer is an unconfined aquifer system in the formation's outcrop area in the western portion of the study area. The outcrop area of the formation functions as the recharge area for the aquifer. The Patuxent Aquifer becomes a confined aquifer where the Patuxent Formation dips below the Arundel Formation (confining layer) toward the middle and eastern portions of the study area. The Patapsco Aquifer is unconfined over the outcrop area (recharge area) of the formation, which includes the entire eastern portion of the study area.

The two aquifers are used by some residents and businesses within the study area for water supply. Although some portions of the study area near major roads are served by public water, most of the area is served by private wells. The area north of Ebenezer Road and south of Bird River is not served by public water. The area south of Ebenezer Road to Eastern Avenue is not presently served by public water, but Baltimore County's plans include water service for this area in the future. Residents and businesses along Eastern Avenue (MD 150), Martin State Airport and in most of Bowleys Corner are served by public water, as are residents and businesses along US 40. The rest of the area is served by private wells screened in either the unconfined or the confined aquifers.





**LEGEND**

- R - AQUIFER RECHARGE AREA
- C - CLAY, NO RECHARGE
- - - STUDY AREA



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**AQUIFER RECHARGE AREAS**



MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

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Jan. 2001

FIGURE  
NO. 111-8

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Wells screened in the unconfined aquifer are susceptible to contamination or loss of water due to surface activities in the area. Some older wells may be screened in the unconfined aquifer, but newer wells are all required to be screened into the deeper confined aquifer. Wells screened in the confined aquifer in the study area (Patuxent Aquifer in the Arundel or Patapsco outcrop areas) are not as susceptible to surface activity degradation and should not be affected by planned activities in the area.

A request for well data in the study area was made to the Maryland Department of the Environment (MDE). Well data within specified grid coordinates were obtained from MDE's wells database. Wells within the study area were tabulated, along with well depths, well yields and static water levels. The data are shown in Table III-7. Based on locations and depths of the wells, a determination was made as to which aquifer the well was screened in and whether the aquifer was confined or unconfined in that location. This was accomplished by estimating the thickness and depth of the aquifer-bearing formations at well locations.

**Table III-7: Wells Screened in Coastal Plain Aquifers of the MRECA Study Area**

Well No.	Location	Depth (Ft.)	Yield (GPM)	Static WL*	Aquifer	Confined/Unconfined
BA-73-3977	Bengies Rd.	85	20	40	Patuxent	Confined
BA-81-1481	Bengies Rd.	103	30	20	Patuxent	Confined
BA-81-1481	Bengies Rd.	97	15	41	Patuxent	Confined
BA-81-2662	Bengies Rd.	208	30	85	Patuxent	Confined
BA-81-7285	Bengies Rd.	100	30	16	Patuxent	Confined
BA-81-7925	Bengies Rd.	100	30	28	Patuxent	Confined
BA-70-0308	Bird River Rd.	70	12	18	Patuxent	Confined
BA-70-0427	Bird River Rd.	55	20	13	Patuxent	Confined
BA-73-1149	Bird River Rd.	85	10	10	Patuxent	Confined
BA-73-6193	Bird River Rd.	147	83	60	Patuxent	Confined
BA-81-0276	Bird River Rd.	120	30	30	Patuxent	Confined
BA-81-3358	Bird River Rd.	50	8	28	Patuxent	Confined
BA-81-6716	Bird River Rd.	132	55	50	Patuxent	Confined
BA-92-0335	Bird River Rd.	194	20	120	Patuxent	Confined
BA-92-0618	Bird River Rd.	50	25	21	Patuxent	Confined
BA-70-0283	Carroll Is. Rd.	60	25	9	Patapsco	Unconfined
BA-71-0132	Carroll Is. Rd.	50	20	13	Patapsco	Unconfined
BA-73-0290	Carroll Is. Rd.	58	40	8	Patapsco	Unconfined
BA-81-5684	Clares Lane	110	20	9	Patapsco	Unconfined
BA-72-0209	Earles Ave.	120	8	30	Patapsco	Unconfined
BA-81-3095	Earles Beach Rd.	73	40	5	Patapsco	Unconfined
BA-81-6254	Earles Beach Rd.	50	20	14	Patapsco	Unconfined
BA-71-0502	Earles Rd.	95	25	35	Patapsco	Unconfined
BA-73-2294	Earles Rd.	75	30	10	Patapsco	Unconfined
BA-73-2686	Earles Rd.	75	15	40	Patapsco	Unconfined
BA-73-5152	Earles Rd.	160	37	80	Patuxent	Confined
BA-73-5165	Earles Rd.	119	30	20	Patapsco	Unconfined
BA-73-6588	Earles Rd.	95	20	52	Patapsco	Unconfined
BA-73-7765	Earles Rd.	125	30	30	Patapsco	Unconfined
BA-73-8205	Earles Rd.	155	25	83	Patuxent	Confined
BA-81-0830	Earles Rd.	85	20	46	Patapsco	Unconfined
BA-81-1459	Earles Rd.	120	50	23	Patapsco	Unconfined
BA-81-2026	Earles Rd.	140	25	63	Patuxent	Confined

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Well No.	Location	Depth (Ft.)	Yield (GPM)	Static WL*	Aquifer	Confined/Unconfined
BA-81-2412	Earles Rd.	100	30	20	Patapsco	Unconfined
BA-81-2838	Earles Rd.	100	20	20	Patapsco	Unconfined
BA-81-3093	Earles Rd.	122	40	21	Patapsco	Unconfined
BA-81-3359	Earles Rd.	75	20	34	Patapsco	Unconfined
BA-81-3882	Earles Rd.	133	25	48	Patapsco	Unconfined
BA-81-4187	Earles Rd.	145	40	56	Patuxent	Confined
BA-81-4465	Earles Rd.	125	25	44	Patapsco	Unconfined
BA-81-6326	Earles Rd.	130	30	52	Patuxent	Confined
BA-81-6686	Earles Rd.	145	50	36	Patuxent	Confined
BA-81-7396	Earles Rd.	220	50	28	Patuxent	Confined
BA-81-8799	Earles Rd.	142	30	60	Patuxent	Confined
BA-88-2497	Earles Rd.	155	0	0	Patuxent	Confined
BA-92-0900	Earles Rd.	60	8	39	Patapsco	Unconfined
BA-70-0445	Ebenezer Rd.	95	20	40	Patuxent	Confined
BA-73-0099	Ebenezer Rd.	155	15	17	Patuxent	Confined
BA-73-0365	Ebenezer Rd.	80	14	14	Patapsco	Unconfined
BA-73-4924	Ebenezer Rd.	130	25	60	Patapsco	Unconfined
BA-73-6946	Ebenezer Rd.	92	70	16	Patapsco	Unconfined
BA-81-0260	Ebenezer Rd.	77	10	44	Patapsco	Unconfined
BA-81-0262	Ebenezer Rd.	113	30	50	Patuxent	Confined
BA-81-0438	Ebenezer Rd.	105	30	49	Patuxent	Confined
BA-81-0560	Ebenezer Rd.	115	20	53	Patuxent	Confined
BA-81-3287	Ebenezer Rd.	102	50	29	Patuxent	Confined
BA-81-3335	Ebenezer Rd.	105	50	38	Patuxent	Confined
BA-81-4019	Ebenezer Rd.	100	30	52	Patuxent	Confined
BA-81-4375	Ebenezer Rd.	117	8	68	Patuxent	Confined
BA-81-5395	Ebenezer Rd.	135	20	65	Patuxent	Confined
BA-81-7203	Ebenezer Rd.	105	25	29	Patuxent	Confined
BA-92-0795	Edwards Lane	68	60	5	Patapsco	Unconfined
BA-73-5119	Hillpine Road	87	60	38	Patuxent	Confined
BA-81-0596	Hughes Lane	87	15	10	Patapsco	Unconfined
BA-73-1592	Hughes Rd.	110	25	1	Patapsco	Unconfined
BA-73-5701	Leland Ave.	95	15	15	Patuxent	Confined
BA-81-6255	Leland Rd.	115	40	21	Patuxent	Confined
BA-72-0031	Mohr Lane	95	25	40	Patuxent	Confined
BA-73-6737	Mohr Lane	85	40	36	Patuxent	Confined
BA-81-7090	Pulaski Hwy.	58	20	30	Patuxent	Unconfined
BA-73-0108	Stevens Rd.	104	15	5	Patapsco	Unconfined
BA-73-7310	Stevens Rd.	110	30	3	Patapsco	Unconfined
BA-73-8262	Stevens Rd.	107	30	1	Patapsco	Unconfined
BA-81-7195	Stevens Rd.	120	50	6	Patapsco	Unconfined
BA-92-0216	Stevens Rd.	114	25	1	Patapsco	Unconfined
BA-73-3514	Stumpfs Rd.	121	7	90	Patapsco	Unconfined
BA-81-4058	Stumpfs Rd.	47	30	6	Patapsco	Unconfined
BA-88-0550	Wampler Rd.	125	50	20	Patuxent	Confined
BA-88-3474	Wampler Rd.	90	20	20	Patuxent	Confined
BA-71-0101	Wampler Road	65	10	31	Patuxent	Confined
<b>Average</b>		<b>104.22</b>	<b>27.78</b>	<b>32.23</b>		

Source: Maryland Department of the Environment

\*Static Water Level expressed as number of feet below the ground surface

Most of the wells found in the study area are located in the central to eastern portions of the study area. Few wells were located west of Bird River Road. Public water is supplied to most residences in the western portions of the study area and in areas adjacent to major roads. Eighty wells were identified within the study area. Wells along the Bird River Road and the Bengies Road area are most likely screened into the confined Patuxent Aquifer. Well depths recorded for wells in this area are sufficient to penetrate the Patapsco and Arundel Formations and reach the underlying Patuxent Formation which carries a confined aquifer in this area. Wells located along the western section of Ebenezer Road are probably screened into the confined Patuxent Aquifer while well along the eastern section of the road are probably screened into the unconfined Patapsco Aquifer. Deeper wells along Earles Road are most likely screened into the confined Patuxent Aquifer and shallower wells along the road are probably screened into the unconfined Patapsco Aquifer. Wells located north of Ebenezer Road and south of Eastern Blvd. are probably all screened into the unconfined Patapsco Aquifer.

Wells screened in the Patuxent Aquifer average 114 feet deep, yield 28.4 GPM and average a static water level of 40 feet below the ground surface. Wells screened into the unconfined Patapsco Aquifer average 93 feet in depth, yield 25.6 GPM and average a static water level of 22.5 feet below ground surface.

Based on the information obtained from MDE, it appears that groundwater, confined and unconfined, is located relatively deep below the surface over much of the area. Groundwater should be found much closer to the surface at lower elevations and near streams or tidal shorelines within the study area. Wells screened into the unconfined aquifer are concentrated in the eastern and southeastern sections of the study area. These wells are the most susceptible to affects from road construction activities. Wells screened into the confined aquifer are concentrated in the central section of the study area near Bird River and Bengies Roads. These wells should not be as susceptible to damage from construction activities or surface contamination.

## **F. Surface Water Resources**

### **1. Streams and Rivers**

Surface water resources including streams and rivers are a dynamic and important part of the physical environment. They support and maintain not only aquatic biota but are very important in the support of terrestrial systems as well.

#### **a. Affected Watersheds**

The MRECA study area lies entirely within the Chesapeake Bay drainage area on the Atlantic Coastal Plain in eastern Baltimore County, Maryland. Six large surface streams drain portions of the study area, in addition to several smaller tributary streams. Three of them (Whitemarsh Run, Honeygo Run, and Windlass Run) are primary tributaries to Bird River. Whitemarsh and Honeygo Runs originate in the Piedmont region west of the coastal plain and descend onto the Atlantic Coastal Plain before emptying into Bird River, whereas Windlass Run lies entirely within the coastal plain (Maryland Department of Natural Resources, 1998). Bird River is a

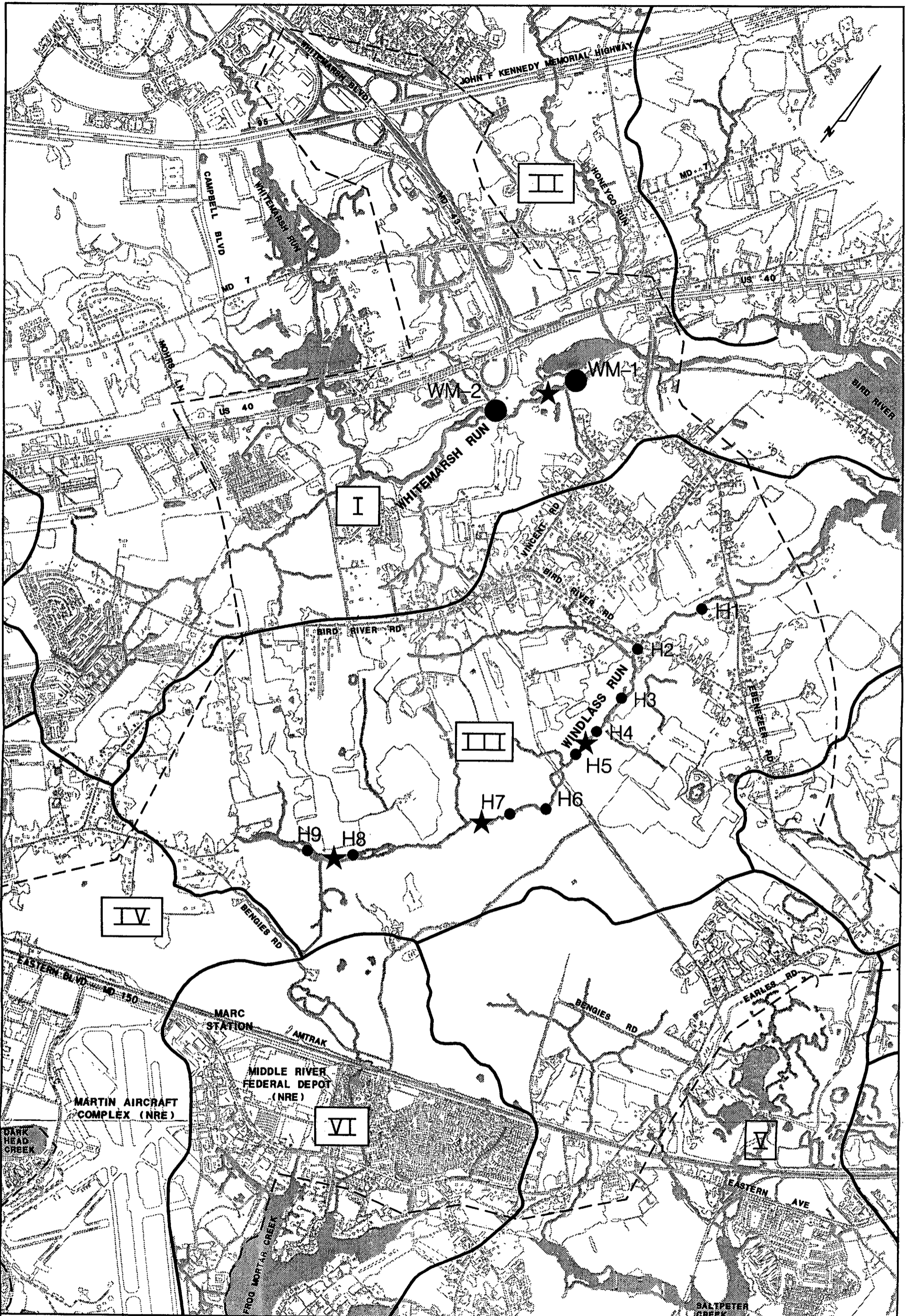
tributary to the Gunpowder River, which discharges directly into Chesapeake Bay. Another Gunpowder River tributary (Saltpeter Creek) drains the southeastern portion of the study area. Frog Mortar Creek and Darkhead Creek drain a small area in the southwestern section of the study area and flow into Middle River, which discharges directly into Chesapeake Bay. Maryland Department of Natural Resources classifies all of the non-tidal streams in the study area except for Whitemarsh Run as Use-I, which designates use for water contact recreation and the protection of aquatic life. Whitemarsh Run and its tributaries are classified as Use-IV, (recreational trout fishing and associated aquatic life).

As indicated on Figure III-9, four of the streams are located at the extreme edges of the study area. They will not be directly impacted by any of the proposed highway alignments. But Windlass Run and Whitemarsh Run, which lie well within the study area, will both have to be crossed regardless which build alternate is selected, so stream studies for this project have been primarily directed toward those two subwatersheds. On Figure III-9 the six drainage areas are identified by Roman numerals as follows:

- I      Whitemarsh Run
- II     Honeygo Run
- III    Windlass Run
- IV    Darkhead Creek
- V     Saltpeter Creek
- VI    Frog Mortar Creek

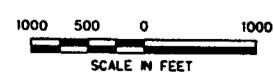
Windlass Run is a small narrow stream where it flows through the study area. At no point is it wider than fifteen feet, and in the upper reaches of the study area it is generally less than three feet wide and braided. The bottom substrate is a very soft muck. Typical of coastal plain streams, riffle and pool areas in Windlass Run are rare and generally small. However, aquatic vegetation and snags are common in many parts of the stream and provide plentiful habitat for aquatic life. The stream is relatively undisturbed (compared to other nearby streams) and there is a buffer of at least 100 meters from human development along much of its channel.

Whitemarsh Run has a 25-foot wide channel in many places. Some of the pools exceed six feet in depth, but most of the stream is shallow. The substrate is primarily soft sand and the channel is straight with minimal bank stabilization. Overhanging vegetation and some snags provide most in-stream habitats; macrophytic vegetation is rare. The stream channel is within 100 meters of human activity throughout much of its course, and trash lies on many of the banks. Tires and concrete debris are common in the stream.



**LEGEND**

- STREAMS
- - - STUDY AREA
- DRAINAGE AREA BOUNDARY
- H1 SAMPLING POINTS
- WM SAMPLING POINTS
- ★ STREAM CLASSIFICATION STUDY RICH



**MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT STATEMENT**

**STREAMS AND DRAINAGE AREAS**



DATE: Jan. 2001

FIGURE NO. III-9

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b. Hydrology

The six streams located in the study area vary in size and discharge (Table III-8).

Table III-8: Area and 1993 peak flows for tributaries of Bird River, Saltpeter Creek, and Middle River\*

Watershed	Tributary	Area (acres)	1993 Peak Flow (ft <sup>3</sup> /s)
Bird River	Windlass Run	2,059	76
Bird River	Whitemarsh Run	8,248	1,720
Bird River	Honeygo Run	1,681	349
Saltpeter Creek	Saltpeter Creek	NA	NA
Middle River	Frog Mortar Creek	NA	NA
Middle River	Darkhead Creek	NA	NA

Sources: U.S. Geological Survey, 1998 and Maryland DNR, 1998

\*1993 peak flow is included for a rough comparison between streams.

c. Channel Classification

On December 30, 1998 a fluvial geomorphologic field assessment was conducted on two stream reaches within the study area: one on Windlass Run and one on Whitemarsh Run. Each stream reach was approximately 1000 feet long. Both study reaches were identified by survey flagging and staking in the field for the proposed alignment of Alternative D Modified. Physical channel conditions were assessed using the procedures and methodologies outlined in *A Classification for Natural River Systems* (Rosgen, 1994). The team members first walked the reaches to visually assess the streams, record in-stream and riparian features, and locate an appropriate riffle reach (hydraulic control) to measure cross sectional features. An automatic transit and stadia rod were used to survey the cross sections. Stream morphology and cross section locations were photo documented using 35mm color print film. The field measurement were then used to derive key parameters used in the Rosgen classification system to determine channel type. Key parameters and channel types used in the Rosgen Classification analysis are presented in Table III-9 below.

Table III-9: Rosgen Stream Classification Parameters

Channel Type	Channel Gradient	Width/Depth Ratio	Sinuosity	Entrenchment Ratio
A	4 to 10%	< 12	Low (< 1.2)	< 1.4
B	2 to 4%	> 12	Moderate (> 1.2)	1.4 to 2.2
C	0.1 to 2%	> 12	High (> 1.2)	> 2.2
D	0.1 to 2%	> 40	Low (< 1.2)	N/A
E	< 2%	< 12	Very High (> 1.5)	> 2.2
F	< 2%	> 12	Moderate (> 1.2)	< 1.4
G	2 to 4%	< 12	Moderate (> 1.2)	< 1.4

Source: Rosgen, 1994.

Each major stream type identified in the field was further classified based upon the median particle size (D50) of the bed material. Numbers 1 through 6 correspond to different sediment size ranges as follows:

- |             |            |
|-------------|------------|
| 1 - Bedrock | 4 - Gravel |
| 2 - Boulder | 5 - Sand   |
| 3 - Cobble  | 6 - Silt   |

The Wolman Pebble Count Method was used to calculate the particle size distribution of the bed material (Wolman, 1954). This information was also used to calculate a channel roughness coefficient utilizing the methods of Lane (1975), Limerinos (1984) and Anderson (1990).

On April 12, 1999, a fluvial geomorphologic field assessment of two additional stream reaches was conducted. Each stream reach, both on Windlass Run, was approximately 500 feet long. These study reaches were identified by survey flagging and staking for Alternates D and F<sub>1</sub>-Modified. The same procedures were followed as in the earlier two assessments.

The results of all four assessments are discussed below.

#### *Windlass Run at Alternate D-Modified*

The Windlass Run study reach is located east of Holly Hill Memorial Gardens located on the east side of Bird River Road. The drainage area to the study reach is approximately 1.5 square miles and is mostly undeveloped. The developed areas are composed of mostly large lot, single family homes.

The study reach is situated in a broad, flat, wooded floodplain. The vegetation is characterized as mixed mesic deciduous woods in mid-successional stage. It is a typical woodland association of the Atlantic coastal plain physiographic province.

The channel appears to be very stable. It is about 15 feet wide and 2 feet deep with an all sand substrate. (No pebble count was performed at this site as all channel material was less than 2mm.) The sand substrate and fairly low gradient (0.15%) form a glide/pool system rather than a riffle/pool system. There are no significant mid-channel or point bars and it is obvious that the bankfull elevation is top of bank. The banks are composed of silt and clay and allow a near vertical slope. The stream meanders modestly through the floodplain so there is minimal migration of meander bends.

Using top of bank as bankfull elevation, the assessment of the cross section survey data produced key channel parameters as follows:

- |                     |       |
|---------------------|-------|
| Width/Depth Ratio:  | 21.25 |
| Entrenchment Ratio: | >2.2  |

The channel is classified as a C5. The bankfull discharge, using Manning's Equation and the field measured cross sectional area and slope, was computed as 67 cfs. This compares well with an estimated bankfull discharge of 90cfs from the regional curve for southeast Pennsylvania (Dunne & Leopold, 1978).



### *Whitemarsh Run*

The Whitemarsh Run study reach is located just east of the ramp from MD 43 onto US 40. The drainage area to the study reach is approximately 13.8 square miles and is mostly developed. The land use is dominated by small lot residential, but also contains commercial, industrial, and institutional land uses.

The study reach is situated in a broad, flat, wooded floodplain; however, the lower reaches of Whitemarsh Run (including the study reach) have been greatly disturbed by past mining operations. While the vegetation can be characterized as a mixed mesic deciduous woods, it is in an early successional stage with some remnant large trees and it has been heavily invaded by multiflora rose.

The channel, at first glance, appears to be entrenched and unstable. The study reach has numerous eroding banks which are about 8 feet above the base flow elevation. The study reach contains large mid-channel and point bar deposits composed of sand and gravel. Long, deep pools dominate the reach with only a couple small (perhaps 5 feet long) riffle reaches. (The lack of riffle reaches made it difficult to determine an accurate water surface slope at the study reach.) The banks are composed of silt and clay which allow near vertical slopes. The meanders are migrating readily as there nothing to inhibit erosion of the outside meander bends.

The inside meander bend, immediately upstream of the cross section location, exhibits two possible bankfull indicators. The first is an active point bar with fresh sand and gravel deposits. The second is a vegetated terrace between the active point bar and the top of bank. Computing a discharge using the lower elevation produces a discharge of about 407 cfs. The discharge computed from the upper elevation is about 785 cfs. The larger discharge compares well with an estimated bankfull discharge of 700 cfs from the regional curve for southeast Pennsylvania (Dunne & Leopold, 1978). Also, sand deposits were observed in the overbank areas of the floodplain, which suggests that the channel is not entrenched and accesses the floodplain on an annual or semi-annual basis.

Using the terrace elevation as bankfull elevation, the assessment of the cross section survey data and pebble count produced key channel parameters as follows:

- Width/Depth Ratio: 24.95
- Entrenchment Ratio: >2.2
- D50 Material: 3 mm

The channel is classified as a C5. However, the morphological features, discussed above, indicate that this channel is unstable, incising and becoming more entrenched. It is apparent that the channel is adjusting to large, frequent storm flows from the highly developed watershed.

d. Aquatic Resources

(1) Assessment Parameters and Sampling Sites

An assessment was made of water quality and aquatic health of the two tributaries in the immediate study area: Windlass Run and Whitemarsh Run. Aquatic health was assessed using three sets of indirect indicators: aquatic habitat, benthic macroinvertebrate composition, fish/herpetofauna composition. Water quality was assessed directly by testing stream waters and comparing the results to Maryland's water quality standards. Test parameters included various toxic chemicals, pH, dissolved oxygen, turbidity, and fecal coliforms. A total of eleven sites were examined, including nine sites on Windlass Run and two on Whitemarsh Run. Table III-10 shows which sites were sampled and the specific assessment parameters addressed at each site.

Table III-10: Surface water parameters sampled at selected reaches of Windlass and Whitemarsh Runs.

Site Name	Aquatic Habitat	Macro-invertebrates	Fish and Herpetofauna	Water Quality
Windlass 1 (H-1)	X			
Windlass 2 (H-2)	X			
Windlass 3 (H-3)	X			
Windlass 4 (H-4)	X	X	X	X
Windlass 5 (H-5)	X			
Windlass 6 (H-6)	X			
Windlass 7 (H-7)	X	X	Spot-Sample	X
Windlass 8 (H-8)	X	X		X
Windlass 9 (H-9)	X	X		X
Whitemarsh 1 (WM-1)	X	X	X	X
Whitemarsh 2 (WM-2)	X	X		X

(2) Assessment Methodology

*Aquatic Habitat*

Habitat quality was evaluated based on protocols outlined in the *Field and Laboratory Methods for Macroinvertebrate and Habitat Assessment of Low Gradient, Nontidal Streams* (U.S. Environmental Protection Agency, 1997). This survey method was developed to accurately characterize the slow-moving nature of coastal plain streams. A team of three trained environmental scientists conducted habitat assessments at every major habitat change (for a total of 11 sample sites) along the reaches of Windlass and Whitemarsh Runs within the study area. Every habitat assessment site extended 100 meters along the stream. Teams determined a rating from 0 to 10 (poor to excellent, respectively) for each habitat parameter of interest. These parameters included:

- Channel Modification – measures the degree to which the stream channel has been modified or engineered by man
- In-stream Habitat – measures the diversity and abundance of stable habitats (snags, riffles, vegetated banks, and macrophytes)
- Pools – measures the diversity and abundance of pools
- Bank Stability – estimates the percentage of stream bank that shows evidence of recent erosion or bank failure

- Bank Vegetative Type – determines the dominant vegetation type (shrubs, trees, grasses and herbaceous plants, or non-vegetated) along the stream bank
- Shading – estimates the percentage of water that is shaded
- Riparian Zone Width – estimates the width of the riparian zone that shows no evidence of human activity

A final consensus rating for each habitat parameter was discussed and recorded. An overall habitat score for each stream was determined by adding all rated habitat parameters.

#### *Benthic Macroinvertebrates*

Benthic macroinvertebrates were sampled using the basic protocols discussed in *Field and Laboratory Methods for Macroinvertebrate and Habitat Assessment of Low Gradient, Nontidal Streams* (U.S. Environmental Protection Agency, 1997). A total of six sites were sampled, four on Windlass Run and two on Whitemarsh Run. At each sample site, which consisted of 100 meters of stream, the percentage of each type of potential macroinvertebrate habitat was estimated. Potential habitats included stream banks, woody snags, and submerged macrophytes. Sampling was performed according to the percentage of potential habitat. For example, if 60% of the stream habitats were woody snags, then 60% of the samples came from woody snags.

A total of twenty jab samples were taken at each sample site using a dip-net. Any captured organisms were then picked from detritus with the aid of sieves and taken to the laboratory for processing. All of the organisms were placed in a shallow pan over a numbered grid. Using a random number generator, grid squares were selected from which all organisms were removed. This process was repeated until 100 organisms were removed. The resulting subsample was used for all further processing.

Where possible, all organisms were identified to the genus level. Several metrics were then calculated:

- Metric 1. Taxonomic Richness  
This metric represents the total number of unique taxa in a sample. High taxonomic richness is indicative of areas with high water and habitat quality.
- Metric 2. EPT Richness  
The total number of unique taxa in the Ephemeroptera (mayfly), Plecoptera (stonefly), and Trichoptera (caddisfly) orders. Macroinvertebrates within these groups are generally intolerant of pollution and human disturbance, therefore a higher number of taxa present suggests better water quality.
- Metric 3. % EPT Abundance  
The percent of the organisms in a sample that are EPTs. See Metric 2 for additional comments.

- Metric 4. % Dominant Taxon  
The percent of the total abundance that is a single taxon. A community dominated by a single taxon indicates environmental stress.
- Metric 5. Hilsenhoff Biotic Index (HBI)  
Each genera is given a tolerance value (U.S. EPA 1990), which ranges from 0 – 10, increasing as water quality decreases. The tolerance value is incorporated into the following equation:

$$\text{HBI} = \sum x_i t_i / n$$

Where:

- $x_i$  = number of individuals within genera  $i$
- $t_i$  = tolerance value for genera  $i$
- $n$  = total number of organisms in the sample

Metric values increase as organic pollution increases.

- Metric 6. % Non-Insect  
This metric represents the percent of organisms that are not insects. Non-insects such as scuds, aquatic pillbugs, snails, worms, leeches and water mites are generally more pollution tolerant.

In summary, Metrics 1-3 tend to increase with increasing habitat and water quality, Metric 4 tends to increase as habitat and water quality decrease and Metrics 5 and 6 tend to increase as pollution increases.

### *Fish and Herpetofauna*

Sampling followed methods described in the U.S. EPA's Rapid Bioassessment V Protocols (RBPs) for fish (Plafkin et. al., 1989). These methods call for the sampling of 100-meter representative reaches of streams in the study area. Block nets were installed at the upstream and downstream end of each sampled reach. Two sampling runs were conducted for each reach using an electro-fisher. All species were identified and weighed before they were returned to the stream. Any specimens that were unidentifiable in the field were preserved and brought to the laboratory for positive identification. Fish were also examined for any anomalies such as external diseases and deformities. Any herpetofauna captured in the sampling runs were identified and recorded.

One reach of Windlass Run and one reach of Whitemarsh Run were completely sampled. Because of thick bank vegetation, an extremely soft stream bottom, and excessive surface leaf litter and detritus, a second section of Windlass Run was spot-sampled (no block nets were installed) and the remaining sample sites were not sampled at all.

Using the data gathered during the surveys, several metrics were calculated to describe fish diversity and abundance (Roth et. al., 1997), including:

- **Metric 1. Number of native species**  
Often referred to as species richness, lower numbers of species generally indicate environmental degradation.
- **Metric 2. Number of benthic species**  
Benthic fish species have specific requirements for reproducing and feeding on the stream bottom. Therefore, they are very sensitive to the quality of benthic habitats that become degraded through channelization, siltation, and reduction in dissolved oxygen.
- **Metric 3. Percent tolerant individuals**  
Intolerant species are those that become negatively affected by environmental degradation. Therefore, an increase in the percent of tolerant individuals may indicate an increase in habitat degradation or environmental stress.
- **Metric 4. Percent abundance of the dominant species**  
Dominant taxa (tolerant species) become more abundant with increasing habitat degradation.
- **Metric 5. Percent of individuals as generalists, omnivores, or invertivores**  
When stream degradation reduces the abundance and variety of prey items, generalist feeders may increase in numbers because they are more successful at foraging with a switching food base than are specialist feeders.
- **Metric 6. Percent of individuals as insectivores**  
Degraded streams will generally support fewer insects, thus reducing the food supply for insectivorous fish.
- **Metric 7. Abundance (number of individuals) per square meter**  
Degraded streams will generally support fewer individuals than less severely disturbed streams.
- **Metric 8. Biomass per square meter**  
As with abundance, biomass is expected to decrease in severely impacted streams.
- **Metric 9. Percent of individuals as lithophilic spawners**  
Lithophilic spawners use rocks, rubble or gravel substrates for egg deposition. Silt, a common stream pollutant in Maryland, can negatively affect egg deposition and reduce the number of lithophils.

Metrics were then used to determine the Index of Biotic Integrity (IBI) which has been developed for assessing stream fishes in the Coastal Plain of Maryland (Roth et al., 1997). The IBI provides a way of estimating the extent of stream degradation. Each metric is scored against

a criteria developed from regional Coastal Plain reference sites and is converted to a score of 1, 3, or 5. The average of these scores produced the overall IBI and ranges from 1-5. Table III-11 summarizes the interpretation for IBI scores.

**Table III-11: Interpretation for the Index of Biotic Integrity (IBI) Scores for Fishes in Maryland Streams.**

IBI	Integrity Class	Characteristics
1-2	Good	Decreased species richness, intolerant species in particular; sensitive species present
2-3	Fair	Intolerant and sensitive species absent; skewed trophic structure
3-4	Poor	Top carnivore and many expected species absent or rare; omnivores and tolerant species dominant
4-5	Very poor	Few species and individuals present; tolerant species dominant; diseased fish frequent

Sources: Roth et al., 1997; Plafkin et al., 1989

### *Water quality*

Water quality samples were taken at six stream reaches: four on Windlass Run and two on Whitemarsh Run. These samples were analyzed for the presence and amount of cadmium, lead, mercury, selenium, silver, zinc, and fecal coliforms. Several additional variables were measured in the field, including dissolved oxygen, conductivity, pH, and turbidity.

### (3) Results and Discussion

For clarity purposes, Aquatic Habitat, Benthic Macroinvertebrates, Fish and Herpetofauna, and Water Quality for Windlass and Whitemarsh Runs will be addressed separately.

#### (a) Windlass Run

##### *Aquatic Habitat*

A summary of the habitat assessment ratings for each sample site is shown in Table III-12. One sample site (H-2) was rated "fair", and the remainder (88%) were rated as either "good" or "excellent". Most of Windlass Run has a natural channel with frequent bends, a high diversity of in-stream habitats, few pools, stable banks dominated by shrubs and trees, a variety of shading conditions, and little evidence of human activity within 18 meters of the stream. H-2 was rated "fair" because it has a modified channel with no bends, a relative low diversity of in-stream habitats, moderately stable banks dominated by grasses and herbaceous plants and no evidence of human activity within 12 meters of the stream.

**Table III-12: Habitat assessment ratings for Windlass Run sample sites**

Sample site	Rating			
	Excellent	Good	Fair	Poor
H-1		X		
H-2			X	
H-3		X		
H-4	X			
H-5	X			
H-6	X			
H-7	X			
H-8	X			
H-9	X			

*Benthic Macroinvertebrates*

The four sample sites in Windlass Run varied in their macroinvertebrate composition and metric scores (Table III-13). Of these four sites, H-4 and H-7 received similar scores indicating relatively high stream quality with little pollution or human disturbances. Sites H-8 and H-9 received low scores for Taxonomic Richness, EPT Richness, % EPT and high scores for % Dominant Taxon, and HBI. Site H-9 received the highest score for % Non-Insect. The scores for H-8 and H-9 suggest relatively low water and habitat quality, and high environmental stress and pollution.

**Table III-13: Benthic Macroinvertebrate Metric Scores for Windlass Run.**

Biological Metric	Sample Site			
	H-4	H-7	H-8	H-9
Taxonomic Richness	13	16	8	5
EPT Richness	0	2	1	1
% EPT	0	4%	4%	1%
% Dominant Taxon	38%	22% <sup>a</sup>	50%	56%
HBI	5.2	5.3	6.7	5.8
% Non-Insect	76%	65%	76%	97%

<sup>a</sup> Dominant Taxon shared by *Asellus* sp. (22%) and *Synurella* sp. (22%)

*Fish and Herpetofauna*

Relatively few individuals representing a few different species were sampled from the two sites at Windlass Run (Table III-14). The majority of individuals sampled were American Eels (*Anguilla rostrata*). In addition, several amphibians were collected including 1 wood frog (*Rana sylvatica*), 16 green frogs (*Rana clamitans*) and 6 bullfrogs (*Rana catesbeiana*). Fish IBI scores were calculated for only site H-4 because insufficient data were available from the spot-sample at site H-7. Site H-4 received an overall IBI score of 3.25 placing it in the "fair" class (Table III-15). This suggests that intolerant and sensitive species are absent from this stream; their absence indicates moderate stream degradation.

**Table III-14: Summary of the fish species collected for Windlass Run.**

Taxa		Sample Site	
Common name	Scientific name	H-4	H-7*
Spottail Shiner	<i>Notropis hudsonius</i>	-	-
Striped Shiner	<i>Luxilus chrysocephalus</i>	-	-
Comely Shiner	<i>Notropis amoenus</i>	-	-
Banded Killifish	<i>Fundulus diaphanus</i>	-	-
Tessolated Darter	<i>Etheostoma olmstedi</i>	7	-
Glassy Darter	<i>Etheostoma vitreum</i>	1	-
American Eel	<i>Anguilla rostrata</i>	23	6
Brown Bullhead	<i>Ameiurus nebulosus</i>	-	-
Mosquitofish	<i>Gambusia affinis</i>	-	-
Mummichog	<i>Fundulus heteroclitus</i>	-	-
Pumpkinseed	<i>Lepomis gibbosus</i>	-	-
Green Sunfish	<i>Lepomis cyanellus</i>	-	-
Bluespotted Sunfish	<i>Enneacanthus obesus</i>	4	-
Chain Pickerel	<i>Esox niger</i>	1	-
Redfin Pickerel	<i>Esox americanus</i>	3	3
Eastern Mudminnow	<i>Umbra limi</i>	2	2
White Perch	<i>Morone americana</i>	-	-
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	-	-
Northern Hog Sucker	<i>Hypentelium nigricans</i>	2	-
Total number of species		8	3
Total number of individuals		43	11

\* not a complete sample

**Table III-15: Fish Index of Biotic Integrity (IBI) Scores for Windlass Run.**

IBI Metric	Sample Site
	H-4
No. of native species	5
No. of benthic species	3
% Tolerant individuals	3
% Abundance of dominant species	3
% Generalists, omnivores and invertivores	3
Abundance (No. of individuals/m <sup>2</sup> )	3
Biomass (g/m <sup>2</sup> )	1
% Lithophilic spawners	5
IBI Score	3.25

### Water Quality

Toxic substances including cadmium, lead, mercury, selenium, silver, and zinc did not exceed Maryland Department of the Environment (MDE) criteria for aquatic life. (Table III-16). Water was slightly acidic; field pH sampled in all sites at Windlass Run were below the accepted criterion of pH = 6.5 (Table III-17). Two of the four sites had dissolved oxygen below the 5



mg/l minimum acceptable value set forth for Use I waters. Turbidity and fecal coliforms met MDE criteria except for H-8 which had fecal coliforms slightly above the accepted value.

**Table III-16: Comparison of Windlass Run samples with MDE Toxic Substance Criteria<sup>b</sup>**

Compound	Toxic substances Criteria <sup>a</sup>		Windlass Run			
	Acute	Chronic	H-4	H-7	H-8	H-9
Cadmium	3.9	1.1	<1	1	2	2.7
Lead	82	3.2	<5	<5	9	<5
Mercury	2.4	0.012	<0.5	<0.5	<0.5	<0.5
Selenium	20	5	<5	<5	<5	<5
Silver	4.1	0.12	<1	2	<1	<1
Zinc	120	110	9	10	60	30

<sup>a</sup> Source: Maryland Department of the Environment, 1993

<sup>b</sup> Toxic substances criteria are for aquatic life in fresh water. Criteria and sample test values are represented in micrograms per liter (µg/l).

**Table III-17: Comparison of Windlass Run samples with MDE Water Quality Criteria for Use I waters.**

Parameter	Criteria <sup>a</sup>	Windlass Run			
		H-4	H-7	H-8	H-9
Fecal coliforms	200/100 ml	90	40	230	<30
pH	6.5 < x < 8.5	6.15	6.28	5.71	5.69
Turbidity	< 150 units	5	3	3	18
Dissolved O <sub>2</sub>	> 5 mg/l	5.07	5.44	0.93	2.85

<sup>a</sup>Source: Maryland Department of the Environment, 1993

(b) Whitemarsh Run

*Aquatic Habitat*

The habitat assessment for WM-1 indicated that habitat at this site was classified overall as "Good". This type of habitat has a natural channel that is mostly straight with low sinuosity. The site was rated excellent with regard to its natural channel characteristics and shading. It rated good for the presence of pools and stability of its banks and fair for bank vegetation and riparian width. The in-stream habitat was rated poor. The bottom was soft with some snags and vegetated banks that provided the in-stream habitat. However, coverage of these features was less than 50%.

Site WM-2 overall habitat assessment was also classified as "Good". This site rated excellent for natural channel characteristics, the presence of pools and for shading. In-stream habitat, bank vegetation and the riparian zone width were all rated as good. The only poor rating was for bank stability which indicated very unstable banks and many eroded areas.

*Benthic Macroinvertebrates*

WM-1 and WM-2 differed in their macroinvertebrate composition. Table III-18 provides the macroinvertebrate metrics calculated for each site. WM-2 had nearly twice the number of taxa of WM-1. The community composition at WM-2 included Ephemeroptera (Baetidae) and Trichoptera (Hydropsychidae). The Hydropsychidae included two genera, *Hydropsyche* sp. and *Cheumatopsyche* sp. The genus *Hydropsyche* sp. made up the dominant taxon. There was also a non-insect component which included amphipods and gastropods. WM-1 only had eight taxa, three of which were in the order Odonata with *Argia* sp. making up the dominant taxon. Ephemeroptera, Plecoptera, and Trichoptera were not present.

The HBI index for WM-1 and WM-2 were 7.6 and 5.3, respectively. Based on Hilsenhoff's (1988) classification this indicates that the water quality at WM-1 is very poor and at WM-2 it is fair. The HBI index is an indicator of water quality degradation due to organic pollution. The conditions at each site; low gradient, low flow, and poor in-stream habitat may partially explain the lower taxonomic diversity at this site and the types of species found there.

**Table III-18: Benthic Macroinvertebrate Metric Scores for Whitemarsh Run**

Biological Metric	Sample site	
	WM-1	WM-2
Taxonomic Richness	8	15
EPT Richness	0	3
% EPT	0	53%
% Dominant Taxon	48%	45%
HBI	7.6	5.3
% Non-Insect	0	6.30%

*Fish and Herpetofauna*

Fish collections at sample site WM-1 at Whitemarsh Run yielded the highest number of individuals (Table III-19). In addition, Whitemarsh Run had almost twice as many species of fish present as Windlass Run. A summary of the number of fishes collected within each species is shown in Table III-19. In addition, one green frog (*Rana clamitans*) was collected. Overall fish IBI scores were of 3.25 placing it in the "fair" class. This suggests that intolerant and sensitive species are absent from this stream; their absence indicates moderate stream degradation (Table III-20).

**Table III-19: Summary of the fish species collected for Whitemarsh Run.**

Taxa		Sample site
Common name	Scientific name	WM-1
Spottail Shiner	<i>Notropis hudsonius</i>	151
Striped Shiner	<i>Luxilus chrysocephalus</i>	48
Comely Shiner	<i>Notropis amoenus</i>	3
Banded Killifish	<i>Fundulus diaphanus</i>	2
Tessolated Darter	<i>Etheostoma olmstedii</i>	12
Glassy Darter	<i>Etheostoma vitreum</i>	-
American Eel	<i>Anguilla rostrata</i>	16
Brown Bullhead	<i>Ameiurus nebulosus</i>	1
Mosquitofish	<i>Gambusia affinis</i>	73
Mummichog	<i>Fundulus heteroclitus</i>	2
Pumpkinseed	<i>Lepomis gibbosus</i>	7
Green Sunfish	<i>Lepomis cyanellus</i>	2
Bluespotted Sunfish	<i>Enneacanthus obesus</i>	10
Chain Pickerel	<i>Esox niger</i>	-
Redfin Pickerel	<i>Esox americanus</i>	-
Eastern Mudminnow	<i>Umbra limi</i>	-
White Perch	<i>Morone americana</i>	1
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	3
Northern Hog Sucker	<i>Hypentelium nigricans</i>	1
Total number of species		15
Total number of individuals		331

**Table III-20: Fish Index of Biotic Integrity (IBI) Scores for Whitemarsh Run.**

IBI Metric	Sample site
No. of native species	5
No. of benthic species	1
% Tolerant individuals	5
% Abundance of dominant species	3
% Generalists, omnivores and invertivores	1
Abundance (No. of individuals/m <sup>2</sup> )	5
Biomass (g/m <sup>2</sup> )	1
% Lithophilic spawners	5
IBI Score	3.25

### Water Quality

Water quality at both sites (WM-1 and WM-2) was similar. Constituents did not exceed MDE criteria for aquatic life. (Table III-21). Heavy metals were at or below the detection limits with the exception of copper at WM-1 and zinc at WM-2. However, these metals were less than the acute and chronic criteria for aquatic life. Field pH sampled at WM-1 was 6.69, slightly less than circumneutral indicating a buffered system. Dissolved oxygen for both sites WM-1 and WM-2 was, 7.1 mg/l and 5.07 mg/l, respectively, and was greater than the required 5 mg/l for

Use I waters. Although fecal coliforms were present at both sites, they did not exceed the recommended density of 200/100 ml (Table III-22).

**Table III-21: Comparison of Whitemarsh Run samples with MDE Toxic Substance Criteria<sup>b</sup>**

Compound	Toxic substances criteria <sup>a</sup>		Whitemarsh Run	
	Acute	Chronic	WM-1	WM-2
Cadmium	3.9	1.1	<0.5	<0.5
Lead	82	3.2	<5	<5
Mercury	2.4	0.012	<0.5	<0.5
Selenium	20	5	<5	<5
Silver	4.1	0.12	<1	<1
Zinc	120	110	10	20

<sup>a</sup>Source: Maryland Department of the Environment, 1993

<sup>b</sup>Toxic substances criteria are for aquatic life in fresh water. Criteria and sample test values are represented in micrograms per liter (µg/l).

**Table III-22: Comparison of Whitemarsh Run samples with MDE Water Quality Criteria for Use I Waters**

Parameter	Criteria <sup>a</sup>	Whitemarsh Run	
		WM-1	WM-2
Fecal coliforms	200/100 ml	90	90
PH	6.5 < x < 8.5	6.69	6.15
Turbidity	< 150 units	12	5
Dissolved O <sub>2</sub>	> 5 mg/l	7.1	5.07

<sup>a</sup>Source: Maryland Department of the Environment, 1993

## 2. Wild and Scenic Rivers

There are no Federal or State Wild and Scenic Rivers within the study area.

## G. Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) there are three designated 100-year floodplains within the study area. Floodplains in the study area are associated with Whitemarsh Run, Windlass Run and tributaries of Saltpeter Creek.

Floodplains provide unique environments for various species of plants and animals, and serve as a channel for excess drainage in times of flood. Floodplains are usually associated with wetlands, but can extend beyond designated wetland areas. Soils associated with floodplains usually consist of silty sands and clays that are rich in nutrients and are well suited for some types of agriculture.

The floodplain for Whitemarsh Run (100-year) is the widest in the study area, ranging from 300 to over 1000 feet wide. The floodplain associated with Windlass Run (100-year) bisects the study area and averages approximately 150 feet in width. Floodplains associated with a tributary

of Saltpeter Creek are located in the southeast portion of the study area and range in width from 100 to 400 feet in width throughout the study area.

## H. Chesapeake Bay Critical Area

The Chesapeake Bay Critical Area Law of 1984 regulates land use activities within a 1,000-foot strip of land along tidal waters. The law requires local governments to develop and implement a management plan for protection of tidal waters, riparian habitat, and wetlands that are immediately adjacent to tidal waters. The management plan must include certain elements specified in the Critical Area Law. Baltimore County has the responsibility for managing the critical areas associated with the MRECAS. As shown in Figure III-10, the Critical Area skirts the eastern side of the study area.

## I. Wetlands

### 1. Methodology

Wetlands were identified in accordance with the *Corps of Engineers Wetland Delineation Manual, (Environmental Laboratory, Technical Report Y-87-1)* (ACOE 1987), and supplemental guidance papers issued by the Corps of Engineers, the Natural Resources Conservation Service, and the US Fish and Wildlife Service. This method requires, under normal circumstances, positive field identification of three parameters: wetland hydrology, hydric soils, and hydrophytic vegetation.

Wetland areas were evaluated in a study area that consists of five 400-1000 foot corridors crossing between Eastern Avenue and Pulaski Highway (200-500 feet on either side of a center line) (see Figures 1 through 10 in Appendix B). The 400-foot corridor was used in most areas, however, at Windlass Run a 1000-foot corridor was established, and at the railroad tracks near Eastern Avenue a 500-foot corridor was established.

Wetlands in the study area were classified according to the Cowardin System, as described in *A Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Vegetation in and near wetland areas was identified using several guides, including *Woody Plants of Maryland* (Brown and Brown 1972), *Herbaceous Plants of Maryland* (Brown and Brown 1984), and *Aquatic and Wetland Plants of Southeastern United States: Monocots and Dicots* (Godfrey and Wooten 1979, 1981). The wetland indicator status of observed vegetation was determined using the *National List of Plant Species that Occur in Wetlands: Northeast (Region 1)* (US Fish and Wildlife Service 1988, Resource Management Group 1992). Soil colors were determined in the field using *Munsell Soil Color Charts* (Macbeth 1994).



Before the field delineation was conducted, potential wetland areas were identified using delineation mapping from previous studies conducted in the same study area; National Wetland Inventory (NWI) maps created by the US Fish and Wildlife Service; Soil Survey maps for Baltimore County, Maryland prepared by the Natural Resources Conservation Service (formerly the Soil Conservation Service) (SCS 1976); and topographic maps (scale: 1" = 200') prepared by the Maryland State Highway Administration. Preliminary wetlands were identified in areas with hydric soils, near watercourses, and in topographic depressions.

Field investigation of wetlands was conducted between October 1998 and January 1999. Boundaries of wetlands in the study area were flagged using pink ribbon labeled "SHA Wetland" for verification by the Corps of Engineers. A latitude/longitude position was acquired for each flag using a Trimble® Global Positioning System (GPS) receiver and subsequently incorporated into the project plans. The Jurisdictional Determination was completed by the Corps of Engineers in January, 1998.

## 2. Wetland Functions

As agreed upon by SHA, ACOE, and MDE, wetland functions were assessed using the Evaluation for Planned Wetlands (EPW) method (Bartoldus et al. 1994). Three functions were analyzed using this method: Wildlife, Sediment Stabilization, and Water Quality.

The Wildlife (WL) function considers the capacity of a wetland to provide food, shelter, and nesting habitat for animal species. It refers to the interaction between habitat complexity and wildlife diversity and/or abundance. In general, it is assumed that wetlands with high habitat complexity, both vertical and horizontal, will attract more wildlife species and be able to support larger wildlife populations however, it is not a direct measure of wildlife use or abundance.

The Sediment Stabilization (SS) function examines the wetland's ability to retain previously deposited sediments. It refers to the interactions between stable substrate, hydrologic flow, erosion control, and nutrient retention. Wetlands with a high sediment stabilization capacity will generally control erosion and nutrient run-off more effectively than those with a low sediment stabilization capacity. The methodology does not however examine sources of sediment for the wetland.

Water Quality (WQ) is closely related to Sediment Stabilization, but instead looks at the wetland's capacity to retain suspended and dissolved particles. This directly relates to the interaction between the wetland and downstream surface water quality. The higher the water quality capacity, the better the wetland acts as a hydrologic filter for nutrients, toxic chemicals, and suspended soil. The methodology does not however examine sources of pollution within the wetland's watershed and only examines wetlands with direct downstream surface water connections.

The EPW method uses a series of ecological elements to calculate an overall rating of each function. Reviewers assess each function by examining relevant elements. For each element a condition is selected that best describes the form the element takes in the wetland. These conditions correspond to a score ranging from 0.1 to 1.0, with a score of 1.0 implying the

greatest potential to increase the functional capacity of the wetland. Conversely, a low score indicates that this element probably does not increase the functional capacity of the wetland. Scores of "NA" indicate that the condition is not applicable.

The element scores are used in a series of formulas that yield an overall Functional Capacity Index (FCI). This index is multiplied by the impacted area of the wetland to calculate the number of Functional Capacity Units (FCU). The FCUs serve as a base unit for comparing function differences between different wetlands and time periods. The final objective is to plan wetlands that will exhibit similar functional capacities to existing wetlands, both qualitatively and quantitatively.

For this study, teams of two to four trained scientists agreed upon the condition of each element for the existing field-delineated wetlands. The evaluation incorporated the entire area of the wetland, including portions that may have extended beyond the right-of-way limits of the build alternatives. Corresponding scores for each element condition were recorded on data sheets. Following the initial assessment, SHA, ACOE, and MDE reviewed element scores for twelve representative wetlands. All of the wetlands were then sorted according to the reference wetlands. Element scores for all wetlands were reevaluated and adjusted based on any changes made during the review. These element scores were approved by SHA, ACOE, and MDE. An FCI was then calculated for each function using the method outlined by Bartoldus et al. (1994).

The wetlands in the study area can be described as Palustrine Forested (PFO), Palustrine Scrub-Shrub (PSS), or Palustrine Emergent (PEM) using the wetland classification system described by Cowardin et al. (1979). EPW does not compare FCIs or FCUs between different wetland classes. Thus, all wetland areas were grouped according to class for the functional assessment. In addition, the Water Quality FCI could not be calculated for any wetland that is isolated, because conditions in these wetlands do not directly effect downstream surface water quality. However, element scores for Water Quality were obtained in order to make comparisons with other wetlands and for eventual mitigation purposes. For more information, refer to the EPW manual by Environmental Concern, Inc. (Bartoldus et al. 1994).

### 3. Identification and Delineation

Observations of hydrology, soils, and vegetation were made in each of the 74 wetlands and at neighboring upland sites to characterize the study area and confirm wetland boundaries. The field data from these observation points are included in the Natural Environmental Technical Report.

The wetlands in the study area lie in four drainage systems. Of the number of wetlands studied, there are fourteen wetlands in the Whitmarsh Run watershed, thirty-one in the Windlass Run watershed, twenty in the Saltpeter Creek drainage, and nine in the Frog Mortar Creek drainage. Figure III-9 shows the location of drainage divides within the study area. Waters from Whitmarsh Run and Windlass Run flow into the Bird River before entering the Gunpowder River; Saltpeter Creek empties directly into the Gunpowder River; and Frog Mortar Creek flows into the Middle River. All wetlands within the study area are included within the Chesapeake Bay drainage system.



The majority of wetlands in the study area are classified as palustrine forested (PFO), but some are palustrine scrub-shrub (PSS) and palustrine emergent (PEM). A description of each delineated wetland is provided below. Wetland functions were analyzed using the Evaluation for Planned Wetlands (EPW) method (Batoldus et al. 1994). Functional Capacity Indices (FCI), which were calculated to describe wetland functions, are explained in Section III.I.2. The total area of each wetland in the study area and results of the EPW assessment are in Table III-23.

This methodology does not examine the opportunity of a wetland to perform the assessed functions based upon its location in the wetland system. For example, wetlands along Windlass Run's mainstem will be able to perform its function in receiving runoff from drainage areas better than those wetlands at headwaters and more isolated upland wetlands.

**Table III-23: Area and Functional Capacity Index (FCI) Scores for Wetlands in Study Area**

Wetland Number	Watershed	Wetland Class <sup>1</sup>	Wetland Area (ac)	WL <sup>1</sup> FCI <sup>2</sup>	SS <sup>1</sup> FCI <sup>2</sup>	WQ <sup>1</sup> FCI <sup>2</sup>
D W1	Whitemarsh	PSS	0.033	0.31	0.76	0.63
D W1	Whitemarsh	PEM	0.080	0.31	0.76	0.63
D W1	Whitemarsh	<b>Total</b>	0.113	N/A	N/A	N/A
D W1A	Whitemarsh	PEM	0.02	0.21	1.00	N/A
D W1B*	Whitemarsh	PFO	0.11	0.33	0.90	0.89
D W1B*	Whitemarsh	PEM	0.13	0.33	0.90	0.89
D W1B*	Whitemarsh	<b>Total</b>	0.24	N/A	N/A	N/A
D W2	Whitemarsh	PEM	0.136	0.27	0.53	N/A
D W2A	Whitemarsh	PEM	0.039	0.27	0.53	N/A
D W2B	Whitemarsh	PFO	0.164	0.41	0.76	0.75
D W3	Whitemarsh	PEM	0.020	0.48	0.15	0.58
D W4	Whitemarsh	PSS	0.047	0.33	0.55	0.7
DW4A	Whitemarsh	PSS	0.086	0.39	0.69	0.75
D W5	Whitemarsh	PSS	0.015	0.26	0.7	N/A
D W6*	Whitemarsh	PFO	1.029	0.28	0.81	0.65
D W6*	Whitemarsh	PEM	0.806	0.28	0.81	0.65
D W6*	Whitemarsh	<b>Total</b>	1.835	N/A	N/A	N/A
D W6A*	Whitemarsh	PSS	0.094	0.5	0.76	0.75
D W6A*	Whitemarsh	PEM	0.080	0.5	0.76	0.75
D W6A*	Whitemarsh	<b>Total</b>	0.174	N/A	N/A	N/A
D W6B	Whitemarsh	PEM	0.013	0.32	0.88	N/A
D W7	Whitemarsh	PSS	0.036	0.22	0.95	0.98
D W8*	Whitemarsh	PEM	0.220	0.43	0.77	0.78
D W97*	Whitemarsh	PFO	12.105	0.74	0.82	0.83
D W100	Windlass	PFO	0.254	0.48	0.76	0.75
D-mod W1	Frog Mortar	PEM	0.007	0.15	0.76	N/A

Wetland Number	Watershed	Wetland Class <sup>1</sup>	Wetland Area (ac)	WL <sup>1</sup> FCI <sup>2</sup>	SS <sup>1</sup> FCI <sup>2</sup>	WQ <sup>1</sup> FCI <sup>2</sup>
D-mod W2*	Frog Mortar	PFO	5.203	0.5	0.76	0.75
D-mod W2A	Frog Mortar	PFO	0.406	0.4	0.76	N/A
D-mod W3	Frog Mortar	PFO	0.040	0.41	0.76	0.75
D-mod W4*	Frog Mortar	PFO	1.277	0.5	0.76	0.75
D-mod W4*	Frog Mortar	PEM	0.018	0.5	0.76	0.75
D-mod W4*	Frog Mortar	Total	1.295	N/A	N/A	N/A
D-mod W5*	Frog Mortar	PFO	4.999	0.48	0.76	0.75
D-mod W5A	Frog Mortar	PFO	0.485	0.47	0.61	N/A
D-mod W6*	Windlass	PFO	2.388	0.5	0.76	0.75
D-mod W7	Frog Mortar	PFO	0.279	0.47	0.76	N/A
D-mod W8	Frog Mortar	PFO	0.077	0.46	0.76	N/A
D-mod W9*	Saltpeter	PFO	3.292	0.5	0.76	N/A
D-mod W10	Saltpeter	PFO	0.736	0.48	0.76	N/A
D-mod W11*	Windlass	PFO	0.863	0.5	0.76	0.75
D-mod W12	Windlass	PFO	0.092	0.48	0.76	N/A
D-mod W13*	Windlass	PFO	2.042	0.55	0.76	0.49
D-mod W13A*	Windlass	PFO	0.674	0.51	0.76	0.75
D-mod W14	Windlass	PFO	1.504	0.52	0.76	0.75
D-mod W15*	Windlass	PFO	0.277	0.54	0.76	0.65
D-mod W15A*	Windlass	PFO	0.27	0.54	0.76	0.65
D-mod W15A*	Windlass	PEM	0.03	0.54	0.76	0.65
D-mod W15A*	Windlass	Total	0.30	N/A	N/A	N/A
D-mod W15B	Windlass	WUS	170 LF	N/A	N/A	N/A
D-mod W16	Windlass	PFO	0.008	0.38	0.76	0.75
D-mod W17	Windlass	PFO	0.052	0.38	0.76	0.75
E W1*	Saltpeter	PFO	0.343	0.53	0.76	N/A
E W2	Saltpeter	PFO	0.096	0.48	0.76	N/A
E W3	Saltpeter	PFO	0.219	0.28	0.79	N/A
E W4	Saltpeter	PFO	0.159	0.4	0.76	N/A
E W5	Saltpeter	PFO	0.008	0.46	0.76	N/A
E W6*	Saltpeter	PFO	0.368	0.45	0.76	N/A
E W7*	Saltpeter	PFO	1.746	0.56	0.81	0.68
E W8	Saltpeter	PFO	0.627	0.56	0.76	N/A
E W9	Windlass	PFO	0.704	0.49	0.76	N/A
E W10*	Windlass	PFO	0.657	0.51	0.81	0.71
E W11*	Windlass	PFO	12.228	0.7	0.82	0.71
F-mod W1A	Whitemarsh	PEM	0.149	0.15	0.95	0.86

Wetland Number	Watershed	Wetland Class <sup>1</sup>	Wetland Area (ac)	WL <sup>1</sup> FCI <sup>2</sup>	SS <sup>1</sup> FCI <sup>2</sup>	WQ <sup>1</sup> FCI <sup>2</sup>
F-mod W1B*	Whitemarsh	PFO	1.732	0.8	0.57	0.67
F-mod W2	Whitemarsh	PFO	0.086	0.21	0.79	0.69
F-mod W2A	Whitemarsh	PEM	0.038	0.49	0.8	N/A
F-mod W3	Whitemarsh	PFO	0.144	0.21	0.79	0.69
F-mod W4*	Windlass	PFO	0.681	0.46	0.75	0.77
F-mod W4*	Windlass	PSS	0.128	0.46	0.75	0.77
F-mod W4*	Windlass	PEM	0.119	0.46	0.75	0.77
F-mod W4*	Windlass	<b>Total</b>	0.928	N/A	N/A	N/A
F <sub>1</sub> -mod W4A	Windlass	PEM	0.084	0.12	0.73	N/A
F <sub>1</sub> -mod W4B	Windlass	PEM	0.280	0.12	0.75	N/A
F <sub>1</sub> -mod W4C	Windlass	PEM	0.136	0.23	0.98	0.54
F <sub>1</sub> -mod W5*	Windlass	PFO	10.820	0.56	0.84	0.69
F <sub>1</sub> -mod W5A*	Windlass	PFO	0.107	0.49	0.76	0.75
F <sub>1</sub> -mod W5B*	Windlass	PFO	1.149	0.49	0.76	0.66
F <sub>1</sub> -mod W6	Windlass	PFO	0.542	0.36	0.76	N/A
Eastern W1*	Salt peter	PFO	0.145	0.53	0.76	0.51
I-mod WA	Salt peter	PFO	0.341	0.3	0.76	N/A
I-mod WB	Salt peter	PFO	1.546	0.44	0.76	N/A
I-mod WB	Salt peter	PEM	0.143	0.44	0.76	N/A
I-mod WB	Salt peter	<b>Total</b>	1.689	N/A	N/A	N/A
I-mod W1*	Salt peter	PFO	0.973	0.42	0.76	0.69
I-mod W2	Salt peter	PFO	0.058	0.42	0.76	0.64
I-mod W3*	Salt peter	PFO	1.951	0.56	0.76	0.56
I-mod W3A	Salt peter	PFO	1.090	0.49	0.76	N/A
I-mod W3B*	Salt peter	PFO	1.197	0.51	0.76	0.75
I-mod W4*	Salt peter	PFO	2.126	0.49	0.76	0.75
I-mod W5*	Salt peter	PFO	1.001	0.49	0.76	0.75
I-mod W6*	Windlass	PFO	1.858	0.49	0.76	0.75
I-mod W7*	Windlass	PEM	0.398	0.16	0.7	N/A
I-mod W8*	Windlass	PFO	1.154	0.51	0.76	N/A
I-mod W9*	Windlass	PFO	0.950	0.49	0.76	0.75
I-mod W10	Windlass	PFO	0.752	0.49	0.76	0.75
I-mod W11	Windlass	PFO	0.276	0.48	0.76	0.75
I-mod W12*	Windlass	PFO	9.998	0.56	0.76	0.51

\*These wetlands extend beyond the study area. Listed acreage only includes the area within study limits.

<sup>1</sup>Definition of terms: PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent wetland; WUS=Waters of the U.S.; WL = wildlife; SS = sediment stabilization; WQ = water quality

<sup>2</sup>The Functional Capacity Index measures the functionality of a site, where 0 represents no functional capacity and 1.0 represents optimal.

#### *Wetland D 1*

This wetland is classified as palustrine scrub-shrub and is located on a small hillside behind several residences and adjacent to a power line right-of-way. The area is the headwater for a small ephemeral channel that flows into a larger ditch before crossing under the power line right-of-way. Vegetation in this wetland includes red maple (*Acer rubrum*), river birch (*Betula nigra*), red-osier dogwood (*Cornus stolonifera*), and Japanese honeysuckle (*Lonicera japonica*). The soils at this site showed hydric characteristics with low chroma colors above 10 inches and distinct mottling. Oxidized root channels were present above 10 inches, showing evidence of periodic flooding. The wetland has a Wildlife FCI of 0.31, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland lies within the Whitemarsh Run drainage area.

#### *Wetland D 1A*

The wetland along the cattail ditch, north of the BGE entrance road, was flagged as DW1A. The dominant plant is cattail, (*Typha latifolia*), and reducing conditions were present. The source of hydrology is effluent from the septic field, therefore no examination was done of the soil. The ditch was flowing the day of the field review. The wetland has a Wildlife FCI of 0.21, a Sediment Stabilization FCI of 1.00, and a Water Quality FCI of NA.

#### *Wetland D 1B*

The wetland south of the BGE entrance road was flagged as DW1B. Along the road, the wetland is palustrine emergent, with the palustrine forested portion of the wetland within the woods. We flagged the entire limits of the wetland, however it flows into a stream outside of the study area. Dominant plants include black willow (*Salix nigra*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), elderberry (*Sambucus canadensis*), jewelweed (*Impatiens capensis*), horsetail (*Equisetum arvense*), and yellow rocket (*Barbarea vulgaris*). Wetland hydrology indicators include inundation or saturation, and drainage patterns. Hydric soil indicators include reducing conditions and low-chroma colors. The wetland has a Wildlife FCI of 0.33, a Sediment Stabilization FCI of 0.90, and a Water Quality FCI of 0.89.

#### *Wetlands D 2, D 2A*

D 2 and D 2A are small palustrine emergent wetlands in a depression adjacent to a power substation. Vegetation consists of soft rush (*Juncus effusus*), wool-grass (*Scirpus cyperinus*), and common cat-tail (*Typha latifolia*). The soils are strongly gleyed below three inches and contain some mottling. The entire area was inundated by shallow surface water and oxidized root channels were common throughout the soil profile. The wetland has a Wildlife FCI of 0.27, a Sediment Stabilization FCI of 0.53, and a Water Quality FCI of NA. Wetlands D2 and D2A are within the Whitemarsh Run drainage basin, but they lie in an isolated depression with no surface water outlet.

#### *Wetland D 2B*

This wetland is a palustrine forested wetland that lies in a headwater area for a shallow swale. The vegetation is dominated by facultative species, including red maple (*Acer rubrum*) and common greenbriar (*Smilax rotundifolia*), as well as American holly (*Ilex opaca*). The soil profile for this wetland is strongly hydric, with low chroma colors in the upper B horizon and bright mottling. There were few indicators of hydrology, except for the topographic position of

the area. The wetland has a Wildlife FCI of 0.41, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. Water from wetland D2B eventually flows into Whitemarsh Run.

#### *Wetland D 3*

Wetland D 3 is a very small depression located in an abandoned sand pit adjacent to Whitemarsh Run. The site is significantly disturbed from former mining operations. The wetland itself lies between two commonly used all-terrain vehicle trails that block an ephemeral channel; the trails create ponding conditions that allow for a palustrine emergent community. Vegetation primarily consists of black willow (*Salix nigra*), soft rush (*Juncus effusus*), and common cat-tail (*Typha latifolia*). Soils consist of sand that does not show any horizon development. The site was inundated with 3 inches of water when the wetland was evaluated. The wetland has a Wildlife FCI of 0.48, a Sediment Stabilization FCI of 0.15, and a Water Quality FCI of 0.58. This wetland is located within the Whitemarsh drainage area.

#### *Wetland D 4*

This wetland is located within the same abandoned sand pit as wetland D 3. The community is classified as palustrine scrub-shrub. Common plant species include woolgrass (*Scirpus cyperinus*), deertongue (*Dichantheleum clandestinum*), multiflora rose (*Rosa multiflora*), and black willow (*Salix nigra*). Soils are a poorly developed sand, with only one horizon that extends to at least 12 inches below the surface. The wetland is a headwater area for a deeply incised ephemeral channel that flows into Whitemarsh Run. Other hydrology indicators include oxidized root channels and soil saturation 12 inches below the soil surface. The wetland has a Wildlife FCI of 0.33, a Sediment Stabilization FCI of 0.55, and a Water Quality FCI of 0.7. Water from wetland D4 flows into Whitemarsh Run.

#### *Wetland D 4A*

Wetland D 4A is a depression located within the sand pit. It is a palustrine forested wetland exhibiting some vernal pool characteristics. There is a very limited herbaceous layer, and the soil surface has been rutted by all-terrain vehicles. The vegetation consists of river birch (*Betula nigra*), black willow (*Salix nigra*), Red Osier dogwood (*Cornus stolonifera*), and some moneywort (*Lysimachia nummularia*). The soil profile contains low chroma colors to a depth of 24 inches with distinct mottling, and a shallow disturbed horizon on the surface. There are water-stained leaves, sediment deposits, and oxidized root channels in this wetland, all of which strongly indicate periodic flooding. The wetland has a Wildlife FCI of 0.39, a Sediment Stabilization FCI of 0.69, and a Water Quality FCI of 0.75. This wetland is located in the Whitemarsh Run drainage area, however, there is no surface water outlet.

#### *Wetland D 5*

This wetland is also in the abandoned sand pit near Whitemarsh Run. It lies in a small depression composed of palustrine forested vegetation. The site exhibits vernal pool characteristics, such as limited herbaceous and shrub layers. The most prominent vegetation grows on the edge of the wetland and consists of river birch (*Betula nigra*), red maple (*Acer rubrum*), and red-osier dogwood (*Cornus stolonifera*). The soils are a consistent, disturbed silty clay loam to 20 inches below the surface, with a relatively bright chroma of 3. Hydrology indicators include water-stained leaves, saturation at 12 inches, and oxidized root channels. Although the soil has high chroma values, it was assumed to be hydric because of strong

hydrologic indicators. It is expected that, given time, the soils will show hydric characteristics. The wetland has a Wildlife FCI of 0.26, a Sediment Stabilization FCI of 0.7, and a Water Quality FCI of NA. This wetland is located in the Whitemarsh Run drainage area; it lies in an isolated depression that has no surface water outlet.

#### *Wetland D 6*

Wetland D 6 is a palustrine scrub-shrub wetland, located in a depression next to an embankment for the existing MD 43 – US 40 interchange ramp. Water that collects in this wetland eventually drains along a shallow ditch, empties into a persistent channel and eventually enters Whitemarsh Run. The vegetation consists of a number of co-dominant species, primarily in the herbaceous and scrub-shrub layers: common reed (*Phragmites australis*), soft rush (*Juncus effusus*), agrimony (*Agrimonia parviflora*), silky dogwood (*Cornus amomum*), and multiflora rose (*Rosa multiflora*). The soil profile shows a color chroma of 2 just below the A horizon, with very bright, common mottles. Water-stained leaves and drainage patterns indicate the hydrology of the wetland, and there are also some small hummocks scattered throughout the site. The wetland has a Wildlife FCI of 0.28, a Sediment Stabilization FCI of 0.81, and a Water Quality FCI of NA. This wetland is within the Whitemarsh Run drainage. It extends beyond the study area corridor to the southwest and the entire wetland area is greater than one acre.

#### *Wetland D 6A*

This wetland lies adjacent to US 40. The wetland begins in a drainage ditch for the road before spreading into a larger headwater area. It empties into a large pond (outside the study area) which drains into Whitemarsh Run. The wetland is divided among two distinct classes: palustrine scrub-shrub, which lies next to the road, and palustrine emergent, which dominates the headwater area. The vegetation consists of black willow (*Salix nigra*), green ash (*Fraxinus pennsylvanica*), eastern cottonwood (*Populus deltoides*), multiflora rose (*Rosa multiflora*), and common reed (*Phragmites australis*). The soils are slightly disturbed, perhaps from the construction of US 40. The A horizon has a dark gray color (10YR 2/1), and the B horizons are a lighter gray (10YR 6/2, 10YR 5/2). Mottles begin to occur 3 inches below the soil surface and are generally a pale orange color (10YR 4/6, 10YR 5/6, and 10YR 5/4). Hydrology indicators at this site include drainage patterns and the FAC-neutral test. The wetland has a Wildlife FCI of 0.5, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. It extends beyond the study area corridor to the southwest and the entire wetland area is approximately one acre.

#### *Wetland D 6B*

This wetland is a very small isolated depression that lies immediately adjacent to US 40. It is classified as palustrine emergent, with the vegetation dominated by soft rush (*Juncus effusus*), common reed (*Phragmites australis*), tall fescue (*Festuca arundinacea*), and chinese elm (*Ulmus parvifolia*). The soils consist of a disturbed A horizon (10YR 4/3) and two B horizons, with colors of 10YR 3/2 and 10YR 6/1, respectively. Mottles are found in both B horizons and have colors of 10YR 5/8 and 7.5 YR 5/8. The hydrology indicators for this wetland are drainage patterns, inundation, and soil saturation to the surface. This wetland contains no surface water inlet or outlet, but it lies within the Whitemarsh Run drainage area. The wetland has a Wildlife FCI of 0.32, a Sediment Stabilization FCI of .88, and a Water Quality FCI of NA.

#### Wetland D 7

This wetland is a small palustrine scrub-shrub swale adjacent to the ramp for the MD 43 – US 40 interchange. It is dominated by black willow (*Salix nigra*), multiflora rose (*Rosa multiflora*), and soft rush (*Juncus effusus*). The soil profile shows some hydric characteristics with a chroma of 2 and distinct mottling just below the A horizon. Hydrology indicators include drainage patterns and oxidized root channels. The wetland has a Wildlife FCI of 0.22, a Sediment Stabilization FCI of 0.95, and a Water Quality FCI of 0.98. Surface water from Wetland D7 flows into Whitemarsh Run.

#### Wetland D 8

This is a palustrine emergent/scrub-shrub wetland located within the MD 43 – US 40 interchange. All water collected within the interchange drains into this wetland before flowing into a small channel that eventually flows under the ramp and into Whitemarsh Run. Dominant vegetation includes silky dogwood (*Cornus amomum*), purple-leaf willow-herb (*Epilobium coloratum*), swamp milkweed (*Asclepias incarnata*), and soft rush (*Juncus effusus*). The soil profile shows low-chroma colors within 5 inches of the surface with distinct mottles. Drainage patterns and oxidized root channels indicate that this site floods periodically. The wetland has a Wildlife FCI of 0.43, a Sediment Stabilization FCI of 0.77, and a Water Quality FCI of 0.8. This wetland is less than one acre in size with part of the wetland lying northeast of the study area corridor.

#### Wetland D 97

D 97 is a large wetland system that is classified as palustrine forested within the study area. It lies between US 40 and Whitemarsh Run and extends from MD 43 to Ebenezer Road. The wetland drains into a large pond that lies outside the study area and eventually into Whitemarsh Run. The vegetation consists of river birch (*Betula nigra*), red maple (*Acer rubrum*), spice bush (*Lindera benzoin*), silky dogwood (*Cornus amomum*), and Japanese honeysuckle (*Lonicera japonica*). The soil profile shows an A horizon with a color of 10YR 6/2 and mottles with a 10YR 5/3 color. The B horizon has a matrix color of 10YR 7/2 and mottles of 10YR 5/6. Hydrology indicators at this wetland include saturated soil, watermarks, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.74, a Sediment Stabilization FCI of 0.82, and a Water Quality FCI of 0.83. The wetland is part of a larger wetland system, greater than 20 acres in size which extends south beyond the study area corridor.

#### Wetland D 100

Wetland D 100 is a palustrine forested wetland located at the headwater of a seasonal channel that flows into Windlass Run. The dominant vegetation consists of red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), highbush blueberry (*Vaccinium corymbosum*), and Japanese honeysuckle (*Lonicera japonica*). The soils at the site have a low chroma and common, distinct mottles from 3-14 inches below the surface. Oxidized root channels, reducing conditions in the B2 horizon, and the FAC-neutral test indicate that wetland hydrology is present. The wetland has a Wildlife FCI of 0.48, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75.

#### *Wetland E1*

This is a palustrine forested wetland located just north of the railroad tracks that parallel Eastern Avenue. Water seeps from the ground in this wetland and eventually flows along the tracks before flowing under them and into Saltpeter Creek. Dominant vegetation at this wetland includes sweetgum (*Liquidambar styraciflua*), sweet pepperbush (*Clethra alnifolia*), and highbush blueberry (*Vaccinium corymbosum*). The soil profile has low chroma colors beginning at 1 inch below the surface, and distinct, abundant mottles at the same depth. Hydrology indicators include drainage patterns, water-stained leaves, and oxidized root channels. The wetland has a Wildlife FCI of 0.53, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. The wetland is greater than one acre in size and part of it extends beyond the study area corridor to the south.

#### *Wetland E2*

Wetland E2 is a small palustrine forested depression that contains no drainage outlet. Dominant vegetation consists of loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), pin oak (*Quercus palustris*), and highbush blueberry (*Vaccinium corymbosum*). There is no herb layer. The soil has very low chroma colors throughout all horizons, and distinct mottles 5-18 inches below the surface. Water marks, oxidized root channels, and water stained leaves indicate wetland hydrology at this site. The wetland has a Wildlife FCI of 0.48, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. Wetland E2 lies within the Saltpeter Creek drainage system.

#### *Wetland E3*

This wetland is also a palustrine forested depression without a surface drainage outlet. The dominant vegetation is loblolly pine (*Pinus taeda*) and sweetgum (*Liquidambar styraciflua*) in the tree layer, and red maple (*Acer rubrum*) and highbush blueberry (*Vaccinium corymbosum*) in the shrub layer. Soils are strongly hydric, with a high organic content in the A horizon. Mottles are faint but abundant; they begin to appear 9 inches below the soil surface. Hydrology indicators include water-stained leaves, the FAC-neutral test, and depressional topography. The wetland has a Wildlife FCI of 0.28, a Sediment Stabilization FCI of 0.79, and a Water Quality FCI of NA. The wetland is within the Saltpeter Creek drainage basin.

#### *Wetland E4*

Wetland E4 is a palustrine forested system located in a small depression. There is a low diversity of plants: the primary species consist only of loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), and highbush blueberry (*Vaccinium corymbosum*). The soil profile contains a very deep, dark organic horizon, with somewhat brighter soils in the A and B horizons. Mottles begin at 14 inches below the surface. Hydrology indicators include water-stained leaves and the depressional topography of the site. The wetland has a Wildlife FCI of 0.4, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. The wetland is located within the Saltpeter drainage area, however, it contains no surface water outlet.

#### *Wetland E5*

This wetland is another palustrine forested area that lies in a small topographic bowl. Vegetation in the tree and shrub layers include loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and highbush blueberry (*Vaccinium corymbosum*). The



soil profile has a very thick A horizon with high organic content. Subsurface horizons have low chroma colors. The texture throughout the profile is sandy; thus, no mottles are present. Hydrology indicators at this site are water-stained leaves and depressional topography. The wetland has a Wildlife FCI of 0.46, a Sediment Stabilization FCI of 0.79, and a Water Quality FCI of NA. The wetland is within the Saltpeter Creek drainage area. There is no surface water outlet.

#### *Wetland E6*

This wetland is a palustrine forested wetland, with loblolly pine (*Pinus taeda*), white oak (*Quercus alba*), and sweetbay (*Magnolia virginiana*) dominating the vegetation community. Cinnamon fern (*Osmunda cinnamomea*) dominates the herb layer. The soil has a low chroma profile throughout, with mottles beginning at 12 inches below the surface. Wetland hydrology indicators include drainage patterns and water-stained leaves. The wetland has a Wildlife FCI of 0.45, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. Surface water from this wetland flows into a small, unnamed tributary of Saltpeter Creek. The wetland is part of a larger wetland system, greater than 50 acres in size which extends beyond the study area to the north.

#### *Wetland E7*

E7 is a broad wetland that lies along a small seasonal tributary of Saltpeter Creek. The vegetation is composed of red maple (*Acer rubrum*), arrow-wood viburnum (*Viburnum dentatum*), sweetgum (*Liquidambar styraciflua*), and some scattered Virginia pine (*Pinus virginiana*). The soil color is a chroma 2 below the A horizon, with common, distinct mottles. Drainage patterns and oxidized root channels indicate wetland hydrology at this site. The wetland has a Wildlife FCI of 0.56, a Sediment Stabilization FCI of 0.81, and a Water Quality FCI of 0.68. The wetland is part of a larger wetland system, greater than 50 acres in size which extends beyond the study area corridor to the east and southwest.

#### *Wetland E8*

Wetland E8 lies in a depressional area with no outlet. The vegetation is palustrine forested, with sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and highbush blueberry (*Vaccinium corymbosum*) forming the dominant species. The soil profile shows hydric conditions, with low chroma colors dominating every horizon. Mottles faintly begin at 6 inches below the surface, and distinctly at 12 inches. Wetland hydrology is indicated by water marks, water-stained leaves, and oxidized root channels. The wetland has a Wildlife FCI of 0.56, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. Wetland E8 lies in the Saltpeter Creek drainage basin.

#### *Wetland E9*

This is a palustrine forested wetland that lies in a small depression on a ridge above Windlass Run. The vegetation consists of sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), American holly (*Ilex opaca*), and highbush blueberry (*Vaccinium corymbosum*). The soil in this wetland contains a deep organic layer and low chroma colors throughout the profile. Mottles are not present because the soil texture is very sandy. Watermarks, drainage patterns, and water-stained leaves indicate wetland hydrology at this site. The wetland has a Wildlife FCI of 0.49, a

Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. The wetland is isolated and contains no surface water outlet; it lies on the edge of the Windlass Run drainage area.

#### *Wetland E10*

Wetland E10 is a headwater seep for an ephemeral tributary that flows into Windlass Run. The vegetation is palustrine scrub-shrub. Sweetgum (*Liquidambar styraciflua*) forms the tree layer, with American holly (*Ilex opaca*), highbush blueberry (*Vaccinium corymbosum*), and sweet pepperbush (*Clethra alnifolia*) forming the shrub layer. Groundpine (*Lycopodium obscurum*) can be found in the herb layer. The soil profile has a loamy sand texture near the surface, with low chroma sandy clays below 9 inches. Mottles are not present. The wetland has a Wildlife FCI of 0.51, a Sediment Stabilization FCI of 0.81, and a Water Quality FCI of 0.71. The wetland is part of a larger wetland system, greater than 300 acres in size which extends west beyond the study area.

#### *Wetland E11*

Wetland E11 includes part of Windlass Run and the Windlass Run floodplain. This section of Windlass Run is approximately 5 feet wide, with a floodplain that extends about fifty feet on either side. The vegetation near the upland-wetland transition in the floodplain consists of red maple (*Acer rubrum*), American holly (*Ilex opaca*), sweetbay (*Magnolia virginiana*), and highbush blueberry (*Vaccinium corymbosum*). Soils near the transition have a low chroma color and are very sandy. Mottles are not present, but there was saturation within twelve inches of the surface. Drainage patterns are another indicator of hydrology present in this part of the wetland. The wetland has a Wildlife FCI of 0.7, a Sediment Stabilization FCI of 0.82, and a Water Quality FCI of 0.71. This wetland is part of a larger wetland system, greater than 300 acres in size which extends east and west beyond the study area.

#### *Wetland D-mod 1*

This wetland is a very small palustrine emergent/scrub-shrub area located in a depression between the Amtrak railroad tracks and Eastern Avenue. The dominant vegetation consists of switch-grass (*Panicum sp.*) and sweetgum (*Liquidambar styraciflua*). The soils show some hydric characteristics with low chroma colors and strong mottling, especially in the B horizon. Hydrology is indicated by drainage patterns and micro-topography. There are also some small hummocks within the wetland. There is no surface water outlet present in this wetland. The wetland has a Wildlife FCI of 0.15, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. It is located in the Frog Mortar Creek basin.

#### *Wetland D-mod 2*

D-mod 2 is a wide palustrine forested wetland area found at the headwater of a small seasonal drainage that eventually flows into Frog Mortar Creek and the Middle River. Vegetation consists of loblolly pine (*Pinus taeda*), sweetbay (*Magnolia virginiana*), sweetgum (*Liquidambar styraciflua*), and cinnamon fern (*Osmunda cinnamomea*). The soil in this wetland is sandy, with strong organic staining and low chroma colors. Mottles are faint and appear only below 12 inches. Hydrology is indicated by drainage patterns in the wetland. The wetland has a Wildlife FCI of 0.5, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland system is more than 10 acres in size and extends west beyond the study area.

#### *Wetland D-mod 2A*

This wetland is located in a disturbed area adjacent to the railroad tracks that parallel Eastern Avenue. The dominant wetland classification is palustrine forested. Vegetation includes sweetgum (*Liquidambar styraciflua*), willow oak (*Quercus phellos*), Virginia pine (*Pinus virginiana*), highbush blueberry (*Vaccinium corymbosum*), and common greenbriar (*Smilax rotundifolia*). The soil in this wetland contains a depleted matrix in many places, with colors in the A horizon generally ranging between a 10YR 3/1 and a 10YR 3/2. Soils just below the A horizon are brightly mottled in a 10YR 5/1 matrix. Hydrology is indicated by topography, the FAC-neutral test, and by hydric soils field indicators. The wetland has a Wildlife FCI of 0.4, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.76. The wetland lies in the Frog Mortar Creek drainage area.

#### *Wetland D-mod 3*

Wetland D-mod 3 lies in the headwaters of a very small, ephemeral channel that flows toward the railroad tracks. It is classified as palustrine forested; vegetation is dominated by red maple (*Acer rubrum*), sweet pepperbush (*Clethra alnifolia*), sweetbay (*Magnolia virginiana*), and highbush blueberry (*Vaccinium corymbosum*). The soil matrix is has a color of 10YR 5/2 in the A horizon, and 10YR 5/1 8 inches below the surface in the B horizon. Mottles are not present in the soil. Hydrology is indicated by drainage patterns and the FAC-neutral test. The wetland has a Wildlife FCI of 0.41, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. Surface water from this wetland eventually flows into Frog Mortar Creek.

#### *Wetland D-mod 4*

Wetland D-mod 4 is a palustrine forested wetland that empties via a small channel into a palustrine emergent area (that lies south of the study corridor). The vegetation in this wetland is dominated by sweetgum (*Liquidambar styraciflua*), willow oak (*Quercus phellos*), highbush blueberry (*Vaccinium corymbosum*), and sweetbay (*Magnolia virginiana*). The soil consists of gray colors throughout the profile; the color just below the A horizon is a 2.5Y 6/1 with 2.5Y 6/6 mottles. Wetland hydrology is indicated by drainage patterns and supported by shallow root systems. The wetland has a Wildlife FCI of 0.5, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is larger than two acres in area and drains into Frog Mortar Creek.

#### *Wetland D-mod 5*

This wetland is a large palustrine forested area that drains into Frog Mortar Creek. It lies in a broad, slightly depressional area that seasonally contains standing water. Vegetation consists of red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), and highbush blueberry (*Vaccinium corymbosum*). The soil has a deep (12 inch) A horizon consisting of 10YR 2/1 and 10YR 4/2 colors. The B horizon begins 12 inches below the soil surface and has a matrix color of 10YR 3/1 without mottles. Watermarks and depressional topography indicate hydrology. The wetland has a Wildlife FCI of 0.48, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. The wetland is part of a wetland system more than 10 acres in size and extends east beyond the study area corridor.

#### *Wetland D-mod 5A*

This wetland lies in a small, isolated depression within the Frog Mortar Creek drainage area. It is classified as a palustrine scrub-shrub/palustrine forested wetland. Dominant vegetation includes red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), and common greenbriar (*Smilax rotundifolia*). The soil color is a 10YR 4/2 just below the A horizon, with distinct mottles (10YR 6/8) throughout the B horizon. Hydrology indicators include drainage patterns and the FAC-neutral test. The wetland has a Wildlife FCI of 0.47, a Sediment Stabilization FCI of 0.61, and a Water Quality FCI of NA. This wetland does not have a surface water outlet.

#### *Wetland D-mod 6*

This wetland is a broad palustrine forested area that lies in a depressional headwater that eventually flows into Windlass Run. The canopy consists of red maple (*Acer rubrum*) and sweetgum (*Liquidambar styraciflua*); highbush blueberry (*Vaccinium corymbosum*), sweet pepperbush (*Clethra alnifolia*), and sweetbay (*Magnolia virginiana*) dominate the midstory. The soil contains a deep (6 inch) organic layer. Soil color ranges from a 10YR 2/1 in the A horizon to a 10YR 3/1 in the B horizon. There are no mottles present. The wetland has a Wildlife FCI of 0.5, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is part of a larger wetland system more than 20 acres in size and continues west beyond the study area corridor.

#### *Wetland D-mod 7*

This wetland is a small bowl that lies next to Bengies Road, approximately 400 ft. south of the construction stockpile yard (commonly referred to as "Jersey City"). The wetland is classified as palustrine forested, with the dominant vegetation composed of willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and arrow-wood viburnum (*Viburnum dentatum*). The soil profile in this wetland shows a gray (10YR 4/1) A horizon, and a slightly lighter gray B horizon (10YR 6/1) with abundant, bright mottles beginning 7 inches below the surface. Hydrology indicators include oxidized root channels within 12 inches of the soil surface, the depressional drainage patterns, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.47, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. Surface water from this wetland drains into Frog Mortar Creek.

#### *Wetland D-mod 8*

D-mod 8 is a small isolated wetland located between D-mod 7 and the construction stockpile yard. The wetland is dominated by a palustrine forested community, with plant species that include sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), willow oak (*Quercus phellos*), and highbush blueberry (*Vaccinium corymbosum*). The soil at this site is colored a dark gray in the A horizon (10YR 3/1) and a light yellow-gray in the B horizon (2.5Y 7/1). Mottles occur frequently below 6 inches from the soil surface. They have a color of 2.5Y 6/6. Hydrologic indicators in this wetland include oxidized root channels, water stained leaves, and drainage patterns. The wetland has a Wildlife FCI of 0.46, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. Wetland D-mod 8 has no surface water outlet and appears to be a vernal pool. It lies in on the edge of the Frog Mortar Creek watershed.

#### Wetland D-mod 9

This wetland rests on the side of a small slope that overlooks D-mod 10. Water perches above an impenetrable clay layer that eventually outcrops further down slope. This clay layer produces seasonally wet conditions that support a palustrine forested wetland community. The dominant vegetation consists of loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), highbush blueberry (*Vaccinium corymbosum*), and sweetbay (*Magnolia virginiana*). The soil profile shows that, beginning 8 inches below the surface, the matrix is a light yellow-gray (2.5Y 6/1) with distinct 2.5Y 6/6 mottles. Wetland hydrology is indicated at this site by drainage patterns, oxidized root channels and water-stained leaves. Shallow root systems and some tree buttressing also support the hydrology. The wetland has a Wildlife FCI of 0.5, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. This wetland has no surface water outlet. It covers more than four acres in the Saltpeter Creek drainage basin, and extends beyond the study area corridor to the east.

#### Wetland D-mod 10

D-mod 10 is an isolated bowl that consists of a palustrine forested wetland community. The dominant plants include red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), American holly (*Ilex opaca*), sweet pepperbush (*Clethra alnifolia*), and sweetbay (*Magnolia virginiana*). Common greenbriar (*Smilax rotundifolia*) is also abundant. The soil profile contains light gray soils throughout. The A horizon has a color of 2.5Y 7/1, and the B horizon (which begins 10 inches below the surface) has a color of 10YR 7/1 with frequent 10YR 6/8 mottles. Hydrology indicators include oxidized root channels, drainage patterns, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.48, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. This wetland has no surface water outlet. It lies in the Saltpeter Creek watershed.

#### Wetland D-mod 11

This wetland is a broad palustrine forested headwater area that stretches across an all-terrain vehicle path (Bengies Road extended) before exiting the study area corridor. The vegetation is dominated by loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), willow oak (*Quercus phellos*), highbush blueberry (*Vaccinium corymbosum*), and sweetbay (*Magnolia virginiana*). The soil at this site is a 2.5Y 4/1 in the A horizon. The B horizon, which extends from 7-18 inches below the surface, has a color of 2.5Y 7/2 with distinct 10YR 6/8 mottles. Drainage patterns, oxidized root channels, and water-stained leaves indicate wetland hydrology. The wetland has a Wildlife FCI of 0.5, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland covers more than two acres and extends beyond the study area corridor to the west. Surface water eventually flows down slope into Windlass Run.

#### Wetland D-mod 12

D-mod 12 is a small, isolated wetland that has no surface water outlet. The palustrine forested community consists of red maple (*Acer rubrum*), willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), and common greenbriar (*Smilax rotundifolia*). The soil is a dark gray in the A horizon (10YR 4/1), and a lighter gray in the B horizon (10YR 7/1). The B horizon extends for 7-12 inches below the soil surface and has distinct 10YR 5/8 mottles. Indicators of wetland hydrology include drainage patterns, oxidized root channels, and water-stained leaves. The wetland has a Wildlife FCI of 0.48, a Sediment

Stabilization FCI of 0.76, and a Water Quality FCI of NA. Wetland D-mod 12 is located within the Windlass Run watershed.

#### *Wetland D-mod 13*

This wetland lies on the south side of the power line right-of-way. An unnamed tributary of Windlass Run flows through it from east to west, and the wetland extends above the tributary approximately 200 ft. Much of the wetland is palustrine forested, but part of it is in the mowed right-of-way and is palustrine emergent. The vegetation is dominated by red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), highbush blueberry (*Vaccinium corymbosum*), sweetbay (*Magnolia virginiana*), and common greenbriar (*Smilax rotundifolia*). The soil at this site is a gray sandy loam, with colors of 2.5Y 5/1 in the A horizon and 2.5Y 6/2 in the B horizon. There are two mottle colors in the B horizon, 10YR 5/8 and 2.5Y 7/6, which begin to occur 5 inches below the soil surface. Soil saturation, drainage patterns, oxidized root channels, and the FAC-neutral test all indicate wetland hydrology at this site. The wetland has a Wildlife FCI of 0.55, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.49. D-mod 13 is part of the Windlass Run wetland system which is more than 300 acres in size and extends west and east beyond the study area corridor.

#### *Wetland D-mod 13A*

Wetland D-mod 13A lies above D-mod 13 in a shallow swale that eventually drains into Windlass Run. The wetland is palustrine forested with intermixed scrub/shrub vegetation. Dominant plant species include red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*), sweet pepperbush (*Clethra alnifolia*), and common greenbriar (*Smilax rotundifolia*). The soil in this wetland is gray throughout (10YR 5/1), with faint mottles (10YR 7/2) beginning 6 inches below the soil surface. Hydrologic indicators include drainage patterns and oxidized root channels. The wetland has a Wildlife FCI of 0.51, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is part of the Windlass Run wetland system which is more than 300 acres in size and extends west beyond the study area corridor.

#### *Wetland D-mod 14*

This wetland lies across the power right-of-way from D-mod W13. Water that originates in wetland I-mod 10 flows into D-mod 14 before crossing the right of way and entering the unnamed tributary in wetland D-mod 13. The vegetation is predominantly palustrine scrub-shrub, with some palustrine emergent vegetation along the mowed right-of-way. Plants include black willow (*Salix nigra*) and multiflora rose (*Rosa multiflora*) in the shrub layer, and soft rush (*Juncus effusus*), smartweed (*Polygonum arifolium*) and deer-tongue (*Dichantheleum clandestinum*) in the herb layer. The soil at this site is a silty clay; the A horizon has a color of 2.5Y 5/3, and the B horizon has a color of 2.5Y 5/1. There are no mottles in the profile. Wetland hydrology indicators are drainage patterns and oxidized root channels. The wetland has a Wildlife FCI of 0.52, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is in the Windlass Run drainage basin.

#### *Wetland D-mod 15*

This wetland is located on along a seasonal, unnamed tributary of Windlass Run. It lies immediately northeast of Holly Hill Memorial Gardens. The palustrine forested wetland extends approximately 200 feet northwest above the tributary. Dominant plant species include red maple

(*Acer rubrum*), sweetbay (*Magnolia virginiana*), winterberry (*Ilex verticillata*), agrimony (*Agrimonia parviflora*), and common greenbriar (*Smilax rotundifolia*). Soil horizon A has a color of 10YR 2/2, while the B horizon (which starts 2 inches below the soil surface) has a color of 10YR 4/2 with distinct 7.5YR 4/6 mottles. The soil is saturated to within 2 inches of the surface in this wetland, with freestanding water appearing 12 inches below the surface. Drainage patterns also indicate wetland hydrology at this site. The wetland has a Wildlife FCI of 0.54, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.65. This wetland is approximately one acre in size and extends along the tributary northeast beyond the study area corridor.

#### *Wetland D-Mod 15A*

This wetland is an extension of D-Mod 15, and has the same dominant plant species and wetland functions. The wetland has a Wildlife FCI of 0.54, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.65. This wetland is approximately one third acre in size and extends along the tributary northeast beyond the study area corridor.

#### *Wetland D Mod 15B*

This wetland is regulated as Waters of the U.S. It is groundwater discharge from a well, and was flowing down the driveway during the field review and subsequent field delineation. There were no wetlands plants associated with the discharge. It flows into Wetland D-Mod 15A.

#### *Wetland D-mod 16*

This is a small headwater wetland located in a swale that flows into D-mod 15. It is located directly behind the mausoleum at Holly Hill Memorial Gardens. The vegetation immediately surrounding the entire wetland is forested, however the dominant community within the wetland is palustrine scrub-shrub. Dominant plants are winterberry (*Ilex verticillata*), arrow-wood viburnum (*Viburnum dentatum*), red maple (*Acer rubrum*), soft rush (*Juncus effusus*), and Japanese honeysuckle (*Lonicera japonica*). The soil horizon in this wetland has a loamy texture, with colors in the B horizon ranging from a 10YR 5/2 to a 10YR 6/2. Mottles appear 6 inches below the surface (10YR 5/6) and are common. Wetland hydrology was indicated by soil saturation 10 inches below the surface at the time of evaluation. Drainage patterns are a second indicator of hydrology in this wetland. The wetland has a Wildlife FCI of 0.38, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is within the Windlass Run drainage basin.

#### *Wetland D-mod 17*

D-mod 17 is also a small headwater area located above an intermittent channel/swale. The vegetation community is classified as palustrine forested/palustrine scrub-shrub. Dominant plants are black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), common greenbriar (*Smilax rotundifolia*), and highbush blueberry (*Vaccinium corymbosum*). Soils throughout the profile are gray. The a horizon has a color of 10YR 4/1, and the B horizons are 10YR 5/1 and 10YR 6/1. There are a few mottles that occur from 3 to 12 inches below the soil surface (7.5YR 5/6 and 10YR 7/6). Hydrology is indicated by drainage patterns and water-stained leaves. The wetland has a Wildlife FCI of 0.38, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. Surface water from this wetland drains into Windlass Run.

#### *Wetland F<sub>1</sub>-mod 1A, 1B*

This a large wetland system that begins as a headwater area near Bird River Road (1B), flows into a deeply cut channel and into a broad depression (1A), and eventually empties into Whitemarsh Run. The vegetation community is a mixture between palustrine forested and palustrine emergent. The most common plant species include red maple (*Acer rubrum*), river birch (*Betula nigra*), sweetgum (*Liquidambar styraciflua*), spicebush (*Lindera benzoin*), St. Johns wort (*Hypericum mutilum*), Japanese honeysuckle (*Lonicera japonica*), and speckled alder (*Alnus rugosa*). The soil in this wetland also varies. Near the headwater area, which is frequently mown, the A horizon is a 10YR 4/3 and the B horizon is a 10YR 7/1 with common 10YR 5/6 mottles. Near the shallow depression, the soil color of the A horizon is 7.5 YR 5/4, and the B horizon has a color of 10YR 5/3. Mottles occur throughout the profile in the depression, with colors of 7.5 YR 3/4 in the A horizon and 10YR 5/6 in the B horizon. The soils in the depression do not have colors typical of wetlands, but their hydric nature is assumed because of strong hydrology indicators. These wetland hydrology indicators include soil saturation in the upper 12 inches, oxidized root channels, and water-stained leaves. Wetland F<sub>1</sub>-mod 1A has a Wildlife FCI of 0.15, a Sediment Stabilization FCI of 0.95, and a Water Quality FCI of 0.86. Wetland F<sub>1</sub>-mod 1B has a Wildlife FCI of 0.8, a Sediment Stabilization FCI of 0.57, and a Water Quality FCI of 0.67. This wetland system is more than two acres in size, extending west beyond the study area before emptying into Whitemarsh Run.

#### *Wetland F<sub>1</sub>-mod 2*

F<sub>1</sub>-mod 2 is a small headwater area that has formed at the end of an intermittent channel that drains into F<sub>1</sub>-mod 1. The vegetation is palustrine forested/palustrine scrub-shrub. The dominant vegetation includes black gum (*Nyssa sylvatica*), sweetbay (*Magnolia virginiana*), sweet pepperbush (*Clethra alnifolia*), goldenrod (*Solidago canadense*), and white oak (*Quercus alba*). The soil in this wetland has a deep A horizon to 15 inches below the surface, and a sandy clay loam B horizon that has a color of 10YR 3/1. Mottles occur in both the A and B horizons, with colors of 10YR 6/4 and 7.5YR 5/4, respectively. There was also a sulfidic odor to the soil at the time of evaluation. Indicators of wetland hydrology include drainage patterns and oxidized root channels. The wetland has a Wildlife FCI of 0.21, a Sediment Stabilization FCI of 0.79, and a Water Quality FCI of 0.69. This wetland is part of the Whitemarsh Run drainage system.

#### *Wetland F<sub>1</sub>-mod 2A*

This is a small pond in a neighborhood backyard. It is located immediately above F<sub>1</sub>-mod 2. The wetland was mapped using the GPS, but no soils or vegetation data were collected because it is clearly a wetland system. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.8, and a Water Quality FCI of NA. It lies in the Whitemarsh Run drainage area. There is no surface water inlet or outlet.

#### *Wetland F<sub>1</sub>-mod 3*

F<sub>1</sub>-mod 3 is another headwater area that drains into an intermittent channel and into wetland F<sub>1</sub>-mod 1. It is classified as a palustrine forested wetland. Black gum (*Nyssa sylvatica*), sweetbay (*Magnolia virginiana*), yellow poplar (*Liriodendron tulipifera*), American holly (*Ilex opaca*), arrow-wood viburnum (*Viburnum dentatum*) and cinnamon fern (*Osmunda cinnamomea*) form the dominant plant species. The soil profile contains an A horizon that is 8 inches deep (10YR



2/1), and two B horizons with colors of 10YR 5/1 and 2.5Y 6/2. There are no mottles in the profile. Hydrologic indicators include saturated soil, drainage patterns, and oxidized root channels. The wetland has a Wildlife FCI of 0.21, a Sediment Stabilization FCI of 0.79, and a Water Quality FCI of 0.69. This wetland is part of the Whitemarsh Run drainage area.

#### *Wetland F<sub>1</sub>-mod 4*

This is a palustrine emergent/palustrine scrub/shrub wetland; there is also a small palustrine forested area that is located adjacent to an intermittent tributary of Windlass Run. It has formed at the base of a stormwater management pond constructed for a nearby housing development. The soils in the wetland are highly disturbed, perhaps from previous agricultural projects or other development projects. The vegetation in this wetland includes red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and river birch (*Betula nigra*) in the shrub layer; and willow-herb (*Epilobium coloratum*) and smartweed (*Polygonum perfoliatum*) in the herb layer. The soils contain one horizon that extends to 14 inches below the surface. The soil color is a 2.5Y 5/2 with 10YR 5/8 mottles. Wetland hydrology is indicated by drainage patterns, oxidized root channels, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.46, a Sediment Stabilization FCI of 0.75, and a Water Quality FCI of 0.77. This wetland is more than two acres in size draining into Windlass Run and extends beyond the study area corridor to the south.

#### *Wetland F<sub>1</sub>-Mod 4A*

This wetland is a small sediment trap pond, presumably created for erosion control during a past construction project. It is classified as palustrine emergent, with the dominant vegetation consisting of sedges (*Carex lurda*), rushes (*Juncus effusus*), common reed (*Phragmites australis*), and goldenrod (*Euthamia graminifolia*). The soils are sandy and disturbed. The A horizon, which lies between 1 and 8 inches, has a color of 10YR 5/4. The B horizon extends to 18 inches below the surface and has a matrix color of 2.5Y 7/2. Mottles begin at 8 inches below the surface and have a color of 10YR 6/8. Wetland hydrology is indicated by oxidized root channels and the depressional relief of the site. This wetland has no permanent surface water outlet. The wetland has a Wildlife FCI of 0.12, a Sediment Stabilization FCI of 0.73, and a Water Quality FCI of NA. It lies in the Windlass Run drainage basin.

#### *Wetland F<sub>1</sub>-Mod 4B*

This wetland is also a small sediment trap that is located close to F<sub>1</sub>-Mod 4A. It consists of palustrine emergent vegetation with some scattered shrubs. The dominant vegetation includes black willow (*Salix nigra*), willow-herb (*Epilobium coloratum*), bulrush (*Scirpus cyperinus*) and common reed (*Phragmites australis*). The B horizon in this wetland has colors that range from a 2.5YR 5/6 to a 10YR 6/3. Mottles are common beginning at 9 inches below the soil surface. Mottle colors are 5YR 5/6 and 7.5YR 7/2. Hydrology at this site is indicated by drainage patterns and the topographic relief of the site. Although the colors are not typical of hydric soils, the strong vegetative and hydrologic indicators verify that this site is a wetland. Surface water from the sediment trap drains through a highly erodable gully before entering a third sediment trap (Wetland F<sub>1</sub>-Mod 4C). The wetland has a Wildlife FCI of 0.12, a Sediment Stabilization FCI of 0.75, and a Water Quality FCI of NA. F<sub>1</sub>-Mod 4B lies within the Windlass Run drainage area.

#### Wetland F<sub>1</sub>-Mod 4C

This is another sediment pond that supports a palustrine emergent wetland. The vegetation consists of black willow (*Salix nigra*), common cat-tail (*Typha latifolia*), soft rush (*Juncus effusus*), and tall fescue (*Festuca arundinaceae*). The soil contains 2 nondescript layers of sand, one which lies between 0 and 30 inches below the surface and has a color of 10YR 6/6; and a second layer which has a color of 10YR 6/2 and extends down from 30 inches below the surface. Hydrology is indicated in this wetland by oxidized root channels, the FAC-neutral test, and the depressional topography. It is assumed that hydric soils have not had time to develop at this site. The wetland has a Wildlife FCI of 0.23, a Sediment Stabilization FCI of 0.98, and a Water Quality FCI of 0.54. This wetland is within the Windlass Run drainage basin.

#### Wetland F<sub>1</sub>-Mod 5

This wetland lies along a 500-foot reach of Windlass Run and includes an average of 200 feet of the surrounding floodplain. The wetland is classified as palustrine forested. Dominant plant species include loblolly pine (*Pinus taeda*), sweetbay (*Magnolia virginiana*), sweetgum (*Liquidambar styraciflua*), highbush blueberry (*Vaccinium corymbosum*), and clubmoss (*Lycopodium dendroideum*). The soil profile contains an A horizon with a color of 2.5Y 5/1; a B horizon with a 2.5Y 5/2 matrix and 10YR 5/6 mottles; and a second B horizon with a 10YR 5/1 matrix and 2.5Y6/6 mottles. Wetland hydrology is indicated by drainage patterns and oxidized root channels. The wetland has a Wildlife FCI of 0.56, a Sediment Stabilization FCI of 0.84, and a Water Quality FCI of 0.69. This wetland is part of the Windlass Run wetland system and is more than 300 acres in size extending east and west beyond the study area corridor.

#### Wetland F<sub>1</sub>-Mod 5A

This wetland is located in a shallow depression that drains into F<sub>1</sub>-Mod 5B before entering Windlass Run. It is located adjacent to Bengies Road approximately 600 feet west of the Williams property gate. The palustrine forested vegetation is dominated by red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), multiflora rose (*Rosa multiflora*), poison ivy (*Toxicodendron radicans*), and long sedge (*Carex folliculata*). The soil profile contains an A horizon that has a color of 2.5Y 3/1; a B horizon with a color of 2.5Y 4/1; and a second B horizon with a 2.5Y 6/2 matrix and distinct 10YR 5/6 mottles. Hydrology is indicated by drainage patterns and oxidized root channels. The site hydrology is supported by the strongly hydric soils. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is part of a larger wetland system, more than 20 acres in size and extends northeast beyond the study area corridor.

#### Wetland F<sub>1</sub>-Mod 5B

F<sub>1</sub>-Mod 5B is a headwater area above an intermittent channel that flows into Windlass Run. The plant community is palustrine forested, and is dominated by red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), long sedge (*Carex folliculata*) and running blackberry (*Rubus hispidus*). The soil profile has an A horizon with a color of 10YR 3/1. The first B horizon has a matrix of 10YR 4/1 and common mottles of 10YR 4/6; the second B horizon has a matrix of 10YR 7/1 and mottles that have a color of 10YR 5/6. Hydrologic indicators for this site are oxidized root channels and the FAC-neutral test. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.66.

This wetland is part of a larger wetland system, more than 20 acres in size and extends east beyond the study area corridor.

*Wetland F<sub>1</sub>-Mod 6*

This is a small depression area that has no surface water inlet or outlet and is a vernal pool that seasonally floods. The community type is palustrine forested. The dominant plant species include red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), highbush blueberry (*Vaccinium corymbosum*), and sweetbay magnolia (*Magnolia virginiana*). The soil at this site has a 2.5Y 3/1 A horizon, a 2.5Y 4/1 B1 horizon, and a 2.5Y 6/2 B2 horizon with 2.5Y 6/4 mottles. Hydrology is indicated by water marks, oxidized root channels, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.36, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. This wetland is located in the Windlass Run drainage basin, however, it is isolated from other surface water features in the nearby area.

*Wetland Eastern 1*

Eastern 1 lies along a small tributary of Saltpeter Creek that flows under Eastern Avenue near Bowley's Quarters Road. The wetland contains a palustrine forested community that is dominated by red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), arrow-wood viburnum (*Viburnum dentatum*), and Japanese honeysuckle (*Lonicera japonica*). The soil has a color of 2.5Y3/2 in the A horizon and 2.5Y 5/2 in the B horizon. Mottles occur in the B horizon (beginning 4 inches below the surface) and have a color of 10YR 5/6. Hydrology is indicated by oxidized root channels, water stained leaves, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.53, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.51. This wetland is more than 50 acres in size and extends north and south beyond the study area corridor.

*Wetland I-Mod A*

This wetland is adjacent to the south side of the Amtrak railroad tracks. It is classified as palustrine forested. The vegetation is dominated by pitch pine (*Pinus rigida*), sweetgum (*Liquidambar styraciflua*), white oak (*Quercus alba*), sweetbay (*Magnolia virginiana*), highbush blueberry (*Vaccinium corymbosum*), and cinnamon fern (*Osmunda cinnamomea*). The soil profile contains an A horizon with a 10YR 3/1 color and a B horizon with a matrix color of 10YR 6/1. Mottling in the B horizon is distinct (10YR 4/1). Hydrologic indicators in this wetland include local soil survey data and the FAC-neutral test. Wetland hydrology is also strongly supported by hydric soil properties. The wetland has a Wildlife FCI of 0.3, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. This wetland is located within the Saltpeter Creek drainage area, however, it has no surface water outlet and it is isolated from the rest of the Saltpeter Creek basin.

*Wetland I-Mod B*

I-Mod B is an isolated wetland with no inlet or outlet. It is located between I-Mod A and Eastern Avenue. The palustrine forested community is dominated by red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), willow oak (*Quercus phellos*), common reed (*Phragmites australis*), and soft rush (*Juncus effusus*). The soil at this site has a dark A horizon (10YR 3/3). There are two B horizons: B1 has a matrix of 10YR 4/1 and distinct mottles of 10YR 4/4; the B2 horizon has a matrix of 10YR 6/2 with mottles of 10YR 5/4. Wetland hydrology at this site is

indicated by oxidized root channels, water-stained leaves, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.44, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. This wetland is within the Saltpeter Creek basin.

#### *Wetland I-Mod 1*

This wetland lies in a shallow depression located above a small intermittent drainage swale. It can be classified as palustrine forested; dominant vegetation includes sweetbay (*Magnolia virginiana*), sweetgum (*Liquidambar styraciflua*), white oak (*Quercus alba*), sweet pepperbush (*Clethra alnifolia*), and cinnamon fern (*Osmunda cinnamomea*). The soil profile consists of a gray A horizon (10YR 3/1), a light gray B1 horizon (10YR 6/1), and a 10YR 6/2 B2 horizon. Mottles occur at 6 inches below the soil surface (10YR 5/2, 10YR 5/6). Oxidized root channels and the FAC-neutral test are hydrology indicators at this site. The wetland has a Wildlife FCI of 0.42, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.69. The wetland is part of the more than 50 acre wetland associated with the Saltpeter Creek drainage and extends west beyond the study area corridor.

#### *Wetland I-Mod 2*

I-Mod 2 is located at the headwater of an intermittent channel. The vegetation community is palustrine forested; dominant plant species include willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), highbush blueberry (*Vaccinium corymbosum*), and common greenbriar (*Smilax rotundifolia*). The soil contains a deep A horizon (1-6 inches, 10YR 3/1) and two B horizons. B1 has a matrix of 10YR 4/1 and mottles of 10YR 6/1; B2 has a matrix of 10YR 7/1 and no mottling. Hydrology is indicated by the FAC-neutral test and is supported by hydric soil characteristics. The wetland has a Wildlife FCI of 0.42, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.64. I-Mod 2 is part of the Saltpeter Creek drainage basin.

#### *Wetland I-Mod 3*

This palustrine forested wetland is located along a permanent stream that flows through wetland Eastern 1 before draining into Saltpeter Creek. The dominant vegetation includes sweetgum (*Liquidambar styraciflua*), highbush blueberry (*Vaccinium corymbosum*), red maple (*Acer rubrum*), Virginia pine (*Pinus virginiana*), sweetbay (*Magnolia virginiana*), and cinnamon fern (*Osmunda cinnamomea*). The soil profile contains a deep, dark A horizon (10YR 3/1), with two B horizons. B1 has a 10YR 4/1 matrix and 7.5 YR 4/6 mottles. Horizon B2 has a 10YR 6/1 matrix with two colors of mottles: 10YR 5/1 and 10YR 5/6. Hydrology indicators include soil saturation within 12 inches of the surface, oxidized root channels, water-stained leaves, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.56, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. The wetland extends east and west beyond the study area.

#### *Wetland I-Mod 3A*

I-Mod 3A is located in a depression area north of New Bengies Road. Part of the wetland flows into a man-made drainage ditch that parallels the road. The wetland is classified as palustrine forested; dominant plants include red maple (*Acer rubrum*), willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), highbush blueberry (*Vaccinium corymbosum*), and soft rush (*Juncus effusus*). Soils are dark throughout the profile. The A horizon is a 10YR 3/1, the B1 horizon has a matrix of 10YR 4/1 with 10YR 5/6 and 10YR 6/6 mottles, and the B2

horizon has a matrix of 10YR 7/1 with 10YR 5/6 mottles. The FAC-neutral test supports wetland hydrology at the site, as does the strongly hydric soil profile. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. This wetland is located in the Saltpeter Creek drainage basin, however, it does not contain a surface inlet or outlet is thus isolated from the rest of the basin.

#### *Wetland I-Mod 3B*

This wetland lies in the headwater area of an intermittent stream that flows into Saltpeter Creek. It is classified as palustrine forested, and is dominated by pitch pine (*Pinus rigida*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), Virginia pine (*Pinus virginiana*), sweetbay (*Magnolia virginiana*), and sweet pepperbush (*Clethra alnifolia*). The soil profile consists of a 10YR 3/1 A horizon, a 10YR 5/1 B1 horizon, and a 10YR 7/1 B2 horizon. Both of the B horizons have mottles (10YR 6/6 and 10YR 6/8). Hydrology indicators at this site include oxidized root channels and drainage patterns. The wetland has a Wildlife FCI of 0.51, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is part of the more than 50 acre wetland associated with the Saltpeter Creek drainage area and extends beyond the study area corridor to the west.

#### *Wetland I-Mod 4*

I-Mod 4 is located in a headwater depression at the north end of the unnamed tributary that flows through wetlands I-Mod 3 and Eastern 1. The vegetation community is palustrine forested and includes red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), sweetbay magnolia (*Magnolia virginiana*), pitch pine (*Pinus rigida*), highbush blueberry (*Vaccinium corymbosum*), and sweet pepperbush (*Clethra alnifolia*). The soils are a silty clay loam throughout, with a 10YR 2/1 A horizon and 10YR 3/1 B horizon. Mottles are not present anywhere in the profile. Hydrology indicators include water marks, oxidized root channels, water-stained leaves, and the FAC-neutral test. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is part of the more than 50 acre wetland associated with the Saltpeter Creek drainage area and extends beyond the study area corridor to the west.

#### *Wetland I-Mod 5*

This palustrine forested wetland is located at the headwater of an intermittent stream that eventually drains into wetland I-Mod 3. The dominant vegetation consists of pitch pine (*Pinus rigida*), scarlet oak (*Quercus coccinea*), sweetbay (*Magnolia virginiana*), winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*), and common greenbriar (*Smilax rotundifolia*). The soil horizons are primarily a sandy clay loam, with a deep (0-4 inches) organic/peat layer on the surface. The A horizon is a 10YR 3/1 without mottles; the B1 horizon has a matrix of 10YR 4/1 with 10YR 5/6 mottles; and the B2 horizon has a matrix of 10YR 6/1 with 10YR 5/6 mottles. Oxidized root channels and the FAC-neutral test indicate hydrology in this wetland. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. The wetland is more than 2 acres in size and located in the Saltpeter Creek drainage basin and extends beyond the study corridor to the east.

#### Wetland I-Mod 6

This is a palustrine forested wetland located near the headwaters of a small stream that runs parallel to the power right-of-way. The vegetation is dominated by sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*), sweet pepperbush (*Clethra alnifolia*), and cinnamon fern (*Osmunda cinnamomea*). The soil profile is loamy with three distinct horizons above 18 inches. The A horizon is a 2.5Y 3/2; the B1 horizon is a 2.5Y3/1; and the B2 has a color of 2.5Y 5/1. There are no mottles in the profile. Hydrology is indicated by the FAC-neutral test, the depressional topography of the site, and the hydric soil characteristics. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This more than 300 acre wetland extends west beyond the study area corridor and drains into Windlass Run.

#### Wetland I-Mod 7

This is a predominantly palustrine emergent wetland that is located on the south side of the power right-of way. Much of the wetland is regularly mown to maintain vegetation under the power lines, but there is an area of taller vegetation in a site that stays too wet to mow. Dominant vegetation includes two species growing as shrubs, red maple (*Acer rubrum*) and sweetgum (*Liquidambar styraciflua*). Canada rush (*Juncus canadensis*), soft rush (*Juncus effusus*), and common wool-grass (*Scirpus cyperinus*). The soils are generally a gray loam. The A horizon (3-5 inches below the surface) has a color of 2.5Y 3/2. There are two B horizons: B1 (5-14 inches) has a matrix of 2.5Y3/1 and no mottles; B2 (14-18+ inches) has a matrix of 2.5Y 6/1 and distinct mottles of 2.5Y 4/1. Oxidized root channels and the FAC-neutral test indicate hydrology at this site. The wetland has a Wildlife FCI of 0.16, a Sediment Stabilization FCI of 0.7, and a Water Quality FCI of NA. Wetland I-Mod 7 is about one acre in size and is located in the Windlass Run drainage and extends west beyond the study corridor.

#### Wetland I-Mod 8

This palustrine forested wetland lies in a shallow depression that drains across the power right-of-way and into I-Mod 7. The vegetation community is dominated by American holly (*Ilex opaca*), black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*), sweet pepperbush (*Clethra alnifolia*), and common greenbriar (*Smilax rotundifolia*). The soil consists of two horizons with sandy loam texture. The A horizon has a color of 2.5Y 3/1; the B horizon has a color of 2.5Y 5/1 with 10YR 4/6 mottles. Hydrology is indicated by drainage patterns and the depressional topography of the site. The wetland has a Wildlife FCI of 0.51, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of NA. This wetland is located in the Windlass Run drainage system. It is more than one acre in size and extends beyond the study area to the northeast.

#### Wetland I-Mod 9

Wetland I-Mod 9 is a palustrine forested flat that drains toward the power right-of-way. Surface water from this wetland empties near the bottom of wetland D-Mod 14 before crossing the power lines and flowing toward Windlass Run. The vegetation is dominated by sweetbay (*Magnolia virginiana*), American holly (*Ilex opaca*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), highbush blueberry (*Vaccinium corymbosum*), and sweet pepperbush (*Clethra alnifolia*). The soil is a sandy loam/loamy sand, with a 2.5Y 3/1 A horizon; a 2.5Y 4/2 B1 horizon; and a 2.5Y 6/3 B2 horizon. Mottles occur five inches below the soil surface (10YR 4/4

and 2.5Y 4/3). Water-stained leaves and the FAC-neutral test indicate hydrology at this site. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is more than 300 acres in size and extends southwest beyond the study area corridor.

#### *Wetland I-Mod 10*

This palustrine forested wetland lies in a shallow depression. Surface water empties into D-Mod 14 before continuing toward Windlass Run. The dominant vegetation includes black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), American holly (*Ilex opaca*), loblolly pine (*Pinus taeda*), sweet pepperbush (*Clethra alnifolia*), and common greenbriar (*Smilax rotundifolia*). The soil has a sandy loam texture throughout the profile. There is a deep organic layer (0-4 inches), followed by a 2-inch A horizon with a color of 2.5Y 3/2. Two B horizons make up the remainder of the profile to 18 inches: the B1 horizon has a color of 2.5Y 5/1, with 10YR 5/6 mottles; the B2 horizon has a 2.5Y 6/2 matrix with 10YR 5/6 mottles. Wetland hydrologic indicators include oxidized root channels, the depressional relief, and strong hydric soil characteristics. The wetland has a Wildlife FCI of 0.49, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75. This wetland is located within the Windlass Run drainage basin.

#### *Wetland I-Mod 11*

This palustrine forested wetland lies at the headwaters of an intermittent drainage that empties into Windlass Run. The vegetation community is dominated by red maple (*Acer rubrum*), willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), American holly (*Ilex opaca*), arrow-wood viburnum (*Viburnum dentatum*), highbush blueberry (*Vaccinium corymbosum*), and clubmoss (*Lycopodium obscurum*). The soil consists of two horizons: a 2.5Y 5/1 A horizon without mottles, and a 10YR 6/2 B horizon with some 10YR 5/1 mottles. Wetland hydrology is indicated by drainage patterns and oxidized root channels. The wetland has a Wildlife FCI of 0.48, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.75.

#### *Wetland I-Mod 12*

I-Mod 12 consists of a 500-foot stretch of Windlass Run and an average of 200 feet of the surrounding floodplain. A palustrine forested community dominates most of the wetland. The most common plant species include red maple (*Acer rubrum*), American holly (*Ilex opaca*), arrow-wood viburnum (*Viburnum dentatum*), highbush blueberry (*Vaccinium corymbosum*), and common greenbriar (*Smilax rotundifolia*). Soils are variable, but generally consist of three horizons to 15 inches below the surface – one of which is a deep (0-4 inches) organic layer. The A horizon has a color of 2.5Y 5/3; the B horizon is a 2.5Y 6/1 with abundant 10YR 6/8 mottles. Wetland hydrology is indicated by drainage patterns, oxidized root channels, water-stained leaves. The wetland has a Wildlife FCI of 0.56, a Sediment Stabilization FCI of 0.76, and a Water Quality FCI of 0.51. This wetland is part of the more than 300 acre Windlass Run wetland system and extends north and south beyond the study area corridor.

## J. Vegetation and Wildlife

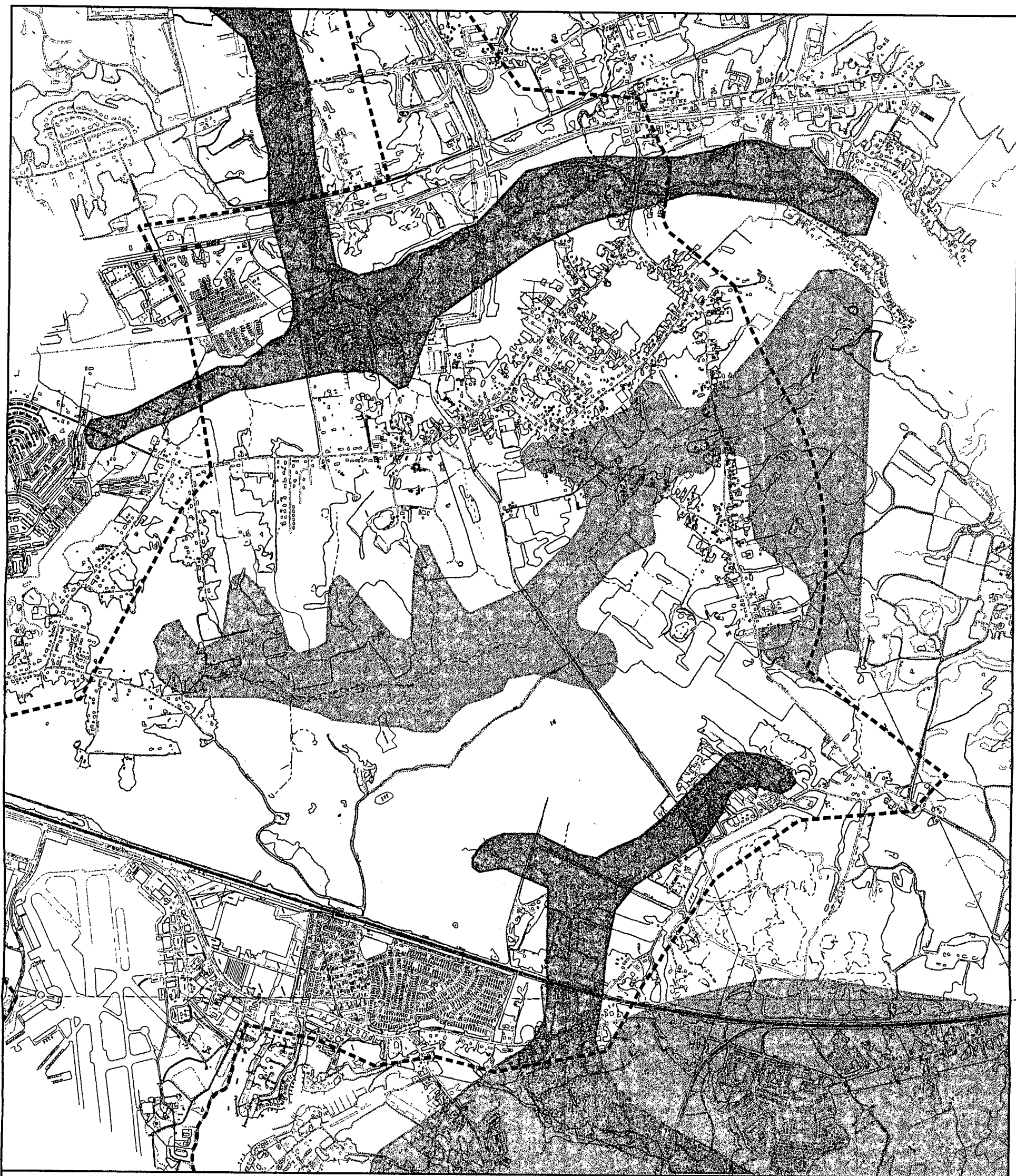
### 1. Vegetation

The Maryland Forest Conservation Act (FCA) was enacted in 1991 to protect the forests of Maryland by making forest conditions and character an integral part of the planning process. The Act seeks to maximize the benefits of forests and to slow the loss of forestland in Maryland, while allowing development to occur. The Act is especially pertinent to the MRECA study because forest comprises the majority of the study area, although residential and agricultural lands are also present. In fact, residential and agricultural land uses predominate along the western and northern edges of the study area, but its central and southeastern portions are for the most part covered by a large tract of contiguous forest. This section briefly describes the FCA and then provides a characterization of the forest plants within the study area as they are described in authoritative texts and as confirmed by a brief field survey.

The Maryland Forestry Service, a division of the Maryland Department of Natural Resources, wrote the FCA, but the Act assigns to local governments the responsibility for enforcing it. According to the Maryland Forestry Service's Internet Web-site, the FCA requires that "any person making an application for subdivision, grading permit or sediment control plan on a tract 40,000 square feet or more in area must submit a Forest Stand Delineation and a Forest Conservation Plan. The Forest Stand Delineation identifies the existing forest cover and environmental features on the proposed development site. It is submitted at the initial stages of subdivision or project plan approval, before a grading permit application, or before a sediment control application is submitted. When the Forest Stand Delineation is complete and approved, the information it provides can then be used to prepare the Forest Conservation Plan. The Forest Conservation Plan indicates the limits of disturbance for the proposed project and how existing forested and sensitive areas will be protected during and after development."

The affected forest is classified by Brown and Brown (1972) in *Woody Plants of Maryland* as an Oak-Pine Forest of the Coastal Region, and according to *The Vegetation Map of Maryland* (Brush et al., 1976), this classification includes the species listed in Table III-24 (below), as well as species from three other plant associations: the Tulip Poplar Association, the Chestnut Oak-Post Oak-Blackjack Oak Association, and the River Birch-Sycamore Association (Tables III-25, III-26, and III-27). The Tulip Poplar Association covers most of the forested area at the study site, while the Chestnut Oak-Post Oak-Blackjack Oak Association is located along the floodplains of Windlass Run. The River Birch-Sycamore Association is found along the Whitemarsh Run floodplain. Figure III-11 shows the portions of the study area covered by each of the three forest associations.

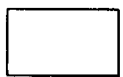




RIVER BIRCH-SYCAMORE ASSOCIATION



TULIP POPLAR ASSOCIATION



CHESNUT OAK-POST OAK BLACKJACK OAK ASSOCIATION



STUDY AREA



MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT

FOREST ASSOCIATIONS



MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

DATE:  
Jan. 2001

FIGURE  
NO. III-11

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Table III-24: Plant Species of the Oak-Pine Forests of the Coastal Plain

Common Name	Botanical Name	Preferred Habitat	Uses, Natural Value
loblolly pine	<i>Pinus taeda</i>	moist sandy soils, abandoned fields	Lumber, pulpwood
Virginia pine	<i>Pinus virginiana</i>	dry or sterile soils, abandoned farm fields	pulpwood
pitch pine	<i>Pinus rigida</i>	dry, sandy or rocky sites	lumber, fuel, pulpwood, rosin, turpentine
sweet gum	<i>Liquidambar styraciflua</i>	bottom lands, abandoned fields in coastal plain	wood products
willow oak	<i>Quercus phellos</i>	swamps and bottom lands of the Coastal Plain	lumber, ornamental
pin oak	<i>Quercus palustris</i>	moist bottom lands	ornamental
post oak	<i>Quercus stellata</i>	dry poor soils, shale barrens, serpentine barrens	posts, railroad ties
Spanish oak	<i>Quercus falcata</i>	moist to dry woods	lumber, fuel
pond pine	<i>Pinus serotina</i>	poorly drained soils, sandy or peaty swamps	lumber, pulpwood
water oak	<i>Quercus nigra</i>	wet, sandy woods or stream borders	landscape planting
basket oak	<i>Quercus michauxii</i>	low wet soils and stream borders	lumber, fuel, baskets
American holly	<i>Ilex opaca</i>	moist sandy woodlands of the coastal plain	food and shelter for wildlife, ornamental, furniture
blackjack oak	<i>Quercus marilandica</i>	dry, sandy or shaly soils, coastal plain and piedmont	fuel
pale hickory	<i>Carya pallida</i>	sandy soils of the Coastal Plain, rare	
bitternut hickory	<i>Carya cordiformis</i>	moist woods or wet bottomland	charcoal, mine props, pulpwood, handles, fuel
river birch	<i>Betula nigra</i>	along fresh water streams of the Coastal Plain	furniture, fuel, pulpwood
black willow	<i>Salix nigra</i>	stream banks and bottom woodlands	pulp, charcoal, veneer, artificial limbs
tulip poplar	<i>Liriodendron tulipifera</i>	rich woods, coves and abandoned fields	Bee pollen, lumber
American beech	<i>Fagus grandifolia</i>	rich moist woodlands, some in pure stands	food for wildlife, charcoal, pulpwood, fuel, furniture
green ash	<i>Fraxinus pennsylvanica</i>	moist soils	
American Elm	<i>Ulmus americana</i>	rich soils, flood plains	pulpwood, charcoal, lumber, ornamental
swamp white oak	<i>Quercus bicolor</i>	wet soils and along streams of the Coastal Plain	railroad ties, woodworking, lumber
bur oak	<i>Quercus macrocarpa</i>	bottom lands, rich moist woods and floodplains	railroad ties, fuel, lumber, cabinet making
sweet bay	<i>Magnolia virginiana</i>	swampy woods or stream banks of the Coastal Plain	ornamental
early low blueberry	<i>Vaccinium angustifolium</i>	dry, rocky or poor soils and peaty bogs	food for wildlife
dwarf huckleberry	<i>Gaylussacia dumosa</i>	moist to dry sandy soils of coastal plain	food for wildlife
greenbriers	<i>Smilax spp.</i>	woodlands	food and shelter for wildlife
sand blackberry	<i>Rubus cuneifolius</i>	sandy soils of the Coastal Plain	fruit, food for wildlife
bayberry	<i>Myrica</i>		
sweet pepperbush	<i>Clethra alnifolia</i>	swamps, wet thickets and forests of the Coastal Plain	
sweet azalea	<i>Rhododendron canescens</i>	moist woods of the Coastal Plain	

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Common Name	Botanical Name	Preferred Habitat	Uses, Natural Value
male-berry	<i>Lyonia ligustrina</i>	swamps, moist forests or open areas	
stagger bush	<i>Lyonia mariana</i>	swamps, moist or dry forests of the Coastal Plain	
fetterbush	<i>Leucothoe racemosa</i>	swamps, moist woods of the Coastal Plain	
inkberry	<i>Ilex glabra</i>	sandy woodlands of the Coastal Plain	honey, ornamental

Table III-25: Plant Species of the Tulip Poplar Association

Common Name	Botanical Name	Preferred Habitat	Uses, Natural Value
tulip poplar	<i>Liriodendron tulipifera</i>	rich woods, coves and abandoned fields	Bee pollen, lumber
red maple	<i>Acer rubrum</i>	dry mountain tops to moist woods and swamps	pulpwood, charcoal and cheap lumber
flowering dogwood	<i>Cornus florida</i>	acid woodlands, old fields	food for wildlife, ornamental
Virginia creeper	<i>Parthenocissus quinquefolia</i>	rich woods, fence posts, tree trunks, cliffs and rocky banks	
black gum	<i>Nyssa sylvatica</i>	swamps or wet soils	cheap furniture, lumber and crates
white oak	<i>Quercus alba</i>	well-drained soils, some found in wet soils	food for wildlife, lumber
sassafras	<i>Sassafras albidum</i>	dense thickets	food for wildlife
black cherry	<i>Prunus serotina</i>	fence rows, thickets and woodlands	food for wildlife
grape	<i>Vitis spp.</i>	woodlands	food for wildlife
mockernut hickory	<i>Carya tomentosa</i>	dry or moist woodland	food for wildlife, tool handles
black oak	<i>Quercus velutina</i>	dry and moist soils	lumber
poison ivy	<i>Rhus radicans</i>	woodlands, orchards, fence rows, not found above el. 2,400	food for wildlife
greenbriers	<i>Smilax spp.</i>	woodlands	food and shelter for wildlife
American beech	<i>Fagus grandifolia</i>	rich moist woodlands, some in pure stands	food for wildlife, charcoal, pulpwood, fuel, furniture
spicebush	<i>Lindera benzoin</i>	damp woods	food for wildlife
northern red oak	<i>Quercus rubra</i>	upland well-drained soils	quick growing timber tree
mapleleaf viburnum	<i>Viburnum acerifolium</i>	moist or dry deciduous woods	
early low blueberry	<i>Vaccinium angustifolium</i>	dry, rocky or poor soils and peaty bogs	food for wildlife
choke cherry	<i>Prunus virginiana</i>	thickets and borders of woods and in wet areas	food for wildlife
brambles	<i>Rubus spp.</i>	woodlands, fences	food for wildlife, fruit

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Table III-26: Plants Species of the Chestnut Oak-Post Oak-Blackjack Oak Association

Common Name	Botanical Name	Preferred Habitat	Uses, Natural Value
chestnut oak	<i>Quercus prinus</i>	dry shaly ridges, calcareous slopes, or with post oak	Lumber
post oak	<i>Qercus stellata</i>	dry poor soils, shale barrens, serpentine barrens	posts, railroad ties
blackjack oak	<i>Quercus marilandica</i>	dry, sandy or shaly soils, coastal plain and piedmont	fuel
red maple	<i>Acer rubrum</i>	dry mountain tops to moist woods and swamps	pulpwood, charcoal and cheap lumber
black gum	<i>Nyssa sylvatica</i>	swamps or wet soils	cheap furniture, lumber and crates
white oak	<i>Quercus alba</i>	well-drained soils, some found in wet soils	food for wildlife, lumber
sassafras	<i>Sassafras albidum</i>	dense thickets	food for wildlife
greenbriers	<i>Smilax spp.</i>	woodlands	food and shelter for wildlife
American holly	<i>Ilex opaca</i>	moist sandy woodlands of the coastal plain	food and shelter for wildlife, ornamental, furniture
Virginia pine	<i>Pinus virginiana</i>	dry or sterile soils, abandoned farm fields	pulpwood
black oak	<i>Quercus velutina</i>	dry and moist soils	lumber
Japanese honeysuckle	<i>Lonicera japonica</i>	woodland invader, fence rows and fields	imported for bank stabilization, pest plant
American beech	<i>Fagus grandifolia</i>	rich moist woodlands, some in pure stands	food for wildlife, charcoal, pulpwood, fuel, furniture
early low blueberry	<i>Vaccinium angustifolium</i>	dry, rocky or poor soils and peaty bogs	food for wildlife
flowering dogwood	<i>Cornus florida</i>	acid woodlands, old fields	food for wildlife, ornamental
sweet gum	<i>Liquidambar styraciflua</i>	bottom lands, abandoned fields in coastal plain	wood products
scarlet oak	<i>Quercus coccinea</i>	dry soils	ornamental
Spanish oak	<i>Quercus falcata</i>	moist to dry woods	lumber, fuel
mockernut hickory	<i>Carya tomentosa</i>	dry or moist woodland	food for wildlife, tool handles
Virginia creeper	<i>Parthenocissus quinquefolia</i>	rich woods, fence posts, tree trunks, cliffs and rocky banks	
black cherry	<i>Prunus serotina</i>	fence rows, thickets and woodlands	food for wildlife
sweet pignut hickory	<i>Carya glabra</i>	dry woods or open pastures	mine props, charcoal, handles, fuel
dwarf huckleberry	<i>Gaylussacia dumosa</i>	moist to dry sandy soils of coastal plain	food for wildlife
mountain laurel	<i>Kalmia latifolia</i>	acid, rocky or sandy soils, swamps	ornamental
southern arrowwood	<i>Viburnum dentatum</i>	moist or dry sandy soils in partial shade	
tall deerberry	<i>Vaccinium stamineum</i>	dry forests and thickets	fruit

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Table III-27: Plants Species of the River Birch-Sycamore Association

Common Name	Botanical Name	Preferred Habitat	Uses, Natural Value
river birch	<i>Betula nigra</i>	along fresh water streams of the Coastal Plain	furniture, fuel, pulpwood
sycamore	<i>Platanus occidentalis</i>	along streams and bottom lands, rare above 2300 feet	furniture, boxes, pulpwood, butchers blocks
red maple	<i>Acer rubrum</i>	dry mountain tops to moist woods and swamps	pulpwood, charcoal and cheap lumber
poison ivy	<i>Rhus radicans</i>	woodlands, orchards, fence rows, not found above elev. 2,400	food for wildlife
Virginia creeper	<i>Parthenocissus quinquefolia</i>	rich woods, fence posts, tree trunks, cliffs and rocky banks	
greenbriers	<i>Smilax spp.</i>	woodlands	food and shelter for wildlife
sweet gum	<i>Liquidambar styraciflua</i>	bottom lands, abandoned fields in coastal plain	wood products
Japanese honeysuckle	<i>Lonicera japonica</i>	woodland invader, fence rows and fields	imported for bank stabilization, pest plant
southern arrowwood	<i>Viburnum dentatum</i>	moist or dry sandy soils in partial shade	
tulip poplar	<i>Liriodendron tulipifera</i>	rich woods, coves and abandoned fields	Bee pollen, lumber
spicebush	<i>Lindera benzoin</i>	damp woods	food for wildlife
black gum	<i>Nyssa sylvatica</i>	swamps or wet soils	cheap furniture, lumber and crates
grape	<i>Vitus spp.</i>	woodlands	food for wildlife
ironwood	<i>Carpinus caroliniana</i>	moist forests of rocky slopes, often with oaks	handles, pulpwood, mine props, charcoal
American holly	<i>Ilex opaca</i>	moist sandy woodlands of the coastal plain	food and shelter for wildlife, ornamental, furniture
flowering dogwood	<i>Cornus florida</i>	acid woodlands, old fields	food for wildlife, ornamental
black cherry	<i>Prunus serotina</i>	fence rows, thickets and woodlands	food for wildlife
green ash	<i>Fraxinus pennsylvanica</i>	moist soils, common in Potomac drainage	
white oak	<i>Quercus alba</i>	well-drained soils, some found in wet soils	food for wildlife, lumber
brambles	<i>Rubus spp.</i>	woodlands, fences	food for wildlife, fruit
elderberry	<i>Sambucus canadensis</i>		
slippery elm	<i>Ulmus rubra</i>	rich dry soils, limestone outcrops, rare on Coastal Plain	pulpwood, charcoal, lumber
sassafras	<i>Sassafras albidum</i>	dense thickets	food for wildlife

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The Oak-Pine Forest of the Coastal Region is characterized as being dominated by loblolly, Virginia and pitch pines in well-drained soils, along with the deciduous sweet gum, willow oak, pin oak, post oak and Spanish oak. Shrubs growing in well-drained soils include blueberry, huckleberry, greenbrier, sand blackberry, beach plum and beach heather. Moist soils produce stands of loblolly and pond pine, willow oak, water oak, basket oak and American holly. Other trees and shrubs growing in moist soils in this forest type include tulip poplar, American beech, sweet gum, black cottonwood, pale hickory, bitternut hickory, sweet bay, bayberry, sweet pepperbush, azalea, maleberry, stagger-bush, fetter-bush, inkberry and alder buckhorn. Floodplain species include river birch, willows, poplars, green ash, American elm, swamp white oak, and bur oak.

According to the *Vegetation Map of Maryland*, the Tulip Poplar Association covers most of the forested region of the study area. This Association is dominated by the tulip poplar, and it includes the associated species: red maple, flowering dogwood, Virginia creeper, black gum, white oak, sassafras, black cherry, grape, mockernut hickory, black oak, poison ivy, greenbriers, American beech, spicebush, northern red oak, mapleleaf viburnum, early low blueberry, choke cherry and brambles. This association is mapped as covering the entire forested area of the study site except along the floodplains of Windlass Run, which is mapped as the Chestnut Oak-Post Oak-Blackjack Oak Association.

The Chestnut Oak-Post Oak-Blackjack Oak Association contains species that are tolerant of wet to moist soils and that are generally found along floodplains, swamps and bottom lands. The Association is dominated by the chestnut oak, post oak, and blackjack oak. It includes the associated species: red maple, black gum, white oak, sassafras, greenbriers, American holly, Virginia pine, black oak, Japanese honeysuckle, American beech, early low blueberry, flowering dogwood, sweet gum, scarlet oak, Spanish oak, mockernut hickory, Virginia creeper, black cherry, sweet pignut hickory, dwarf huckleberry, mountain laurel, southern arrowwood, and tall deerberry.

The River Birch-Sycamore Association is represented along the Whitemarsh Run Floodplain. This association is dominated by river birch, sycamore, and red maple, and includes poison ivy, Virginia creeper, greenbriers, sweet gum, Japanese honeysuckle, southern arrowwood, tulip poplar, spicebush, black gum, grape, ironwood, American holly, flowering dogwood, black cherry, green ash, white oak, brambles, elderberry, slippery elm, and sassafras.

A field survey of the study area forest indicated a dominance of tulip poplars, Virginia pines, loblolly pines, pitch pines, red maples, red oaks, black oaks and pin oaks. The understory is dominated by greenbriers, American holly, mountain laurel, sweet bay, sweet pepperbush and club moss. Several almost pure stands of pines were found in areas with sandy soils.

## 2. Wildlife and Wildlife Habitat (Terrestrial)

Terrestrial wildlife found in the study area includes the following species, considered according to feeding type:

- Herbivorous species in the study area include mice, voles, chipmunks, squirrels, woodchucks, muskrats, rabbits, quail and a variety of songbirds.

- Insectivorous species include shrews, moles, bats and a variety of songbirds.
- Carnivorous species include weasels, mink, foxes, hawks and owls.
- Omnivorous species include opossums, skunks and raccoons.

The animals can be found in a variety of habitats, which can vary according to season and the availability of food and cover. Generally, they can be found in the following habitats:

- The upland woodlands support a diverse fauna of deer, mice, chipmunks, squirrels, shrews, opossums, woodpeckers, blue jays, crows, vireos, towhees, tanagers, chickadees and many other songbirds.
- Bottomlands, including floodplains, support furbearers such as muskrats, occasional mink and raccoons, as well as rabbits, shrews, moles, bats, kingfishers, waterfowl and a variety of songbirds.
- Old fields support a varied faunal community. Rabbits, voles, skunks, red foxes, woodchucks, quail and many songbirds such as meadowlarks, bluebirds, robins, red-winged blackbirds, indigo buntings, etc. inhabit these areas.

The large forested area provides suitable food and habitat for many wildlife species common to the area. Mammals typically found in a forest habitat of the Coastal Plain would include white-tailed deer, raccoon, eastern gray squirrel, eastern chipmunk, rabbit, woodchuck, field mouse, and opossum. Birds found in this habitat would include American robin, field sparrow, common grackle, European starling, northern mockingbird, blue jay, mourning dove, eastern bluebird, red-winged blackbird, red-shouldered hawk, red-tailed hawk, and turkey vulture. Reptiles found in this type of habitat would include box turtle, snapping turtle, painted turtle, black rat snake, copperhead snake, king snake, garter snake and corn snake.

### 3. Rare, Threatened and Endangered Species

There are no Federally listed threatened or endangered species within the study area. In a letter to SHA dated January 5, 1999 the United States Fish and Wildlife Service reported that "except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the described study or cumulative effects areas. Therefore, no biological assessment or further Section 7 consultation is required with the U.S. Fish and Wildlife Service." The letter further stated that if the project changes or if new information about the distribution of such species becomes available in the future this determination could be reconsidered. It recommended contacting Maryland Heritage and Wildlife Division of Maryland Department of Natural Resources for information regarding any state-listed and other species of concern within the study area. That state agency had already been contacted and the results of its determination had been received in a letter dated November 1998.

The Maryland Department of Natural Resources-Forest, Wildlife and Heritage Service reported that four species listed in its National Heritage database are known to occur within the MRECAS area. The four species are shown below in Table III-28.

Table III-28: Threatened and endangered species known to occur within the MRECAS area:

Scientific Name	Common Name	State Status
<i>Carex vestita</i>	Velvety Sedge	Endangered
<i>Iris prismatica</i>	Slender Blue Flag	Endangered
<i>Platanthera blephariglottis</i>	White Fringed Orchid	Threatened
<i>Sterna antillarum</i>	Least Tern	Threatened

Maryland Department of Natural Resources-Forest, Wildlife and Heritage Service reported that the forested areas of the MRECAS, as well as areas outside the study area but which lie within the secondary and cumulative effects boundary, contain habitat for Forest Interior Dwelling Birds (FIDS). In general, FIDS are bird species that are either restricted to or dependent upon relatively large, undisturbed, mature forest areas to maintain their populations, although occasionally some individual birds of such species might be found inhabiting small woodlots or non-forested habitat.

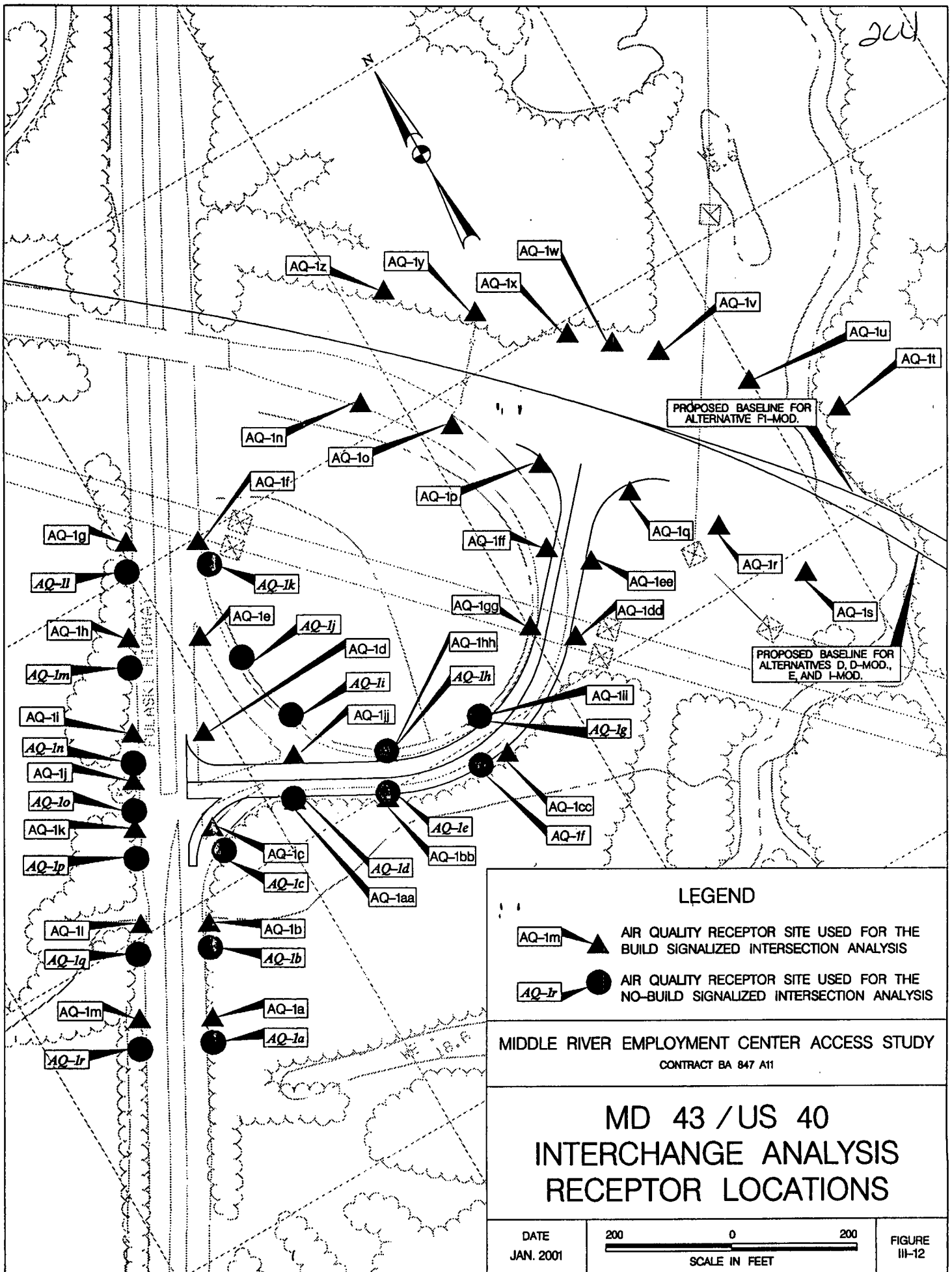
Populations of many FIDS are declining in Maryland and throughout the eastern United States. The declines are directly related to the loss, fragmentation, and isolation of the forest habitat necessary to sustain their population (Chesapeake Bay Critical Area Commission, 1986). Therefore, the conservation of their habitat is strongly encouraged Statewide by Maryland Department of Natural Resources. Furthermore, in areas adjacent to tidal waters the Chesapeake Bay Critical Area criteria require protection of FIDS and their habitat. The Critical Area criteria do not prohibit development, tree harvesting, tree clearing, or other activities from occurring in such areas, but it is implicit within the criteria that managing such areas to conserve these birds should generally have a higher priority than management of other wildlife species, except for those species listed as threatened or endangered.

#### K. Air Quality

The project area is located in Baltimore County, Maryland, which is a severe air quality non-attainment area for ozone (O<sub>3</sub>). Baltimore County is not a non-attainment area for carbon monoxide (CO) and Particulate Matter (PM<sub>10</sub>). 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 Inspections Program.

A detailed microscale air quality analysis has been performed to determine the local CO impact of the proposed project. The location of air quality sensitive receptors used in the analysis, and the build alternative(s) each receptor is used to analyze, is shown on Table III-29 and on Figures II-7 through II-19 and Figures III-12 through III-14. The results are summarized in Section IV-L. A copy of the technical analysis report is available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.







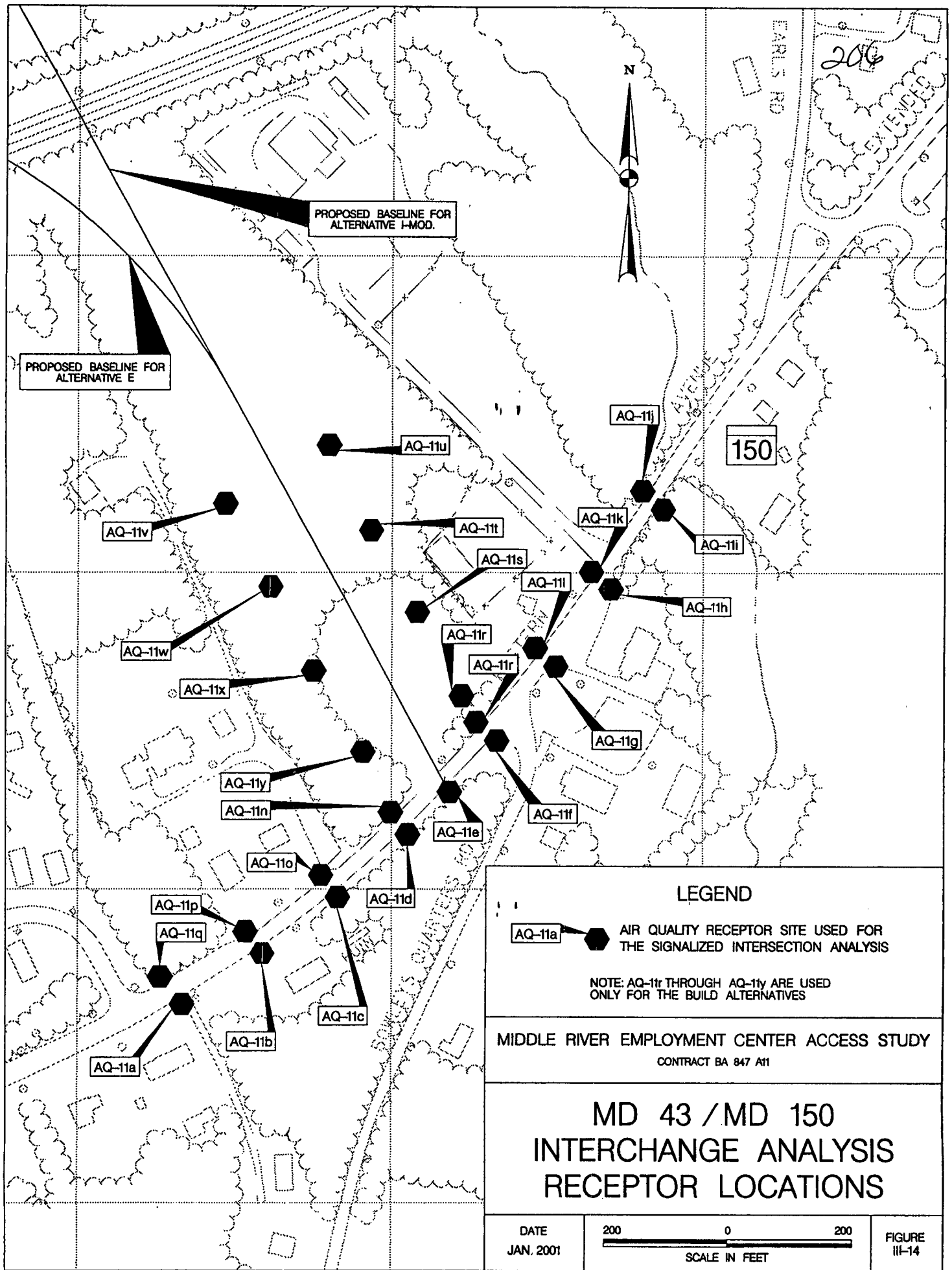


Table III-29: Location of air quality sensitive receptors

Receptor	Address/ Location	Alternatives	Description
AQ-1	MD 43 / US 40 Interchange	All	Intersection Analysis – Receptors: 18 No-Build, 36 Build
AQ-2	12158 Buttonwood Lane	F1-Mod	White Ranch Residence
AQ-3	10124 Bird River Road	F1-Mod	Brick Ranch Residence
AQ-4	10136 Bird River Road	F1-Mod	Brick Ranch Residence
AQ-5	10212 Bird River Road	D; D-Mod; E; 1-Mod	1 ½ Story Green Frame Residence
AQ-6	10227 Bird River Road	D; D-Mod; E; 1-Mod	1 ½ Story Green Frame Residence
AQ-7	5715 Hilltop Road	D; D-Mod; E; 1-Mod	White 2-Story Residence
AQ-8	10414 Vincent Road	D; D-Mod; E; 1-Mod	Brick Ranch Residence / Barn
AQ-9a	10100 Bevans Lane	D; E; 1-Mod	White 2-Story Residence
AQ-9b	10102 Bevans Lane	D-Mod	White 2-Story Residence
AQ-10a	125 Bengies Road	1-Mod	White Ranch Residence
AQ-10b	10038 Bengies Road	E; 1-Mod	Gray 2-Story Residence
AQ-11	MD 43 / MD 150 Intersection	E; 1-Mod	Intersection Analysis – Receptors: 17 No-Build, 25 Build
AQ-12	127 Rodeo Drive	E; 1-Mod	White Mobile Home
AQ-13a	Martin State Airport (Historic Site)	D; D-Mod; F1-Mod	Historic Manufacturing Facility
AQ-13b	Martin State Airport (Historic Site)	D; D-Mod; F1-Mod	Historic Manufacturing Facility
AQ-14	MD 43 / MD 150 Intersection	D; D-Mod; F1-Mod	Intersection Analysis – Receptors: 18 No-Build, 23 Build
AQ-15	Alts. D&E Station 1087+75.10 Right	D; E	Edge of right-of-way
AQ-16	Alts. D&E Station 1107+75.10 Left	D; E	Edge of right-of-way
AQ-17	Alt. D Station 1132+75.10 Right	D	Edge of right-of-way
AQ-18	Alt. D-Mod Sta. 1092+75.10 Right	D-Mod	Edge of right-of-way
AQ-19	Alt. D-Mod Sta. 1115+75.10 Left	D-Mod	Edge of right-of-way
AQ-20	Alt. D-Mod Sta. 1139+75.10 Right	D-Mod	Edge of right-of-way
AQ-21	Alt. E Station 1127+75.10 Right	E	Edge of right-of-way
AQ-22	Alt. F1-Mod Sta. 1087+11.19 Left	F1-Mod	Edge of right-of-way
AQ-23	Alt. F1-Mod Sta. 1108+74.14 Right	F1-Mod	Edge of right-of-way
AQ-24	Alt. F1-Mod Sta. 1131+89.11 Right	F1-Mod	Edge of right-of-way
AQ-25	Alt. I-Mod Sta. 1084+07.90 Right	I-Mod	Edge of right-of-way
AQ-26	Alt. I-Mod Sta. 1118+22.86 Right	I-Mod	Edge of right-of-way
AQ-27	Alt. I-Mod Sta. 1143+74.10 Left	I-Mod	Edge of right-of-way

L. Noise Quality

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1. Introduction

Fourteen (14) Noise Sensitive Areas (NSA) were identified within the Middle River Employment Center Access Study area. Individual noise receptor locations were selected to be representative of each noise sensitive community potentially affected by project improvements. A total of fifty-seven (57) receptors were identified to represent noise sensitive land use within the 14 NSA's. Individual noise receptor locations are shown on Figures II-7 through II-19 at the end of Section II of this document.

Each NSA is comprised of residential, commercial, recreational, cultural, or institutional facilities and uses that may be affected by traffic noise from the project alternatives. The following describes each NSA:

***NSA 1 (White Marsh - Buttonwood Lane Development)***

NSA 1 consists of seventy-three (73) individual single-family residences in a modern suburban development, along Buttonwood Lane, near Reames Road. Noise Receptors 1-3 are representative of homes in the first row of development from Alternative F<sub>1</sub> Modified. Receptors 4 and 5 represent the second row of development.

***NSA 2 (White Marsh Estates)***

NSA 2 consists of two (2) individual residences, approximately 1000' west of Bird River Road. Receptor 6 was selected to represent this area. Receptors 7 and 8 have been identified as a garage (Receptor 7) and a commercial property (Receptor 8) and were not analyzed. Receptor 6 and the nearby residence are isolated and wooded properties.

***NSA 3 (White Marsh Estates - South Bird River Road)***

NSA 3 is situated on each side of Bird River Road, between Reames Road and the entrance to Holly Hill Memorial Gardens. Thirteen (13) residential properties are on the east side of Bird River Road and are represented by Receptors 11, 12, 13, and 17. Each of these receptors are single-family residences with access drives to Bird River Road. Receptors 10, 14, 15, and 16 represent the ten (10) residences on the west side of Bird River Road. Receptor 9 was identified as an automotive repair shop and was not analyzed.

***NSA 4 (White Marsh Estates - North Bird River Road)***

NSA 4 is situated between the entrance to Holly Hill Memorial Gardens and Vincent Road, and consists of nine (9) residences on either side of Bird River Road. Receptors 22, 23, 26, and 27 represent the residences on the west side of Bird River Road, and Receptors 24 and 25 represent the east side. Each of these receptors is a single-family residence with access to Bird River Road. NSA 4 also contains seven (7) residential properties adjacent to Hilltop Road that are represented by Receptors 18- 21.

***NSA 5 (Holly Hill Memorial Gardens)***

Holly Hill Memorial Gardens is a large modern cemetery, containing in-ground gravesites and mausoleum vaults. There is also a war memorial in the northeastern sector of the cemetery.

Receptors 28-30 were selected to represent this cemetery, which is surrounded by wooded land on three sides and Bird River Road to the west.

***NSA 6 (Bevans Lane Properties)***

NSA 6 consists of four (4) individual residences and one (1) mobile home. The area is isolated and surrounded by woodland. The mid-section of the area is pasture land for boarding horses. Receptors 31-34 were selected to represent NSA 6. One residence will be taken if Alternative D Modified is selected.

***NSA 7 (Stoecker Lane Properties)***

NSA 7 consists of several isolated abandoned buildings and was not analyzed.

***NSA 8 (White Marsh Farms)***

White Marsh Farms is a relatively new development consisting of 68 single-family residences adjacent to Meadow Glen Road, Oldfield Court, and Rohe Farm Lane. Receptors 36-38 were selected to represent this development that sits atop a ridge and will overlook Alternative F<sub>1</sub> Modified, if it is selected for design and construction.

***NSA 9 (Bengies Road Properties)***

NSA 9 (Receptor 39) is a well isolated single-family residence, with out buildings, on the north side of Bengies Road. Bengies Road dead ends at a quarry site north of Receptor 39. This location is completely surrounded by mature woodland.

***NSA 10 (New Bengies Road)***

NSA 10 consists of five (5) individual single-family residences on the north side of new Bengies Road, near its dead end at the railroad tracks.

***NSA 11 (Chase)***

NSA 11 consists of approximately ten (10) individual single-family residences, the Chase Elementary School, the Christian Missionary Alliance Fellowship Church, a community center, and two (2) commercial establishments adjacent to Eastern Avenue Extended, from north of Earls Road to Lariat Road. Receptor 44 is the church, Receptor 49 the Chase Elementary School, and Receptors 46-48 are single-family residences. Receptors 46-48 are adjacent to a private lane, which will parallel Alternatives E or I Modified, if either is selected for design and construction. The church and Receptor 45 have access drives to Bowley's Quarters Road and Chase Elementary School has two access points on Eastern Avenue Extended.

***NSA 12 (Williams Estates)***

Williams Estates is a large mobile home park on the west side of Eastern Avenue Extended. The most northerly portion of the development, along Rodeo Circle, will be within 250'-350' of Alternatives E and I Modified, if either is selected for design and construction. These mobile homes are represented by Receptors 50-53.

***NSA 13 (Earls Road Properties)***

NSA 13 consists of six (6) individual homes and three (3) commercial properties adjacent to Earls Road. Receptor 54, a mobile home, and Receptor 55, a single-family dwelling, are isolated

properties surrounded by mature woodland, approximately 800'-1000' south of Earls Road. Receptor 56 was selected to represent the four single-family residences adjacent to the south side of Earls Road.

#### ***NSA 14 (GSA Depot)***

This noise sensitive area (Receptor 57) is typical of the commercial and industrial nature in this area of Eastern Boulevard. It is a large multi-story facility that once housed the U.S. Army Publications Depot. Immediately adjacent to the Depot is a Mass Transit Administration rail car maintenance facility. This site was selected due to its potential historic eligibility.

## **2. Method, Sample Results, and Analysis**

The one hour A-weighted sound energy equivalent noise level (dBA Leq) is the noise metric used in assessing highway noise impacts. Leq represents the equivalent steady state noise level that, during a stated period of time, contains the same noise energy as the time-varying noise during the same period. The A-weighting refers to the method of measuring sound to approximate the human ear, de-emphasizing the low and very high frequencies and emphasizing the mid-range frequencies.

Field measurements of ambient noise levels were performed to calibrate FHWA's Traffic Noise Model Version 1.0 (TNM), to establish the basis for impact analysis, and to establish no-build noise levels where existing background noise levels are not influenced by traffic noise. Field monitoring was performed on December 10 and 11, 1998 and January 5, 1999, using two (2) Metrosonics dB 3080 Noise Dosimeters, in accordance with procedures outlined in FHWA Report PD-96-046, *Measurement of Highway Related Noise*, dated May, 1996. Since any alternative selected for design and construction would be on new alignment, it was determined that 24-hour monitoring to establish worst case noise hours was not required. Therefore, noise measurements were taken during the A.M. and P.M. peak traffic hours (7:00 A.M. to 9:00 A.M. and 4:30 P.M. to 6:30 P.M.) for receptors affected by traffic (i.e. adjacent to Bird River Road and MD 150). All other receptors were monitored at any time between 9:00 A.M. and 4:30 P.M., given their relative isolation.

Short-term monitoring was conducted at 27 receptors. Several noise sensitive receptor locations were selected, including second row residences, to thoroughly assess the severity and limit of existing impacts within each NSA. Short-term measurements of 15 minutes during peak hour and 10 minutes at isolated receptors were conducted at each receptor location. Traffic classification counts along with vehicle speeds were also recorded during monitoring periods. Short-term monitoring results are shown in Table III-30. As identified on Table III-30, no receptors currently equal or exceed the 66 dBA Leq criterion established by FHWA.

Table III-30: Short-term Noise Monitoring Levels

Noise Sensitive Area	Receptor No.	Receptor Location	Time	Leq(dBA)	
1 White Marsh Estates (Buttonwood Lane Development)	1	12142 Buttonwood Lane	2:45 PM	54	
	2	12150 Buttonwood Lane	2:45 PM	54	
	3	12158 Buttonwood Lane	2:45 PM	54	
	4	12151 Buttonwood Lane	2:45 PM	54	
	5	12155 Buttonwood Lane	2:45 PM	54	
2 White Marsh Estates	6	10124 Bird River Road	2:10 PM	47	
	7	Garage	N/A	N/A	
	8	Commercial	N/A	N/A	
3 White Marsh Estates (S. Bird River Road)	9	Commercial	N/A	N/A	
	10	Bird River Road	7:30 AM	62	
	11	Bird River Road	8:40 AM	51	
	12	10115 Bird River Road	8:40 AM	51	
	13	10108 Bird River Road	8:40 AM	51	
	14	Bird River Road	7:35 AM	49	
	15	10142 Bird River Road	8:35 AM	58	
	16	10140 Bird River Road	8:35 AM	58	
	17	10135 Bird River Road	7:30 AM	62	
4 White Marsh Estates (N. Bird River Road)	18	5708 Hilltop Road	2:10 PM	47	
	19	5716 Hilltop Road	2:10 PM	47	
	20	5715 Hilltop Road	2:10 PM	47	
	21	5719 Hilltop Road	2:10 PM	47	
	22	10228 Bird River Road	8:05 AM	65	
	23	10226 Bird River Road	8:05 AM	65	
	24	10229 Bird River Road	8:05 AM	63	
	25	10225 Bird River Road	8:05 AM	63	
	26	Bird River Road	8:10 AM	61	
	27	Bird River Road	8:10 AM	61	
5 Holly Hill Memorial Gardens	28	Holly Hill Memorial Gardens	8:35 AM	55	
	29	Holly Hill Memorial Gardens	11:33 AM	52	
	30	Holly Hill Memorial Gardens	11:33 AM	52	
6 Bevans Lane Properties	31	10102 Bevans Lane	1:40 PM	49	
	32	10100 Bevans Lane	1:40 PM	49	
	33	10204 Bevans Lane	1:40 PM	48	
	34	10124 Bevans Lane	1:40 PM	48	
7	Stoecker Lane Properties	35	Abandoned Buildings	N/A	N/A
8 White Marsh Farms	36	1000 Meadow Glen Road	11:07 AM	52	
	37	1001 Rohe Farm Lane	11:07 AM	52	
	38	991 Rohe Farm Lane	11:07 AM	52	
9	Bengies Road Properties	39	3016 Bengies Road	10:17 AM	49
10 New Bengies Road	40	143 Bengies Road	1:00 PM	49	
	41	129 Bengies Road	1:00 PM	49	
	42	133 Bengies Road	1:00 PM	49	
	43	125 Bengies Road	1:00 PM	49	
11 Chase	44	Christian Missionary Alliance Fellowship Church	4:20 PM	65	
	45	7 Bowleys Quarters Road	4:20 PM	63	
	46	11530 Eastern Avenue Extended	10:32 AM	54	
	47	11528 Eastern Avenue Extended	4:45 PM	60	
	48	11522 Eastern Avenue Extended	4:45 PM	65	
	49	Chase Elementary School	5:15 PM	62	
12 Williams Estates	50	141 Rodeo Circle	10:08 AM	51	
	51	135 Rodeo Circle	10:08 AM	51	
	52	127 Rodeo Circle	10:08 AM	51	
	53	123 Rodeo Circle	10:08 AM	51	
13 Earls Road Properties	54	130 Earls Road	11:25 AM	50	
	55	Earls Road	11:25 AM	50	
	56	Earls Road	8:25 AM	48	
14	GSA Depot	57	GSA Depot	7:20 AM	56



## M. Municipal and Industrial Waste Sites

### 1. Introduction

An Initial Site Assessment (ISA) was conducted for the proposed Middle River Employment Center Access Study (MRECAS). The study was conducted to determine the potential for hazardous materials on the properties within and adjacent to the proposed alignments being considered. These alignments (known as Alternatives D, D-Modified, E, F<sub>1</sub>-Modified, and I-Modified) are located within a 3-mile long by 1.25-mile wide corridor extending from the existing terminus of MD 43, to Eastern Avenue (MD 150). The study areas are hereinafter referred to as the "Alignments".

The study was conducted in accordance with the *Hazardous Waste Guide for Project Development*, published by the American Association of State Highway and Transportation Officials (AASHTO). The objectives of the ISA were to:

- Perform an on site inspection and identify sites along the Alignments with one or more environmental concerns that could influence construction activities and warrant further study; and
- Provide MSHA with an electronic database synthesizing the information collected at each site.

The on-site inspection of the Alignments included each right-of-way plus an additional 100 feet on either side of the alignment centerline. In addition to the inspection, a database search was performed to determine if regulated hazardous waste sites, above ground and underground storage tank sites and/or other sites monitored by environmental regulatory agencies were located on or in proximity to the proposed Alignments.

### 2. Methodology

The current environmental status of the Alignments was accessed by performing an on-site inspection, and addressed regulatory concerns by performing an environmental database search for a 200-foot wide corridor around the alignments. On-site findings presented herein are based upon visual observations by consultant personnel during site visits to the Alignments conducted from December 7 to December 16, 1998. Conclusions are based solely upon the condition of the Alignments on the date of the inspection, supplemented by information and data obtained from other sources prior and subsequent to the inspection.

Conclusions presented herein are not indicative of conditions subsequent to the inspection date or of future operating procedures on the Alignments. This study was limited to observations made during the site inspection, supplemented by the information obtained from the radius data base search. No soil, sediment, surface water or ground-water samples were collected for laboratory analysis.

Following the inspection of the alignment, the project team evaluated and sorted the sites into five impact potential categories: "high," "medium/high," "medium," "low," and "listed." The criteria for ranking the sites is presented in Table III-31. The site ranking criteria assesses the

potential impact a site may have on construction activities and identifies potential liabilities that may affect site acquisition costs or remediation requirements. Results of the site ranking are presented in Table III-32 below, while a table in Section IV.N of this document provides a comprehensive overview of the identified environmental concerns associated with the corridor.

**Table III-31: Project Impact Ranking Criteria for Hazardous Waste Sites**

<b>High</b>	<ul style="list-style-type: none"> <li>◆ Industrial facilities</li> <li>◆ Gasoline stations</li> <li>◆ Auto repair facilities</li> <li>◆ Paint manufacturing facilities</li> <li>◆ Dry cleaners</li> <li>◆ USTs containing gasoline, jet fuel, kerosene, diesel fuel, waste oil or solvents</li> <li>◆ Landfills</li> </ul>	<ul style="list-style-type: none"> <li>◆ Surface dumps with drums or other hazardous materials</li> <li>◆ Pits and lagoons</li> <li>◆ Above-ground storage tanks with a large amount of staining</li> <li>◆ PCB containing transformers with major stains</li> <li>◆ Remediation system in place</li> </ul>
<b>Listed sites</b>	<ul style="list-style-type: none"> <li>◆ Sites reported on the EDR Data Base that indicate the presence of hazardous materials</li> </ul>	<ul style="list-style-type: none"> <li>◆ Sites reported on the EDR Data Base that indicate the presence of USTs or Leaking USTs</li> </ul>
<b>Medium/High</b>	<ul style="list-style-type: none"> <li>◆ USTs containing materials other than listed above</li> <li>◆ Surface dumps with empty drums or other materials of concern</li> </ul>	<ul style="list-style-type: none"> <li>◆ Mounds</li> <li>◆ Above-ground storage tanks with several medium stains</li> <li>◆ PCB containing transformers with minor stains</li> </ul>
<b>Medium</b>	<ul style="list-style-type: none"> <li>◆ Small amounts of surface staining</li> <li>◆ Slightly discolored water</li> <li>◆ PCB containing transformers, no staining</li> <li>◆ Unmarked transformers</li> <li>◆ Stressed vegetation</li> </ul>	<ul style="list-style-type: none"> <li>◆ Large surface dumps containing household wastes</li> <li>◆ Above-ground storage tanks with a few small stains or no staining, but of questionable integrity</li> </ul>
<b>Low</b>	<ul style="list-style-type: none"> <li>◆ Small surface dumps containing household wastes</li> <li>◆ Above-ground storage tanks (relatively new) with no staining or evidence of poor structural integrity</li> </ul>	<ul style="list-style-type: none"> <li>◆ Septic systems</li> <li>◆ Non-PCB containing transformers with no stains</li> </ul>

The project team used state-of-the-art electronic equipment to record visible evidence of contamination or illicit activities that could result in environmental liabilities related to the acquisition of all or portion of properties located along the proposed Alignments. In addition, a search of various Federal and State environmental databases was performed to help determine the presence of known, alleged or potential hazardous waste sites within 200 feet of the centerline of the proposed Alignments.

An on-site inspection of the Alignments was performed to determine if there were any visible environmental hazards or contamination sources on-site, or if the Alignments are being visibly affected by any adjacent properties. The consultant performed a walking site reconnaissance encompassing the corridors of the proposed Alternatives.

### 3. Initial Site Assessment (ISA) Results

The site reconnaissance and database search of all alignments identified 54 sites of potential environmental concern that may affect the corridor planning process, future highway

construction activities or existing roadway improvements. Based on the criteria presented in Table III-31 the sites were ranked into five impact potential categories: "high," "listed," "medium/high," "medium," and "low." The breakdown of the site ranking process follows.

Seven (7) sites were ranked in the high impact potential category. Identified concerns included substations, household and unregulated dumps with USTs, containers, drums, and other discarded refuse, automotive junkyards, and storage yards with unrestricted access and evidence of unregulated dumping.

Four (4) sites were discovered through the EDR Database Search process. These sites consisted of reported leaking UST and regulated Hazardous Waste Generators.

Seven (7) sites were ranked in the medium high impact potential category. Identified concerns included refuse discarded near agricultural activities, surface dumps with mainly household appliances or few empty drums, scattered junk autos and areas where the ground was mounded.

Twelve (12) sites were ranked in the medium impact potential category. Identified concerns included small areas of surface staining, unmarked transformers, old above-ground storage tanks and large household waste dumps.

Twenty-four (24) sites were ranked in the low impact potential category. Identified concerns included relatively new above-ground storage tanks, small household waste dumps, residential activities, and potential septic tanks. Table III-32 summarizes the findings for each of the 54 sites by impact classification order.

The following is a list of references used and the agencies contacted during the ISA:

- *Code of Maryland Regulations (COMAR)*, Title 26, Department of the Environment, Part 1, Vol. XXIII.
- Cleaves, et. al. 1968, *Geologic Map of Maryland*: Maryland Geological Survey.
- *Environmental Data Resources*. 1998. Corridor Study Report – White Marsh Inquiry 317082.1s
- United States Geologic Survey Middle River Topographic Quadrangle, PR 1985.

**Table III-32: Hazardous Waste Site Ranking by Impact Potential**

Impact Potential	Site No.	Parcel No.	Environmental Concerns
<b>HIGH</b> (7)	5	82/230	Electric substation: suspected historical use of PCB's, and/or solvents, haz. materials storage.
	28	83/147	Jersey wall storage area: severe environmental concern, numerous dump sites of up to 50 drums, containers, paint cans, abandoned USTs/ASTs, rubble and trees.
	29	83/144	Undeveloped: dumping of auto parts, four drums, containers, debris, etc.
	31	83/164, 198&171	Automotive Junk Yard: severe environmental concern, stock piles of junk cars, drums, containers, tires, abandoned USTs/ASTs, rubble.
	35	91/212	Concrete Express: Adjacent to alignment, trucking operations, maintenance, junk autos, possible petroleum solvents and other hazardous materials.
	42	91/465	MSHA MARC, Rail Assembly Plant: Manufacturing facility is active industrial plant with evidence of use and storage for hazardous materials. Wash facility, painting, drums, containers, etc. No evidence of significant spillage.
	50	91/147	Reported Dump: Site not observed. Reported in document provided to CEM by SHA that site is former unregulated dump, 200 by 200 ft. (Elsewhere 200 ac.) with evidence of junk cars, appliances, rubble etc. No visible evidence on E or D, D-Modified alignments.
<b>LISTED</b> (4)	51	83/427	LUST/UST: Holly Hills Cemetery, database reports leaking underground storage tank.
	52	N/Ap	FINDS: Cochran Co.: Reported as hazardous waste trucking company.
	53	N/Ap	RCRIS-SQG: Wolfes Trucking, Inc.: Reported as hazardous waste trucking company.
	54	91/168	FINDS: Bengies Garage: Reported as small quantity generator of hazardous waste.
<b>MEDIUM/HIGH</b> (7)	12	82/111	Undeveloped: 3 empty drums on hillslope in depression used for paintball games, wetland.
	13	82/230	Residence: Backlot stream with dumped household debris, autos, trash, appliances, containers.
	23	83/677	Abandoned Commercial: Former roofing co., possible mastic, old foundation with abandoned 1000-tank on ground, containers and drum in foundation, other rubble evident.
	32	91/198	Vacant: Scattered dumping of car parts, farm implements, and household debris, abandoned shed with drum.
	33	91/198	Backlot of Site 32.
	36	91/209	Vacant: household debris, 4 empty drums, containers, wood and rubble.
	45	83/830	Vegetable Farm: discarded herb/pest sprayer, fertilizers, agricultural debris.
<b>MEDIUM</b> (12)	3	83/103	Residence: observed large collapsed underground structure, large vent pipe, possible cellar.
	6	82/300	Residence: junked bus w/ discarded gas pump, pheasant brood (fecal), lube oil container.
	11	82/111	Undeveloped: Large concrete rubble/ pier mound, some household debris and motor oil cans.
	14	82/256	Residence: Household dumping of junk cars, refrigerators, pressure tanks, rubble.
<b>MEDIUM</b> (12)	17	82/605	Residence with small auto garage: Not on alignment, solvents, petroleum, etc.
	22	83/139	Residence: Backlot dumping of junk autos, boats, parts, one drum, several containers, tires, etc.

Impact Potential	Site No.	Parcel No.	Environmental Concerns
<b>MEDIUM (12)</b> (cont'd)	24	83/144&678	Undeveloped land: dumping of auto parts and truck topper, some household materials, unmarked containers, debris.
	26	83/532	Back lot of Residential Site 25: general household dumping and empty containers on slope.
	30	83/164	Undeveloped: Discarded car parts and hummocky mounded terrain.
	34	91/214	Amtrak: possible historical spillage of fuel or chemicals cargo, etc., coal clinker beds.
	40	91/147	Undeveloped, small ditches with household debris, hummocky terrain, possible burial.
	41	91/147	Vacant: small discarded concrete pier rubble.
<b>LOW (24)</b>	1	83/106	Residence/Weld shop: No significant environmental concerns, possible welding gases, septic.
	2	83/459	Residence: No significant environmental concerns, storage containers, tractor, wetland.
	4	82/448	Residence: One observed propane AST in good condition.
	7	82/608	Transmission Lines: No significant environmental concerns, possible history of transformer oil.
	8	82/111	Undeveloped: large linear mound, possible old elevated road or buried rubble.
	9	82/452	Undeveloped: Minor concrete rubble dumping.
	10	82/452	Undeveloped: No significant environmental concerns, culvert dumped in Whitmarsh Run.
	15	83/291	Residence: Collapsed shed with trash drum and containers, wetland, garden implements parts.
	16	83/459	Residence: No observed concerns, possible septic field.
	18	83/155	Residence: No observed concerns, possible septic field.
	19	83/156	Residence: Locked outbuildings, garden implements, possible septic field.
	20	83/158	Backlot area of Number 19.
	21	83/140	Residence: No observed concerns, possible septic field.
	25	83/141&532	Horse Farm/Residence: No visible environmental concerns, apparent archeological site in rear of eastern residence, possible septic field.
	27	83/147	Undeveloped: Pine woods with one empty drum, minor scrap metal and lawn furniture.
	37	91/210	Vacant Pad Site: No observed concerns, history unknown.
	38	91/198	Residence: large frame home with gardens, 250-g AST in good shape, possible septic.
	39	91/231	Residence: no observed concerns, possible septic field.
	43	91/147	Undeveloped: discarded refrigerators, minor household debris.
	44	91/147	Undeveloped: Late 1800 Archeological site. Foundations contain tires and household debris.
	46	83/741	Vacant: Subdivision under development, cleared land, SWMP, hummocky terrain.
	47	82/834	Residence: has contractor storage for building materials.
	48	82/834?	Backlot of Site 47: discarded tires, containers and household debris.
	49	83/158	Same as Site 19.

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# IV. ENVIRONMENTAL CONSEQUENCES

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration



#### IV. ENVIRONMENTAL CONSEQUENCES

This section of the document provides the probable beneficial and adverse social, economic, and environmental effects of the alternatives considered and describes the measures proposed to mitigate adverse impacts. Table S-1 summarizes the impacts of the *SHA Selected Alternative* (Revised D Modified), as well as the impacts for the alternatives dropped from consideration following the Public Hearing.

As indicated on Table S-1, Revised D Modified represents the best overall alternative, in terms of balancing impacts to the man-made and natural environment. In addition, measures have been taken to reduce and minimize impacts wherever possible through use of alignment shifts, changes to the typical section, and structural treatments at stream crossings. The following section describes the impacts and proposed mitigation measures for the social, economic and land use considerations.

##### A. Social, Economic and Land Use

###### 1. Social Environment

###### a. Residential and Business Displacements

This section summarizes for comparison purposes the residential and business displacements involved in each of the proposed highway alternatives through the MRECAS area. Details regarding specific rights-of-way and relocations are provided in Appendix B.

The *No-Build Alternative* consists of regular maintenance, safety and operational improvements to the existing roadways in the study area. It is unlikely that the *No-Build Alternative* would displace homes or businesses.

*Alternative D's* alignment extends on the east side of the BGE substation and ties into MD 150 near the MARC station. *Alternative D* would displace four residences and one business. All of the displacements are located near the crossing of Bird River Road and affects 23 properties.

*Alternative D Modified* has the same termini as *Alternative D*, but crosses Windlass Run approximately 2700 feet farther east. *Alternative D Modified* displaces five residences and one business and affects 24 properties. The relocations are the same structures impacted by *Alternative D* with one more displacement.

*Revised D Modified*, the *SHA Selected Alternative*, has an alignment similar to that of *Alternative D Modified* except for some minor shifts in the area of the BGE transmission towers. The typical section has been revised to reduce environmental impacts. *Revised D Modified* displaces 6 residences and no businesses, and affects 24 properties.

*Alternative E* follows an alignment similar to *Alternative D*, except that it ties into MD 150 just east of Williams Estates, rather than at the MARC station. *Alternative E* would displace six residences and one business and affect 41 properties. Four of the residences are the same as

those impacted by *Alternative D*. The two additional residences are located on Bengies Road. Minority families occupy both of the residences on Bengies Road. This alternative may also affect a minority community (see sections IV.A.1.b. and IV.A.1.c. below).

*Alternative F<sub>1</sub> Modified* is located on the east side of the BGE substation, continues on the west side of Holly Hills Memorial Gardens Cemetery and ties into MD 150 near the MARC station. *Alternative F<sub>1</sub> Modified* will affect 25 properties and displace ten residences and one business. All of the residences displaced are located on Bird River Road except one, which is located on Bengie's Road.

*Alternative I Modified* is located east of the BGE substation and Holly Hill Memorial Gardens Cemetery and ties into MD 150 just east of Williams Estates. *Alternative I Modified* displaces the same five residences and one business as *Alternative D Modified*. *Alternative I Modified* affects 40 properties. This alternative may also affect a minority community (see sections IV.A.1.b. and IV.A.1.c. below).

SHA has reviewed each alternative and note that several residential properties and at least one business is affected by each alternative, except for the *SHA Selected Alternative*. Although the area is an older, established community with long time residents that may include minorities, elderly and disabled persons, we are not impacting a large identifiable community of a particular group.

SHA believes there will be sufficient available housing to satisfy the demands for replacement housing for any of the alternatives in this report. We also believe that there locations available to satisfy relocating the businesses affected, however, it may be somewhat difficult to relocate the business/residence combinations to similar use properties due to zoning regulations.

This area is experiencing significant development, both residentially and commercially. A review of real estate in the area leads SHA to believe we could complete acquisition and relocation assistance activities in a satisfactory manner. It is estimated that we could accomplish all relocation assistance activities within an eighteen month period.

The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. 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.

b. Title VI Statement

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

or in part by the Federal Highway Administration. SHA 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 highways projects. Alleged discriminatory actions should be addressed to the Equal Opportunity Section of SHA for investigation.

c. Effects on Minorities, Handicapped, and the Elderly

President Clinton signed Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, on February 11, 1994. The EO focuses Federal attention on the environmental and human health conditions in minority and low-income populations, with the goal of achieving environmental justice. The EO promotes nondiscrimination in Federal programs that affect human health and the environment and provides access to public information on, and an opportunity for public participation in, issues affecting human health and the environment.

The term "minority" is defined by the US Census Bureau as persons of black (non-Hispanic), Hispanic, Asian or Pacific Islander, American Indian or Alaskan native descent. A "minority population" is defined as any readily identifiable groups of minority persons who live within close geographic proximity, or geographically dispersed/transient persons (such as migrant workers or Native Americans. Minority populations are present when over 50% of the affected population are minority (or over 50% of the population in general), or when the minority population percentage is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

Data from the 1990 census indicate that minorities make up far less of the study area's population than the 50% threshold, both for the area as a whole and for individual census tracts within the study area. But through discussions with residents at the Alternatives Public Workshop and through other coordination, a minority community has been identified in the Bengies/Chase area, and for this community the Environmental Justice mandate is applicable. This community has been distinctly African-American in nature since the early 1800's.

A meeting was held on June 3, 1999 with the minority communities to update them on the upcoming Public Hearing and to solicit comments. See community meeting minutes in Appendix F.

The *SHA Selected Alternative* will not disproportionately impact the Bengies minority community, nor would Retained Alternatives D and F1 Modified. But Alternatives E and I Modified would have had some impacts on this neighborhood, both during and after highway construction. Impacts would have included right-of-way acquisition, visual intrusion, noise intrusion, long-term community disruption, and driveway access limitations.

In regards to handicapped individuals or to elderly residents within the study area, long-term negative impacts are expected to be minimal or nonexistent. In fact, the new highway will provide improved access to medical facilities and other services outside the MRECAS area and

will shorten the response times required by emergency vehicles responding to medical and other types of emergencies within the area. Consequently, the long-term safety and well being of the handicapped and the elderly will be improved as a direct result of completing the project.

No low-income populations were identified in the study area, however, individual low-income families are present in the study area, based on testimony received at the Public Hearing. None of the residents displaced by the *SHA Selected Alternative* are believed to be low income.

d. Effects on Community Facilities and Services

No places of worship would need to be acquired by any of the alternatives considered, including the *SHA Selected Alternative*, nor would any right-of-way be required. Parishioners of Our Lady Queen of Peace Catholic Church would not be confronted with adverse travel, since Bird River Road will be bridged by the proposed alternatives.

No schools, recreational facilities, libraries, health care facilities, public parks, or senior citizen centers will be displaced or require right-of-way acquisition by the proposed alternatives, including the *SHA Selected Alternative*. Access to those facilities will not be permanently affected.

Improved emergency response to the study area would be provided by all of the proposed alternatives, including the *SHA Selected Alternative*.

No local roads would be dead-ended by any of the proposed alternatives, including the *SHA Selected Alternative*. Access to residences and businesses will not be adversely affected on a permanent basis. As discussed in the Purpose and Need section of this document, the proposed alternatives are intended to provide better access to businesses and employers in the study area. Pedestrian travel and other non-vehicular travel will not be adversely affected by any of the proposed alternatives. A hiker/biker trail would be incorporated along parts of the *SHA Selected Alternative*, and a commuter bikeway would be provided along the entire length of the *SHA Selected Alternative*. This trail system is designed to connect with the Baltimore County proposals for trails within the MREC and along proposed Campbell Boulevard.

e. Disruption of Neighborhoods and Communities

Currently the main access roads for the Wampler Road and Bird River Road communities carry a considerable amount of through traffic that must use these roads to travel between MD 150 and the major highways to the west. The proposed extension of MD 43 to MD 150 would take the bulk of this traffic away from those communities and thereby improve the quality of life for the residents. However, some disruption to local neighborhoods must be expected with a project of this magnitude, and these disruptions can be either short-term or long-term in duration.

Short-term disruptions occur during the construction phase of any project, and for some of the communities that lie within the MRECAS area disruptions of this type will undoubtedly occur. The locations and extent of these disruptions will ultimately depend on the alternative selected

for the project. SHA will take all necessary steps to minimize the extent of these disruptions as well as the length of time that residents must endure them.

As discussed in other parts of this document, some limited displacement of residents will need to take place in order to gain a continuous corridor through the area, and for those who are displaced the changes will be permanent. Furthermore, residents located along MD 150 within the communities of Fairwinds, Williams Estates, and Peppermint Woods, as well as those living along the eastern segment of Bengies Road, will experience substantially higher traffic volumes along MD 150 as a direct result of the improved access provided by the new highway. This will likely occur regardless of the final route chosen for construction. Communities located along Alternatives E and I would be subjected to more traffic than the other proposed alternatives.

For other residents, including those along Bird River Road, long-term disruptions are not likely to occur, or will be very slight because most of the effected area is undeveloped land, and because there will be no direct access from the new highway to the smaller roadways. Indeed, the only road connections planned for the project will be the existing US 40/MD 43 interchange, MD 150, and two to three access points into the proposed employment center.

2. Economic Displacement

a. Effects on Local Businesses

While existing and future businesses located in the MREC will undoubtedly benefit from the project, some roadside businesses depend on drive-by traffic to provide a customer base, and these may suffer when through traffic is shifted off of the existing through-roads and onto the new highway that bypasses them. It is anticipated, however, that increased employment in the MREC will generate additional customers that may be inclined to patronize local businesses during the workweek. It is important to note, too, that vehicular access to those businesses will not be restricted in any way by the highway improvement.

b. Effects on Regional Business Activities and County Tax Base

Baltimore County has performed extensive studies to determine business trends for this area based on scenarios that consider the build and no-build alternatives. According to their projections, business activities within the MREC will increase substantially if the highway is built in any of the alternative configurations approved for further study. On the other hand the *No Build Alternative* is projected to provide only limited growth for the same period. Their projections are summarized in Table IV-1, which shows the level of new development likely to occur and the economic benefits that would be derived:

Table IV-1: Projected Business Development, Build vs. No-Build

	Build	No-Build
Acres Developed	647	84
Square Feet Built	7,3307,479	890,117
Employment	15,564	2,052
Capital Investment	\$462,395,964	\$58,197,822
County Taxes	\$41,745,056	\$5,351,895

Source: MREC Purpose and Need Statement, Baltimore County, 1997

As this table shows, Baltimore County estimates that with improved access and new infrastructure, 647 acres of commercial and industrial land would be developed over a thirty year period within the employment center. This would represent a potential of 6.1 million to 7.3 million square feet of commercial and industrial space. On the other hand, if improved access is not provided to the MREC, the County projects that only 87 of these acres would be developed, and that this limited development would provide only one fourth of the revenues that a new highway would generate.

**B. Land Use**

**1. Existing**

The purpose of the proposed roadway improvement is to improve access to the MREC. Current land use will be altered by the proposed transportation improvements through conversion of residential properties, commercial properties, farmland, and natural areas to transportation use. Table IV-2 shows the right-of-way required by each proposed alternative.

**Table IV-2: Right-of-Way Impacts by Alternative**

Alternative	Right-of-Way Required (Acres)
No-Build	None
Revised D Modified (SHA Selected Alternative)	92.0
Alternative D	93.1
Alternative D Modified	118.1
Alternative E	91.1
Alternative F, Modified	97.1
Alternative I Modified	107.4

**2. Future**

Future land use is expected to be affected by the MREC in a controlled fashion, based upon development and land use policies implemented by the Baltimore County government. The decennial Baltimore County Master Plan provides a policy framework for guiding future development of the County. The Plan is an important advisory tool for ensuring that the growth of the County is managed in an orderly and rational manner. Many of the activities of government encourage conformance with the master plan, such as the capital improvement program, the water and sewer master plan, and the various zoning map processes. Proposed regulations and standards are reviewed to determine if they conform to the master plan. For the past 25 years, Baltimore County master plans have focused on directing new development to targeted growth areas and employment centers, while preserving agriculture and watershed land in other areas of the County. Master Plan 2020, currently in draft form, reinforces this distinction between the urban County - where growth and redevelopment are encouraged, versus the rural County - where development is highly constrained and proactive efforts are encouraged to preserve rural character. The most likely development scenario for future land use is discussed in the secondary and cumulative effects section.

### 3. Smart Growth

State-wide Smart Growth Initiatives formally took effect on October 1, 1998. The intent of Maryland's Smart Growth 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. The desired effect of this regulation is to revitalize existing urban areas while decreasing the outward expansion of rural sprawl into undeveloped areas.

Transportation projects, especially at the planning stages, will be substantially affected by local priority funding area designations. In addition to those PFAs designated in the law (e.g., municipalities, the areas inside the Washington and Baltimore Beltways, and other areas currently designated as enterprise zones, neighborhood revitalization areas, heritage areas, and existing industrial lands), counties can designate PFAs that meet the Smart Growth Act's criteria for density and public facilities. Maryland Office of Planning (MOP) is responsible for evaluating these areas certified by local jurisdictions against the criteria specified in the law.

The certified PFA for the Study Area coincides with Baltimore County's Urban/Rural Demarcation Line, which is shown on Figures I-2 and I-4. The development opportunity areas that would be accessed by the roadway are wholly within the certified PFA (see letter from Baltimore County in Section VI).

#### C. Cultural Resources

##### 1. Historic Sites

36 CFR 800 implements the requirements of the National Historic Preservation Act (NHPA). Once an agency has identified historic properties, it must determine whether the proposed activity will impact the resources in any way. The agency consults with the SHPO to determine this and takes into account the views of any interested parties.

The agency applies the criteria of effect to determine if an undertaking would affect characteristics qualifying the property for inclusion in the National Register of Historic Places, and submits its finding to the SHPO for concurrence.

"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."

a. BA-1852 St. John's/Old Chase School

St. John's/Old Chase School is located well east of any of the proposed alignments, and would not be affected by the project.

b. BA-1180 Ebenezer Methodist Church

The Ebenezer Methodist Church is located well east of any of the proposed alignments, and would not be affected by the project.

c. Martin State Airport/Federal Depot Historical District

Alternative F<sub>1</sub> Modified, D and D Modified and *Revised D Modified (the SHA Selected Alternative)* intersect Eastern Boulevard within the boundaries of the Martin State Airport/Federal Depot Historic District. The historic district is currently bisected by Eastern Boulevard, and contains non-contributing modern commercial elements interspersed with the historic industrial and commercial structures. However, because these Alternatives require right of way from a contributing element to the district, the project will have an adverse impact on the Martin State Airport/Federal Depot Historic District. Additionally, the Federal Depot (BA-2824) is independently eligible for the National Register, and will be adversely impacted by the proposed construction of a roadway within the property's historic boundary along the western border. The proposed road will be elevated on a bridge over the Amtrak rail line tracks and graded down toward Eastern Boulevard on fill supported by a retaining wall directly behind the Depot's Paint Hangar, a significant element of the Depot property. The Maryland Historic Trust (SHPO) has concurred with this determination. See Section VI, Comments and Coordination. A final Section 4(f) Evaluation is in Section V of this FEIS.

The *SHA Selected Alternative* requires 3.1 acres of right-of-way from the Federal Depot portion of the Martin State Airport/Federal Depot Historic District. The total area of the Federal Depot portion of the historic district is 50.93 acres. The proposed right-of-way for Revised Alternative D Modified would affect a portion of the Middle River Depot near the southwestern corner of the property, near the AMTRAK rail lines and MD 150. That portion is currently being used as a storage and maintenance facility for the Mass Transit Administration's light rail trains. The proposed action will require the relocation of several storage tracks in that vicinity. Retaining walls will be used to contain fill slopes in order to minimize right-of-way acquisition. Due to the current industrial nature of the site, the proposed bridge over Amtrak will not create uncharacteristic visual impacts to the existing environment. There would be a small remaining parcel between the proposed right-of-way and the adjacent MARC station (0.5 acres). This residual parcel would probably be acquired by SHA along with the required right-of-way because it would be determined unusable.

Proposed mitigation is discussed in Appendix E, Memorandum of Agreement between the Federal Highway Administration and the Maryland State Historic Preservation Officer, pursuant to 36 CFR 800.5 (e) (4). The Federal Highway Administration shall ensure that the following stipulations are implemented:



(1) National Register Eligible Martin State Airport

The SHA, in consultation with the MD SHPO, will develop a plan for the public interpretation of the history of the Martin State Airport/Federal Depot Historic District, including the paint hangar, currently a MARC maintenance facility. The plan may include one or more of the following items: exhibits, markers, interpretive panels, and/or oral histories of those who worked at the Martin State Airport during its period of significance (1929-1949). The plan will be developed within one year following the completion of the highway bridge and will be submitted to the MD SHPO for review and comment. A final Section 4(f) evaluation is included in Section V of this FEIS.

(2) Future Activities

Related ancillary activities including but not limited to wetland mitigation, stormwater management, and reforestation, may be added to this undertaking in the future. Should such activities be added for which cultural resources studies have not been completed, SHA shall implement such studies adhering to all relevant standards and guidelines and accordance with the following:

a. Identification

SHA professional cultural resources staff shall review any additions or changes to this undertaking and evaluate their potential to contain as-yet unidentified significant cultural resources. The results of this assessment shall be conveyed to the MD SHPO and all consulting parties under this MOA along with any recommendations for needed studies for review and comment. Upon the concurrence of the MD SHPO, the SHA shall implement agreed upon identification studies. The SHA shall provide all completed information to the MD SHPO and all consulting parties under this MOA for review and comment.

b. Evaluation

The SHA shall ensure that all potentially significant historic resources identified in any areas surveyed under Stipulation 2a will be evaluated in accordance with 36 CFR 800.4(c). Phase II work plans for the evaluation of identified archeological resources will be submitted for review and comment if requested by the MD SHPO at the completion of the identification survey. The results of any evaluation efforts shall be provided to the MD SHPO and all consulting parties under this MOA for review and concurrence. The consulting parties shall provide comment within 30 days of receipt of acceptable documentation. Should the parties not be able to reach agreement, the FHWA shall forward the documentation to the Keeper of the National Register of Historic Places for a final determination.

c. Treatment

Should any historic property eligible for inclusion in the National Register of Historic Places be identified under Stipulation 2a and 2b, the SHA shall make a reasonable good-faith effort to avoid adversely impacting such resources. If adverse impacts are unavoidable, SHA shall, in

consultation with the MD SHPO and all consulting parties to this MOA, consider appropriate treatment options. Such options may include, but are not limited to, public interpretation, architectural salvage, landscaping, architectural recordation, sale, relocation, archeological data recovery, or loss without mitigation.

d. Chase Elementary School

The Chase Elementary School, while close to the point where both Alternative I Modified and Alternative E intercept Eastern Boulevard, is too distant to be impacted, due to the extant, intervening screening consisting of a two-story structure and a substantial line of mature trees. The project will have no impact on this resource.

2. Archeological Resources

Identification of archeological resources was completed in accordance with the requirements of 36CFR800.4 for each alternative under consideration. Sites 18BA467, 18BA469, and 18BA470 are considered potentially eligible for the National Register of Historic Places. The Phase I investigations indicate that sites 18BA467, 18BA469, and 18BA470 may be important chiefly because of what can be learned from data recovery. The Maryland Historic Trust (SHPO) has concurred that future archeological work would be required to conclusively define National Register eligibility if the sites were impacted (see Appendix E).

- None of the sites will be impacted by Alternative D Modified or *Revised D-Modified (SHA's Selected Alternative)*.
- Site 18BA467 would have been impacted by Alternatives I Modified, D and E.
- Site 18BA469 would have been impacted by Alternatives D and E.
- Site 18BA470 would have been impacted by Alternative F<sub>1</sub> Modified.

D. Farmlands

Productive farmland parcels will be impacted by Alternatives D-mod, F<sub>1</sub>-mod, I-Mod, and *Revised D-Modified (SHA's Selected Alternative)*. Prime Farmland Soils and Soils of Statewide Importance will be impacted by all of the build alternatives. Alternative F<sub>1</sub> Modified impacts the highest amount of Prime Farmland Soils and direct productive farmland. Table IV-3 summarizes the farmland impacts, and Figure IV-1 shows the farmland soils areas which would be taken up by each alternative.

MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY

FINAL ENVIRONMENTAL IMPACT  
STATEMENT


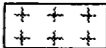
MRECAS ALTERNATES CROSSING  
FARMLAND SOIL AREAS

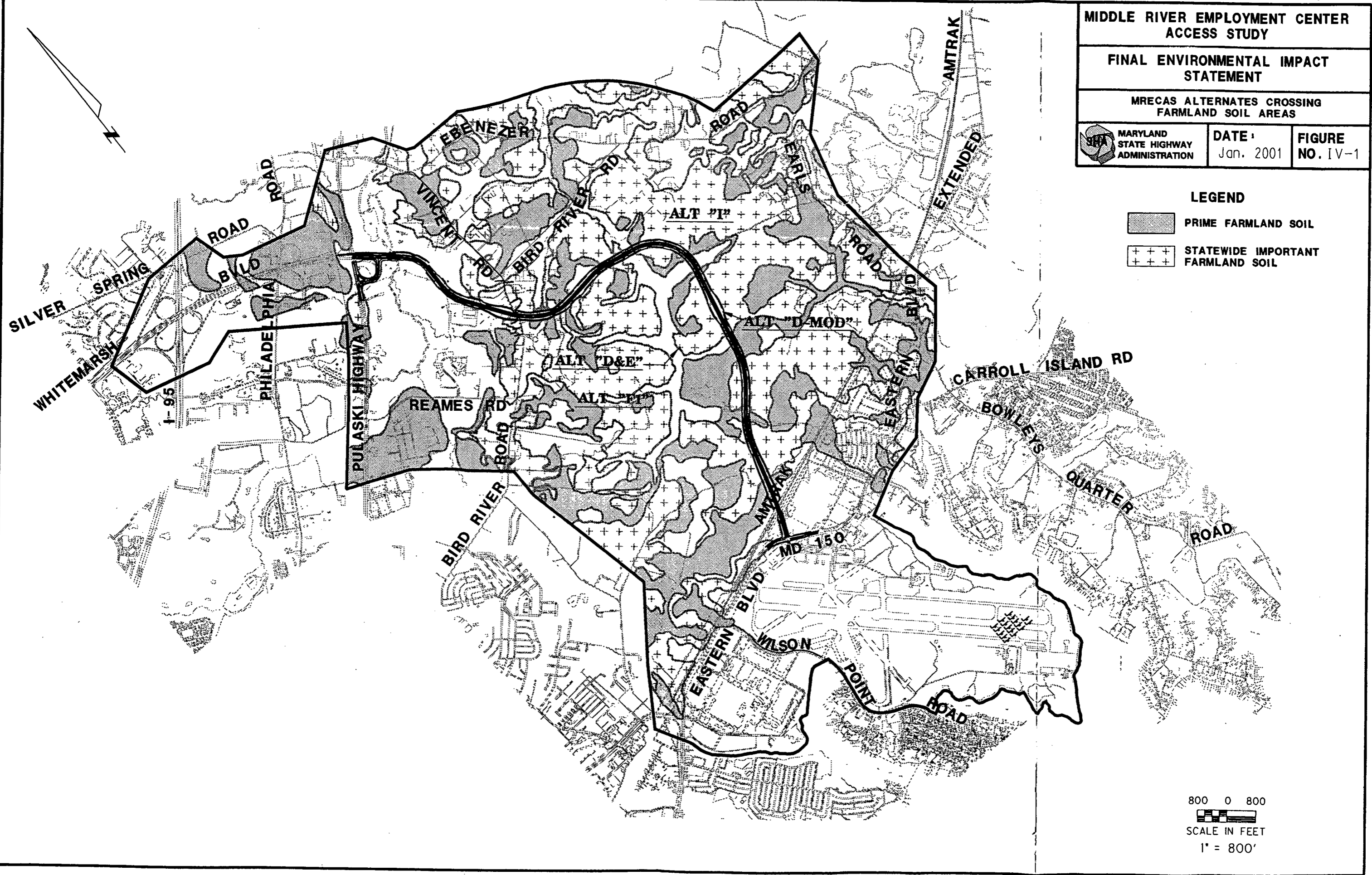
MARYLAND  
STATE HIGHWAY  
ADMINISTRATION

DATE:  
Jan. 2001

FIGURE  
NO. IV-1

LEGEND

-  PRIME FARMLAND SOIL
-  STATEWIDE IMPORTANT FARMLAND SOIL



**Table IV-3: Farmland Impact Summary**

Alternative	Prime Farmland Soils Impacted (acres)	Soils of Statewide Importance (acres)	Direct Productive Farmland Impacted (acres)	Indirect* Farmland Impacts (acres)	Number of Farmland Parcels Directly Impacted	Number of Farmland Parcels Indirectly* Impacted
<b>Rev. D-Mod</b> (SHA's Selected Alternative)	12.1	34.1	2.6	0.8	4	2
<b>D-Mod</b>	12.1	34.1	2.6	0.8	4	2
<b>D</b>	12.8	24.2	0	0	0	0
<b>E</b>	9.2	41.2	1	0	0	0
<b>F-Mod</b>	17.4	14.5	10.0	13.9	3	4
<b>I-Mod</b>	8.7	49.0	4.6	6.8	3	3

\*Indirect impacts are a result of the alternatives bisecting a productive farmland parcel that may create accessibility difficulties for farmers.

**Note:** Additional farmland acreage may be needed for wetland mitigation requirements.

To comply with the Farmland Protection Policy Act of 1981, as amended in 1984, a Farmland Conversion Impact Rating Form (USDA Form AD-1006) has been completed and submitted to the USDA Natural Resources Conservation Service office in Cockeysville, Maryland for evaluation. On this form, the amount in the block "Total Acres in Site" was derived from SHA right-of-way calculations, which do not include right-of-way owned by SHA. Farmland impacts, however, include farmland within SHA right-of-way limits.

According to the FPPA, the USDA recommends that the alternatives scoring more than 160 points be given higher levels of consideration for protection and alternatives receiving less than 160 points be given a minimal level of consideration for protection.

SHA will look at ways to minimize, where possible, the amount of farmland acreage necessary while maintaining required safety standards. Accessibility concerns will be addressed on a property-by-property basis during final design. Just compensation at fair market value will be offered to farm owners whose property is needed for right-of-way or for acquired property that is too small to profitably farm.

All property will be acquired in accordance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Act and Title VI of the Civil Rights Act.

**E. Soils, Geology and Topography**

The study area is located primarily over the Potomac Group of Geologic Formations which consist of the Patuxent, Arundel and Patapsco Formations. These formations generally consist of unconsolidated sands, clays and silts. Historically these formations have presented little difficulty in the construction of roads. The materials in these formations are not highly erodible and present no special environmental concerns for erosion and sediment control issues. Thus, in terms of stormwater runoff, standard erosion and sediment control structures and systems should provide sufficient erosion protection to the landscape as well as protection of surface waters from sedimentation. However, the expected higher runoff rates and lower groundwater recharge

rates, both resulting from roadway paving, are likely to cause wide fluctuations in stream volumes and velocity, which would cause some degree of stream bed and bank erosion. Well-constructed stormwater management facilities would provide some stream channel protection but would not totally alleviate the problem.

#### **F. Groundwater Resources**

Recharge zones within the study area consist of areas underlain by the sand facies of the Patuxent and Patapsco Formations. The sand facies of the Patuxent Formation is located in the northwest corner of the study area and recharges the unconfined aquifer in the outcrop area of the formation and the confined aquifer within the formation down-dip, east of the outcrop area. The sand facies of the Patapsco Formation encompasses most of the eastern portion of the study area. In this area the Patapsco Formation carries the unconfined aquifer and the Patuxent Formation carries the confined aquifer.

The unconfined aquifer is recharged by infiltration from precipitation, thereby making it susceptible to contamination from surface activities. Substances on the surface can become dissolved or mixed into the water as it filters down into the shallow aquifer, resulting in localized aquifer contamination. Consequently, construction activities and subsequent highway usage in recharge areas present the potential for contamination of the unconfined aquifer from spills of hazardous substances, applications of chemicals to roadside vegetation, and road salting. Furthermore, water levels in wells screened in the unconfined aquifer located near the road construction areas may also be lowered by construction activities.

Conversely, areas under construction would represent only a small portion of the entire recharge area, and unconfined aquifer contamination in the Coastal Plain region does not usually extend far from the source of contamination. Natural attenuation of aquifer contamination is usually very effective in this area in limiting contamination to near the source, meaning that a shallow well would have to be located very near the construction area to be affected by either water table lowering or aquifer contamination. Therefore, impacts to the unconfined aquifer by road construction would most likely be minimal and localized. If an evaluation by a qualified hydrogeologist determines that road construction activities have negatively impacted a well, SHA will replace the well with a deeper well screened into a confined aquifer.

Potential impacts to aquifer system recharge and stream flow characteristics can be mitigated to varying degrees by utilizing storm water management techniques that encourage infiltration and minimize alterations of surface flow drainage patterns. Avoiding spillage of fuels or other contaminating substances and the careful and prudent use of vegetation, applications of fertilizer, herbicides and insecticides can minimize potential impacts to groundwater quality. Except for some older, dug or shallow wells that may still be in use, the unconfined aquifer is not used for potable water supplies in this area. Most of the potable water supplies used by local residents and businesses are from deep wells screened in the confined aquifer or from public water supplies. Future commercial development in the area will use public water.

The degree of potential impact to the recharge area of the aquifer systems in and of itself should not be enough to eliminate or select an alternative road alignment, but this hazard should be considered in combination with other potential environmental impacts.

Each of the alternative roadways retained for further study would cover some recharge zones with the only difference being in the expanse of recharge area affected. There is insufficient data at this time to determine which of the alternatives would have the least amount of impact on shallow wells in the area. Further study would be required to determine the locations of shallow wells relative to the location of each alternative. Each of the alternatives are listed below, along with the amount of recharge zone each would directly affect.

- *Revised D Modified*, the *SHA Selected Alternative*, would cross 10,640 linear feet (2.0 miles) of recharge area and would cover approximately 36.6 acres of the recharge zone.
- Alternative F<sub>1</sub> Modified would cover the least amount of recharge area of the alternatives selected for further study. This route would cross approximately 6,460 linear feet (1.2 miles) of recharge area and would cover 22.2 acres of the recharge zone.
- Alternative D would cross 9,120 linear feet (1.7 miles) of the recharge area and would cover approximately 31.4 acres of the recharge zone.
- Alternative D Modified would cross 10,640 linear feet (2.0 miles) of recharge area and would cover approximately 36.6 acres of the recharge zone.
- Alternative I Modified would cross 10,260 linear feet (1.9 miles) of recharge area and would cover approximately 35.3 acres of the recharge zone.
- Alternative E would cross the most recharge area at 11,210 linear feet (2.1 miles) and would eliminate 38.6 acres of the recharge zone.

In general, alternatives that are routed through the western and central part of the study area would appear to have less impact on shallow wells than routes through the eastern section. Data supplied by MDE indicates that most of the wells suspected of being screened in the unconfined aquifer are located in the eastern section of the study area. To fully determine the impact on shallow wells, a field study to identify and locate each shallow well in the project area will be conducted during final design.

#### **G. Surface Water Resources**

The construction and presence of a highway may affect surface water resources consisting of streams, intermittent stream channels and drainage ditches. Although generally temporary, highway construction can impact the environment through increased erosion. Highways increase the amount of impervious cover in a watershed, causing increased storm water runoff volumes which affect water quality and those organisms supported in the aquatic and riparian habitats. Pollutants, contained within highway runoff, can negatively impact aquatic communities and are of concern when considering highway construction. Careful planning can alleviate many problems associated with pollutants in highway runoff.

## 1. Sources of Pollutants

Pollutants come from vehicles (directly and indirectly), atmospheric dustfall, and precipitation (Barrett et al., 1993; Muschack, 1990; Kobringer 1984). The maintenance of the roadway can also contribute chloride, sodium, calcium, cyanide, PCB's, pesticides, and other compounds (Young et al., 1996; Muschack, 1990; Kobringer, 1984). Through vehicle "wear and tear", many pollutants are directly introduced to road surfaces, and vehicles also indirectly transport solids to surrounding areas (Barrett et al., 1993). Rainfall can contribute up to 78% of the major ionic contaminants and 48% of the suspended solids representing a substantial portion of the pollutant loadings. This is especially true for highways near urban areas (Barrett, 1993; Muschack, 1990). Thus, the surrounding land use has a major impact on the amount of pollution in dustfall deposited on a highway and on the resulting quality of highway stormwater runoff (Barrett et al., 1993; Muschack, 1990).

The constituents of highway runoff may include dissolved solids, metals, oil and grease, nitrates, sulfates, phosphorus and other substances. All of these constituents may not be found in runoff from the proposed MRECAS project.

## 2. Factors Affecting Highway Runoff Quality

Factors contributing to highway runoff quantity and quality are roadway traffic and precipitation characteristics (Barrett et al., 1993). Because vehicles are a major source of pollutants, the traffic volume will influence the accumulation of pollutants in runoff (Barrett et al., 1993). Driscoll et al. (1990) found that roadways with Average Daily Traffic (ADT) greater than 30,000 vehicles produced two to five times the pollutant levels present in runoff from rural highways (less than 30,000 ADT). Table IV-4 shows the mean pollutant concentrations based on over 900 storm events in 31 states for high and low ADT roadways. Barrett et al. (1993) found that while some studies show that ADT greatly influences runoff pollutant levels, other studies show less correlation between ADT and pollutant loads and suggest that ADT may simply be an indicator of the surrounding land-use (e.g., urban, high ADT roadways versus rural, low ADT roadways). In these low correlation cases, the pollutant sources from surrounding land uses (i.e., atmospheric deposition from urban pollution sources) may be more important than ADT in determining pollutant loads (Barrett et al., 1993; Young et al., 1996). Muschack (1990) found that freeways generally had lower pollutant loads than local streets because the acceleration/deceleration activities associated with traffic lights and stop signs increased tire and roadway abrasion, brake wear, and vehicle emissions and leakages.

**Table IV-4: 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 Solid	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	0.4	0.16
Total Copper	0.054	0.022
Total Lead	0.4	0.08
Total Zinc	0.329	0.08

Source: Driscoll et al., 1990

Dupis (1985) reported that highways with traffic densities ranging from 12,000 to 120,000 ADT had little effect on the biota of receiving waters. Various studies cited by Barrett et al. (1993) show conflicting results regarding the chronic and acute effects of highway runoff on aquatic organisms. While some studies showed that highway runoff had little or no effect on aquatic life, other studies did identify the bioaccumulation of metals with ADTs as low as 10,000 (Barrett et al., 1993). Dilution of runoff can play an important role in the toxic effect of highway pollutants and smaller receiving bodies may be at greater risk (Barrett et al., 1993; Muschack, 1990). The ADT of the roadway for the build design year (2020) is expected to range from 25,000 to 45,000 vehicles indicating a potential for adverse effects on aquatic life.

The precipitation characteristics that may impact the water quality of highway runoff include the intensity and duration of storms. Storm intensity has a strong impact on water quality because many of the pollutants are associated with suspended solids including metals, organic compounds, and total organic carbon that are more easily moved by high-intensity storms. Intense, long-lived storms dilute highway runoff and lower concentrations of contaminants, but the total pollutant loads are generally higher in longer storms (Barrett et al., 1993; Young et al., 1996). Higher pollutant concentrations are generally observed during the first part of a storm event (often called "first flush") as the accumulated pollutants wash off the road surface and are quickly depleted (Barrett et al., 1993; Young et al., 1996).

### 3. Controlling Pollution

Control of pollution from highway runoff can be achieved through both source management and structural controls. Because much of the pollutant load is either suspended particulate matter or material adsorbed to the suspended solids, control measures that reduce the amount of particulates available or settle and/or filter particulates are most effective.

Non-structural source management controls may include decreasing the ADT, eliminating curbs and other barriers, limiting the use of fertilizers on the right-of-way, and implementing various Best Management Practices (BMP) such as integrated pest management, litter and debris controls and other similar techniques (Young et al., 1996; Barrett et al., 1993). The proposed closed typical section for the build alternatives does use curbs and therefore discourages



overland flow conditions which would help improve water quality. Beyond the initial establishment of vegetative cover on the right-of-way, SHA generally avoids the use of fertilizers and pesticides in the regular maintenance of its right-of-ways.

Structural controls for water quality improvement appropriate for highways may include vegetative practices, ponds, and wetlands. Vegetative controls, including grassy swales and vegetated buffer strips, have been shown to be effective at reducing metals, oil and grease, and suspended solids but are generally less effective at reducing nutrient loads. The efficiency of vegetative controls is influenced by various factors such as vegetation type and density and the length of contact.

Three types of ponds are used to improve the water quality of highway runoff: detention, extended-detention and retention ponds. Detention ponds (stormwater management ponds that are designed to detain water for only a short time and are generally dry between rain events) are effective at reducing peak discharges and therefore reducing stream bank erosion but, are generally not reliable or effective at treating highway runoff. Extended-detention ponds often contain shallow marsh systems and are designed to detain water for longer periods of time and support the growth of various emergent wetland plants. Retention ponds are designed to maintain a permanent pool of water and retain a certain amount of storm runoff. Both extended-detention and retention ponds have been shown to be much more effective than detention ponds at pollutant removal (Young et al., 1996; Barrett et al., 1993). Physical and biological processes in these ponds have been shown to be very effective at removing pollutants including metals (Young et al., 1996; Barrett et al., 1993; Yousef et al., 1990).

Constructed wetlands have the ability to assimilate large quantities of dissolved and suspended solids and nutrients but are generally costly and use 2-3 times the space required for other control methods (Barrett et al., 1993). Pollutant removal is achieved through plant uptake, physical filtration, adsorption, gravitational settling, and microbial decomposition (Young et al., 1996; Barrett et al., 1993). Combinations of control measures may increase the ability to effectively filter suspended solids and the redundancy can increase the overall reliability and performance of the pollutant removal (Barrett et al., 1993). The design of stormwater management facilities and the selection of appropriate water quality control measures will be completed during final design when detailed hydrology data is available.

The stormwater management plans that will be developed for the project will not be placed in Waters of the US or wetlands and will be designed to minimize adverse effects on aquatic resources. An MDE approved stormwater management plan will include both quantity and quality management for stormwater runoff prior to discharge into receiving waters. In accordance with Maryland stormwater criteria (Maryland Department of the Environment, 1999), stormwater management plans must

- capture and treat 1.0 inch of rainfall from stormwater runoff,
- maintain groundwater recharge volume,
- have 24 hour extended detention of the one year, 24 hour storm event, and
- prevent an increase in the frequency and magnitude of overbank flooding generated by development.

The resulting approved plan will help to reduce the adverse effects of highway runoff pollution.

A preliminary stormwater management study was conducted to compare the alternative alignments and to determine whether the stormwater management criteria can be met for each. A decentralized approach to stormwater management is preferred; however this requires a final design of inlet spacing, soil testing of infiltration sites, and detailed contour mapping of the road corridor. With the limited information available, only a centralized stormwater management study could be performed. Centralized systems generally require extra land outside of the minimal highway corridor; so this type of study produces a conservative, worst case estimate of the land required for each proposed alignment. At the two alternative Eastern Boulevard connections compensatory stormwater management is appropriate. Compensatory stormwater management involves treating existing impervious area in-lieu-of treating all of the widely scattered new impervious areas. The results of this preliminary study on each alignment's corridor can be seen on Figures II-7 through II-19 at the end of Section II of this document.

4. Highway Construction

Construction may increase sedimentation that will likely increase turbidity and suspended solids in receiving streams and wetlands and can have negative impacts on aquatic biota. The turbidity and suspended solids can interfere with the photosynthetic process, smother fish eggs and other aquatic organisms, and abrade fish gills (Barrett et al., 1993). Although the period of active erosion and sedimentation should be limited to the construction period, the negative effects of sediment deposition in streams and wetlands may persist long after the construction area is vegetatively stabilized.

During construction of the build alternative for the project, surface water quality may be temporarily impacted by increased sedimentation associated with grading operations. Table IV-5 provides the total area covered by each alternative as well as the area contained within different watersheds. Construction of each alternative will create between 25 and 30 acres of impervious surface, with D-Mod covering the greatest amount of area and F<sub>1</sub>-Modified covering the least.

Table IV-5: Summary of Alternative area by watershed.

Watershed	Area of Alternative (acres)					
	Rev. D-Mod (SHA Sel. Alt.)	D	D-Mod	E	F <sub>1</sub> -Mod	L-Mod
Whitemarsh Run	8	8	8	8	10	8
Windlass Run	13	12	13	11	10	12
Saltpeter Creek	3	0	3	8	0	8
Frog Mortar Creek	6	6	6	0	4	0
Darkhead Creek	0	0	0	0	1	0
<b>Total</b>	30	26	30	27	25	28

Adverse impacts to water quality during construction of the roadway or borrow pits will be minimized through strict adherence to the SHA erosion and sediment control procedures. All borrow material will be obtained from clean upland sites. All areas of exposed soil will be vegetatively or structurally stabilized as soon as practical.

Other measures to minimize construction related impact include:

- Initiating temporary stream closures where necessary.
- Minimizing equipment operation within the stream channels
- Constructing temporary in-stream measures (Coffer dams, stream crossings) with clean materials.
- Locating equipment fueling and service staging areas away from aquatic resources.
- Constructing culvert extensions or new structures at stream crossings in such a manner as to promote continued easy fish migration and/or avoid any additional impact within stream channels.

## 5. Stream Crossings

All Waters of the United States including Jurisdictional Wetlands are regulated under Section 404 of the Clean Water Act (CWA). The State of Maryland through its wetlands and waterways statutes also regulates these areas. Project activities impacting jurisdictional water and wetlands will require authorization from the Corps of Engineers and the Maryland Department of the Environment.

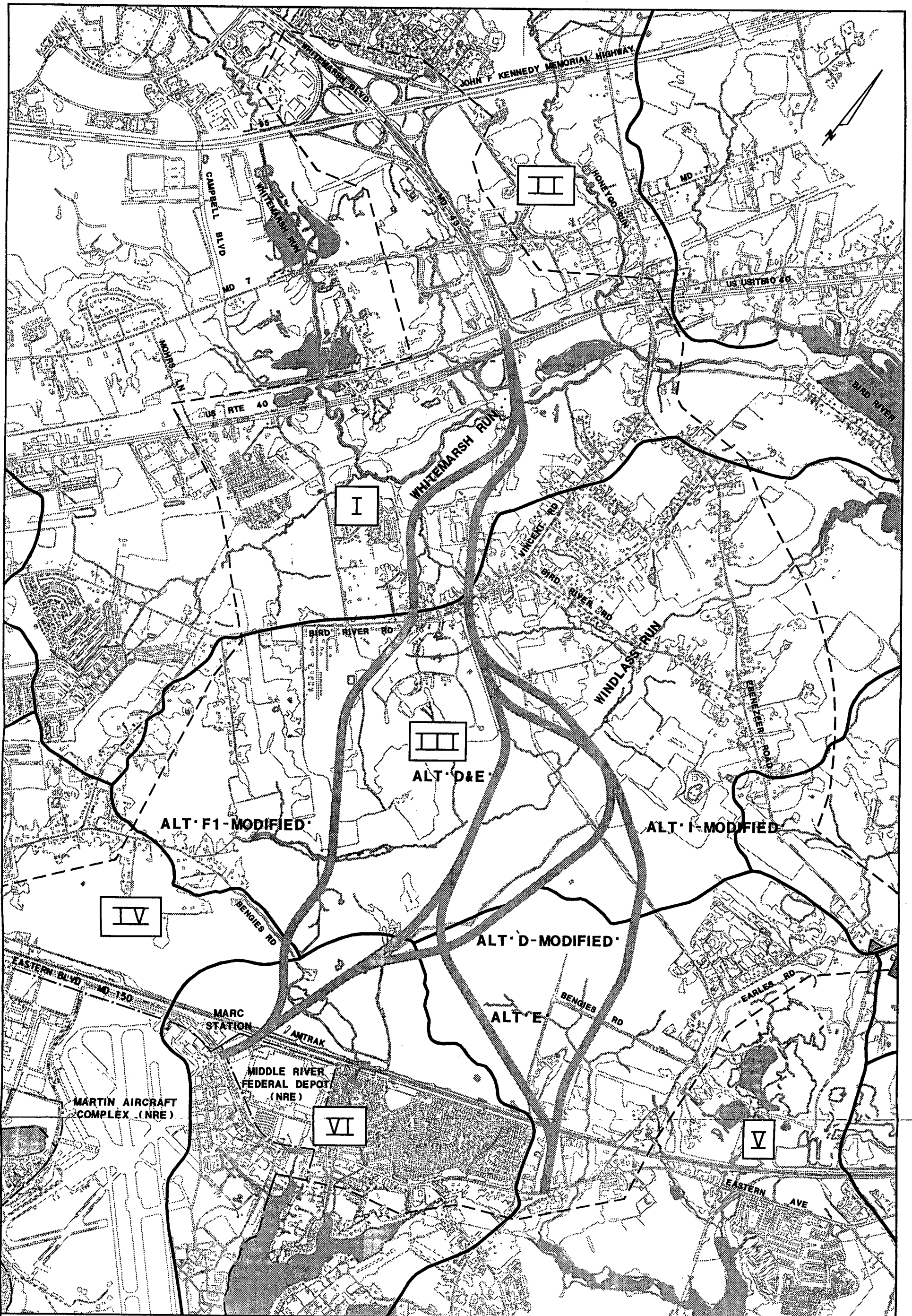
All of the alternatives will require the crossing of streams within the study areas. The perennial streams have water quality that is conducive to the support of aquatic plant materials, migratory fish species as well as other aquatic organisms. For more information on the aquatic biota present in streams within the study area see Section III.G.

Table IV-6 identifies the proposed stream crossings, probable type of crossing, length of the crossing, and length of the stream impact for each proposed stream crossing. The length of the stream crossing was determined by measuring the straight line distance between where the stream entered the proposed roadway fill area to where it exited the fill area. The linear length of stream impact was calculated by measuring the actual length of the stream as it meandered through the area of proposed road fill. Alternative E will potentially have the greatest amount of linear stream impact, whereas Revised D Modified (SHA's Selected Alternative) /D Modified shows the least amount of linear stream impact. Based upon the additional stream classification and actual field wetland limits, F<sub>1</sub> Modified and Revised D Modified/D Modified appear to be the narrowest crossings, bank to bank, and the Revised D Modified/D Modified crossing is located in the most disturbed and unstable stream section of Windlass Run.

Following Table IV-6, Figure IV-2 shows all alternatives and stream crossings. On Figure IV-2 the six drainage areas are identified by Roman numerals as follows:

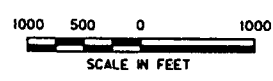
- |     |                   |
|-----|-------------------|
| I   | Whitemarsh Run    |
| II  | Honeygo Run       |
| III | Windlass Run      |
| IV  | Darkhead Creek    |
| V   | Saltpeter Creek   |
| VI  | Frog Mortar Creek |

The restoration of streams within the study area to compensate for stream loss will be considered during final design. Until detailed hydrologic data is available, it is not possible to identify appropriate restoration methods.



**LEGEND**

- I DRAINAGE AREA ID
- STREAMS
- - - STUDY AREA
- DRAINAGE AREA BOUNDARY



**MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT STATEMENT**

MRECAS ALTERNATES CROSSING STREAMS AND DRAINAGE AREAS

MARYLAND STATE HIGHWAY ADMINISTRATION	DATE:	FIGURE
	Jan. 2001	NO. IV-2

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**Table IV-6: Number, Probable Type, and Preliminary Size of Stream Crossings by Alternative.<sup>a</sup>**

Alternative	Stream Crossing	Type of Crossing	Length of Crossing'	Linear Feet of Stream Impact
<b>No Build<sup>b</sup></b>	None	None	0	0
<b>Rev. D Mod (SHA Selected Alt.)</b>	Honeygo Run	bridge	80	0
	Whitemarsh Run	bridge	80	0
	Windlass Run	bridge	100	0
	Unt #1 of Windlass Run	culvert	225	240
	Unt #2 of Windlass Run	culvert	130	150
	<b>TOTAL</b>			<b>390</b>
<b>D</b>	Honeygo Run <sup>c</sup>	bridge <sup>d</sup>	80	0
	Whitemarsh Run	bridge	80	0
	Windlass Run	bridge	80	0
	Unt #1 of Windlass Run	culvert	225	240
	Unt #3 of Windlass Run	culvert	180	180
	<b>TOTAL</b>			<b>420</b>
<b>D Mod</b>	Honeygo Run	bridge	80	0
	Whitemarsh Run	bridge	80	0
	Windlass Run	bridge	80	0
	Unt #1 of Windlass Run	culvert	225	240
	Unt #2 of Windlass Run	culvert	130	150
	<b>TOTAL</b>			<b>390</b>
<b>E</b>	Honeygo Run	bridge	80	0
	Whitemarsh Run	bridge	80	0
	Windlass Run	bridge	80	0
	Unt #1 of Windlass Run	culvert	225	240
	Unt #3 of Windlass Run	culvert	180	180
	Unt #1 of Saltpeter Creek	culvert	130	140
	(second crossing) <sup>e</sup>	culvert	25	25
	<b>TOTAL</b>			<b>585</b>
<b>F, Mod</b>	Honeygo Run	bridge	80	0
	Whitemarsh Run	bridge	80	0
	Unt #1 of Whitemarsh Run	culvert	270	320
	(second crossing)	culvert	240	250
	Windlass Run	bridge	80	0
	Unt #1 of Windlass Run	culvert	N/A	0
	Unt #2 of Windlass Run	culvert	N/A	0
	Unt #3 of Windlass Run	culvert	N/A	0
	Unt #1 of Saltpeter Creek	culvert	N/A	0
	<b>TOTAL</b>			<b>570</b>
<b>I Mod</b>	Honeygo Run	bridge	80	0
	Whitemarsh Run	bridge	80	0
	Windlass Run	bridge	80	0
	Unt #1 of Windlass Run	culvert	225	240
	Unt #1 of Saltpeter Creek	culvert	230	230
	(second crossing)	culvert	25	25
	<b>TOTAL</b>			<b>495</b>

<sup>a</sup> Stream crossings are listed as encountered heading south on alternative

<sup>b</sup> The No-Build Alternative does not cross any streams

<sup>c</sup> Honeygo Run and the second crossing of Unt #1 of Saltpeter Creek already exist, although modifications to these crossings are expected.

<sup>d</sup> Where stream crossing is "bridge", then the linear feet of stream impact is equal to 0.

<sup>e</sup> Unt = "unnamed tributary"

<sup>f</sup> For bridge crossings, this is the length of stream under the bridge

## H. Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for the study area, two designated floodplains will have to be crossed by the proposed highway. They are the floodplains associated with Whitemarsh Run and Windlass Run. Because of the important storage functions of floodplains, Executive Order 11988 requires their examination in relation to reducing property damage and loss of life as well as other natural and beneficial floodplain values. In accordance with this policy, each floodplain encroachment was evaluated to determine its significance. The results of that analysis are discussed in the following paragraphs.

### *Whitemarsh Run*

All alternatives starting at the present terminus of MD 43 would cross the 100-year and 500-year floodplains associated with Whitemarsh Run. This floodplain is located 100 feet southeast of the MD 43/US 40 Interchange. The 500-year floodplain is approximately 600 feet wide and the 100-year floodplain is approximately 450 feet wide at the proposed crossing locations. The following list compares the areas in acres of the 100 year floodplain impacted by each alternative.

- Revised D Modified (*SHA Selected Alternative*) and Alternative D modified would impact 1.9 acres
- Alternatives D and E would cross the floodplain at the same location, impacting 1.9 acres
- Alternative F<sub>1</sub> Modified would impact 1.5 acres
- Alternative I Modified would impact 1.9 acres

### *Windlass Run*

- Alternatives D and E would cross the floodplain at the same location, where the 100-year floodplain is approximately 150 feet wide. Each alternative would impact 0.9 acres.
- Revised Alternative D Modified (*SHA Selected Alternative*), Alternatives D Modified and I Modified would cross the floodplain at nearly the same location, where the 100-year floodplain is approximately 200 feet wide. But Revised Alternative D Modified (*SHA Selected Alternative*), and D Modified would impact 0.5 acres, while I Modified would impact 0.6 acres. Based upon the stream classification of Windlass Run and wetland limits, Revised Alternative D Modified (*SHA Selected Alternative*)/Alternative D Modified/I Modified crossing was the preferred location by the Corps of Engineers because it appeared to be the narrowest crossing in the most disturbed stream section of Windlass Run.
- Alternative F<sub>1</sub> Modified would cross upstream of all other alternatives and would avoid the floodplain associated with Windlass Run.

## I. Chesapeake Bay Critical Area

Alternatives Revised D Modified (*SHA Selected Alternative*), D, D Modified, and F<sub>1</sub> Modified do not impact the Chesapeake Bay Critical Area (CBCA). Alternatives E and I Modified would each impact approximately 7.3 acres of the CBCA due to the construction of improvements to Eastern Boulevard (MD 150) which those alternatives would require. This area of the CBCA is designated as a "Limited Development Area," and the proposed roadway improvements are not compatible with this designation. Stormwater management measures and erosion/sediment

control measures will be employed to ensure that the road construction will be in compliance with CBCA requirements and will protect the Chesapeake Bay resources to the extent possible.

## J. Wetlands

### 1. Impacts

#### a. Summary of Impacts

The placement of fill within some wetlands and the construction of stream crossings on others will cause the loss of wetland acreage, and may also impact some of the wetland functions described in Section III. Construction and operation of the roadway may further impair wetland values and functions (Surface Water Resources, Section IV-G).

In addition to direct impacts to wetlands caused by earthwork and highway structures, there may also be post-construction impacts to wetland functions and values. These impacts include: the loss of wetland flora, fauna and habitat from sediment and pollution deposition or hydrology changes; the introduction of noxious or exotic plant and animal species; the interruption of animal reproductive behavior from highway related noise; and the interruption of animal movement by highway traffic and structural barriers (Forman 1995).

Existing functions for each wetland within the right-of-way for all alternatives were determined using the Evaluation of Planned Wetlands (EPW) methods. Using a wetland class system described by Cowardin et al. (1979), each wetland was broken down into palustrine emergent (PEM), palustrine scrub/shrub (PSS), and/or palustrine forested (PFO). The functional capacity units (FCUs) are a measure of wetland capacity expressed in terms of quantity per unit area. FCUs were calculated for each function evaluated, for each wetland, by multiplying the appropriate functional capacity index (FCI) by the area of proposed wetland impact. FCI is an indication of the capacity of the wetland to perform a specific function. Therefore a small wetland with a high FCI can have a relatively large FCU, while a large wetland with a low FCI can have a small FCU. These FCUs, which provide a measure of the wetland function by wetland size, were determined for each vegetative class.

The area impacted and FCUs for each wetland by alignment are shown in Tables IV-7 to IV-12. Only wetlands that partially or completely fall along the alignment are shown in these tables. Wetlands with larger FCUs indicate greater potential functional capacity for wildlife, sediment stabilization and/or water quality and should be avoided when possible. The alternative with the highest total FCU values indicate a greater potential impact to the overall wetland functional capacity. Based on the EPW analysis for palustrine forested wetlands, which account for approximately 85% to 95% of the proposed wetland impacts, it appears that Revised D Modified (*SHA Selected Alternative*) would have the largest potential impact to the overall wildlife functional capacities based on the greatest loss of FCUs. Alternative D Modified would have the greatest potential impact to sediment stabilization based on the greatest loss of FCUs. Alternative D would have the greatest potential impact to the water quality functional capacity based on the loss of FCUs.

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Table IV-7: Impacts to Wetlands, Revised Alternative D Modified (SHA Selected Alternative)

Wetland Number	Watershed	Wetland Class*	Contiguous <sup>1</sup> Impact Area (ac)	Contiguous & Isolated <sup>2</sup> Impact Area (ac)	WL FCI <sup>3</sup>	WL FCU <sup>3</sup>	SS FCI <sup>3</sup>	SS FCU <sup>3</sup>	WQ FCI <sup>3</sup>	WQ FCU <sup>3</sup>
D 8	Whitemarsh	PEM	<0.1	<0.1	0.43	0.02	0.77	0.03	0.78	0.03
D 7	Whitemarsh	PSS	---	<0.1	0.22	0.01	0.95	0.03	0.98	0.04
D 6	Whitemarsh	PEM	0.3	0.3	0.28	0.08	0.81	0.22	0.65	0.18
D 6A	Whitemarsh	PSS	<0.1	<0.1	0.50	0.02	0.76	0.02	0.75	0.02
D 5	Whitemarsh	PSS	---	<0.1	0.26	<0.01	0.7	0.01	N/A <sup>4</sup>	N/A
D 5B	Whitemarsh	PSS	---	<0.1	0.23	0.01	0.55	0.03	N/A	N/A
D 3	Whitemarsh	PEM	---	<0.1	0.48	0.01	0.15	<0.01	N/A	N/A
D 2B	Whitemarsh	PFO	---	0.2	0.41	0.07	0.76	0.13	0.75	0.12
D 1	Whitemarsh	PSS	---	<0.1	0.31	0.01	0.76	0.03	0.63	0.02
		PEM	---	0.1	0.31	0.03	0.76	0.06	0.63	0.05
		Total	---	0.1	N/A	N/A	N/A	N/A	N/A	N/A
D 1A	Whitemarsh	PEM	<0.1	<0.1	0.21	<0.01	1.00	0.02	N/A	N/A
D 1B	Whitemarsh	PFO	0.1	0.1	0.33	0.03	0.90	0.10	0.89	0.10
		PEM	0.13	0.13	0.33	0.04	0.90	0.12	0.89	0.12
		Total	0.24	0.24	N/A	N/A	N/A	N/A	N/A	N/A
D-Mod 15	Windlass	PFO	0.14	0.14	0.54	0.03	0.76	0.05	0.65	0.04
D-Mod 15A	Windlass	PFO	0.27	0.27	0.54	0.15	0.76	0.21	0.65	0.18
		PEM	0.03	0.03	0.54	0.02	0.76	0.03	0.65	0.02
		Total	0.30	0.30	N/A	N/A	N/A	N/A	N/A	N/A
D-Mod 15B	Windlass	WUS	170 LF	170 LF	N/A	N/A	N/A	N/A	N/A	N/A
D-Mod 17	Windlass	PFO	---	0.1	0.38	0.02	0.76	0.04	0.75	0.04
I-Mod 12	Windlass	PFO	0.3	0.3	0.56	0.17	0.76	0.23	0.51	0.15
I-Mod 11	Windlass	PFO	0.2	0.2	0.48	0.09	0.76	0.14	0.75	0.14
D-Mod 14	Windlass	PFO	0.4	0.4	0.52	0.22	0.76	0.32	0.75	0.31
D-Mod 13	Windlass	PFO	0.8	0.8	0.55	0.43	0.76	0.59	0.49	0.38
D-Mod 13A	Windlass	PFO	0.4	0.4	0.51	0.21	0.76	0.32	0.75	0.31
D-Mod 12	Windlass	PFO	---	0.1	0.48	0.04	0.76	0.07	N/A	N/A
D-Mod 11	Windlass	PFO	---	0.2	0.5	0.12	0.76	0.18	0.75	0.17
D-Mod 10	Saltpeper	PFO	---	0.6	0.48	0.31	0.76	0.49	N/A	N/A
D-Mod 9	Saltpeper	PFO	---	0.9	0.5	0.45	0.76	0.69	N/A	N/A
D-Mod 8	Frog Mortar	PFO	---	<0.1	0.46	<0.01	0.76	<0.01	N/A	N/A
D-Mod 7	Frog Mortar	PFO	---	0.2	0.47	0.08	0.76	0.13	N/A	N/A
D-Mod 6	Windlass	PFO	0.2	0.2	0.5	0.10	0.76	0.16	0.75	0.15
D-Mod 5A	Frog Mortar	PFO	---	0.2	0.47	0.11	0.61	0.14	N/A	N/A
D-Mod 5	Frog Mortar	PFO	1.8	1.8	0.48	0.85	0.76	1.35	0.75	1.33
D-Mod 4	Frog Mortar	PFO	1.0	1.0	0.5	0.50	0.76	0.76	0.75	0.75
D-Mod 2	Frog Mortar	PFO	0.4	0.4	0.5	0.19	0.76	0.29	0.75	0.28
D-Mod 2A	Frog Mortar	PFO	---	0.4	0.4	0.16	0.76	0.30	N/A	N/A

		WL	SS	WQ
		FCU	FCU	FCU
TOTALS <sup>5</sup> :	PFO	5.9	8.8	4.42
	PSS	0	0	0
	PEM	0.5	0.5	0.20
	All	6.4	9.3	6.82

\*Definition of terms: PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent wetland; WUS=Waters of the US; WL = wildlife; SS = sediment stabilization; WQ = water quality



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<sup>1</sup>Final determination as to whether a wetland is a jurisdictional Waters of the U.S. or is adjacent to wetlands which are jurisdictional Waters of the U.S. will be made by ACOE later in the design phase.

<sup>2</sup>The Functional Capacity Index (FCI) is a measure of functional capacity expressed as an index, where 0 represents no functional capacity and 1.0 represents optimal.

<sup>3</sup>The Functional Capacity Unit (FCU) is a measure of functional capacity expressed in terms of quantity per unit area (FCU = FCI times the MDE Impact Area).

<sup>4</sup>Not Applicable - This function could not be evaluated for this wetland because the wetland has no surface water outlet and therefore has no direct effects on downstream water quality.

<sup>5</sup>Apparent errors created by rounding.

Table IV-8: Impacts to Wetlands, Alternative D

Wetland Number	Watershed	Wetland Class <sup>*</sup>	Contiguous <sup>1</sup> Impact Area (ac)	Contiguous & Isolated <sup>1</sup> Impact Area (ac)	WL FCI <sup>2</sup>	WL FCU <sup>3</sup>	SS FCI <sup>2</sup>	SS FCU <sup>3</sup>	WQ FCI <sup>2</sup>	WQ FCU <sup>3</sup>
D 8	Whitemarsh	PEM	<0.1	<0.1	0.43	0.02	0.77	0.03	0.78	0.03
D 7	Whitemarsh	PSS	---	<0.1	0.22	0.01	0.95	0.03	0.98	0.04
D 6	Whitemarsh	PEM	0.3	0.3	0.28	0.08	0.81	0.22	0.65	0.18
D 6A	Whitemarsh	PSS	<0.1	<0.1	0.50	0.02	0.76	0.02	0.75	0.02
D 5	Whitemarsh	PSS	---	<0.1	0.26	<0.01	0.7	0.01	N/A <sup>4</sup>	N/A
D 5A	Whitemarsh	PSS	0.1	0.1	0.41	0.02	0.95	0.05	0.79	0.04
D 5B	Whitemarsh	PSS	---	0.1	0.23	0.01	0.55	0.03	N/A	N/A
D 3	Whitemarsh	PEM	---	<0.1	0.48	0.01	0.15	<0.01	N/A	N/A
D 2B	Whitemarsh	PFO	---	0.2	0.41	0.07	0.76	0.13	0.75	0.12
D 1	Whitemarsh	PSS	---	<0.1	0.31	0.01	0.76	0.03	0.63	0.02
		PEM	---	0.1	0.31	0.03	0.76	0.06	0.63	0.05
		Total	---	0.1	N/A	N/A	N/A	N/A	N/A	N/A
D-Mod 15	Windlass	PFO	0.3	0.3	0.54	0.14	0.76	0.20	0.65	0.17
D-Mod 16	Windlass	PFO	---	<0.1	0.38	<0.01	0.76	0.01	0.65	0.01
D 100	Windlass	PFO	0.3	0.3	0.48	0.12	0.76	0.19	0.75	0.19
E 11	Windlass	PFO	1.7	1.7	0.70	1.17	0.72	1.20	0.71	1.19
E 10	Windlass	PFO	0.5	0.5	0.51	0.23	0.81	0.37	0.71	0.33
D Mod 6	Windlass	PFO	1.2	1.2	0.50	0.59	0.76	0.90	0.75	0.89
D-Mod 5A	Frog Mortar	PFO	---	<0.1	0.47	0.02	0.61	0.03	N/A	N/A
D-Mod 5	Frog Mortar	PFO	1.8	1.8	0.48	0.86	0.76	1.36	0.75	1.34
D-Mod 4	Frog Mortar	PFO	1.0	1.0	0.50	0.50	0.76	0.76	0.75	0.75
D Mod 2	Frog Mortar	PFO	0.4	0.4	0.50	0.19	0.76	0.29	0.75	0.28
D-Mod 2A	Frog Mortar	PFO	---	0.4	0.40	0.16	0.76	0.30	N/A	N/A
					WL		SS		WQ	
					FCU		FCU		FCU	
TOTALS <sup>5</sup>		PFO	7.0	7.6	4.05		5.72		5.26	
		PSS	0.1	0.2	0.07		0.17		0.12	
		PEM	0.3	0.4	0.13		0.32		0.27	
		All	7.3	8.2						

\*Definition of terms: PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent wetland; WL = wildlife; SS = sediment stabilization; WQ = water quality

<sup>1</sup>Final determination as to whether a wetland is a jurisdictional Waters of the U.S. or is adjacent to wetlands which are jurisdictional Waters of the U.S. will be made by ACOE later in the design phase.

<sup>2</sup>The Functional Capacity Index (FCI) is a measure of functional capacity expressed as an index, where 0 represents no functional capacity and 1.0 represents optimal.

<sup>3</sup>The Functional Capacity Unit (FCU) is a measure of functional capacity expressed in terms of quantity per unit area (FCU = FCI \* MDE Impact Area).

<sup>4</sup>Not Applicable - This function could not be evaluated for this wetland because the wetland has no surface water outlet and therefore has no direct effects on downstream water quality.

<sup>5</sup>Apparent errors created by rounding.

Table IV-9: Impacts to Wetlands, Alternative D Modified

Wetland Number	Watershed	Wetland Class*	Contiguous <sup>1</sup> Impact Area (ac)	Contiguous & Isolated <sup>1</sup> Impact Area (ac)	WL FCI <sup>2</sup>	WL FCU <sup>3</sup>	SS FCI <sup>2</sup>	SS FCU <sup>3</sup>	WQ FCI <sup>4</sup>	WQ FCU <sup>3</sup>
D 8	Whitemarsh	PEM	<0.1	<0.1	0.43	0.02	0.77	0.03	0.78	0.03
D 7	Whitemarsh	PSS	---	<0.1	0.22	0.01	0.95	0.03	0.98	0.04
D 6	Whitemarsh	PEM	0.3	0.3	0.28	0.08	0.81	0.22	0.65	0.18
D 6A	Whitemarsh	PSS	<0.1	<0.1	0.50	0.02	0.76	0.02	0.75	0.02
D 5	Whitemarsh	PSS	---	<0.1	0.26	<0.01	0.7	0.01	N/A <sup>4</sup>	N/A
D 5A	Whitemarsh	PSS	0.1	0.1	0.41	0.02	0.95	0.05	0.79	0.04
D 5B	Whitemarsh	PSS	---	0.1	0.23	0.01	0.55	0.03	N/A	N/A
D 3	Whitemarsh	PEM	---	<0.1	0.48	0.01	0.15	<0.01	N/A	N/A
D 2B	Whitemarsh	PFO	---	0.2	0.41	0.07	0.76	0.13	0.75	0.12
D 1	Whitemarsh	PSS	---	<0.1	0.31	0.01	0.76	0.03	0.63	0.02
		PEM	---	0.1	0.31	0.03	0.76	0.06	0.63	0.05
		Total	---	0.1	N/A	N/A	N/A	N/A	N/A	N/A
D-Mod 15	Windlass	PFO	0.3	0.3	0.54	0.14	0.76	0.20	0.65	0.17
D-Mod 16	Windlass	PFO	---	<0.1	0.38	<0.01	0.76	0.01	0.75	0.01
I-Mod 12	Windlass	PFO	0.8	0.8	0.56	0.44	0.76	0.59	0.51	0.40
I-Mod 11	Windlass	PFO	0.2	0.2	0.48	0.09	0.76	0.14	0.75	0.14
D-Mod 14	Windlass	PFO	0.4	0.4	0.52	0.22	0.76	0.32	0.75	0.31
D-Mod 13	Windlass	PFO	0.8	0.8	0.55	0.43	0.76	0.59	0.49	0.38
D-Mod 13A	Windlass	PFO	0.4	0.4	0.51	0.21	0.76	0.32	0.75	0.31
D-Mod 12	Windlass	PFO	---	0.1	0.48	0.04	0.76	0.07	N/A	N/A
D-Mod 11	Windlass	PFO	---	0.2	0.5	0.12	0.76	0.18	0.75	0.17
D-Mod 10	Salt peter	PFO	---	0.6	0.48	0.31	0.76	0.49	N/A	N/A
D-Mod 9	Salt peter	PFO	---	0.9	0.5	0.45	0.76	0.69	N/A	N/A
D-Mod 8	Frog Mortar	PFO	---	<0.1	0.46	<0.01	0.76	<0.01	N/A	N/A
D-Mod 7	Frog Mortar	PFO	---	0.2	0.47	0.08	0.76	0.13	N/A	N/A
D-Mod 6	Windlass	PFO	0.2	0.2	0.5	0.10	0.76	0.16	0.75	0.15
D-Mod 5A	Frog Mortar	PFO	---	0.2	0.47	0.11	0.61	0.14	N/A	N/A
D-Mod 5	Frog Mortar	PFO	1.8	1.8	0.48	0.85	0.76	1.35	0.75	1.33
D-Mod 4	Frog Mortar	PFO	1.0	1.0	0.5	0.50	0.76	0.76	0.75	0.75
D-Mod 2	Frog Mortar	PFO	0.4	0.4	0.5	0.19	0.76	0.29	0.75	0.28
D-Mod 2A	Frog Mortar	PFO	---	0.4	0.4	0.16	0.76	0.30	N/A	N/A
					WL		SS		WQ	
					FCU		FCU		FCU	
TOTALS <sup>5</sup> :		PFO	6.4	9.0	4.51		6.84		4.53	
		PSS	0.1	0.2		0.07		0.17		0.12
		PEM	0.3	0.4	0.13		0.32			0.27
		All	6.8	9.6						

\*Definition of terms: PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent wetland; WL = wildlife; SS = sediment stabilization; WQ = water quality

<sup>1</sup>Final determination as to whether a wetland is a jurisdictional Waters of the U.S. or is adjacent to wetlands which are jurisdictional Waters of the U.S. will be made by ACOE later in the design phase.

<sup>2</sup>The Functional Capacity Index (FCI) is a measure of functional capacity expressed as an index, where 0 represents no functional capacity and 1.0 represents optimal.

<sup>3</sup>The Functional Capacity Unit (FCU) is a measure of functional capacity expressed in terms of quantity per unit area (FCU = FCI \* MDE Impact Area).

<sup>4</sup> Not Applicable - This function could not be evaluated for this wetland because the wetland has no surface water outlet and therefore has no direct effects on downstream water quality.

<sup>5</sup> Apparent errors created by rounding.

Table IV-10: Impacts to Wetlands, Alternative E

Wetland Number	Watershed	Wetland Class*	Contiguous <sup>1</sup> Impact Area (ac)	Contiguous & Isolated <sup>1</sup> Impact Area (ac)	WL FCI <sup>2</sup>	WL FCU <sup>3</sup>	SS FCI <sup>2</sup>	SS FCU <sup>3</sup>	WQ FCI <sup>2</sup>	WQ FCU <sup>3</sup>
D-8	Whitemarsh	PEM	<0.1	<0.1	0.43	0.02	0.77	0.03	0.78	0.03
D-7	Whitemarsh	PSS	---	<0.1	0.22	0.01	0.95	0.03	0.98	0.04
D-6	Whitemarsh	PEM	0.3	0.3	0.28	0.08	0.81	0.22	0.65	0.18
D-6A	Whitemarsh	PSS	<0.1	<0.1	0.50	0.02	0.76	0.02	0.75	0.02
D-5	Whitemarsh	PSS	---	<0.1	0.26	<0.01	0.7	0.01	N/A <sup>4</sup>	N/A
D-5A	Whitemarsh	PSS	0.1	0.1	0.41	0.02	0.95	0.05	0.79	0.04
D-5B	Whitemarsh	PSS	---	0.1	0.23	0.01	0.55	0.03	N/A	N/A
D-3	Whitemarsh	PEM	---	<0.1	0.48	0.01	0.15	<0.01	N/A	N/A
D-2B	Whitemarsh	PFO	---	0.2	0.16	0.03	0.07	0.01	0.05	0.01
D-1	Whitemarsh	PSS	---	<0.1	0.31	0.01	0.76	0.03	0.63	0.02
		PEM	---	0.1	0.31	0.03	0.76	0.06	0.63	0.05
		Total	---	0.1	N/A	N/A	N/A	N/A	N/A	N/A
D-Mod 15	Windlass	PFO	0.3	0.3	0.54	0.14	0.76	0.20	0.65	0.17
D-Mod 16	Windlass	PFO	---	<0.1	0.38	<0.01	0.76	0.01	0.75	0.01
D-100	Windlass	PFO	0.3	0.3	0.48	0.12	0.76	0.19	0.75	0.19
E-11	Windlass	PFO	1.7	1.7	0.7	1.17	0.82	1.37	0.71	1.19
E-10	Windlass	PFO	0.3	0.3	0.51	0.18	0.81	0.27	0.71	0.24
E-9	Windlass	PFO	---	0.7	0.49	0.35	0.76	0.54	0.71	0.50
D-Mod 9	Salt peter	PFO	---	1.3	0.5	0.65	0.76	0.99	N/A	N/A
E-8	Salt peter	PFO	---	0.4	0.56	0.21	0.76	0.28	N/A	N/A
E-7	Salt peter	PFO	0.4	0.4	0.56	0.23	0.81	0.33	0.68	0.27
E-6	Salt peter	PFO	<0.1	<0.1	0.45	0.01	0.76	0.01	N/A	N/A
E-5	Salt peter	PFO	---	<0.1	0.46	<0.01	0.76	0.01	N/A	N/A
E-3	Salt peter	PFO	---	0.2	0.28	0.06	0.79	0.17	N/A	N/A
E-2	Salt peter	PFO	---	<0.1	0.48	0.02	0.76	0.03	N/A	N/A
E-1	Salt peter	PFO	---	<0.1	0.53	0.01	0.76	0.02	N/A	N/A
I-Mod A	Salt peter	PFO	---	0.3	0.3	0.10	0.76	0.26	N/A	N/A
I-Mod B	Salt peter	PFO	---	0.8	0.44	0.35	0.76	0.61	N/A	N/A

		WL FCI	WL FCU	SS FCI	SS FCU	WQ FCI	WQ FCU
TOTALS <sup>5</sup> :	PFO	2.9	7.0	3.62	5.29	2.57	
	PSS	0.1	0.2	0.07	0.17	0.12	
	PEM	0.3	0.4	0.13	0.32	0.27	
	All	3.3	7.5				

\*Definition of terms: PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent wetland; WL = wildlife; SS = sediment stabilization; WQ = water quality

<sup>1</sup>Final determination as to whether a wetland is a jurisdictional Waters of the U.S. or is adjacent to wetlands which are jurisdictional Waters of the U.S. will be made by ACOE later in the design phase.

<sup>2</sup>The Functional Capacity Index (FCI) is a measure of functional capacity expressed as an index, where 0 represents no functional capacity and 1.0 represents optimal.

<sup>3</sup>The Functional Capacity Unit (FCU) is a measure of functional capacity expressed in terms of quantity per unit area (FCU = FCI \* MDE Impact Area).

<sup>4</sup>Not Applicable - This function could not be evaluated for this wetland because the wetland has no surface water outlet and therefore has no direct effects on downstream water quality.

<sup>5</sup>Apparent errors created by rounding.

Table-IV-11: Impacts to Wetlands, Alternative F<sub>1</sub> Modified.

Wetland Number	Watershed	Wetland Class*	Contiguous <sup>1</sup> Impact Area (ac)	Contiguous & Isolated <sup>1</sup> Impact Area (ac)	WL FCI <sup>2</sup>	WL FCU <sup>3</sup>	SS FCI <sup>2</sup>	SS FCU <sup>3</sup>	WQ FCI <sup>2</sup>	WQ FCU <sup>3</sup>
D 8	Whitemarsh	PEM	<0.1	<0.1	0.43	0.02	0.77	0.03	0.78	0.03
D 7	Whitemarsh	PSS	---	<0.1	0.22	0.01	0.95	0.03	0.98	0.04
D 6	Whitemarsh	PEM	0.3	0.3	0.28	0.08	0.81	0.22	0.65	0.18
D 6A	Whitemarsh	PSS	<0.1	<0.1	0.50	0.02	0.76	0.02	0.75	0.02
D 5	Whitemarsh	PSS	---	<0.1	0.26	<0.01	0.7	0.01	N/A <sup>4</sup>	N/A
D 5A	Whitemarsh	PSS	0.1	0.1	0.41	0.02	0.95	0.05	0.79	0.04
D 5B	Whitemarsh	PSS	---	0.1	0.23	0.01	0.55	0.03	N/A	N/A
D 3	Whitemarsh	PEM	---	<0.1	0.48	0.01	0.15	<0.01	N/A	N/A
F <sub>1</sub> -Mod 1B	Whitemarsh	PFO	0.6	0.6	0.08	0.51	0.57	0.36	0.67	0.43
F <sub>1</sub> -Mod 2	Whitemarsh	PFO	0.1	0.1	0.21	0.02	0.79	0.07	0.69	0.06
F <sub>1</sub> -Mod 2A	Whitemarsh	PEM	---	<0.1	0.49	0.01	0.8	0.02	N/A	N/A
F <sub>1</sub> -Mod 3	Whitemarsh	PFO	0.1	0.1	0.21	0.03	0.79	0.11	0.69	0.10
F <sub>1</sub> -Mod 4	Windlass	PSS	0.1	0.1	0.46	0.03	0.75	0.04	0.77	0.04
		PEM	0.1	0.1	0.46	0.06	0.77	0.09	0.77	0.09
		Total	0.2	0.2	N/A	N/A	N/A	N/A	N/A	N/A
F <sub>1</sub> -Mod 4A	Windlass	PEM	---	0.1	0.12	0.01	0.73	0.06	N/A	N/A
F <sub>1</sub> -Mod 4B	Windlass	PEM	---	0.2	0.12	0.02	0.75	0.13	N/A	N/A
F <sub>1</sub> -Mod 4C	Windlass	PEM	---	0.1	0.23	0.03	0.98	0.13	0.54	0.07
F <sub>1</sub> -Mod 5	Windlass	PFO	1.2	1.2	0.56	0.66	0.84	0.98	0.69	0.81
F <sub>1</sub> -Mod 5B	Windlass	PFO	0.4	0.4	0.49	0.20	0.76	0.32	0.66	0.27
F <sub>1</sub> -Mod 6	Windlass	PFO	---	0.5	0.36	0.20	0.76	0.41	N/A	N/A
D-Mod 5	Frog Mortar	PFO	<0.1	<0.1	0.48	0.02	0.76	0.04	0.75	0.04
D-Mod 4	Frog Mortar	PFO	0.1	0.1	0.5	0.05	0.76	0.08	0.75	0.08
D-Mod 2	Frog Mortar	PFO	2.9	2.9	0.5	1.43	0.76	2.18	0.75	2.15
D-Mod 2A	Frog Mortar	PFO	---	0.3	0.4	0.12	0.76	0.23	N/A	N/A

		WL FCI <sup>2</sup>	WL FCU <sup>3</sup>	SS FCI <sup>2</sup>	SS FCU <sup>3</sup>	WQ FCI <sup>2</sup>	WQ FCU <sup>3</sup>
TOTALS <sup>5</sup> :	PFO	5.5	6.3	3.24	4.78	3.93	
	PSS	0.1	0.1	0.06	0.12	0.10	
	PEM	0.4	0.9	0.23	0.69	0.38	
	All	6.0	7.3				

\*Definition of terms: PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent wetland;  
 WL = wildlife; SS = sediment stabilization; WQ = water quality  
<sup>1</sup>Final determination as to whether a wetland is a jurisdictional Waters of the U.S. or is adjacent to wetlands which are jurisdictional Waters of the U.S. will be made by ACOE later in the design phase.  
<sup>2</sup>The Functional Capacity Index (FCI) is a measure of functional capacity expressed as an index, where 0 represents no functional capacity and 1.0 represents optimal.  
<sup>3</sup>The Functional Capacity Unit (FCU) is a measure of functional capacity expressed in terms of quantity per unit area (FCU = FCI \* MDE Impact Area).  
<sup>4</sup>Not Applicable - This function could not be evaluated for this wetland because the wetland has no surface water outlet and therefore has no direct effects on downstream water quality.  
<sup>5</sup>Apparent errors created by rounding.

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Table IV-12: Impacts to Wetlands, Alternative I modified.

Wetland Number	Watershed	Wetland Class <sup>2</sup>	Contiguous <sup>1</sup> Impact Area (ac)	Contiguous & Isolated <sup>1</sup> Impact Area (ac)	WL FCI <sup>1</sup>	WL FCU <sup>3</sup>	SS FCI <sup>1</sup>	SS FCU <sup>3</sup>	WQ FCI <sup>1</sup>	WQ FCU <sup>3</sup>
D 8	Whitemarsh	PEM	<0.1	<0.1	0.43	0.02	0.77	0.03	0.78	0.03
D 7	Whitemarsh	PSS	---	<0.1	0.22	0.01	0.95	0.03	0.98	0.04
D 6	Whitemarsh	PEM	0.3	0.3	0.28	0.08	0.81	0.22	0.65	0.18
D 6A	Whitemarsh	PSS	<0.1	<0.1	0.50	0.02	0.76	0.02	0.75	0.02
D 5	Whitemarsh	PSS	---	<0.1	0.26	<0.01	0.7	0.01	N/A <sup>4</sup>	N/A
D 5A	Whitemarsh	PSS	0.1	0.1	0.41	0.02	0.95	0.05	0.79	0.04
D 5B	Whitemarsh	PSS	---	0.1	0.23	0.01	0.55	0.03	N/A	N/A
D 3	Whitemarsh	PEM	---	<0.1	0.48	0.01	0.15	<0.01	N/A	N/A
D 2B	Whitemarsh	PFO	---	0.2	0.41	0.07	0.76	0.13	0.75	0.12
D 1	Whitemarsh	PSS	---	<0.1	0.31	0.01	0.76	0.03	0.63	0.02
		PEM	---	0.1	0.31	0.03	0.76	0.06	0.63	0.05
		Total	---	0.1	N/A	N/A	N/A	N/A	N/A	N/A
D-Mod 15	Windlass	PFO	0.3	0.3	0.54	0.14	0.76	0.20	0.65	0.17
D-Mod 16	Windlass	PFO	---	<0.1	0.38	<0.01	0.76	0.01	0.65	0.01
I-Mod 12	Windlass	PFO	0.9	0.9	0.56	0.53	0.76	0.72	0.51	0.48
I-Mod 11	Windlass	PFO	0.3	0.3	0.48	0.13	0.76	0.21	0.75	0.21
I-Mod 10	Windlass	PFO	0.2	0.2	0.49	0.09	0.76	0.14	0.75	0.14
I-Mod 9	Windlass	PFO	0.5	0.5	0.49	0.23	0.76	0.35	0.75	0.34
I-Mod 8	Windlass	PFO	---	0.6	0.51	0.30	0.76	0.45	N/A	N/A
I-Mod 7	Windlass	PEM	---	0.3	0.16	0.05	0.70	0.20	N/A	N/A
I-Mod 6	Windlass	PFO	<0.1	<0.1	0.47	0.02	0.76	0.02	0.75	0.02
I-Mod 4	Salt peter	PFO	<0.1	<0.1	0.49	0.01	0.76	0.01	0.75	0.01
I-Mod 3A	Salt peter	PFO	---	<0.1	0.49	0.02	0.76	0.03	N/A	N/A
I-Mod 3	Salt peter	PFO	0.9	0.9	0.56	0.48	0.76	0.65	0.56	0.48
I-Mod 2	Salt peter	PFO	---	0.1	0.42	0.02	0.76	0.04	0.64	0.04
I-Mod 1	Salt peter	PFO	---	0.4	0.42	0.19	0.76	0.34	0.69	0.30
I-Mod A	Salt peter	PFO	---	0.3	0.30	0.10	0.76	0.26	N/A	N/A
I-Mod B	Salt peter	PFO	---	0.8	0.44	0.35	0.76	0.61	N/A	N/A
					WL		SS		WQ	
					FCU <sup>3</sup>		FCU <sup>3</sup>		FCU <sup>3</sup>	
TOTALS <sup>5</sup> :		PFO	3.0	5.5	2.68		4.16		2.33	
		PSS	0.1	0.2	0.07		0.17		0.12	
		PEM	0.3	0.7	0.17		0.51		0.27	
		All	3.4	6.4						

\*Definition of terms: PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent wetland; WL = wildlife; SS = sediment stabilization; WQ = water quality

<sup>1</sup>Final determination as to whether a wetland is a jurisdictional Waters of the U.S. or is adjacent to wetlands which are jurisdictional Waters of the U.S. will be made by ACOE later in the design phase.

<sup>2</sup>The Functional Capacity Index (FCI) is a measure of functional capacity expressed as an index, where 0 represents no functional capacity and 1.0 represents optimal.

<sup>3</sup>The Functional Capacity Unit (FCU) is a measure of functional capacity expressed in terms of quantity per unit area (FCU = FCI \* MDE Impact Area).

<sup>4</sup>Not Applicable - This function could not be evaluated for this wetland because the wetland has no surface water outlet and therefore has no direct effects on downstream water quality.

<sup>5</sup>Apparent errors created by rounding.

Table IV-13 lists wetland areas regulated by either ACOE or MDE that will be impacted by the alignments according to watershed. As indicated in the table footnotes, the Army Corps of Engineers does not have jurisdiction over wetlands that are isolated from other surface waters (Waters of the US) unless the wetland is adjacent to other jurisdictional areas or affects interstate commerce. The Maryland Department of the Environment does take jurisdiction over all of these isolated areas. Consequently, the number of acres that ACOE considers to be impacted frequently differ from those MDE considers affected. If this occurs, SHA will mitigate for the higher impacts.

**Table IV-13: Wetland areas regulated as Contiguous or Isolated and directly impacted by alternatives**

Alignment	Watershed Area Impacted (Acres)				Total Acres Impacted
	Frog Mortar	Saltpeter	Windlass	Whitemarsh	
<b>Revised D Modified (SHA Selected Alternative)</b>					
Contiguous	3.0	0	3.0	0.2	6.4
Contiguous & Isolated	3.7	1.4	3.3	0.9	9.3
<b>Alternative D</b>					
Contiguous	3.2	0	3.8	0.4	7.4
Contiguous & Isolated	3.6	0	3.8	0.8	8.2
<b>Alternative D Modified</b>					
Contiguous	3.2	0	3.3	0.4	6.8
Contiguous & Isolated	4.0	1.6	3.4	0.8	9.7
<b>Alternative E</b>					
Contiguous	0	0.4	2.5	0.4	3.3
Contiguous & Isolated	0	3.5	3.2	0.8	7.5
<b>Alternative F, Modified</b>					
Contiguous	3.0	0	1.8	1.2	6.0
Contiguous & Isolated	3.3	0	2.7	1.3	7.3
<b>Alternative I Modified</b>					
Contiguous	0	0.9	2.2	0.4	3.4
Contiguous & Isolated	0	2.5	3.0	0.8	6.4

Final determination as to whether a wetland is a jurisdictional Waters of the U.S. or is adjacent to wetlands which are jurisdictional Waters of the U.S. may be made by ACOE as a result of any changes during the design phase.

In general, most of the existing functions and values will continue to be provided by the remaining portions of the wetlands although the quantity or magnitude of these functions and values would be reduced proportionally with the area lost. For some wetlands, the introduction of new sediment/toxicant sources; the introduction or loss of inlet, outlets or constrictions; the change in the input area; etc. will impact the wetland's effectiveness and/or opportunity to perform some or all functions and values.

2. Wetland Impact Minimization at Stream Crossings

a. Windlass Run

The proposed alternative crossings of Windlass Run include a culvert and two bridge systems. Detailed hydrologic, hydraulic, and geomorphic analysis was completed for the proposed Alternative D Modified crossing. This crossing is the furthest downstream and therefore

represents a "worst case" scenario for the extent, elevation, and discharge characteristics of the 100-year flood. The geomorphic analysis of the existing conditions at the Alternative D Modified crossing classified the stream as a C5 with a bankfull width of approximately 15 ft. and a maximum depth over 2 ft. The hydraulics analysis results in existing 100-year flood elevations in the vicinity of the crossing to be between 19 to 21 feet above sea level. For a more detailed discussion of the floodplains and the requirements to protect floodplains and floodplain values, refer to Sections III-G and IV-H of this document.

### ***Culvert Crossing***

The proposed culvert system includes an 18' x 9' box culvert (buried two feet) with an 18' x 7' opening. This box culvert will be located within the channel and can convey the bankfull flows. Three elliptical pipes (7.6' span x 4.8' rise) are configured with one pipe in the right overbank (facing downstream) and two pipes in the left overbank. These three elliptical culverts are located at elevations such that flows within the overbank areas are conveyed in the overbank areas. Another 9' x 9' box culvert would be placed above the 2-year water surface elevation. This culvert is used as a wildlife passage and conveys much lower frequency discharges. The estimated cost of the culvert system is \$1,875,000.

### ***Bridge Crossing***

The proposed bridge scenario #1 would include a minimum span of approximately 100 feet. This structure would convey the bankfull discharge, maintain the stability of the channel and raise the 100-year flood elevation less than 1.0 foot over the existing condition. Riprap abutment or other scour countermeasures may be required. The estimated cost of the structure is \$1,200,000. A structure that completely spans the wetland would range in cost from approximately \$2,500,000 to \$4,700,000. During final design, a 150 foot bridge length will be examined. Utilizing a 150 foot bridge would reduce impacts more than the 100 foot bridge.

Table IV-14 compares the wetland and floodplain impacts associated with the alternative crossing structures for Windlass Run.

Table IV-14: Wetland Impact Minimization for Windlass Run

	Revised D Modified			D			D Modified			E			F Modified			I Modified		
	Culvert	100-foot Bridge	400-foot Bridge	Culvert	100-foot Bridge	400-foot Bridge	Culvert	100-foot Bridge	200-foot Bridge	Culvert	100-foot Bridge	400-foot Bridge	Culvert	100-foot Bridge	300-foot Bridge	Culvert	100-foot Bridge	300-foot Bridge
Rosgen Stream Classification	C5	C5	C5	E6	E6	E6	C5	C5	C5	E6	E6	E6	E6	E6	E6	C5	C5	C5
Wetlands (Ac) Direct	0.8	0.4	0.0	1.7	1.2	0.0	0.8	0.4	0.0	1.7	1.2	0.0	1.2	0.6	0.0	0.9	0.4	0.0
Wetlands (Ac) Under Bridge	-	0.3	0.3	-	0.2	0.7	-	0.2	0.3	-	0.2	0.7	-	0.2	0.6	-	0.2	0.3
Stream Impact (LF)	160	80	80	180	80	80	160	80	80	190	80	80	140	80	80	190	80	80
Floodplain (Ac)	0.7	0.5	0.0	1.1	0.9	0.0	0.7	0.5	0.0	1.1	0.9	0.0	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	0.8	0.6	0.0
Construction Cost (\$Mil.)	1.9	1.9	2.5	1.9	1.2	4.7	1.9	1.2	2.5	1.9	1.2	4.7	1.9	1.2	3.5	1.9	1.2	3.5

<sup>1</sup> This crossing is upstream of the limits of the 100-year floodplain as identified by the FEMA flood study.

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b. Whitemarsh Run

Crossing Whitemarsh Run at the alternative crossings with a culvert would not be feasible, since the depth of fill (over 20 feet) would impact the 100-year floodplain. The evaluation of alternative bridge lengths is not necessary at the Whitemarsh crossing because there are no adjacent wetlands present to be avoided. The proposed crossing of Whitemarsh Run, therefore, includes only one bridge system. The geomorphic analysis of the existing conditions at this crossing classified the stream as a C5 with a bankfull width of approximately 40 ft. and a maximum depth over 4 ft. The hydraulics analysis results in existing 100-year flood elevations in the vicinity of the crossing to be between 14 to 16 feet above sea level.

The proposed bridge requires a span of approximately 280 feet. This structure would convey the bankfull discharge, maintains the stability of the channel and raise the 100-year flood elevation less than 1.0 foot over the existing condition. Riprap abutment or other scour countermeasures may be required. The crossing does not directly impact any wetlands. The estimated cost of the structure is \$5,400,000.

3. Compliance with Section 404(b)(1) Guidelines

The Section 404(b)(1) guidelines are the substantive criteria used to evaluate discharges of dredged or fill material under Section 404 of the Clean Water Act. The purpose of the Section 404 (b)(1) guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material. From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by the Guidelines. The guiding principle should be that degradation or destruction of special aquatic sites might represent an irreversible loss of valuable resources. (40 CFR §230.1)

This Environmental Impact Statement, in compliance with Section 404 of the Clean Water Act addresses the requirements of the 404(b)(1) guidelines Subparts B through F. The provisions of Subparts B through F and the manner in which they are addressed in this document are detailed below:

Subpart B: Compliance with the Guidelines

Subpart B addresses the analysis necessary for compliance with the guidelines and establishes four conditions that must be satisfied to determine that the proposed action complies with the 404(b)(1) guidelines. Subpart B further sets forth factual determinations to be considered when determining if the proposed action satisfies the conditions of compliance.

**230.10 Restrictions on discharge** - The discharge of dredged or fill material in the aquatic ecosystem including wetlands, is not permitted if there is a practicable alternative that would have less adverse impact. Commonly referred to as the "Alternatives Analysis," these provisions of the guidelines require that alternative actions and locations be considered to avoid impacts to aquatic resources. The analysis must demonstrate that there is no practicable alternative to the proposed discharge of dredged or fill material that would have less adverse impact to the aquatic

ecosystem. These alternatives are not considered practicable if they have other significant adverse environmental consequences. The provisions also require the determination of the project's water dependency and compliance with NEPA and the Coastal Zone Management Program.

**230.10(a)(1) Alternatives analysis** - As detailed in Chapter II (Alternatives Considered) of this DEIS, a range of alternatives were considered for this project. Section II-E reviews each of the alternatives studied in detail in the DEIS. The findings of this analysis demonstrate that there are no practicable alternatives that completely avoid aquatic impacts and still meet the purpose and need for the project.

**230.10(a)(2) Avoidance alternatives** - Where possible, alternatives were located to avoid and minimize impacts to aquatic resources including wetlands during preliminary design. Avoidance of stream systems that are generally perpendicular to the alternative alignments was not possible while still meeting the project's purpose and need. Circumventing the resources to the extent possible and maximizing slopes, thereby reducing fill minimized unavoidable impacts to aquatic resources including wetlands. Culverts or bridges will also be used to maintain existing stream channels and hydrologic connections.

The following text documents the extent of avoidance and minimization measures that have been considered to further reduce impacts to wetlands and other Waters of the United States and the State of Maryland within the study area. See Figures II-7 through II-19 for the location of wetland areas. Additional measures may also be considered, as the engineering designs are further refined.

- **Revised D Modified (SHA Selected Alternative)**

*Wetland D 6B*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland is not impacted by this alternative.

*Wetland D 6A*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland can not be avoided because of its proximity to US 40.

*Wetland D 6*

This wetland, associated with a small tributary of Whitemarsh Run, is located on the outside of the existing interchange loop ramp at US 40 and MD 43. Impacts to this wetland can not be avoided or minimized because the ramp radius can not be further reduced. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact wetland D 97 in the northeast quadrant of the interchange.

*Wetland D 8*

Wetland D 8 is associated with a small tributary of Whitemarsh Run and located within the existing loop ramp of the US 40/MD 43 interchange. The additional lane on this loop ramp is

required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact wetland D 97 in the northeast quadrant of the interchange. Avoiding or reducing impacts to wetland D 8 would require increasing the radius of the loop ramp, which would increase impacts to wetland D 6 by at least 0.4 acres.

*Wetland D 7*

Wetland D 7 is an isolated wetland located at the end of the existing MD 43 roadway. Impacts to this wetland can not be avoided due to the need to tie into the existing roadway.

*Wetland D 5*

This isolated wetland is located along the proposed alternative just east of Whitemarsh Run. Shifting the proposed alignment to the north would increase impacts to wetland D 5A on the floodplain of Whitemarsh Run. Shifting the roadway to the south would impact the currently avoided wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 5A and D 5B*

These wetlands are located on the floodplain of Whitemarsh Run on the north side of the proposed alignment. Shifting the roadway to the north would increase impacts to these wetlands, while shifting the roadway to the south would impact the currently avoided wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 4 and D 4A*

These isolated wetlands are located south of the proposed alignment, just east of Whitemarsh Run. The proposed roadway does not impact these wetlands.

*Wetland D 3*

This wetland is located south of the proposed alignment in a small ephemeral channel just east of Whitemarsh Run. The proposed roadway does not impact this wetland.

*Wetlands D 2B and D 1*

Wetlands D 2B and D 1 are isolated wetlands and are located along the proposed alignment, to the east of Bird River Road and South of Hilltop Road. Shifting the roadway to the north to avoid these wetlands would require the displacement of six additional residential properties in the Hilltop Road area. Shifting the alignment to the south would impact the currently avoided wetlands D 2 and D 2A and would impact a BG&E electric substation.

*Wetlands D 2 and D2A*

These isolated wetlands are located adjacent to the BG&E electric substation and will not be impacted by the proposed roadway alignment.

*Wetland D 1A*

This wetland is a small ditch of cattails, fed by effluent from a septic field.. This wetland cannot be avoided.

*Wetland D 1B*

This wetland is located just east of Bird River Road. This wetland cannot be avoided by shifting the proposed alignment without impacting additional homes.

*Wetland D-Mod 15*

Wetland D-Mod 15 is located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. Wetland D-Mod 15 is part of a headwater wetland system associated with a small tributary of Windlass Run and extends beyond our study area to the north. This wetland was largely avoided by shifting the proposed roadway to the north. The shift to the north, by the **SHA Selected Alternative** over D Modified, resulted in a loss of only 0.06 acres. This shift to the north also saved D-Mod 16.

*Wetland D-Mod 15A*

This wetland is an extension of D-Mod 15. By avoiding D-Mod 15, this wetland will be impacted.

*Wetland D-Mod 15B*

This groundwater fed system, Waters of the U.S., will be impacted by the **SHA Selected Alternative**. This wetland was lost as a result of a shift, which saved Wetland D-Mod 15. The flow runs down a driveway, therefore it has little habitat value, and will be relocated during the design phase.

*Wetland D-Mod 17*

This small, isolated wetland will be impacted. Shifting the roadway to the south to avoid Wetlands D-Mod 15, 15 A, 15 B, and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

• **Alternative D Modified**

*Wetland D 6B*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland is not impacted by this alternative.

*Wetland D 6A*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland can not be avoided because of its proximity to US 40.

*Wetland D 6*

This wetland, associated with a small tributary of Whitemarsh Run, is located on the outside of the existing interchange loop ramp at US 40 and MD 43. Impacts to this wetland can not be avoided or minimized because the ramp radius can not be further reduced. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact wetland D 97 in the northeast quadrant of the interchange.

*Wetland D 8*

Wetland D 8 is associated with a small tributary of Whitemarsh Run and located within the existing loop ramp of the US 40/MD 43 interchange. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact wetland D 97 in the northeast quadrant of the interchange. Avoiding or reducing impacts to wetland D 8 would require increasing the radius of the loop ramp, which would increase impacts to wetland D 6 by at least 0.4 acres.

*Wetland D 7*

Wetland D 7 is an isolated wetland located at the end of the existing MD 43 roadway. Impacts to this wetland can not be avoided due to the need to tie into the existing roadway.

*Wetland D 5*

This isolated wetland is located along the proposed alternative just east of Whitemarsh Run. Shifting the proposed alignment to the north would increase impacts to wetland D 5A on the floodplain of Whitemarsh Run. Shifting the roadway to the south would impact the currently avoided wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 5A and D 5B*

These wetlands are located on the floodplain of Whitemarsh Run on the north side of the proposed alignment. Shifting the roadway to the north would increase impacts to these wetlands, while shifting the roadway to the south would impact the currently avoided wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 4 and D 4A*

These isolated wetlands are located south of the proposed alignment, just east of Whitemarsh Run. The proposed roadway does not impact these wetlands.

*Wetland D 3*

This wetland is located south of the proposed alignment in a small ephemeral channel just east of Whitemarsh Run. The proposed roadway does not impact this wetland.

*Wetlands D 2B and D 1*

Wetlands D 2B and D 1 are isolated wetlands and are located along the proposed alignment, to the east of Bird River Road and South of Hilltop Road. Shifting the roadway to the north to avoid these wetlands would require the displacement of six additional residential properties in the Hilltop Road area. Shifting the alignment to the south would impact the currently avoided wetlands D 2 and D 2A and would impact a BG&E electric substation.

*Wetlands D 2 and D2A*

These isolated wetlands are located adjacent to the BG&E electric substation and will not be impacted by the proposed roadway alignment.

*Wetland D-Mod 15*

Wetland D-Mod 15 is located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. Wetland D-Mod 15 is part of a headwater wetland system associated with a small tributary of Windlass Run and extends beyond our study area to the north. This wetland can not be avoided by shifting the proposed roadway to the north. A shift to the north would also cause Wetland D-Mod 17 to be impacted and require the relocation four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod 15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 16*

Wetland D-Mod 16 is an isolated wetland and located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. A shift to the north would cause the larger Wetland D-Mod 17 (approximately 0.04 acres larger) to be impacted and would require the relocation four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod 15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 17*

Wetland D-Mod 17 is an isolated wetland located west of Bird River Road, between the Holly Hill Memorial Gardens Cemetery and the BG&E right-of-way. This wetland is currently avoided by the proposed alignment.

*Wetland I-Mod 12*

This wetland area is part of a very large wetland system associated with Windlass Run. The wetland is being crossed at its narrowest point in this vicinity at a proposed crossing identified and agreed upon by the environmental agencies.

*Wetland I-Mod 11*

This wetland is hydrologically connected to Wetland I-Mod 12 and Windlass Run. Avoiding this wetland by shifting the alignment to the east would increase impacts to Wetland I-Mod 12 by approximately 2.1 acres and result in a less than perpendicular crossing of Windlass Run. This shift would also impact an active farm potentially removing as much as 25% of the farm from production. A shift of the proposed roadway to the west to avoid this wetland would result in as much as 2.5 to 3 acres of additional wetland impact to Wetland I-Mod 12 and a less than perpendicular crossing of Windlass Run.

*Wetland D-Mod 14*

This wetland area is drained by a small tributary of Windlass Run and is located along the BG&E right-of-way. Shifting the proposed alignment approximately 300 feet to the west could potentially reduce impacts to this wetland and Wetland D-Mod 13A by nearly 0.6 acres. However, this would increase impacts to Wetland D-Mod 13 by at least 0.8 acres and result in a less than perpendicular crossing of the Windlass Run tributary. Shifting to the east to avoid this wetland would increase impacts to Wetlands D-Mod 13 and D-Mod 13A by approximately 2.7 acres and result in a less than perpendicular crossing of the Windlass Run tributary.

*Wetlands D-Mod 13 and 13A*

These wetlands are associated with a small tributary of Windlass Run and are located adjacent to the BG&E right-of-way. The stream and wetlands are being crossed at a narrow point and shifts in the alignment would result in a less than perpendicular crossing.

*Wetlands D-Mod 12 and D-Mod 10*

Wetlands D-Mod 12 and D-Mod 10 are small, isolated wetlands located along the alignment. The area in the vicinity of this section of roadway contains numerous, similar wetlands and any attempt to shift the alignment will likely result in impacts to other (currently not quantified) isolated wetlands. In addition, an alignment shift to the east to avoid these wetlands would impact a large wetland system located just outside of the current study area (this impact is currently not quantified). A shift to the west would also increase impacts to Wetlands D-Mod 11 and D-Mod 9 by approximately 2.5 acres.

*Wetlands D-Mod 11 and D-Mod 9*

Wetlands D-Mod 11 and D-Mod 9 are relatively large, isolated wetlands located along the alignment. The area in the vicinity of this section of roadway contains numerous, small wetlands and any attempt to shift the alignment will likely result in impacts to other (currently not quantified) isolated wetlands. In addition, an alignment shift to the east to avoid these wetlands would impact a large wetland system located just outside of the current study area (this impact is currently not quantified). A shift to the west to avoid Wetland D-Mod 9 would likely increase impacts to Wetlands D-Mod 11 and impact Wetland E 9 by approximately 1.6 acres and would require impacts to the potentially contaminated "Jersey City."

*Wetlands D-Mod 7 and D-Mod 8*

These isolated wetlands are located near "Jersey City." Shifting the roadway to the east to avoid this wetland would increase impacts to Wetland D-Mod 5 (approximately 2.5 acres). Shifting the alignment to the west would increase impacts to Wetland D-Mod 6 by at least 0.5 acres and would require impacts to the potentially contaminated "Jersey City."

*Wetland D-Mod 6*

This wetland is part of a large headwater wetland system in the Windlass Run watershed and is located in the vicinity of "Jersey City." Avoiding Wetland D-Mod 6 by shifting the proposed alternative to the east would impact approximately 3.4 acres of wetlands including complete takes of isolated wetlands D-Mod 5A, D-Mod 7, and D-Mod 8 and an increased impact to Wetland D-Mod 5. Shifting the alignment to the west would not avoid this wetland and would require impacts to the potentially contaminated "Jersey City" and the displacement of one additional residence.

*Wetland D-Mod 5A*

This is an isolated wetland area located near "Jersey City." Shifting the roadway to the east to avoid this wetland would impact Wetlands D-Mod 7 and D-Mod 8 (approximately 0.4 acres) and increase impacts to Wetland D-Mod 5 (approximately 2.5 acres). Shifting the alignment to the west would increase impacts to Wetland D-Mod 6 by at least 0.5 acres and would require impacts to the potentially contaminated "Jersey City."

*Wetlands D-Mod 5, D-Mod 4, and D-Mod 2*

These wetlands form headwater areas of Frog Mortar creek and are located in the vicinity of Bengies Road and the Amtrak. The proposed roadway alignment generally follows areas of higher ground (upland areas) to minimize wetland impacts to the extent possible, however, further alignment shifts for avoidance and minimization are not achievable due to numerous geometric constraints. The proposed roadway has been aligned to intersect with Eastern Boulevard opposite an existing industrial entrance, minimize impact to the old depot Section 4(f) property (to the east), and avoid the MARC commuter rail station (to the west). In addition, severe vertical grade differences between the bridge over Amtrak railroad tracks and the tie-in at Eastern Boulevard do not allow the current alignment to be changed.

*Wetlands D-Mod 3*

This isolated wetland is located between Bengies Road and Eastern Boulevard in the vicinity of the Amtrak railroad tracks and is not impacted by proposed roadway.

*Wetlands D-Mod 2A and D-Mod 1*

These isolated wetlands are located between Bengies Road and Eastern Boulevard in the vicinity of the Amtrak railroad tracks. The proposed roadway alignment generally follows areas of higher ground (upland areas) to minimize impacts to other wetlands to the extent possible, however, further alignment shifts for avoidance and minimization of these small wetlands are not achievable due to numerous geometric constraints. The proposed roadway has been aligned to intersect with Eastern Boulevard opposite an existing industrial entrance, minimize impact to the old depot Section 4(f) property (to the east), and avoid the MARC commuter rail station (to the west). In addition, severe vertical grade differences between the bridge over Amtrak railroad tracks and the tie-in at Eastern Boulevard do not allow the current alignment to be changed.

• **Alternative D**

*Wetland D 6B*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland is not impacted by this alternative.

*Wetland D 6A*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland cannot be avoided because of its proximity to US 40.

*Wetland D 6*

This wetland, associated with a small tributary of Whitemarsh Run, is located on the outside of the existing interchange loop ramp at US 40 and MD 43. Impacts to this wetland can not be avoided or minimized because the ramp radius can not be further reduced. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact wetland D 97 in the northeast quadrant of the interchange.



*Wetland D 8*

Wetland D 8 is associated with a small tributary of Whitemarsh Run and located within the existing loop ramp of the US 40/MD 43 interchange. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact wetland D 97 in the northeast quadrant of the interchange. Avoiding or reducing impacts to wetland D8 would require increasing the radius of the loop ramp, which would increase impacts to wetland D 6 by at least 0.4 acres.

*Wetland D 7*

Wetland D 7 is an isolated wetland located at the end of the existing MD 43 roadway. Impacts to this wetland can not be avoided due to the need to tie into the existing roadway.

*Wetland D 5*

This isolated wetland is located along the proposed alternative just east of Whitemarsh Run. Shifting the proposed alignment to the north would increase impacts to wetland D 5A on the floodplain of Whitemarsh Run. Shifting the roadway to the south would impact the currently avoided wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetland D 5A and D 5B*

These wetlands are located on the floodplain of Whitemarsh Run on the north side of the proposed alignment. Shifting the roadway to the north would increase impacts to these wetlands while shifting the roadway to the south would impact the currently avoided wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 4 and D 4A*

These isolated wetlands are located south of the proposed alignment, just east of Whitemarsh Run. The proposed roadway does not impact these wetlands.

*Wetland D 3*

This wetland is located south of the proposed alignment in a small ephemeral channel just east of Whitemarsh Run. The proposed roadway does not impact this wetland.

*Wetlands D 2B and D 1*

Wetlands D 2B and D 1 are isolated wetlands and are located along the proposed alignment, to the east of Bird River Road and South of Hilltop Road. Shifting the roadway to the north to avoid these wetlands would require the displacement of six additional residential properties in the Hilltop Road area. Shifting the alignment to the south would impact the currently avoided wetlands D 2 and D 2A and would impact a BG&E electric substation.

*Wetlands D 2 and D2A*

These isolated wetlands are located adjacent to the BG&E electric substation and will not be impacted by the proposed roadway alignment.

*Wetland D-Mod 15*

Wetland D-Mod 15 is located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. Wetland D-Mod 15 is part of a headwater wetland system associated with a small tributary of Windlass Run and extends beyond our study area to the north. This wetland can not be avoided by shifting the proposed roadway to the north. A shift to the north would also cause Wetland D-Mod 17 to be impacted and require the relocation of four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod 15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 16*

Wetland D-Mod 16 is an isolated wetland and located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. A shift to the north would cause the larger Wetland D-Mod 17 (approximately 0.04 acres larger) to be impacted and would require the relocation of four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod 15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 17*

Wetland D-Mod 17 is an isolated wetland and located west of Bird River Road, between the Holly Hill Memorial Gardens Cemetery and the BG&E right-of-way. This wetland is currently avoided by the proposed alignment.

*Wetland D 100*

This wetland is located along the proposed roadway alignment, adjacent to the Holly Hill Memorial Gardens Cemetery. Wetland D 100 is a headwater wetland system associated with a small tributary of Windlass Run. Shifting the alignment to the north to avoid this wetland would potentially require the relocation of three BG&E electric transmission towers. Shifting the alignment to the south would impact approximately 4.5 acres of the cemetery including a war veteran's memorial.

*Wetland E 11*

This wetland area is part of a very large wetland system associated with Windlass Run. The wetland is being crossed at its narrowest point in this vicinity at a proposed crossing identified and agreed upon by the environmental agencies.

*Wetland E 10*

Wetland E 10 is associated with a small tributary of Windlass Run and extends beyond our current study area to the south. Avoiding this wetland by shifting the alignment to the north would increase impacts to Wetland E 11 by approximately 1.4 acres and impact approximately 0.7 acres at the currently avoided Wetland E 9. This shift would also require a less than perpendicular crossing of Windlass Run. Shifting the roadway to the south would not avoid impacts to Wetland E 10 and would increase impacts to Wetland E 11 by approximately 1.9 acres and require a less than perpendicular crossing of Windlass Run.

*Wetlands D-Mod 7 and D-Mod 8*

These isolated wetlands are located in the vicinity of "Jersey City" and are not impacted by the currently proposed alternative.

*Wetland D-Mod 6*

This wetland is part of a large headwater wetland system in the Windlass Run watershed and is located in the vicinity of "Jersey City." Avoiding Wetland D-Mod 6 by shifting the proposed alternative to the east would impact approximately 3.4 acres of wetlands including complete takes of isolated wetlands D-Mod 5A, D-Mod 7, and D-Mod 8 and an increased impact to Wetland D-Mod 5. Shifting the alignment to the west would not avoid this wetland and would require impacts to the potentially contaminated "Jersey City" and the displacement of one additional residence.

*Wetland D-Mod 5A*

This is an isolated wetland area located near "Jersey City." Shifting the roadway to the east to avoid this wetland would impact Wetlands D-Mod 7 and D-Mod 8 (approximately 0.4 acres) and increase impacts to Wetland D-Mod 5 (approximately 2.5 acres). Shifting the alignment to the west would increase impacts to Wetland D-Mod 6 by at least 0.5 acres and would require impacts to the potentially contaminated "Jersey City."

*Wetlands D-Mod 5, D-Mod 4, and D-Mod 2*

These wetlands form headwater areas of Frog Mortar creek and are located in the vicinity of Bengies Road and the Amtrak. The proposed roadway alignment generally follows areas of higher ground (upland areas) to minimize wetland impacts to the extent possible, however, further alignment shifts for avoidance and minimization are not achievable due to numerous geometric constraints. The proposed roadway has been aligned to intersect with Eastern Boulevard opposite an existing industrial entrance, minimize impact to the old depot Section 4(f) property (to the east), and avoid the MARC commuter rail station (to the west). In addition, severe vertical grade differences between the bridge over Amtrak railroad tracks and the tie-in at Eastern Boulevard do not allow the current alignment to be changed.

*Wetlands D-Mod 3*

This isolated wetland is located between Bengies Road and Eastern Boulevard in the vicinity of the Amtrak railroad tracks and is not impacted by the proposed roadway.

*Wetlands D-Mod 2A and D-Mod 1*

These isolated wetlands are located between Bengies Road and Eastern Boulevard in the vicinity of the Amtrak railroad tracks. The proposed roadway alignment generally follows areas of higher ground (upland areas) to minimize impacts to other wetlands to the extent possible, however, further alignment shifts for avoidance and minimization of these small wetlands are not achievable due to numerous geometric constraints. The proposed roadway has been aligned to intersect with Eastern Boulevard opposite an existing industrial entrance, minimize impact to the old depot Section 4(f) property (to the east), and avoid the MARC commuter rail station (to the west). In addition, severe vertical grade differences between the bridge over Amtrak railroad tracks and the tie-in at Eastern Boulevard do not allow the current alignment to be changed.

• **Alternative E**

*Wetland D 6B*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland is not impacted by this alternative.

*Wetland D 6A*

This isolated wetland is located along the east side of US 40 south of the existing US 40/MD 43 interchange. This wetland can not be avoided because of its proximity to US 40.

*Wetland D 6*

This wetland, associated with a small tributary of Whitemarsh Run, is located on the outside of the existing interchange loop ramp at US 40 and MD 43. Impacts to this wetland can not be avoided or minimized because the ramp radius can not be further reduced. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact Wetland D 97 in the northeast quadrant of the interchange.

*Wetland D 8*

Wetland D 8 is associated with a small tributary of Whitemarsh Run and located within the existing loop ramp of the US 40/MD 43 interchange. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact Wetland D 97 in the northeast quadrant of the interchange. Avoiding or reducing impacts to Wetland D 8 would require increasing the radius of the loop ramp, which would increase impacts to Wetland D 6 by at least 0.4 acres.

*Wetland D 7*

Wetland D 7 is an isolated wetland located at the end of the existing MD 43 roadway. Impacts to this wetland can not be avoided due to the need to tie into the existing roadway.

*Wetland D 5*

This isolated wetland is located along the proposed alternative just east of Whitemarsh Run. Shifting the proposed alignment to the north would increase impacts to wetlands on the floodplain of Whitemarsh Run. Shifting the roadway to the south would impact the currently avoided wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 5A and D 5B*

These wetlands are located on the floodplain of Whitemarsh Run on the north side of the proposed alignment. Shifting the roadway to the north would increase impacts to these wetlands, while shifting the roadway to the south would impact the currently avoided Wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 4 and D 4A*

These isolated wetlands are located south of the proposed alignment, just east of Whitemarsh Run. The proposed roadway does not impact these wetlands.

*Wetland D 3*

This wetland is located south of the proposed alignment in a small ephemeral channel just east of Whitmarsh Run. The proposed roadway does not impact this wetland.

*Wetlands D 2B and D 1*

Wetlands D 2B and D 1 are isolated wetlands and are located along the proposed alignment, to the east of Bird River Road and South of Hilltop Road. Shifting the roadway to the north to avoid these wetlands would require the displacement of six additional residential properties in the Hilltop Road area. Shifting the alignment to the south would impact the currently avoided Wetlands D 2 and D 2A and would impact a BG&E electric substation.

*Wetlands D 2 and D2A*

These isolated wetlands are located adjacent to the BG&E electric substation and will not be impacted by the proposed roadway alignment.

*Wetland D-Mod 15*

Wetland D-Mod 15 is located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. Wetland D-Mod 15 is part of a headwater wetland system associated with a small tributary of Windlass Run and extends beyond our study area to the north. This wetland can not be avoided by shifting the proposed roadway to the north. A shift to the north would also cause Wetland D-Mod 17 to be impacted and require the relocation of four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod 15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 16*

Wetland D-Mod 16 is an isolated wetland and located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. A shift to the north would cause the larger Wetland D-Mod 17 (approximately 0.04 acres larger) to be impacted and would require the relocation of four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod 15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 17*

Wetland D-Mod 17 is an isolated wetland located west of Bird River Road, between the Holly Hill Memorial Gardens Cemetery and the BG&E right-of-way. This wetland is currently avoided by the proposed alignment.

*Wetland D 100*

This wetland is located along the proposed roadway alignment, adjacent to the Holly Hill Memorial Gardens Cemetery. Wetland D 100 is a headwater wetland system associated with a small tributary of Windlass Run. Shifting the alignment to the north to avoid this wetland would potentially require the relocation of three BG&E electric transmission towers. Shifting the alignment to the south would impact approximately 4.5 acres of the cemetery including a war veteran's memorial.

*Wetland E 11*

This wetland area is part of a very large wetland system associated with Windlass Run. The wetland is being crossed at its narrowest point in this vicinity at a proposed crossing identified and agreed upon by the environmental agencies.

*Wetland E 10*

Wetland E 10 is associated with a small tributary of Windlass Run and extends beyond our current study area to the south. Avoiding this wetland by shifting the alignment to the north would increase impacts to Wetland E 11 by approximately 1.4 acres. This shift would also require a less than perpendicular crossing of Windlass Run. Shifting the roadway to the south would not avoid impacts to Wetland E 10 and would increase impacts to Wetland E 11 by approximately 1.9 acres and require a less than perpendicular crossing of Windlass Run.

*Wetland E 9*

Wetland E 9 is a small isolated wetland located along the alignment. The area in the vicinity of this section of roadway contains numerous, similar wetlands and any attempt to shift the alignment will likely result in impacts to other (currently not quantified) isolated wetlands. Attempts to circumvent this wetland to the north would result in impacts to portions of Wetland D-Mod 11 which lie outside the current detailed study area and impact approximately 0.1 acres of the currently avoided Wetland D-Mod 10. Avoiding this wetland to the south would increase impacts to Wetland E 10 and Wetland D-Mod 9 by approximately 0.7 acres.

*Wetland D-Mod 9*

This is a relatively large, isolated wetland located along the proposed alignment. The area in the vicinity of this section of roadway contains numerous, similar wetlands and any attempt to shift the alignment will likely result in impacts to other (currently not quantified) isolated wetlands. Shifting the roadway alignment to the north would result in impacts to portions of Wetland D-Mod 11 which lie outside the current detailed study area and impact approximately 0.1 acres of the currently avoided Wetland D-Mod 10. Because Wetland D-Mod 9 extends beyond the current study area, an alignment shift to the south would result in impacts essentially equal to the currently proposed alignment.

*Wetland E 8*

Wetland E 8 is a small isolated wetland located along the alignment. The area in the vicinity of this section of roadway contains numerous, similar wetlands and any attempt to shift the alignment will likely result in impacts to other (currently not quantified) isolated wetlands. Shifting the roadway alignment to the north would result in impacts to portions of Wetland D-Mod 11 which lie outside the current detailed study area and impact approximately 0.1 acres of the currently avoided Wetland D-Mod 10. Because Wetland D-Mod 9 extends beyond the current study area, an alignment shift to the south would result in impacts to this wetland essentially equal to the currently proposed alignment. Shifts to the roadway in either direction would also result in between 0.7 and 1.0 acres of increased impacts to Wetland E 7 and would require a less than perpendicular crossing of the small tributary of Saltpeter Creek.

*Wetland E 7*

Wetland E 7 is associated with a small tributary of Saltpeter Creek. The currently proposed alignment crosses this creek nearly perpendicularly at a narrow point to minimize impacts. Shifting the proposed alignment to the north or south would increase impacts to the wetlands (by approximately 0.7 acres and 1.0 acre, respectively) and result in a less than perpendicular crossing of the creek.

*Wetlands E 6, E 5, E 4, E 3, E 2, and E 1*

Wetland areas E 6 and E 1 represent the headwaters of relatively large wetlands and their boundaries extend beyond the current study area. Wetland E 6 drains into a tributary of Saltpeter Creek, while Wetland E 1 is isolated. Wetlands E 5 through E 2 are small isolated wetlands. The proposed alignment in this area generally follows an area of higher ground in an attempt to minimize impacts to these larger wetland systems. Because the area in the vicinity of this section of roadway contains numerous, small isolated wetlands, any attempt to shift the alignment will likely result in impacts to other (currently not quantified) isolated wetlands. Shifts to the alignment would also increase impacts to Wetlands E 6 and E 2.

*Wetlands I-Mod A and I-Mod B*

These wetlands are isolated and located between the Amtrak railroad tracks and Eastern Boulevard. Alignment shifts to avoid impacts to these wetlands are not possible due to numerous geometric constraints. These include: the need to intersect with Eastern Boulevard near the existing intersection of Bowleys Quarters Road, the need to cross the railroad track as close to perpendicular as possible, the presence of a trailer park and several other residences immediately to the south, and a business located immediately to the north.

• **Alternative F<sub>1</sub>-Mod**

*Wetland D 6B*

This isolated wetland is located along the east side of US 40, south of the existing US 40/MD 43 interchange. This wetland is not impacted by this alternative.

*Wetland D 6A*

This isolated wetland is located along the east side of US 40, south of the existing US 40/MD 43 interchange. This wetland can not be avoided due to its proximity to US 40.

*Wetland D 6*

This wetland, associated with a small tributary of Whitemarsh Run, is located on the outside of the existing interchange loop ramp at US 40 and MD 43. Impacts to this wetland can not be avoided or minimized because the ramp radius can not be further reduced. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact Wetland D 97 in the northeast quadrant of the interchange.

*Wetland D 8*

Wetland D 8 is associated with a small tributary of Whitemarsh Run and located within the existing loop ramp of the US 40/MD 43 interchange. The additional lane on this loop ramp is

required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact wetland D 97 in the northeast quadrant of the interchange. Avoiding or reducing impacts to wetland D 8 would require increasing the radius of the loop ramp, which would increase impacts to wetland D 6 by at least 0.4 acres.

*Wetland D 7*

Wetland D 7 is an isolated wetland located at the end of the existing MD 43 roadway. Impacts to this wetland can not be avoided due to the need to tie into the existing roadway.

*Wetland D 5 and D 4*

Wetland D-5 is an isolated wetland located along the proposed alternative just east of Whitemarsh Run while Wetland D 4 is a small ephemeral channel just east of Whitemarsh Run. Shifting the proposed alignment to the north would impact currently avoided wetlands D 5A and D 5B on the floodplain of Whitemarsh Run. Shifting the roadway to the south would impact the currently avoided Wetland D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetland D 4A*

This isolated wetland is located south of the proposed alignment, just east of Whitemarsh Run. The proposed roadway does not impact this wetland.

*Wetland D 3*

This wetland is located along the proposed alternative in a small ephemeral channel just east of Whitemarsh Run. Shifting the proposed alignment to the north would increase impacts to wetlands on the floodplain of Whitemarsh Run. Shifting the roadway to the south would impact the currently avoided Wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetland F<sub>1</sub>-Mod 1B*

Wetland F<sub>1</sub>-Mod 1B is part of a large wetland area associated with a tributary of Whitemarsh Run and is located on the floodplain of Whitemarsh Run. Shifting the proposed roadway to the east to avoid this wetland would involve the relocation of at least 12 BG&E electric transmission towers and possible impacts to the electric substation. Shifting the alignment to the west would increase wetland impacts by at least 2.5 acres and would require a 1000 linear foot relocation of Whitemarsh Run.

*Wetland F<sub>1</sub>-Mod 1A*

Wetland F<sub>1</sub>-Mod 1A is part of the headwaters of a small tributary to Whitemarsh Run. This wetland is avoided by the current alignment.

*Wetland F<sub>1</sub>-Mod 2, F<sub>1</sub>-Mod 2A, and F<sub>1</sub>-Mod 3*

Wetlands F<sub>1</sub>-Mod 2 and F<sub>1</sub>-Mod 3 are part of the headwaters of a small tributary to Whitemarsh Run, while Wetland F<sub>1</sub>-Mod 2A is an adjacent small pond (isolated). Circumventing these wetlands to the east would result in impacts to the BG&E substation, require the displacement of two additional residences, and impact additional wetlands outside the current study area.



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Shifting the alignment west would impact the currently avoided Wetland F<sub>1</sub>-Mod 1A (0.2 acres) and require the displacement of six additional residences.

*Wetlands F<sub>1</sub>-Mod 4, F<sub>1</sub>-Mod 4A, F<sub>1</sub>-Mod 4B, and F<sub>1</sub>-Mod 4C*

Wetland F<sub>1</sub>-Mod 4 is associated with a small tributary of Windlass Run and extends beyond the study area to the east. Wetlands F<sub>1</sub>-Mod 4A, F<sub>1</sub>-Mod 4B, and F<sub>1</sub>-Mod 4C are small isolated wetlands associated with abandoned sediment traps and stormwater management ponds. Shifting the roadway to the east would increase impacts to Wetland F<sub>1</sub>-Mod 4 by at least 5.0 to 5.5 acres and require longitudinal crossing of the Windlass Run tributary. Shifting the roadway to the west would require the relocation of an active stormwater management pond and would likely cut-off most of the hydrology to each of these wetlands. The resulting indirect impacts would equal the currently proposed direct impacts.

*Wetland F<sub>1</sub>-Mod 5*

This wetland area is part a very large wetland system associated with Windlass Run. The wetland is being crossed at its narrowest point in this vicinity at a proposed crossing identified and agreed upon by the environmental agencies.

*Wetlands F<sub>1</sub>-Mod 5A and Wetland F<sub>1</sub>-Mod 5B*

This wetland system is part of a very large headwater area that drains into Windlass Run. Because the proposed alignment only crosses the edge of these wetlands, the impacts have been minimized. This system can not be avoided by shifting the roadway alignment to the east as this would greatly increase impacts (by in excess of six acres). Circumventing this wetland system to the west would result in an increased impact to Wetland F<sub>1</sub>-Mod 5 by approximately 4.9 acres and require a less than perpendicular crossing of Windlass Run.

*Wetland F<sub>1</sub>-Mod 6*

This wetland is an isolated wetland located along the existing alignment. This wetland can not be avoided by shifting the roadway alignment to the east, as this would greatly increase impacts to Wetland F<sub>1</sub>-Mod 5A and F<sub>1</sub>-Mod 5B (by an excess of six acres). Circumventing this wetland system to the west would result in an increased impact to Wetland F<sub>1</sub>-Mod 5 by approximately 4.9 acres and require a less than perpendicular crossing of Windlass Run.

*Wetlands D-Mod 5, D-Mod 4, and D-Mod 2*

These wetlands form headwater areas of Frog Mortar creek and are located in the vicinity of Bengies Road and the Amtrak. The proposed roadway alignment generally follows areas of higher ground (upland areas) to minimize wetland impacts to the extent possible, however, further alignment shifts for avoidance and minimization are not achievable due to numerous geometric constraints. The proposed roadway has been aligned to intersect with Eastern Boulevard opposite an existing industrial entrance, minimize impact to the old depot Section 4(f) property (to the east), and avoid the MARC commuter rail station (to the west). In addition, severe vertical grade differences between the bridge over Amtrak railroad tracks and the tie-in at Eastern Boulevard do not allow the current alignment to be changed.

*Wetlands D-Mod 3*

This isolated wetland is located between Bengies Road and Eastern Boulevard in the vicinity of the Amtrak railroad tracks and is not impacted by proposed roadway.

*Wetlands D-Mod 2A and D-Mod 1*

These isolated wetlands are located between Bengies Road and Eastern Boulevard in the vicinity of the Amtrak railroad tracks. The proposed roadway alignment generally follows areas of higher ground (upland areas) to minimize impacts to other wetlands to the extent possible, however, further alignment shifts for avoidance and minimization of these small wetlands are not achievable due to numerous geometric constraints. The proposed roadway has been aligned to intersect with Eastern Boulevard opposite an existing industrial entrance, minimize impact to the old depot Section 4(f) property (to the east), and avoid the MARC commuter rail station (to the west). In addition, severe vertical grade differences between the bridge over Amtrak railroad tracks and the tie-in at Eastern Boulevard do not allow the current alignment to be changed.

• **Alternative I-Mod**

*Wetland D 6B*

This isolated wetland is located along the east side of US 40, south of the existing US 40/MD 43 interchange. This wetland is not impacted by this alternative.

*Wetland D 6A*

This isolated wetland is located along the east side of US 40, south of the existing US 40/MD 43 interchange. This wetland can not be avoided due to its proximity to US 40.

*Wetland D 6*

This wetland, associated with a small tributary of Whitemarsh Run, is located on the outside of the existing interchange loop ramp at US 40 and MD 43. Impacts to this wetland can not be avoided or minimized because the ramp radius can not be further reduced. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact Wetland D 97 in the northeast quadrant of the interchange.

*Wetland D 8*

Wetland D 8 is associated with a small tributary of Whitemarsh Run and located within the existing loop ramp of the US 40/MD 43 interchange. The additional lane on this loop ramp is required to facilitate not only the US 40 to MD 43 movements but also the MD 43 to US 40 movements. This eliminates the need to impact Wetland D 97 in the northeast quadrant of the interchange. Avoiding or reducing impacts to Wetland D 8 would require increasing the radius of the loop ramp, which would increase impacts to Wetland D 6 by at least 0.4 acres.

*Wetland D 7*

Wetland D 7 is an isolated wetland located at the end of the existing MD 43 roadway. Impacts to this wetland can not be avoided due to the need to tie into the existing roadway.

*Wetland D 5*

This isolated wetland is located along the proposed alternative just east of Whitemarsh Run. Shifting the proposed alignment to the north would increase impacts to wetlands on the floodplain of Whitemarsh Run. Shifting the roadway to the south would impact the currently avoided Wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 5A and D 5B*

These wetlands are located on the floodplain of Whitemarsh Run on the north side of the proposed alignment. Shifting the roadway to the north would increase impacts to these wetlands, while shifting the roadway to the south would impact the currently avoided Wetlands D 4 and D 4A and would require a more transverse crossing of Whitemarsh Run.

*Wetlands D 4 and D 4A*

These isolated wetlands are located south of the proposed alignment, just east of Whitemarsh Run. The proposed roadway does not impact these wetlands.

*Wetland D 3*

This wetland is located south of the proposed alignment in a small ephemeral channel just east of Whitemarsh Run. The proposed roadway does not impact this wetland.

*Wetlands D 2B and D 1*

Wetlands D 2B and D 1 are isolated wetlands and are located along the proposed alignment, to the east of Bird River Road and South of Hilltop Road. Shifting the roadway to the north to avoid these wetlands would require the displacement of six additional residential properties in the Hilltop Road area. Shifting the alignment to the south would impact the currently avoided Wetlands D 2 and D 2A and would impact a BG&E electric substation.

*Wetlands D 2 and D2A*

These isolated wetlands are located adjacent to the BG&E electric substation and will not be impacted by the proposed roadway alignment.

*Wetland D-Mod 15*

Wetland D-Mod 15 is located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. Wetland D-Mod 15 is part of a headwater wetland system associated with a small tributary of Windlass Run and extends beyond our study area to the north. This wetland can not be avoided by shifting the proposed roadway to the north. A shift to the north would also cause Wetland D-Mod 17 to be impacted and require the relocation of four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod 15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 16*

Wetland D-Mod 16 is an isolated wetland located west of Bird River Road, adjacent to the Holly Hill Memorial Gardens Cemetery. A shift to the north would cause the larger Wetland D-Mod 17 (approximately 0.04 acres larger) to be impacted and would require the relocation of four BG&E electric transmission towers. Shifting the roadway to the south to avoid Wetlands D-Mod

15 and D-Mod 16 would impact approximately 12 acres of the cemetery including a mausoleum building.

*Wetland D-Mod 17*

Wetland D-Mod 17 is an isolated wetland located west of Bird River Road, between the Holly Hill Memorial Gardens Cemetery and the BG&E right-of-way. This wetland is currently avoided by the proposed alignment.

*Wetland I-Mod 12*

This wetland area is part of a very large wetland system associated with Windlass Run. The wetland is being crossed at its narrowest point in this vicinity at a proposed crossing identified and agreed upon by the environmental agencies.

*Wetland I-Mod 11*

This wetland is hydrologically connected to Wetland I-Mod 12 and Windlass Run. Avoiding this wetland by shifting the alignment to the east would increase impacts to Wetland I-Mod 12 by approximately 2.1 acres and result in a less than perpendicular crossing of Windlass Run. This shift would also impact an active farm potentially removing as much as 25% of the farm out of production. A shift of the proposed roadway to the west to avoid this wetland would result in as much as 2.5 to 3 acres of additional wetland impact to Wetland I-Mod 11 and a less than perpendicular crossing of Windlass Run.

*Wetlands I-Mod 10 and I-Mod 9*

These wetland areas are drained by a small tributary of Windlass Run and are located along the BG&E right-of-way. Shifting the proposed alignment to the east would impact an active farm potentially removing as much as 25% of the farm out of production. A shift of the proposed roadway to the west to avoid these wetlands would result in approximately 0.8 acres of additional impacts to these wetlands.

*Wetlands I-Mod 8 and I-Mod 7*

These wetland areas are isolated and are located along the BG&E right-of-way. Because Wetland I-Mod 8 extends beyond the study area, shifting the proposed alignment to the east would increase the impact to this wetland by as much as 0.4 acres. A shift of the proposed roadway to the west to avoid these wetlands would result in approximately 0.8 acres of additional impacts to Wetlands I-Mod 10 and I-Mod 9.

*Wetlands I-Mod 6, I-Mod 5, I-Mod 4, and I-Mod 3A*

Wetland areas I-Mod 6, I-Mod 5, and I-Mod 4 represent headwater wetland areas draining into Saltpeter Creek and their boundaries extend beyond the current study area. Wetland I-Mod 3A is a small isolated wetland. The proposed alignment in this area generally follows an area of higher ground in an attempt to minimize impacts to these larger wetland systems. Shifts to the alignment in either direction would increase impacts to these wetlands.

*Wetland I-Mod 3*

This wetland is associated with a tributary of Saltpeter Creek and is located between Bengies Road and the Amtrak railroad tracks. The tributary is being crossed at a narrow point and shifts

to the alignment to the east or west would increase wetland impacts by as much as 3.9 acres and 3.6 acres, respectively, and would require less than perpendicular crossings of the creek.

*Wetlands I-Mod 2 and I-Mod 1*

These wetlands are isolated and located between Bengies Road and the Amtrak railroad tracks. Alignment shifts to avoid impacts to these wetlands are not possible due to numerous geometric constraints. These include: the need to cross the railroad track as close to perpendicular as possible, the presence of several other residences immediately to the south, and a business located immediately to the north.

*Wetlands I-Mod A and I-Mod B*

These wetlands are isolated and located between the Amtrak railroad tracks and Eastern Boulevard. Alignment shifts to avoid impacts to these wetlands are not possible due to numerous geometric constraints. These include: the need to intersect with Eastern Boulevard near the existing intersection of Bowleys Quarters Road, the need to cross the railroad track as close to perpendicular as possible, the presence of a trailer park and several other residences immediately to the south, and a business located immediately to the north.

**230.10(a)(3) Water dependency** - The project is not water dependent because the highway does not need to be located within an aquatic site to fulfill the project purpose. As demonstrated in the alternatives analysis and avoidance alternatives, complete avoidance of special aquatic sites is not possible.

**230.10(a)(4) NEPA Compliance** - This FEIS serves as the required environmental documentation in compliance with NEPA requirements. This document contains a range of alternatives for the evaluation of environmental impacts in compliance with NEPA and the Section 404 (b) (1) guidelines.

**230.10(a)(5) Coastal Zone Management Program Consistency** - The range of alternatives evaluated in this FEIS are consistent with the requirements of the Coastal zone Management Program. The National Marine Fisheries Service and Maryland Department of the Environment will maintain continued consistency with this program through ongoing coordination with and review.

**230.10(b)(1) Water Quality Standards** - The Maryland Department of the Environment will be reviewing the proposed discharges for compliance with the state's water quality standards. It is anticipated that the required Section 401 Water Quality Certifications and National Pollutant Discharge Elimination System (NPDES) permits will be issued for this project. These certifications and permits will contain special conditions to help ensure that the discharges will not violate the state's water quality standards.

**230.10(b)(2) Toxic Pollutants** - The proposed will not violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act. If the proposed discharges disturbs any hazardous materials identified during Phase I Hazardous Waste Investigations and any subsequent studies, they will be appropriately contained and/or disposed of in accordance with Maryland Department of the Environment regulations.

**230.10(b)(3) Endangered Species** - The proposed discharges will not impact any species listed as threatened or endangered under the Endangered Species Act. The proposed discharge will not jeopardize the continued existence or destroy or adversely modify critical habitat of federally listed species.

**230.10(b)(4) Marine Sanctuaries** - The proposed discharges will not violate any requirement imposed to protect any marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972.

**230.10(c) Findings of Substantial Degradation** - As discussed in Sections IV.F, IV.G and IV.I of this FEIS, the proposed discharges of fill material are not expected to substantially contribute to the degradation of Waters of the United States.

**230.10(d) Minimization of Potential Adverse Impacts** - The proposed discharges and other associated work incorporate appropriate and practicable steps to minimize potential adverse impacts to the aquatic ecosystem. These steps include impact minimization, application of best management practices (BMP's), and compensatory mitigation for unavoidable wetland losses.

**230.11 Factual determinations** - The potential short-term and long-term effects of the proposed discharge on the physical, chemical and biological components of the aquatic environment must be determined in light of the considerations of Subparts C through F of the Section 404(b)(1) guidelines. The US Army Corps of Engineers to make a finding of compliance or non-compliance with the restrictions on discharge (Section 230.10) uses these factual determinations.

**230.11(a) Physical Substrate Determinations** - The substrate at the proposed discharge sites is composed of various mixtures of sands, silts and clays with rock, stones and pebbles intermixed in varying amounts within the substrate. The discharges will be composed of clean borrow, excavated material from the surrounding area, or clean stone which will be placed as controlled fill within Waters of the United States over, or in place of, existing substrate. The placement of the discharge will elevate the bottom contours creating a controlled, compacted, dry surface suited for the highway grade or temporary construction access. Once the discharge is placed and stabilized, no movement of the fill is anticipated.

**230.11(b) Water Circulation, Fluctuation and Salinity Determinations** - The proposed discharges of fill material are located in nontidal areas and will not involve any tidal exchange. The discharges will consist of natural material found within the area or clean stone and should not alter the existing water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, or cause eutrophication. The discharges may in some cases have effects on the flow patterns within those wetlands located immediately down gradient. With this exception, the discharges will not substantially change the current patterns, circulation and normal water fluctuation.

**230.11(c) Suspended Particulate/Turbidity Determinations** - The proposed discharges may cause an initial increase in water turbidity down gradient from the fill site. This will be controlled through the use of sediment and erosion control structures and devices. The

discharges of clean stone may also increase water turbidity by disturbing bottom sediments and can be mitigated for by in-stream work restrictions (e.g., low flow periods). Both of these impacts will be temporary in nature. Possible time of year discharge restrictions (where applicable) and the use of BMPs will mitigate adverse effects.

**230.11(d) Contaminant Determinations** - The discharges will involve natural materials and clean stone and will not require bioassay or bioaccumulation testing. The stone will be sized to avoid dislocation or movement by current and heavy flows. Earthen discharges will be controlled through BMPs and other measures to minimize the potential for contaminant releases outside of the discharge areas.

**230.11(e) Aquatic Ecosystem and Organism Determinations** - Aquatic organisms will be displaced or eliminated from the discharge areas by the placement of the fill material. Minor, temporary effects on aquatic organisms may result from suspended particulates during the discharges. The confined discharges will elevate bottom contours and create dry substrate that will not be repopulated by aquatic organisms. Temporary discharges will be removed and the areas will be returned to pre-discharge conditions. The loss of aquatic habitat resulting from permanent discharges will be compensated with compensatory wetland mitigation and the establishment of natural bottoms in culverts.

**230.11(f) Proposed Disposal Site Determinations** - On discharge sites where a zone of mixing could occur, clean stone will be discharged to ensure that no mixing will occur.

**230.11(g and h) Determination of Cumulative and Secondary Effects on the Aquatic Ecosystem** - Cumulatively, the proposed discharges will not result in a major impairment of the water resources or interfere with the productivity and water quality of the aquatic ecosystem outside of the discharge areas. Secondary effects will occur on Waters of the United States immediately down gradient of the proposed discharges, but are not expected to result in a major impairment of the water resources or interfere with the productivity and water quality of the aquatic ecosystem outside of the discharge areas. As discussed in Section IV.Q.3 of this FEIS, additional cumulative impacts to aquatic resources may be expected due to development and economic growth occurring within the highway corridor. The existing permit process at the federal, state and local levels in conjunction with comprehensive long-term planning to guide the development will be required to achieve the goal of no net loss of aquatic resources.

#### Subpart C: Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

Subpart C addresses the potential for impacts to the physical and chemical characteristics of the impacted wetlands. The separate portions of Subpart C have each been addressed in other sections of this document, as detailed below.

**230.20 Substrate** - The placement of fill material will alter substrate elevation or contours may cause changes in the water circulation, depth, current pattern, water fluctuation and water temperature. Additionally, smothering immobile forms or forcing mobile forms to migrate may adversely impact benthic organisms.

**230.21 Suspended Particulates/Turbidity** - The placement of fill material may increase the levels of suspended particulates, which may reduce light penetration and lower the rate of photosynthesis and primary productivity of an aquatic area. In addition, the biological and chemical contents of the suspended material may become biologically available to organisms or result in oxygen depletion. Due to the anticipated low volume of suspended sediments, these impacts are expected to be minimal.

**230.22 Water** - The placement of fill material, which may change the chemistry and physical characteristics, may alter clarity, color, odor and taste; thereby affecting the water bodies' stability for aquatic organisms, human consumption, recreation and aesthetics. Clean borrow, excavated material from the surrounding area and clean stone will be used and are not expected to change the chemical and physical characteristics of the water.

**230.23 Current Patterns and Water Circulation** - The placement of fill material may change the dimensions of a water body, resulting in alteration of suspended particle deposition; shoreline and substrate erosion; location, structure and dynamics of aquatic communities; rate and extent of water column components' mixing; and water stratification. Changes to current patterns and water circulation are expected to be minimal outside of the discharge zones.

**230.24 Normal Water Fluctuations** - The placement of fill material may result in prolonged periods of inundation, exaggerated extremes of high and low water, or a static, non-fluctuating water level, all of which may modify salinity balance of aquatic animals and vegetation. The placement of fill will permanently de-water the areas within the discharge zone. Normal water fluctuations are expected to remain outside of the fill areas.

#### Subpart D: Potential Impacts on the Biological Characteristics of the Aquatic Ecosystem

Subpart D addresses the potential for impacts to the biological characteristics of the impacted wetlands. The separate portions of subpart D have each been addressed below.

**230.30 Threatened and Endangered Species** - As discussed in Section IV.J.3 of this FEIS, there are no federally listed threatened or endangered species known to occur in the project area. Mitigation for potential impacts to state listed species is discussed in Section IV.J.3 of this FEIS.

**230.31 Fish, Crustaceans, Mollusks and Other Aquatic Organisms in the Food Web** - The placement of fill material could release contaminants or suspended particles resulting in an adverse effect on the balance of populations of adults, juveniles, larvae or eggs, which may modify the overall productivity and nutrient export capability of the ecosystem. The use of clean borrow, natural excavated material from the surrounding area, and clean stone is expected to minimize this impact.

**230.32 Other Wildlife** - The placement of fill material can change water levels, water flow and circulation, salinity, chemical content and substrate characteristics and elevation, which may result in the loss or change of breeding and nesting areas, escape cover, travel corridors, and preferred food sources for resident and transient species. Additionally, plant and animal species



diversity may decrease, disrupting the normal functions of the ecosystems and reducing overall biological productivity. Permanent impacts to wetland resources will be offset by compensatory mitigation. Encouraging the deposition of natural sediments in culvert bottoms, thereby creating benthic habitat will minimize impacts to aquatic resources.

#### Subpart E: Potential impacts on Special Aquatic Sites

Subpart E addresses the potential for impacts to special aquatic sites within the rights-of-way of the alternatives. These sites comprise wetlands and riffle and pool complexes as detailed below. No other special aquatic sites are found in the project area.

**230.41 Wetlands** - The placement of fill material may damage or destroy habitat and adversely affect the biological productivity by smothering, draining, permanently flooding or altering substrate elevation or periodicity of water movement. Additionally, destruction or reduction in wetland vegetation, nutrient exchange, water quality, floodwater storage, buffering ability, and fish and wildlife habitat may occur. Permanent impacts to wetland resources will be offset by compensatory mitigation.

**230.45 Riffle and Pool Complexes** - The placement of fill material can eliminate riffle and pool areas by displacement, hydrologic modification of complexes may reduce aeration/filtration capabilities and stream habitat diversity, alter stream hydrology, destroy habitats, create anaerobic conditions and increase floodwater velocities. Impacts to riffle and pool complexes will be minimized by encouraging the deposition of natural sediments in culvert bottoms, thereby creating benthic habitat.

#### Subpart F: Potential Effects on Human Use Characteristics

Subpart F addresses the potential for impacts to the human use characteristics of the impacted wetlands. The separate portions of Subpart F have each been addressed below.

**230.50 Municipal and Private Water Supplies** - The placement of fill or discharges can affect the quantity and quality of water supplies with respect to color, taste, odor, chemical content and suspended particulate concentration which reduces the fitness of the water for consumption. Water supplies are not expected to be impacted by the proposed discharges.

**230.51 Recreational and Commercial Fisheries** - No commercial fisheries are found in the study area. The placement of fill material may cause chemical contamination, interfere with reproductive success, reduce populations and affect habitat for populations of consumable aquatic organisms. Recreational fisheries are not expected to be impacted outside of the discharge zones.

**230.52 Water-Related Recreation** - The disposal of fill material may adversely modify turbidity, suspended particulates, temperature, dissolved oxygen, dissolved materials, toxic materials, pathogenic organisms, quality of habitat and the aesthetic qualities of sight, taste, odor and color. Other than recreational fishing, no water-related recreational activities occur within the study area; therefore, no impacts are anticipated outside of the discharge zone.

**230.53 Aesthetics** - The placement of fill material can affect the beauty of natural aquatic ecosystems by degrading water quality, creating distracting disposal sites, including inappropriate development, encouraging unplanned and incompatible human access and by destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness or diversity of an area. The project will create a visual intrusion and that may decrease the monetary and/or intrinsic values of the aquatic resources.

**230.54 Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites and Similar Preserves** - The placement of fill material into such areas may modify the aesthetic, educational, historical, recreational and/or scientific qualities, thereby reducing or eliminating their uses. None of these features are found within the project area, therefore, no impact will occur.

#### 4. Wetland Mitigation

##### a. Introduction

Following the steps outlined by the NEPA and 404 guidelines any proposed impact must be mitigated by: avoidance, minimization, mitigation, and compensation. Avoidance of wetland and stream impacts is preferred. Minimization stresses the need to reduce impacts when impacts cannot be avoided. Minimization can be realized through the selection of various options; design features such as retaining walls, bridges and grading refinements; and construction techniques such as end-on-end construction. The use of various Best Management Practices and restoration of the affected areas can minimize temporary impacts from construction activities. Mitigation is achieved through in-kind measures such as: wetland creation, wetland enhancement, and wetland restoration, or out-of-kind measures such as: stream restoration, upland watershed enhancement or preservation.

This information describes the efforts undertaken by the SHA to identify sites with the potential to be used for compensating for unavoidable wetland impacts associated with the MRECAS project. In addition, this information presents the results of the wetland mitigation site identification and selection study for the MRECAS project. Finally, this description provides information on the consensus reached with the U. S. Army Corps of Engineers (Corps) and the Maryland Department of the Environment on the selected mitigation approach.

The technical approach used to identify sites with the greatest potential to provide opportunities for wetland creation consisted of the following:

- objectively identify the universe of potential forested wetland mitigation sites in the project area, the Bird River watershed and the Middle River watershed;
- score and rank this list of potential mitigation sites and select a number of the highest ranked sites suitable for further investigation; and

- subject this second set of sites to a further prioritization effort to identify sites appropriate for regulatory agency consideration; and
- review this set of sites with regulatory staff and obtain a consensus on the best sites for wetland compensatory mitigation.

The remainder of this section provides more detail on the methodology used to identify the most promising potential mitigation sites and summary information on the proposed mitigation sites on which consensus was obtained.

b. Methodology

The process of identifying the best site for wetland mitigation was an iterative approach using a variety of characteristics at each iteration. The first iteration used a geographic information system (ArcView) and readily available digital map information to identify all sites in the project area and the watersheds of the Bird River and Middle River. Characteristics used in this identification process consisted of:

- land cover to identify non-forested areas;
- soils information to identify areas underlain by soils with wetness limitations;
- stream and National Wetland Inventory information to identify areas within 300 feet of a stream or NWI-mapped wetland;
- FEMA floodplain mapping to identify areas within the mapped 500- year floodplain of a stream; and
- Minimum areas greater than 5 acres in size.

Non-forested sites greater than 5 acres underlain by soils with wetness limitation or adjacent to NWI-mapped wetlands, floodplains or streams were identified as potential mitigation sites. A total of 60 such properties were identified.

These 60 sites were then ranked on the basis of another set of characteristics. This set of characteristics included:

- site acreage;
- watershed location;
- existing landcover;
- proportion of site underlain by soils with wetness limitations;
- depth to groundwater based on the County soil survey;

- presence of a surface water feature (e.g., stream, wetland or floodplain); and
- surface slope.

This ranking approach identified the 24 highest scoring sites for field evaluation and further consideration. In order to conduct field evaluations, SHA contacted the property owners of these sites for permission to access the sites. During this process, permission was denied for some properties and on other properties the owners informed SHA that development plans (or other competing plans) were underway. As a result, a total of 12 properties identified in this study were evaluated in the field for their feasibility as wetland mitigation sites.

These 12 sites were then ranked on the basis of a third set of characteristics, which included:

- surficial soil characteristics (e.g., evidence of groundwater);
- site hydrology (i.e., evidence of flooding);
- existing vegetative cover (e.g., farm field);
- type of modifications required to establish hydrology (i.e., amount of earthwork);
- expected benefits to accrue (e.g., connecting woodlands, etc.); and adjacent and future land-use in vicinity.

In addition to the sites identified in the GIS site identification process, three additional sites were identified during the course of contacting property owners and reviewing existing information. Also, an older SHA mitigation study (citation) that focused on a portion of the Middle River watershed was reviewed for potential mitigation sites.

Based on the field evaluation and ranking, the six (6) highest scoring sites were identified for presentation to the regulatory and resource agency team for consideration.

The remainder of this report presents a summary of available information for each of these potential mitigation sites. SHA conducted a site visit at each of these properties with Mr. Paul Wettlaufer of the U. S. Army Corps of Engineers and Mr. Joe Hamilton of the Maryland Department of the Environment. Mr. George Beston and Mr. Bob Cooper of the Maryland Department of the Environment visited some but not all of the sites. During this field meeting, regulatory opinions on each of these sites were solicited.

#### c. Results

Each site included in the field review with the Corps of Engineers and Maryland Department of the Environment is summarized with a narrative description of the existing conditions, a brief discussion of the proposed mitigation approach, and the consensus final site disposition. All sites were visited before the final consensus was reached. In this respect, the regulatory and

SHA consensus decision that a site could be dropped from further consideration as a potential mitigation site for MRECAS project impacts indicates only that better mitigation opportunities exist on another potential mitigation site evaluated during the course of this study.

***Site #11 Graces Quarter DNR Site***

This site consists of three (3) parcels of mixed agricultural and forested land totaling approximately 53 acres. Each parcel is owned by the State of Maryland (DNR). The site is located on the southside of Graces Quarters Road just east of Ebenezer Road approximately 3 miles from the MRECAS site (See Figure IV-3).

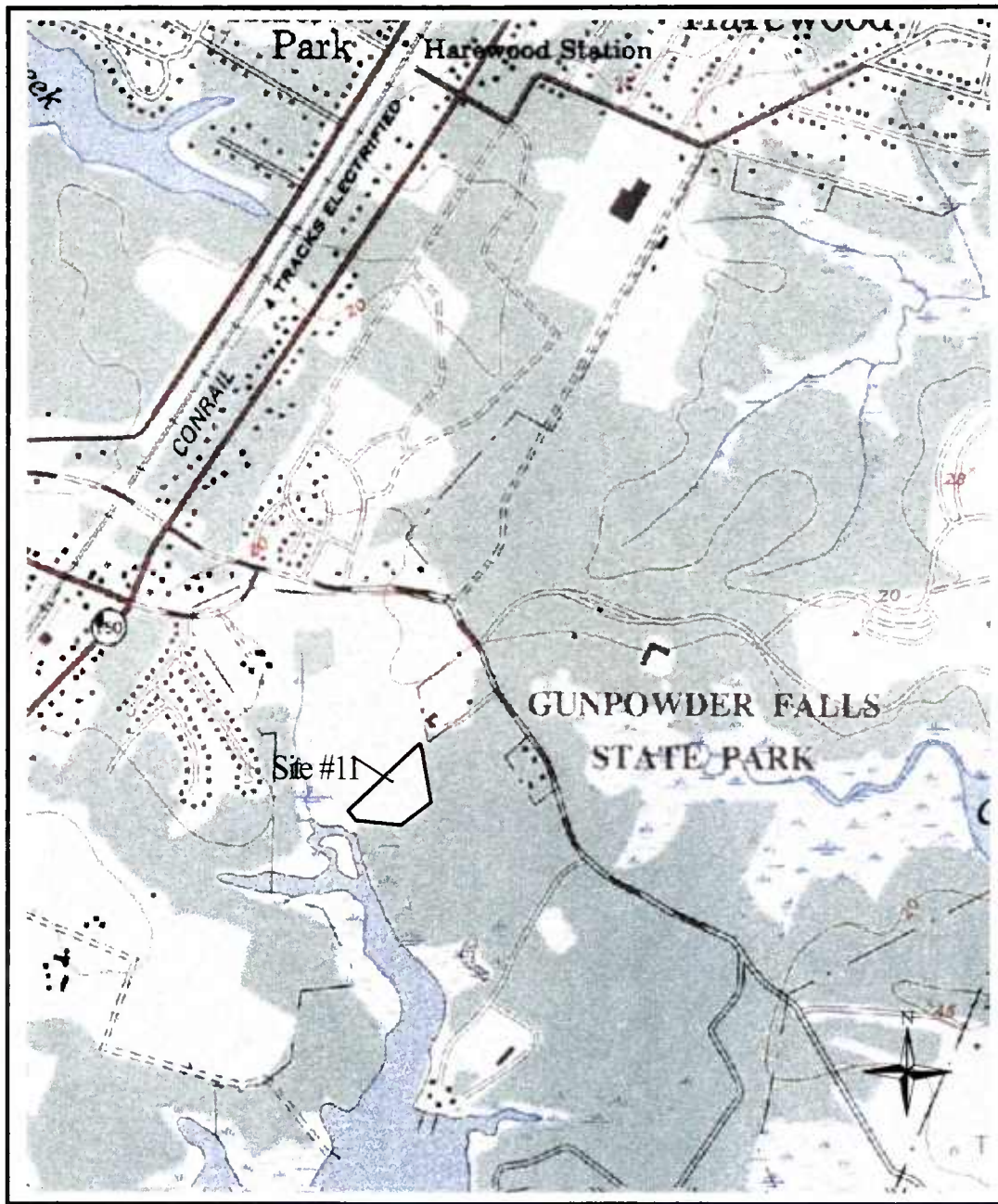
This site drains to a tributary of Dundee Creek. Tidal waters come to within 100-ft of the agricultural fields separated by a narrow band of forest. During several site visits, groundwater was encountered in the top 36-inches of the soil surface and evidence of redoximorphic conditions was observed in the top 12-in along the edges of the farm field. Soils mapped for this area include Woodstown and Elkton. Existing vegetative cover is a mixed hayfield.


The concept for this area is to excavate within the lower portion of the site relative to the seasonal high ground water table and place soils to enhance surface ponding. Topsoil salvaged from the wetland impact areas could be as a topdressing for biomass and seed source. These activities will result in the creation of a more significant forested wetland buffer to two tidal water features and a significant tidal oligohaline/mesohaline marsh. An archeological assessment of Site #11 is currently underway.

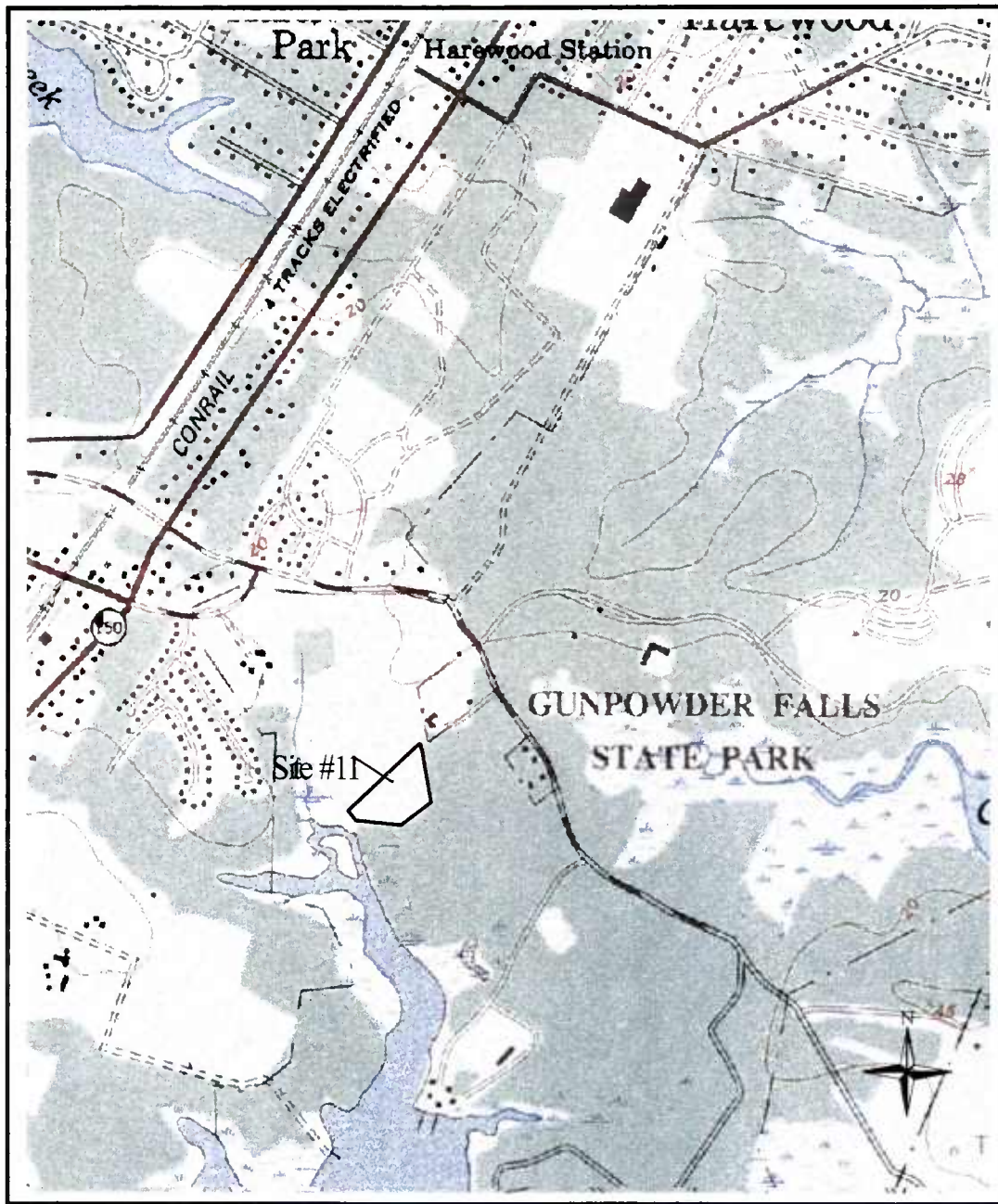
***Site #21 University of Maryland Foundation Site***


This site includes approximately 50 acres of two adjoining parcels owned by the University of Maryland Foundation. Site #21 is located off Bird River Beach Road approximately 1 mile from the MRECAS project (See Figure IV-4). The site drains to the Bird River downstream of the Windlass Run/Bird River confluence. The portion of the two parcels under consideration for mitigation consists of unreclaimed mined lands. The site is characterized by open water, unvegetated mud flats and clay pans and poorly vegetated slopes that are actively eroding, in addition to a variety of herbaceous and forested wetland and upland areas.

The general concept is to re-grade portions of the site to create vegetated wetlands while stabilizing severely eroded upland slopes which drain to existing and proposed on-site wetlands. The areas for wetland creation are located in a broad flat basin located in the lowest portion of the site. The use of wetland topsoil salvaged from the impact areas is proposed as topdressing providing biomass and a seed source for the newly created wetlands. The creation of wetlands and stabilization of the eroded slopes will compliment and enhance the values of the existing onsite wetlands and wildlife habitat. Existing herbaceous wetlands provide an opportunity for enhancement through the establishment of diverse wetland habitats such as forested and

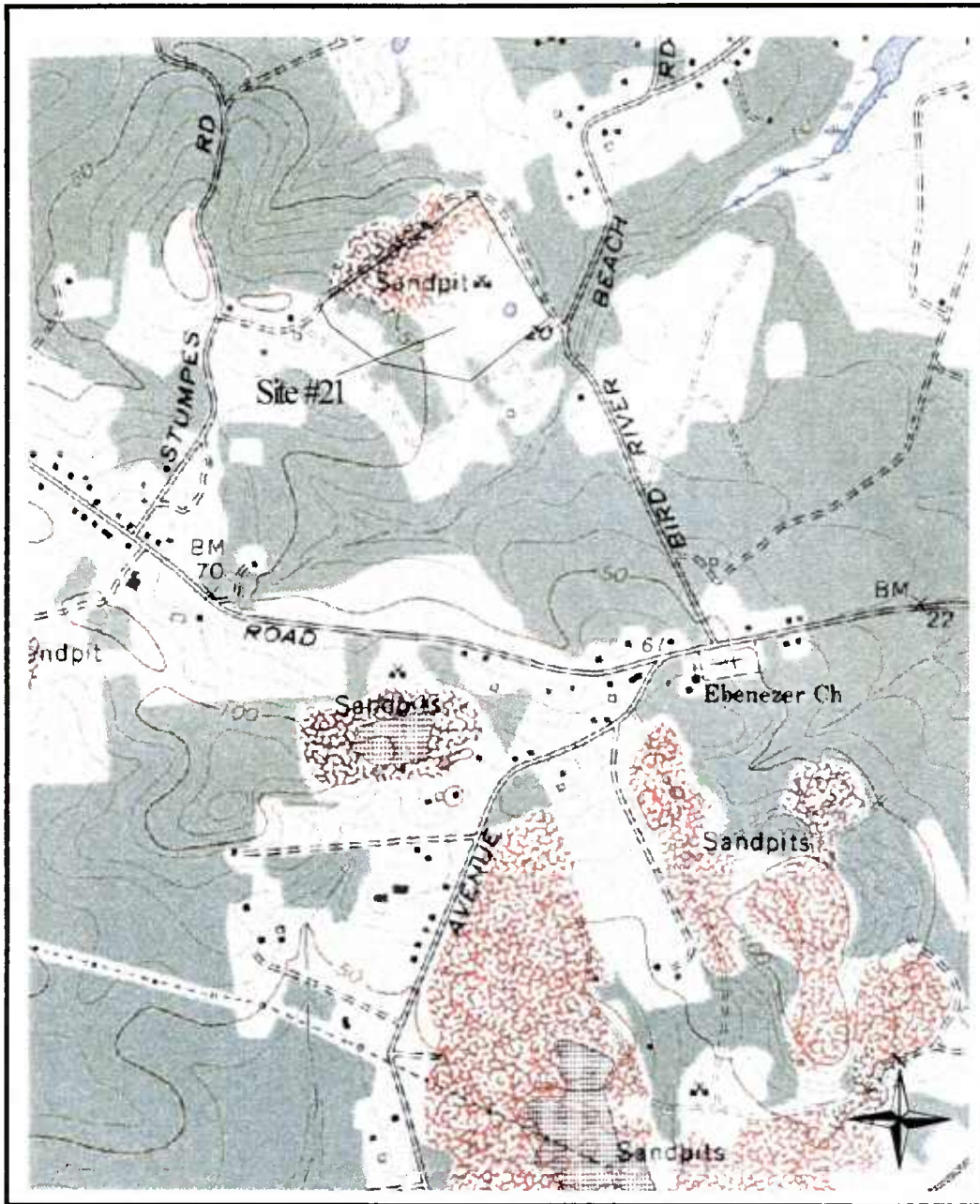



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FIGURE IV-3	January, 2001



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FIGURE IV-3	January, 2001

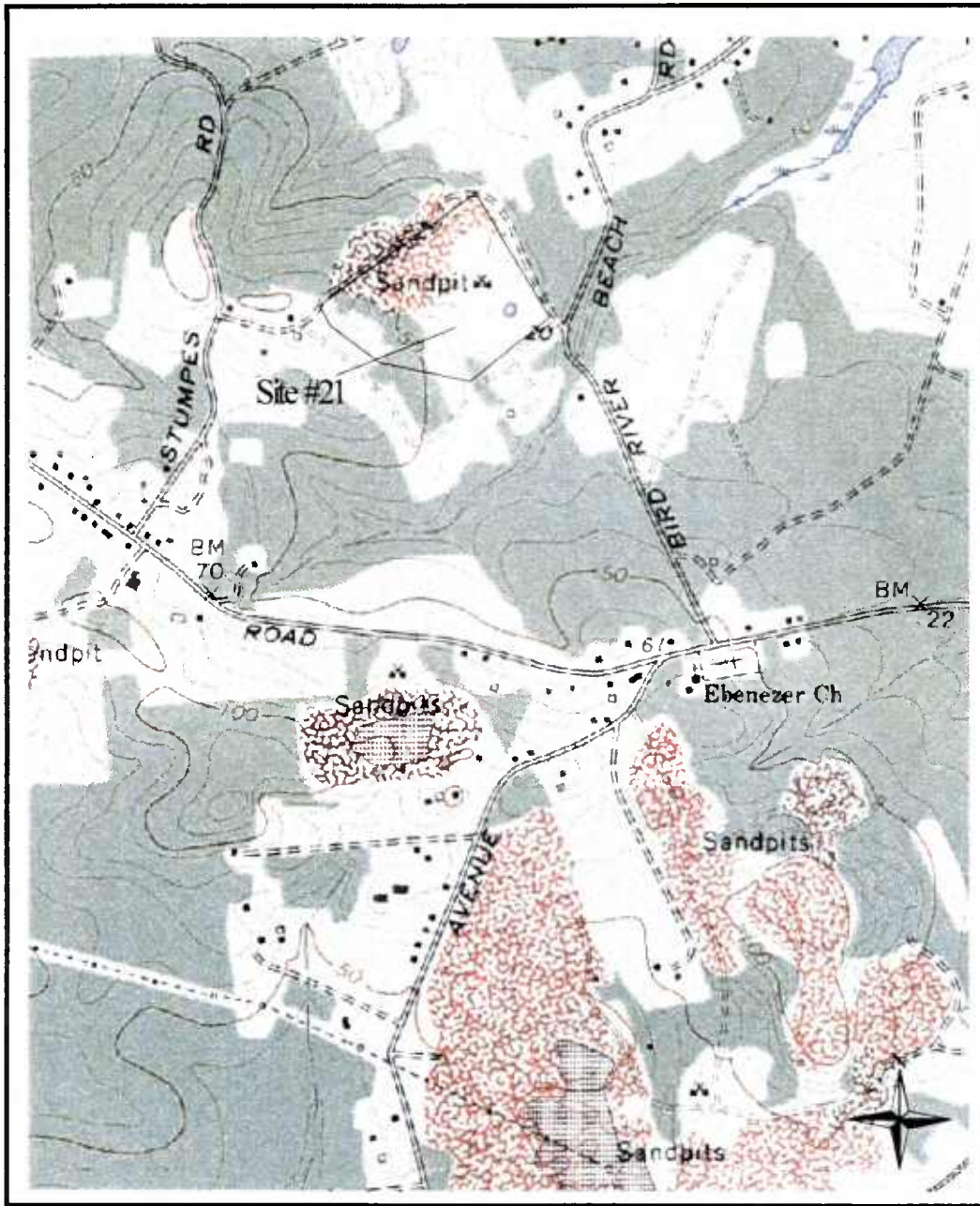
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FIGURE IV-4	January, 2001



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FIGURE IV-4	January, 2001

scrub/shrub wetlands. Relatively old and established mined out depressions, which appear much like vernal pools, will be preserved. Along with the adjacent upland drainage areas which provide surface water flow and terrestrial habitat.

An archeological assessment of Site #21 indicates that Phase 1 archeological surveys of undisturbed portions of the site is recommended and would be completed if the site is selected.

***Site #25 Back River Neck Road***

Site #25 is a 128-acre parcel located between Back River Neck Road and Holly Neck Road (See Figure IV-5). The site consists of approximately 14 acres of cropfield surrounded by upland and wetland forest. Soils mapped on the site include Mattapex, Barclay and Othello silt loams. The Mattapex-Barclay-Othello Association is characterized by a silt loam surface layer with moderately slow permeable subsoil of silt loam or silty clay loam. This proved evident from several shallow soil borings conducted during preliminary site investigations. The slow permeable subsoil condition appeared to be exasperated in the cropfield by years of plowing and compaction. This compaction of the subsoil allows for the perching of surfacewater that drains to shallow depressions in the field. The perching of surfacewater is also evident through much of the parcel. During the early portions of the growing season water covers numerous areas throughout the parcel. The exact extent of jurisdictional wetlands on the parcel has yet to be completed.

The mitigation concept for Site #25 is built upon the poor permeability of the subsoil. Through the creation of a mosaic of shallow depressions and hummocks, surfacewater can be trapped within the depressions developing numerous vernal or ephemeral pools. Hummocks would be planted with trees and shrubs with a gradient of wetter species of shrubs and emergents toward the center of the depressions. In addition to the creation of approximately 11.3 acres of such wetlands, the extensive forest located on this parcel further enhances the ecological value of the site. Through the preservation of these forested areas a more complete ecosystem approach could be developed for mitigation of proposed impacts from MRECAS. The Corps of Engineers, Federal Highway Administration and Maryland Department of the Environment have visited Site 25 and have concurred that the site may have potential for the creation of wetlands but recommend further hydrologic investigation and analysis to determine the true amount of potential wetland creation. An archeological assessment of Site #25 is currently underway.

d. Wetland Mitigation Summary

Following the field review, the Corps of Engineers and Maryland Department of the Environment staff identified Site 6 Holly Neck Road Site and Site 21 University of Maryland Foundation Site as their preferred potential mitigation sites. However, the property owner of Site 6 has plans for development of the parcel on which the potential mitigation site was identified and access to the site has been denied.

scrub/shrub wetlands. Relatively old and established mined out depressions, which appear much like vernal pools, will be preserved. Along with the adjacent upland drainage areas which provide surface water flow and terrestrial habitat.

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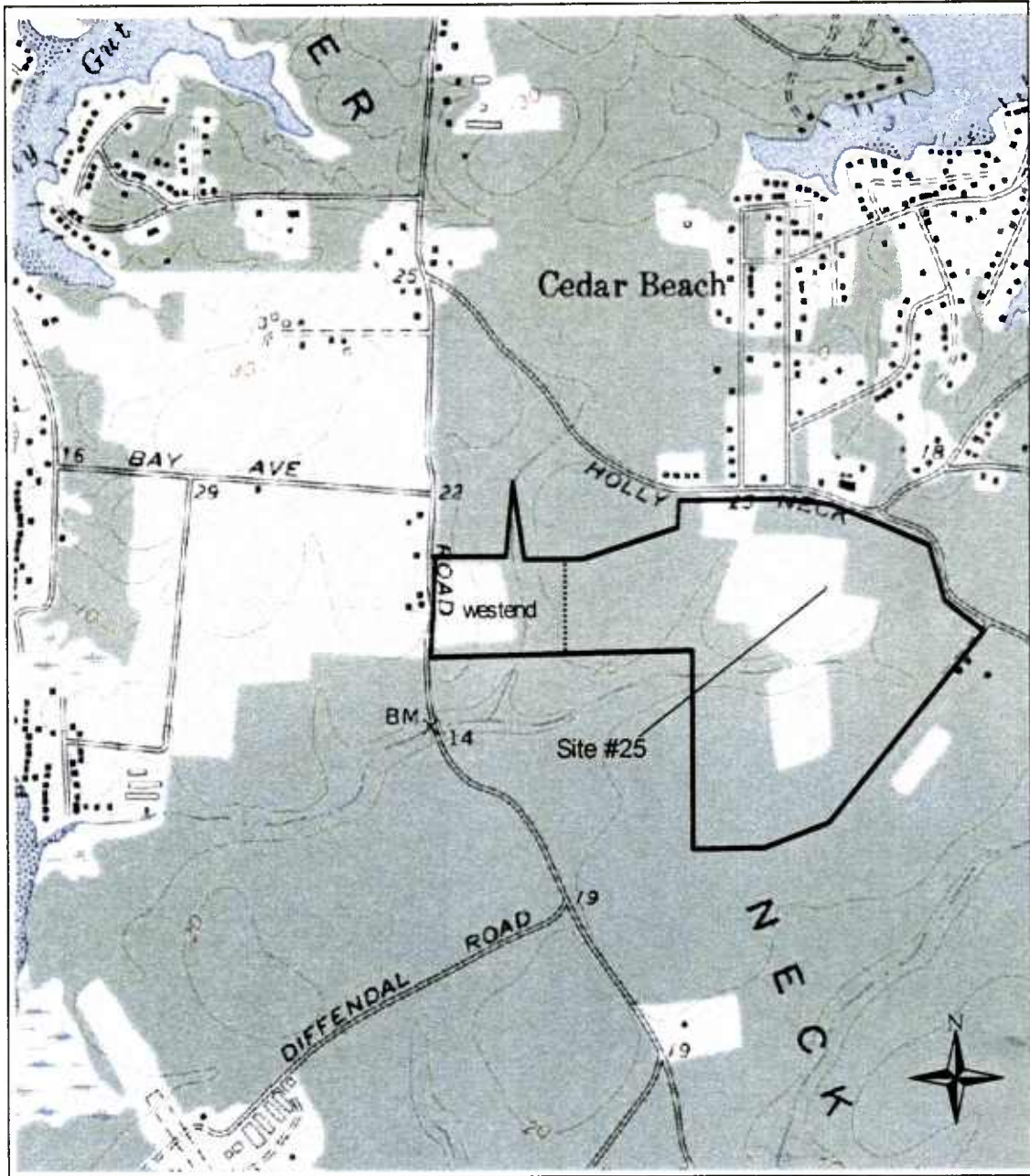
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d. Wetland Mitigation Summary

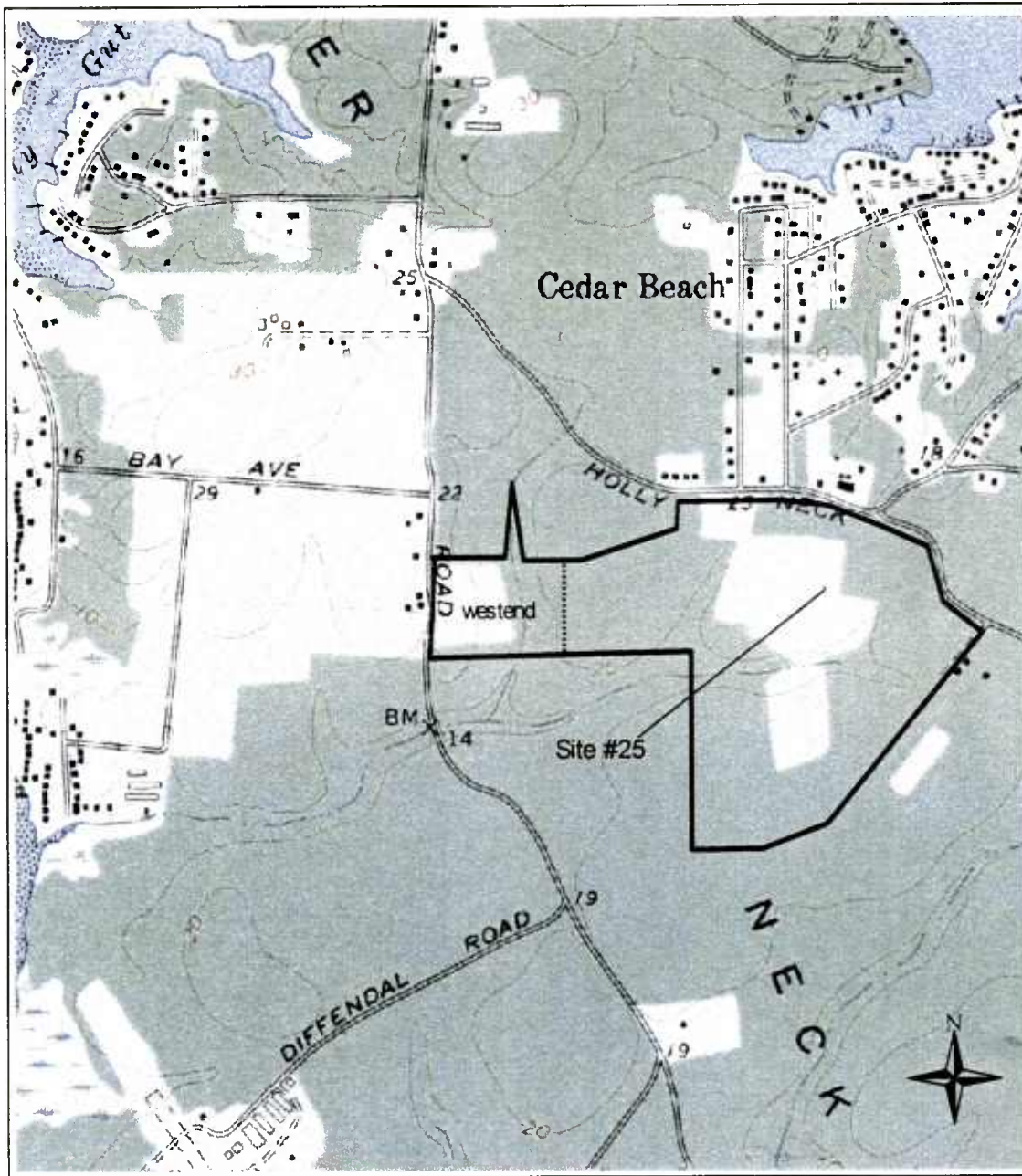
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FIGURE IV-5	January, 2001

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FIGURE IV-5	January, 2001

To meet the estimated 18.6 acres of wetland mitigation for this project, SHA proposes a two level approach that will allow SHA flexibility and the regulatory agencies surety should one of the preferred mitigation sites be found infeasible for the creation of wetlands. The main components of the package include non-tidal wetland creation, enhancement, restoration and preservation, in addition to afforestation and preservation of forested drainage areas contributing to the creation and enhancement sites. The proposed Level 1 includes the use of preferred Site # 21 (U. of MD Foundation), and the western portion of Site #25 (Back River Neck Road) which potentially may provide 14.9 acres and 4.4 acres of mitigation credit, respectively. These two sites collectively exceed the 1:1 ratio for no net loss, as well as, exceed the estimated mitigation for the project. The proposed Level 2 includes alternative sites, Site # 11 (DNR) and the entire Site # 25. These sites could provide sufficient acreage should one or all of the Level 1 sites prove to be infeasible. See Table IV-15 for a summary of potential mitigation provided for Levels 1 and 2.

## K. Vegetation and Wildlife

### 1. Terrestrial Ecology

Impacts to terrestrial wildlife and associated habitat were assessed qualitatively based on the loss of natural vegetation areas. The no-build alternative would not cause any additional impacts to terrestrial wildlife or associated habitat, but based on the vegetative types, various wildlife species would be impacted by the roadway build alternatives.

Whereas the No-build alternative is not expected to cause additional impacts to natural vegetation in the study area, the build alternatives will require the clearing and grubbing of existing vegetation and the conversion of land for transportation purposes. This will result in the loss of agricultural land, forested land, and old field. Some impacts to natural vegetation, crop fields and miscellaneous lawns are expected to result from each build alternative. The alignments avoid impacts to residential properties, primarily impacting wetlands, forests and farmlands instead.

Expected impacts from each alternative are shown as impacted acres in Table IV-16. The table shows that Revised D-modified (the *SHA Selected Alternative*) impacts the greatest amount of wetlands and forest. However, this is partly due to the fact that this alignment was laid out as a central access road through both the northern and southern parts of the MREC, thereby limiting the extensiveness of additional secondary roads for access. Thus, any secondary impacts to wetlands and forests associated with secondary development roads would be avoided with the *SHA Selected Alternative*.

**Table IV-15: Proposed Mitigation**

Level 1 Preferred Mitigation			Type of Mitigation						
Site	Watershed	Total Ac.	Wetland Creation 1:1	Wetland Enhancement 2:1	Wetland Restoration 1:1	Wetland Preservation 10:1	Upland Preservation 10:1	Upland Watershed Afforestation 5:1	Total Mitigation Credit (ac.)
21 (U of MD)	Bird River	50.0	7.2	0.3	1.6	1.2	3.6	1.0	14.9
25 Back River Neck Road (westend)	Back River	15.0	4.0			0.2	0.2		4.4
<b>Total</b>		<b>65.0</b>	<b>11.2</b>	<b>0.3</b>	<b>1.6</b>	<b>1.4</b>	<b>3.8</b>	<b>1.0</b>	<b>19.3</b>

Level 2 Alternative Mitigation			Type of Mitigation						
Site	Watershed	Total Ac.	Wetland Creation 1:1	Wetland Enhancement 2:1	Wetland Restoration 1:1	Wetland Preservation 10:1	Upland Preservation 10:1	Upland Watershed Afforestation 5:1	Total Mitigation Credit (ac.)
11 (DNR)	Dundee Creek	4.0	3.0						3.0
25 Back River Neck Road (Entire)	Back River	128.0	11.3			2.5	8.5		22.3
<b>Total</b>		<b>132.0</b>	<b>14.3</b>	<b>0.0</b>	<b>0.0</b>	<b>2.5</b>	<b>8.5</b>	<b>0.0</b>	<b>25.3</b>

280

287

Conversely, Alternative F<sub>1</sub> Modified impacts the fewest acres of forest, while Alternative I Modified impacts the least amount of wetlands, but more extensive secondary access roads are needed for these two alternatives and for Alternative D and Alternative E. When impacts associated with the secondary access roads are added to the values in Table IV-16 the total forest losses and total wetland losses come closer to those approximated for the *SHA Selected Alternative* (see Table IV-17). Section Q.5 of this document discusses the secondary access roads in more detail.

**Table IV-16: Direct Impacts to Vegetation expressed in Acres**

Vegetation Type	Alternative						
	No Build	Rev. D-Mod (SHA Selected Alt.)	D	D-mod	E	F <sub>1</sub> -mod	I-mod
Upland Forest	0	52.7	44.1	50.3	48.1	31.8	49.2
Palustrine Forested Wetland <sup>1</sup>	0	8.8	7.6	9.0	6.9	6.3	5.5
Palustrine Scrub/Shrub Wetland <sup>1</sup>	0	0	0.2	0.2	0.2	0.2	0.2
Palustrine Emergent Wetland	0	0.5	0.4	0.4	0.4	0.8	0.7
<b>Total Wetlands<sup>1</sup></b>	<b>0</b>	<b>9.3</b>	<b>8.5</b>	<b>9.9</b>	<b>7.8</b>	<b>7.3</b>	<b>6.7</b>
<b>Total Forest<sup>1</sup></b>	<b>0</b>	<b>53.1</b>	<b>51.5</b>	<b>59.5</b>	<b>55.0</b>	<b>38.3</b>	<b>54.9</b>
<b>Total Agriculture Land</b>	<b>0</b>	<b>3.4</b>	<b>0.0</b>	<b>3.4</b>	<b>0.0</b>	<b>5.8</b>	<b>7.3</b>
<b>Total Upland Meadow</b>	<b>0</b>	<b>5.1</b>	<b>7.1</b>	<b>7.1</b>	<b>7.2</b>	<b>13.4</b>	<b>7.4</b>
<b>Total Landscaped &amp; Turfed Areas</b>	<b>0</b>	<b>14.6</b>	<b>13.9</b>	<b>14.6</b>	<b>17.3</b>	<b>9.1</b>	<b>14.4</b>
<b>TOTAL ALL VEGETATION</b>	<b>0</b>	<b>85.1</b>	<b>72.8</b>	<b>84.9</b>	<b>80.0</b>	<b>67.4</b>	<b>84.3</b>

<sup>1</sup>The forested wetlands and the scrub/shrub wetlands are counted as contributing to the acreages of both Total Forest and Total Wetlands.

Note: All wetland acreages are jurisdictional per MDE regulations.

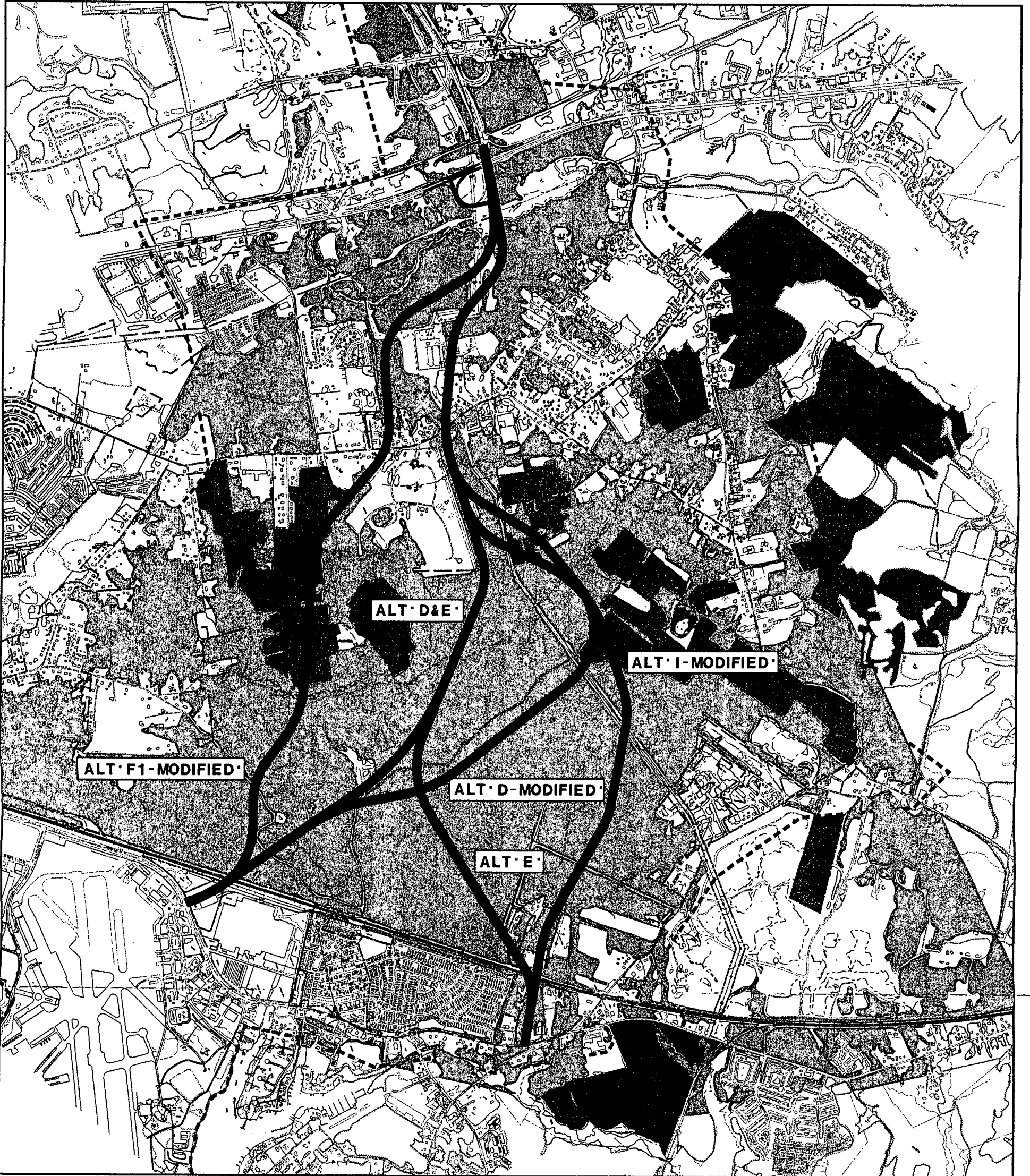
**Table IV-17: Direct Impacts and Impacts from Secondary Access Roads on Wetlands and Forest (Acres)**

Alternative	Direct Wetland Loss	Wetland Loss to Secondary Access*	Total Wetland Loss	Direct Forest Loss	Forest Loss to Secondary Access*	Total Forest Loss
No-Build	0	0	0	0	0	0
Alt. Rev. D-Mod (SHA Selected Alternative)	9.3	0.3 to 0.5	9.6 to 9.8	53.1	2.0 to 3.0	55.1 to 56.1
Alt D	8.5	1.0 to 1.4	9.5 to 9.9	51.5	1.0 to 1.5	52.5 to 53.0
Alt D-mod	9.9	0.3 to 0.5	10.2 to 10.4	59.5	2.0 to 3.0	61.5 to 62.5
Alt E	7.8	2.3 to 3.4	10.1 to 11.2	55.0	3.4 to 5.2	58.4 to 60.2
Alt F <sub>1</sub> -mod	7.3	2.2 to 3.4	9.5 to 10.7	38.3	10.0 to 15.0	48.3 to 53.3
Alt I-mod	6.7	6.4 to 9.6	13.1 to 16.3	54.9	6.4 to 9.6	61.3 to 64.5

\*Losses to access roads are shown as ranges due to uncertainty of width for the access roads. Road widths used for determining the ranges were 50 feet and 75 feet.

The forested and agricultural lands within the study area are shown in Figure IV-6 with the alternatives overlain to indicate the areas subject to direct impacts. No attempt has been made to show wetlands because the scale of the map is too small. Consequently, wetland areas are included within the forest coverage of this graphic, while actual acreages discussed in this section were calculated separately using field survey measurements.





**LEGEND**

- AGRICULTURAL LAND
- FORESTED LAND
- STUDY AREA

1000 500 0 1000  
SCALE IN FEET

**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT  
STATEMENT**

**AGRICULTURE AND FORESTED AREAS  
WITHIN MRECA STUDY AREA**



**MARYLAND  
STATE HIGHWAY  
ADMINISTRATION**

**DATE :**  
Jan. 2001

**FIGURE  
NO. IV-6**

Choosing any of the build alternatives will cause the physical destruction of some habitats within the highway corridor and will cause the direct loss of some wildlife through migratory animal mortality. Furthermore, fragmentation and/or degradation of other habitats adjacent to the corridor could result from any of the build alternatives. Impacts to wildlife and/or wildlife habitat could come about in a number of ways. The breaking up of large, contiguous tracts of habitat into smaller blocks can have negative impacts on area-sensitive species such as neotropical migrant birds. The construction of the roadway might also act as a barrier to wildlife movement to and from these habitat fragments. Furthermore, degradation of habitats may occur due to the disturbance of resident species by light and noise along the road, contamination with pollutants, and/or the introduction of exotic species.

Research indicates that while highway construction destroys habitats within the construction corridor and increases the possibility of migratory animal mortality, it has little effect on the distribution or density of non-migratory animals within adjacent habitats (Michael, 1975). Furthermore, the change of vegetation types within the right-of-way (such as forest to grasses) may attract new species (e.g. American robin and woodchuck) to replace species lost by the destruction of the previous habitat. Other species, such as the whitetail deer and black rat snake, can benefit from the newly created "ecotone," or edge between the new habitat type and the adjacent existing habitat (Leedy and Adams, 1982). Within the MRECAS that effect will be minimal due to the large amount of ecotones already existent there.

Wildlife species found in the vicinity of existing highways are generally tolerant of man-induced noise, although noise levels may have a negative impact on breeding birds that depend on vocal communication for attracting mates. Minor additional air pollution is not expected to have an adverse affect on wildlife, as it will be dispersed by wind.

The associated loss of terrestrial wildlife caused by the alternatives may be mitigated by the enhancement of wildlife habitat through reforestation and wetland mitigation, including the use of vegetation that has high food value for wildlife or that will provide effective cover. Vegetation with high food value includes mast-producing trees as well as seed or berry-producing shrubs.

Future impacts on forested areas due to development will be reduced or mitigated to some extent by the State and Local Forest Conservation Regulations that require some development activities to retain or replace a portion of existing forest cover. In 1991 the Maryland Forest Conservation Act (FCA) was enacted to reduce the number of forested acres cleared when land is changed from forests or agriculture to residential, commercial, or industrial development. The FCA applies to all activities requiring a permit for subdivision, grading, or sediment control that is larger than 40,000 square feet (3,716 square meters). The FCA provides guidelines, based on land use categories, for the amount of forestland retained or planted after completion of development projects. This allows development to occur in areas where it is appropriate, while protecting forests.

At the same time, the Reforestation Law of 1988 was amended to apply to highway projects. Under the law, trees are to be planted in areas equal in size to areas cleared for construction. The

following are reforestation site requirements prescribed by the law. They are listed in order of priority:

- reforestation to occur on-site or in the right-of-way or on an adjacent property
- reforestation to occur on any public land within the county and within the subwatershed
- reforestation to occur within the county or subwatershed
- in lieu of reforestation, payment for forested area cleared can be paid into the Reforestation Law Fund

## 2. Aquatic Ecology

Expectations are that additional pollutants carried into adjacent waters by surface run-off could result in some water quality degradation, thereby affecting aquatic biota. Highways increase the amount of impervious cover in a watershed thereby increasing runoff volume and peak discharge resulting in increased streambank erosion. This erosion adds to the suspended solid and other pollutant loads associated with highway runoff. Particulates and sediments in highway runoff can cause a number of problems including decreased flow capacity in drainageways, reduced storage volume of ponds, smothering of benthic organisms, decreased water clarity, and interference with the respiration of small fish. Also, toxic materials such as metals, hydrocarbons, pesticides, and PCB's often attach to and are transported by suspended solids. This presents both acute and chronic threats to aquatic organisms (Barrett et al., 1993). Sediments from roadways which are deposited in waterways may be a reservoir for toxic metals and a primary source for the bioaccumulation of metals (Barrett et al., 1993; Yousef et al., 1990). Soluble pollutants can adversely affect algae and zooplankton and toxic effects can greatly reduce production in the aquatic system.

A highway may also impact the "riparian zone," the terrestrial environment along the stream corridor. The riparian zone is directly linked to water quality and to aquatic habitat, and it provides important habitat for terrestrial wildlife as well. The greatest potential impact to riparian areas would be new construction parallel to a stream or an impoundment of a stream. Avoiding parallel construction would provide the greatest potential reduction of impacts to riparian habitat. Other minimization measures include: minimizing the clearing of riparian vegetation, protecting areas not intended to be cleared, re-vegetating the riparian area after clearing and grading, and managing the remaining riparian forest to retain habitat.

However, as shown in Section IV-G, these effects are expected to be minimal within the study area, assuming appropriate measures are taken to protect water resources. Fish species should be protected by the Use-I in-stream prohibition periods (expanded for the presence of yellow perch), sediment and erosion control methods, and other Best Management Practices typically used for protection of stream resources. Use-I prohibitions require that no in-stream work is to be conducted during the period of February 15 through June 15, inclusive, during any year when spawning by yellow perch may occur near the project site.

The construction phase of the roadway has the potential for causing various temporary and permanent impacts to the aquatic biota of the streams located in the study areas. Impacts to the streams and their biota may also result from highway structures, such as bridges, culverts, pipes,

piers, and abutments. Stream crossings using bridges, culverts and/or pipes have the potential to disrupt fish migrations, cause streambank erosion, and create unstable substrate which could lead to the loss of invertebrate biota and suitable fish habitat, especially of spawning sites. Low flow channels, provision of baffles, and the suppression of the culvert bottom to maintain a natural stream bottom are just a few measures that can be incorporated into the stream crossing design to prevent such problems. Animal passage may be facilitated through the use of bridges and the expansion of bridge crossings. Further investigations will occur when detailed hydrologic and hydraulic data become available.

In order to protect anadromous fishes in study area streams (Windlass Run and Whitmarsh Run), no instream construction will be permitted between Feb 15 and June 15. Construction activity in wetlands and waterways will adhere to the time of year restrictions specified as part of the Section 404 permit and Section 401 Water Quality Certification. The Corps of Engineers and MDE will develop specific time of year restrictions during the permitting process, in consultation with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and Maryland Department of Natural Resources.

### 3. Rare, Threatened, and Endangered Species

There are no Federally-listed threatened or endangered species in the study area. Impacts relevant to the threatened and endangered species of concern for this project primarily involve the loss of a large portion of forest habitat that currently supports the State-listed rare, threatened, and endangered species, as well as the forest interior dwelling birds (FIDS) of concern to State environmental agency officials. When avoidance of large forest tracts such as this is not feasible, mitigation efforts for highway construction should focus on minimizing forest fragmentation by preserving the largest core area. In general terms this may be accomplished by:

- utilizing existing non-forested areas within or adjacent to the forest,
- routing transportation improvement near the edge of an existing forest instead of through the central portions,
- minimizing the length of the highway right-of-way through or along a forest, thereby reducing the amount of new forest edge as well as reducing the amount of impacted area.

The Maryland Department of Natural Resources-Forest, Wildlife and Heritage Service has provided written guidance for minimizing, as much as possible, the project's impacts on FIDS and other native forest plants and wildlife. The agency's guidelines are as follows:

- Avoid placement of new roads or related construction in the forest interior. If forest loss or disturbance is absolutely unavoidable, restrict development to the perimeter of the forest (i.e. within 300 feet of the existing forest edge), and avoid road placement in areas of high quality FIDS habitat (e.g., old-growth forest). Maximize the amount of remaining contiguous forested habitat.
- Do not remove or disturb forest habitat during May-August, the breeding season for most FIDS. This seasonal restriction may be expanded to February-August if certain early-nesting FIDS (e.g., Barred Owl) are present.
- Maintain forest habitat as close as possible to the road, and maintain canopy closure where possible.
- Maintain grass height of at least ten inches during the breeding season (May-August).

FIDS and FIDS habitat are also a concern of the Chesapeake Bay Critical Area Commission, which is concerned about the loss of any habitat in close proximity to the tidal waters of Maryland and the Chesapeake Bay. The Chesapeake Bay Critical Areas are defined as zones within 1000 feet of the tidal shoreline. As stated in the Affected Environment section of this report, none of the proposed alternatives extends into the Critical Area, but portions of the MRECAS area lie inside the Critical Area boundary, especially along the southeastern perimeter. Since no construction activities are planned for within the Critical Area boundary, the Critical Area Law is not of regulatory concern to this study, but the construction of the roadway should consider:

- that the MRECAS boundary adjoins the Critical Area boundary along the eastern edge of the study area, and
- that both the Critical Area and the interior forest habitat area are extremely sensitive in terms of ecological importance, political interest, and social esthetics, and
- that a large (450 acre) tract of long-standing, contiguous forest known to be used by forest interior dwelling birds (FIDS) will likely be lost to secondary development as a result of the highway being constructed.

## **L. Air Quality**

### **1. Objectives and Type of Analysis**

This analysis has been prepared in accordance with the U.S. Environmental Protection Agency (US EPA), Federal Highway Administration (FHWA), and Maryland State Highway Administration (MD SHA) guidelines. Carbon monoxide (CO) impacts are analyzed as the accepted indicator of vehicle-generated air pollution.

The EPA CAL3QHC dispersion model is used to predict carbon monoxide (CO) concentrations for air quality sensitive receptors for both the build year (2005) and design year (2020). The detailed analyses predict air quality impacts from carbon monoxide vehicular emissions for both the No-Build and build alternatives at each receptor location. Modeled 1-hour and 8-hour average CO concentrations are added to background CO concentrations for comparison to the State and National Ambient Air Quality Standards (S/NAAQS).

### **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 and Radiation 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 and Radiation 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 10.18.06.03 D) would be incorporated to minimize the impact of the proposed transportation improvements on the air quality of the area.

### 3. Receptor Site Locations

Twenty-seven (27) air quality receptors were selected to represent air quality sensitive locations within the study area. In addition, three (3) signalized intersections were also analyzed. All twenty-seven receptors and the three signalized intersections were analyzed for the No-Build Alternative. Ten (10) receptors and two (2) signalized intersections were used for Alternatives D, D Modified, and E. Eight (8) receptors and two (2) signalized intersections were used for Alternative F<sub>1</sub> Modified, and eleven (11) receptors and two (2) signalized intersections were used for Alternative I Modified. Receptor site locations are shown on Figures II-7 through II-19 at the end of Section II and Figures III-12 through III-14 in Section III-K of this document.

Most of the receptor sites are residences. At these sites, the air quality receptor is located at the property line closest to the proposed alignment of MD 43. In places where no residence was nearby, the right-of-way of a proposed alternative was used. The analysis of signalized intersections involves placing a matrix of receptors at intervals on both sides of the roadway where queue length form. The results reported for the intersection is the highest CO concentration among the matrix of receptors.

The locations of the receptors, and the build alternatives they are used to analyze, are described in Section III-K, where they are also listed in Table III-29 and shown in Figures III-12 through III-14.

### 4. Results of Microscale Analysis

A summary of the CO concentrations is shown in Tables IV-18 and IV-19. The values reported for AQ-1, AQ-11, and AQ-14 are the highest CO concentrations from the matrix of receptors around the intersection. The concentrations at all receptors for all alternatives are below the State and National Ambient Air Quality Standards for the one-hour and eight-hour analyses. The concentrations at all receptors for all alternatives are below the State and National Ambient Air Quality Standards (S/NAAQS) for the one-hour and eight-hour analysis.

Relative comparison of the No-Build Alternative versus the build alternatives shows that there is an increase in CO concentrations at all receptor locations. The CO concentration at most receptors for the No-Build Alternative is only the background CO concentration. This occurs because no roadway is close enough to affect the CO concentrations at the receptor site. However, the build alternatives introduce traffic near these receptors, thereby increasing the CO concentrations.

Table IV-18: Carbon Monoxide (CO) concentration estimates from CAL3QHC (ppm) for the year 2005

Receptor	No-Build		Alt. D		Alt. D Mod. & Rev. D Mod		Alt. E		Alt. F, Mod.		Alt. I Mod.	
	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR
AQ-1	8.0	4.6	12.2	5.6	12.2	5.6	12.2	5.6	12.1	5.6	12.2	5.6
AQ-2	2.8	1.7	-	-	-	-	-	-	4.2	2.1	-	-
AQ-3	2.7	1.7	-	-	-	-	-	-	3.7	2.1	-	-
AQ-4	2.7	1.7	-	-	-	-	-	-	3.9	2.1	-	-
AQ-5	2.7	1.7	3.8	2.1	3.8	2.0	3.8	2.1	-	-	3.8	2.0
AQ-6	2.8	1.7	3.2	1.9	3.2	1.9	3.2	1.9	-	-	3.2	1.9
AQ-7	2.9	1.7	3.6	2.0	3.6	2.0	3.6	2.0	-	-	3.6	2.0
AQ-8	3.2	1.8	3.4	1.9	3.4	1.9	3.4	1.9	-	-	3.4	1.9
AQ-9a	2.6	1.7	3.2	1.8	-	-	3.2	1.8	-	-	2.9	1.8
AQ-9b	2.6	1.7	-	-	3.4	1.9	-	-	-	-	-	-
AQ-10a	2.7	1.7	-	-	-	-	-	-	-	-	3.3	1.9
AQ-10b	2.6	1.7	-	-	-	-	3.0	1.8	-	-	2.9	1.8
AQ-11	4.5	2.4	-	-	-	-	9.0	4.5	-	-	9.1	4.5
AQ-12	2.7	1.7	-	-	-	-	3.2	1.9	-	-	3.2	1.9
AQ-13a	3.9	2.0	5.4	2.9	5.4	2.9	-	-	5.4	2.9	-	-
AQ-13b	4.1	2.2	5.5	2.9	5.5	2.9	-	-	5.5	2.9	-	-
AQ-14	6.7	3.3	10.0	5.0	9.9	4.9	-	-	9.7	4.9	-	-
AQ-15	2.6	1.7	3.5	2.1	-	-	3.7	2.1	-	-	-	-
AQ-16	2.6	1.7	3.3	1.9	-	-	4.0	2.1	-	-	-	-
AQ-17	2.7	1.7	3.2	1.9	-	-	-	-	-	-	-	-
AQ-18	2.6	1.7	-	-	3.4	2.0	-	-	-	-	-	-
AQ-19	2.6	1.7	-	-	3.1	1.9	-	-	-	-	-	-
AQ-20	2.6	1.7	-	-	3.0	1.9	-	-	-	-	-	-
AQ-21	2.6	1.7	-	-	-	-	3.2	1.9	-	-	-	-
AQ-22	2.6	1.7	-	-	-	-	-	-	3.9	2.1	-	-
AQ-23	2.6	1.7	-	-	-	-	-	-	3.8	2.1	-	-
AQ-24	2.7	1.7	-	-	-	-	-	-	3.4	2.0	-	-
AQ-25	2.6	1.7	-	-	-	-	-	-	-	-	3.6	2.0
AQ-26	2.6	1.7	-	-	-	-	-	-	-	-	3.1	1.9
AQ-27	2.6	1.7	-	-	-	-	-	-	-	-	3.2	1.9

NOTES:

1-hour average CO concentrations include a 2.6-ppm background concentration. Worst case (a.m. or p.m.) shown.

8-hour average concentrations include a 1.7-ppm background concentration.

The S/NAAQS for the 1-hour average is 35.0 ppm.

The S/NAAQS for the 8-hour average is 9.0 ppm.

Table IV-19: Carbon Monoxide (CO) concentration estimates from CAL3QHC (ppm) for the year 2020

Receptor	No-Build		Alt D		Alt. D Mod. & Rev. D Mod		Alt E		Alt. F, Mod.		Alt. I Mod.	
	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR	1-HR	8-HR
AQ-1	8.5	4.7	15.0	6.8	15.0	6.8	15.0	6.8	14.9	6.8	15.0	6.8
AQ-2	2.9	1.8	-	-	-	-	-	-	4.7	2.4	-	-
AQ-3	2.8	1.7	-	-	-	-	-	-	4.1	2.1	-	-
AQ-4	2.8	1.7	-	-	-	-	-	-	4.3	2.2	-	-
AQ-5	2.8	1.7	4.3	2.2	4.3	2.2	4.3	2.2	-	-	4.3	2.2
AQ-6	2.8	1.7	3.6	2.0	3.6	2.0	3.6	2.0	-	-	3.6	2.0
AQ-7	3.0	1.8	4.0	2.2	4.0	2.2	4.0	2.2	-	-	4.0	2.2
AQ-8	3.4	1.9	4.1	2.2	4.1	2.2	4.1	2.2	-	-	4.1	2.2
AQ-9a	2.6	1.7	3.4	1.9	-	-	3.5	1.9	-	-	3.3	1.8
AQ-9b	2.7	1.7	-	-	3.6	1.9	-	-	-	-	-	-
AQ-10a	2.7	1.7	-	-	-	-	-	-	-	-	6.0	2.4
AQ-10b	2.7	1.7	-	-	-	-	3.9	2.0	-	-	3.9	2.0
AQ-11	5.2	2.6	-	-	-	-	11.9	5.0	-	-	12.1	5.1
AQ-12	2.7	1.7	-	-	-	-	4.1	2.1	-	-	4.2	2.0
AQ-13a	4.3	2.1	5.8	3.0	5.8	3.0	-	-	5.8	3.0	-	-
AQ-13b	4.3	2.3	5.9	3.0	5.9	3.0	-	-	5.9	3.0	-	-
AQ-14	6.9	3.5	11.3	5.7	11.2	5.7	-	-	11.2	5.7	-	-
AQ-15	2.6	1.7	3.8	2.2	-	-	4.0	2.2	-	-	-	-
AQ-16	2.6	1.7	3.5	2.0	-	-	4.4	2.2	-	-	-	-
AQ-17	2.7	1.7	3.4	2.0	-	-	-	-	-	-	-	-
AQ-18	2.6	1.7	-	-	3.8	2.1	-	-	-	-	-	-
AQ-19	2.6	1.7	-	-	3.3	2.0	-	-	-	-	-	-
AQ-20	2.6	1.7	-	-	3.1	2.0	-	-	-	-	-	-
AQ-21	2.7	1.7	-	-	-	-	3.5	2.0	-	-	-	-
AQ-22	2.6	1.7	-	-	-	-	-	-	4.2	2.2	-	-
AQ-23	2.7	1.7	-	-	-	-	-	-	4.2	2.2	-	-
AQ-24	2.8	1.7	-	-	-	-	-	-	3.7	2.1	-	-
AQ-25	2.6	1.7	-	-	-	-	-	-	-	-	3.9	2.1
AQ-26	2.6	1.7	-	-	-	-	-	-	-	-	3.5	1.9
AQ-27	2.6	1.7	-	-	-	-	-	-	-	-	4.0	2.0

NOTES:

1-hour average CO concentrations include a 2.6-ppm background concentration. Worst case (a.m. or p.m.) shown.  
 8-hour average concentrations include a 1.7-ppm background concentration.  
 The S/NAAQS for the 1-hour average is 35.0 ppm.  
 The S/NAAQS for the 8-hour average is 9.0 ppm.



The signalized intersections in the build alternatives also result in an increase in CO concentrations. In the build alternatives two signals are present at the MD 43 / US 40 interchange (only one is present in the No-Build Alternative). A new signal is also added at MD 150 for Alternatives E and I Modified, where no signal is present in the No-Build Alternative. In Addition, all of the signalized intersections were modeled assuming the current roadway configuration on the existing roads (except for US 40 WB, where the existing median width can accommodate double left turning lanes). This assumption was made because no intersection configuration is finalized at this time. Using this assumption produces the worst case conditions for CO concentrations. These factors result in the increase in CO concentrations at these intersections. If the final design of the intersections allows more turning lanes and free flow movements, the length of the queues will decrease, and will result in lower CO concentrations.

#### 5. Conformity with Regional Air Quality Planning

The MRECAS is located in Baltimore County, Maryland. This county is not a non-attainment area for carbon monoxide (CO) but is a severe non-attainment area for ozone (O<sub>3</sub>). Since the project is located in an ozone non-attainment area, conformity to the State Implementation Plans (SIP's) is determined through a regional air quality analysis performed on the Transportation Improvement Plan (TIP) and transportation plan. This project is included in the current approved federally required State Transportation Improvement Program (STIP) and the current Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP). The STIP project number is 03NEW1 12-01-97.

#### 6. Analysis Input

##### a. Traffic Data

The traffic data used for this air quality analysis included average daily traffic volumes (ADTs), hourly a.m. and p.m. peak hour volumes, percent daily distributions (diurnal traffic curves), and peak and off-peak vehicle speeds. Traffic data was provided by the MD SHA for the MRECAS project for the years 2005 and 2020. Vehicle speeds were assumed to be the posted speed limits. This data was compiled for each alternative and each year of study.

Three signalized intersections were analyzed in the study area. They are US 40 / MD 43 (No-Build and Build); MD 43 / MD 150 / Warfield A.N.G. (No-Build and Build); and MD 43 / MD 150 (Build only). Signal timing at this intersections were assumed to be optimized based on current and future traffic.

##### 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 8-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% of vehicles are non-catalytic cold start vehicles, 27.3% are catalytic hot start vehicles, and 20.6% 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 provided by the MD SHA, and average regional vehicle ages were assumed.

The VEIP was modeled using two tests: The Idle Test (tailpipe test) is given for 1977 model year vehicles through 1983 model year vehicles, and for gasoline powered trucks weighing 10,001 through 26,000 pounds. The IM 240 test (treadmill test) is given for 1984 model year and newer vehicles; gasoline powered trucks weighing up to 10,000 pounds (model year 1984 and newer); and vehicles powered by propane or natural gas. Vehicles not included in the VEIP are new vehicles less than 24 months old; vehicles powered solely by diesel, motorcycles; vehicles weighing over 26,000 pounds; and 1976 model year and earlier vehicles. A biannual test was used, with a centralized inspection test only station. The start date used for the IM 240 test is January 1, 1998. The cutoff points used for the Idle Test are the default cutoff points in Mobile5b and are as follows: 220.0 ppm for hydrocarbons (HC); 1.20% for carbon monoxide (CO); and 999.0 (no units) for oxides of nitrogen (NOx). The cutoff points used for the IM240 Test are 0.8 grams per mile (GPM) for HC; 15.0 GPM for CO; and 2.0 GPM for NOx.

The Anti-Tampering Program (ATP) is part of the VEIP. The ATP checks for fuel inlet restrictor disablements, catalytic converter removals and the presence of gas caps. These checks are performed as part of both the Idle Test and the IM 240 Test. Reformulated gasoline was assumed in use in the area during the wintertime months. Fuel parameters used in MOBILE5b are fuel volatility Class B and a volatility limit 7.2-psi RVP for both Phases 1 and 2. The default Mobile5b market share of alcohol blends was used.

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 1-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 ADT's 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 8-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 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 in Table IV-20.

**Table IV-20: Meteorological factors and values during CAL3QHC analysis**

VARIABLE	VALUE
Averaging Time	60 minutes
Surface Roughness Coefficient	108 cm (Suburban Area)
Settling Velocity	0.0 cm/second
Deposition Velocity	0.0 cm/second
Mixing Height	1,000 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.

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 consideration.

The background levels, as shown in Table IV-21, were derived from the application of rollback methodology to on-site monitoring conducted by the Maryland Air and Radiation Management Administration at their Rockpikie Site in Montgomery County during the period of 1996.

Table IV-21: Background Carbon Monoxide Projected for Years 2005 and 2020.

Year	Background CO, PPM*	
	1-Hour	8-hour
2005	2.6	1.7
2020	2.6	1.7

Source: Maryland Air Quality Data Report, 1996, MDE

\* Parts Per Million

## M. Noise Quality

### 1. Introduction

As stated in Section III-K, fourteen (14) Noise Sensitive Areas, comprised of fifty-seven (57) individual noise sensitive receptors, were selected to represent the overall noise environment for areas affected by the alternatives under consideration. Locations of the noise receptors are shown on Figures II-7 to II-19, which can be found at the end of Section II of this document. A summary of anticipated impacts and recommended mitigation measures is presented in this section. In addition, a detailed Noise Quality Technical Analysis Report has been prepared and is available at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

### 2. Future Noise Impacts

All impact analyses were performed in conformance with Title 23 of the *Code of Federal Regulations*, Part 772 (23 CFR 772) and the Maryland State Highway Administration's (SHA) *Sound Barrier Policy* (May, 1998). Each noise receptor was analyzed to determine potential impacts from each of the alternatives. Impacts were assessed based upon the following criteria:

- Projected 2020 Design Year Noise Levels (DYNL) equal or exceed 66 dBA
- Projected 2020 DYNL exceed existing noise levels by more than 10dBA and exceed 57 dBA.

Prediction modeling was performed to assess projected 2020 DYNL and to assess noise abatement alternatives. All prediction modeling was performed using FHWA's Traffic Noise Model Version 1.0 (TNM). Features of TNM include:

- Expanded vehicle types for buses and motorcycles
- Enhanced vehicle emission level database (in 1/3 octave bands)
- New vehicle source heights
- New algorithms that properly deal with the complex effects of sound propagation and attenuation.

Design hour noise levels were projected based upon environmental traffic data developed by SHA's Travel Forecasting Division. Build alternatives were modeled with an average cruising speed of 50 MPH. Other roadway speeds were based on observed speeds. The results of the prediction modeling are shown in Table IV-22.

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Table IV-22: Predicted Design Year Noise Levels

Noise Sensitive Area			Receptor No.	Receptor Location	Existing Noise Level	2020 No-Build	D Mod	Rev. D Mod	D	E	I Mod	F <sub>1</sub> Mod
1	White Marsh Estates (Buttonwood Development)	Estates Lane	1	12142 Buttonwood Lane	54	54 <sup>1</sup>	---	---	---	---	---	58
			2	12150 Buttonwood Lane	54	54 <sup>1</sup>	---	---	---	---	---	62
			3	12158 Buttonwood Lane	54	54 <sup>1</sup>	---	---	---	---	---	66
			4	12151 Buttonwood Lane	54	54 <sup>1</sup>	---	---	---	---	---	57
			5	12155 Buttonwood Lane	54	54 <sup>1</sup>	---	---	---	---	---	58
2	White Marsh Estates		6	10124 Bird River Road	47	47 <sup>1</sup>	---	---	---	---	---	59
			7	Garage	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A
			8	Commercial	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A
3	White Marsh Estates (S. Bird River Road)		9	Commercial	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A
			10	Bird River Road	62	63	---	---	---	---	---	70
			11	Bird River Road	51	52	---	---	---	---	---	69
			12	10115 Bird River Road	51	51	---	---	---	---	---	63
			13	10108 Bird River Road	51	51 <sup>1</sup>	---	---	---	---	---	59
			14	Bird River Road	49	49	58	49	58	58	58	60
			15	10142 Bird River Road	58	60	63	58	63	63	63	63
			16	10140 Bird River Road	58	59	61	58	61	60	60	69
4	White Marsh Estates (N. Bird River Road)		17	10135 Bird River Road	62	61	---	62	---	---	---	69
			18A	5700 Hilltop Road	47	47 <sup>1</sup>	---	64	---	---	---	---
			18	5708 Hilltop Road	47	47 <sup>1</sup>	66	63	66	66	66	---
			19	5716 Hilltop Road	47	47 <sup>1</sup>	65	62	65	65	65	---
			20	5715 Hilltop Road	47	47 <sup>1</sup>	72	68	72	72	72	---
			21	5719 Hilltop Road	47	47 <sup>1</sup>	69	65	69	69	69	---
			22	10228 Bird River Road	65	58	67	66	67	66	66	---
			23	10226 Bird River Road	65	65	69	---	69	68	68	---
			24	10229 Bird River Road	63	62	67	66	67	66	66	---
			25	10225 Bird River Road	63	62	68	68	68	67	68	---
			26	10212 Bird River Road	61	67	68	70	68	68	68	---
5	Holly Hill Memorial Gardens		27	10208 Bird River Road	61	66	68	70	68	68	68	---
			28	Holly Hill Memorial Gardens	55	55 <sup>1</sup>	62	61	63	61	61	52
			29	Holly Hill Memorial Gardens	52	52 <sup>1</sup>	56	54	67	67	59	---
6	Bevans Lane Properties		30	Holly Hill Memorial Gardens	52	52 <sup>1</sup>	---	---	---	---	---	62
			31	10102 Bevans Lane	49	49 <sup>1</sup>	60	62	58	58	59	---
			32	10100 Bevans Lane	49	49 <sup>1</sup>	65	---	60	59	60	---
			33	10204 Bevans Lane	48	48 <sup>1</sup>	55	53	52	51	53	---
			34	10124 Bevans Lane	48	48 <sup>1</sup>	55	52	52	52	52	---

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Noise Sensitive Area	Receptor No.	Receptor Location	Existing Noise Level	2020 No-Build	D Mod	Rev. D Mod	D	E	I Mod	F <sub>1</sub> Mod	
7	Stoecker Lane Properties	35	Abandoned Buildings	N/A	N/A	N/A	---	N/A	N/A	N/A	
8	White Marsh Farms	36	1000 Meadow Glen Road	52	52 <sup>1</sup>	---	---	---	---	56	
		37	1001 Rohe Farm Lane	52	52 <sup>1</sup>	---	---	---	---	56	
		38	991 Rohe Farm Lane	52	52 <sup>1</sup>	---	---	---	---	59	
9	Bengies Road Properties	39	3016 Bengies Road	49	49 <sup>1</sup>	58	---	58	---	57	
10	New Bengies Road	40	143 Bengies Road	49	49 <sup>1</sup>	---	---	---	53	58	---
		41	129 Bengies Road	49	49 <sup>1</sup>	---	---	---	56	58	---
		42	133 Bengies Road	49	49 <sup>1</sup>	---	---	---	58	54	---
		43	125 Bengies Road	49	49 <sup>1</sup>	---	---	---	---	58	---
11	Chase	44	Christian Missionary Alliance Fellowship Church	65	63	---	---	---	65	65	---
		45	7 Bowleys Quarters Road	63	61	---	---	---	62	62	---
		46	11530 Eastern Ave. Extended	54	54 <sup>1</sup>	---	---	---	62	62	---
		47	11528 Eastern Ave. Extended	60	58	---	---	---	62	62	---
		48	11522 Eastern Ave. Extended	65	71	---	---	---	72	72	---
		49	Chase Elementary School	62	67	---	---	---	65	65	---
12	Williams Estates	50	141 Rodeo Circle	51	51 <sup>1</sup>	---	---	---	55	53	---
		51	135 Rodeo Circle	51	51 <sup>1</sup>	---	---	---	56	54	---
		52	127 Rodeo Circle	51	51 <sup>1</sup>	---	---	---	58	54	---
		53	123 Rodeo Circle	51	51 <sup>1</sup>	---	---	---	57	56	---
13	Earls Road Properties	54	130 Earls Road	50	50 <sup>1</sup>	---	---	---	---	52	---
		55	Earls Road	50	50 <sup>1</sup>	---	---	---	---	50	---
		56	Earls Road	48	48 <sup>1</sup>	---	---	---	---	49	---
14	GSA Depot	57	GSA Depot	56	57	60	---	60	---	60	

<sup>1</sup> Receptors that are isolated from the existing road way system. No build noise levels are estimated from monitored levels.

<sup>2</sup> Property to be acquired.

Noise levels which exceed SHA impact criteria.

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### 3. Impact Assessment

The Maryland State Highway Administration (SHA) Sound Barrier Policy, dated May 11, 1998, states that mitigation shall be considered for receptors that will experience future noise levels equal to or exceeding 66 dBA, or exceeding existing noise levels by 10 dBA or more, resulting from the construction of new highways or through lane additions to existing highways. Table IV-22 (above) shows those receptors being impacted by each of the alternatives and the Noise Sensitive Area where each receptor is located. The following is a summary of potential traffic noise impacts at each Noise Sensitive Area:

#### ***NSA 1 (White Marsh Estates-Buttonwood Lane Development)***

NSA 1 will be affected by Alternative F<sub>1</sub> Modified only. Receptors 1, 2, and 3 were selected to represent the first row of homes adjacent to Alternative F<sub>1</sub> Modified. Receptors 4 and 5 represent the second row. No-Build noise levels were estimated to be 54 dBA, given the isolated nature of this development. Alternative F<sub>1</sub> Modified noise levels were projected to be 58 dBA and 62 dBA at Receptors 1 and 2. Receptors 4 and 5 will experience noise levels of 51 and 58, respectively. All of these noise levels are below the SHA criterion. Only Receptor 3 will experience noise levels equal to or exceeding the SHA criteria. The design year Alternative F<sub>1</sub> Modified noise levels at Receptor 3, will be 66 dBA.

#### ***NSA 2 (White Marsh Estates)***

Only Alternative F<sub>1</sub>-Modified affects NSA 2. The No-Build noise level was estimated to be 47 dBA and the noise level from Alternative F<sub>1</sub>-Modified was projected to be 59 dBA, which is more than 10 dBA higher than existing levels.

#### ***NSA 3 (White Marsh Estates- South Bird River Road)***

Receptors 10 through 17 represent NSA 3. Alternative F<sub>1</sub> Modified affects the acoustic environment of Receptors 10 through 17, while Alternatives D, D Modified, Revised D Modified, E, and I Modified affect Receptors 14, 15, and 16.

#### **No-Build Alternative**

None of the receptors will experience noise levels exceeding SHA impact criteria. The locations for Receptors 10, 15, 16, and 17 were in the front yards of residences adjacent to Bird River Road, which dominate traffic design year No-Build noise levels. Receptor locations 11, 12, 13, and 14 are either isolated or in the rear yard of residences.

#### **Alternatives D, D Modified, Revised D Modified (SHA's Selected Alternative), E, and I Modified**

Receptors 14, 15, and 16 are acoustically affected by these alternatives, which cross Bird River Road on the overpass. None of these receptors will experience noise levels exceeding SHA impact criteria.

#### **Alternative F<sub>1</sub>-Modified**

Receptors 10, 11, 16, and 17 will experience noise levels exceeding the 66 dBA criteria, while noise levels at Receptors 12 and 14 will exceed existing levels by



more than 10 dBA. Noise levels at Receptors 13 and 15 will not exceed SHA criteria, and are not impacted.

**NSA 4 (White Marsh Estates – North Bird River Road)**

Receptors 18 - 25 represent Noise Sensitive Area 4 and are influenced by Alternatives D, D Modified, Revised D-Modified, E, and I Modified.

**No- Build Alternative**

Only Receptors 26 and 27 will experience noise levels exceeding SHA criteria in the No- Build condition. Receptors 18 through 21 are isolated and Receptors 22 through 27 are heavily influenced by traffic noise from Bird River Road.

**Alternatives D, D Modified, Revised D-Modified, E, and I Modified**

Each receptor will experience noise levels exceeding SHA criteria. Receptors 22 through 27 are heavily influenced by traffic noise from Bird River Road.

**NSA 5 (Holly Hill Memorial Gardens)**

Three (3) sites were selected as representative of this cemetery. Receptors 28 and 29 represent areas of the cemetery most influenced by Alternatives D, D Modified, Revised D-Modified, E, and I Modified. The area near Receptor 29 is influenced by Alternative F<sub>1</sub>-Modified.

**No-Build Alternative**

None of these receptors will experience noise levels exceeding SHA criteria will not be impacted by the No-Build Alternative.

**Alternatives D, D Modified, Revised D-Modified, E, and I Modified**

Receptor 28 will experience noise levels between 61dBA and 63dBA depending on the alternative selected. None of these predicted noise levels exceed SHA impact criteria. Receptor 29 will be influenced differently depending on the alternative selected. Alternatives D and E will result in noise levels exceeding impact criteria, while Alternatives D Modified, Revised D-Modified and I Modified are farther from Receptor 29 and will not exceed the noise impact criteria.

**Alternative F<sub>1</sub> Modified**

A 62 dBA predicted noise level will occur at Receptor 29. This exceeds existing noise levels by 10 dBA, resulting in an impact.

**NSA 6 (Bevans Lane Properties)**

Receptors 31 through 34 represent NSA 6 and are affected acoustically by Alternatives D, D Modified, Revised D-Modified, E, and I Modified. Receptors 33 and 34 are 1000' from the closest alternative (Alternative D Modified, Revised D-Modified) and will not experience noise levels exceeding SHA criteria. Receptors 31 and 32 will not experience noise levels equal to or exceeding 66 dBA resulting from any alternative, but will experience noise levels equal to or greater than 10 dBA higher than existing levels, as a result of Alternatives D Modified, Revised D-Modified and I Modified. Alternatives D and E will impact Receptor 32 only.

***NSA 7 (Stoecker Lane Properties)***

Upon field evaluation, it was found that the buildings comprising NSA 7 were abandoned and overgrown with vegetation. Therefore, NSA 7 was not evaluated.

***NSA 8 (White Marsh Farms)***

The individual residences in this relatively new development are represented by Receptors 36, 37, and 38. Based upon SHA impact criteria, none of the receptors will experience noise levels that equal or exceed either SHA criterion.

***NSA 9 (Bengies Road Properties)***

This single family residence and associated out buildings are isolated and surrounded by woodland. This residence will not experience noise levels exceeding SHA impact criteria.

***NSA 10 (New Bengies Road)***

Receptors 40 through 43 represent this NSA and will not experience noise levels exceeding SHA criteria.

***NSA 11 (Chase)***

NSA 11 is represented by Receptors 44 through 48. They are acoustically influenced by Alternatives E and I Modified. Only Receptor 48 will experience noise levels equal to or exceeding SHA criteria. Receptor 48 is the only receptor located closely to both the proposed alternatives and Eastern Avenue Extended. It is therefore influenced by both alternatives. Receptor 49 (Chase Elementary School) will also exceed 66 dBA for the No-Build Alternative.

***NSA 12 (Williams Estates)***

This large mobile home park is represented by Receptors 50 through 53 which are the four receptors closest to Alternatives E and I Modified. None of these receptors will exceed SHA criteria in the 2020 design year.

***NSA 13 (Earls Road Properties)***

NSA 13 is represented by Receptors 54 through 56 and is acoustically influenced by Alternative I Modified. Given their relative distance from Alternative I Modified (900' - 1300'), these receptors will not exceed SHA criteria in the design year.

***NSA 14 (GSA Depot)***

This commercial/industrial area is acoustically influenced by Alternatives D, D Modified, Revised D-Modified, and F<sub>1</sub> Modified and will not exceed SHA criteria in the design year. The "traffic option with no eastbound movements from US 40" yields noise levels 1 - 4 dBA lower than the "traffic option with eastbound movements at US 40". Impacts from both traffic options however, generally remain the same for individual Noise Sensitive Areas. Therefore, barrier evaluation and analysis was performed based upon worst case noise levels (the option with eastern movements at US 40). Barrier insertion loss remains the same regardless of either traffic option.

#### 4. Feasibility and Reasonability of Noise Control

According to the SHA Sound Barrier Policy, decisions concerning the provision of sound barriers will be made after evaluation of the feasibility and reasonableness of barriers. Sound barrier feasibility is defined as the engineering and acoustical ability to provide effective noise reduction. The determination of the feasibility of a noise barrier is dependent upon the relationship of the highway to the adjacent community. The elevations of the highway and adjacent development must be such that a barrier of reasonable height can be constructed to provide a desirable noise reduction of 7 to 10 (minimum 3) dBA. Other factors, such as available right-of-way, constructability and safety are also considered in determining noise barrier feasibility. To that end, the policy establishes feasibility and reasonability criteria as guidelines to determine if noise barriers should be constructed. The elements of SHA's sound barrier feasibility criteria include the following:

##### ***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 substantial impact upon a Section 4(f) resource.

##### ***Reasonableness Criteria***

- The majority of impacted receptors should receive 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 or greater than 3 dBA.
- Build noise 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 substantial negative visual impact.
- The cost of noise abatement is equal to or less than \$50,000 per residence benefited. (However, barriers with a cost of \$50,000 to \$100,000 will be considered reasonable if the combined cost of mitigation per residence on the entire project does not exceed \$50,000).
- There are special circumstances (e.g. historical or cultural significance).

According to SHA policy, only barriers that are determined to be feasible and reasonable will be approved.

#### 5. Barrier Evaluations and Recommendations

Table IV-23 identifies the noise sensitive areas where noise barriers were evaluated. Noise barrier preliminary cost is based upon a figure of \$16.54 per square foot. Following the table is a brief description of the barrier evaluations.

**Table IV-23: Noise Barrier Evaluation Locations**

Alternative Revised D-Mod	Alternative D	Alternative D-Mod	Alternative E	Alternative F <sub>1</sub> -Mod	Alternative I-Mod
NSA 4	NSA 4	NSA 4	NSA 4	NSA 1	NSA 4
NSA 6	NSA 5		NSA 5	NSA 2	
	NSA 6	NSA 6	NSA 6	NSA 3	NSA 6
			NSA 11	NSA 5	NSA 11

a. Alternative Revised D-Modified

Topographic and right of way constraints preclude the construction of earth berms adjacent to the proposed highway as an effective solution for traffic noise mitigation. Therefore, three sound barrier systems were evaluated at these locations to determine their feasibility and reasonableness.

**Barrier 1 (South of the Proposed Highway)  
 NSA 4 (White Marsh Estates – North Bird River Road)  
Receptors 26 and 27**

Receptors 26 and 27 are in close proximity to Bird River Road and are influenced acoustically by Bird River Road traffic. The residence immediately to the north of Receptor 26, on the west side of Bird River Road, will be acquired. Design year noise levels will equal or exceed the 66 dBA criterion at each receptor. A sound barrier 1630' long, located at the top of the fill slope and crossing Bird River Road on the elevated structure, was evaluated using the "Barrier Analysis" module of TNM. Ten different barrier profiles were evaluated ranging in height from 10' to 28'. Receptors 14-17, within NSA 3, were added to the evaluation to determine if this barrier could also benefit them.

Regardless of barrier height, insertion loss was limited at all receptors due to the high degree of acoustic influence from Bird River Road. A 28' high barrier provides insertion losses of 1 to 2 dBA at impacted residences (Receptors 26 and 27). Non-impacted residences (Receptors 14-17) will experience insertion losses ranging from 1 to 4 dBA, depending on their distance from Bird River Road. Only Receptors 26 and 14 attain insertion losses greater than 1 dBA.

The preliminary cost of Barrier 1 is \$755,810. Based on SHA's minimum noise reduction criteria, there are no benefited receptors as a result of this barrier. Barrier 1 is not consistent with SHA's sound barrier criteria for cost per benefited residence of \$50,000 or less. In addition, access driveways preclude extending the barrier south on Bird River Road that would increase insertion loss. Therefore, this barrier is considered neither feasible, per SHA's sound barrier criteria.

**Barrier 2 (North side of the Proposed Highway)  
 NSA 4 (White Marsh Estates – North Bird River Road)  
Receptors 18-25**

Receptor 23, as identified in the original report, will require acquisition due to the shift in the horizontal alignment, and was eliminated from this evaluation. Receptors 18 through 25 can be categorized into two classifications, those affected by Bird River Road traffic noise and those that are isolated and not affected by Bird River Road traffic noise. Receptors 18-21 are adjacent

to Hilltop Road and are relatively isolated. Receptors 22-25 are immediately adjacent to Bird River Road and are influenced by its traffic noise.

A sound barrier 2480' long, at the top of the fill slope and crossing Bird River Road on the elevated structure, was evaluated using TNM's "Barrier Analysis" module. Nine (9) different barrier profiles were evaluated. Eight (8) profiles were of constant height ranging from 10' to 24' and the ninth profile was a barrier of variable height to optimize cost effectiveness.

A sound barrier 2480' long, ranging in height from 6' to 16', will provide a 9 to 11 dBA insertion loss at the first row of impacted residences adjacent to Hilltop Road. Noise levels at the second row of residences on Hilltop Road will be reduced by 7 to 8 dBA. Insertion loss at Receptors 22-25 is limited to 4 to 5 dBA, due to their proximity to Bird River Road. The estimated cost of Barrier 2 is \$539,450.

All nine (9) impacted residences will receive a minimum of 3 dBA insertion loss. In addition, it is anticipated that two (2) non-impacted residences will receive a minimum of 5 dBA insertion loss. The resultant cost per benefited residence is less than the \$50,000 criterion (\$49,041). Therefore, Barrier 2 is considered feasible and reasonable, per SHA's sound barrier criteria.

**Barrier 3 (North of the Proposed Highway)  
NSA 6 (Bevans Lane Properties)**

**Receptor 31**

Of the two originally impacted receptors at NSA 6, only Receptor 31 was evaluated for this study. The proposed alignment shift would require the acquisition of Receptor 32. A sound barrier 1130' long and 14'-30' high, at Receptor 31, will provide an insertion loss consistent with the 7 to 10 dBA SHA goal for sound barriers. The preliminary cost of Barrier 3 is \$388,440. Since only one (1) residence would be benefited, this barrier is not consistent with the SHA cost per benefited residence criterion. Barrier 3 is not considered feasible or reasonable, per SHA's sound barrier criteria.

b. Alternative D

**Barrier 1 (South Side of Alternative)  
NSA 4 (White Marsh Estates - North Bird River Road)**

**Receptors 26 and 27**

Receptors 26 and 27 are in close proximity to Bird River Road and are influenced acoustically by traffic noise from Bird River Road. No-build noise levels will exceed the 66 dBA SHA criteria. A barrier located at the top of the fill slope for the alternative was analyzed. This barrier was 1714' long and 16' high and crosses Bird River Road on the elevated structure. Insertion loss from this barrier was limited to 1 dBA due to the high degree of acoustic influence from Bird River Road. Without Bird River Road, this barrier could reduce MREC noise levels 7 dBA. The barrier evaluated had an estimated cost of \$453,500.

This barrier does not achieve the SHA cost per benefiting receptor criteria of \$50,000 or less. In addition, access driveways on Bird River Road preclude extending the barrier south on Bird

River Road to increase insertion loss at these receptors. Therefore this barrier is not considered feasible or reasonable and is not recommended for construction.

**Barrier 2 (North Side of Alternative)**

**NSA 4 (White Marsh Estates - North Bird River Road)**

**Receptors 18-25**

Receptors 18 through 25 can be separated into two categories. Receptors 18-21 are adjacent to either side of Hilltop Road and are relatively isolated from Bird River Road traffic. Receptors 22-25 are in close proximity to Bird River Road and are substantially affected by Bird River Road traffic noise. No-build noise levels at these locations range from 58 dBA in the rear yard of the receptor 22 to 65 dBA in the front yards. A barrier at the top of the fill slope for the alternative was analyzed. This barrier was 6'-20' high and 2093' long and crosses Bird River Road on an elevated structure. An 11-13 dBA insertion loss can be attained at the first row of homes on Hilltop Road (Receptors 20 and 21). A 5-7 dBA insertion loss is anticipated at the second row of homes (Receptors 18 and 19). Receptors 22-26 would receive effective abatement if not for traffic noise contributions from Bird River Road. However, insertion loss at these receptors is limited to 1-4 dBA, due to Bird River Road. The estimated cost of this barrier is \$567,800.

All ten (10) impacted receptors receive a minimum 3 dBA insertion loss. Three (3) of the receptors achieve at least a 7 dBA insertion loss. The resultant cost per benefiting receptor is less than \$50,000 (\$47,317) therefore this barrier is recommended for consideration in final design if Alternative D is selected.

**Barrier 3 (South Side of Alternative)**

**NSA 5 (Holly Hill Memorial Gardens)**

**Receptor 29**

A barrier 1797' long, ranging from 10'-22' high was evaluated and provided an insertion loss of 10 dBA within this area of the cemetery. The estimated cost of this barrier is \$473,700.

It is recommended that this barrier be considered in final design if Alternative D is selected. A 7 dBA insertion loss can be achieved with a resultant cost per benefiting receptor less than \$50,000 (\$47,370).

**Barrier 4 (North Side of Alternative)**

**NSA 6 (Bevans Lane Properties)**

**Receptors 31 and 32**

A barrier 2034' long and 16' high will provide a 4 and 5 dBA insertion loss at Receptors 31 and 32, respectively. This barrier is estimated to cost \$538,200.

This barrier is not consistent with the SHA criteria for cost per benefiting receptor of \$50,000 or less. Therefore, it is considered not reasonable and not recommended for construction.

c. Alternative D Modified

**Barrier 1 (South Side of Alternative)**  
**NSA 4 (White Marsh Estates - North Bird River Road)**  
**Receptors 26 and 27**

Receptors 26 and 27 are in close proximity to Bird River Road and are influenced acoustically by traffic noise from Bird River Road. No-build noise levels will exceed the 66 dBA SHA criteria. A barrier located at the top of the fill slope for the alternative was analyzed. This barrier was 1714' long and 16' high and crosses Bird River Road on the elevated structure. Insertion loss from this barrier was limited to 1 dBA due to the high degree of acoustic influence from Bird River Road. Without Bird River Road, this barrier could reduce MREC noise levels 7 dBA. The barrier evaluated had an estimated cost of \$453,500.

This barrier is not consistent with the SHA criteria for cost per benefiting receptor of \$50,000 or less. In addition, access driveways on Bird River Road preclude extending the barrier south on Bird River Road to increase insertion loss at these receptors. Therefore this barrier is considered neither feasible nor reasonable and is not recommended for construction.

**Barrier 2 (North Side of Alternative)**  
**NSA 4 (White Marsh Estates - North Bird River Road)**  
**Receptors 18-25**

Receptors 18 through 25 can be categorized into two categories. Receptors 18-21 are adjacent to either side of Hilltop Road and are relatively isolated from Bird River Road traffic. Receptors 22-25 are in close proximity to Bird River Road and are substantially affected by Bird River Road traffic noise. No-build noise levels at these locations range from 58 dBA in the rear yard of the receptor 22 to 65 dBA in the front yards. A barrier at the top of the fill slope for the alternative was analyzed. This barrier was 6'-20' high and 2093' long and crosses Bird River Road on an elevated structure. An 11-13 dBA insertion loss can be attained at the first row of homes on Hilltop Road (Receptors 20 and 21). A 5-7 dBA insertion loss is anticipated at the second row of homes (Receptors 18 and 19). Receptors 22-26 would receive effective abatement if not for traffic noise contributions from Bird River Road. However, insertion loss at these receptors is limited to 1-4 dBA, due to Bird River Road. The estimated cost of this barrier is \$567,800.

All ten (10) impacted receptors receive a minimum 3 dBA insertion loss. Three (3) of the receptors achieve at least a 7 dBA insertion loss. The resultant cost per benefiting receptor is less than \$50,000 (\$47,317) therefore this barrier is recommended for consideration in final design for SHA Selected Revised Alternative D Modified.

**Barrier 3 (North Side of Alternative)**  
**NSA 6 (Bevans Lane Properties)**  
**Receptors 31 and 32**

Traffic noise from alternative D Modified/Revised D-Modified has the most severe impact on receptors 31 and 32. A barrier 1150' long and 14'-20' high will yield an insertion loss of 8 dBA. This barrier is estimated to cost \$427,800. This barrier is not consistent with the SHA criteria for

cost per benefiting receptor of \$50,000 or less. It is not considered reasonable and not recommended for construction.

d. Alternative I Modified

**Barrier 1 (South Side of Alternative)**  
**NSA 4 (White Marsh Estates - North Bird River Road)**  
**Receptors 26 and 27**

Receptors 26 and 27 are in close proximity to Bird River Road and are influenced acoustically by traffic noise from Bird River Road. No-build noise levels will exceed the 66 dBA SHA criteria. A barrier located at the top of the fill slope for the alternative was analyzed. This barrier was 1714' long and 16' high and crosses Bird River Road on the elevated structure. Insertion loss from this barrier was limited to 1 dBA due to the high degree of acoustic influence from Bird River Road. Without Bird River Road, this barrier could reduce MREC noise levels 7 dBA. The barrier evaluated had an estimated cost of \$453,500.

This barrier is not consistent with the SHA criteria for cost per benefiting receptor of \$50,000 or less. In addition, access driveways on Bird River Road preclude extending the barrier south on Bird River Road to increase insertion loss at these receptors. Therefore this barrier is considered neither feasible nor reasonable and is not recommended for construction.

**Barrier 2 (North Side of Alternative)**  
**NSA 4 (White Marsh Estates - North Bird River Road)**  
**Receptors 18-25**

Receptors 18 through 25 can be categorized into two categories. Receptors 18-21 are adjacent to either side of Hilltop Road and are relatively isolated from Bird River Road traffic. Receptors 22-25 are in close proximity to Bird River Road and are substantially affected by Bird River Road traffic noise. No-build noise levels at these locations range from 58 dBA in the rear yard of the receptor 22 to 65 dBA in the front yards. A barrier at the top of fill slope for the alternatives was analyzed. This barrier was 6'-20' high and 2093' long and crosses Bird River Road on an elevated structure. An 11-13 dBA insertion loss can be attained at the first row of homes on Hilltop Road (Receptors 20 and 21). A 5-7 dBA insertion loss is anticipated at the second row of homes (Receptors 18 and 19). Receptors 22-26 would receive effective abatement if not for traffic noise contributions from Bird River Road. However, insertion loss at these receptors is limited to 1-4 dBA, due to Bird River Road. The estimated cost of this barrier is \$567,800.

All ten (10) impacted receptors receive a minimum 3 dBA insertion loss. Three (3) of the receptors achieve at least a 7 dBA insertion loss. The resultant cost per benefiting receptor is less than \$50,000 (\$47,317) therefore this barrier is recommended for consideration in final design if Alternative I Modified is selected.



**Barrier 3 (North Side of Alternative)**

**NSA 6 (Bevans Lane Properties)**

**Receptors 31 and 32**

A barrier 1932' long and 16' high will provide an insertion loss of 5 dBA at Receptors 31 and 32. The estimated cost of this barrier is \$511,200.

This barrier is not consistent with SHA's cost per benefiting receptor criteria. It is therefore not reasonable and not recommended for construction.

**Barrier 4 (South Side of Alternative)**

**NSA 11 (Chase)**

**Receptor 48**

A sound barrier for Receptors 46 through 48 was analyzed for these first row homes. Receptor 46 is isolated and greater than 700' from Eastern Avenue Extended. Receptor 48, on the other hand, is immediately adjacent to and is highly affected by traffic noise from Eastern Avenue Extended. The No-Build projection for Receptor 48 is 71 dBA. The barrier evaluated is 1205' long and 16' high and provides a 7 dBA insertion loss at Receptor 46. This same insertion is expected at Receptor 48, if not for traffic noise from Eastern Avenue Extended. As a result, the barrier insertion loss at Receptor 48 is limited to 1 dBA. The barrier cost is estimated at \$318,900.

This barrier is not consistent with SHA's cost per benefiting receptor criteria. It is therefore not reasonable and not recommended for construction.

e. Alternative E

**Barrier 1 (South Side of Alternative)**

**NSA 4 (White Marsh Estates - North Bird River Road)**

**Receptors 26 and 27**

Receptors 26 and 27 are in close proximity to Bird River Road and are influenced acoustically by traffic noise from Bird River Road. No-build noise levels will exceed the 66 dBA SHA criteria. A barrier located at the top of the fill slope for the alternative was analyzed. This barrier was 1714' long and 16' high and crosses Bird River Road on the elevated structure. Insertion loss from this barrier was limited to 1 dBA due to the high degree of acoustic influence from Bird River Road. Without Bird River Road, this barrier could reduce MREC noise levels 7 dBA. The barrier evaluated had an estimated cost of \$453,500.

This barrier is not consistent with SHA's cost per benefiting receptor criteria. In addition, access driveways on Bird River Road preclude extending the barrier south on Bird River Road necessary to increase insertion loss at these receptors. Therefore, this barrier is neither feasible nor reasonable and not recommended for construction.

**Barrier 2 (North Side of Alternative)  
NSA 4 (White Marsh Estates - North Bird River Road)  
Receptors 18-25**

Receptors 18 through 25 can be categorized into two categories. Receptors 18-21 are adjacent to either side of Hilltop Road and are relatively isolated from Bird River Road traffic. Receptors 22-25 are in close proximity to Bird River Road and are substantially affected by Bird River Road traffic noise. No-build noise levels at these locations range from 58 dBA in the rear yard of the receptor 22 to 65 dBA in the front yards. A barrier at the top of fill slope for the alternatives was analyzed. This barrier was 6'-20' high and 2093' long and crosses Bird River Road on an elevated structure. An 11-13 dBA insertion loss can be attained at the first row of homes on Hilltop Road (Receptors 20 and 21). A 5-7 dBA insertion loss is anticipated at the second row of homes (Receptors 18 and 19). Receptors 22-26 would receive effective abatement if not for traffic noise contributions from Bird River Road. However, insertion loss at these receptors is limited to 1-4 dBA, due to Bird River Road. The estimated cost of this barrier is \$567,800.

All ten (10) impacted receptors receive a minimum 3 dBA insertion loss. Three (3) of the receptors achieve at least a 7 dBA insertion loss. The resultant cost per benefiting receptor is less than \$50,000 (\$47,317) therefore this barrier is recommended for consideration in final design if Alternative E is selected.

**Barrier 3 (South Side of Alternative)  
NSA 5 (Holly Hill Memorial Gardens)  
Barrier on South Side of Alternative  
Receptor 29**

A barrier 1797' long, ranging from 10'-22' high was evaluated and provided an insertion loss of 10 dBA within this area of the cemetery. The estimated cost of this barrier is \$473,700.

Since more than 7 dBA insertion loss can be achieved and the cost per benefiting receptor is less than \$50,000 (\$47,370), it is recommended that this barrier be considered in final design if Alternative E is selected.

**Barrier 4 (North Side of Alternative)  
NSA 6 (Bevans Lane Properties)  
Receptors 31 and 32**

A barrier 2034' long and 16' high will provide a 4 and 5 dBA insertion loss at Receptors 31 and 32, respectively. This barrier is estimated to cost \$538,200.

This barrier is not consistent with the SHA criteria for cost per benefiting receptor. Therefore, it is considered not reasonable and not recommended for construction.

**Barrier 5 (South Side of Alternative)  
NSA 11 (Chase)  
Receptor 48**

A sound barrier for Receptors 46 through 48 was analyzed for these first row homes. Receptor 46 is isolated and greater than 700' from Eastern Boulevard. Receptor 48, on the other hand, is

immediately adjacent to and is highly affected by traffic noise from Eastern Boulevard. The No-Build projection for receptor 48 is 71 dBA. The barrier evaluated is 1205' long and 16' high and provides a 7 dBA insertion loss at Receptor 46. This same insertion is expected at Receptor 48, if not for traffic noise from Eastern Boulevard. As a result, the barrier insertion loss at Receptor 48 is limited to 1 dBA. The barrier cost is estimated at \$318,900.

This barrier is not consistent with the SHA criteria for cost per benefiting receptor. Therefore, it is considered not reasonable and not recommended for construction.

f. Alternative F<sub>1</sub> Modified

**Barrier 1 (South Side of Alternative)**

**NSA 1, 2, 3 (White Marsh Estates, Buttonwood Lane Development, and S. Bird River Rd.)  
Receptors 3, 6, 10, 11, 12**

A barrier atop the Alternative F<sub>1</sub>- Modified cut slope was analyzed. This barrier is segmented by Bird River Road structure resulting in a gap in the noise barrier. The barrier has a total length of 3435' and ranges from 14'-16' high.

Receptor 3 will receive a 12 dBA barrier insertion loss. Insertion losses vary between 9 dBA and 5 dBA respectively at receptors 1 and 2. Second row insertion losses range between 2 and 6 decibels. A 7 dBA insertion loss can be achieved at NSA 2. Receptor locations 11 and 12 are located in the backyards of residences adjacent to Bird River Road. They are less influenced by Bird River Road traffic noise and attain 10 and 8 dBA insertion losses. The location of receptor 10 is in the front yard of the residence and there is a high degree of acoustic influence from Bird River Road. No-build noise levels for Receptor 10 are projected to be 63 dBA. This close proximity, as well as the barrier gap to allow Bird River Road to cross the alignment, limit the insertion loss for Receptor 10 to 5 dBA. The estimated barrier cost is \$855,000.

This barrier is recommended for consideration during final design. Nine of the ten impacted receptors will receive an insertion loss equal to or greater than 7 dBA with a cost per benefiting receptor value less than \$50,000 (\$42,700),

**Barrier 2 (North Side of Alternative)**

**NSA 3 and 5 (White Marsh Estates and Holly Hill Memorial Gardens)  
Receptors 14, 16, 17 and 30**

A barrier atop the Alternative F<sub>1</sub>-Modified cut slope was analyzed for noise sensitive areas 3 and 5. This barrier is segmented by Bird River Road structure resulting in a gap in the noise barrier. This barrier has a total length of 2895' and ranges from 16' to 24' high. 7 dBA insertion losses are expected at Receptors 14, 16 and 17. The insertion loss at Receptors 16 and 17 is limited by its proximity to Bird River Road and the necessary gap in the barrier.

The barrier provided an 8 dBA insertion loss for the area of the cemetery surrounding Receptor 30. The estimated barrier cost is \$951,800.

This barrier is not consistent with the SHA cost per benefiting receptor criteria. It is therefore not considered reasonable and is not recommended for construction.

Tables IV-24, IV-25, IV-26, IV-27, IV-28 and IV-29 summarize noise barrier cost per benefitting receptor for each alternative. In addition, Table IV-29 summarizes the cost averaging calculations for Alternative F<sub>1</sub> Modified. SHA Policy permits cost averaging of individual noise barriers of less than \$100,000 per benefitting receptor, per alternative. Preliminary construction costs for recommended barriers are summarized in Table IV-30.

Feasibility and reasonableness worksheets were completed for each noise sensitive area. These worksheets will be finalized during and prior to the completion of final project engineering. It is the Maryland Department of Transportation, State Highway Administration's policy that decisions on where to provide sound barriers will be made after evaluation of the feasibility and reasonableness of barriers. It is the SHA's policy to make final decisions on the construction of Type I (new highways or improvement of existing highways) sound barriers during the final design phase of project development, after final horizontal and vertical alignments are determined and detailed engineering analysis of the feasibility and reasonability of noise abatement can be made. Barriers that meet the SHA criteria, as accepted by FHWA, will be constructed.

It should also be noted that SHA will also consider non-sound barrier options for areas which meet the eligibility date criterion for consideration of a barrier, but do not meet all of the remaining criteria for a barrier. These options could include the installation of landscape screening or privacy fencing for areas which meet the eligibility date criterion, but do not meet all of the remaining criteria for a barrier.

In summary, the following sound barrier is recommended for consideration during final design based upon consistency with the SHA sound barrier feasibility and reasonableness criteria:

***Revised D Modified (SHA's Selected Alternative)***

- Barrier 2 -NSA 4

Table IV-24: Noise Barrier Cost Per Benefiting Receptor Calculations for Revised D Modified (SHA's Selected Alternative)

Noise Sensitive Area	Total Number of Receptors Impacted	Number of Impacted Receptors Receiving at least 3 dBA Insertion Loss	Additional Non-Impacted Receptors Receiving at least 5 dBA Insertion Loss	Total No. of Benefiting Receptors	Preliminary Noise Barrier Cost	Cost per Benefiting Receptor
Barrier 1 (Barrier on South Side of Alternative) NSA 4	2	0	0	0 <sup>1</sup>	\$755,810	----
Barrier 2 (Barrier on North Side of Alternative) NSA 4	9	9	2	11	\$539,450	\$49,041
Barrier 3 (Barrier on North Side of Alternative) NSA 6	1	1	0	1	\$388,440	\$388,440

<sup>1</sup> Barrier insertion loss limited due to acoustic influence from Bird River Road.

Table IV-25: Noise Barrier Cost Per Benefiting Receptor Calculations for Alternative D

Noise Sensitive Area	Total Number of Receptors Impacted	Number of Impacted Receptors Receiving at least 3 dBA Insertion Loss	Additional Non-Impacted Receptors Receiving at least 5 dBA Insertion Loss	Total No. of Benefiting Receptors	Preliminary Noise Barrier Cost	Cost per Benefiting Receptor
Barrier 1 (Barrier on South Side of Alternative) NSA 4	3	0	0	0 <sup>2</sup>	\$453,500	----
Barrier 2 (Barrier on North Side of Alternative) NSA 4	10	10	2	12	\$567,800	\$47,317
Barrier 3 NSA 5	1	0	0	10 <sup>1</sup>	\$473,700	\$47,370
Barrier 4 NSA 6	2	2	0	2	\$538,200	\$269,100

<sup>1</sup> The Holly Hill Memorial Gardens received an equivalent 10 residences per benefiting receptor.

<sup>2</sup> Barrier insertion loss limited due to acoustic influence from Bird River Road.

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Table IV-26: Noise Barrier Cost Per Benefiting Receptor Calculations for Alternative D Modified

Noise Sensitive Area	Total Number of Receptors Impacted	Number of Impacted Receptors Receiving at least 3 dBA Insertion Loss	Additional Non-Impacted Receptors Receiving at least 5 dBA Insertion Loss	Total No. of Benefiting Receptors	Preliminary Noise Barrier Cost	Cost per Benefiting Receptor
Barrier 1 (Barrier on South Side of Alternative) NSA 4	3	0	0	0 <sup>1</sup>	\$453,500	-----
Barrier 2 (Barrier on North Side of Alternative) NSA 4	10	10	2	12	\$567,800	\$47,317
Barrier 3 NSA 6	2	1	0	2	\$427,800	\$213,900

<sup>1</sup> Barrier insertion loss limited due to acoustic influence from Bird River Road.

Table IV-27: Noise Barrier Cost Per Benefiting Receptor Calculations for Alternative I Modified

Noise Sensitive Area	Total Number of Receptors Impacted	Number of Impacted Receptors Receiving at least 3 dBA Insertion Loss	Additional Non-Impacted Receptors Receiving at least 5 dBA Insertion Loss	Total No. of Benefiting Receptors	Preliminary Noise Barrier Cost	Cost per Benefiting Receptor
Barrier 1 (Barrier on South Side of Alternative) NSA 4	3	0	0	0 <sup>1</sup>	\$453,500	-----
Barrier 2 (Barrier on North Side of Alternative) NSA 4	10	10	2	12	\$567,800	\$47,317
Barrier 3 NSA 6	2	2	0	2	\$511,200	\$255,600
Barrier 4 NSA 11	1	0	2	2	\$318,900	\$159,450

<sup>1</sup> Barrier insertion loss limited due to acoustic influence from Bird River Road.

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**Table IV-28: Noise Barrier Cost Per Benefiting Receptor Calculations for Alternative E**

Noise Sensitive Area	Total Number of Receptors Impacted	Number of Impacted Receptors Receiving at least 3 dBA Insertion Loss	Additional Non-Impacted Receptors Receiving at least 5 dBA Insertion Loss	Total No. of Benefiting Receptors	Preliminary Noise Barrier Cost	Cost per Benefiting Receptor
Barrier 1 (Barrier on South Side of Alternative) NSA 4	3	0	0	0 <sup>2</sup>	\$453,500	----
Barrier 2 (Barrier on North Side of Alternative) NSA 4	10	10	2	12	\$567,800	\$47,317
Barrier 3 NSA 5	1	0	0	10 <sup>1</sup>	\$473,700	\$47,370
Barrier 4 NSA 6	2	2	0	2	\$538,200	\$269,100
Barrier 5 NSA 11	1	0	2	2	\$318,900	\$159,450

<sup>1</sup> The Holly Hill Memorial Gardens received an equivalent 10 residences per benefiting receptor.

<sup>2</sup> Barrier insertion loss limited due to acoustic influence from Bird River Road.

**Table IV-29: Noise Barrier Cost Per Benefiting Receptor Calculations for Alternative F<sub>1</sub> Modified**

Noise Sensitive Area	Total Number of Receptors Impacted	Number of Impacted Receptors Receiving at least 3 dBA Insertion Loss	Additional Non-Impacted Receptors Receiving at least 5 dBA Insertion Loss	Total No. of Benefiting Receptors	Preliminary Noise Barrier Cost	Cost per Benefiting Receptor
Barrier 1 (Barrier on South Side of Alternative) NSA 1,2, and 3	10	10	10	20	\$855,600	\$42,780
Barrier 2 (Barrier on North Side of Alternative) NSA 3 and 5	6	4	0	13 <sup>1</sup>	\$951,800	\$73,215
<b>Cost Averaging Calculation</b>				33	\$1,807,400	\$54,770

<sup>1</sup> The Holly Hill Memorial Gardens received an equivalent 10 residences per benefiting receptor.

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Table IV-30: Barrier Costs and Recommendations

Barrier	Cost per Benefiting Receptor	Recommended for Consideration		Preliminary Cost of Recommended Barriers
		Yes	No	
<b>Revised D Modified (SHA's Selected Alternative)</b>				
1 (NSA 4)	- <sup>1</sup>		√	
2 (NSA 4)	\$49,041	√		\$539,450
3 (NSA 6)	\$388,440		√	
<b>TOTAL</b>				\$539,450
<b>Alternative D</b>				
1 (NSA 4)	- <sup>1</sup>		√	
2 (NSA 4)	\$47,317	√		\$567,800
3 (NSA 5)	\$47,370	√		\$473,700
4 (NSA 6)	\$269,100		√	
<b>TOTAL</b>				\$1,041,500
<b>Alternative D Modified</b>				
1 (NSA 4)	- <sup>1</sup>		√	
2 (NSA 4)	\$47,317	√		\$567,800
3 (NSA 6)	\$213,900		√	
<b>TOTAL</b>				\$567,800
<b>Alternative I Modified</b>				
1 (NSA 4)	- <sup>1</sup>		√	
2 (NSA 4)	\$47,317	√		\$567,800
3 (NSA 6)	\$255,600		√	
4 (NSA 11)	\$159,450		√	
<b>TOTAL</b>				\$567,800
<b>Alternative E</b>				
1 (NSA 4)	- <sup>1</sup>		√	
2 (NSA 4)	\$47,317	√		\$567,800
3 (NSA 5)	\$47,370	√		\$473,700
4 (NSA 6)	\$269,100		√	
5 (NSA 11)	\$159,450		√	
<b>TOTAL</b>				\$1,041,500
<b>Alternative F, Modified</b>				
1 (NSA 1, 2 and 3)	\$42,780	√		\$855,600
2 (NSA 3 and 5)	\$95,180		√	
<b>TOTAL</b>				\$855,600

<sup>1</sup> Insertion loss at receptors at NSA 4 was limited by the acoustic influence of Bird River Road. Therefore, NSA 4 contained no benefiting receptors based on SHA criteria.



## 6. Construction Impacts

Short-term impacts will occur within the project limits during the construction of any of the Middle River Access Study Alternatives. The majority of construction noise is generated by the associated equipment. These include vibratory rollers, front loaders, backhoes, tractors, scrapers and graders, pavers, trucks, jackhammers and compressors. Table IV-31 provides approximate construction noise levels at a distance of 50 feet. In general, sensitive land use located near construction zones (approximately 100 feet) may experience noise levels in the 78 dBA to 83 dBA range.

Several mitigation procedures can be followed to assist in minimizing the temporary impacts of construction noise. Adjustments to the equipment, the provision of temporary noise barriers, varying the construction activity areas to redistribute noise events, public involvement and financial incentives to contractors are alternatives to decrease temporary noise impacts. These mitigation measures will be considered during final design to minimize public exposure to short-term noise impacts.

## N. Municipal and Industrial Waste Sites

Section III-M describes SHA's investigation into potential municipal and industrial waste sites within the study area and presents detailed results of that research. The investigation, which included a site reconnaissance and regulatory database search, identified 54 sites with potential environmental concerns.

The greatest concern is raised by the presence of businesses and facilities that either currently or historically generate or store hazardous chemicals or fuels, or show evidence of severe unregulated dumping. Seven sites were identified during the ISA. Unregulated dumping of drums and potentially hazardous materials represents the greatest potential for subsurface contamination and notable environmental liability in the study area. Large dumps were noted at sites 28 and 31. Site 42 is a large MARC Rail assembly plant. Site 50 was reported in SHA files as consisting of an unregulated dump of over up to 200 acres, although, this estimate appears to be large. Underground storage tanks (USTs) were identified during the government database and site reconnaissance activities at one site, the Holly Hills Cemetery. Three additional sites were identified in the database as being small quantity handlers of hazardous materials.

Table IV-31: Approximate Construction Equipment Noise Ranges

		Noise level ranges at 50 ft, dBA					
		60	70	80	90	100	110
Equipment Powered by Internal Combustion Engines	Earth-moving	Compactors (rollers)		—			
		Front Loaders		—	—		
		Backhoes		—	—	—	
		Tractors		—	—	—	
		Scrapers, graders			—	—	
		Pavers				—	
		Trucks			—	—	
	Materials-handling	Concrete mixers			—	—	
		Concrete pumps				—	
		Cranes, movable			—	—	
		Cranes, derrick				—	
	Stationary	Pumps		—			
		Generators		—	—		
		Compressors		—	—		
Impact Equipment	Pneumatic wrenches			—	—		
	Jackhammers and rock drills			—	—		
	Impact pile drivers, peaks				—	—	
Other	Vibrator		—	—			
	Saws		—	—			

Source: Environmental Impact Assessment, Larry W. Canter, University of Oklahoma

Table IV-32 presents a comparison of the number of sites for each severity ranking category identified along the six alternative Alignments.

**Table IV-32: Comparison of MRECAS Alignment Impact Rankings**

Rank and Score	Rev. D-Mod. (SHA Sel. Alt.)	D Modified	I Modified	E	D	F <sub>1</sub> Modified	Total Number of Sites**
High	4	4	3	3	4	1	7
Listed	2	2	2	2	2	2	4
Medium/High	1	1	4	2	1	3	7
Medium	6	6	5	5	4	4	12
Low	10	10	10	12	8	13	24
Total Each Alternative	23	23	24	24	19	23	N/Ap
Hazard Score	45.15	45.15	44.44	41.78	35.19	27.69	N/Ap
Hazard Rank	5	5	4	3	2	1	N/Ap

\*\*Due to alignment overlap and sharing of duplicate sites, totals are not derived from adding values in each row. Totals represent the number of hazardous sites throughout the study area.

The Hazard Score presented in Table IV-32 was derived by first weighting the hazards. Each increasingly severe hazard category was assigned a weight that was double the next lowest value (High=16, Listed=8, Medium/High=4, Medium=2 and Low=1). The weighted site values were then summed for each separate alignment and multiplied by the normalized ratio of the total number of sites in an alignment, divided by the total number of sites within the study area (54). For example, the hazard score for I-Modified is:

$$[(16 \times 3 \text{ High}) + (8 \times 2 \text{ Listed}) + (4 \times 4 \text{ Medium/High}) + (2 \times 5 \text{ Medium}) + (1 \times 10 \text{ Low})] \times (24/54) = 44.44$$

Once the Hazard Score was derived, the alignments were ranked by most risk (5) to least risk (1). Alignment D Modified presents the most apparent risk, while Alignment F1 Modified is apparently the least.

The ISA process identified 54 sites in the vicinity of the proposed MRECAS project. The sites range in environmental concern from small residential areas with potential septic drain fields to large industrial sites such as the MARC rail assembly facility. Of the sites identified, 14 are ranked in the high and medium/high severity category. The presence of a high or medium/high impact site in the proximity of the Alignments does not mean that land acquisition or construction activities are jeopardized; however, MSHA should consider further investigation to fully assess the impact, if any, on the project. Further data collection and assessment of these sites may lead to one of several outcomes:

- a site may be reclassified to a lower classification
- the contamination, if found, may be determined to be most appropriately dealt with as part of the construction phase of the project
- the severity of the contamination may warrant remediation in advance of construction.

The following is a list of references used and the agencies contacted during the ISA:

- *Code of Maryland Regulations* (COMAR), Title 26, Department of the Environment, Part 1, Vol. XXIII.

- Cleaves, et. al. 1968, *Geologic Map of Maryland*: Maryland Geological Survey.
- *Environmental Data Resources*. 1998. Corridor Study Report – White Marsh Inquiry 317082.1s
- United States Geologic Survey Middle River Topographic Quadrangle, PR 1985.

## O. Energy

A comparison of the energy usage requirements for the operation, maintenance and construction of the alternatives was completed for the DEIS. This comparison found that the long term energy requirements of the No-Build and the multi-modal alternatives will be similar. Although the energy requirements for construction are not applicable of the No-Build Alternative, this savings will be off-set by the increased energy consumption due to projected traffic congestion in the design year. The multi-modal alternatives will require a relatively low amount of energy for construction but some long term savings will be realized through the reduction of traffic congestion.

It has been determined that each of the Build alternatives will have similar energy requirements. Each alternative will 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 dualize alternatives will be similar to those of the No-Build and multi-modal alternatives. Operational energy expenditures for the build alternatives will be lower than those for the other alternatives because the traffic congestion will be reduced and safety will be greatly improved reducing the need for emergency services.

The No-Build Alternative will require the least amount of expended energy over the design life of this project. The multi-modal alternative will require slightly more energy than the No-Build for the construction of the additional intersection improvements. The Build Alternatives will require the greatest amount of energy.

## P. Construction Impacts

Construction activities for any of the proposed Build alternatives will have temporary impacts to resources, residences, and travelers within the immediate vicinity of the project. These impacts will include traffic detours, potential air and fugitive dust emissions, increased noise levels, natural resources, and visual quality.

### 1. Traffic Detours

Detours and road closures during construction will create temporary inconveniences for residents, business owners and travelers. Maintenance and protection of traffic plans will be developed during final design to mitigate access impacts and to minimize delays throughout the project. These plans will include appropriate signs, pavement markings, and media announcements. Access to all businesses and residences will be maintained through construction scheduling.

## 2. Air Emissions

The operation of heavy equipment would have minor, temporary impacts on air quality during construction of the alternatives. The primary source of impact would be windblown soil and dust in active construction zones, and secondarily from increased levels of exhaust pollutants.

Measures will be taken to reduce fugitive dust and other emissions generated during construction by wetting disturbed soils, staging soil-disturbing activities, and prompt revegetation of disturbed areas. Emissions from construction equipment will be controlled by the contractors in accordance with state and federal regulations.

## 3. Construction Noise Impacts

Temporary noise impacts will occur in the study area during the construction of any of the build alternatives. Sources of this noise would include earth moving equipment, vibratory rollers, pavers, trucks, jackhammers, and compressors. In most cases, the effects of increased noise levels associated with construction equipment are 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 assist in minimizing the temporary impacts of construction noise. Adjustments to the equipment, the provision of temporary noise communication with the public, and monetary incentives to the contractor could be considered to lessen the temporary noise impacts. These mitigation measures will be examined during final design to minimize public impacts and annoyances during construction.

Construction noise impacts are discussed fully in Section IV-M.

## 4. Natural Resources

Temporary construction-related impacts to soils, surface waters, and wetlands are anticipated to occur as the result of this project. Temporary and permanent impacts to these resources have been addressed throughout Chapter IV.

Temporary impacts to soils include increased erosion potential from areas cleared of vegetation for construction activities. Standard sediment and erosion control measures will be implemented in accordance with state and local regulations to minimize adverse impacts.

Temporary construction-related impacts to wetlands include increased sedimentation, instream 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 at final design will be used to minimize temporary impacts to wetlands. Original grades will be restored as needed in temporary wetland impact areas and native vegetation will be re-established.

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Temporary impacts to surface water resources are also anticipated from construction-related activities. Temporary impacts would result from temporary stream crossings, dikes and coffer dams, temporary channel relocations, and suspended solids from increased erosion and sedimentation. Runoff from disturbed areas may contain high sediment loads, which can reduce both the diversity and numbers of organisms in the aquatic environment. Physical impacts such as temporary stream crossings and coffer dams, disrupt the stream substrate and could affect fish migrations through these areas. This will eliminate benthic macroinvertebrate 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 coffer dam construction may generate excessive scouring of the substrate and generate sediment impacts immediately downstream of the construction area.

## 5. Visual Quality

Construction activity and some of the materials stored for the project may be displeasing to residents in the immediate vicinity of the project. This visual impact will be temporary and should pose no substantial problem in the long-term.

### Q. Secondary and Cumulative Effects

#### 1. Definition and Purpose

The National Environmental Policy Act (NEPA) requires that any project having the potential to impact the environment to the extent that an Environmental Impact Statement is needed must address secondary and cumulative effects in addition to direct impacts. The proposed highway project meets this criterion. Accordingly, a study was undertaken to determine the nature, extent, and consequences of those effects. This report describes the methodology used for performing the pertinent analyses and presents the study findings. The secondary and cumulative effects analyses (SCEA) contained in this report take into consideration all six retained alternatives, although ultimately only one will be chosen for actual construction.

The Council on Environmental Quality (CEQ) regulations for implementing NEPA broadly define "secondary impacts" as those that are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8). The CEQ provides further clarification in a guidance document entitled *Considering Cumulative Effects*, where it is stated that secondary or indirect effects might include: "growth inducing effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Secondary impacts analysis, then, entails forecasting intended and unintended future effects which might result from an initial action and from any subsequent development brought about directly by the initial action.

Similarly, the CEQ regulations broadly define "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions" (40 CFR 1508.7). The purpose of cumulative impact analysis is to assure that agency decisions consider the full range of environmental consequences.

Consequently, cumulative impacts can be substantially greater than and quite different from outcomes that might be expected when the same actions are considered singly. Cumulative impact analysis entails determining what actions have and will affect the SCEA boundary and then assessing the additive and interactive impacts of those actions along with their more singular effects.

## 2. Methodology, Time Frame, and Boundaries

### a. For Secondary Effects Analysis

The data used for the secondary effects analysis include land use, employment, population, income, and tax revenue projections provided by Baltimore County and verified by an appointed Land Use Analysis Committee (see Appendix C). Furthermore, the concepts and placements of developable "land bays" and commercial connector roads within the Middle River Employment Center (MREC), as proposed in those projections, were primary considerations for determining secondary impacts. A land bay as used in this context can be defined as a contiguous, developable portion of a land parcel or cluster of parcels adjacent to or surrounded by other lands that are not developable because of environmental or zoning constraints or other existing land uses. Environmental constraints for this analysis included twenty-five foot buffers around wetlands and seventy-five foot buffers around streams as measured from the top of each stream bank.

The time frame used for the secondary effects analysis was the present time (1999) to the year 2020. The 2020 ending date was selected in part because it is the "design year" for the project, i.e. the year the project is to be completed plus 15 years. Another consideration was that projections for beyond 2020 are not readily available for some of the environmental resources.

The geographic boundaries selected for the secondary effects analysis are identical to the boundaries of the MREC. The rationale behind this decision is that the secondary effects sections would be looking only at short-term, indirect effects of the highway project, and those effects primarily involve the planned development within the employment center.

### b. For Cumulative Effects Analysis

The cumulative effects analysis considers the road project's direct and secondary impacts upon the environment in aggregate with the effects of other known development activities that have gone on, are going on, or are expected to occur in the reasonably foreseeable future within the same area. The socioeconomic cumulative effects analysis required the gathering of information about past, current, and proposed development and demographics within the study area, followed by a qualitative assessment based on that data. Only existing, readily available data were used. Trend analysis were then conducted to trace socioeconomic patterns.

The time frame for the cumulative effects analysis spans the years 1963 to 2020. The rationale for selecting 1963 as the initial year was that I-95 was opened in Baltimore County that year. The ending date for the analysis, 2020, was selected in part because it is the "design year" for the project, i.e. the year the project is to be completed plus 15 years. Another consideration was that

projections for beyond 2020 are not readily available for some of the resources. It was also determined that for any criterion that lacked sufficient data from within the specified time frame, a substitute time period was to be used which closely approximated the specified chronology.

Whereas the secondary effects analysis considers only impacts to resources within the employment center area, the cumulative effects analysis was used in a larger geographic context. Furthermore, the socioeconomic parameters require different geographic contexts than those pertaining to the natural environment, because socioeconomic data are traditionally compiled according to human-created boundaries, whereas data that describe long-term impacts to the natural environment are organized according to naturally occurring boundaries. At the same time, it was felt that in order to discuss socioeconomic and natural environment cumulative effects, the socioeconomic study boundary should approximate the natural boundaries as closely as possible. The geographic boundary used for the natural environment cumulative effects analysis encompasses the contiguous areas of three major Baltimore County watersheds: Middle River, Bird River, and Gunpowder River. The socioeconomic cumulative effects analyses utilize data from the twenty-four Baltimore County census tracts that, together, comprise the same general area as those three watersheds, although their peripheral boundaries are somewhat different (see Figure IV-7, the SCEA map). The census tracts are 4113.02, 4113.03, 4113.04, 4113.05, 4114.02, 4114.04, 4114.05, 4403, 4406, 4407, 4503, 4506, 4507, 4508.01, 4508.02, 4509, 4514, 4515, 4516, 4517.01, 4517.02, 4518.01, 4518.02, and 4919. Both of these areas are approximately 8.6 square miles in size.

### 3. Secondary Effects Analysis – Social and Economic Environment

The purpose of the proposed highway project is to promote economic development within the MREC. The Land Use Analysis Committee has forecasted that the project alternatives will result in the following land use changes that would enhance the economy of the MREC:

- Direct access will have been provided from the MREC to I-95 in a fashion that will effectively limit interaction with adjacent residential communities.
- Because of this direct access, the A.V. Williams and adjacent compatible parcels will have the opportunity to perform as a primary business park, rather than being perceived as merely the “back-end” of the White Marsh-Rossville business communities.
- Because the existing development west of the A.V. Williams parcel is primarily residential in character, the Land Use Analysis Committee suggested an alignment alternative which locates MD 43 as far west as possible, with the new roadway creating a buffer to these residential communities. This would also allow for large “land bays” to be located to the east of the new roadway, which would maximize the development potential of the site. Existing Bengies Road-North and Earls Road could then be utilized as a secondary means of ingress/egress to the site for truck traffic or cars entering from the Bengies/Chase areas.





- With the extension of MD 43, a commercial/service parcel could be carved out at the US 40/MD 43 interchange, which would provide land for users that could include service hotels, a convenience shopping center which may include commercial services, a grocery store, and automotive services, similar to that which is seen at the White Marsh Center. This retail area would also support the residential areas, as there has been no new neighborhood retail centers developed along Eastern Boulevard over the past twenty-five years. There are wetlands in the northwest quadrant of this interchange which will limit development.

With an extension of MD 43 the following specific economic development activity could take place on the A.V. Williams and adjacent compatible parcels. The White Marsh Business Community provides an excellent example of the potential for this site. Uses and land values for fully-developed, finished sites in this area include:

- *Warehouse Distribution Centers* - similar to the Time Warner facility, which is a 600,000 square foot building. Land values for this type of project will be in the \$140,000 per acre range.
- *Office/Flex/R&D* - Similar to the McLean Ridge Development, a five (5) building 250,000 square foot office park which is home to Metris, Travelers Insurance and others. Land values in this park are in the \$200,000 per acre range.
- *Service Retail* - Similar to White Marsh Retail, a Giant grocery anchored center; the Hampton Inn Hotel facility and Exxon Service Station. Land values from these users are in the \$300-400,000 per acre range.
- *Manufacturing* - Because the White Marsh's development plan did not encourage this use, new manufacturing businesses have typically located in the Harford County area for growth. Employers such as Clorox, Alcore and others are operating in sites that have typically been priced in the \$95,000 per acre range.
- *Residential* - It is assumed that the sites west of the MD 43 extension alternatives will be designated for residential use. Land value for this activity will be dependent on the single family or townhouse density and yield which would be available.

Assuming 500 acres of land bays could be assembled on the east side of the MD 43 extension into this development envelope, and operating within the following Development Profile:

<i>Distribution Warehouse</i>	65%	325 acres @ 80% efficiency	260 net useable
<i>Office/Flex/R&amp;D</i>	15%	75 acres @ 80% efficiency	60 net useable
<i>Manufacturing</i>	10%	50 acres @ 80% efficiency	40 net useable
<i>Retail Service</i>	<u>10%</u>	<u>50 acres @ 80% efficiency</u>	<u>40 net useable</u>
<b>Total</b>	<b>100%</b>	<b>500 acres</b>	<b>400 net useable</b>

Finished land/lot values are expected to be as follows:

<i>Distribution Warehouse</i>	260 acres @ \$140,000 per acre =	\$36,400,000
<i>Office/Flex/R&amp;D</i>	60 acres @ \$200,000 per acre =	\$12,000,000
<i>Manufacturing</i>	40 acres @ \$95,000 per acre =	\$3,800,000
<i>Retail Service</i>	40 acres @ \$300,000 per acre =	<u>\$12,000,000</u>
<b>Gross Land Value:</b>		<b>\$64,200,000</b>
<i>(Residential Values are to be determined later.)</i>		

Potential Square Footage of Buildings and Employment to be located in each of these land bays could be as follows:

<i>Distribution/Warehouse:</i>	260 acres at 50% coverage = 5,662,800 square feet @1.25 Employees per 1,000 sq. ft. = 7,079 employees
<i>Office/Flex/R&amp;D:</i>	60 acres at 25% coverage = 653,400 square feet @ 5 Employees per 1,000 sq. ft. = 3,267 employees
<i>Manufacturing:</i>	40 acres at 35% coverage = 609,840 square feet @ 4 Employees per 1,000 sq. ft. = 2,439 employees
<i>Retail Service:</i>	40 acres at 20% coverage = 348,480 square feet @ 3 Employees per 1,000 sq. ft. = 1,045 employees
<i>Projected Total Square Footage = 7,274,520</i>	
<i>Projected Total Employees = 13,830</i>	

It is projected that only with the extension of MD 43 and corresponding direct access to I-95 will a substantial increase in land value occur along Eastern Boulevard. For property owners and large employers such as the State of Maryland with Martin State Airport, Vertical Launch Systems and Lockheed Martin at the Chesapeake Industrial Park, and the G.S.A. depot facility on Eastern Boulevard, an extension of MD 43 will have an enormous benefit in that their industrial site values could increase. Increases of no less than 25%, and in some cases 40%, will occur in the industrial property values along Eastern Boulevard once this access is provided.

Residential and recreational land values would be expected to change in several ways. The direct access will improve the possibility of the high quality waterfront development contemplated for Middle River. Furthermore, within the existing residential neighborhoods along Bird River, Wampler Road, and Vincent Road, through-traffic could be substantially reduced or eliminated once the MD 43 extension is in place.

The extension of MD 43 will have a substantial impact on employment opportunities for the residents of the Middle River area. The build-out time frame for the distribution, manufacturing and retail, as well as the job creation will be substantial, and can occur within a ten-year period.

In addition to the proposed highway project and the secondary development that will occur as a result of that project, other public and private development projects are either underway or planned for construction in the near future. Private development projects have been itemized in

Section II of this document. Public development projects include sewer and water upgrades being provided for current and projected residential development and for support of the commercial/industrial development desired for the MREC by State and local governments. These public utility projects are described below.

The Vincent Farms sewer force main and the Windlass Run Pumping Station will be completed by the year 2000. Located in the area between Bird River Road, Vincent Road, and Ebenezer Road, this new sewer system would adequately serve the developable properties within the MREC north of the power line. Other sewer force mains and pumping stations currently exist on MD 150, to the south and southeast of the MREC, and they will adequately serve the remainder of the MREC. The Land Use Analysis Committee determined that these new facilities, together with existing sewer facilities, are capable of supporting a full build-out of the MREC.

In regards to public water supply, a new water line will be constructed within the proposed Campbell Boulevard right-of-way when Campbell Road is constructed by Baltimore County. This new system is programmed for construction in the year 2000 and will consist of 20" and 16" water mains extending from Philadelphia Road to Bird River Road. Currently existing public water is located along Leland Road (36" water line) and Ebenezer Road (16" water line). The developable area within the MREC would tie into the existing systems. The Land Use Analysis Committee determined that the existing and planned water system is adequate to support any development within the MREC.

In addition to the above projects, Baltimore County estimates that with improved access and new infrastructure approximately 600 acres of commercial and industrial land could be developed over a thirty year period, representing a potential of 6.1 million to 7.3 million square feet of commercial and industrial space. On the other hand, if improved access is not provided to the MREC, the County projects that only 87 of these acres would be developed, and that this limited development would provide only one fourth of the revenues that a new highway would generate.

In the same report Baltimore County provided employment growth projections for the MREC that were developed by the Baltimore County Office of Planning, using the assumption that a four-lane roadway would be built. Their growth predictions compared to their predictions of population trends within the same area are summarized in Table IV-33.

**Table IV-33: Projected Employment and Population Changes  
Within the MREC, Based on a Highway Build Scenario**

	1995	2020	% Change
Population	16,273	16,021	-1.5
Households	6,236	6,524	4.6
Labor Force	8,681	8,561	-1.4
Employment	12,186	23,528	93.1

Source: Baltimore County Office of Planning, Round 5A projections  
from: *MREC Purpose and Need Statement, Baltimore County, 1997*

These projections show that employment is likely to increase substantially within the MREC as a result of the improved highway access. Yet the number of households within the same area is expected to increase only slightly, while its population and labor force are expected to remain

near the current level. Consequently, the need for employees from outside the MREC to commute to jobs within the employment center will be substantially greater in the future than it is today.

4. Cumulative Effects Analysis - Social and Economic Environment

a. Population

The population of Baltimore County was 621,077 in 1970. By 1980, the population had increased to 655,615. The 1990 population was 692,134 and the 1995 estimated population was 713,600. The vast majority of the County's population is concentrated in the areas closest to Baltimore City.

The pace of growth in the SCEA boundary was somewhat slower than that of the County as a whole. An evaluation of the population statistics available from the US Census Bureau and County reports revealed a trend in the growth of the population in census tracts served by major transportation facilities. Historic data compiled from census files indicate that the population of the SCEA tracts increased steadily between 1960 and 1990. Table IV-34 summarizes the historic population data collected from census files.

**Table IV-34: Population of the MREC SCEA**

1960	1970	1980	1990
55,604	62,146	85,798	103,321

Source: US Census, 1960, 1970, 1980 and 1990.

Population projections are not available on a census tract basis, therefore population trends in the SCEA cannot be presented. Table IV-35 provides population projections for Baltimore County as a whole. As shown, the Maryland Office of Planning (MOP) expects the population to increase at a steady rate over the next 20 years.

**Table IV-35: Population Projections - Baltimore County**

2000	2005	2010	2015	2020
732,700	742,000	755,000	768,400	781,500

Source: Maryland Office of Planning, March, 1998

b. Land Use

Table IV-36 shows the results of trend analyses performed on agricultural and forest land within the cumulative effects area, utilizing Maryland Office of Planning (MOP) land use maps for Baltimore County. The areas are necessarily approximate because of the large scale of the maps (one inch is equal to one mile). Still, it is readily apparent that, unlike many areas in close proximity to Baltimore City, the forests and agricultural lands in this area have remained largely intact since 1973. That year was the first year for which MOP has land use maps available.

**Table IV-36: Trend Analyses of Land Areas Used for Forest and Agriculture, 1973 to 1997.**

Year	Forest				Agricultural Lands			
	1973	1985	1990	1997	1973	1985	1990	1997
Square Miles	19.50	18.43	18.08	16.93	6.05	5.95	5.70	4.93
Acres	12480	11792	11568	10832	3872	3808	3648	3152
Area Remaining	100.00%	94.49%	92.69%	86.79%	100.00%	98.35%	94.21%	81.40%

Source: Maryland Office of Planning Land Use maps for each of the specified years.

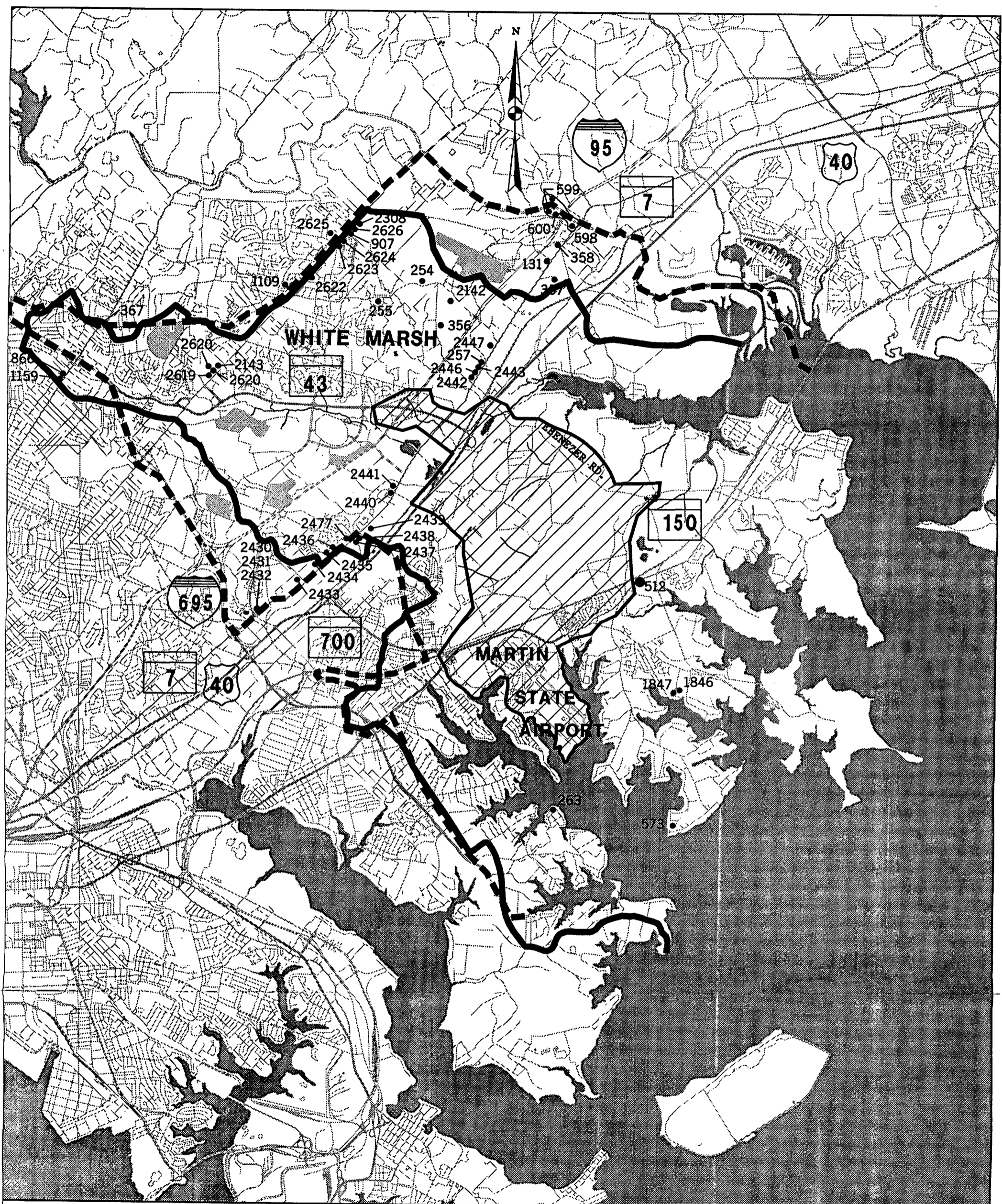
In regards to other types of future land use, Baltimore County has established an aggressive county-wide growth management program, which is embodied within its *Baltimore County Master Plan 1979-1990*. The plan, adopted by the County Council in 1979, created an urban service boundary, the Urban Rural Demarcation Line (URDL), which defines the limit of public water and sewer service and the limit of the major transportation system. The MREC is located within the URDL, which means that development requiring water and sewer extensions could occur, and the County's major transportation system could be extended to the area. As has been stated previously in this document, the County has targeted the MREC for future employment growth, and the stated means for achieving that end are the development of prime industrial properties and the public infrastructure. But in the portion of the cumulative effects study boundary which lies to the north and northeast of the MREC, future development will be limited by Baltimore County zoning and by regulations pertinent to the Chesapeake Bay Critical Area.

In the assessment of cumulative effects it is necessary to identify all reasonably foreseeable projects that will likely occur within the SCEA boundary. Reasonably foreseeable actions are noted in County Master Plans or planning documents, State, Federal and local agency plans for future projects, and known private actions. Impacts can be evaluated based on the proximity of the action or project to a resource. The following projects have been identified from County and State records.

The Maryland Department of Transportation has proposed only two improvement projects within the SCEA boundary. The State Highway Administration plans to widen I-695 (the Baltimore Beltway) from US 40 to MD 702, part of which is within the SCEA boundary.

The projects listed in the County's Capital Improvement Program include replacement of the Earl's Road Bridge (ongoing as of January 1999).

Additional actions outside of the MREC will occur to the west of the MREC and will occur regardless of whether the proposed highway is built or not. Active and proposed private development projects are detailed in Table IV-37. The properties on which that development is expected to occur are shown as generalized shapes on Figure IV-8. That development, together with the extensive secondary development planned for within the MREC and for the wider SCEA boundary will undoubtedly cause stress for certain of the natural resources, but the effects on the social environment will most likely be positive, especially in terms of improved access, improved infrastructure, and an improved outlook for economic stability in the region.



**LEGEND**

- 573 • HISTORIC SITES
- ▨ ACTIVE AND PLANNED DEVELOPMENT > 20 ACRES
- ▬▬▬ SOCIOECONOMIC CUMULATIVE EFFECTS BOUNDARY
- ▬ NATURAL ENVIRONMENT CUMULATIVE EFFECTS BOUNDARY
- ▨ MRECA STUDY AREA BOUNDARY
- ▨ BODIES OF WATER

**MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY**

**FINAL ENVIRONMENTAL IMPACT STATEMENT**

HISTORIC SITES AND PROPOSED DEVELOPMENT IN CUMULATIVE EFFECTS STUDY AREA

MARYLAND STATE HIGHWAY ADMINISTRATION

DATE: Jan. 2001

FIGURE NO. IV-8

**Table IV-37: Known Active and Proposed Private Development Projects within the Cumulative Effects area.**

Tax Map	Census Tract	Parcel	Proj. No.	Project Name	Status 11/24/98	Development Type	No. of Units	Acres
71	411402	1319 761 317 451 589 552 321	XI-695-1	Oak Crest Village, Phase 1	plan approved by HOH	Multi-Family	505	48.9
71	411402	509 1319 321 371	XI-695-2	Oak Crest Village, Phase 2	plan approved by HOH	Institutional Multi-Family	1012	39.1
72	411405	177	XI-794-1	Brewer Property (Virgie)	concept plan for review	Single Family Detached	51	24.9
72	411304	858 195 196	XI-724-1	Glenside Farms	plan approved by HOH	Single Family Detached	191	85.4
81	440800	289 628 629	XIV-342-1	Cedar Lane Farms (PUD-R1)	plan approved by HOH	Single Family: Attached Detached	189 36	58.9
82	440600	773	XI-349-11	Avenue at White Marsh (White Marsh Business Community, Sections C31, D10, D11)	plat recorded	Commercial	18	38.2
82	440600	440	XI-338-1	Spring House Station (formerly Shirleybrook Village)	plat recorded	Single Family Detached	60	22.7
82	440600	465	XIV-359-1	Fiedler Property	plat recorded	Single Family Detached	73	27.3
82	440600	322	XIV-374-1	Dorn Property at White Marsh	concept plan for review	Single Family Detached	50	24.5
82	440600	343	XIV-369-1	Boumi Temple	plat recorded	Institutional	2	33.6
82	440600	296 297 501	XIV-365-1	White Marsh Road Property	plan approved by HOH	Single Family Detached	40.2	105

Source: Baltimore County Office of Planning

c. Historic Sites

As discussed in Section III-B there are direct impacts to cultural resources associated with all six of the Build Alternatives. Alternatives Revised D Modified (*SHA Selected Alternative*), D, D Modified and F1 Modified impact the Middle River Depot. Alternatives D, E, F1 Modified and I Modified impact archeological sites.

The cultural resources environment was also investigated in terms of cumulative effects from the expected development. Specifically this involved locating previously identified sites and structures of historic importance to the region within the SCEA boundary. Forty-eight properties within the SCEA study boundary (socioeconomic) were identified using Maryland Historical Trust (MHT) quad maps available at SHA. Those sites are listed on subsequent pages below.



The number at the beginning of each description corresponds to a numbered marker on the MHT map of historical properties. Using the same reference number, sites can be generally located on Figure IV-8 and can be seen in relation to generalized shapes of planned and proposed private development within the SCEA study boundary as described in the previous discussion.

As shown on Figure IV-8, none of the historical properties are located on parcels that are planned for private development.

**Historical Properties in the SCEA study area, outside of the MRECAS boundary (See Figure IV-8 above):**

- #131 LORELEY SCHOOL (1861) 11530 Old Philadelphia Road..
- #254 CAMP CHAPEL (1872) 5006 Joppa Road.
- #255 SEDDON HOUSE (Early 1700's) 4705 Joppa Road.
- #257 OLD GERST TAVERN (ca. 1814) 10848 Old Philadelphia Road.
- #263 BAUERNHURST (1909) 2316 Bauernschmidt Drive (former 731-B Martin Drive).
- #356 WAGENFEUHR HOUSE (Early 1800s) 9025 Cowenton Avenue.
- #357 ASBURY METHODIST CHURCH (1913) 11501 Old Philadelphia Road.
- #358 LORELEY SCHOOL (1861) 11646 Philadelphia Road.
- #367 PAUL HARROD COMPANY
- #512 LITTLE SHARP STREET METHODIST EPISCOPAL CHURCH (1902) 1814 Eastern Avenue.
- #513 BOWLEYS YACHT BASIN a.k.a. BOWLEYS QUARTERS MANSION (Before 1911) Between Chesapeake and Bay Avenues at terminus of Bowleys Quarters Road.
- #597 GUNPOWDER IRON WORKS (1759-1866). Site stretching from MD7 bridge along south bank of Big Gunpowder Falls to a point just upstream of I95 bridge and power line.
- #598 GUNPOWDER IRON WORKS FURNACE RUIN (1846) 11818 Philadelphia Road.
- #599 GUNPOWDER IRON WORKS--DAM ABUTMENTS (1835). Both banks of Big Gunpowder Falls just upstream of #600 and the I-95 bridge.
- #600 SITE OF ROBERT HOWARD'S GRISTMILL (ca. 1800). South bank of Big Gunpowder Falls, 30 feet upstream of power line.

- #866 ST. JOHNS EVANGELICAL LUTHERAN CHURCH . Harford Road.
- #907 BALTIMORE EMBROIDERY FACTORY (1915) 9621 Belair Road.
- #1109 BISHOP'S INN (ca. 1813) 9114 Belair Road.
- #1159 EVANS FUNERAL HOME (former HISS CHAPEL PARSONAGE) 8802 Harford Road.
- #1846 SCOTT-ANDREW HOUSE (1725-1744) 701 Luthard Road.
- #1847 MACE-LUTHARDT HOUSE (ca. 1880) 820 Luthard Road.
- #2142 MOORES ORCHARD (1852) 5225 Joppa Road.
- #2143 SITE OF WALDMAN'S SEVEN MILE HOUSE (ca. 1876) 8441 Belair Road.
- #2308 DIETZ HOUSE AND NURSERY (ca. 1915) 9641 Belair Road.
- #2430 REGESTER BUNGALOW, 8772 Philadelphia Road.
- #2431 BANKS REVIVAL HOUSE, 8774 Philadelphia Road.
- #2432 ROSSVILLE INN, 8776-8778 Philadelphia Road.
- #2433 MOHR HOUSE, 9100 Philadelphia Road
- #2434 WALBECK HOUSE, 9136 Philadelphia Road
- #2435 SCHAMEL HOUSE, 9222 Philadelphia Road.
- #2436 HOFFMEISTER-BARROW HOUSE, 9304 Philadelphia Avenue
- #2440 DUDNANSKI BUNGALOW (ca. 1915) 10000 Philadelphia Road.
- #2441 HOLTZNER HOUSE (ca. 1899) 10004 Philadelphia Road.
- #2477 BUCK'S SCHOOL HOUSE (1859) 9734 Philadelphia Road.
- #2437 EAST HOUSE (ca. 1915) 9505 Philadelphia Road.
- #2438 DE PHILADELPHIA INN (ca. 1915) 9515 Philadelphia Road.
- #2439 NEISER HOUSE (ca. 1915) 9719 Philadelphia Road.
- #2442 DODGE DEALERSHIP (ca. 1920) 10800 Philadelphia Road.

- #2443 HOFFMAN HOUSE, 10816 Philadelphia Road.
- #2446 SURGY HOUSE, 10822 Philadelphia Road.
- #2447 WILLIAMS HOUSE (Before 1877) 11026 Philadelphia Road.
- #2619 ST. JOSEPH'S CATHOLIC CHURCH: PARISH HALL (1925) 8416 Belair Road.
- #2620 ST. JOSEPH'S CATHOLIC CHURCH: OLD PAROCHIAL SCHOOL (1869 ) 8418 Belair Road.
- #2622 PERRY HALL CENTER (ca. 1920) 9325 Belair Road.
- #2623 DE GRUCHY WHEELWRIGHT SHOP (1911) 9533 Belair Road.
- #2624 GERMANTOWN BUILDING ASSOCIATION (ca. 1920) 9537 Belair Road.
- #2625 ST. MICHAEL'S LUTHERAN CHURCH (1925) 9534 Belair Road.
- #2626 TANNER HOUSE (1921) 9627 Belair Road.

#### 5. Secondary Effects Analysis – Natural Environment

Assuming maximum development of the employment center site, approximately 600 acres of land bays could be assembled. The land parcels where secondary development could occur are primarily forested with some smaller areas in agricultural use. Approximately 440 acres of forest (40% to 45% of the total forest in the MREC) and 100 acres of farmland (nearly 100% of the total farmland in the MREC) could be lost. If current regulations are stringently enforced, wetland loss will be minimal (certainly less than 10% of the 450 to 500 acres of wetlands in the MREC), with regulatory permitting through MDE, ACOE and Baltimore County. The only wetlands that are typically filled for development are water dependent activities, which may include roadway crossings, as authorized by permits.

Secondary impacts to water quality and wetlands caused by the MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities are permitted under these regulations.

Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP (Special Area Management Plan) areas. SAMP areas are wetlands that have been identified in the past in a special management plan as being either of moderate to high-value and therefore in need of enhanced protection from development, or of lesser value and therefore more acceptable for limited development. The SAMP is intended to reduce the problems associated with traditional case-by-case review of projects, and where it has been utilized SAMP has streamlined the review process, making it

more efficient for business interests and more effective for environmental interests. But a SAMP was never written or conceived for the wetlands within the MREC.

Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records. These Forest Buffers and associated protective covenants ride with the deed of the property in perpetuity.

Secondary impacts to forest habitat caused by MREC development would also be limited by Baltimore County's Forest Conservation Regulations. These regulations require a forest stand delineation to distinguish forest stands of higher ecological quality in order to direct proposed development activities away from those areas wherever possible. Additionally, a forest conservation worksheet (FCW) is required to determine any reforestation or afforestation requirements. The FCW is prorated to require less reforestation if forest disturbance is less than the break-even point on a forested property, and more reforestation for clearing beyond the reforestation threshold. The objective of the Forest Conservation Regulations is not just to protect and enhance forest cover in general, but to preserve large, existing forest corridors in perpetual protective easements similar to the easements required for stream and wetlands buffers.

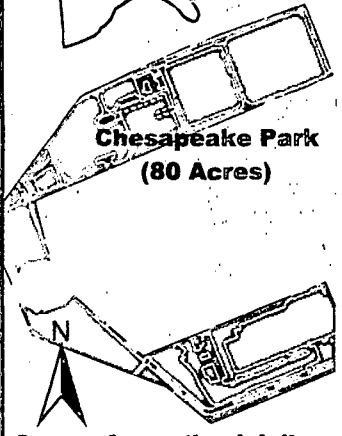
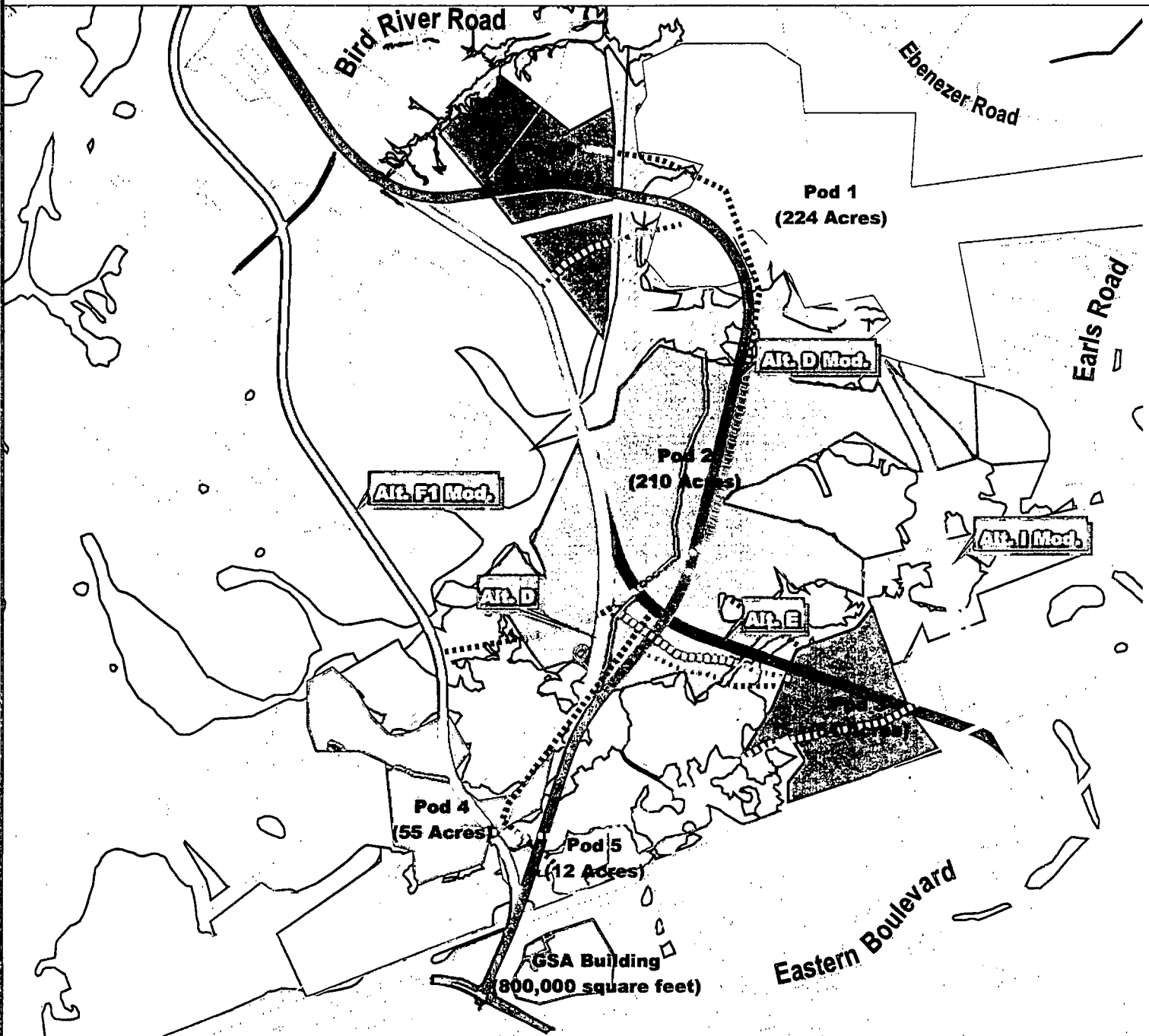
In addition to the secondary impacts caused by development in the MREC, impacts will also occur as a result of constructing access roads from MD 43 to the proposed development sites. Figure IV-9 shows the possible location of these access roads. Ultimately the developer will design and determine service road locations. The access road locations shown on Figure IV-9 were provided by Baltimore County and are conceptual in nature. More accurate assessments will be made for alternative alignments that minimize impacts to forests and wetlands during subsequent project planning stages.


**Revised D-Modified (SHA Selected Alternative)** and D-Modified directly cross and access five of the six development "pods" and would require about 1,700 additional feet of roadway to access the sixth. Alternatives D, E, and I-Modified directly access less land and require additional connecting roads than does **Revised D-Modified (SHA Selected Alternative)**. Alternative F<sub>1</sub>-Modified offers the least direct access to the target development parcels. Due to its alignment substantially west of the major employment development areas, it crosses only two pods (67 acres) directly. In order to provide access to the other development pods, an estimated 10,800 linear feet of additional connecting roadway would need to be constructed, involving four additional wetland crossings. Table IV-38 provides estimates of the length of access roads needed to connect the development parcels to each build alternative. Table IV-39 summarizes the secondary effects to wetlands and forests associated with access roads needed with each build alternative.

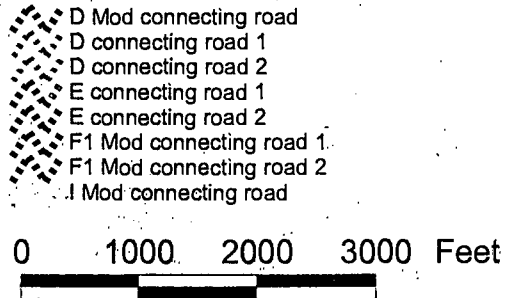
The loss of forestland will directly affect forest wildlife, including FIDS. (See Section K.3. Rare, Threatened, and Endangered Species above for details on these impacts.)

# Key Development Parcels with Relation to Alternative MD43 Alignments

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<b>Key Development Parcels With Alternative Alignments</b>	
FIGURE IV-9	January, 2001



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**Table IV-38: Accessibility of Key Development Parcels Under Alternative Alignments of MD 43 Extended**

	Pod 1	Pod 2	Pod 3	Pod 4	Pod 5	Pod 6	Total
<b>Total Developable Non-wetland Acres</b>	224	210	54	55	12	64	619
<b>Revised Alternative D-Modified (SHA Selected Alternative)</b>							
Acres Directly Accessed <sup>1</sup>	224	210	0	55	12	64	565
Feet of Additional Connecting Road Required to Access Pod <sup>2</sup>	0	0	1700	0	0	0	1700
No. of Additional Wetland Crossings to Access Pod <sup>3</sup>	0	0	1	0	0	0	1
<b>Alternative D</b>							
Acres Directly Accessed <sup>1</sup>	0	210	0	55	12	0	277
Feet of Additional Connecting Road Required to Access Pod <sup>2</sup>	1700	0	2200	0	0	included in Pod 1	3900
No. of Additional Wetland Crossings to Access Pod <sup>3</sup>	1	0	1	0	0	0	2
<b>Alternative D Modified</b>							
Acres Directly Accessed <sup>1</sup>	224	210	0	55	12	64	565
Feet of Additional Connecting Road Required to Access Pod <sup>2</sup>	0	0	1700	0	0	0	1700
No. of Additional Wetland Crossings to Access Pod <sup>3</sup>	0	0	1	0	0	0	1
<b>Alternative E</b>							
Acres Directly Accessed <sup>1</sup>	0	210	54	0	0	0	264
Feet of Additional Connecting Road Required to Access Pod <sup>2</sup>	1700	0	0	3600	included in Pod 4	included in Pod 1	5300
No. of Additional Wetland Crossings to Access Pod <sup>3</sup>	1	0	0	1	1	included in Pod 1	3
<b>Alternative F, Modified</b>							
Acres Directly Accessed <sup>1</sup>	0	0	0	55	12	0	67
Feet of Additional Connecting Road Required to Access Pod <sup>2</sup>	9000	included in Pod 1	1800	0	0	included in Pod 1	10800
No. of Additional Wetland Crossings to Access Pod <sup>3</sup>	1	1	1	0	0	1	4
<b>Alternative I Modified</b>							
Acres Directly Accessed <sup>1</sup>	224	210	0	0	0	64	498
Feet of Additional Connecting Road Required to Access Pod <sup>2</sup>	0	0	6000	included in Pod 3	included in Pod 3	0	6000
No. of Additional Wetland Crossings to Access Pod <sup>3</sup>	0	0	0	1	1	0	2

<sup>1</sup>Number of acres in each development pod directly crossed by respective alignment.

<sup>2</sup>Rough Estimate of the number of additional feet of connecting roadway that would be necessary to connect the respective alignment to pods which the alignment does not cross.

<sup>3</sup>Rough estimate of the number of wetland crossings necessitated by the additional "connecting" roadways.

**Table IV-39: Potential Impacts to Wetlands and Forests from Access Roads**

<b>Alternative</b>	<b>Possible Wetland Loss (Acres)</b>	<b>Possible Forest Loss (Acres)</b>
<b>Revised D Modified (SHA Selected Alternative)</b>	0.3 to 0.5	2.0 to 3.0
<b>D</b>	1.0 to 1.4	1.0 to 1.5
<b>D Modified</b>	0.3 to 0.5	2.0 to 3.0
<b>E</b>	2.3 to 3.4	3.4 to 5.2
<b>F Modified</b>	2.2 to 3.4	10.0 to 15.0
<b>I Modified</b>	6.4 to 9.6	6.4 to 9.6

6. Cumulative Effects Analysis – Natural Environment

a. Groundwater

The area within the SCEA contains three different aquifer systems: the Patuxent Aquifer, the Patapsco Aquifer, and the Piedmont Aquifer. The Patuxent Aquifer underlies the entire study area. This aquifer is unconfined within the area directly underlain by the Patuxent Formation, but becomes confined where the Patapsco Formation overlies the Patuxent Formation. The Patapsco Aquifer is unconfined in the study area and extends southeastward from Bird River Road to beyond the edge of the study area. The Piedmont Aquifer is located in isolated areas underlain by Piedmont formations in the northwest portion of the study area. The Piedmont Aquifer is unconfined and generally moves through the fractured zones of the upper surface of consolidated rock beneath the ground surface.

The unconfined aquifer is recharged by infiltration from precipitation, thereby making it susceptible to contamination from surface activities. Substances on the surface can become dissolved or mixed into the water as it filters down into the shallow aquifer, resulting in localized aquifer contamination. Consequently, construction activities and subsequent usage in recharge areas present the potential for contamination of the unconfined aquifer. Furthermore, water levels in wells screened in the unconfined aquifer located near construction areas may also be lowered by construction activities.

However, unconfined aquifer contamination in the Coastal Plain region does not usually extend far from the source of contamination. Natural attenuation of aquifer contamination is usually very effective in this area in limiting contamination to near the source, meaning that a shallow well would have to be located very near the construction area to be affected by either water table lowering or aquifer contamination. Therefore, impacts to the unconfined aquifer by construction development would most likely be minimal and localized.

Reduction of aquifer recharge areas and increased potential for shallow aquifer contamination would be the greatest impacts to the hydrogeology of the SCEA boundary from road construction activities and other anticipated development. Increased impervious surface reduces the amount of recharge area when new pavement covers formerly pervious surfaces in an aquifer's recharge zone. This reduction of infiltration surface area has the three-fold effect of altering surface drainage patterns, lowering the local groundwater table, and reducing the base levels and base

flows of local streams. The highly intermittent base flows, coupled with higher temperature run-off from sun-warmed pavements, also negatively impact the quality of stream waters and ultimately effect aquatic life. Streams may be dry or dryer in periods of low precipitation and prone to more flooding in periods of high precipitation. Sheet flow of precipitation may increase in velocity due to increased impervious surface, causing greater run-off. However, the proper MDE-approved storm water and sediment/erosion control measures will be completed as part of this project.

Potential impacts to aquifer system recharge and stream flow characteristics can be mitigated to varying degrees by utilizing storm water management techniques that encourage infiltration and minimize alterations of surface flow drainage patterns. Avoiding spillage of fuels or other contaminating substances and the careful and prudent use of vegetation, applications of fertilizer, herbicides and insecticides can minimize potential impacts to groundwater quality. Shallow water supply wells located within 1000 feet of proposed construction areas could be replaced with deep wells to avoid the possibility of water supply contamination. Except for some older, dug or shallow wells that may still be in use, the unconfined aquifer is not used for potable water supplies in this area. Most of the potable water supplies used by local residents and businesses are from deep wells screened in the confined aquifer or from public water supplies. Future commercial development in the area will use public water.

It is expected that current Baltimore County and MDE regulatory programs pertaining to groundwater withdrawals and discharges, and other regulatory programs (e.g., *MD Forest Conservation Act*, *Non-tidal Wetlands Act*, etc.) will effectively protect groundwater resources within the SCEA boundary.

b. Surface Water

Water quality of surface waters is regulated by the Maryland Department of the Environment (MDE) pursuant to the COMAR 26.08.02 (Water Quality), revised February 7, 1995 (ACM, Environment Article, Section 9-13 through 9-316, 9-319, 9-320, and 9-325). The purpose of these regulations is to protect surface water quality through the adoption and implementation of water quality standards. The surface water quality standards consist of designated uses of state waters, and criteria to protect the designated uses. One regional initiative to protect surface waters and control non-point source (NPS) pollution is the Stormwater Management Program (implemented in 1984), which requires that stormwater from urban land be treated using best management practices. Baltimore County has been delegated authority over this program. The Federal Program in place to regulate NPS pollution is the *National Pollutant Discharge Elimination System* (NPDES) Permits for Municipal Separate Storm Sewer Systems (implemented in 1990). This federal program mandates that local jurisdictions with populations greater than 100,000 are required to inventory, monitor and assess their stormwater programs.

The SCEA boundary includes three major subwatersheds: Bird River, Gunpowder River and Middle River. Stresses to surface water quality in the SCEA boundary have varied during the study time frame. Prior to the implementation of improved sewage disposal systems in the 1970's and 1980's as a result of the *Federal Water Pollution Control Act of 1972*, the major stress on water quality in the study area was discharge of poorly or untreated sewage. Current



and anticipated future stresses on surface water quality are stormwater runoff from urbanized areas and sedimentation/siltation from soil erosion/disturbance due to commercial and residential development.

Maryland Save Our Streams has been monitoring water quality in Baltimore County since 1990 utilizing its *Project Heartbeat* sampling protocols, which are based on USEPA's Rapid Bioassessment Protocol II for benthic macroinvertebrates (Platkin, et. al. 1989). The monitoring program is a cooperative effort in conjunction with Baltimore County Department of Environmental Protection and Resource Management (DEPRM). Entitled *100 Points of Stream Monitoring*, the program is one facet of the *Baltimore County Citizens for Stream Restoration Campaign* and is a countywide effort to provide reliable stream data for effectively managing watershed resources. One hundred County stream sites are monitored every summer, with a subset of 30 to 45 of these sites also sampled in the spring and fall. (Maryland Save Our Streams, 1997)

Maryland Save Our Streams sample sites within the SCEA include: (1) Honeygo Run at Pulaski Highway; (2) Whitemarsh Run at US 1; (3) Whitemarsh Run at Ebenezer Rd; (4) Whitemarsh Run at Mercantile Rd; (5) Whitemarsh Run at Pulaski Highway; and (6) Windlass Run at Bird River Rd. All of these stations are within the Bird River watershed. Approximately 57% of the stream stations indicate a poor condition. Approximately 29% of the stations indicate a fair/poor condition, with 14% of the stations indicating a fair condition. The trend in water quality for Honeygo Run shows a decrease from fair to poor, while the Whitemarsh Run stations show inconclusive results.

The *Maryland Water Quality Inventory, 1993-1995*, evaluation concentrates on water quality conditions during the 2-year period and was developed by analysis of data generated through various monitoring programs (Maryland DNR, 1996). For Segment 02-13-08-03 (Gunpowder-Bird River) there are no routine water quality monitoring stations, however, based on information collected in the Targeted Watershed project here, water quality is Poor. High nutrient levels and suspended sediment loads are related to construction activities and runoff from agricultural and urban areas. Bioassessment of one site on Whitemarsh Run showed some improvement over conditions observed in 1993. Citizen data collected from six Project Heartbeat stations in Baltimore County generally showed moderate to severe impacts on the benthic community.

The USEPA *Index of Watershed Indicators* is a data resource available on the Internet site "Surf Your Watershed." The index provides a general picture of watershed health. For the Gunpowder-Patapsco watershed the overall rating indicates "Less Serious Water Quality Problems", with high vulnerability to stressors, such as pollutant loadings. Candidate indicators used to determine the rating include: risk of groundwater nitrate contamination; soil permeability; nitrogen export; atmospheric deposition; soil; agricultural/urban riparian habitat; and forest riparian habitat. Indicators receiving a rating of "more serious" include: risk of groundwater nitrate contamination; nitrogen export; and atmospheric deposition. Soil permeability received a "less serious" rating. Agricultural/urban riparian habitat and forest riparian habitat received a "better" rating. The following is a description of the indicators:

#### *Forest Riparian Habitat*

Percentage of land within one kilometer of major streams which is covered by forest. Land cover was estimated by the United States Geological Survey (USGS) Earth Resources Observation Systems (EROS) Data Center using one kilometer Advanced Very High Resolution Radiometer (AVHRR) satellite imagery.

Riparian zones have the capacity to buffer rivers and other waters from non-point source runoff from agricultural, urban, or other areas. Healthy riparian zones can absorb sediments, chemical nutrients, and other substances contained in non-point source runoff.

#### *Agricultural/Urban Riparian Habitat*

Percentage of land within one kilometer of major streams which is classified as agriculture or urban. Land classification was estimated by the United States Geological Survey (USGS) Earth Resources Observation Systems (EROS) Data Center using one kilometer Advanced Very High Resolution Radiometer (AVHRR) satellite imagery.

#### *Atmospheric Deposition Estimates for Total Nitrogen*

This information comes from the National Atmospheric Deposition Program/ National Trends Network and depicts nitrogen (NO<sub>3</sub> and NH<sub>4</sub>) deposition estimates. Nitrogen, along with phosphorous, is one of the primary nutrients that can cause algal blooms and other problems in surface and ground waters. Atmospheric deposition is often one of the major sources of nitrogen. For instance, it has been identified as a primary source in the Chesapeake Bay. This data layer estimates total atmospheric nitrogen deposition using the National Atmospheric Deposition Program/National Trends Network (NADP/NTN). Total Nitrogen was selected as the first of the atmospheric layers to be included in IWI because it is considered a reliable value given the methods used by NADP/NTN and it is such an important potential pollutant of surface waters. Total Nitrogen in this layer is the sum of the ammonia and nitrate values in NADP/NTN for 1996.

#### *Watershed Nitrogen Export*

"Nitrogen export" refers to the total amount of nutrients exported from the watershed that is produced solely within the watershed. Total nitrogen includes the organic and inorganic forms of nitrogen that serve as nutrients for both desirable and undesirable aquatic plant growth. Local TN export refers to the annual quantity of total nitrogen that comes from pollution sources in a watershed and leaves the watershed in the river or stream that connects the watershed to other watersheds downstream. This indicator is an expression of the disparity between the sources of nitrogen (usually fertilizers, animal wastes, atmospheric deposition, and wastewater discharges) and the consumptive uses of nitrogen such as the growth of crops and natural processes that return nitrogen to the atmosphere. Watershed nitrogen exports are influenced by soils and by other natural watershed characteristics. Just as the sources of nitrogen in watersheds vary, so do the impacts of exported nitrogen. The impacts vary with such factors as water-column mixing, sunlight, temperature, and the availability of other nutrients. High levels of nitrogen are not

always a cause of concern in the watersheds that export them, but these exports are known to influence the condition of coastal estuaries and lakes, and their reduction is the focus of several coastal management plans.

#### *Soil Permeability*

The contamination of ground water resources by nitrates and pesticides has the potential to impact drinking water quality and other surface waters. The contamination of ground water resources by nitrates and pesticides has the potential to impact drinking water quality and other surface waters. For example, over 56% of community water systems and 64% of the rural domestic wells tested in an EPA survey (1988-1990) contained nitrates (USEPA 579/9-91-020). Ground water contamination can also lead to the contamination of surface waters where ground water feeds rivers, lakes, wetlands and other waters.

Groundwater contamination by pollutants such as pesticides and nutrients found in surface releases is affected by the properties of the overlying soil. Soil permeability is one of the controlling factors for the rate at which a contaminant travels through soils. Soils with higher permeability facilitate the transport of pollutants into ground water. Thus, high permeability is an indicator of increased risk of ground water contamination. Identifying permeability as an indicator of potential ground water contamination has been used in a number of screening level tools such as the DRASTIC (Depth, Recharge, Aquifer, Soil, Topography, Conductivity) System.

#### *Risk of Ground Water Nitrate Contamination*

This indicator presents patterns of vulnerability to nitrate contamination at large regional or national scales. Knowing where and what type of risks to groundwater exist can alert managers to the need for protection of water supplies.

The rating for the Gunpowder-Patapsco watershed implies that forest riparian buffers along tributaries in the watershed are generally good. Riparian zones function to buffer rivers and waters from NPS pollution. Since NPS pollution will increase as a result of development, riparian buffers will be important.

Water quality in the Bird River Watershed has been impacted by high sediment loads, high stormwater flows, and excessive stream channel erosion and habitat degradation. These impacts are the result of both extensive sand and gravel mining and changing land use due to urbanization. Impacts from the rapid urbanization could further degrade this watershed's water resources unless the development of a comprehensive watershed management plan was not initiated by the County.

In the last five years, extensive efforts have been undertaken to assess and begin to address the areas of pollution contributing to the water quality problems in this watershed. Baltimore County's Bird River Watershed Water Quality Management Program was initiated with the goal of using a comprehensive watershed framework to make decisions about water quality restoration in a rapidly urbanizing area.

The Whitemarsh Run tributary has been selected for the intensive evaluation as a result of the comprehensive restoration efforts planned for the sub-basin. The analysis will evaluate an integrated management plan for sediment load reductions, and fish and habitat improvement projects. These include detention basin retrofits, wetlands and floodplain creations, and stream channel stabilization using bioengineering techniques.

Readily available data on water quality trends in the SCEA boundary and time frame were limited to a relatively short (i.e., less than a decade) time span and limited monitoring stations within the Bird River watershed. There was some improvement at one site on Whitemarsh Run, over conditions in 1993.

The increased amount of impervious surface associated with development will affect the hydrogeology of the SCEA. Increased impervious surface reduces the amount of recharge area when new pavement covers formerly pervious surfaces in an aquifer's recharge zone. This reduction of infiltration surface area has the three-fold effect of altering surface drainage patterns, lowering the local groundwater table, and reducing the base levels and base flows of local streams. The highly intermittent base flows, coupled with higher temperature run-off from sun-warmed pavements, also negatively impact the quality of stream waters and ultimately effect aquatic life. Streams may be dry or dryer in periods of low precipitation and prone to more flooding in periods of high precipitation.

The construction of the highway will provide access to the planned Middle River Employment Center. The development will increase non-point source pollutant loadings to Windlass Run. NPS pollution continues to be a problem which will likely worsen as the watershed becomes more populated.

c. Floodplains

The Baltimore County Department of Environmental Protection and Resource Management (DEPRM) regulates development in floodplains in Baltimore County. The regulatory authority is a County Floodplain Ordinance enacted in the 1960's and amended in 1990 to include the 100-year floodplain. Under this ordinance, development is discouraged in the regulatory (i.e. 100-year) floodplain. If development encroaches upon the regulatory floodplain, appropriate hydraulic studies must show that the elevation of the regulatory floodplain of the post-development condition does not exceed that of the pre-development condition along the adjacent properties. If there is a documented flooding problem on properties downstream of the proposed development, certain development restrictions may apply.

Past stresses to floodplains in the SCEA boundary have entailed filling and building construction for residential and commercial development and infrastructure construction (i.e. roads, bridges, sewers, etc.). Most of these stresses were apparent prior to the enacting of the Countywide floodplain ordinance. Since that time, development in and impacts to, floodplains have been rigorously controlled in Baltimore County. Generally, filling and/or construction within the 100-year floodplain is prohibited and, if permitted, certain conditions as noted above must be met, including implementation of floodplain mitigation measures, if warranted.

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Streams within the SCEA Boundary include Whitemarsh Run, Windlass Run, Darkhead Creek, Saltpeter Creek, and Honeygo Run. The Federal Emergency Management Agency (FEMA), the Corps of Engineers, DEPRM, and the Baltimore County Department of Public Works have studied these streams over the years since enactment of floodplain ordinances. These studies have accurately established regulated floodplains within the SCEA. Cumulative effects on floodplains resulting from future development are, therefore, expected to be negligible. An assessment of future impacts to floodplains was not made as floodplain impacts are very project specific. The rationale for the assessment that future secondary and cumulative impacts effects to floodplains will be negligible is based on the current County regulations which generally prohibits development in the regulated floodplain.

d. Wetlands

Wetlands in the SCEA boundary are primarily palustrine, forested wetlands associated with the various tidal and non-tidal waterways that traverse the two sub-watersheds. These waterways include Whitemarsh Run, Windlass Run, Darkhead Creek, Saltpeter Creek, and Honeygo Run. Palustrine emergent and palustrine shrub-scrub are also represented in these stream corridors.

Stresses to wetlands in the SCEA boundary have varied over time according to changes in land use and/or regulatory programs. Quantitative wetland trends data for the SCEA area were not readily available. Expectations were that mapped data could be used to assess wetland trends within the SCEA boundary; that is, wetland areas for different time periods could be measured (by planimeter or CADD digitizing) and compared to show trends. This method was not appropriate as a consistent database was not available.

The amount of wetlands at risk outside the Employment Center are those associated with development identified above on Table IV-37. Only five of the known, active and proposed development projects contain wetlands that would be at risk. The following list describes those wetlands:

A. Wetlands on Parcels with Development Plans

<i>Parcel A</i>	<i>PEM5J</i>	<i>250,000 sq. ft</i>
	<i>PFO1A</i>	<i>2000 linear ft</i>
	<i>PSS1A</i>	<i>400 linear ft</i>
	<i>POWfH</i>	<i>10,000 sq. ft</i>
<i>Parcel B</i>	<i>POWfH</i>	<i>10,000 sq. ft</i>
	<i>PEM5E</i>	<i>20,000 sq. ft</i>
	<i>PFO1A</i>	<i>600 linear ft</i>
<i>Parcel C</i>	<i>POWF1</i>	<i>20,000 sq. ft</i>
<i>Parcel D</i>	<i>PFOiA</i>	<i>1,000 linear ft</i>
<i>Parcel E</i>	<i>POWZh</i>	<i>40,000 sq. ft</i>

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A recent report by the National Wetlands Inventory "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.

Regulatory programs will continue to reduce the conversion of wetland areas in Maryland and the study area. An increased emphasis on wetland mitigation will strive to offset wetland disturbances caused by major development actions. The recent Maryland Wetlands Initiative will attempt to contribute to the wetlands base through restoration of some 60,000 acres (24,282 hectares) 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 wetland creation, and development of a wetlands conservation plan to aid private sector wetland initiatives.

e. Wildlife Habitat

Forest habitats of the SCEA boundary are primarily present as contiguous forest within the employment center, forested corridors alongside streams and larger rivers within the study area, and as fragmented patches interspersed with highway, commercial, and residential development. Scrub/shrub, herbaceous/grassland, and active and fallow agricultural field habitats are also present within the SCEA boundary.

Stresses to terrestrial habitat include development, forest fragmentation, changing agricultural practices, pesticide applications, and natural plant succession. The population in Baltimore County is expected to grow by 9.5% by 2020 (MOP). Between 1973 and 1990, trend analysis using MOP land use maps shows there was a 7% loss in forested lands and an 18% loss in agricultural lands in the SCEA.

The proposed highway would displace from 38 to 60 acres of forest, the degree of loss being dependent on the alternative chosen. It is also likely that forest habitats in the SCEA will continue to be developed and highly fragmented, as is indicated by the private development projects already underway. Natural succession will continue to offset some of these losses, as will afforestation or reforestation mitigation requirements of approved Forest Conservation Plans pursuant to the Forest Conservation Act (See Section III.J.1).

Proposed secondary development will occur once the highway is built. The Employment Center will occur on areas of currently forested land, with a projection of 440 acres of forest to be consumed, which will cause forest habitat fragmentation. However, because of current regulations that protect forests, some of the forested area will remain undeveloped.

In addition to habitat loss, expected stresses to wildlife species include increased noise pollution resulting from development, increased human disturbance during breeding and nesting seasons, and increased application of pesticides.

f. Rare, Threatened, and Endangered Species

Consultation with the Maryland Department of Natural Resources, Wildlife and Heritage Division (MDNR-WHD) has revealed that their Natural Heritage database has both historical and recent records for State-listed Endangered/Threatened (E/T) and/or Rare species of plants or animals known to have occurred within the immediate vicinity of the SCEA boundary ( see Comments and Coordination Section). These are listed in Table IV-40 along with their State Status.

Table IV-40: Threatened and endangered species known to occur within the SCEA boundary:

Scientific Name	Common Name	State Status
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Endangered (Federally Threatened)
<i>Sterna antillarum</i>	Least Tern	Threatened
<i>Lycopodiella inundata</i>	Bog Clubmoss	Rare
<i>Polemonium vanbruntiae</i>	Jacob's-ladder	Threatened
<i>Asclepias rubra</i>	Red Milkweed	Endangered
<i>Pycnanthemum virginianum</i>	Virginia Mountain-mint	Rare
<i>Betula populifolia</i>	Gray Birch	Uncertain*
<i>Scirpus smithii</i>	Smith's Clubrush	Endangered Extirpated*
<i>Arundinaria gigantea</i>	Giant Cane	Threatened
<i>Potamogeton perfoliatus</i>	Clasping-leaved Pondweed	Rare
<i>Bidens coronata</i>	Tickseed Sunflower	Rare
<i>Iris prismatica</i>	Slender Blue Flag	Endangered
<i>Botaurus lentiginosus</i>	American Bittern	In Need of Conservation
<i>Circus cyaneus</i>	Northern Harrier	Rare
<i>Laterallus jamaicensis</i>	Black Rail	In Need of Conservation
<i>Eriocaulon parkeri</i>	Parker's Pipewort	Threatened
<i>Potamogeton spirillus</i>	Spiral Pondweed	Highly Rare
<i>Matteucia struthiopteris</i>	Ostrich Fern	Rare
<i>Pilea fontana</i>	Coolwort	Rare*
<i>Bromus nottowayanus</i>	Nottoway's Brome	Endangered Extirpated
<i>Sporobolus asper</i>	Long-leaved Rushgrass	Highly Rare
<i>Arnica acaulis</i>	Leopard's-bane	Endangered
<i>Gentiana villosa</i>	Striped Gentian	Endangered
<i>Ixobrychus exilis</i>	Least Bittern	In Need of Conservation
<i>Carex vestita</i>	Velvety Sedge	Endangered
<i>Solidago hispida</i>	Hairy Goldenrod	Endangered Extirpated*
<i>Desmodium strictum</i>	Stiff Tick-trefoil	Endangered
<i>Sanguisorba canadensis</i>	Canada Burnet	Threatened
<i>Monotropsis odorata</i>	Sweet Pinesap	Endangered

\*Species currently proposed for rank changes

Endangered/Threatened species are regulated by the Federal Government pursuant to the Endangered Species Act of 1973 (P.L. 93-205, 87 Stat. 884), and the State of Maryland pursuant to the Endangered Species Act of 1973 (ACM, Natural Resources Article, Section 10-210). The

Maryland Non-game and Endangered Species Conservation Act of 1975 (ACM Natural Resources Article, Section 10-2A01 *et seq.*) further protects E/T species. This act mandates the investigation, management, and protection of both non-game wildlife and E/T species of wildlife and plants through the MDNR-WHD, Heritage and Biological Conservation Program. Certain State permitting programs, such as the wetlands and hazardous waste discharge permit programs, require review of public development permit applications by MDNR-WHD before public development is permitted. On private lands that are within State designated Critical Areas, the County government regulates development with regards to rare species, and requests MDNR-WHD to review the private development permit applications. For private development permit applications that are outside the State Critical Areas, there is no enforcement policy currently in place.

Data were only readily available to assess the cumulative effects on Forest Interior Dwelling Bird Species (FIDS) and other breeding bird species. No data were readily available for mammals, herptiles or other types of wildlife. FIDS habitat is conservatively defined as: 1) contiguous upland forest of 50 acres or more; 2) riparian forest greater than 300 feet in width that border a stream for at least 600 feet; 3) riparian forest at least 150 feet wide and connected to one of the above; or 4) forest patches 10 acres or larger and within 300 feet of the first two definition (MDNR 1998). The primary reasons for the general decline in breeding populations of FIDS are from: forest habitat loss and fragmentation, and wintering habitat loss due to development; (2) loss of food sources (mainly insects) due to pesticide use (especially to control gypsy moths); 3) human disturbance; and/or 4) Brown-headed Cowbird parasitism. Data from the 1966-1996 BBS period indicates a general positive trend for Maryland for the Woodland Breeding Species Group (Sauer et al, 1997 and Robbins, 1996), while at the same time the following woodland breeding species are showing a negative trend within the SCEA:

- Wood Thrush
- Yellow-throated Vireo
- Black & White Warbler
- Scarlet Tanager
- Great Crested Flycatcher
- Eastern Wood-pewee
- Carolina Chickadee
- Kentucky Warbler
- Red-eyed Vireo
- Prothonotary Warbler
- Downy Woodpecker
- Ruby-throated Hummingbird
- Yellow-billed Cuckoo
- Whip-poor-will
- Broad-winged Hawk

According to the USGS-PWRC Internet web page entitled *BBS Summary of Trends Data* (Sauer et al, 1997 and Robbins, 1996) the primary reasons for the general decline in breeding populations of FIDS are from:

- forest habitat loss and fragmentation, and wintering habitat loss due to development
- loss of food resources (mainly insects) due to pesticide use
- human disturbance; and
- Brown-headed Cowbird parasitism.

Other breeding populations of birds in decline include the grassland species. The Grassland Breeding Species Group is listed as having a substantial negative trend estimate throughout the entire 1966-1996 BBS period (Sauer et al, 1997). The primary reasons for the decline of these



species include the loss of grassland or wetland habitat due to development, changing agricultural practices, loss of food resources due to pesticide use, human disturbance and cowbird parasitism.

Implementation of the highway project is expected to result in cumulative impacts to wildlife due to proposed development. The development of the Employment Center will displace up to 440 acres of forest habitat. Implementation of the highway project will also contribute to forest habitat fragmentation, which affects wildlife species that depend on forest interior habitats. The cumulative effects of the highway coupled with other connector roads and development projects will likely be that certain species of concern, such as FIDS, would become rarer.

Over time, forest interior habitat has been substantially reduced, fragmented or altered as has agricultural/grassland habitat. This has resulted in a declining trend in FIDS and grassland and scrub/shrub species within the SCEA. The cumulative effects of the highway coupled with other highway and development projects will likely be that certain species of concern, such as FIDS, would become even more rare, and especially vulnerable to extirpation. Their numbers will decline, as their habitats continue to be developed, and as new highway construction and development continue to result in forest fragmentation.

7. Summary of Secondary and Cumulative Effects

Table IV-41 provides a summary of the expected secondary and cumulative effects associated with the MRECAS project.

**R. Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity**

The long-term benefits of the extension of MD 43 to the Middle River Employment Center would occur at the expense of short-term construction impacts in the immediate vicinity of the project area. These short-term effects would include localized noise and air pollution, 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 build alternatives are consistent with the maintenance and enhancement of long-term productivity for the local area, state, and the region. The Middle River Employment Center Access Study is consistent with the Baltimore County Master Plan 1979-1990, adopted by the County Council in November, 1979 and the Eastern Baltimore County Revitalization Strategy. The transportation improvements addressed in this document have been considered and proposed in accordance with these plans.

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**Table IV-41: Comparison Summary of Potential Secondary and Cumulative Effects**

<b>Resource</b>	<b>Potential Secondary Effects</b>	<b>Potential Cumulative Effects</b>
<b>Residential Land Use</b>	Sites west of the MD 43 extension alternatives will be designated for residential use. There are over 500 acres available. County estimates 1185 new residential units.	Nine developments are planned, totaling 2207 units and 437 acres.
<b>Commercial and Institutional Land Use</b>	Sites are generally east and south of MD 43 extension alternatives. There are approximately 647 acres available. County expects 65% warehouse, 15% office, 10% manufacturing and 10% retail.	One commercial development is planned, to include 18 units on 38.2 acres. One institutional development planned, to include two units on 33.6 acres.
<b>Farmlands</b>	There are no agriculturally zoned parcels in the MERC, however, several small active farmland will be converted.	Trend analysis indicates a potential 18% loss of farmlands within the SCEA boundary.
<b>Floodplains</b>	Some development will occur adjacent to floodplains. Development restrictions within floodplains will minimize impacts.	Some development will likely occur adjacent to floodplains. Development restrictions within floodplains will minimize impacts.
<b>Forests</b>	There are over 400 acres of forests in the MREC. Most would be lost to development.	Trend analysis indicates a potential 7% loss of forested lands within the SCEA boundary. State regulations and conservation activities are striving to preserve remaining resources
<b>Cultural Resources</b>	Martin State Airport/Federal Depot Historic District will be affected.	Known historic sites not located on parcels planned for development. Archeological sites may be affected by infrastructure extensions.
<b>Water Resources</b>	MREC borders Windlass Run. Also includes several unnamed tributaries. Stream buffers will minimize impacts. Water and sewer service will be provided.	Anticipated future stresses on surface water quality will be stormwater runoff from urbanized areas and sedimentation/siltation from soil erosion/disturbance due to residential and commercial development. Current Baltimore County and MDE regulations are expected to protect groundwater resources.
<b>Wetlands</b>	Potential impact to isolated pockets within MREC. Alternatives that are removed from the MREC will require conversion of additional wetlands. Buffers will minimize impacts to wetlands adjacent to streams.	Regulatory programs will continue to reduce the conversion of wetland areas. An increased emphasis on wetland mitigation will strive to offset wetland disturbances caused by development actions.
<b>Wildlife Habitat</b>	MREC located on currently forested land, with a projection of over 400 acres of forest to be converted, which will cause forest habitat fragmentation.	Habitat loss is projected to continue. Expected stresses to wildlife species include increased noise pollution, increased disturbance during breeding and nesting seasons, and increased application of fertilizers.
<b>Rare, Threatened and Endangered Species</b>	Loss of contiguous forest in MREC may effect species that depend on forest interior habitats.	Certain species of concern, such as FIDS, may become even more rare, and especially vulnerable to extirpation.

**S. Irreversible and Irretrievable Commitments of Resources**

The construction of the build alternatives involve the irreversible and irretrievable commitment of various natural, human, and fiscal resources. The project 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 the highway facility. If a greater need for the land be proven, or the highway proven no longer to be necessary, it is possible to re-convert the property to another use. It is not anticipated, however, that either of these two situations will occur.

Fossil fuels, labor, and construction materials will be used in considerable quantities for the build alternatives. In addition, labor and natural resources 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 the continued availability of these resources.

Selection of a build alternative would require an irretrievable commitment of local, state and federal funds for right-of-way acquisition, materials, and construction. Funds for annual maintenance would also be required.

The commitment of these resources is established on the premise that the local and regional residents, commuters, and business communities will benefit from the proposed highway improvements. Benefits that are anticipated to outweigh the loss of these resources would include economic development, increased jobs, increased wages, decreased unemployment and increased income tax revenues.

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V.

# FINAL SECTION 4(f) EVALUATION

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**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

## V. FINAL SECTION 4(f) EVALUATION

### A. Introduction

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303(c)) permits the use of land from a publicly owned park or recreation area, wildlife or waterfowl refuge, or any significant historic site (as determined by the officials having jurisdiction over the park, recreation area, refuge or historic site) only if there is no feasible and prudent alternative to the use of land and the action includes all possible planning to minimize harm to the protected property resulting from such use. This chapter contains the documentation to comply with Section 4(f) of the Department of Transportation Act of 1966.

### B. Description of Proposed Action

The study area for the Middle River Employment Center Access Study (MRECAS) is located in southeastern Baltimore County and is bounded by Ebenezer Road to the north and MD 150 (Eastern Avenue) to the east and south (See Figure III-3). Wampler Road generally defines the western boundary except for a corridor where MD 43 (White Marsh Boulevard) extends westward from its eastern terminus at US 40. Via this corridor the highway interchange of MD 43 and I-95 is included within the project area and defines its westernmost point. The project area contains approximately 8.6 square miles, and its boundaries are generally parallel to those of the Middle River Employment Center (MREC) as identified in the *Eastern Baltimore County Revitalization Strategy*, a plan adopted by the Baltimore County Council in 1996.

The primary east-west road currently serving the MREC is Ebenezer Road, which runs along its northern edge. However, travelers wishing to access MD 150 from Ebenezer Road must also utilize north-south oriented Earls Road as a connecting link. Both roads are two-lane secondary roads having narrow lanes (eleven-foot and ten-foot widths respectively) with no shoulders and no access controls. Ebenezer Road has twelve at-grade intersections and 115 driveways accessing it. Land-use along Ebenezer Road is predominantly residential with some agriculture and some local service businesses also being present. Earls Road exhibits severe design deficiencies in both horizontal and vertical alignments. Adjacent land uses, which are predominantly commercial, include a sand and gravel plant, a nursery, an auto junkyard, and other similar activities. These businesses generate a heavy flow of truck traffic. Scattered residential uses also contribute to traffic volumes. The road deficiencies have contributed to a high accident rate on Earls Road.

The MRECAS was initiated in order to address the severe limitations to east-west travel through the MREC and thereby provide improved access from the regional transportation network to planned major economic development opportunity sites. These sites take the form of development "pods" that have been established by Baltimore County within the developable portions of the MREC. Improved access within the MREC would also foster increased utilization of established employment areas. This project is critical to the desired growth in the designated growth area.

The MRECAS has identified numerous alternate routes through the MREC which could potentially connect MD 43 with MD150 and provide the necessary access links to the major north-south highway routes and to other transportation modes available in the area, such as the AMTRAK railway facilities and Martin State Airport. One of the five alternative routes has been selected by SHA. All other alternatives have been rejected for various reasons related to cost and/or to excessive negative impacts. The negative impacts associated with the rejection of these alternatives are discussed below, and under section F, Avoidance and Minimization Alternatives.

### C. Alternatives Considered

#### 1. No-Build or Baseline Alternative

The *No-Build Alternative* consisted of regular maintenance, safety and operational improvements to existing roadways in the study area. This alternative would have involved no major improvements in the Middle River area and therefore was not selected because it did not meet the stated purpose and need of the project.

#### 2. Build Alternatives

The following Build Alternatives were studied in detail, but were not selected. Detailed descriptions of these alternatives, along with detailed mapping, and reasons for not selecting them are provided in Section II of this document.

*Alternative D* proposed a four lane divided section, which would have connected to the MD 43/US 40 interchange. The segment would have extended east of the BGE substation and the Holly Hill Memorial Cemetery, with a grade-separated crossing of Bird River Road. The proposed roadway would have then crossed the AMTRAK rail lines via a bridge structure and tied into MD 150 between the MARC station and the Federal Depot, directly across from the Air National Guard Complex entrance. Alternative D would have impacted a Section 4(f) resource (NRE historic district) near this intersection. Alternative D was not selected because its crossing of Windlass Run directly impacted 1.2 acres of wetlands and 0.9 acres of floodplain. The US Army Corps of Engineers did not favor this alternative due to the impacts to Windlass Run.

*Alternative D Modified* was very similar to Alternative D but crossed Windless Run further east at a possibly less environmentally-damaging crossing and provided improved access to prime developable parcels within the MREC that are closer to Ebenezer Road. Alternative D Modified was later revised to become Revised D Modified (the *SHA Selected Alternative*) and was, therefore, not selected.

*Alternative E* followed the same alignment as Alternative D except for its connection with MD 150. Alternative E avoided a Section 4(f) resource (the Martin State Airport/Federal Depot Historic District), instead tying into MD 150 just east of the Williams Estates community and west of Chase Elementary School. The tie-in utilized a clearing that is currently owned by Baltimore County. Alternative E was not selected, primarily, because it impacted a minority community located immediately adjacent to the terminus. Impacts to this community would



have included right-of-way acquisition, visual intrusion, community disruption and noise intrusion. Alternative E would have also required upgrading MD 150 from the termination point west to Carroll Island Road. This would have resulted in impacts to utilities and additional properties along MD 150 and would have required construction within the Limited Development Area of the Chesapeake Bay Critical Area. These impacts are more fully described below, under "Avoidance Alternatives".

*Alternative F<sub>1</sub> Modified* proposed a four lane divided section, which would have connected to the MD 43/US 40 interchange. The alignment extended west of the BGE substation expansion and west of the Holly Hill Memorial Gardens Cemetery, with a grade-separated crossing of Bird River Road. The proposed roadway traversed south to tie into MD 150 at the same location as Alternative D and Alternative D Modified and would have also impacted the Martin State Airport/Federal Depot Historic District. Alternative F<sub>1</sub> Modified was not selected because it had the most residential displacement (10 residences, as opposed to 6 residences relocated by SHA's Selected Alternative) and provided the most indirect access to several prime developable pods in the MREC (particularly the pods east of the Holly Hills Memorial Gardens Cemetery). The connector roads needed to access the pods east of the cemetery resulted in large secondary impacts to forests and wetlands. It also impacted a potential NRE archeological site. A Phase I investigation of this site indicated that it met the criteria for eligibility for the NRE on a preliminary basis and that a Phase II investigation was warranted. Further Section 106 coordination would need to take place if these sites are impacted.

*Alternative I Modified* proposed a four lane divided section, which would have connected to the MD 43/US 40 interchange. This alignment would have extended east of the BGE substation and the Holly Hill Memorial Gardens Cemetery, with a grade-separated crossing of Bird River Road. Similar to Alternative E, Alternative I Modified would have tied into MD 150 slightly east of the Williams Estates community, utilizing the clearing just west of Chase Elementary School, which is currently owned by Baltimore County. Alternative I Modified would have avoided the Martin State Airport/Federal Depot Historic District. Alternative I Modified required upgrading of MD150 from its termination at MD 150 to Carroll Island Road. Alternative I Modified was not selected, primarily, because it impacted a minority community located adjacent to the terminus at MD 150. Impacts to this community would have included right-of-way acquisition, visual intrusion, and noise intrusion. Alternative I Modified also would have also required upgrading MD 150 from the termination point west to Carroll Island Road. This would have resulted in impacts to utilities and additional properties along MD 150 and would have required construction within the Limited Development Area of the Chesapeake Bay Critical Area. These impacts are more fully described below, under "Avoidance Alternatives".

### 3. SHA's Selected Alternative

**Revised D Modified** is **SHA's Selected Alternative**. It consists of a 4-lane divided roadway on a new location extending from the existing US 40/MD 43 interchange, over Bird River Road and the Amtrak railroad, and terminating at MD 150, opposite the main entrance to the Maryland Air National Guard Complex. The alignment differs from Alternative D Modified in that it avoids several BGE transmission towers just east of US 40, resulting in a substantial utility relocation cost savings.

The typical section has also been modified as a result of concerns raised by the regulatory agencies after their review of the proposed typical section included in the DEIS. In order to reduce impacts to the environment, the median width has been reduced from 34 feet to 24 feet in areas of no proposed intersections. Also the 20 feet of grading originally proposed on one side of the roadway has been reduced to 10 feet. This will allow for a future sidewalk to be built if a parallel system is not constructed in the future and the need is not met other ways.

Incorporating those changes, the typical section for Revised D Modified consists of a 14 foot inside lane and a 15 foot outside lane in each direction with a variable-width raised median that ranges from 24 feet in areas of potential impact to 34 feet in the vicinity of proposed intersection locations. The roadway will be constructed with a closed drainage system, i.e. curb and gutter along the median and outside roadway edges. On one side of the roadway there is a ten foot graded buffer between the roadway and an eight-foot pedestrian/bike path. The other side of the roadway will have a 10-foot landscape area to accommodate a future sidewalk. The design speed of the road is 45 miles per hour. Figure II-2 shows the originally proposed and modified typical sections.

Revised D Modified has been selected for final design and construction because it best meets the project purpose and need and its overall direct and secondary environmental impacts are less than most of the other alternatives (see Table V-1). As shown on Table V-1, the SHA Selected Alternative crosses fewer streams than Alternatives E or I Modified (the Section 4(f) avoidance alternatives), impacts fewer noise sensitive areas than the Section 4(f) avoidance alternatives, requires the least amount of privately owned right-of-way, requires no business relocations, requires no right-of-way in the Chesapeake Bay Critical Area, and has the lowest right-of-way cost.

Table V-1: Summary of Impacts

Feature	DEIS Alternatives							SHA Selected Alternative
	Unit	No Build	D	D Mod	E	F <sub>1</sub> Mod	I Mod	Revised D Mod
<b>Socioeconomic</b>								
Right-of-Way (ROW) Required	Acre	0	93.1	118.1	91.1	97.1	107.4	92.0
Currently in Private Ownership	Acre	0	81.0	106.0	79.0	84.7	95.3	75.6
# of properties affected	No.	0	23	24	41	25	40	24
Currently in State Ownership	Acre	0	12.1	12.1	12.1	12.4	12.1	12.1
Residential Displacements	No.	0	4	5	6	10	5	6
Business Displacements	No.	0	1	1	1	1	1	0
Consistent with Master Plans	---	No	Yes	Yes	Yes	Yes	Yes	Yes
Active Agricultural Land	Acre	0	0	3.4	1	23.9	11.4	3.4
Public Parks	No.	0	0	0	0	0	0	0
<b>Cultural Resources</b>								
NRE Historic Sites <sup>1</sup>	No.	0	1	1	0	1	0	1
Pot. NRE Archeological Sites Impacted	No.	0	2	0	2	1	1	0
<b>Natural Environment</b>								
Critical Area	Acre	0	0	0	7.3	0	7.3	0
Wetlands <sup>5</sup>	Acre	0	8.5	9.9	7.8	7.3	6.7	9.3
Streams Crossed	No.	0	5	5	7	9	6	5
Stream Impacts	L.F.	0	420	390	585	570	495	390
Floodplain Encroachment	Acre	0	2.8	2.4	2.8	1.5	2.5	2.4
Forest Impacts	Acre	0	51.5	59.5	55.0	38.3	54.9	53.1
100+ Acres Contiguous Forest Blocks	No.	0	1	1	1	1	1	1
Rare, Threatened, or Endangered Species-Federal	No. of Sites	0	0	0	0	0	0	0
Noise Impacts <sup>2</sup>	No.	1	3	2	4	4	3	2
Air Quality Impacts <sup>3</sup>	No.	0	0	0	0	0	0	0
<b>Cost</b>								
Length	Mile	0	3.1	3.6	4.0	3.2	4.1	3.6
ROW <sup>4</sup>	\$Million	0	6.6	6.6	8.5	11.8	12.2	6.6
Potential Noise Barriers	\$Million	0	1.0	0.6	1.0	0.9	0.6	0.6
Engineering & Construction	\$Million	0	50.9	52.2	50.6	48.6	56.3	51.4
Total	\$Million	0	58.5	59.4	60.1	61.3	69.1	58.6

<sup>1</sup> National Register Eligible sites from which property is required.

<sup>2</sup> NSAs that approach or exceed Federal Noise Abatement Criteria or have a 10 dBA or greater increase.

<sup>3</sup> Sites Exceeding S/NAAQs.

<sup>4</sup> Does not include ROW needed from A.V. Williams Trust property.

<sup>5</sup> Additional wetlands were found west of Bird River Road, which total 0.26 acres. This amount has been added to Alternatives D-Mod, D, E and I-Mod.

Key points that led to this decision are as follows:

- Revised D Modified provides the most direct access to key undeveloped upland parcels of land currently zoned for development in the Middle River Employment Center, therefore best addresses the purpose and need of the project.
- Revised D Modified is one of three alternatives that provide direct access to additional developable parcels as well as existing development at the Chesapeake Industrial Park, the Federal Depot and the Martin State Airport.
- Revised D Modified impacts a range of 9.6 to 9.8 acres of wetlands for both the alternative and its associated access roads (See Section IV, Q "Secondary and Cumulative Effects"), one of the least of all the alternatives.
- Revised D Modified directly impacts 390 linear feet of streams, the least of all the alternatives (same as D Modified).
- Revised D Modified impacts two Noise Sensitive Areas (NSA's 4 and 6) that approach or exceed Federal Noise Abatement Criteria or have a 10-decibel or greater increase, the least of all the alternatives.
- Revised D Modified provides access to the MTA MARC Station and Martin State Airport for inter-modal connectivity with I-95.
- Revised D Modified crosses Windlass Run at the US Corps of Engineers' second preferred crossing, F1 Modified being the first choice.
- Revised D Modified requires six residential and no business displacements.
- Revised D Modified avoids several BGE high-tension transmission towers. Avoidance of these towers will reduce the construction cost by approximately \$5 million and cut 12 months off of the lead-time needed to relocate the towers.
- Revised D Modified is estimated to cost \$58.6 million, which includes Right of Way, Potential Noise Barriers, Engineering and Construction.
- Revised D Modified does not affect the two potentially NR eligible archeological sites.
- While Revised D Modified has an adverse effect to the Martin State Airport/Federal Depot Historic District, SHA feels that this is an unavoidable impact. A retaining wall has been incorporated into the design to minimize proximity impacts to the paint hanger that is a contributing element to the historic district, although the wall does not eliminate the need for property acquisition from this parcel. SHA has agreed with the Maryland Historical Trust to provide other mitigation (See " Mitigation and Measures to Minimize Harm", below, and the "Memorandum of Agreement" in Appendix E).

#### D. Description of the Section 4(f) Resources

The Maryland Historical Trust (MHT), which is the State Historic Preservation Officer (SHPO) for the State of Maryland, has concurred that two (2) properties impacted by *SHA's Selected Alternative* are either listed on or are eligible for listing on the National Register of Historic Places. These properties are the Middle River Depot (BA-2824); and the Martin State Airport historic district (BA-2081). The locations of these resources are shown on Figure V-1. The Middle River Depot is eligible for the National register under criteria A, B and C. The Martin State Airport historic district is also eligible under criteria A, B, and C.

SHA has recommended, and MHT has concurred, that the Middle River Depot (BA 2824) and Martin State Airport (BA 2081) together constitute a historic district, the Martin State Airport/Federal Depot Historic District (See Figure IV-1). The Martin State Airport/Federal Depot Historic District would be the only Section 4(f) resource impacted by *SHA's Selected Alternative (Revised D Modified)*.

The Martin State Airport/Federal Depot Historic District developed in three building campaigns that took place between 1938 and 1943. Aviation pioneer Glenn L. Martin located his company in Middle River to take advantage of proximity to the federal government and access to ice-free water. Plant #1 was constructed in 1929 and expanded through 1943; Plant #2 was built between 1940 and 1941, and repeated the design utilized in Plant #2 additions. The Martin State Airport was begun in 1938 and completed in 1941.

The complex is significant for its relation to aviation history, its importance as a production facility during World War II, and for several engineering and architectural considerations. Built by the noted industrial architectural firm of Albert Kahn Associated Architects, the Depot's system of 300-foot trusses allowed the greatest flat span in a building to date. The total plant accommodated the making of machines at an unprecedented scale, with its transportation connection expressed through use of streamline modern-stylistic elements. By employing nearly 60,000 workers during wartime, the facilities also played a critical role in local development. Area neighborhoods with names such as Victory Villa and Aero Acres were built to accommodate the influx of workers necessary to meet wartime production demands.

The total area of the Martin State Airport/Federal Depot Historic District is 993 acres. The total area of the Federal Depot portion of the Martin State Airport/Federal Depot Historic District is 50.93 acres. Most of the historic district is owned by the United States of America, and is operated by the Federal General Services Administration (GSA). In 1990, an 8.63-acre parcel on the western edge of the property was purchased from the Federal Government by the Maryland Mass Transit Administration (MTA) for the development of a maintenance facility and storage yard for the Maryland Rail Commuter Service (MARC) (see Figure V-2). The GSA buildings, constructed in the 1940's, are low-lying horizontal blocks, 1-2 stories in height. The facility was the site of a major U.S. Army Publications Depot facility until 1996. The building is presently 53% leased and houses the Social Security Administration, a US Air Force Publications facility, and the US State Department. The remaining 47% is being actively marketed by GSA, with the potential of an additional 400,000 square feet being leased in the immediate future. GSA plans to maintain control of the facility for lease to government entities.



**LEGEND**

-  HISTORIC DISTRICT
-  PFA BOUNDARY
-  STUDY AREA
-  PROPERTY LINE
-  CRITICAL AREA BOUNDARY
-  RETAINED ALTERNATIVES



**MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY**

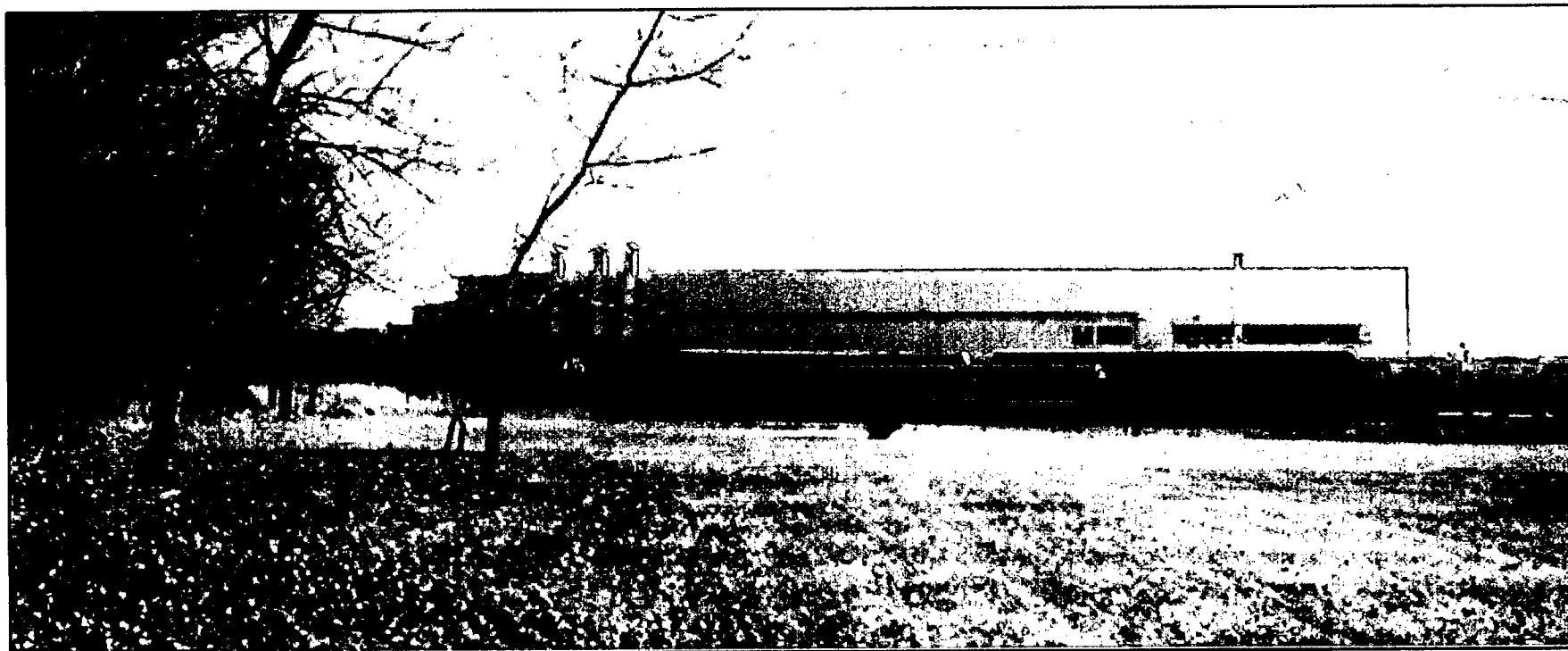
**FINAL ENVIRONMENTAL IMPACT STATEMENT**


MARTIN STATE AIRPORT/  
FEDERAL DEPOT HISTORIC DISTRICT



DATE:  
Jan. 2001

FIGURE  
NO. V-1



	Middle River Employment Center Access Study
	Final Environmental Impact Statement
Paint Hanger and Amtrak Storage Yard (facing north from MARC station parking lot -Amtrak railway is to left of trees)	
FIGURE V-2	January, 2001

The building closest to *SHA's Selected Alternative* (Revised D Modified) is the one-story, flat roofed rectangular Paint Hangar, which was constructed in 1941. Its three large openings on the northeastern elevation accommodated railroad cars transferring components from Plant #1 for painting. This building has been modified to serve as a maintenance facility for MARC trains and cars.

#### E. Impacts to the Section 4(f) Resource

Revised D Modified, *SHA's Selected Alternative*, requires 3.1 acres of right-of-way from the edge of the Middle River Depot portion of the Martin State Airport/Federal Depot Historic District. The total area of the Middle River portion of the historic district is 50.93 acres. The proposed right-of-way for Revised D Modified would affect the MARC maintenance facility, the AMTRAK rail lines and MD 150 (see Figure V-3). The proposed action will require the relocation of several MTA constructed railroad storage tracks in that vicinity. Retaining walls will be used to contain roadway fill slopes in order to minimize right-of-way acquisition from the historic district. This retaining wall will allow for 30 feet between the wall and the paint hanger building. There would be a small remaining parcel between the proposed right-of-way and the adjacent MARC station (0.5 acres). This residual parcel would probably be used for expansion of the MARC station.

On June 2, 2000 MHT concurred with SHA's determination that Revised D Modified would have an adverse effect on the Martin State Airport/Federal Depot Historic District due to the acquisition of 3.1 acres of right-of-way from the historic district (See Appendix E).

It is expected that there would be a net benefit to the entire 993 acres of the Martin State Airport/Federal Depot Historic District. This is due to the economic benefits of the increased access to I-95 from the SHA Selected Alternative's direct access into this area. The Land Use Analysis Committee Market Analysis Report indicates that the extension of MD 43 to properties along Eastern Boulevard (MD 150) such as Martin State Airport and the Chesapeake Industrial Park would have enormous benefits to the local economy. Their report (see Appendix C) states that "increases of no less than 25%, and in some cases 40%, will occur in the industrial property values along Eastern Boulevard once this access is provided". The economic benefit to the properties making up the historic district (GSA property, the Martin State Airport and the Chesapeake Industrial Park) would generate increased revenue enabling the property owners to maintain the existing industrial structures that make up the contributing elements of the historic district. Maintaining these structures would in turn help maintain the historic function and heritage of the historic district as an industrial and manufacturing center of the county. Without direct access to I-95 the owners of the buildings in this industrial area have had problems maintaining high occupancy rates and employment opportunities have declined as a result. It could be expected that the owners of the buildings within the historic district would not want to invest in the upkeep of the buildings if there are diminishing returns on their investments. This benefit is documented in a letter following page V-22 from the Maryland Aviation Administration.





## F. Avoidance Alternatives

There are two alternatives that avoid impacting the Martin State Airport/Federal Depot Historic District. They are Alternative E and Alternative I Modified. Both of these alternatives intersect MD 150 east of Williams Estates, near Beasley Road, and thus avoid the Martin State Airport/Federal Depot Historic District (see Figures II-12 and II-16). Despite the fact that they avoid the Section 4(f) resource, these two alternatives pose unique problems, and the cost, social impacts, natural environmental impacts, and community disruption resulting from these alternatives reach extraordinary magnitudes as detailed below.

- The intersection of these two alternatives with MD 150 occurs at the same location: approximately one and one-half miles northeast of all the other alternatives. Constructing an intersection with MD 150 at this location requires upgrading a mixed residential/business segment of MD 150 from a two-lane to a four-lane typical section. This upgraded segment extends westward 3950 feet to Carroll Island Road. This widening of MD 150 impacts overhead and underground utilities, requires 1.4 additional acres of residential and business right-of-way from 16 to 17 properties, causes permanent loss of 13-18 parking spaces for 6-7 local businesses along MD 150, and temporarily affects access to residences and businesses during construction. The limited intersection improvements associated with the SHA Selected Alternative will not impose substantial temporary or permanent impacts to residences or businesses along MD 150. The additional cost for the MD 150 upgrade for the Section 4(f) avoidance alternatives is over \$4 million, including right-of-way acquisition, maintenance of traffic and construction.
- As part of the study process, impacts to the Bengies community were evaluated in accordance with the National Environmental Policy Act and Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low Income Populations." This is the only minority community within the Study Area. Alternatives E and I Modified are not consistent with the intent of this Executive Order, because both of the Section 4(f) avoidance alternatives intersect MD 150 in the heart of the Bengies community, a well-established, historically important African-American community dating to the early 1800's. The new roadway is less than 200 feet from the front doors of the homes along Beasley Road. The Bengies residents own their homes, and have a strong feeling of community cohesion. An intersection at the proposed location makes it extremely difficult to maintain the existing social activity. The Bengies Community Center and the Maranatha House Church, two key elements in the area's social life, are situated immediately across the street from the intersection. Chase Elementary School, a National Register Eligible Historic site that has also contributed substantially to the community's stability, is located less than 850 feet north of the intersection.

Consequently, a heavy-use intersection located at this point on MD 150 exposes school children to unacceptable higher safety risks as they walk to or from school, and residents utilizing the church or community center contend with much higher volumes of truck traffic and increased traffic noise. Under Alternatives E and I Modified, this community is directly exposed to a traffic volume of 25,000 vehicles per day on MD 43, 1000 of which is heavy

trucks. Traffic volumes along MD 150 will increase from 3275 vehicles per day in 1997 to 18,000 vehicles per day in the design year. The impact to the Chase Elementary School was also raised as a serious issue for the County Board of Education as well as concerns over all construction activities. These concerns include impacts from noise, construction traffic, equipment movement and location of staging areas and materials storage on the schools learning environment (see page VI-62).

Furthermore, information obtained from the Bengies-Chase Recreation and Parks Community Supervisor indicates that the Community Center is heavily used every weekday evening and on most weekends for carrying on numerous recreation-related activities. In addition, a program for pre-school age children is conducted on Tuesday and Thursday mornings each week, and a senior citizens group meets twice each week on weekday afternoons. Indoors, the Center has a gymnasium and meeting rooms, and it has two playgrounds adjacent to the building.

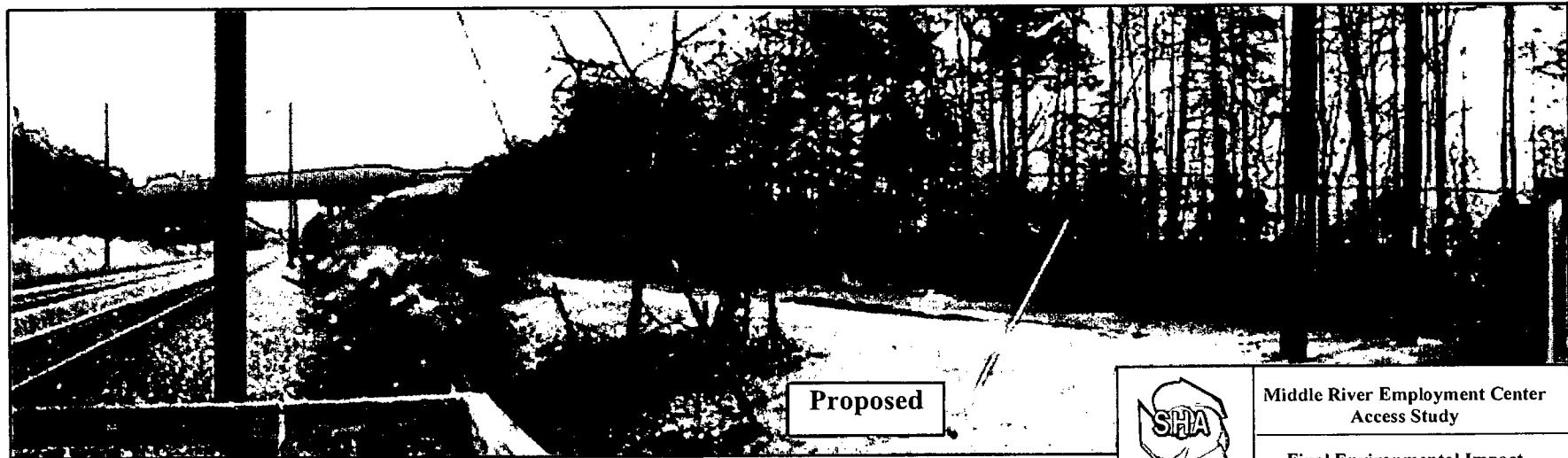
The Community Center Supervisor states that many of the volunteers and participants must walk to the Community Center from their homes within the Carroll Island Apartments, which lie to the west of the Center, and from Whispering Woods, which lies to the east. Walkers utilize Carroll Park Road, Bowleys Quarters Road and MD 150. Some of the staff members also walk to the Center. Immediately southwest of the Center is an MTA bus stop, and some people utilize the bus service for accessing the Community Center and the Maranatha House Church next door. These bus riders cross MD 150 within the general area of the proposed intersection. The Maranatha House Church is heavily used in the evenings and on weekends for carrying on its active youth programs and for conducting numerous other religious and social activities. Taking everything into consideration, the Community Center Supervisor thinks that there are far too many safety and aesthetic issues involved in locating a heavy use intersection in the center of this vibrant community.


- This intersection and the increased MD 150 traffic associated with it, effectively isolates Beasley Road residents from the rest of the Bengies community, and causes disproportionate adverse affects on their residences, including access constraints, increased noise levels, and aesthetic impacts (see pages VI-112, 113 and 122). Under Alternatives E and I Modified, this community is directly exposed to a traffic volume of 25,000 vehicles per day on MD 43, 1000 of which is heavy trucks. Traffic volumes along MD 150 will increase from 3275 vehicles per day in 1997 to 18,000 vehicles per day in the design year. These impacts are disproportionate, because the Bengies Community is the only residential area that have an at-grade portion of the highway immediately adjacent to their homes. The only other residential community near any of the alternatives is the Bird River Community. All alternatives being considered at the Bird River Road crossing, however, are grade-separated and the proximity impacts are much less severe.

The Beasley Road residents currently enjoy full access to their homes. However, with Alternatives E or I Modified, access to or from northbound MD150 will be extremely difficult and dangerous due to the proposed intersection's close proximity (120 feet) to Beasley Road and the high traffic volumes that will be associated with the MD 43 tie-in. The Beasley Road residents will be limited to right turns in from southbound MD 150 and right


turns out to southbound MD 150, and they will suffer the added difficulty of waiting long periods for breaks in traffic to allow them access onto southbound MD 150. For access onto northbound MD 150 or to enter their neighborhood from northbound MD 150, residents and visitors will have to first make U-turns from or to the southbound lanes of MD 150. In terms of aesthetics, these residents will be looking at and hearing the noise from an elevated highway bridge over the AMTRAK railway, whereas they currently have a clear view to the north. Conversely, the *SHA Selected Alternative* will cross AMTRAK in an industrial area, 1-1/2 miles further south, and will not be visible from this or any other residential community (See Figure V-4).

- The bridge carrying Alternatives E and I Modified over the AMTRAK railway will be visible for a considerable distance due to the height of the bridge (20-25 feet above existing grade) and the low elevation of the surrounding area. Therefore, along with the Bengies community, residents of the Williams Estate and Peppermint Woods modular home communities will be aesthetically impacted by the bridge (See Figure V-5 and Figure V-6). The bridge associated with the SHA Selected Alternative will not impact them.
- With the construction of either Alternative E or I Modified, noise levels will increase by 8 to 10 decibels over existing levels in the Beasley Road area of the Bengies community. Furthermore, under SHA guidelines this area will not qualify for a noise barrier because too few residential properties are being impacted. The cost of the barrier when compared to the number of homes protected exceeds the SHA criterion of \$50,000 per residence.
- Alternatives E and I Modified adversely impact two Native American archeological sites that are potentially eligible for the National Register. Site 18BA467 is impacted by either of the two alternatives, whereas Site 18BA469 is impacted only by Alternative E. Site 18BA467 is an Early - Middle Woodland prehistoric site. Site 18BA469 is a Late Archaic prehistoric site. MHT has concurred that future archeological work will be required to conclusively define National Register eligibility if the sites are impacted. (see Appendix E). The Phase I investigations indicate that these sites may be important chiefly because of what can be learned from data recovery.




	Middle River Employment Center Access Study
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Site of <i>SHA Selected Alternative Crossing</i> Over Amtrak, as Seen from MARC Station (Paint Hanger is at right, beyond the trees)	
FIGURE V4	January, 2001



	Middle River Employment Center Access Study
	Final Environmental Impact Statement
Proposed Site of Bridge Over Amtrak (beyond trees) for Alternates E and I-Modified as Viewed from Williams Estates	
FIGURE V-5	January, 2001



	Middle River Employment Center Access Study
	Final Environmental Impact Statement
Probable Appearance of Bridge Over Amtrak Proposed for Alternates E and I-Modified as Viewed from Williams Estates	
FIGURE V-6	January, 2001

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- An intersection of MD 43 and MD 150 at the proposed Chase/Bengies location results in mixing two traffic types by utilizing the residential/commercial section of MD 150 for employment center/industrial traffic, including heavy truck traffic. The public responded very negatively to this tie-in location, citing concerns about heavy traffic being directed toward a residential community. As indicated in the testimony at the Public Hearing (see page VI-122), area residents are concerned about the socioeconomic impacts associated with Alternatives E and I Modified.
- An intersection of MD 43 and MD 150 in this location involves road construction activities on more than 7 acres of land that lies within a "Limited Development Area" of the Chesapeake Bay Critical Area (Critical Area). According to Maryland State regulations (COMAR Title 14, Subtitle 15) development "may be permitted in the Limited Development Areas, but shall be subject to strict regulation to prevent adverse impacts on habitat and water quality." However, the regulation goes on to state that "transportation facilities...may not be permitted in the Critical Area except in the Intensely Developed Areas...and only after the activity or facility has demonstrated to all appropriate local and State permitting agencies that there will be a net improvement in water quality to the adjacent body of water." An exception can be made if the transportation facility is "necessary to serve permitted uses, or where regional or interstate facilities must cross tidal waters." Even when new roadways are permitted within a Limited Development Area, the regulations pertaining to habitat preservation, land-clearing, sediment control, and mitigation are substantially more stringent than they are outside of the Critical Area. The *SHA Selected Alternative* will not involve any construction within the Critical Area.
- Alternatives E and I Modified does not provide direct access to the 80 acres of land slated for development within the Chesapeake Industrial Park or to the 800,000 square feet at the GSA Building, whereas the *SHA Selected Alternative* connects directly with Martin State Airport and these associated properties. Without direct access these properties ability to develop is severely reduced. Alternatives E and I Modified do not provide any better access then they currently have and they currently are experiencing the inability to market these key pieces of property. These Alternatives do not satisfy the purpose and need for the project. There may also be economic impacts at the County level. If direct access from the Chesapeake Industrial Center and Martin State Airport and this portion of the MREC does not develop to its potential, Baltimore County may lose an estimated \$1,200,000 in tax revenues annually. Also at stake are over 1200 new jobs, with annual wages of over \$36,000,000. This data was derived from tables in Appendix A of the original Purpose and Need Statement (Appendix A of FEIS)
- Alternatives E and I Modified do not provide direct access for as many employment center development pods as will the *SHA Selected Alternative*. Alternative E only accesses two development pods directly and requires over a mile (5300 linear feet) of additional access roads to be constructed in order to serve the other four pods. Furthermore, the service roads involve three additional crossings of significant wetland systems involving up to 3.4 acres of additional wetland impacts. Alternative I Modified only accesses three pods directly and requires well over a mile (6000 feet) of additional service roads, crossing two additional



significant wetland systems involving up to 9.6 acres of additional wetland impacts. The *SHA Selected Alternative* will provide direct access to five of the six development pods and will access the sixth pod with only 1700 feet of additional service road, requiring only one additional wetland crossing involving only 0.3 to 0.5 acres of additional wetland impact. Due to the long service roads necessary to access the additional pods the economic viability of these areas is questionable. Alternative I Modified leaves well over half of the new development areas with circuitous access while Alternative E leaves even more of the development areas with circuitous access.

- Alternatives E and I Modified do not meet the project's purpose and need because they do not provide improved access to the MARC station and Martin State Airport from I-95, which would facilitate intermodal transfers between highway, rail and air transportation systems. Furthermore, Alternatives E and I Modified fail to advance the additional planned development in the Chesapeake Industrial Park estimated to have a market value of over \$35,000,000.
- Alternative E has the largest impact on streams (585 l.f. ) of any of the retained alternatives. Part of the reason for the larger impact is the crossing of Windlass Run, because the alignment of Alternative E requires crossing that stream at an oblique angle.

Alternative I Modified impacts less stream area (495 l.f.) than Alternative E, but substantially more stream area than the *SHA Selected Alternative*, which has the lowest stream impacts of all the retained alternatives (390 l.f.). Furthermore, although Alternatives I Modified and the *SHA Selected Alternative* cross Windlass Run within the same general area, the stream channel within the specific area designated for the I Modified crossing is stable, whereas the channel at the *SHA Selected Alternative* crossing is noticeably unstable. Figure V-7 shows the two stream crossings. The channel at the *SHA Selected Alternative* crossing is longitudinally U-shaped and deeply incised, with steep, undercut banks. A dry storm channel (not in the picture) shortcuts the U-shaped main channel. In time, the storm channel will undoubtedly become the main channel after stormflows have downcut its bed sufficiently to cut off the U-shaped portion. Structural improvements related to construction of the *SHA Selected Alternative* would provide for stream channel stabilization in this area while preserving the stable portion of the channel within the I Modified alignment.

- As discussed in the Land Use Analysis Committee Market Analysis Report (see Appendix C), an employment center access alternate must connect to I-95 in order for significant land development and growth in jobs to occur. The report goes on to state that "Existing development west of the A.V. Williams parcel is significantly residential in character. We would suggest an alignment alternative that locates Maryland 43 as far west as possible, with the new roadway creating a buffer to those residential communities. This would allow for large land bays to be located to the east of the new roadway; when this is assembled it will maximize the development potential of the site". Alternatives E and I Modified are located on the east side of the employment center and would not, therefore, maximize the development potential of the site. If implemented, the *SHA Selected Alternative* will require a substantial public investment, not only from the State of Maryland and the federal government, but from local sources as well. It is important, therefore, to maximize the

benefits derived from this investment, while at the same time protecting environmental resources. On balance, the SHA Selected Alternative provides the best overall return on the public's investment, minimizes environmental impacts and maximize the response to the project need to halt loss of population, increase employment opportunities, increase family incomes, increase educational opportunities and reduce crime in the Middle River area. When compared to the SHA Selected Alternative, Alternatives E and I Modified fall short of addressing these needs while at the same time substantially increasing project costs and environmental impacts.

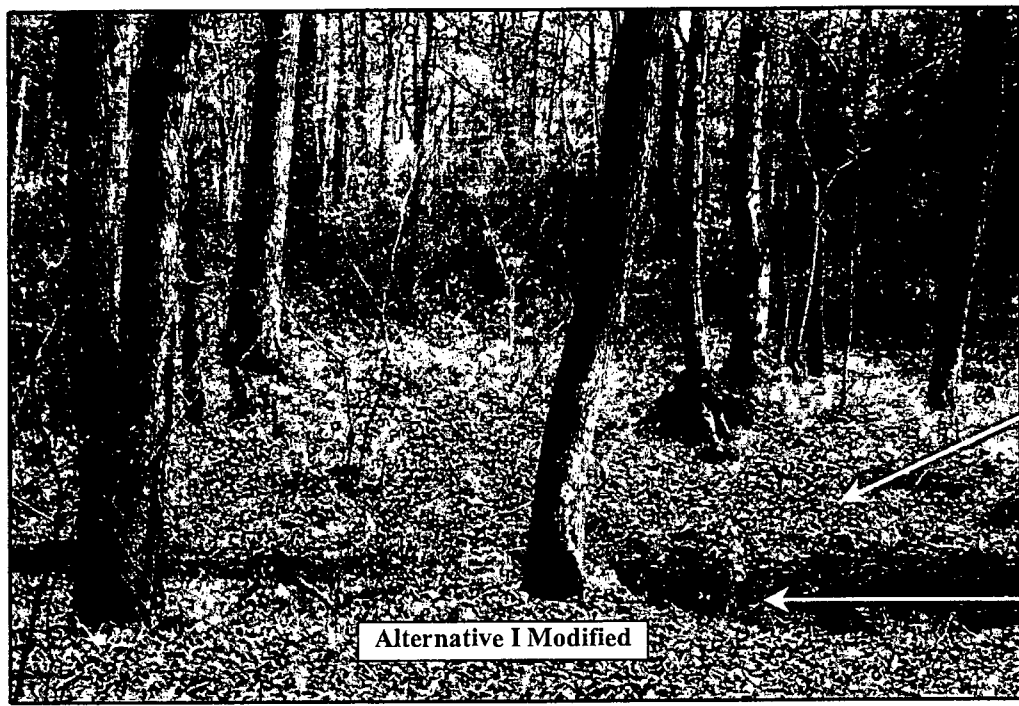
As a result of the above factors, Alternatives E and I Modified are not prudent.

As discussed in Section II, a number of other "preliminary" alternatives were considered and then, for various reasons, eliminated during earlier stages of the study. Of the preliminary alternatives, the ones that would have avoided the Section 4(f) Resource were Alternatives A, B, C, G, J-1, J-2, and upgrades of Martin Boulevard/Rossville Boulevard. The reasons why they were eliminated from consideration are discussed in Section II.

**G. Mitigation and Measures to Minimize Harm**

A Memorandum of Agreement (MOA) describing mitigation and measures to minimize harm to the Section 4(f) resource has been developed with the Maryland Historical Trust (See MOA in Appendix E). The State Highway Administration has agreed with the following stipulations.

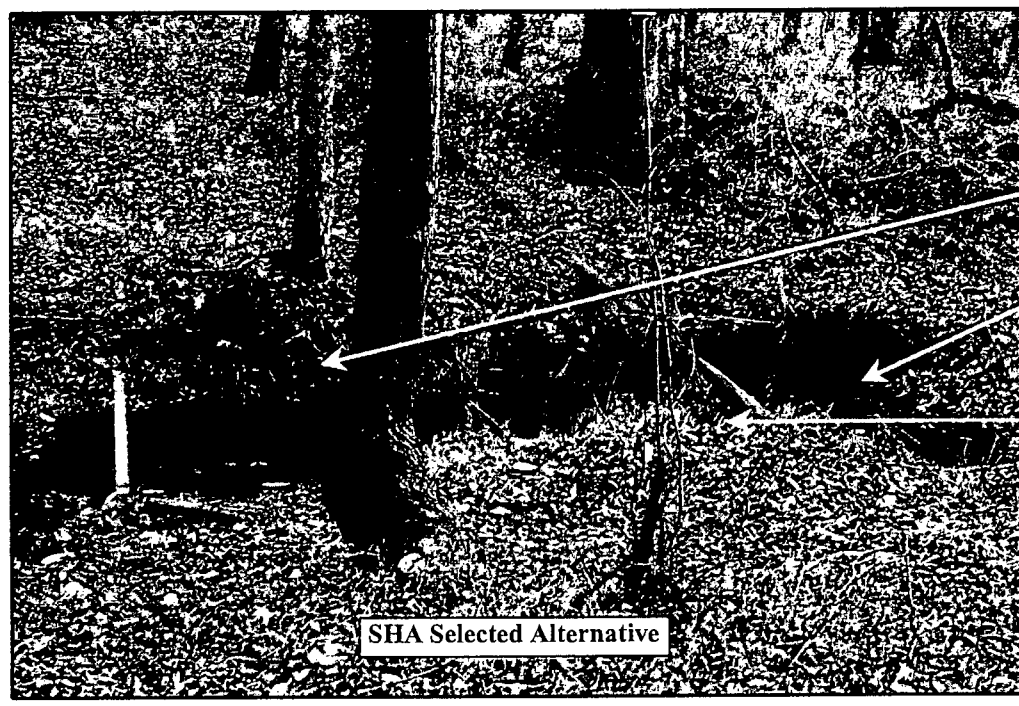
The SHA, in consultation with the MD SHPO, will develop a plan for the public interpretation of the history of the Martin State Airport/Federal Depot Historic District, including the paint hangar, currently a MARC maintenance facility. The plan may include one or more of the following items: exhibits, markers, interpretive panels, and/or oral histories of those who worked at Martin State Airport during its period of significance (1929-1949). The plan will be developed within one year following the completion of the highway bridge and will be submitted to the MD SHPO for review and comment.



Bank slopes gentle and stable

Meander bends gentle, directing stream energy downstream

Alternative I Modified




Tree roots exposed due to stream erosion

Banks steeply downcut, and undercut

Meander bend U-shaped, encouraging bank erosion

SHA Selected Alternative

	Middle River Employment Center Access Study
	Final Environmental Impact Statement
<b>Comparison of Crossing at Windlass Run by SHA Selected Alternative With That of the Avoidance Alternative I Modified</b>	
FIGURE V-7	January, 2001

**H. Correspondence and Coordination**

Public Involvement and agency coordination have been integral parts of the project planning process as presented in Section II.D.

Coordination with the Maryland Historical Trust (MHT) is ongoing, in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, to identify cultural resources affected by the proposed alternatives. MHT reviewed preliminary alternative alignments and offered comments on SHA's assessment of impacts for architectural resources, as well as comments on a draft Phase 1 archeological report. MHT has urged careful examination and consideration of the options that would avoid and minimize the project's adverse impacts to historic and archeological properties. Coordination has continued with MHT, the Advisory Council on Historic Preservation, and other interested parties regarding proposed mitigation measures and development of a Memorandum of Agreement (MOA) for this project. The MOA includes stipulations addressing the specific treatment of impacted historic standing structures and the procedures for completing evaluation and treatment of archeological resources affected by SHA's selected alternative (see Appendix E).

Coordination has been conducted with the US Department of the Interior (DOI). DOI concurred that there is no prudent and feasible alternative to the proposed project, if project objectives are to be met. They recommended continued cooperation and coordination with the SHPO to prepare the Memorandum of Agreement (See Section VI, Comments and Coordination).

Coordination was conducted with the Maryland Aviation Administration (MAA) and the Federal Aviation Administration (FAA). MAA advises close coordination with Martin State Airport (MTN) and FAA regarding right-of-way acquisition and possible aircraft obstructions (See Section VI, Comments and Coordination). This coordination will take place during final design of this project.

Coordination was conducted with the U.S. Army Corps of Engineers (Corps) as to the permissibility of the avoidance alternatives. The Corps conclusion was that they believe Revised Alternative D Modified is the only alternative that they could authorize. (see Section VI pages 156-157)

**I. Conclusion**

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from the Martin State Airport/Federal Depot Historic District and the proposed action includes all possible planning to minimize harm to the Martin State Airport/Federal Depot Historic District resulting from such use.



## Maryland Aviation Administration

Parris N. Glendening  
Governor

John D. Porcari  
Secretary

David L. Blackshear Executive Director

February 5, 2001

Ms. Heather Murphy  
State Highway Administration  
PO Box 717  
Baltimore MD 21202

SUBJECT: Maryland (MD) 43 Extended

Dear Ms. Murphy:

Maryland Aviation Administration (MAA) wishes to express its support for the proposed Maryland Department of Transportation (MDOT), State Highway Administration (SHA), MD 43 Extension from West of US 40 to MD 150. In response to SHA's inquiry regarding the Selected Alternative, D Modified, MAA believes that this new access to Interstate 95 will provide the benefit of improved access to Martin State Airport (MTN), which will enhance its marketability. MAA believes that the completion of this proposed project will bring continued economic benefits to the area and will not have an affect on the historic integrity of the area.

Thank you for the opportunity to comment on this project.

Sincerely,

Barbara E. Grey, Acting Associate Administrator  
Office of Facilities Planning

cc: Mr. Jake West, Manager, Martin State Airport, Maryland Aviation Administration  
Ms. Robin Bowie, Environmental Planner, Maryland Aviation Administration

P.O. Box 8766, BWI Airport, Maryland 21240-0766 • 410-859-7100 • TOLL FREE: 1-800-435-9294  
Fax: 410-850-4729 • TTY/TDD for the hearing impaired: 410-859-7227 • [www.bwiairport.com](http://www.bwiairport.com)  
The Maryland Aviation Administration is an agency of the Maryland Department of Transportation

# VI. COMMENTS AND COORDINATION

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*

VI. COMMENTS AND  
COORDINATION



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

**VI. COMMENTS AND COORDINATION**

Coordination with environmental resource agencies, elected officials, organizations/associations, and the public has been an important component of the MRECAS planning study. Agency coordination in preparation for the Draft Environmental Impact Statement/Section 4(f) Evaluation (May 1999) document was conducted throughout the study. The Draft EIS/Section 4(f) Evaluation was submitted to the environmental resource agencies for their review and comment prior to finalizing the document. Section VI of the Draft EIS/Section 4(f) Evaluation included a compilation of correspondence with agencies, public groups, and elected officials.

Following circulation of the Draft EIS in May 1999 and the June 16<sup>th</sup> Location/Design Public Hearing, written comments were received from environmental resource agencies, elected officials, organizations/associations, and the public. Those comments and responses have been incorporated as appropriate into this document.

Copies of letters received from government agencies in reference to the Draft EIS are contained in this section along with letters of response from SHA. Where a change has been made to the FEIS as a result of one of these comments, the copied letter contains a text box showing either the section and sub-section number of the FEIS where the change was made (example: III.A.2) or, where applicable, the table or figure number where the change was made. Furthermore, comments extracted from the letters, along with SHA's responses to those comments are shown in two matrices that follow the letters. The first matrix refers to letters from environmental, regulatory, or resource agencies. The second matrix refers to letters written in the same context but which originate from other agencies.


Following the two matrices are copies of written comments received at the June 16, 1999 public hearing and SHA's letter of response to those comments. At the end of this section is a summary that contains synopses of all comments and responses contained in those documents.

In summary, the following pages include the following sub-sections in corresponding order:

- A. Agency letters in response to the Draft EIS/Section 4(f) Evaluation
- B. Comment and Response matrices for agency letters
- C. Written Comments from June 16, 1999 Public Hearing and SHA Response Letters
- D. Synopses of Comments from Public Hearing and of SHA Responses
- E. Agency Coordination Letters for Preparation of Final EIS/Section 4f Evaluation

A. Agency Letters in Response to the Draft EIS/Section 4(f) Evaluation

1. Environmental, Regulatory, and Resource Agency Letters in Response to Draft EIS/Section 4(f) Evaluation (circulated May 1999)



United States Department of the Interior  
OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

ER-99/418

JUL 8 1999

Mr. Nelson Castellanos  
Division Administrator  
Federal Highway Administration  
The Rotunda-Suite 220  
711 West 40th Street  
Baltimore Maryland. 21211

Dear Mr. Castellanos:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental Impact Statement/Section 4(f) Evaluation for the Middle River Employment Center Access Study, Baltimore County, Maryland.

**Section 4(f) Evaluation Comments**

We concur that there is no prudent and feasible alternative to the proposed project, if project objectives are to be met. However, we do not believe that all possible planning has been done to minimize harm to Section 4(f) resources.

We recommend continued cooperation and coordination with the State Historic Preservation Officer in order to prepare the proposed the Memorandum of Agreement (MOA) which should include measures to avoid and/or minimize harm to the Glen L. Martin Airport Complex, the three archeological sites (sites 18BA467, 18BA469, and 18BA470) and other historic properties which may be affected by the proposed project, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. A signed copy of the MOA should be included in the Final Section 4(f) Evaluation.

Fig. III-9

**Environmental Statement Comments**

The U.S. Fish and Wildlife Service (FWS) advises that it would be beneficial to the review process if a map showing all eleven sampling sites (sites that were sampled for aquatic habitat, benthic macro invertebrates, fish and herpetofauna, and water quality) was added to this document.

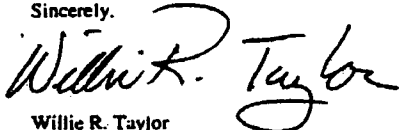
Also, the FWS advises that it prefers the selection of Alternative F1-Modified as the Final Build Alternative because it has fewer natural resource impacts. Alternatives D and D-Modified are not preferred alternatives because they will impact large amounts of wetland, floodplain and forest. On the other hand Alternatives E and I-Modified are not preferred because they will impact large amounts of floodplain, forest and Chesapeake Bay Critical Area Habitat. IV.Q.5

If you have any questions about the fish and wildlife resources comments, please contact Trevor Clark U.S. Fish and Wildlife Service at (410) 573-4527 or [Trevor.Clark@fws.gov](mailto:Trevor.Clark@fws.gov).

**Summary Comments**

The Department of the Interior has no objection to Section 4(f) approval of this project by the Department of Transportation, providing a signed copy of the MOA to mitigate project impacts to historic and archeological resources is included in the Final Section 4(f) Evaluation.

We appreciate the opportunity to provide these comments.


Sincerely,  
  
Willie R. Taylor  
Director, Office of Environmental  
Policy and Compliance

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

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Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



**MARYLAND Office of Planning**

Murphy  
 JUL 19 '99 11:53 CPM

Paris H. Glendening  
 Governor

Ronald M. Kreimer  
 Director

July 16, 1999

Mr. Louis H. Ege, Jr.  
 Deputy Director  
 State Highway Administration  
 Maryland Department of Transportation  
 707 N. Calvert Street  
 Baltimore, MD 21202

**REVIEW AND RECOMMENDATION**

State Application Identifier: MD990517-0469  
 Description: Middle River Employment Center Access Study - Draft Environmental Impact Statement and Draft Section 4(f) Evaluation  
 Applicant: Maryland Dept. of Transportation/State Highway Administration  
 Location: Baltimore County

Recommendation: Endorsement With Qualifying Comments and Contingent Upon Certain Actions

Dear Mr. Ege, Jr.:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 14.24.04, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter constitutes the State process review and recommendation. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Departments of Business and Economic Development, Environment, Housing and Community Development including the Maryland Historical Trust; Baltimore County; Baltimore Metropolitan Council; and the Maryland Office of Planning.

The Maryland Department of Housing and Community Development including the Maryland Historical Trust; and Baltimore County stated that their finding(s) of consistency is/are contingent upon the applicant taking the action(s) summarized below.

The Maryland Department of the Environment found this project to be generally consistent with its plans, programs, and objectives, but included certain qualifying comments summarized below and discussed in the attached comments.

The Maryland Department of Business and Economic Development; Baltimore Metropolitan Council; and the Maryland Office of Planning found this project to be consistent with their plans, programs, and objectives. Comments and recommendations from this Office are included in the summary.

The Baltimore Metropolitan Council included general comment, which are included for your information.

301 West Preston Street • Baltimore, Maryland 21201-2365  
 State Clearinghouse: (410) 767-4490 Fax: 767-4480

Mr. Louis H. Ege, Jr.  
 July 16, 1999  
 Page 2

**Summary of Comments:**

The Department of Housing and Community Development including the Maryland Historical Trust state that their finding of consistency is contingent upon the applicant's completion of the review process required under Section 106 of the National Historic Preservation Act.

The Department of the Environment, in its attached comments addressed issues relating to air quality and hazardous and solid waste.

Baltimore County states that its staff has been actively involved in the review of this project. All of the proposed alternatives are being assessed for impacts to streams, wetlands, floodplains and forests. Protection of these natural resources will be priority and mitigation will be required if impacts are necessary and agreed to by the County. At this time the alternatives have been modified to address some of the impacts to natural resources and the project has been progressing in accordance with the regulatory requirements of the County.

The Office of Planning commented on this project previously through the NEPA/404 Interagency Review Process and recognizes that the proposed transportation improvements would facilitate economic development in the Middle River Employment Center, a Priority Funding Area (PFA) designated by Baltimore County. The Office of Planning evaluated the County's PFAs' designation and find that they meet the criteria provided by the Smart Growth Area Act. Provision of transportation facilities to support growth in a PFA is consistent with the State's growth management policies. All build alternatives retained for detailed study appear to be within the PFA. When a preferred alternative is selected Baltimore County will have to certify to the State Highway Administration that it is located within the Priority Funding Area.

**Detailed Comments**

P. IV-122 - We suggest that this chapter include a summary or a reference to the summary of Secondary and Cumulative Effects Analysis completed for the project

Table IV-41

II. Alternative Considered  
 C.2. Multi-Modal and Congestion Mitigation Options for Further Study (p.11-8)  
 We understand that implementation of these multi-modal options relies upon the extent of future employment development in the Middle River Employment Center. If a build alternative is selected, we recommend that along with highway improvements, policies be recommended to reduce the single occupant vehicle (SOV) travel resulting from planned employment development in the Center. In coordination with Baltimore County and the Baltimore Metropolitan Council, the Maryland Department of Transportation should monitor employment development in the Center and implement congestion mitigation strategies as demand for such options is warranted.

P. II-9 Bus  
 A bus/shuttle service connected to the MARC service seems to be the only strategy considered for the Bus option. Has the Metropolitan Transportation Administration evaluated bus connections to other activity centers? Without a study of alternative bus strategies, it does not seem adequate to recommend only a shuttle service to the MARC station for the Bus option.

II.B.3

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Middle River Employment Center Access Study  
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Mr. Louis H. Ege, Jr.  
July 16, 1999  
Page 3

P.II-37 Table II-4

The environmental impacts for each alternative shown in Table II-4 and Table S-1 (p.S-5) are different. Which table presents correct information?

IV. Environmental Consequences

B. 3. Land Use

We suggest the following revisions on page IV-7 (revisions are shown in *bold and in italic*; strikeouts indicate deletion):

...will be substantially affected by local priority *funding area* designations. These local jurisdictions must certify and PFA areas in addition to those PFAs designated in the law (e.g.,...), counties can designate additional PFAs that meet the Smart Growth Area Act's criteria for density and public facilities...

The MGP certified PFA for the Study Area coincides with...

IV.B.3

P.IV-122 Table IV-37

The description on "Potential Secondary Effects" for "Forest" seems to be inaccurate. Based on the information provided on page IV-107, about 400 acres of forest (40% to 45% of the total forest in the Middle River Employment Center) could be lost.

Any statement of consideration given to the comments should be submitted to the approving authority, with a copy to the State Clearinghouse. Additionally, the State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the recommendation cannot be accommodated by the approving authority.

Please remember, you must comply with all applicable state and local laws and regulations. If you have any questions about the comments contained in this letter or how to proceed, please contact the State Clearinghouse at (410) 767-4490. Also please complete the attached form and return it to the State Clearinghouse as soon as the status of the project is known. Any substitutions of this form must include the State Application Identifier Number. This will ensure that our files are complete.

We appreciate your attention to the intergovernmental review process and look forward to your continued cooperation.

Sincerely,



Linda C. Janey, J.D.  
Manager, Clearinghouse & Plan Review Unit

LCJ:LG:da

Enclosures

(\* indicates with attachments)

cc: Ernie Kent - DBED  
Al Svhelda - BLCO  
Mary Abrams - OPM

Steve Bieber - MDE  
Mary Logan - BMC  
Charles Armstrong - OPM  
Lucinder Jones - DHCH/MHT  
Chris Wells - OPL

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State Clearinghouse: (410) 767-4490 Fax: 767-4480

State Application Identifier: MD990517-0469

Comments from the Maryland Department of the Environment's Water Management Administration:

This project is consistent with our plans, programs, and objectives.

Comments from the Maryland Department of the Environment's Air and Radiation Management Administration:


1. Pages II-8 and II-9: Requiring Middle River Employment Center (MREC) employers to develop and implement a Transportation Demand Management (TDM) plan would help to reduce additional traffic generated by the Center into the I-95 corridor in the White Marsh area. This is an already congested location where trip reductions would help lessen any negative air quality impacts caused by traffic to and from the proposed development. Shuttle service to the Martin Airport MARC station and enhanced bus service to MREC are also desirable options.

II.B.3

Comments from the Maryland Department of the Environment's Waste Management Administration:

2. In Section III. Affected Environment, M. Municipal and Industrial Waste Sites, a summary of the Initial Site Assessment Results is provided and Table III-32 Hazardous Waste Site Ranking by Impact Potential lists site numbers, parcel numbers, and environmental concerns associated with the 54 sites of potential environmental concern. Although it may be possible to discern the locations of the 54 sites from other maps and diagrams within the document, it would be more useful if the sites could be located on a separate map or diagram and listed with site names and addresses. This information could assist the Waste Management Administration in locating these sites within our databases and perhaps providing additional information to the Maryland Department of Transportation regarding them. Since the exact location of the sites is difficult to determine, we can only offer general comments regarding the information provided.
3. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) listed sites MD-304, Martin State Airport, Box 1, 701 Wilson Point Road, Baltimore, MD 21220 and MD-310, Martin State Airport Site II (Air National Guard), Eastern Avenue and Wilson Point Road, Baltimore, MD 21220 are located within the study area. Contact the Environmental Restoration and Redevelopment Program at (410) 631-3437 for additional information.
4. Hazardous, solid, and oil wastes must be properly disposed at permitted facilities. Contact the Hazardous Waste Program at (410) 631-3343, the Solid Waste Program at (410) 631-3424, and the Oil Control Program at (410) 631-3442 for additional information. Comments attached.

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



**MARYLAND Office of Planning**

*Paris N. Glavinich*  
Governor

*Ronald M. Kreimer*  
Director

**MEMORANDUM**

Please complete this form and return it to the State Clearinghouse upon receipt of notification that the project has been approved or not approved by the approving authority.

**TO:** Maryland State Clearinghouse  
 Maryland Office of Planning  
 301 West Preston Street  
 Room 1104  
 Baltimore, MD 21201-2363

**DATE:** \_\_\_\_\_  
 (Please fill in the date form completed)

**FROM:** \_\_\_\_\_  
 (Name of person completing this form.)

**PHONE:** (\_\_\_\_) \_\_\_\_\_  
 (Area Code & Phone number)

**RE:** State Application Identifier: MD990517-0469  
 Project Description: Middle River Employment Center Access Study - Draft Environmental Impact Statement and Draft Section 4(f) Evaluation

---

**PROJECT APPROVAL**

The project/plan was:

Approved   
  Approved with Modification   
  Disapproved

Name of Approving Authority: \_\_\_\_\_ Date Approved: \_\_\_\_\_

---

**FUNDING APPROVAL**

The funding (if applicable) has been approved for the period of \_\_\_\_\_, 199\_\_ to \_\_\_\_\_, 199\_\_ as follows:

Federal: \$ _____	Local: \$ _____	State: \$ _____	Other: \$ _____
----------------------	--------------------	--------------------	--------------------

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**OTHER**

Further comment or explanation is attached

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 State Clearinghouse: (410) 767-6490 Fax: 767-6490

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Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

JUL 27 1999

Ms. Cynthia Simpson  
Deputy Director  
Office of Planning and Preliminary Engineering  
Maryland State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21203

Attn: Heather Murphy  
Catherine Romero

RE: Middle River Employment Center Access Study:  
Draft Environmental Impact Statement

Dear Ms. Simpson:

The Environmental Protection Agency (EPA) has received the Draft Environmental Impact Statement (DEIS) for the Middle River Employment Center Access Study (MRECAS) dated May, 1999. In accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), Section 309 of the Clean Air Act and Section 404 of the Clean Water Act, EPA has reviewed this document and is providing you with our comments.

Based on our review of the DEIS, EPA has rated the environmental impacts of the action as "EC" Environmental Concerns and the adequacy of the impact statement as "1" Adequate Information. A copy of EPA's ranking system is enclosed for your reference. The detailed basis for these ratings are contained in the following comments.

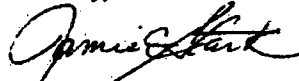
EPA remains concerned with the direct, cumulative and secondary impacts that are associated with this project. We believe it is important to view projects such as new highways for economic development as single and complete projects. We applaud Maryland State Highway Administration's efforts to include preliminary access roads that may be developed for each alternative. The impacts of these access roads and the development that will follow have the potential to cause significant environmental impacts.

IV.Q.5

We urge Baltimore County to implement aggressive conservation practices when reviewing plans and processing permits that will allow development to occur in Middle River Employment Center. EPA would be happy to assist Baltimore County in the identification of sensitive resources that should be avoided during future development. Preservation and conservation of these sensitive areas may lessen the overall impacts of the build out for this project.

Thank you for the opportunity to review and comment on this document. If you have any questions on any of our comments feel free to contact Jamie Stark at (215)814-5569.

Sincerely,

  
Denise M. Rigney  
Transportation Program Manager

Enclosure

cc: Steve Harman, COE  
Robert Zepp, USFWS  
Mary Huie, FHWA  
Elder Ghigiarelli, MDE  
Christine Wells, MOP  
Ray Dintiman, DNR  
John Nichols, NMFS

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*

**SUMMARY OF RATING DEFINITIONS  
AND FOLLOW UP ACTION\***

Environmental Impact of the Action

**LO--Lack of Objections**

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

**EC--Environmental Concerns**

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

**EO--Environmental Objections**

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

**EU--Environmentally Unsatisfactory**

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

**Category 1--Adequate**

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**Category 2--Insufficient Information**

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

**Category 3--Inadequate**

EPA does not believe that draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment.



**MARYLAND DEPARTMENT OF THE ENVIRONMENT**  
2500 Broening Highway • Baltimore Maryland 21224  
(410) 631-3000 • 1-800-633-6101 • <http://www.mde.state.md.us>

Farris N. Glendening  
Governor

Maryland Department of the Environment  
Water Management Administration  
Wetlands and Waterways Division  
2500 Broening Highway  
Baltimore, MD 21224  
(410) 631-6094

Jane T. Nishida  
Secretary

SEP03'99 PM 2:04 OPPE

September 2, 1999

Maryland Department of Transportation  
State Highway Administration  
Attn: Ms. Heather Murphy, Project Planning Division  
707 North Calvert Street  
Baltimore, Maryland 21202

Re: SHA Project BA67A11 - Middle River Employment  
Center Access Study, Baltimore County

Dear Ms. Murphy:

The Wetlands and Waterways Program of the Water Management Administration has reviewed the "Draft Environmental Impact Statement" (DEIS) for the referenced project. As a result of this review, significant concerns over the direct and indirect impacts to regulated resources have been identified. At this time, we do not have adequate information to concur with the recommended alternative, identified as "Alternative D-Modified", as presented during the July 21, 1999 Interagency Project Review meeting. In addition, a few inaccuracies in the DEIS should be corrected. It should also be noted that the signed DEIS document was not received by the Wetlands and Waterways Program until after the July 21, 1999 meeting, therefore making it impossible to provide comments by the due date of July 16, 1999 listed in document.

The DEIS identifies six "build" alternatives all of which would have direct adverse impact to nontidal wetlands, wetland buffers, waterways and 100-year floodplains. The direct impacts range from 6.4 to 9.6 acres of wetlands, 390 to 585 linear feet of stream channel loss and 1.4 to 1.5 acres of floodplain encroachment. The DEIS also discusses the potential for indirect adverse impacts due to the cumulative effects of the highway construction and development of the employment center. The potential additional environmental impacts, as identified in the DEIS, include:

- Additional loss of wetlands for access to development parcels in the study area (p. IV-110).
- "Wide fluctuations in stream volumes and velocity" resulting from "higher runoff rates and lower groundwater recharges" and the resultant degradation of the stream beds, banks and

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8/23/1999 14:54 418-293-5804 SHA PFD PAGE 83/83

habitat value (p. IV-11).

- Post-construction impacts to wetland functions and values including "loss of wetland flora, fauna, and habitat from sediment and pollution deposition or hydrology changes" (p. IV-22).
- Forest loss due to highway construction (38.3 to 39.5 acres) secondary access roads (1.0 to 15.0 acres) and from development of the employment center (approximately 440 acres) (p. IV-55 and IV-107).
- Degradation of habitats due to fragmentation, "contamination with pollutants and/or the introduction and/or the introduction of exotic species (p. IV-57).

The environmental impacts identified in the DEIS raise permitting concerns under the following regulatory criteria:

**IV.J.3**

- COMAR 26.17.04.11B(5): "Proposed projects that eliminate or significantly and adversely affect aquatic or terrestrial habitat and their related flora and fauna are not in the public interest".
- COMAR 26.23.02.04A(3): "The Department may not issue a permit for a regulated activity unless the Department finds that the applicant has demonstrated that the regulated activity does not cause or contribute to a degradation of ground or surface waters".
- COMAR 26.23.02.05B(3)(e, h, & k): The Department shall consider avoidance and minimization of direct or indirect adverse impacts to nontidal wetlands including "hydrologic regime of the areas upstream and downstream of the area of impact", "subsurface water flow into or out of any nontidal wetland area", and "cumulative impact to nontidal wetlands".
- COMAR 26.23.02.06A(1)(a) & (2)(b): A regulated activity may not cause an individual or cumulative effect that degrades aquatic ecosystem diversity, productivity and stability or that degrades surface and ground water quality.

At the July 21, 1999 Interagency Project Review meeting, SHA identified "Alternative D-Modified" as the preferred alternative. At the meeting, a handout was provided outlining some basic considerations in SHA's recommendation. Please be aware that a detailed analysis of the selection process, and the factors cited in the handout should be provided for review. Once this is reviewed, and the permitting concerns outlined above are addressed, we can consider whether concurrence can be made or if additional comments are warranted.

The DEIS also contains a few inaccurate statements that should be corrected, in particular:

**III.F.1**

**III.F.1**

**III.F.1**

**III.I.3**


**IV.A.1**

- P. III-36 incorrectly states that all nontidal streams in the study area are designated as Use I. Please be aware that Whitesmarsh Run and all tributaries are Use IV waters.
- P. III-36 also states that "six surface streams drain portions of the study area". The study should note that there are several smaller tributary streams in addition to the six larger streams identified.
- P. III-37 states that at no point is Windless Run wider than ten feet while P. III-40 discusses a 15 foot wide study reach on Windless Run.
- P. III-56 discusses the number of wetlands in each watershed. This should be clarified to indicate the number of wetlands studied within the watershed and not the total number of wetlands.
- P. IV-4 states that "the only road connections planned for the project" will be at the existing US 40/4d, 43 interchanges and at Md. 150. How will new development be served without additional road connections?

**IV.Q.6**

- P. IV-108 incorrectly states that MDE has delegated authority to Baltimore County for regulation of development in floodplains.

Thank you for providing the opportunity to comment of the DEIS for this project. If you have any questions regarding this letter, please call me at the above number.

Sincerely,  
  
 Robert P. Cooper  
 Environmental Specialist  
 Nontidal Wetlands and Waterways Division

Cc: Elder Chigirelli, Jr.

8/23/1999 14:55 418-293-5804 SHA PFD PAGE 84/84

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*

December 26, 2000

**Elder Ghigiarelli**  
Nontidal Wetlands and Waterways Division  
Maryland Department of the Environment  
2500 Broening Highway  
Baltimore Maryland 21224

Attention: Robert P. Cooper  
Environmental Specialist

Dear Mr. Ghigiarelli:

Thank you for your letter dated September 2, 1999 regarding the Middle River Employment Center Access Study (MRECAS) Draft Environmental Impact Statement (DEIS). We have attached your incoming letter with the responses to your comments, as they will appear in the FEIS.

In terms of our wetland mitigation work, a detailed Wetland Mitigation concept plan is contained in the SHA Selected Alternative & Mitigation Concurrence Package, which discusses potential sites and SHA's conceptual proposal for each. I have attached a copy for your convenience. Additionally, agency field reviews have taken place since the distribution of the above mentioned package and a new site is being proposed. I am attaching minutes of the wetland mitigation meeting and a preview of the updated Wetland Mitigation discussion that will be included in the Preliminary Final Environmental Impact Statement (P-FEIS).

We anticipate that the attached responses address your comments and concerns and look forward to your concurrence on the SHA Selected Alternative and Mitigation Package. Please do not hesitate to contact the Project Manager, Heather Murphy or the Environmental Manager, Allison Grooms, if you need any additional information or have any questions. They can be reached at (410) 545-8571 and (410) 545-8568 respectively.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

Mr. Elder Ghigiarelli  
MRECAS  
Page 9

By: \_\_\_\_\_

Joseph R. Kresslein  
Assistant Division Chief  
Project Planning Division

**Attachments**

cc: all with incoming  
Trevor Clark, USFWS  
Ray Dintaman, DNR  
Larry Duket, OP  
Mary Huie, FHWA  
J. Rodney Little, MHT  
Denise Rigney, EPA  
Paul Wettlaufer, ACOE  
Cynthia Wilkerson, NPS  
Danelle Bernard, SHA Bridge Design Division  
Bill Buettner, SHA Environmental Programs Division  
Allison Grooms, SHA Environmental Planning  
Joe Kresslein, SHA Environmental Planning  
Mike Lynch, SHA Highway Hydraulics  
Dave Manly, Century Engineering  
Bob Riley, SHA Highway Design Division  
Tom Vidmar, Baltimore Co. DEPREM

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

MDE letter dated September 2, 1999

3. SHA's consultant hand delivered five DEIS documents to the Wetlands and Waterways Program on May 14, 1999. Unfortunately, appropriate MDE staff did not receive the documents in a timely manner. In the future, SHA will deliver documents return/receipt or if hand delivered with recipients signature required to ensure that they are provided to your offices or staff in a timely manner.
4. While acknowledging that the proposed build alternatives will result in some adverse effects to aquatic and terrestrial habitats, we believe that commitments made in the DEIS and to be reiterated in the FEIS to avoid, minimize and mitigate these effects will help preserve the quality of the most sensitive habitats in the study area. Page IV-50 of the DEIS states that "The loss of aquatic habitat resulting from permanent discharges will be compensated with compensatory wetland mitigation and the establishment of natural bottoms in culverts".

Page IV-53 of the DEIS goes on to describe the Wetland Mitigation site search process that is currently under way in accordance with the guidelines contained in the Maryland Compensatory Mitigation Guidance, August 1994. The conceptual mitigation proposal utilizes Sites 6 and 21 which have been agreed upon by the U.S Army Corps of Engineers and the Maryland Department of the Environment's (MDE) mitigation section representative as indicated in the minutes of the Potential Wetland Mitigation Site field review. It is SHA's goal to mitigate the permanently impacted wetlands by a factor of 2:1 as described in the conclusion of the attached minutes.

Page IV-28 of the DEIS discusses the crossing of Windlass Run and Whitmarsh Run. As recommended by agency representatives SHA proposes to span each of the major stream crossings with a 100-foot simple span bridge, minimizing impacts to these streams. The type and final length will be determined during final design. For the remaining smaller stream crossings, SHA proposes to carry the "waters" through depressed culverts allowing for the deposition of natural sediments in culvert bottoms, thereby providing for the creation of benthic habitat.

Page VI-57 of the DEIS states "The associated loss of terrestrial wildlife caused by the alternatives may be mitigated by the enhancement of wildlife habitat through reforestation and wetland mitigation, including the use of vegetation that has high food value for wildlife or that will provide effective cover. Vegetation with high food value includes mast-producing trees as well as seed or berry-producing shrubs". With regard to wetland mitigation, Site 21 is proposed as a mosaic of forested wetlands and uplands, which will create both aquatic and terrestrial habitat and increase habitat diversity on the site.

Page IV-58 states that "the greatest potential impact to riparian areas would be new construction parallel to a stream or an impoundment of a stream." This type of impact has been avoided in the project planning process, thereby minimizing impacts to riparian areas as much as possible. The State and County each require maintaining a buffer along streams and wetlands of varying degrees as I'm sure you're aware. The requirements are intended to protect the riparian areas along the stream corridors.

As discussed on page IV-17 of the DEIS, "Adverse impacts to water quality during construction of the roadway or borrow pits will be minimized through strict adherence to the SHA erosion and sediment control procedures." The project will also include water quality management provisions subject to review and approval by MDE to mitigate any impacts as per their requirements and guidelines. No significant adverse impacts will be a requirement to obtain the permit. All borrow material will be obtained from MDE approved sites.

Included in the construction contract documents will be all of the requirements contained in the 1994 Maryland Standards and Specifications for soil Erosion and Sediment Control. This includes the Standard Stabilization Note requiring all areas of exposed soil to be vegetatively or structurally stabilized within the time frames indicated. Other measures to minimize construction related impact include the requirements contained within the Best Management Practices (BMP's) for working in Nontidal Wetlands, Wetland Buffers, Waterways, and 100-year Floodplain. The BMP's will also be included in the construction contract documents.

A detailed discussion on minimization and avoidance of wetland and stream impacts proposed by the project including an evaluation of potential avoidance and minimization measures had been provided in the DEIS, starting on page IV-28. The project will include both sediment and erosion control as well as stormwater management plans subject to review and approval by MDE. The hydrologic system upstream and downstream of the project will be maintained by the use of culverts and bridges. Any indirect impacts to the watershed, such as future development, will also be required to meet the local Stormwater Management Regulations.

As discussed on page IV-107 in the secondary and cumulative effects analysis portion of the DEIS, "Secondary (and cumulative) impacts to water quality and wetlands caused by the MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP areas. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called forest buffers) are required on plats along with protective covenants in Baltimore County Land Records. These forest buffers and associated protective covenants ride with the deed of the property in perpetuity".

1. SHA feels that the detailed analysis supporting the selection process outlined in the SHA Alternative & Mitigation Concurrence Package is contained in the DEIS and is being refined for the P-FEIS. Hopefully all of the information provided will facilitate your review.
2. In the DEIS p. III-36 incorrectly states that all nontidal streams in the study area are Use 1. Whitmarsh Run & its tributaries are indeed Use IV. This has been corrected on pg. III-36.




*Middle River Employment Center Access Study  
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5. In the DEIS p. III-36 also states that "six surface streams drain portions of the area". The study should state that there are several smaller tributary streams in addition to the six larger ones identified. This has been corrected.
6. p. III-37 states that at no point is Windlass Run wider than 10 feet, while p. III-40 discusses a 15 ft wide study reach. This has been changed to "no wider than fifteen feet" on pg. III-38.
7. p. III-56 discusses the number of wetlands per watershed. This should be clarified to indicate the number studied within the watershed and not the total number of wetlands. This has been changed on pg. III-58 to "Of the number of wetlands studied, there are fourteen wetlands in Whitemarsh Run watershed...".
8. p. IV-4 states that "the only road connections planned for the project" will be at the existing US 40/MD 43 interchange and at MD 150. How will new development be served without additional road connections? This has been addressed in the Secondary and Cumulative Effects discussion beginning on page IV-107. The sentence was misleading and has been changed to read, "Indeed, the only road connections planned for the project will be existing US 40/MD 43 interchange, MD 150 and two to three access points into the proposed employment center.
9. p. IV-108 incorrectly states that MDE has delegated authority to Baltimore County for regulation of development in floodplains. Agreed, the last two sentences on page IV-116 are misleading and will be eliminated.

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2. Other Agency Letters in Response to Draft EIS/Section 4(f) Evaluation (circulated May 1999)

  
U. S. Department  
of Transportation  
Federal Aviation  
Administration

WASHINGTON AIRPORTS DISTRICT OFFICE  
P. O. Box 16870  
Washington, D. C. 20041-6780  
Telephone: 703/661-1354  
Fax: 703/661-1370

June 15, 1999

Ms. Mary Huie, Environmental Engineer  
Federal Highway Administration  
The Ronunda-Suite 220  
711 West 40th Street  
Baltimore, MD 21211

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

Re: Draft Environmental Impact Statement and Draft Section 4(f) Evaluation, May 1999  
Middle River Employment Center Access Study, Baltimore County, Maryland

Dear Ms. Huie and Mr. Ege:

Thank you for the opportunity to comment on the above referenced draft document. The Federal Aviation Administration (FAA) Washington Airports District Office (WADO) reviewed the document and the following comments are offered for incorporation into the development of the document.

1. The proposed alternatives alignments D, D-modified, and F1-modified appear to impact Martin State Airport (MTN). As such, close coordination is required with the Maryland Aviation Administration (MAA), Maryland Air National Guard (MANG) and the FAA WADO.
2. Although the Airport is in state ownership, the property was acquired with Federal funds. Therefore, the airport property has federal obligations that cannot be removed without FAA concurrence. The FAA WADO will not concur with the release of any dedicated airport property that would be required for roadway alignments, if such release would adversely impact the safety, utility, or efficiency of the Airport.
3. The proposed alignment listed in item 1 above could penetrate the Federal Aviation Regulations (FAR) Part 77 imaginary surfaces associated with the airport. FAA would object to any penetration to the Part 77 surfaces. Therefore, the environmental impact

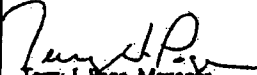
statement must evaluate the proposed alternatives sufficiently to determine what portions of the airport would be impacted by the referenced layout options.

4. Figure S-1 legend does not allow the reader to differentiate between the shading used for wetlands from the shading used for historic areas. Therefore, evaluation of the alternatives is not possible.

FigSI.

If you have any questions regarding our comments on the draft environmental impact statement, please contact Ms. Maria Stephens, Environmental Specialist at 703.661.1365.

Sincerely,

  
Terry J. Page, Manager  
Washington Airports District Office

cc: Michael C. West, MAA

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Section VI. Comments and Coordination

Baltimore Metropolitan Council



601 North Howard Street  
Baltimore, Maryland 21201-4585

Telephone: (410) 333-1750  
Facsimile: (410) 659-1260

PAUL PARRAGUT  
Executive Director

Anne Arundel County  
Baltimore City  
Baltimore County  
Cecil County  
Harford County  
Howard County

June 24, 1999

Ms. Heather Murphy  
Project Manager  
State Highway Administration  
Maryland Department of Transportation  
707 North Calvert Street  
Baltimore, MD 21202

Dear Ms. Murphy:

As a team member for the Middle River Employment Center Access Study, I reviewed the Draft Environmental Impact Statement on behalf of the Transportation Steering Committee for the Maryland State Clearinghouse review process. I would like to further state that the document is well organized and thorough in its presentation of information.

I look forward to our continued involvement in this important project for the region.

Sincerely,

John McHenry  
Transportation Planner

cc: Regina Aris

Print: Just Green To: Creative Web Date: 01/19/99 Time: 10:59:21  
06/16/99 15:23 BALTIMORE METROPOLITAN COUNCIL + 4103330168

Page 1 of 8  
NO. 012 001



Baltimore Metropolitan Council  
601 North Howard Street  
Baltimore, Maryland 21201-4585

Phone: (410) 333-1750  
Fax: (410) 333-0160

MEMORANDUM

TO: TSC Members  
FROM: Harvey S. Bloom

DATE: June 16, 1999  
SUBJECT: Benchmarking Assessment of the Baltimore Region  
ACTION REQUIRED: Informational/Discussion (TSC Meeting - 6/22/99)

As per your directive at today's meeting, enclosed is a copy of the "benchmarking" assessment of the Baltimore region prepared under the FY 1999 UPWP. Also included in the UPWP write-up of this work task was the scoping and identification of key participants and strategies that focused and delineated major products and milestones of a regional goal setting (visioning) effort. However, as I noted this A.M., it is my understanding that it is the consensus of the BMC Management Committee to defer, at this time, any additional work (beyond this benchmarking assessment) in referenced to a regional visioning process.

Again, a status report on the benchmarking assessment is on the agenda of the June 30 BMC Planning Directors meeting. I believe there is ample time on the agenda of the June 22 TSC meeting to discuss this assessment. If Committee members deem it necessary, please contact me prior to the TSC meeting with your comments and thoughts regarding a discussion of this matter.

Attachment

Middle River Employment Center Access Study  
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**Intro**

As the Transportation Steering Committee has completed its Baltimore Regional Transportation Plan, there has been a realization of the importance of a regional vision to shape its direction. The first step in this process is evaluating where we stand at this time by determining our strengths and weaknesses. With an appreciation of the state of the region, we can begin the process of coming to a consensus on what we want to evolve into over the next 20 years.

**Ranking the Baltimore Region**

The Baltimore region has risen in nationally ranked comparisons over the last 20 years by building on its long term assets of world class arts, health and port facilities as well as expanding into tourism, air transportation and sports facilities. In examining the following ranking related reports<sup>1</sup>, the common factor is Baltimore's rising status as a re-engineered metropolitan area developing industries in growth areas. Although there are still poverty and crime issues in the region, overall economic ascendance will give leaders greater resources to confront these while continuing Baltimore's progress as a desirable place to live and work. Outlined below are some of the newfound strengths, existing assets and issues that still need to be addressed in the Baltimore region.

**Newfound Strengths**

High level of *new business activity* and its non-manufacturing industries are growing in the region. Baltimore is a leading region in overall new business activity. It ranks 7th in company formation and 2nd in fast growth new companies from January 1984 to January 1989.<sup>2</sup> The areas of health services, business and professional services, entertainment and tourism, housing and construction, air transportation and warehousing have expanded significantly. These services have grown to replace jobs lost in manufacturing industries that once drove Baltimore's economy.

The region is using new sports arenas and expanded convention and hotel facilities in downtown Baltimore as well as waterfront attractions to draw increased *tourism and convention business* to the metropolitan area. The growth in tourism and convention business reflects the changed perception of Baltimore from a struggling blue-collar city to a friendly and cosmopolitan destination for recreation and business.

<sup>1</sup> Preparing for Global and Regional Collaboration - A Strategic Assessment of the Baltimore Region 1991, The Places Rated Almanac 1987, Rating the Region - Designing Our Future 1996, Greater Baltimore - State of the Region Report 1998

<sup>2</sup> Preparing for Global & Regional Collaboration 1991

The Baltimore Washington International Airport (BWI) has emerged as a major source of new job growth due to *increased air service in the region*. BWI is expanding its capacity in an effort to challenge other east coast airports in handling domestic and international air cargo and passenger traffic. Record volume air service has put it ahead of Dulles International Airport and not far behind Ronald Reagan Washington National Airport in terms of total passenger traffic.

**Existing Assets**

The city and the region have taken advantage of their *world-renowned higher education institutions and research facilities*. The region's strengths in higher education are a considerable asset that can play a role not just in research and technology but in training tomorrow's skilled workforce.

Baltimore has an excellent *interregional transportation network* with international access and moderate levels of congestion. The Port of Baltimore has undergone a major upgrading. Dredging is key for the Port's survival, it is necessary for maintaining the shipping channels and attracting larger ships. The challenge is how to pay for the dredging and where to put the toxic dredge waste material.

Baltimore is ranked 8th in the arts<sup>3</sup>. This is a major positive attribute of the Baltimore region and can be leveraged in terms of economic development, tourism and general promotion of the region.

Baltimore ranked as the second most affordable in *cost of living* for similar metropolitan areas<sup>4</sup>. A lower cost of living and smaller scale than other Atlantic seaboard cities offers lifestyle advantages which attracts businesses and residents.

Nationally Baltimore stands slightly above the middle in both housing price and the quality of *housing stock*<sup>5</sup>, a positive contribution to the low cost of living. Baltimore has replaced notorious high-rise housing projects with low-rise, mixed-income developments while redevelopment continues on its historic building stock.

**Issues to Address**

Fear of *crime* and the perception of crime are extremely important issues for the region since Baltimore is ranked as the 339th metropolitan region in the

<sup>3</sup> Places Rated Almanac 1997

<sup>4</sup> Greater Baltimore - State of the Region Report 1998

<sup>5</sup> Preparing for Global and Regional Collaboration - A Strategic Assessment of the Baltimore Region 1991

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country for crime.<sup>6</sup> It has the highest rate of violent crime among similar sized metropolitan areas.<sup>7</sup> Crime has a powerful impact on the region's public school system as well as for retaining a tax base in the city.

In terms of air quality the Baltimore region ranks 16th in terms of unhealthy air pollution days in a year compared to comparable regions. Although this is partly due to the wind patterns from the mid-West, attaining cleaner air is a key issue for the region.

High dropout rates in the inner city and some older suburban communities make it difficult finding qualified employees to fill many low to mid-level jobs, and makes the region less competitive in retaining and attracting firms. An increasing number of businesses located in fast growing, high income suburban areas with little affordable housing nearby - such as parts of Harford County and Howard County - have difficulty filling low wage job vacancies; at the same time that many people in Baltimore City and certain older ring suburbs cannot get to where the jobs are.

Moving Forward

Under the new terms of global competition, businesses need to draw on essential services and resources found in their local regions - from skilled workers to technology to venture capital to efficient and high quality physical infrastructure and amenities. The viability of the region will depend on an adequate level of public investment in education and other services, private business activity, on access to a high quality transportation system and on the vision, leadership, and creativity of elected public leaders. By addressing some long standing issues and growth in new fields, the Baltimore region will continue to experience its renaissance as a place to live and work.

<sup>6</sup> Places Rated Almanac 1997

<sup>7</sup> Greater Baltimore - State of the Region Report

Appendix

Following are a series of matrices highlighting the Baltimore region in a number of categories as it compares with other metropolitan areas nationally.

SOURCE	Transportation	Arts	Recreation
Greater Baltimore State of the Region Report 1998	2 of 20	4 of 20	10 of 20
Places Rated Almanac 1997	6 of 351	8 of 351	32 of 351

The Places Rated Almanac, 1997 edition, examined 351 metropolitan areas in North America in terms of cost of living, job outlook, transportation, education, health care, crime, the arts, recreation and climate. In 1998, the Greater Baltimore Committee examined the relative health and economic performance of the Baltimore region as compared to a benchmark group of 19 other metropolitan economies throughout the United States. For the three categories listed above the Greater Baltimore Committee used the Places Rated Almanac as a source for their ranking.

Transportation

Places Rated Almanac uses three broad criteria for rating metropolitan areas for transportation: (1) its supply of public transit and the daily commuting patterns; (2) its connectivity with other metropolitan areas via national highways, scheduled air service and passenger rail service; and (3) its centrality, or relative nearness to other metropolitan areas. The high ranking of transportation overall and among similar metropolitan regions demonstrate that transportation network is a competitive advantage for the Baltimore region.

Arts

The rating for the arts in the Places Rated Almanac looks at 14 criteria for art museums and galleries, performance arts, and public libraries, including number of institutions and performances, utilization of library holdings, and museum attendance. The ranking suggests that the arts is a major positive attribute of the Baltimore region and can be leveraged in terms of economic development, tourism and general promotion of the region.

Recreation

The ranking for recreation suggests a valuable resource for the region. The ranking is based upon an evaluation of the availability of facilities such as golf courses and movie theaters, seats for sporting events, and outdoor park, recreation and water resources.

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From: John Corroon To: Christine White Date: 07/16/99 Time: 10:26:26 Page: 6 of 9  
 06/16/99 15:23 BALTIMORE METROPOLITAN COUNCIL + 4103330160 NO. 012 006

SOURCE	Least Expensive Local and State Tax Levels
Money Magazine	72 of 100

Annually *Money* magazine ranks the country's largest 100 metropolitan areas according to the amount of combined taxes paid in the region by an average household. Although this is not a desirable ranking, it is an improvement over previous years due to changes in the state tax structure.

SOURCE	Number of New Corporate Plants and Expansions
Site Selection Magazine	38 of 123

*Site Selection* magazine ranks the metropolitan area 38th out of 123 markets in terms of the number of new corporate plants and expansions. The score is derived from the number of facilities defined as having a minimum of 20,000 additional square feet, or 50 new employees, or at least \$1 million in new investment. This ranking shows the region's general attractiveness as an economic development site.

SOURCE	The Best Places to Locate a Business Today
Cushman & Wakefield Business America Real Estate Monitor Executive Summary	27 of 100

The *Cushman & Wakefield Monitor* asks American chief executive officers of Fortune 500 companies which cities are best for locating a business among the top 100 populated American cities. Similar to the previous benchmark, this indicator demonstrates Baltimore's strength in economic viability.

SOURCE	Roadway Congestion Index
Texas Transportation Institute 1996	21 of 70

The Texas Transportation Institute releases a roadway congestion index which estimates the level of congestion using the density of traffic. Average daily travel volume per lane on freeways and principal arterial streets are estimated using areawide estimates of vehicle-miles of travel and lane-miles of roadway. The 21st ranking was from among the 70 largest urban areas. The current study incorporates information collected through 1996, the most recent year for which all necessary data are available. The ranking demonstrates the increasing amount of congestion in Baltimore, but still not close to the congestion of major cities such as Los Angeles and Washington, D.C.

From: John Corroon To: Christine White Date: 07/16/99 Time: 10:26:26 Page: 7 of 9  
 06/16/99 15:23 BALTIMORE METROPOLITAN COUNCIL + 4103330160 NO. 012 007


SOURCE	Telecommuting
PC World	28 of 300

*PC World* rated the 300 largest metropolitan areas in the country and collected data on telecommuting-related conditions from local phone companies, Internet service providers, courier services and databases. In conjunction with information from *Money* magazine on their annual quality of life survey, a demographic consulting firm pulled the data together and assigned points in each category. The ranking demonstrates the ability to implement telecommuting in our region due to progressive employers, computer network technology and desire of employees to telecommute because of commute times.

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Print: Joan Garneau To: Christine Wells Date: 07/09/99 Time: 10:50:24 Page: 6 of 8  
06/16/99 15:23 BALTIMORE METROPOLITAN COUNCIL + 4103330168 NO. 012 008

 **Baltimore Metropolitan Council**  
601 North Howard Street Phone: (410) 333-1750  
Baltimore, Maryland 21201-4585 Fax: (410) 333-0160

**MEMORANDUM**

**TO:** TSC Members

**FROM:** Harvey S. Bloom *HSB*

**DATE:** June 16, 1999

**SUBJECT:** Second Certification Work Session

This is to confirm a second work session of the TSC regarding certification on Wednesday, July 7, at 10:00 A.M. at BMC. As agreed at today's meeting, a representative of the CAC and the Baltimore Regional Partnership will be invited to participate in this "open to the public" session.

**Cc:** Steve Rapley  
Herman Shipman

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
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Maryland Aviation Administration

"To provide services to our customers and the air transportation industry  
To foster and develop aviation in Maryland • To develop and empower our employees."

Parris N. Glendening  
Governor  
John D. Forcari  
Secretary

Theodore E. Mathison Executive Director

July 16, 1999

Ms. Mary Huie, Environmental Engineer  
Federal Highway Administration  
The Rotunda, Suite 220  
711 West 40<sup>th</sup> Street  
Baltimore MD 21211

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

Re: Draft Environmental Impact Statement and Draft Section 4(f) Evaluation  
Middle River Employment Center Access Study, Baltimore County, Maryland

Dear Ms. Huie and Mr. Ege, Jr.:

Thank you for the opportunity to comment on the above referenced draft document. The Maryland Aviation Administration, (MAA) Office of Planning and Engineering has reviewed the document and has the following comments.

1. In future documents, we ask that you consistently refer to the Airport as "Martin State Airport", with "MTN" as the proper acronym. I.D.1
2. On Page 1-8, the second paragraph refers to expansion of the Airport. MTN Airport is undergoing "development"; not expansion. "Expansion" indicates adding property to the property already owned by the Airport and this misstatement may unnecessarily alarm some people. I.D.1

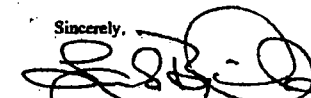
P.O. Box 8768, BWI Airport, Maryland 21240-0768 (410) 859-7100  
TOLL FREE: 1 (800) I-FLY-BWI • FAX: (410) 850-4729 • TDD for the hearing impaired: (410) 859-7227  
The Maryland Aviation Administration is an agency of the Maryland Department of Transportation

Ms. Huie, Mr. Ege, Jr.  
Page Two

3. The cultural resource discussions mention the need for right of way requirements from the "Martin Airport Complex", a term used to describe the National Register Eligible Historic District which encompasses and exceeds the current boundaries of MTN. It is unclear if right of way from MTN property is required. If impacts will occur to property occupied by the Maryland Air National Guard (MANG), they should be consulted directly to review the proposed plans as they are affiliated with the Department of Defense, although they lease state land from MTN. If airport property is impacted, then the MAA defers to the Federal Aviation Administration's (FAA) Comment #2 in their June 15, 1999 letter to you from Mr. Terry Page. This may not impede the acquisition of right of way, but closer analysis of the impact would be required in order to make this determination.
4. It should be noted that the MAA has jurisdiction over possible obstructions or hazards to aircraft within 3 miles of MTN. Obstructions are assessed using the imaginary surfaces described in Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace. All of the alternative routes end at Eastern Boulevard at the northern end of MTN. In this location the routes lay beneath the airport's "Horizontal Surface" which lies at an elevation of 172 feet above mean sea level. Elevated crossings, such as would be needed to cross the Amtrak/Maryland Rail Commuter (MARC) tracks, will require an Airport Zoning Permit from the MAA and an aeronautical study by the FAA Form 7460-1. Any structures that penetrate the Horizontal Surface will also require a variance from the Board of Airport Zoning Appeals (BAZA). These processes will also apply to any cranes or other such equipment used in the construction of improvements.
5. Pending the results of the referenced aeronautical study and barring the existence of any obstructions, significant environmental issues or community objections, MTN supports the alternates (F1, D, D Modified) that terminate at the MARC Station near the Airport.

Should you need further information, please do not hesitate to contact Ms. Barbara Grey at (410) 859-7090.

Sincerely,



Mr. Lynn S. Bezilla, Director  
Division of Planning



*Middle River Employment Center Access Study  
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**B. Comments and Response Matrices for Agency Letters**

1. Environmental, Regulatory, and Resource Agency Letters in Response to Draft EIS/Section 4(f) Evaluation (circulated May 1999)

Date of Letter	Comment	Subject	Agency	SHA Response
7/8/99	We concur that there is no prudent or feasible alternative to the proposed project, if project objectives are to be met. However we do not believe that all possible planning has been done to minimize harm to Section 4(f) resources. We recommend continued cooperation and coordination with the State Historic Preservation Officer in order to prepare the proposed Memorandum of Agreement (MOA) which should include measures to avoid and/or minimize harm to the Martin State Airport/Federal Depot Historic District, the three archeological sites (sites 18BA467, 18BA469, and 18BA470) and other historic properties which may be affected by the proposed project, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. A signed copy of the MOA should be included in the Final Section 4(f) Evaluation.	Section 4(f) Evaluation	DOI - FWS	We will continue to cooperate and coordinate with the State Historic Preservation Officer in order to prepare the MOA. The signed MOA will be included in the Final Section 4(f) Evaluation.
7/8/99	The U.S. Fish and Wildlife Service (FWS) advises that it would be beneficial to the review process if a map showing all eleven sampling sites (sites that were sampled for aquatic habitat, benthic macroinvertebrates, fish and herpetofauna, and water quality) was added to this document.	General	DOI - FWS	Sampling points were added to Fig. III-9.

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Date of Letter	Comment	Subject	Agency	SHA Response
7/8/99	The FWS advises that it prefers the selection of Alternative F1-Modified as the Final Build Alternative because it has fewer natural resource impacts. Alternatives D and D-Modified are not preferred alternatives because they will impact large amounts of wetland, floodplain, and forest. On the other hand, Alternatives E and I-Modified are not preferred because they will impact large amounts of floodplain, forest and Chesapeake Bay Critical Area Habitat.	Alignment Preferences	DOI - FWS	We acknowledge your preference of Alt. F-mod. We acknowledge Alt. D and D mod are not preferred by FWS, due to wetland, floodplain and forest impacts, and Alt. E and I-mod. are not preferred due to floodplain, forest and Critical Area impacts. SHA feels that alternative D-Modified will result in less overall natural environmental impacts once the access roads to the developable parcels are examined. Alternative F1-Modified will require the most additional road construction to access the developable parcels. Alternative F1-Modified could require over 10,000 feet of new roadway and the crossing of four wetland systems. See discussion in the FEIS on pages IV-123 through IV-127 for more details.
7/16/99	P. IV-122 We suggest that this chapter include a summary or a reference to the summary of Secondary and Cumulative Effects Analysis completed for the project.	SCEA	OP	See Table IV-42: Comparison Summary of Potential Secondary and Cumulative Effects, on page IV-138 of FEIS.
7/16/99	C.2 (p. II-8) We understand that implementation of these multi-modal options relies upon the extent of future employment development in the Middle River Employment Center. If a build alternative is selected, we recommend that along with highway improvements, policies be recommended to reduce the single occupant vehicle (SOV) travel resulting from planned employment development in the Center. In coordination with Baltimore County and the Baltimore Metropolitan Council, the Maryland Department of Transportation should monitor employment development in the Center and implement congestion mitigation strategies as demand for such options is warranted.	Multi-Modal and Congestion Mitigation Options for Further Study	OP	The implementation of an employer-based Transportation Demand Management program for the employers locating within the MREC area will be examined. Employers applying for a development permit within the MREC could be held responsible through the County development process for developing and implementing a transportation and flex time plan to reduce signal occupancy demand during the peak periods. (See page II-9 of FEIS)

Middle River Employment Center Access Study  
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Date of Letter	Comment	Subject	Agency	SHA Response
7/16/99	<p>P. II-9                      A bus/shuttle service connected to the MARC service seems to be the <b>only</b> strategy considered for the Bus option. Has the MTA evaluated bus connections to other activity centers? Without a study of alternative bus strategies, it does not seem adequate to recommend only a shuttle service to the MARC station for the Bus option.</p>	Bus	OP	<p>Extension of local bus service, adding commuter bus service and adding local circulator service will be planned for Alternative D-Modified to be coordinated with the opening of the roadway. We have coordinated this analysis with the Mass Transit Administration. In terms of local bus service they intend to extend the proposed Route 66 into the employment center, extend the Route 23 to meet with the Route 66 at the same location and have the Route 24 make a stop at that same location. In terms of the commuter bus service the MTA will investigate locating a park and ride lot near the intersection of US 40/MD 43 and extend the Route 120 to serve the lot. In terms of local circulator service they will examine the implementation of a local circulator bus service to transport people through the study area on the new road to locations such as the White Marsh Mall, Martin State Airport, the Martin Airport MARC station, and the proposed employment center. Shuttle service from the Martin Airport MARC Station to the proposed employment center was included in the TMA discussion.                      (See Page II-9 of FEIS)</p>
7/16/99	<p>P. II-37, Table II-4                      The environmental impacts for each alternative shown in Table II-4 and Table S-1 (p. S-5) are different. Which table presents correct information?</p>	Summary of impacts matrix	OP	<p>Table S-1 contains the latest information, while Table II-4 (Table II-5 in FEIS) bases the impacts on a 150 ft bandwidth.</p>
7/16/99	<p>IV.B. 3.                      We suggest the following revisions on page IV-7 (revisions are shown in <b>bold and italic</b>; strikeout indicates deletion:                        “..will be substantially affected by local priority <b>funding</b> area designations. <del>These local jurisdictions must certify and PFA areas in</del> <b>In</b> addition to those <b>PFA</b>s designated in the law (e.g.,...), <b>counties</b> can designate <del>additional</del> <b>PFA</b>s that meet <b>the Smart Growth Area Act’s</b> criteria for density and public facilities...”                        “The <b>MOP</b> certified PFA for the study area coincides with...”</p>	Land Use	OP	<p>Suggested changes were made. See page IV-8 of FEIS.</p>

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*Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
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Date of Letter	Comment	Subject	Agency	SHA Response
7/16/99	P. IV-122, Table IV-37 The description on "Potential Secondary Effects" for "Forest" seems to be inaccurate. Based on the information provided on page IV-107, about 400 acres of forest (40% to 45% of the total forest in the Middle River Employment Center) could be lost.	SCEA	OP	Table IV-37 of DEIS is accurate. The SCEA boundary encompasses a larger area than the MREC boundary, therefore a loss of 400 acres of forest is only a 7% loss of forested area within the SCEA boundary. This table is IV-42 in the FEIS.
7/16/99	This project is consistent with our plans, programs, and objectives.	General	MDE - Water Management Administration	No response required.
7/16/99	P. II-8 and II-9 Requiring Middle River Employment Center (MREC) employers to develop and implement a Transportation Demand Management (TDM) plan would help to reduce additional traffic generated by the Center into the I-95 corridor in the White Marsh area. This is an already congested location where trip reductions would help lessen any negative air quality impacts caused by traffic to and from the proposed development. Shuttle service to the Martin State Airport MARC station and enhanced bus service to MREC are also desirable options.	TDM	MDE - Air and Radiation Management Administration	<p>The implementation of an employer-based Transportation Demand Management program for the employers locating within the MREC area will be examined. Employers applying for a development permit within the MREC could be held responsible through the County development process for developing and implementing a transportation demand management program to encourage carpooling, use of public transportation and flex time to reduce single occupancy demand during the peak periods.</p> <p>Extension of local bus service, adding commuter bus service and adding local circulator service will be planned for Alternative D-Modified to be coordinated with the opening of the roadway. Shuttle service from the Martin Airport MARC Station to the proposed employment center could be included with the local circulator bus service, if demand warrants this service once development plans are finalized.</p> <p>See TDM discussion on page II-9 of FEIS.</p>

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Date of Letter	Comment	Subject	Agency	SHA Response
7/16/99	<p>III.M.            ...a summary of the Initial Site Assessment Results is provided and Table III-32 Hazardous Waste Site Ranking by Impact Potential lists site numbers, parcel numbers, and environmental concerns associated with the 54 sites of potential environmental concern. Although it may be possible to discern the locations of the 54 sites from other maps and diagrams within the document, it would be more useful if the sites could be located on a separate map or diagram and listed with site names and addresses. This information could assist the Waste Management Administration in locating these sites within our databases and perhaps providing additional information to the Maryland Department of Transportation regarding them. Since the exact location of the sites is difficult to determine, we can only offer general comments regarding the information provided.</p>	Municipal and Industrial Waste Sites	MDE - Waste Management Administration	The detailed study report was sent to MDE.
7/16/99	<p>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) listed sites MD-304, Martin State Airport, Box 1, 701 Wilson Point Road, Baltimore, MD 21220 and MD-310, Martin State Airport Site II (Air National Guard), Eastern Avenue and Wilson Point Road, Baltimore, MD 21220 are located within the study area. Contact the Environmental Restoration and Redevelopment Program at (410) 631-3437 for additional information.</p>	CERCLA Sites	MDE - Waste Management Administration	We will coordinate with the Environmental Restoration and Redevelopment Program.
7/16/99	<p>Hazardous, solid, and oil wastes must be properly disposed at permitted facilities. Contact the Hazardous Waste Program at (410) 631-3343, the Solid Waste Program at (410) 631-3424, and the Oil Control Program at (410) 631-3442 for additional information.</p>	Waste Disposal	MDE - Waste Management Administration	We will coordinate with the Hazardous Waste Program, Solid Waste Program, and the Oil Control Program.

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Date of Letter	Comment	Subject	Agency	SHA Response
7/27/99	EPA remains concerned with the direct, cumulative and secondary impacts. The impacts of access roads and the development that will follow have the potential to cause significant environmental impacts.	Impacts	EPA	Secondary ( <i>and cumulative</i> ) impacts to water quality and wetlands caused by MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP areas. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records. (See page IV-123 in FEIS)
7/27/99	EPA urges Baltimore County to implement aggressive conservation practices when reviewing plans and processing permits for the MREC. EPA would be happy to assist Balto. County in the identification of sensitive resources that should be avoided. Preservation and conservation of these sensitive areas may lessen the overall impacts of the build out for this project.	Sensitive resources	EPA	The State Highway Administration is not involved in permitting the land use, but will pass this concern and offer of help to Baltimore County.

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Date of Letter	Comment	Subject	Agency	SHA Response
9/2/99	COMAR 26.17.04.11B(5): "Proposed projects that eliminate or significantly and adversely affect aquatic or terrestrial habitat and their related flora and fauna are not in the public interest"	Aquatic and terrestrial habitat	MDE, Water Management	As discussed on page IV-50 (IV-56 in FEIS), "The loss of aquatic habitat resulting from permanent discharges will be compensated with compensatory wetland mitigation and the establishment of natural bottoms in culverts". On page IV-52 (IV-58 in FEIS) the document goes on to say "Permanent impacts to wetland resources will be offset by compensatory mitigation. Encouraging the deposition of natural sediments in culvert bottoms, thereby creating benthic habitat will minimize impacts to aquatic resources. Research indicates that while highway construction destroys habitats within the construction corridor and increases the possibility of migratory animal mortality, it has little effect on the distribution or density of non-migratory animals within adjacent habitats (Michael, 1975). Furthermore, the change of vegetation types within the right-of-way (such as forest to grasses) may attract new species (e.g. American robin and woodchuck) to replace species lost by the destruction of the previous habitat. Other species, such as the whitetail deer and black rat snake, can benefit from the newly created "ecotone," or edge between the new habitat type and the adjacent existing habitat (Leedy and Adams, 1982). Within the MRECAS that effect will be minimal due to the large amount of ecotones already existent there". On page VI-57 (page IV-73 in FEIS), the document states "The associated loss of terrestrial wildlife caused by the alternatives may be mitigated by the enhancement of wildlife habitat through reforestation, including the use of vegetation that has high food value for wildlife or that will provide effective cover. Vegetation with high food value includes mast-producing trees as well as seed or berry-producing shrubs".

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Date of Letter	Comment	Subject	Agency	SHA Response
9/2/99	COMAR 26.23.02.04A(3): "The Department may not issue a permit for a regulated activity unless the Department finds that the applicant has demonstrated that the regulated activity does not cause or contribute to the degradation of ground or surface waters"	Water quality	MDE, Water Management	<p>As discussed on page IV-17 of the DEIS (pages IV-19 and IV-20 of FEIS), "Adverse impacts to water quality during construction of the roadway or borrow pits will be minimized through strict adherence to the SHA erosion and sediment control procedures. All borrow material will be obtained from clean upland sites. All areas of exposed soil will be vegetatively or structurally stabilized as soon as practical".</p> <p>"Other measures to minimize construction related impact include:</p> <ul style="list-style-type: none"> <li>• Initiating temporary stream closures where necessary.</li> <li>• Minimizing equipment operation within the stream channels</li> <li>• Constructing temporary in-stream measures (Coffer dams, stream crossings) with clean materials.</li> <li>• Locating equipment fueling and service staging areas away from aquatic resources.</li> <li>• Constructing culvert extensions or new structures at stream crossings in such a manner as to promote continued easy fish migration and/or avoid any additional impact within stream channels."</li> </ul>
9/2/99	COMAR 26.23.02.05B(3)(e,h,&k): "The Department shall consider avoidance and minimization of direct or indirect adverse impacts to nontidal wetlands including "hydrologic regime of the areas upstream and downstream of the area of impact", "subsurface water flow into or out of any nontidal wetland area", and Cumulative impact to nontidal wetlands".	Wetlands	MDE, Water Management	A detailed discussion on mitigation of impacts to nontidal wetlands, including an extensive evaluation of avoidance and minimization, is provided in the document, starting on page IV-28 of DEIS (page IV-31 in FEIS).



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Date of Letter	Comment	Subject	Agency	SHA Response
9/2/99	COMAR 26.23.02.06A(1)(a) & (2)(b): "A regulated activity may not cause an individual or cumulative effect that degrades aquatic ecosystem diversity, productivity, and stability or that degrades surface and groundwater quality."	Cumulative effects	MDE, Water Management	As discussed on page IV-107 of DEIS (page 123 of FEIS), "Secondary (and cumulative) impacts to water quality and wetlands caused by MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP areas. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records. These Forest Buffers and associated protective covenants ride with the deed of the property in perpetuity".
9/2/99	P. III-36 incorrectly states that all nontidal streams in the study area are Use I. Whitemarsh Run & tribs are Use IV.	Use Class	MDE, Water Management	Corrected on pg. III-36 of DEIS. (This is also page III-36 in FEIS.)
9/2/99	P. III-36 also states that "six surface streams drain portions of the area". The study should state that there are several smaller tributary streams in addition to the six larger ones identified.	Stream #	MDE, Water Management	Corrected on pg. III-36 of DEIS (page III-35 in FEIS.)
9/2/99	P. III-37 states that at no point is Windlass Run wider than 10 feet, while p. III-40 discusses a 15 ft wide study reach.	Windlass width	MDE, Water Management	Changed to "no wider than fifteen feet" on pg. III-36 of FEIS.
9/2/99	P. III-58 discusses the number of wetlands per watershed. This should be clarified to indicate the number studied within the watershed and not the total number of wetlands.	Wetlands	MDE, Water Management	Changed to read "of the number of wetlands studied, there are fourteen wetlands in Whitemarsh Run watershed..." (This section is on page III-56 of FEIS.)

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Date of Letter	Comment	Subject	Agency	SHA Response
9/2/99	P. IV-4 states that "the only road connections planned for the project" will be at the existing US 40/MD 43 interchange and at MD 150. How will new development be served without additional road connections?	Road connections	MDE, Water Management	See the discussion in the SCEA, beginning on pg. IV-123 of FEIS. The sentence at page IV-4 of DEIS was misleading. In the FEIS the sentence has been changed to read "Indeed, the only road connections planned for the project will be existing US 40/MD 43 interchange, MD 150 and two to three access points into the proposed employment center." The sentence can be found on page IV-6 of the FEIS.
9/2/99	P. IV-116 incorrectly states that MDE has delegated authority to Baltimore County for regulation of development in floodplains.	Floodplains	MDE, Water Management	The last two sentences on page IV-116 are misleading and were eliminated in FEIS (see page IV-132 of FEIS).

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2. Other Agency Letters in Response to Draft EIS/Section 4(f) Evaluation (circulated May 1999)

Date of Letter	Comment	Subject	Agency	SHA Response
6/15/99	The proposed alternatives alignments D, D-modified, and F1-modified appear to impact Martin State Airport (MTN). As such, close coordination is required with the Maryland Aviation Administration (MAA), Maryland Air National Guard (MANG), and the FAA WADO	General	FAA	SHA will be closely coordinating with Maryland Aviation Administration (MAA), Federal Aviation Administration (FAA) and the Maryland Air National Guard (MANG) as design and construction are undertaken to determine exact impacts to their properties and operations and to determine mitigation strategies
6/15/99	Although the Airport is in state ownership, the property was acquired with Federal funds. Therefore, the airport property has federal obligations that cannot be removed without FAA concurrence. The FAA WADO will not concur with the release of any dedicated airport property that would be required for roadway alignments, if such release would adversely impact the safety, utility, or efficiency of the airport.	General	FAA	SHA will coordinate with FAA if any property is required from Martin State Airport and work to minimize any disruptions to airport operations and eliminate any adverse impacts to the safety, utility or efficiency of the airport. At this time SHA believes that the project will have a positive effect on the efficiency of the airport and not effect the safety or utility of the airport.
6/15/99	The proposed alignment listed in item 1 above could penetrate the Federal Aviation Regulations (FAR) Part 77 imaginary surfaces associated with the airport. FAA would object to any penetration to the Part 77 surfaces. Therefore, the environmental impact statement must evaluate the proposed alternatives sufficiently to determine what portions of the airport would be impacted by the referenced layout options.	General	FAA	SHA will be meeting with FAA, MAA and MANG to determine any potential penetration of the Federal Aviation Regulations Part 777 surface with the bridge over the AMTRAK rail line of the selected alternative.
6/15/99	Figure S-1 legend does not allow the reader to differentiate between the shading used for wetlands from the shading used for historic areas. Therefore, evaluation of the alternatives is not possible.	General	FAA	We have revised the legend.
6/24/99	...the document is well organized and thorough in its presentation of information.	General	BMC	We agree.
7/16/99	MTN is proper acronym for Martin State Airport.	MTN	MAA	Suggested changes were made. (See page I-8 of FEIS.)
7/16/99	MTN is undergoing development, not expansion.	expansion	MAA	Suggested changes were made. (See page I-8 of FEIS.)

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Date of Letter	Comment	Subject	Agency	SHA Response
7/16/99	It is unclear if ROW from MTN property is required. If impacts occur to property occupied by MANG, they should be consulted directly. If airport property is effected, then the MAA defers to FAA Comment #2. This may not impede the acquisition of ROW, but closer analysis of the impact would be required in order to make this determination.	ROW	MAA	SHA will coordinate with the MABG and/or the MAA if any property is required from Martin State Airport and work to minimize disruptions to airport operations and eliminate any adverse impacts to the safety, utility or efficiency of the airport. Exact determination of required ROW will be determined during final design of the project.
7/16/99	MAA has jurisdiction over possible obstructions or hazards to aircraft within 3 miles of MTN. Elevated crossings, such as that which would be needed to cross the Amtrak tracks, will require an Airport Zoning permit from MAA and an aeronautical study by the FAA Form 7460-1. Any structures that penetrate the Horizontal Surface will also require a variance from the Board of Airport Zoning Appeals (BAZA). These processes will also apply to any cranes or other such equipment used in the construction of improvements.	Obstructions to aircraft	MAA	SHA will be meeting with FAA, MAA and MANG to coordinate any potential penetration of the jurisdictional airspace surrounding the MTN created by the MD 43 bridge over Amtrak rail line and any cranes or other such equipment used in the construction of improvements. SHA will adhere to any permit/study requirements of the FAA and MAA during the final design phase of the project.
7/16/99	Pending the results of the referenced aeronautical study and barring the existence of any obstructions, significant environmental issues or community objections, MTN supports the alternates that terminate at the MARC Station near the Airport.	F1, D, D mod	MAA	No response required.

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C. Written Comments from June 16, 1999 Public Hearing and SHA Response Letters

3729 Chestnut Road  
Baltimore, MD 21220

July 10, 1999

Ms Heather Murphy,  
Project Manager  
State Highway Administration  
Mall Stop C-301  
P.O. Box 717  
Baltimore, MD 21203-0717

Dear Ms Heather Murphy:

Unfortunately I had to work late on the night of the public hearing on June 16 so I was unable to attend. I have several questions that I need the answers to:

1. Why develop, is it merely a way to extract more tax dollars for the county?
2. Who really wants a regional transportation network center or hub on the Williams property?
3. Under the project need section it mentions that Balto Co. has designated a portion of Middle River area as an employment center, since growth is planned. How is growth planned?
4. Since the majority of the area is wetlands why and how is this being pursued?
5. Why not make it an park or wildlife center?
6. The project need section said it will increase jobs by 14,000. What type of jobs?

I'm against the use of the Williams property as a transportation hub or center. The reasons are as follows: increased noise, traffic, poor choice of land use, wasting natural resources, roads will be eroded much faster resulting in increased damage to our vehicles. Along with those reasons the final reason is that the trucking industry is already having problems meeting the demand for qualified drivers. The future is only going to get worse. The transportation hub at Middle River will be competing for other business locations. Given the increasing labor shortage for the trucking industry failures or closures of such truck depots will also increase. The increase in jobs such as warehouse workers isn't going to do much economically to the area.

I would be willing to support the use of the land for a high technology center which is the future. A high technology center would be much better for a number of reasons. There would be less heavy transportation, but maybe a slight increase in light transportation. It would be likely to generate more revenue for the county and state be better for the environment than a trucking depot. High technology would do far more in improving socio-economic standards in the area than those minimum wage type jobs. I can't imagine how someone has guesstimated the increase of some 14,000 jobs. In fact I would guess that 2000 white collar technology jobs requiring education past high school would do more to revitalize the County than those 14,000 retail or warehouse workers. Jobs which require more education will pay more, require a less dense housing, generate a larger flow of disposable income into the community and surrounding areas.

The need for less roads would be a good thing. There is no reason to constantly divide the large tracts of land with additional roads. The communities on the eastern side of the county such as Middle River, Back River, Bowleys Quarters still have some scenic water views, woods and wildlife not found in many areas. The Joppa Road improvements in Perry Hall, were horrendous. Taxpayers front yards were taken for no other reason than to increase the number of lanes going to other neighborhoods. The additional lanes allowed the speed limit to increase by 5 mph so traffic is still a problem. Front yards were taken, property owner's received no benefit unless you call living on I-95 type road any consolation. It is a shame that common sense wasn't used prior to any improvements because the pluses certainly don't outweigh the minuses on that community improvement. I don't want to see the same blunder made in this community. Traffic on the east side isn't bad but given all these proposals I'm relatively certain that it will be when the county is done unless they take time to recognize the gem that they have and cultivate it with some real thought.

Sincerely,



Carl L. Rossmark

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME MR Richard E Reed DATE 6-3-99

ADDRESS 5617 ALLENDAE RD.

CITY/TOWN WHITE MARSH STATE MD. ZIP CODE 21162

I/We wish to comment or inquire about the following aspects of this project:

Will the status of Alender Rd. still be a  
no thru for 3/4 ton trucks? Currently there  
are signs posted at both ends of the road.  
But it is not being enforced. I fear the  
problem will get worse with added development.  
I have complained and have got no results.

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME CHARLES E. WILKINSON DATE 06-05-99

ADDRESS 2007 LELAND AVE

CITY/TOWN BALTO STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

I LIVE ON A STREET THAT DEADENDS UP TO  
AREA THAT IS MENTIONED IN THIS PLAN. IT IS  
A SMALL STREET AND I WOULD LIKE TO KNOW  
OF WHAT POSSIBLE PROBLEMS THIS CONSTRUCTION  
COULD POSSIBLY AFFECT THIS STREET. THE ROAD IS  
NARROW AND QUIET. I AM CONCERNED ABOUT HOW  
THIS WILL AFFECT MY RESIDENCE. THE AREA BEHIND  
MY STREET BEING CLOSED OFF HAS ALLOWED A QUIET  
LIFE STYLE OF LIVING FOR MANY YEARS. I PREFER IT  
THAT WAY

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11


Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
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JUL 25 1999 10:58 AM EPA ADMINISTRATOR 410 209 5009

Michael J. Collins  
 6th Legislative District  
 Baltimore and Harford Counties

Chairman  
 Business County Delegation

Member  
 Economic and Environmental  
 Affairs Committee



The Senate of Maryland  
 ANNAPOLIS, MARYLAND 21401-1991

July 20, 1999

Director's Office  
 418 Eastern Boulevard  
 Baltimore, Maryland 21222-4746  
 410-391-7500  
 Fax 410-391-7509

Annapolis Office  
 126 James Senior Office Building  
 Annapolis, Maryland 21401-1991  
 410-321-1643  
 Fax 410-321-1810

E-Mail: michad\_collins@senate.state.md.us

Mr. Parker F. Williams, Administrator  
 State Highway Administration  
 707 North Calvert Street  
 Baltimore, MD 21202

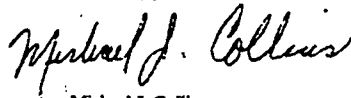
Dear Mr. Williams:

I am writing to you as the State Senator who represents the Essex and Middle River communities of Eastern Baltimore County and as a resident of the area. In the last 15 or 20 years, I have seen the effects of the major reduction in employment opportunities in the area as businesses, large and small, have downsized or closed. Therefore, I have welcomed the efforts of our current Baltimore County government to revitalize the area, and I have worked hard to provide State funding for County revitalization projects.

As a result, we have seen improvements that have made the community a better place to live. However, the most important part of the revitalization effort has not yet been realized—the development of employment opportunities in Eastern Baltimore County. It is my belief that the extension of Route 43 to the Middle River area is the key to that economic development.

I appreciate the time and effort that State Highways has dedicated to this project, and I have tried to familiarize myself with the various alternative routes that have been proposed. Since I am no expert in the field, I have consulted with County economic development and environmental representatives, and I agree that Alternative D, modified, is by far the best choice, both for business development and for the protection of our wetlands. Therefore, I am writing to add my voice in support of your selection of Alternative D, modified, for the Route 43 extension project.

Thank you for your consideration of my request.

Very truly yours,  
  
 Michael J. Collins  
 State Senator

MJC:kmk

No address was found,  
 therefore no response given

**STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS**

*Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School*

PLEASE PRINT

NAME ROBERT JONES DATE 6-20-99

ADDRESS WHITEHAWK RD

CITY/TOWN \_\_\_\_\_ STATE MD ZIP CODE \_\_\_\_\_

**I/We wish to comment or inquire about the following aspects of this project:**

I AM SOLELY AGAINST THE RT-43 EXTENDED. WHY  
 DESTROY A GREAT AREA WHEN THERE ARE VACANT  
 BUILDINGS AT OTHER LOCATIONS WITH GOOD LAND  
 ALREADY IN PLACE. WE DON'T WANT ANY  
 MORE INDUSTRIAL POPPING UP ALONG A NEW  
 ROAD IN OUR AREA. THIS IS NOTHING MORE  
 THAN TO MAKE A CERTAIN PEOPLE RICHER,  
 WHILE DESTROYING THE LITTLE BIT OF VACANT  
 LAND THAT'S LEFT TO BUSINESS & INDUSTRY  
 THANK YOU.

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

h/h

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
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Maryland Department of Transportation  
State Highway Administration

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

July 29, 1999

The Honorable Michael J. Collins  
Senate of Maryland  
418 Eastern Boulevard  
Baltimore MD 21221-6786

Dear Senator Collins:

Thank you for your recent letter regarding the Middle River Employment Center Access Study (MRECAS), formerly known as MD 43 Extended. We appreciate your support for this project. We also appreciate your informing us of your support for Alternative D Modified.

The development of this road is extremely important to the economic future of the Eastern Baltimore County area. Alternative D Modified does provide for both business development and for the protection of our wetlands.

Thank you again for your letter. We look forward to continuing to work with you and the entire delegation on this project. If you have any further comments or questions, please feel free to contact Mr. Neil J. Pedersen, our Planning Director, at 410-545-0411 or 1-888-204-4828.

Sincerely,

Parker F. Williams  
Administrator

cc: Mr. Neil J. Pedersen, Planning Director, State Highway Administration

My telephone number is 410-545-0400 or 1-800-206-0770

Maryland Relay Service for Impaired Hearing or Speech  
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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

September 1, 1999

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

Ms. Judith S. Kremen  
Executive Director  
Baltimore County Historical Trust, Inc.  
P.O. Box 10067  
Towson MD 21285-0067

Dear Ms. Kremen:

Thank you for your comments concerning the Middle River Employment Center Access Study. Your concern for the adverse impact Alternative D would have on historic resources has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The State Highway Administration (SHA) has completed all paperwork necessary to complete identification of historic resources, and has fully coordinated effect determinations for alternatives under consideration. SHA and the Maryland Historical Trust (MHT) agree that four architectural properties are National Register eligible. Two of these properties are twentieth century resources and MHT has concurred with SHA's effect determinations for the alternatives.

The MRECAS study team is currently evaluating citizen comments received at and subsequent to, the recent Public Hearing. After a thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative.

Thank you again for your comments. You will be informed as we proceed with selecting an alternative. We welcome your input in the section 106 coordination. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By:

Heather Murphy  
Project Manager  
Project Planning Division

cc: Ms. Heather Confer  
Ms. Jill Dowling

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



Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

**BALTIMORE  
COUNTY  
HISTORICAL  
TRUST** inc.

Community Preservation at Work   
Post Office Box 10067  
Towson, MD 21285-0067  
410-832-1812

Testimony on the Middle River Employment Center Access Study (MRECAS)  
by Judith S. Kremer, Executive Director

The MRECAS Study is the most recent in a series of projects regarding road access to link industrially zoned land in Middle River to the rest of eastern Baltimore County. The area was designated by the local jurisdiction for additional growth as an employment center a number of years ago.

The Baltimore County Historical Trust, Inc. is a nonprofit organization dedicated to preserving historic sites and structures in Baltimore County and serves as the local advisory arm to the Maryland Historical Trust. It concurs with the MHT's findings that there are four properties eligible for the National Register of Historic Places and hopes that the SHA will complete any remaining paperwork necessary to comply with the federal §106 requirements. A consultant examined many other structures. Some of them may be eligible for the Baltimore County historic register.

There is a tendency in this country to discount the importance of Twentieth Century structures, including industrial ones. Those associated with the Glenn L. Martin Company and with the Allies' role in World War II should be preserved. Consideration should be given to retain the character of nearby residential areas within their existing context when possible. Alternative D would have an adverse impact upon historic resources.

The construction of new roads usually leads to leapfrog development. Given the state's and county's desire to revitalize other parts of eastern Baltimore County, it is unclear from the information packet how extending Route 43 would mitigate possible disinvestment of other areas. Moreover, there is scant attention given to how this project would improve the quality of intermodal transportation within the region.



Maryland Department of Transportation  
State Highway Administration

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

August 5, 1999

Mr. John B. Gontrum  
Romadka, Gontrum & McLaughlin, P.A.  
814 Eastern Boulevard  
Baltimore MD 21221

Dear Mr. Gontrum:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The old Atlas maps are very interesting, painting a picture of what this area was like back in 1877 and 1915 and how everything has evolved to where we are now with development and access. The old maps are a good lead in for the 1969 Master Plan and Zoning map that shows a connector road from White Marsh over I-95 and to Eastern Boulevard and beyond. You are correct, this project has been in the works in many different forms for at least the last 30 years.

Your concerns about waterfront redevelopment are also important. We must keep in mind all the positive benefits to the environment and to economic development that this project can have for the Middle River area.

The MRECAS study team is currently evaluating citizens' comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens' concerns.

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

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

Mr. John B. Gontrum  
Page Two

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By:   
Heather Murphy  
Project Manager  
Project Planning Division

ROMADKA, GONTRUM & McLAUGHLIN, P.A.  
814 Eastern Boulevard  
Baltimore, Maryland 21221  
(410) 686-8274  
(410) 686-0118 FAX

ROBERT J. ROMADKA  
JOHN B. GONTRUM  
J. MICHAEL McLAUGHLIN, JR.\*

\* Also Admitted in the District of Columbia

June 16, 1999

Ms. Heather Murphy, Project Manager  
State Highway Administration  
Mail Stop C-301  
P.O. Box 717  
Baltimore, Maryland 21203-0717

RE: Middle River Employment Center Access  
Study

Dear Ms. Murphy:

I regret that I am unable to attend the public hearing on June 16, 1999, but I would like to submit these written comments in lieu of testimony.

As you know, I have actively participated in the discussion of the extension of Route 43 through the proposed area over the years. I am very much in support of the extension of Route 43 and am in favor of Alternate D Modified as the alignment for the road.

History appears to play some role in the determination to build a roadway through the area and in the selection of a route. Accordingly, I have done a bit of research from various maps in my possession, and they certainly show a more extensive pattern of usage than might otherwise be indicated today by wandering through the fields and woods of the study area.

Attachment A is taken from the 1877 Atlas of Baltimore County by G.M. Hopkins. Much of the study area south of Bird River Road is included on the attachment. As you can see, while other areas now heavily built show little activity, there were many homes and farms on what are now known as the Williams and Security Management properties. In fact, a road that was then known as Ebenezer Road ran from Bird River Road through the center of the area and came out not far from the proposed Alternative D on Eastern Boulevard, west of Carroll Island Road. You can clearly see Windlass Run on the map and the fact that the old road crossed it.

Attachment B is from an Atlas made almost forty years later in 1915. On this Atlas Ebenezer

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*

Road through the Williams property is clearly labeled along with Windlass Run. What is now Ebenezer Road south of Bird River Road was known as Marble Avenue. The crossing of Windlass Run approximately where Alternative D modified is proposed is clearly indicated. This atlas has many names on it now used on local roads. For instance, Vincent Road is shown as part of the Vincent family holdings. I have somewhat crudely highlighted proposed Alternate D modified on the plan showing that it pretty closely follows the old Ebenezer Road.

To me the significance of these maps is twofold. First, it highlights that historically there has been a need and a demand for a route through these properties linking the White Marsh area with the Middle River area. As the 1915 map indicates, there were in fact more travel ways then when the area was much less populated than exist today through the area. Second, it indicates that we are hardly corrupting virgin territory. In fact, much of the area was heavily farmed and used throughout the 19th century and early 20th century. The old field status of some of the property and early growth woods supports the maps.

Doubtless from written comments and testimony much has been put forth on the need and potential that can only be realized if this project goes forward. Every planning study in Baltimore County in the last 30 years has called for a road way through this area.

One of the real problems with the area is that the roadway has not been built. From an employment standpoint this area historically has one of the highest unemployment rates in the state. Although times are good all over now, a few short years ago such was not the case. When unemployment went up at the beginning of the '90's, this area really suffered. The saying goes that when the economy catches cold, the eastern part of the county gets pneumonia. A diverse and updated employment area is needed to assist the area.

On another topic Baltimore County's shorefront has lagged behind others in its restoration. Part of that reason is that it is relatively isolated. Old summer shore homes sit side by side with newer construction on tiny lots. Unfortunately, the older homes were built when much less attention was being paid to environmental issues. Sewer lines run directly from many homes directly into the water. "Gray water" pipes also run overboard into the creeks even where public sewer is proposed.

New construction obviously is not permitted to pollute and to engage in "creative" means of disposing of sewage and "grey water" from washing machines etc. By linking this community to the rest of the area, the days of turning a blind eye to the practices of the area will be over. It is time that the waterfront communities be linked to the rest of the county. It will serve economic interests surely, but it will also bring attention to areas and to situations that we now know need correction. While some may resist change, not all of the "old ways" are good, and some change is necessary.

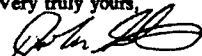
This road way to me represents not just an economic opportunity but a real life line of support to communities which have struggled, are struggling and will struggle, without the access. Access brings people, ideas, and change. All of the good ideas that have come about in the areas of planning and environment need to be brought into this area that has such a stake in the conservation of resources. Just as the critical area program did so much to highlight and enforce

the importance of the land on the water, so too this roadway should bring with it the kind of redevelopment that will be in harmony with that thinking.

We in this community need this roadway and Alternative D seems best to serve the purposes of the area by picking up on the old routes, by accessing the most usable parts of the area, and by having the least impact on existing neighborhoods by its routing and terminus on Eastern Boulevard.

Thank you for your consideration.

Very truly yours,



John B. Gontrum



Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

**ROMADKA, GONTRUM & McLAUGHLIN, P.A.**

814 Eastern Boulevard  
Baltimore, Maryland 21221  
(410) 686-8274  
(410) 686-0118 FAX

ROBERT J. ROMADKA  
JOHN B. GONTRUM  
J. MICHAEL McLAUGHLIN, JR.\*

\* Also Admitted in the District of Columbia

June 17, 1999

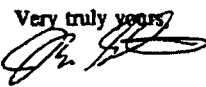
Ms. Heather Murphy, Project Manager  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

RE: Middle River Employment Center Access  
Study

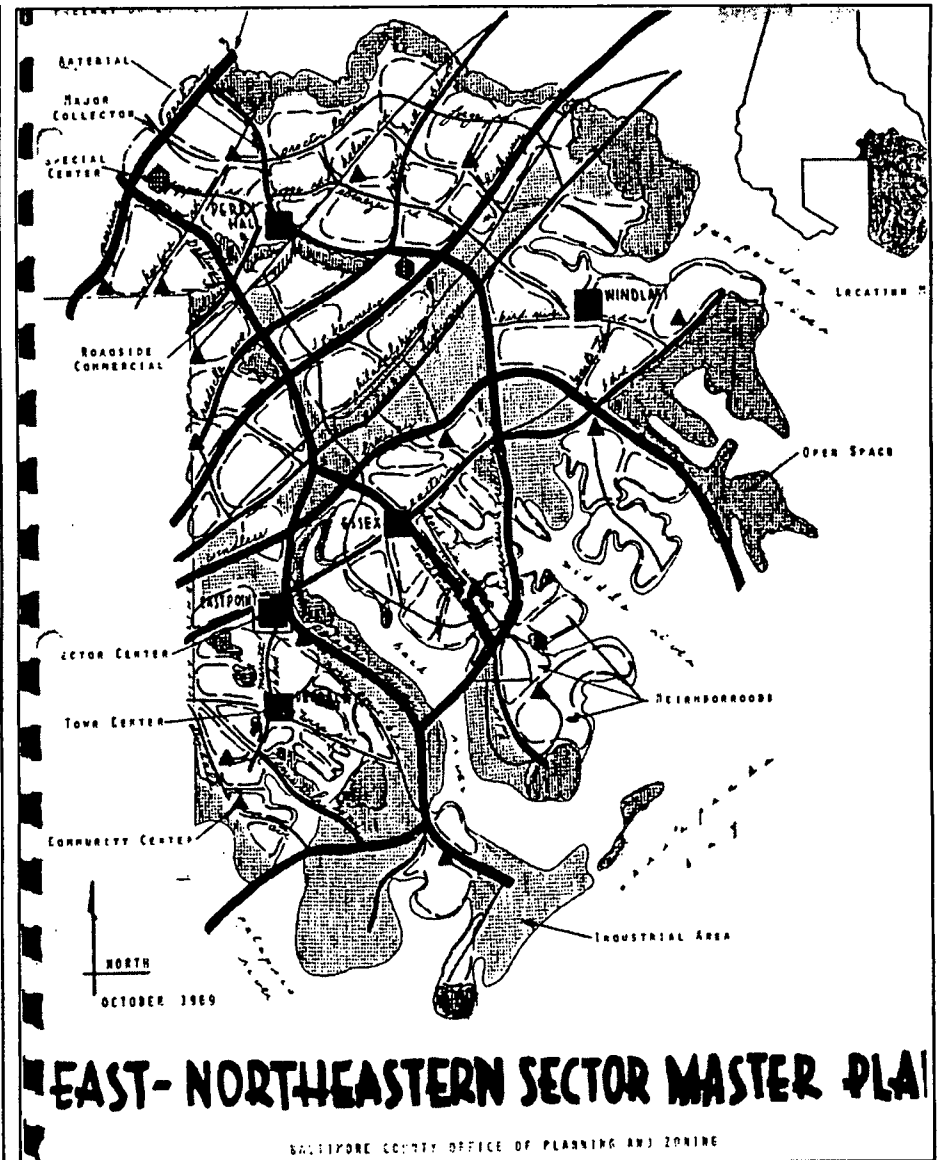
Dear Ms. Murphy:

I would like briefly to supplement my written comments to you submitted on June 16, 1999. My law partner at the public hearing pointed out that we had maps from Baltimore County planning projecting an extension of White Marsh Boulevard dating back many years. This is correct.

Attached is a copy of a plan, which is from a publication of Baltimore County's Office of Planning and Zoning in 1969, New Zoning for a New Baltimore County. The Sector Master Plan and Zoning Map. This shows a projected town center known as "Windlass" with a new freeway known as the "Whitemarsh Freeway" extending from Pulaski Highway to Eastern Boulevard. At the time construction was foreseen in the early 1970's. The road alignment had pretty much the same beginning and ending at Pulaski and Eastern Boulevard as Alternates D and F. As the plan notes, it built upon earlier concepts, especially a 1966 Master Plan. This simply adds to the issue that there is nothing new about this road since in one form or another it has been proposed over the last 30+ years.

Very truly yours,  
  
John B. Gontrum

enc.



Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

**ROMADKA, GONTRUM & McLAUGHLIN, P.A.**

814 Eastern Boulevard  
Baltimore, Maryland 21221  
(410) 686-8274  
(410) 686-0118 FAX

ROBERT J. ROMADKA  
JOHN B. GONTRUM  
J. MICHAEL McLAUGHLIN, JR.\*

\* Also Admitted in the District of Columbia

June 17, 1999

Ms. Heather Murphy, Project Manager  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

RE: Middle River Employment Center Access Study

Dear Ms. Murphy:

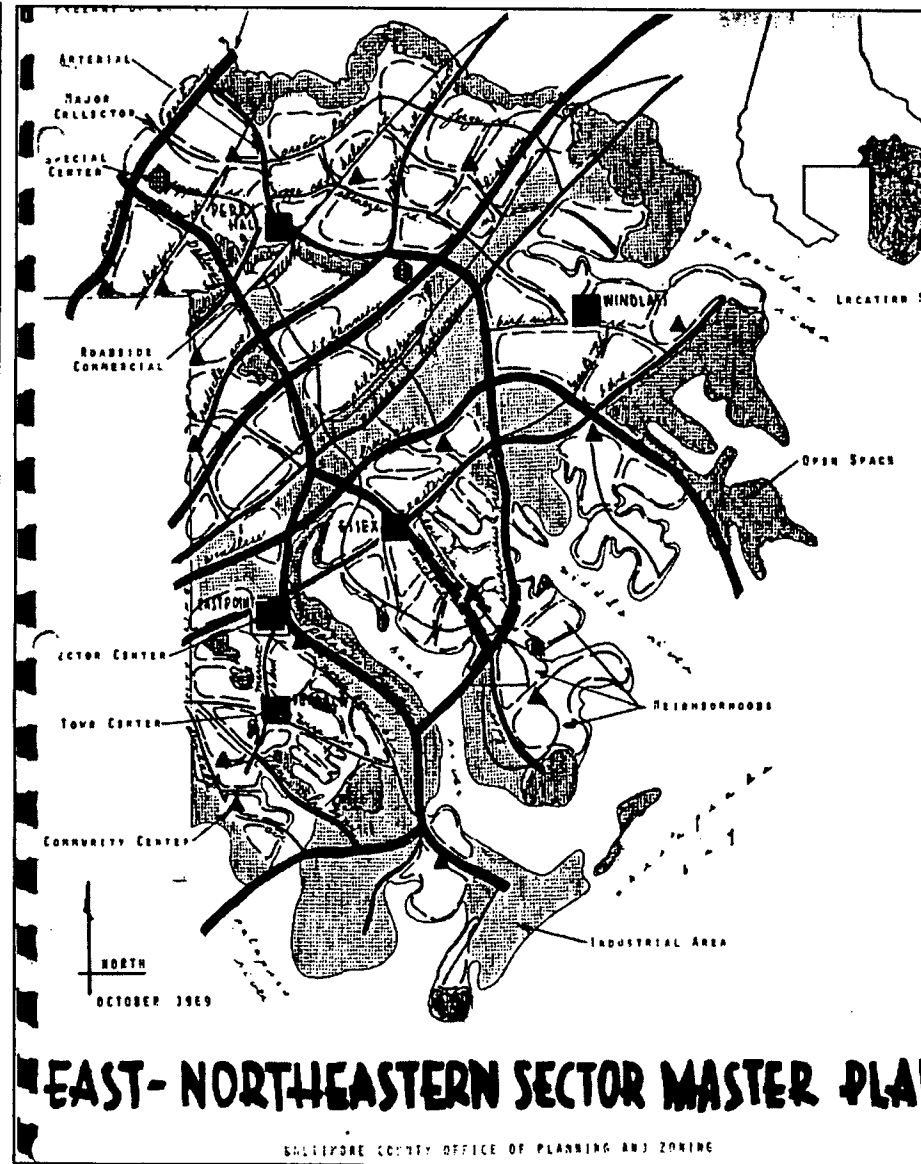
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Attached is a copy of a plan, which is from a publication of Baltimore County's Office of Planning and Zoning in 1969, New Zoning for a New Baltimore County. The Sector Master Plan and Zoning Map. This shows a projected town center known as "Windlass" with a new freeway known as the "Whitemarsh Freeway" extending from Pulaski Highway to Eastern Boulevard. At the time construction was foreseen in the early 1970's. The road alignment had pretty much the same beginning and ending at Pulaski and Eastern Boulevard as Alternates D and F. As the plan notes, it built upon earlier concepts, especially a 1966 Master Plan. This simply adds to the issue that there is nothing new about this road since in one form or another it has been proposed over the last 30+ years.

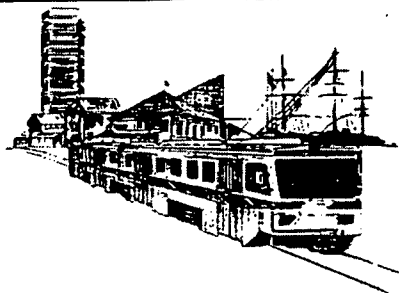
Very truly yours,

John B. Gontrum

enc.



Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



BALTIMORE AREA  
 TRANSIT ASSOCIATION

P.O. Box 117  
 Glen Burnie, MD 21060

July 9, 1999

Ms. Heather Murphy,  
 Project Manager  
 Project Planning Div.  
 MD State Highway Adm.  
 Mallstop C-301  
 707 N. Calvert Street  
 Baltimore, MD 21202

Dear Ms. Murphy:

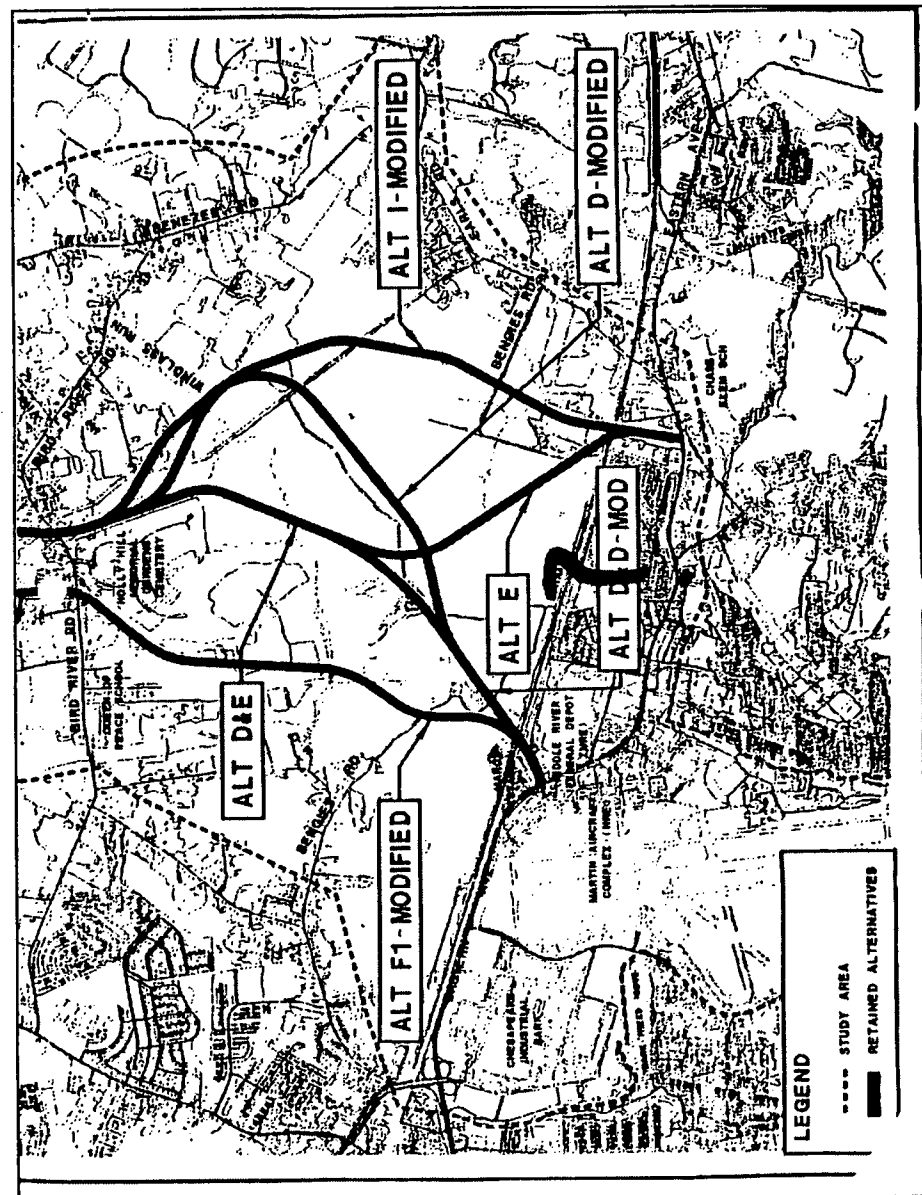
We are writing to you concerning the proposed extension of MD Route 43, White Marsh Boulevard, into the Essex/Middle River area. Alignment D&D-MOD is a concern to our organization due to the fact that this choice would necessitate a reduction in the number of available parking spots at the Glen L. Martin Station, on the Penn line of the M.A.R.C. commuter rail system. (Please see the map.) Currently the station has 175 parking spaces, and B.A.T.A.'s Board of Directors is concerned that any fewer number of spaces than this would discourage commuters from using the M.A.R.C. system. We urge the State Highway Administration to consider some of the other proposed options instead.

It's our hope that the State Highway Administration will adopt Smarter transportation policies for Maryland, as these will allow for more commuter choices, will add transit incentives to change the commuting landscape, and will allow for more efficient use of existing highways and transit systems here. Maryland is the Smart Growth state.

Thank you very kindly for your consideration of the above request.

Sincerely,

John M. Hoy,  
 President  
 Baltimore Area Transit Association



427

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Baltimore County  
 Department of Environmental Protection  
 and Resource Management

401 Bosley Avenue, Suite 414  
 Towson, Maryland 21204

June 28, 1999

Mr. Greg Chamberlain  
 3703 Holly Grove Road  
 Bowleys Quarters, MD 21220

Re: Comments at MRECAS Design  
 Public Hearing - June 16, 1999

Dear Mr. Chamberlain:

This Department has been asked to respond to your written comments which were submitted to State Highway Administration for the MRECAS Design Public Hearing.

Your concerns center on increased development in the Bowleys Quarters and Chase areas, especially impacts to wetlands. As you may know, wetland disturbance is regulated by Federal, State and County law, and, as such, permits are required prior to work being authorized. The permit process requires that the applicant identify all wetlands and streams on the property and disturbance be avoided, if possible. Staff from the regulatory agencies review the application and inspect the site to ensure that the information is accurate and that any proposed disturbance is unavoidable. Mitigation of unavoidable disturbance is required of the applicant, usually by replacing disturbed wetlands at a one to one ratio. As you can see, current regulations are in place which protect wetland and stream resources. For impacts to be permitted, they must be unavoidable and they must be replaced.

You can also express concerns regarding the potential for additional development with the extension of public sewer to the area. As you probably know, the County Council has imposed a temporary moratorium on building permits in lower Back River Neck and Bowleys Quarters through June 30, 1999. During the moratorium period, the Planning Board has conducted a public hearing and has prepared a report to the County Council regarding growth management in these areas. We would suggest you contact your County Councilman, the Honorable Vincent Gardina, to express your viewpoint. Councilman Gardina may be reached at 410-887-3384.

Thank you for your concern regarding these matters. If you have further concerns, you may contact me at 410-887-8413.

Very truly yours,

*Thomas L. Vidmar*  
 Thomas L. Vidmar, P.E., Chief  
 Resource Management and  
 Engineering Services

TLV/jbm

c: Heather Murphy - SHA

Chamberlain

Come visit the County's Website at [www.co.ba.md.us](http://www.co.ba.md.us)

Headed with: Scantron 144  
 an Answer Sheet

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME GREG CHAMBERLAIN DATE 6-10-99

ADDRESS 3703 Holly Grove Rd

Bowleys Quarters  
 CITY/TOWN Bowleys Quarters STATE MD ZIP CODE 21220 3015

We wish to comment or inquire about the following aspects of this project:

CONCERN - Build up of homes or  
Industry in this AREA DUE TO  
INCREASE ACCESS, ENVIRONMENT & WILD LIFE.  
ALL BOWLEYS QUARTERS - CHASE - CARROL, Wood &  
ISLAND AREA ETC IS WET LAND  
Only a small part has  
BEEN TAGED by GOVERNMENT AS WET LAND.  
HUNDREDS of NEW HOMES HAVE BEEN  
BUILT & HUNDREDS MORE PLANNED AFTER SEWER  
COMPLETION! ALL READY

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List. 35 YEAR RESIDENT  
of BQ

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

THANKS  
*Greg Chamberlain*

SWAMPS HAVE BEEN BACK  
filled - DESTROYED FOREVER!  
2900 Eastern Blvd - GONE <sup>50</sup> HOMES  
700 Bowley Quarters rd - GONE <sup>20+</sup> HOMES  
500 Carrol Island rd - GONE <sup>150+</sup> NEW HOMES



Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

August 2, 1999

Mr. Henry Rackl, Jr.  
 1511 Wilson Point Road  
 Baltimore MD 21220

Dear Mr. Rackl:

Thank you for your comments concerning the Middle River Employment Center Access Study. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizen comments received at, and subsequent to, the recent Public Hearing. After a full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizen concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By: Heather Murphy  
 Heather Murphy  
 Project Manager  
 Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

LEASE PRINT

NAME HENRY RACKL JR DATE 7/9/99

ADDRESS 1511 WILSON Pt RD

CITY/TOWN BALTO STATE MD ZIP CODE 21220

We wish to comment or inquire about the following aspects of this project:

I AM OPPOSED TO THE BUILDING OF THIS ROAD IT WILL ONLY SPEED THE DECAY OF EASTERN BALTO CO AND AS FAR AS EMPLOYMENT LOCAL RESIDENTS WILL NOT BENEFIT LEAVE EAST BALTO CO AS IT IS NOW.

Thank you

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

Please add my/our name(s) to the Mailing List

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

hch

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

August 2, 1999

Mr. Richard Bertoldi  
4000 Issacs Road  
Baltimore MD 21220

Dear Mr. Bertoldi:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your support for the project has been noted. Your comments have been included in the project record and will be considered during the decision making process.

We understand your frustration with the time required to complete the project development process; however, we are moving forward as quickly as possible. You should also know that The Sun article was incorrect. We are hoping that the project will be open to traffic by 2005.

The MRECAS study team is currently evaluating citizen comments received at and subsequent to the recent Public Hearing. After a thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By: Heather Murphy  
Heather Murphy  
Project Manager  
Project Planning Division

My telephone number is \_\_\_\_\_

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STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME RICHARD BERTOLDI DATE 6-20-99

ADDRESS 4000 ISSACS ROAD

CITY/TOWN BALTO STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

ACCORDING TO REPORTS IN THE SUN CONSTRUCTION WON'T START  
UNTIL 2005 WITH A 2 TO 3 YEAR CONSTRUCTION TIME FRAME.  
IF THIS IS TRUE IT IS TOO DAMN LONG!!! I WORK IN  
NORTHERN HANOVER COUNTY AND WAS GOING ON THIS ROAD TO EASE  
MY COMMUTE TO WORK AS WELL AS OTHER DESTINATIONS. SINCE I WANT  
TO RETIRE IN '08 THIS ROAD WILL BE OF NO BENEFIT TO MOST  
ALL THAT BEING THE CASE I MIGHT AS WELL MOVE NOW. AND IF  
I MOVE NOW I MIGHT AS WELL MOVE TO PA OR DEL SINCE  
MY WORK IS WITHIN EASY REACH OF EITHER AND TAXES ARE LOWER  
IN BOTH. QUIT DRAGGING YOUR FEET AND WASTING TAX DOLLARS  
TO SUPPORT ALL OF THESE MARK WORK STUDIES AND COMMITTEES THAT DO SO

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List

- Please add my/our name(s) to the Mailing List  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BA847A11

AND WASTE TAXES WHILE  
ACCOMPLISHING NOTHING

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

August 2, 1999

Mr. Robert Wood  
11112 Bird River Grove Road  
White Marsh MD 21162

Dear Mr. Wood:

Thank you for your comments concerning the Middle River Employment Center Access Study. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizen comments received at, and subsequent to, the recent Public Hearing. After a full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizen concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By: Heather Murphy  
Heather Murphy  
Project Manager  
Project Planning Division

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
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STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME ROBERT WOOD DATE JULY 11, 1999

ADDRESS 11112 BIRD RIVER GROVE RD

CITY/TOWN WHITE MARSH STATE MD. ZIP CODE 21162

I/We wish to comment or inquire about the following aspects of this project:

THIS PROJECT IS A BAD IDEA AND I AM IN SUPPORT  
OF THE NO BUILD OPTION. THE CITIZENS OF BALTIMORE  
COUNTY NEED TO PROTECT THE CHESAPEAKE BAY BY PREVENTING  
MAJOR ROAD AND BUILDING DEVELOPMENT THAT IS CLOSE TO THE BAY.  
THIS PROJECT WILL DO A VAST AMOUNT OF DAMAGE TO THE  
ENVIRONMENT BY CUTTING DOWN MANY TREES, DAMAGING WET LAND  
POLLUTING THE WATER, AIR AND LAND AND BRINGING A  
MASSIVE INCREASE OF TRAFFIC INTO THE AREA.

SINCERELY,

Robert M. Wood

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BAB47A11

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Baltimore County  
 Department of Public Works

Bureau of Traffic Engineering  
 & Transportation Planning  
 111 W. Chesapeake Avenue  
 Towson, Maryland 21204  
 410-887-3554  
 Fax: 410-887-5784

July 29, 1999

Mr. Thomas Andrews  
 22 Strawberry Court  
 Baltimore, Maryland 21220

Dear Mr. Andrews:

I have been asked by the Maryland State Highway Administration to respond to your comment regarding the widening of Ebenezer Road. The Baltimore County Master Plan does not contain a project that would significantly improve the capacity of this facility.

It is the intent of the County that Ebenezer Road function as access to residents along the road and surrounding communities. This will be even more apparent when MD 43 Extended is completed. White Marsh Boulevard, extended to MD 150, will remove substantial amounts of through traffic and address the perceived congestion you have noted in your comment. Baltimore County strongly supports the MD 43 Extension not only for its significant economic impact but also to preclude extensive widening/reconstruction of Ebenezer Road.

An initial alternative to building MD 43 Extended was a proposal to widen and upgrade existing Ebenezer Road. One of the prime reasons it was rejected and not recommended was that it cuts through residential areas of the County. It was estimated that 170 properties, with 31 displacements, would occur in this corridor should this alternative be selected. This along with increased traffic, especially trucks, traversing a widened Ebenezer Road would significantly change the residential characteristics of the area. For the reasons stated above Baltimore County does not support significant capacity enhancements to Ebenezer Road.

Again thank you for your interest and should you need additional information or clarification please do not hesitate to contact me at (410) 887-3554.

Sincerely,  
  
 J. Craig Forrest, Chief  
 Division of Transportation Planning

JCF:dll

cc: Heather Murphy, SHA  
 W:\NW\11\VOL1\Bureau\Traffic\Documents\jcr072999a1.doc

Come visit the County's Website at [www.co.ba.md.us](http://www.co.ba.md.us)

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME THOMAS ANDREWS DATE 6-9-99  
 ADDRESS 22 STRAWBERRY COURT  
 CITY/TOWN BALTIMORE STATE CNTY ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

IS THERE ANY WAY TO  
MAKE EBENEZER RD WIDER  
I LIVE OFF EBENEZER RD AND  
IT IS AWFUL CONGESTED @ CERTAIN  
TIMES OF THE DAY

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

- Please add my/our name(s) to the Mailing List.  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

July 13, 1999

Mr. Jay Perskie  
 7718 Belair Road  
 Baltimore MD 21236

Dear Mr. Perskie:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified and the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By: *Heather Murphy*  
 Heather Murphy  
 Project Manager  
 Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Jay Perskie DATE 6/25/99  
 ADDRESS 7718 Belair Rd  
 CITY/TOWN BALTO STATE MD ZIP CODE 21236

We wish to comment or inquire about the following aspects of this project:

*I am in favor of Alternative D Modified + The No-Build Option. East + Northeast Baltimore Co. The older area that is will be helped by the opening of this entire industrial + business area by the building of this Rt 43 Extension. More + better jobs, and the economic benefits it brings is good for the people of this area.*

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List.  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BAB47A11

486

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

July 13, 1999

MacDonald & Weber, P.A.  
 8015- G Corporate Drive  
 Baltimore MD 21236-4977

To Whom It May Concern:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The MacDonald & Weber, P.A. support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for MacDonald & Weber, P.A. comments. The Company is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By: *Heather Murphy*  
 Heather Murphy  
 Project Manager  
 Project Planning Division

My telephone number is \_\_\_\_\_

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

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 Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME MACDONALD & WEBER, P.A. DATE 7/1/99

ADDRESS 8015 - G CORPORATE DRIVE

CITY/TOWN BALTIMORE STATE MD ZIP CODE 21236-4977

I/We wish to comment or inquire about the following aspects of this project:

We are in favor of Alternative D Modified because:

Alternative D Modified poses the least overall environmental impact among the five alternatives. This alignment circumvents the highest-quality wetlands and requires the least amount of secondary roadway construction. Alternative D Modified is the superior alignment in terms of its ability to open key parcels of land for development.

Alternative D Modified provides the most direct access to existing facilities such as Chesapeake Industrial Park, Martin State Airport, an Amtrak station, MARC station, Lockheed Martin Launching Systems, Middle River Aircraft Systems.

IF YOU HAVE ANY QUESTIONS PLEASE LET MAX OR ME KNOW  
 WORLD WAR II  
 BOUTLAND PARKWAY. THIS IS A FEDERAL ROAD BUILT IN 1942 AS PART OF THE BUILD-UP FOR  
 MD 377 ENTERED STATE SYSTEM IN 1942  
 MD 9 ENTERED STATE SYSTEM IN 1922. DUALIZED IN 1964

AS YOU REQUESTED THE FOLLOWING DATES RELATE TO THE ROADS IN QUESTION.

From: LEONARD HOWARD  
 To: ANNE ELRAYS  
 Date: Tue, Aug 17, 1999 1:53 PM  
 Subject: ROAD HISTORIES

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

Page 3

ANNE ELRAYS - ROAD HISTORIES

*blch*

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

July 13, 1999

Mr. Bill Shrieves  
 10148 Bird River Road  
 Baltimore MD 21220

Dear Mr. Shrieves:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the project but opposition to Alternative F-1 modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By:

*Heather Murphy*  
 Heather Murphy  
 Project Manager  
 Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME *Bill Shrieves* DATE *6-29-99*

ADDRESS *10148 Bird River Rd.*

CITY/TOWN *Baltimore* STATE *MD* ZIP CODE *21220*

I/We wish to comment or inquire about the following aspects of this project:

*I Am Strongly Against ALT F-1 MOD.*  
*Should this route be selected I would*  
*request the state to purchase my*  
*property so I could relocate.*

*I understand the need for a*  
*more direct route to Eastern Ave.*  
*But please do NOT choose ALT F1 MODIFIED*

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

Middle River Employment Center Access Study  
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Maryland Department of Transportation  
 State Highway Administration

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

July 14, 1999

Mr. Andrew Bleichfeld  
 406 Waters Watch Court  
 Baltimore MD 21220

Dear Mr. Bleichfeld:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternatives D and F1 modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The 45-mph speed limit was determined to be appropriate based upon the road design, roadside landscaping and expected travel speeds. The curves that are shown in the road concepts are needed to minimize community and environmental impacts and provide access to the developable parcels in a way to minimize secondary effects on the natural environment.

The State Highway Administration (SHA) is not altering the design of the alternatives because of the historical sites; however, SHA will need to continue to coordinate with the Maryland Historical Trust and other parties interested in these historic resources in an effort to safeguard the characteristics that make them National Register eligible. The resources are eligible for the architecture of certain buildings and for the important role the Martin Company played in local, state, and national history.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is

Maryland Relay Service for Impaired Hearing or of 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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME ANDREW BLEICHFELD DATE 6/16/99

ADDRESS 406 WATERS WATCH CT.

CITY/TOWN BALTIMORE, STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

WHY 45mph speed limit? Too many curves?

I DON'T FEEL THAT THE "HISTORIC" SITE LISTED IS OTHER  
 IMPORTANT TO WARRANT ALTERING THE DESIGN.

I AM FOR OPTIONS F1-MOD OR D.  
 AS SOON AS POSSIBLE! BUILD THE ROAD!

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BAB47A11



Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

A. V. WILLIAMS, 1988-1990  
A. N. WILLIAMS, PRESIDENT  
A. J. DRESCHER, ENG. VICE PRES.

W. G. ZIMMERMANN, TREASURER  
E. PALOTAI, CHIEF ENGINEER-SECRETARY

**WILLIAMS CONSTRUCTION COMPANY, INC.**

GENERAL CONTRACTORS

8660 PULASKI HIGHWAY  
BALTIMORE, MD. 21237-3066  
PHONE: (410) 686-1000  
FAX (410) 666-2559

July 6, 1999

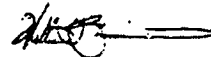
Ms. Heather Murphy, Project Engineer  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

Re: Middle River Employment Center Access Study (MRECAS)  
- In Favor of the Route 43 Extension to Eastern Blvd.  
- Specifically in Support of Alternative D (Modified)

Dear Ms. Murphy:

As a businessman in the Essex/Middle River area, I strongly support the extension of Route 43 to Eastern Blvd. I feel that it is not only good for the economic development in the area, but it may relieve some of the congestion. The best alignment for that road is unquestionably Alternative D (Modified), which among all the alternatives provides the greatest opportunity for economic growth and development in our area.

Very truly yours,



William G. Zimmermann  
Treasurer



Maryland Department of Transportation  
State Highway Administration

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

July 13, 1999

Mr. William G. Zimmermann, Treasurer  
Williams Construction Co., Inc.  
8660 Pulaski Highway  
Baltimore MD 21237-3086

Dear Mr. Zimmermann:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By:   
Heather Murphy  
Project Manager  
Project Planning Division

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

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

July 13, 1999

Mr. Malcolm Wood  
1402 Burke Road  
Baltimore MD 21220

Dear Mr. Wood:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By: Heather Murphy  
Heather Murphy  
Project Manager  
Project Planning Division

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

JULY 10, 1999

MS. HEATHER MURPHY  
PROJECT MANAGER  
SHA MAIL STOP C-301  
P.O. BOX 717  
BALTIMORE, MD. 21203-0717

DEAR MS. MURPHY,

I WANT THE NO BUILD ALTERNATIVE FOR THE MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY. BALTIMORE COUNTY DOES NOT NEED MD. 43 EXTENDED FROM US. 40 TO MD. 150. THERE ARE ENOUGH ACCESS ROADS TO MD. 150. THE STATE OF MARYLAND AND BALTIMORE COUNTY SHOULD NOT BE PROMOTING THE PARTIAL DESTRUCTION OF THE 1000 ACRE A.V. WILLIAMS FOREST AND WETLANDS NO MATTER WHAT THE ZONING OF THAT PROPERTY IS. THE A.V. WILLIAMS PROPERTY IS AN IMPORTANT HABITAT FOR FOREST INTERIOR DWELLING BIRDS AND OTHER WILDLIFE.

ACCORDING TO THE MRECAS, THE STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS WILL NOT BE EXCEEDED BY ANY OF THE ALTERNATIVES CONSIDERED. ANY MAJOR HIGHWAY IN THE AREA IS GOING TO BRING LARGE AMOUNTS OF VEHICULAR TRAFFIC AND LARGE AMOUNTS OF POLLUTING EXHAUST FUMES. THERE IS A SIMPLE SOLUTION TO SOLVE POLLUTING THE AIR WITH VEHICULAR EXHAUST AND NOISE ON THE PROPOSED MD. 43 EXTENSION, IF THERE IS NO ROAD THERE IS NO POLLUTION.

THE MARYLAND HISTORICAL TRUST CONCURED WITH THE DETERMINATION THAT ALL OF THE BUILDING ALTERNATES WILL HAVE AN ADVERSE AFFECT ON CULTURAL RESOURCES ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES. THIS IS ANOTHER GOOD REASON TO SCRAP THE MRECAS, THE RESIDENTS WHO LIVE IN THIS AREA WANT THEIR QUALITY OF LIFE TO IMPROVE NOT BECOME WORSE. IN SUMMARY, THE MRECAS WILL DO GREAT HARM TO THE ENVIRONMENT BY CAUSING THE DESTRUCTION OF FORESTS, WETLANDS AND WILDLIFE AND CAUSING LARGE AMOUNTS OF AIR, WATER AND NOISE POLLUTION. IN MY VIEW, IF THE MRECAS IS IMPLEMENTED, IT WILL CAUSE VASTLY MORE HARM TO THE AREA THAN ANY SUPPOSED BENEFIT.

SINCERELY  
Malcolm Wood  
MALCOLM WOOD

MALCOLM WOOD  
1402 BURKE RD.  
BALTIMORE, MD. 21220

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

July 12, 1999

Mr. Les Richardson  
 Richardson Farm  
 5828 Ebenezer Road  
 White Marsh MD 21162

Dear Mr. Richardson:

Thank you for your comments concerning the Middle River Employment Center Access Study. MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By: Heather Murphy  
 Heather Murphy  
 Project Manager  
 Project Planning Division

My telephone number is \_\_\_\_\_

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STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Les Richardson Richardson Farm DATE 6/30/99

ADDRESS 5828 Ebenezer Road

CITY/TOWN White Marsh STATE MD ZIP CODE 21162

We wish to comment or inquire about the following aspects of this project:

While I do farm some of the land affected by this project, I believe ~~it to be~~ a small the less of farmland to be a small price to pay for the benefits of the project; a Alternative D modified is a practical route for this road. The construction of this road could benefit residents of Ebenezer Road by reducing the "highway like" traffic it carries now. The new real estate this projects opens can be used as a new site for the state fair grounds

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

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Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

July 22, 1999

Mr. Ray Reiner  
Oliver Beach Improvement Association, Inc.  
P.O. Box 57  
Chase MD 21027

Dear Mr. Reiner:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The Oliver Beach Improvement Association's support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at, and subsequent to, the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the Oliver Beach Improvement Association's comments. The Association is on the mailing list and will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By:

Heather Murphy  
Project Manager  
Project Planning Division

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



OLIVER BEACH IMPROVEMENT ASSN. INC.

Post Office Box 57  
Chase, Maryland 21027

July 13, 1999

Maryland Department of Transportation  
State Highway Administration  
Office of Planning and  
Preliminary Engineering  
Box 717  
Baltimore, Maryland 21203

To Whom It May Concern,

The Oliver Beach Improvement Association, Inc. would like to go on record as supporting the extension of Route 43 from Pulaski Highway to Eastern Avenue. We also support the route of Modified D for this project. Although we are in sympathy with the residents whose homes will be destroyed, we believe the benefits to the overall community far out way the negatives.

We support the extension because:

1. It would, as we see it, benefit our local businesses in the area by making them more accessible.
2. It would relieve the heavy amount of traffic flow on our antiquated roads, such as Ebenezer Rd.
3. It would open up this last expanse of land area in Baltimore County for large businesses, and would provide more job opportunities to the residents of our surrounding communities.
4. We support Modified D due to the fact that it seems to be less environmentally damaging and also less disruptive to the residents on Bird River Road.

We would encourage you to be very sensitive to the needs of the residents whose lives and homes will be disrupted, and to provide fair and equitable compensation.

Sincerely,

Ray Reiner - President  
Oliver Beach Improvement Association, Inc.  
P.O. Box 57  
Chase, Maryland 21027

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

August 2, 1999

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

Mr. Elmer Yingling  
 6533 Blackhead Road  
 Baltimore MD 21220

Dear Mr. Yingling:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

During our study we examined both of your suggestions to upgrade Ebenezer Road and extend Campbell Boulevard to MD 150. Both of these alternatives were dropped from further consideration due to the large number of homes that would be impacted either directly or indirectly with either option. Both of these options also did not provide for direct access to I-95 that is needed to fully realize the economic development potential of the entire area.

The MRECAS study team is currently evaluating citizens' comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens' concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By: Heather Murphy  
 Heather Murphy  
 Project Manager  
 Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME ELMER YINGLING DATE 6/23/99

ADDRESS 6533 Blackhead Road

CITY/TOWN Baltimore STATE MD ZIP CODE 21220

We wish to comment or inquire about the following aspects of this project:

this 60 million dollar highway is NOT needed. In war years 55,000  
people worked in middle river area, the roads handle the traffic  
then and now have rt 700, 702 to 695. Extend campbell blvd to Rt  
150 and upgrade EBENEZER road with shoulders and straighten  
out some curves and widen bridge at windless run. It appears  
this is a lot more feasible than rt 43 extension. The whole  
idea will only increase the land value in A.U. Williams  
district. It will not help the residents on Bird River Road,  
or residents along Ebenezer Road. IF road is needed in the future  
Williams experts, the owner should pay for it. He will get more  
money for the property at states expense - I say NO BUILD

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

July 2, 1999

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

Mr. Thomas J. Iacoboni  
President  
Iacoboni Site Specialists, Inc.  
9301 Philadelphia Road  
Baltimore MD 21273

Dear Mr. Iacoboni:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the project has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By:

Heather Murphy  
Project Manager  
Project Planning Division

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

Subj: Returned mail: Host unknown (Name server: aha.state.md.us: host not found)  
Date: 6/25/99 1:53:55 PM Eastern Daylight Time  
From: MAILER-DAEMON@aol.com (Mail Delivery Subsystem)  
SIMUL8R1@aol.com

The original message was received at Fri, 25 Jun 1999 13:53:19 -0400 (EDT)  
from root@localhost

\*\*\* ATTENTION \*\*\*

An e-mail you sent to an Internet destination could not be delivered.

The Internet address is listed in the section labeled:  
"— The following addresses had permanent fatal errors —".

The reason your e-mail could not be delivered is listed in the section labeled:  
"— Transcript of Session Follows —".

The line beginning with "<<<" describes the specific reason your e-mail could not be delivered. The next line contains a second error message which is a general translation for other e-mail servers.

Please direct further questions regarding this message to the e-mail administrator or Postmaster at that destination.

— The following addresses had permanent fatal errors —  
<Hmurphy@aha.state.md.us>

— Transcript of session follows —  
550 <Hmurphy@aha.state.md.us>... Host unknown (Name server: aha.state.md.us: host not found)

Final-Recipient: RFC822; Hmurphy@aha.state.md.us  
Action: failed  
Status: 5.1.2  
Remote-MTA: DNS: aha.state.md.us  
Last-Attempt-Date: Fri, 25 Jun 1999 13:53:36 -0400 (EDT)

Received: from SIMUL8R1@aol.com  
by lmo17.mx.aol.com (MO/20.21) id qUFTa28217 (3873)  
for <Hmurphy@aha.state.md.us>; Fri, 25 Jun 1999 13:53:19 -0400 (EDT)  
Return-path: SIMUL8R1@aol.com  
From: SIMUL8R1@aol.com  
Message-ID: <24b86b2d.24a51c0f@aol.com>  
Date: Fri, 25 Jun 1999 13:53:19 EDT  
Subject: Route 43 Extension  
To: Hmurphy@aha.state.md.us  
MIME-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Content-Transfer-Encoding: 7bit  
X-Mailer: AOL 4.0 for Windows 95 sub 13

In writing to let you know that I am in favor of the Route 43 extension. I believe this will be beneficial for the residents of Baltimore County and will stimulate growth in the area. This much needed growth allows the County

Fri, Jun 25, 1999 1:53:55 PM Eastern Daylight Time  
Page: 1

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

to grow, to increase jobs, to increase its tax base, and to keep property taxes down. This benefits all residents of Baltimore County. Baltimore County has not had a growth area since Owings Mills New Town and the Marsh were established as growth areas almost two decades ago. Both of these areas are almost built to capacity. Without another area in which to expand, Baltimore County will be faced with a declining population, decreased property values, and higher property taxes—much like the present condition of Baltimore City. Baltimore County needs this growth. Route 43 is the only viable area to allow this growth to continue. I urge you to support the extension of Route 43. You are welcome to share my views. Thank you.

Thomas J. Iacoboni  
President, Iacoboni Site Specialists, Inc.  
9301 Philadelphia Road  
Baltimore, Maryland 21237  
410-686-2100

----- Headers -----

Return-Path: <>  
Received: from nty-yd03.mx.aol.com (nty-yd03.mail.aol.com [172.18.150.3]) by air-yd04.mail.aol.com (59.51) with SMTP; Fri, 25 Jun 1999 13:53:55 -0400  
Received: from imo17.mx.aol.com (imo17.mx.aol.com [196.81.17.7]) by nty-yd03.mx.aol.com (x) with SMTP; Fri, 25 Jun 1999 13:53:36 -0400  
Received: from localhost (localhost) by imo17.mx.aol.com (8.8.8/8.7.3/ACL-2.0.0) with internal id NAA16809; Fri, 25 Jun 1999 13:53:36 -0400 (EDT)  
Date: Fri, 25 Jun 1999 13:53:36 -0400 (EDT)  
From: Mail Delivery Subsystem <MAILER-DAEMON@aol.com>  
Subject: Returned mail: Host unknown (Name server: sha.state.md.us: host not found)  
Message-Id: <199906251753.NAA16809@imo17.mx.aol.com>  
To: SIMULBR1@aol.com  
MIME-Version: 1.0  
Content-Type: multipart/report; report-type=delivery-status; boundary="NAA16809\_930333216/imo17.mx.aol.com"  
Auto-Submitted: auto-generated (failure)

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

July 2 1999

Parris N. Glendening  
Governor  
John D. Porcari  
secretary  
Parker F. Williams  
Administrative

Mr. Francis X. Knott  
Chairman  
Partners Management Company  
105 W. Chesapeake Avenue Suite 307  
Towson MD 21285-0715

Dear Mr. Knott:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The Partners Management Company support for Alternative D and Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the Partners Management Company comments. The Company is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By: Heather Murphy  
Heather Murphy  
Project Manager  
Project Planning Division

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

Partners  
MANAGEMENT COMPANY

105 W. CHESAPEAKE AVENUE  
SUITE 307  
TOWSON, MD 21284  
P.O. BOX 10715  
BALTIMORE, MD 21285-0715  
410-821-0500  
FAX 410-821-5296

June 28, 1999

JUN30 1999 9:36 AM

Maryland Department of Transportation  
State Highway Administration  
Office of Planning and Preliminary Engineering  
Post Office Box 717  
Baltimore, MD 21203

Re: Middle River Employment Center  
Access Study (MRECAS)

To Whom It May Concern:

On behalf of our stockholders, partners and clients, I would like to express my strong support for the extension of Maryland Route 43, especially for Alternative D & D - Modified.

Our company owns and operates over 1,200 residential dwellings in the study Area. We believe that this extension would positively impact our residents by giving them easy highway access to both the Central County Corridor and the North - South Interstate Highway System. In addition, as indicated in studies prepared by other parties, the entire eastern end of Baltimore County may benefit by the economic development following the completion of Route 43.

Please do not hesitate to contact me if you would like to discuss this further.

Sincerely,

Francis X. Knott  
Chairman

FXK:dl

FXK\MD-RT-43-EXT.DOC

439



Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

July 1, 1999

Mr. & Mrs. Paul Perkovich  
 5130 Clifford Road  
 Perry Hall MD 21128

Dear Mr. & Mrs. Perrovich:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By:   
 Heather Murphy  
 Project Manager  
 Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME PAUL + JENNIFER PERKOVICH DATE 6-21-99

ADDRESS 5130 CLIFFORD ROAD

CITY/TOWN PERRY HALL STATE MD ZIP CODE 21128

I/We wish to comment or inquire about the following aspects of this project:

I DO NOT FEEL THIS EXTENSION  
IS NECESSARY FOR THE PURPOSES  
STATED. THE ENVIRONMENTAL CONSEQUENCES  
WILL BE DEVASTATING. THERE IS  
ALREADY TOO MUCH GROWTH IN  
THE COUNTY. LET THIS AREA BE  
PROTECTED AND REUSE AREAS  
SUCH AS THE GOLDEN RING MALL  
INSTEAD OF CAUSING BUSINESSES TO  
GO UNDER BECAUSE OF NEW  
DEVELOPMENT.

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

044

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

July 1, 1999

Mr. Joseph Melvin  
 7541 Bel Air Road  
 Baltimore MD 21236

Dear Mr. Melvin:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

By: *Heather Murphy*  
 Heather Murphy  
 Project Manager  
 Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME JOSEPH MELVIN DATE 6/23/99

ADDRESS 66A MELVIN'S TIRE & AUTO SERVICE

CITY/TOWN Baltimore, MD 21236 STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

I/We wish to comment or inquire about the following aspects of this project:

I would like to say I am in favor  
of ALTERNATIVE D for the extension  
of White Marsh Blvd.

STATE HIGHWAY ADMINISTRATION  
 PUBLIC HEARING  
 STATE HIGHWAY ADMINISTRATION

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

JUN 23 1999

147

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

July 2, 1999

Ms. Maryann Pastore  
6101 E. Lombard Street  
Baltimore MD 21224

Dear Ms. Pastore:

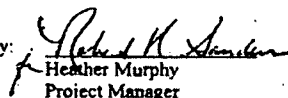
Thank you for your interest concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended.

Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

By:

  
Heather Murphy  
Project Manager  
Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME MARYANN PASTORE DATE 6/24/99

ADDRESS 6101 E. LOMBARD ST.

CITY/TOWN BALTIMORE STATE MD. ZIP CODE 21224

We wish to comment or inquire about the following aspects of this project:

I LIVE IN THE PERRY HALL  
AREA, SO THIS PROJECT WOULD  
BE OF GREAT CONCERN TO ME.

Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BA847A11

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 28, 1999

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

Mr. Richard Cassell, P. E.  
Coordinator  
Office of Engineering and Construction  
Baltimore County Public Schools  
9610 Pulaski Park Drive Suite 204  
Baltimore MD 21220

Dear Mr. Cassell:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The Baltimore County Public Schools comments have been included in the project record and will be considered during the decision making process.

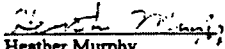
The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns. If the recommended alternative is Alternative E or I modified the State Highway Administration will make every effort to minimize the impacts to Chase Elementary School.

Thank you again for the Baltimore County Public Schools comments. We will keep the school system informed as we proceed with the project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:

  
Heather Murphy  
Project Manager  
Project Planning Division

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

**BALTIMORE COUNTY PUBLIC SCHOOLS**

Division of Physical Facilities  
Engineering and Construction  
9610 Pulaski Park Drive - Suite 204  
Baltimore, MD 21220

Phone (410) 887-6301

Fax (410) 887-6314

June 14, 1999

JUN 14 1999 4:10 PM

Ms. Heather Murphy  
Maryland Department of Transportation  
State Highway Administration  
Office of Planning and Preliminary Engineering  
Box 717  
Baltimore, Md. 21202

Subject: Baltimore County Public Schools Preliminary Comments  
Reference: MRECAS/Project No. BA847A11

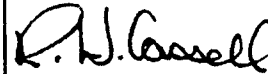
Dear Ms. Murphy:

Baltimore County Public Schools has reviewed the referenced data relative to the Middle River Employment Center Access Study. Though not specifically adjoining the Chase Elementary School site, all alternates to some extent, will affect various bus routes and traffic flow relative to the school. These are items which can be addressed by Baltimore County Public Schools via planning and scheduling means.

Of particular interest are Alternates E and I - modified. Both of these alternates will result in construction within the proximity of said Chase Elementary School. All construction activities including noise, construction traffic, equipment movement and location of staging areas and material storage may have a direct impact upon the schools learning environment. These are all concerns that can be addressed but will require close coordination with Baltimore County Public Schools. Needless to say, these two options appear somewhat less attractive than the others offered.

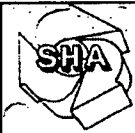
Baltimore County Public Schools requests that you keep us informed relative to the progress alternate selection portion and design portions of this project. Thank you for this opportunity to provide these early stage comments.

Very truly yours,



Richard H. Cassell, P. E.  
Coordinator  
Office of Engineering and Construction

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 30, 1999

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

Mr. Bruce S. Campbell, III  
Senior Vice-President  
Director of Land Development  
Nottingham Properties, Inc  
100 West Pennsylvania Avenue  
Towson MD 21204-4589

Dear Mr. Campbell:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The Nottingham Properties, Inc. support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the Nottingham Properties, Inc comments. The Company is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:

Heather Murphy  
Project Manager  
Project Planning Division

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2256 Statewide Toll Free

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

Nottingham  
Properties Inc

100 West Pennsylvania Avenue/Towson, Maryland 21204-4589/(410) 825-0545/FAX (410) 321-8018

June 23, 1999

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, MD 21202

Re: Middle River Employment Center Access Study (MRECAS)  
Rt. 43 Extended - US 40 to MD 150

Dear Ms. Murphy:

Nottingham Properties, Inc. would like to offer our strong support for the easterly extension of Maryland Route 43 to Eastern Boulevard. This roadway extension is a critically necessary addition to the infrastructure serving Eastern Baltimore County. It will open up hundreds of acres of industrially zoned land which can facilitate the creation of thousands of new jobs. This project can significantly help spur the economic revitalization of this part of Baltimore County.

In terms of a specific alignment, Alternative D-Modified affords the best balance between developable acres served versus social and environmental impacts. D-Modified, by far, provides direct access to the greatest amount of developable land while having the least combined impact to streams and wetlands and affecting only one additional property. Finally, D-Modified is among the alternates which terminate on Eastern Boulevard in the vicinity of Martin State Airport. This location will provide direct access to I-95 for the many businesses already located in this area and will be much less impacting than the other proposed terminus in the Bengies area which has a much greater residential character.

We would like to thank you for this opportunity to express our support for Alternative D-Modified and again say how important this project can be to the economic vitality of Eastern Baltimore County.

Very truly yours,

Bruce S. Campbell, III  
Senior Vice President  
Director of Land Development

BSCiii/jg

cc: Robert L. Hannon  
P. Douglas Dollenberg

JUN 25 '99 4:10:30 PM

h/h/h

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

June 30, 1999

Ms. Patricia A. Sullivan  
6536 Black Head Road  
Baltimore MD 21220-1211

Dear Ms. Sullivan:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process. Direct as well as secondary and cumulative impacts of building this roadway have been evaluated in a Draft Environmental Impact Statement.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME Patricia A. Sullivan DATE 6/28/99

ADDRESS 6536 Black Head Rd.

CITY/TOWN Balto STATE MD ZIP CODE 21220-1211

We wish to comment or inquire about the following aspects of this project:

I see no reason to extend Rt. 43, I am in favor of  
the no build option. There are already many existing  
access roads to Eastern Ave, including the Balto Beltway  
at several locations, Martin Boulevard, Rt 40, Rt 702, etc.  
How many roads do we need to go to Eastern Balto Co  
before you realize people do not want to be in  
the area. All of these roads are easily accessible.  
It doesn't seem fair to always be dumping on this side  
of Balto Co. Bird River has been seriously impacted from  
all of the construction in the past 40 years, what about  
the impact on streams and ultimately the Bay.

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BA847A11

6745

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

June 28, 1999

Ms. Barbara Vaught  
3600 Wheel House Road  
Baltimore MD 21220

Dear Ms. Vaught:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME Barbara Vaught DATE 6-13-99

ADDRESS 3600 Wheel House Rd

CITY/TOWN Baltimore STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

We don't need anymore business in Middle River, every  
time one store opens, one gets shut down. We don't need any  
more roads. They're just an excuse for speeds accidents. If  
the county wants to spend money, build an amusement park,  
so people don't have to go 100 miles to get to one, it will  
mean jobs & a place for people to enjoy their selves & kids  
will have a place to go. We sure don't need anymore drug  
stores, grocery stores or gas stations around here.

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List

- Please add my/our name(s) to the Mailing List.  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BA847A11

dht

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

June 28, 1999

Ms. Denise Hoffman  
991 Rohe Farm Lane  
Baltimore MD 21220

Dear Ms. Hoffman:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your general support for the project but opposition to F1 modified has been noted. We understand your concerns about impact to White Marsh Farms with Alternative F-1 modified. Your comments have been included in the project record and will be considered during the decision making process.

The State Highway Administration held a Public Hearing on June 16 where citizen comments were received. After a full and thorough evaluation of these comments, the study team will formulate a recommendation for the selection of an alternative. We are concerned about the impacts that this project may cause to the community and we will make every effort to minimize them if Alternative F-1 modified is chosen.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

cc: The Honorable Michael S. Collins, Senator

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

991 Rohe Farm Lane  
Baltimore, MD 21220  
410-780-9080

MAY 14 1999 11:17 AM

May 12, 1999

Ms. Heather Murphy  
SHA Project Manager  
Office of Planning and Preliminary Engineering  
State Highway Administration  
707 North Calvert Street  
Mail Stop C301  
Baltimore, MD 21202

Re: Middle River Employment Center Access Study (MRECAS)

Dear Ms. Murphy:

I am writing this letter to voice my concern and opposition regarding one of the five build alternatives to extend MD 43.....specifically Alternative F1-Modified. My husband and I live in the former Rohe Farm development now known as White Marsh Farms that borders Bird River Road, Rohe Farm Lane, and Holly Hill Cemetery. We bought our home nearly five years ago under the assumption that we had found a safe and tranquil neighborhood in which to live. All homes in our development have been sold (averaging in cost from \$150K to over \$200K), and we now have a diverse community of proud homeowners. In the event the F1-Modified alternative of the MD 43 extension is approved, our community will have a busy, four-lane highway virtually in our backyard!

I understand and support the extension of MD 43, although I realize that regardless of the alternative selected, it will greatly change the rural atmosphere that we have all come to appreciate. But please reconsider placing a four-lane highway that will bring noise, pollution, litter, and unwanted traffic alongside The White Marsh Farms community. This alternative will definitely have a negative impact on our community and its citizens.

I thank you on behalf of all homeowners in our community for any consideration you can give us.

Sincerely,


  
Denise B. Hoffman

cc. Senator Michael Collins  
418 Eastern Avenue  
Essex, MD 21221

447



Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

<p><b>MICHAEL J. COLLINS</b> 6th Legislative District Baltimore and Harford Counties</p> <hr/> <p><b>Chairman</b> Baltimore County Delegation</p> <hr/> <p><b>Member</b> Economic and Environmental Affairs Committee</p>	 <p><i>The Senate of Maryland</i> ANNAPOLIS, MARYLAND 21401-1991</p>	<p>418 Eastern Boulevard Baltimore, Maryland 21222-6786 410-391-7800 Fax 410-391-7803</p> <hr/> <p><b>Annapolis Office</b> 216 James Senate Office Building Annapolis, Maryland 21401-1991 410-341-3643 Fax 410-341-3850</p> <hr/> <p>E-Mail: michael_collins@senate.state.md.us</p>
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June 7, 1999

Ms. Heather Murphy, Project Manager  
Office of Planning and Preliminary Engineering  
State Highway Administration  
707 North Calvert Street  
Mail Stop C301  
Baltimore MD 21202

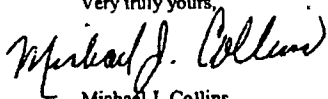
Dear Ms. Murphy:

Recently one of my constituents, Ms. Denise B. Hoffman, wrote to you regarding her concerns with MD 43 Extended Alternative F1-Modified. She believes that this alternative will have a dramatic, negative impact on the White Marsh Farms community.

At the same time, Ms. Hoffman understands the need for this improvement, and she even supports it. She just hopes that you will take time to consider her thoughts and the thoughts of those in her community before making a final decision.

I know that there will be a meeting this month to give residents an opportunity to give their input. This is why I am writing to you now. Your careful consideration is very important to residents in the affected areas; that makes it extremely important to me.

Thank you in advance for taking the time to listen and understand. We all know that the best possible conclusion will be reached if all concerns are given the appropriate attention.

Very truly yours,  
  
Michael J. Collins  
State Senator

MJC:mhc  
cc: Ms. Denise B. Hoffman  
991 Rohe Farm Lane  
Baltimore MD 21220

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 29, 1999

Mr. Donald E. Jones  
 5823 Gambull Road  
 White Marsh MD 21220

Dear Mr. Jones:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRE CAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRE CAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRE CAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Donald E. Jones DATE 6-16-99

ADDRESS 5823 Gambull RD

CITY/TOWN Wiltomond STATE MD ZIP CODE 21162

I/We wish to comment or inquire about the following aspects of this project:

I have lived in this area for 66 years & I see no  
reason to build this EXT 43 now. We didn't need it  
during 4-60's or any other time. We have jobs  
open now with no body to fill them. Why destroy  
this land with a new highway & factories for  
people from other states to come in and  
take the jobs. Leave the land alone or  
make a recreation area out of it.  
You see jobs open in the paper every day  
with no body to fill them. This is only to  
make the Rich - Richer. Thank you!

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List. We need no more  
 Please delete my/our name(s) from the Mailing List. Evaluation in this  
AREA.

Middle River Employment Center  
 Access Center Study (MRE CAS)  
 PROJECT NO. BA847A11

*hjh*

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 29, 1999

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

Mr. Mark N. Carl  
 2103 Oakland Road  
 Baltimore MD 21220

Dear Mr. Carl:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for **Alternative D** modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

JUN 25 1999 4:10 PM

PLEASE PRINT

NAME Mark N Carl DATE 6-21-99

ADDRESS 2103 Oakland Rd

CITY/TOWN BaIT STATE MD ZIP CODE 21220

We wish to comment or inquire about the following aspects of this project:

D-Mod To be built ASAP  
would be good

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

457

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 29, 1999

Parris N. Glendening  
 Governor  
 John D. Percari  
 Secretary  
 Perker F. Williams  
 Administrator

Mr. Carl A. Stallard  
 Beacon Light Marina  
 825 Bowleys Quarters Road  
 Baltimore MD 21220

Dear Mr. Stallard:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT *Beacon Light Marina*  
 NAME Carl A Stallard DATE 6-21-99  
 ADDRESS 825 Bowleys QTRS Rd  
 CITY/TOWN Baltimore STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

I would like to see D-Mod built  
AS AP

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

457

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 29, 1999

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

Anthony & Sylvan Pools  
 9716 Belair Road  
 Baltimore MD 21220

To Whom It May Concern:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The Anthony & Sylvan Pools support for Alternative D modified has been noted. The company comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. The company is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME ANTHONY & SYLVAN POOLS DATE 6/22/99

ADDRESS 9716 BELAIR ROAD

CITY/TOWN BALTO. STATE MD ZIP CODE 21236

We wish to comment or inquire about the following aspects of this project:

MY COMPANY IS IN FAVOR OF ~~THE~~ ALTERNATE D  
MODIFIED. IT IS THE BEST SOLUTION FOR  
EVERYONE INVOLVED IN THE PATHWAY OF  
THIS ROAD

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BAB47A11

457

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 29, 1999

Ms. Joyce Deaver  
 905 Cold Spring Road  
 Baltimore MD 21220

Dear Ms. Deaver:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
 1-800-735-2256 Statewide Toll Free

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Joyce Deaver DATE 6/19/99

ADDRESS 905 Cold Spring Road

CITY/TOWN Baltimore STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

If this project cannot be completed without impacting  
historic sites, critical areas, wetlands, etc., then I  
vote for a No Build.

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

493

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 23, 1999

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

Mr. Robert Alex  
 Community Manager  
 Pascal-Turner Homes  
 3300 Eastern Boulevard  
 Baltimore MD 21220

Dear Mr. Alex:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

**PASCAL-TURNER HOMES**  
 COMMUNITY MANAGEMENT DIVISION

**Baltimore**  
 Office Location: 123 Whistle Stop Road  
 Baltimore, Maryland 21220  
 (410)335-5358  
 (410)574-3255 (Facsimile)

**Southern Maryland**

Mailing Address for Correspondence:  
 3300 Eastern Boulevard  
 Baltimore, Maryland 21220

21400 Suburban Drive  
 Lexington Park, Maryland 20653  
 (301)862-3127  
 (301)862-9173 (Facsimile)

June 16, 1999

JUN 21 '99 4:10:30 PM

Ms. Heather Murphy, Project Manager  
 Project Planning Division  
 Maryland State Highway Administration  
 Mailstop C-301  
 707 North Calvert Street  
 Baltimore, Maryland 21202

RE: Middle River Employment Center Access Study (MRECAS)  
 • *In Favor of the Route 43 Extension to Eastern Boulevard*  
 • *Specifically In Support of Alternative D (Modified)*

Dear Ms. Murphy:

As a businessman in the Essex/Middle-River area, I strongly support the extension of Route 43 to Eastern Boulevard. The best alignment for that road is unquestionably Alternative D (Modified), which among all the alternatives provides the greatest opportunity for economic growth and development in our area.

Very truly yours,

PASCAL-TURNER HOMES

*Robert G. Alex, Jr.*  
 Robert G. Alex, Jr.  
 Community Manager

RGA/bms

Agent for Williams Estates, Peppermill Woods,  
 Oakdale, Suburban Estates and Lexington Estates  
 Manufactured Housing Communities

A Division of PASCAL-TURNER, LTD.  
 "Manufactured Housing Specialists"

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Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 24, 1999

Mr. Edwin A. Dempsey  
 1317 Third Road  
 Baltimore MD 21220

Dear Mr. Jones:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECCAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECCAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives. where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:

*[Signature]*  
 Heather Murphy  
 Project Manager  
 Project Planning Division

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECCAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME EDWIN A. DEMPSEY DATE 6-19-99

ADDRESS 1317 THIRD RD.

CITY/TOWN BALTIMORE STATE MD ZIP CODE 21220

I/we wish to comment or inquire about the following aspects of this project:

THIS PROJECT SHOULD BE LEFT ALONE.  
AS IT WILL DESTROY THE LAST REMAINING  
WILDERNESS IN THE 3RD LARGEST COUNTY IN THE  
STATE

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECCAS)  
 PROJECT NO. BAB47A11



Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 28, 1999

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

Ms. Trudi T. Carski, Trustee  
 Ms. Anna Thau Trust  
 14258 Baldwin Mill  
 Baltimore MD 21013

Dear Ms. Carski:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D and F-1 modified and opposition to the Alternatives I modified Alternative E and Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
 1-800-735-2256 Statewide Toll Free

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT  
 TRUDI T. CARSKI TRUSTEE  
 NAME ANNA THAU TRUST DATE 6/15/99  
 ADDRESS 14258 BALDWIN MILL RD  
 CITY/TOWN BALDWIN STATE MD ZIP CODE 21013

We wish to comment or inquire about the following aspects of this project:

- ① PROJECT SHOULD DEFINITELY PROCEED. DROP THE NO BUILD OPTION
- ② TERMINATIONS NEAREST TO MARC STATION (ALT F1-MODIFIED AND ALT D) ARE BEST IN CONSIDERATION OF FUTURE RAIL USAGE FOR MINIMIZING TRAFFIC TO CITY
- ③ ALT D MODIFIED APPEARS TOO CIRCUITOUS AND SHOULD BE DROPPED
- ④ ALT E AND ALT I-MODIFIED SHOULD BE DROPPED ON BASIS OF <sup>REMOTE</sup> MARC CONNECTION AND NUMBER OF PROPERTIES AFFECTED

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List.  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

4576

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 29, 1999

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

Ms. Betty C. Harper  
410 Gerries Avenue  
Baltimore MD 21222

Dear Ms. Harper:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your comments have been included in the project record and will be considered during the decision making process. Currently none of the proposed alternatives directly impact the Queen of Peace Church or the Holly Hills Memorial Gardens Cemetery.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME Betty C. Harper DATE 6-17-99

ADDRESS 410 Gerries Ave.

CITY/TOWN Ballo. STATE MD ZIP CODE 21222

I/We wish to comment or inquire about the following aspects of this project:

My main concern is to protect Queen of Peace Church & not have the road intersect with Holly Hills Cemetery. I think its very important to protect the public from noise, etc) during burial of loved ones.  
I also know how I would feel if my home would be in one of the areas considered - I think I would fight "tooth & nail".  
At some point the ordinary peoples rights must be considered.

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

Please add my/our name(s) to the Mailing List

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BA847A11

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 23, 1999

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

Ms. Charlotte Oktavec  
1322 Goose Neck Road  
Baltimore MD 21220

Dear Ms. Oktavec:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D and Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME CHARLOTTE OKTAVEC DATE 6-13-99

ADDRESS 1322 GOOSE NECK RD

CITY/TOWN BALTIMORE STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

I like Alternative D and alternative D  
modified because that part of MD/50 is  
already a 4 lane highway, and could absorb  
the changes easier,  
Start the work S.A.P.

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List

Please add my/our name(s) to the Mailing List

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BA847A11

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 23, 1999

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

Mr. Michael L. Homa  
Vice-President  
Pascal-Turner Homes  
3300 Eastern Boulevard  
Baltimore MD 21220

Dear Mr. Homa:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

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

# PASCAL-TURNER HOMES

3300 Eastern Boulevard • Baltimore, Maryland 21220 • (410) 391-0220 • Fax (410) 374-3255

JUN 21 '99 11:00 AM

June 16, 1999

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

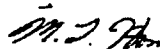
RE: Middle River Employment Center Access Study (MRECAS)  
• *In Favor of the Route 43 Extension to Eastern Boulevard*  
• *Specifically in Support of Alternative D (Modified)*

Dear Ms. Murphy:

As a businessman in the Essex/Middle-River area, I strongly support the extension of Route 43 to Eastern Boulevard. The best alignment for that road is unquestionably Alternative D (Modified), which among all the alternatives provides the greatest opportunity for economic growth and development in our area.

Very truly yours,

PASCAL-TURNER HOMES

  
Michael L. Homa  
Vice President

MLH/bms

A Division Of PASCAL-TURNER, LTD.  
"Manufactured Housing Specialists"

Member of  
Manufactured Housing Institute of Maryland, Inc.



MHC 241831

459

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 30, 1999

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

Mr. John K. Martin  
President  
The University of Maryland Foundation, Inc.  
3300 Metzgerott Road  
Adelphi MD 20783

Dear Mr. Martin:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The University of Maryland Foundation, Inc. support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the University of Maryland Foundation, Inc comments. The Foundation is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

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



THE UNIVERSITY OF MARYLAND FOUNDATION, INC.

June 21, 1999

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, MD 21202

Re: Middle River Employment Center Access Study

Dear Ms. Murphy:

The University of Maryland Foundation, Inc. enthusiastically supports the Alternative D (Modified) alignment of MD 43. As you are aware, we own property adjacent to the A. V. Williams Trust property. We firmly believe that there will be a major surge of economic development in this area once the road is completed.

As the study prepared by the Baltimore County Economic Development Department points out, the Alternative D (Modified) alignment is the "superior alignment in terms of its ability to open up key parcels for development." Access to the most developable areas of the Middle River Employment Center will not only spur new development, but will also greatly enhance the established businesses in this area. We applaud the hard work of your office and others involved in the planning process.

Yours truly,

John K. Martin, President

JKM:pp

cc: William T. Poole, Jr.

3300 METZGEROTT ROAD • ADELPHI, MARYLAND 20783 • PHONE (301) 445-1941 • BUSINESS OFFICE (301) 445-2712 • FAX (301) 445-3707

09/1

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 29, 1999

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

Mr. Orville M. Jones  
 1432 Shore Road  
 Baltimore MD 21220

Dear Mr. Jones:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRE CAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRE CAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRE CAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME ORVILLE M. JONES DATE 6/22/99

ADDRESS 1432 SHORE ROAD

CITY/TOWN BALTIMORE, MARYLAND STATE \_\_\_\_\_ ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

AFTER LOOKING AT THE PROPOSED ROUTES I RECOMMEND ALTERNATE D MODIFIED BECAUSE:

1. IT WILL CUT 10 MINUTES OFF MY TRAVEL TIME TO AND FROM WORK.
2. I BELIEVE THAT IT HAS THE FEWEST PROBLEMS OF ANY OF THE ALTERNATE
3. IT WILL DISTURB THE FEWEST WETLANDS AND HAVE LESS IMPACT ON THE ENVIRONMENT.
4. THIS ALTERNATE WILL OPEN THE MOST LAND FOR DEVELOPMENT

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List.  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRE CAS)  
 PROJECT NO. BA847A11

107

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 23, 1999

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

Ms. Edwina J. Hall  
 10138 Bird River Road  
 Baltimore MD 21220

Dear Mr. Hall:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted should a build action be selected, your support for Alternative D and D modified has also been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME EDWINA J. HALL DATE 6-13-99

ADDRESS 10138 BIRD RIVER RD.

CITY/TOWN BALTO. STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

AS I SAID BEFORE I KNOW PROGRESS GOES ON AND IS BENEFICIAL BUT I FEEL WE SHOULD TAKE THE NO BUILD WAY AS IT WILL PUT FAMILIES OUT OF THEIR HOMES AND CAUSE SOME HARDSHIPS FOR SOME.

IF IT MUST GO FORWARD I SUGGEST THAT IT WILL TAKE THE ALT. D+D MODIFIED AS IT IS LESS HOUSES TO BE TAKEN OUT AND IT WILL GIVE BETTER ACCESS TO THE A.V. WILLIAMS TRACT OF LAND.

THANK YOU!

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

462

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

June 23, 1999

Mr. William T. Poole  
President  
Lexington Group  
3300 Eastern Boulevard  
Baltimore MD 21220

Dear Mr. Poole:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The A.V. Williams Trusts support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the A.V. Williams Trusts comments. The Trusts name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

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

LEXINGTON GROUP LTD.

REALTY CONSULTING, BROKERAGE & ASSET MANAGEMENT  
Telephone & Voice Mail (410)531-4100 - Facsimile (410)531-4141  
3300 EASTERN BOULEVARD, BALTIMORE, MD 21220

June 16, 1999

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

RE: Middle River Employment Center Access Study (MRECAS)  
• In Favor of the Route 43 Extension to Eastern Boulevard  
• Specifically in Support of Alternative D (Modified)

Dear Ms. Murphy:

I represent the A.V. Williams Trusts, which, together with the University of Maryland Foundation, Inc., owns a one thousand-acre tract of industrial land which would be provided access by the extension of Maryland Route 43. We are, therefore, very supportive of this project. However, the alternative which makes the most sense from our perspective, and provides the best access to our property, is Alternative D (Modified). But beyond our property, Alternative D (Modified) would unleash the greatest potential economic development opportunities of any of the road alternatives.

We look forward to working with the State Highway Administration toward the completion of this important project, and will cooperate in any way we can in order to achieve our preferred alignment, Alternative D (Modified).

Thank you for your hard work in shepherding this project. Its completion will provide a tremendous boost to the Eastside economy.

Very truly yours,

LEXINGTON GROUP LTD.

William T. Poole, Jr.  
President

WTP/bms

JUL 21 1999 10:30 AM

4103



Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 23, 1999

Mr. Gerald E. Keefe  
Senior Vice-President  
Chief Financial Officer  
Williams Scotsman  
8211 Town Center Drive  
Baltimore MD 21236

Dear Mr. Keefe:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRE CAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRE CAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

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



Mobile Offices • Storage Products  
And More

June 16, 1999

WILLIAMS SCOTSMAN, INC.  
8211 Town Center Drive  
Baltimore, Maryland 21236-5997  
410-931-6000 • 800-638-6963  
FAX 410-931-6117

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, MD 21202

RE: Middle River Employment Center Access Study (MRE CAS)  
• In Favor of the Route 43 Extension to Eastern Boulevard  
• Specifically in Support of Alternative D (Modified)

Dear Ms. Murphy:

As a businessman in the White Marsh area, I strongly support the extension of Route 43 to Eastern Boulevard. The best alignment for that road is unquestionably Alternative D (Modified), which among all the alternatives provides the greatest opportunity for economic growth and development in our area.

We are looking for sizable acreage to relocate our operations and the Middle River area is of great interest to us. If this access does not become a reality, we may have to relocate our entire operations (200± employees) to another county or even another state. An expedited approval and construction of Route 43 is essential to us.

Very truly yours,

WILLIAMS SCOTSMAN, INC.

*Gerard E Keefe*  
Gerard E. Keefe  
Senior Vice President  
Chief Financial Officer

GEK:gjh

cc: Mr. Robert Hannon  
Economic Development

X:\word\gek\Middle River Emplry.Center Access Study.doc

E-mail: info@willscot.com • Website: http://www.willscot.com • FAX-On-Demand: 877-677-7778

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 23, 1999

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

Mr. Barry P. Gossett  
Pascal-Turner Homes  
3300 Eastern Boulevard  
Baltimore MD 21220

Dear Mr. Gossett:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:

  
Heather Murphy  
Project Manager  
Project Planning Division

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

PASCAL-TURNER PARTNERS

White Marsh Professional Center • 7939 Honesco Boulevard, Suite 112 • Baltimore, Maryland 21236  
(410) 931-4100 • facsimile: (410) 931-4141 • e-mail: info@pascalturner.com

June 16, 1999

JUN21 '99 10:31 AM

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

RE: Middle River Employment Center Access Study (MRECAS)  
• *In Favor of the Route 43 Extension to Eastern Boulevard*  
• *Specifically in Support of Alternative D (Modified)*

Dear Ms. Murphy:

As a businessman in the White Marsh/Essex/Middle-River area, I strongly support the extension of Route 43 to Eastern Boulevard. The best alignment for that road is unquestionably Alternative D (Modified), which among all the alternatives provides the greatest opportunity for economic growth and development in our area.

Very truly yours,

PASCAL-TURNER PARTNERS

  
Barry P. Gossett

BPG/bms

A Division of PASCAL-TURNER, LTD. (A Maryland Corporation)

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 23, 1999

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

Mr. William T. Poole  
President  
Williams Management Services, Inc.  
3300 Eastern Boulevard  
Baltimore MD 21220

Dear Mr. Poole:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

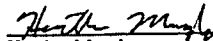
The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:

  
Heather Murphy  
Project Manager  
Project Planning Division

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

Williams Management Services, Inc.

JUN21 '99 10:02:21 CPP

June 16, 1999

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

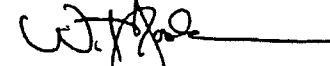
RE: Middle River Employment Center Access Study (MRECAS)  
• *In Favor of the Route 43 Extension to Eastern Boulevard*  
• *Specifically in Support of Alternative D (Modified)*

Dear Ms. Murphy:

As a businessman in the Essex/Middle-River area, I strongly support the extension of Route 43 to Eastern Boulevard. The best alignment for that road is unquestionably Alternative D (Modified), which among all the alternatives provides the greatest opportunity for economic growth and development in our area.

Very truly yours,

WILLIAMS MANAGEMENT SERVICES, INC.

  
William T. Poole, Jr.  
President

WTP/bms

3300 Eastern Boulevard • Baltimore, Maryland 21220 • (410) 574-8666 • Fax (410) 574-3255

997

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 21, 1999

Mrs. Virginia Powell  
 409 Larkspur Drive  
 Joppa MD 21085

Dear Mrs. Powell:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your opposition to Alternatives I modified and D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME V. Virginia Powell DATE 6-16-99

ADDRESS 409 Larkspur Dr.

CITY/TOWN Joppa STATE MD ZIP CODE 21085

I/We wish to comment or inquire about the following aspects of this project:

Because I will be inheriting land at 10205  
Bevana Lane and fields now owned by my  
father, Charles Bevana, I am opposed  
to plans Alt I-Mod and Alt D-Mod.  
'Both' cut through my fields, which I love,  
and the latter causes my cousin and dear  
friend to relocate. The county has finally  
initiated the sewer project which includes  
Bevana Lane allowing me to build on my family  
land. Please do not destroy my opportunity  
w/ the Alt I-Mod or Alt D-Mod.

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

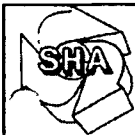
Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

469

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 21, 1999

Ms. Linda Felts  
 10101A Bird River  
 Baltimore MD 21220

Dear Ms. Felts:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Linda Felts DATE 6/16/99  
 ADDRESS 10101A Bird River Rd  
 CITY/TOWN Balto STATE Md ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

NO BUILD

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

468

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 21, 1999

Mrs. Amanda Bollack  
 10100 Bevans Lane  
 Baltimore MD 21220

Dear Mrs. Bollack:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Amanda Bollack DATE 6/21/99

ADDRESS 10100 Bevans Ln.

CITY/TOWN Baltimore STATE MD ZIP CODE 21220

We wish to comment or inquire about the following aspects of this project:

Personnel who are involved in the project are  
able to answer questions and provide  
information regarding the project. The  
staff could provide more information  
on the new design team that will  
be working on the project. It would be  
good to have a meeting with the  
design team to discuss the project and  
the concerns of the public. It would  
also be good to have a meeting with  
the design team to discuss the project  
and the concerns of the public. It  
would also be good to have a meeting  
with the design team to discuss the  
project and the concerns of the public.

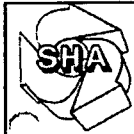
\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List.
- Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

469

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 21, 1999

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

Mr. Edward Schmitt  
 995 Rohe Farm Lane  
 Middle River MD 21220

Dear Mr. Schmitt:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative I modified but opposition for Alternative F1 has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_  
 Maryland Relay Service for Impaired Hearing or Speech  
 1-800-735-2238 Statewide Toll Free  
 Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
 Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Edward Schmitt DATE 6-16-99

ADDRESS 995 Rohe Farm Lane

CITY/TOWN Middle River STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

*My first comment about this project is Alt F1 can (NOT) be considered as a viable route because of the close proximity to the 60 homes in White Hall Farm. This route would destroy the quality of life for the families who have chosen to build in this area.*

*Second I believe (Modified I) to be the best alternative because it crosses Bead River Rd East of Holly Hills and connects with 750 at Bowley's Quarters Rd. This route I believe will serve the residents better for accessibility to the Bowley's Area. Thank you*

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List *SEP*

Please add my/our name(s) to the Mailing List

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 21, 1999

M' Matta Kennedy  
 993 Robe Farm Lane  
 Middle River MD 21220

Dear M' Kennedy:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your opposition to Alternative F1 has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME MATTA KENNEDY DATE 6-16-99

ADDRESS 993 ROBE FARM LN.

CITY/TOWN BAIT. MD STATE MD ZIP CODE 21220

We wish to comment or inquire about the following aspects of this project:

I would JUST TO SAY I AM AGAINST  
 MODIFIED ALT F1 THIS ROADWAY WILL  
 UP-ROOT THE MOST FAMILYS AND CAUSE  
 NOISE LEVELS TO BE TO HIGH IN THE NEIGHBORHOOD  
 I LIVE IN. THANK YOU

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

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Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 21, 1999

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

Mr. Robert McKinney  
President  
Baltimore County Chamber of Commerce  
102 West Pennsylvania Avenue, Suite 402  
Towson MD 21204-4526

Dear Mr. McKinney:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The Baltimore County Chamber of Commerce's support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the Baltimore County Chamber of Commerce comments. The Chamber is on the mailing list and will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

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



BALTIMORE COUNTY  
CHAMBER OF COMMERCE

June 14, 1999

Ms. Heather Murphy  
Project Manager  
State Highway Administration  
Mail Stop C-301  
P. O. Box 717  
Baltimore, MD 21203-0717

Dear Ms. Murphy:

The 700 plus members of the Baltimore County Chamber of Commerce wish to express our strong support for the proposed extension of Maryland Route 43 from the White Marsh to Middle River areas of our county. We believe that the linkage of the Middle River area to Interstate 95 and the Baltimore Beltway (695) is crucial to the future economic vitality of Baltimore County, the region and the state.

Construction of MD Rt. 43 will enable Baltimore County to establish an employment center for the region that utilizes superior access to roads, rail, water and the Martin State Airport facility. With 1800 acres of industrially zoned land "opened up" for economic investment, the potential exists for the creation of as many as 15,000 family sustaining jobs. Jobs crucial to the future of eastern Baltimore County.

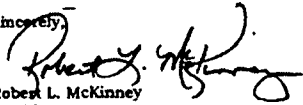
We recognize that the alignment of MD Rt. 43 not only consider potential economic impact, but must also be sensitive to a number of environmental and human factors as well.

Subsequently, the Baltimore County Chamber of Commerce believes that Alternative D Modified makes the greatest economic and environmental sense. It will open up access to the greatest number of land parcels and minimizes the impact on the environment. Moreover, we believe it provides for minimal disruption of current property owners.

In conclusion, we cannot over-emphasize the critical nature of this project to the economic vitality of our county. It is a project that has been envisioned for a number of years to reenergize and revitalize the communities of eastern Baltimore County.

We thank you for consideration of our views.

Sincerely,

  
Robert L. McKinney  
President

cc: The Honorable C. A. Dutch Ruppertsberger  
Robert L. Hannon, Director, Baltimore County Department of Economic Development  
The Honorable Michael J. Collins, Chairman  
The Honorable Joseph J. Minnick, Chairman  
Samuel T. Woodside, Chairman, Baltimore County Chamber of Commerce  
Robert W. Locke, III, Senior Vice Chairman, Baltimore County Chamber of Commerce  
James T. Dresher, Jr., Business Development Chair, Baltimore County Chamber of Commerce

(410) 825-6200 Fax: (410) 821-9901

102 West Pennsylvania Avenue, Suite 402 • Towson, Maryland 21204-4526

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Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 21, 1999

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

Mr. Ronald Parker  
White Marsh Properties, Inc.  
11450 Pulaski Highway  
White Marsh MD 21162

Dear Mr. Parker:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRE CAS, formerly MD 43 extended. The White Marsh Properties, Inc. support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRE CAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the White Marsh Properties Inc. comments. The company is on the mailing list and will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

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

WHITE MARSH PROPERTIES, INC.

Developers and Managers of Commercial Real Estate  
11450 Pulaski Highway  
White Marsh, MD 21162



Phone: 410-335-3800  
Fax: 410-335-3098

June 16, 1999

JUN 18 '99 PM 1:53 OPPF

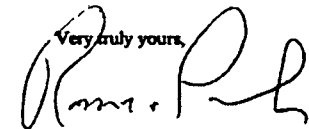
Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, Maryland 21202

RE: Letter dated of June 11, 1999 from EBA Chamber of Commerce

Dear Ms. Murphy:

We are in favor of the extension that would help relieve traffic in White Marsh, Eastern Avenue and Middle River areas, specifically, the extension of Route 43 using Alternative D Modified.

Very truly yours,



Ronald W. Parker

RWP/dcb

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 21, 1999

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

Mrs. Linda Hoffed  
 10100 Bevans Lane  
 Baltimore MD 21220

Dear Mrs. Hoffed:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Lisa Hoffed DATE 6/16

ADDRESS 10100 Bevans Lane

CITY/TOWN Belle STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

"I live in Middle River + Bevans Lane in which I travel  
from Route 40 to Suitcase and all surrounding areas frequently  
and see and witness many accidents that would justify taking away  
highways, riding off roads wild life + disturbing area that which services  
our region Middle River area not have had any health left We  
would not Natural environment more towns we need another highway.

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BAB47A11

6674

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 21, 1999

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

Mr. Lowell Tenney  
2 White Ash Court  
Baltimore MD 21220

Dear Mr. Tenney:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
Access Study (MRECAS)  
Combined Location/Design Public Hearing  
Wednesday, June 16, 1999  
Kenwood High School

PLEASE PRINT

NAME LOWELL TENNEY DATE 6/16/99

ADDRESS 2 WHITE ASH CT

CITY/TOWN BALTO STATE MD ZIP CODE 21220

We wish to comment or inquire about the following aspects of this project:

NO BILL  
AT ALL!

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Middle River Employment Center  
Access Center Study (MRECAS)  
PROJECT NO. BA847A11

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 21, 1999

Mr. & Mrs. Arnold Schultz  
 3 White Ash Court  
 Baltimore MD 21220

Dear Mr. & Mrs. Schultz:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the No-Build Alternative has been noted.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In the meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

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STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME ARNOLD & KIM SCHULTZ DATE 6/16/99

ADDRESS 3 WHITE ASH COURT

CITY/TOWN BALTIMORE STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

DO NOT WANT THIS PROJECT  
TO GO THROUGH AT ALL!

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Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

476

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 18, 1999

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

M' Leigh Raley  
President  
Windless Run Improvement Association, Inc.  
1102 Gladway Road  
Baltimore MD 21220

Dear M' Raley:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your association's support for Alternative D modified has been noted. The comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your association's comments. Your organization is on the mailing list and will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

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



WINDLESS RUN IMPROVEMENT ASSOCIATION, INC.  
1102 GLADWAY ROAD  
BALTIMORE, MD 21220  
(410) 391-0435  
52-1904745

JUN 20 1999 09:10 AM

June 16, 1999

Ms. Heather Murphy  
Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 N. Calvert Street  
Baltimore, MD 21202

Reference: MRECAS Hearing June 16, 1999

Dear Ms. Murphy:

This letter is being sent in lieu of a personal presentation of the decision of the Windless Run Improvement Association's decision to go on record regarding the Alternate Routes under consideration for Rt. 43.

WRIA is in favor of ALT D - MODIFIED. This route shows the least amount of business and residential displacements that are the main concerns of our membership. It also runs closest to the A.V. Williams property that is significant in bringing much needed business and jobs into the Essex, Middle River and Chase areas.

Sincerely yours,

WINDLESS RUN IMPROVEMENT ASSOCIATION, INC.

  
Leigh Raley  
President

477

Middle River Employment Center Access Study  
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Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 18, 1999

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

Mr. Michael Galiazzo  
Executive Director  
Regional Manufacturing Institute  
P.O. Box 476  
Hunt Valley MD 21030

Dear Mr. Galiazzo:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The Regional Manufacturing Institutes (RMI) support for Alternative D modified has been noted. Their comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for RMI's comments. The Institute is on the mailing list and will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:

Heather Murphy  
Project Manager  
Project Planning Division

My telephone number is \_\_\_\_\_

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Street Address: 797 North Calvert Street • Baltimore, Maryland 21202

## Regional Manufacturing Institute

P.O. Box 476 Hunt Valley, MD 21030 410-771-8111

June 16, 1999

Ms Heather Murphy  
Project Manager  
State Highway Administration  
Mail Stop C-301 P.O. Box 717  
Baltimore, MD 21203-0717

Dear Ms Murphy:

On behalf of the Regional Manufacturing Institute (RMI), I am writing to support the Maryland Route 43, Alternative D Modified plan because it best balances access to industrially zoned land, while meeting environmental objectives. It is a thoughtful and highly reasonable plan for industrial growth in eastern Baltimore County.

RMI is a Baltimore Region Association of over 150 manufacturers, vendors and suppliers committed to planned growth of the manufacturing sector. We support balances in manufacturing growth with protecting the environment and communities. County Executive Ruppberger's record of business growth in Baltimore County, reflects thoughtful and deliberate decision-making with great sensitivity to the environment and to the concerns of communities. Alternative D Modified is yet another example of this positive approach to growth.

I have read the details of Alternative D Modified. Also, they were explained this month at a public meeting of RMI by Robert L. Hannon, Executive Director, Baltimore County Economic Development.

The officers and members of RMI respectfully encourage your support of Alternate D Modified.

Sincerely,

Michael Galiazzo, Ph.D.  
Executive Director

Cc: RMI Executive Committee, Robert L. Hannon

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Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 18, 1999

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

Mr. Frank J. Brush, Jr.  
Executive Director  
Essex-Middle River Chamber of Commerce  
431 Eastern Boulevard  
Baltimore MD 21220

Dear Mr. Brush:

Thank you for the Essex-Middle River Chamber of Commerce's comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Their support for Alternative D modified has been noted. The comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the Chamber's comments. Your organization is on the mailing list and will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:

Heather Murphy  
Project Manager  
Project Planning Division

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  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

431 Eastern Boulevard  
Baltimore, MD 21221  
(410) 686-2233  
(410) 687-9081 fax

ESSEX-MIDDLE RIVER CHAMBER  
OF COMMERCE

June 16, 1999

Ms. Heather Murphy, Project Manager  
Project Planning Division  
Maryland State Highway Administration  
Mailstop C-301  
707 North Calvert Street  
Baltimore, MD 21202

Re: Middle River Employment Center Access Study (MRECAS)

Dear Ms. Murphy:

First and foremost, the Essex-Middle River Chamber of Commerce supports the construction of MD 43 Extended.

The extension of MD 43 from Pulaski Highway to Eastern Boulevard will benefit area residents, workers commuting into the area, local businesses, and everyone who enjoys the recreation opportunities offered along the local rivers. The present area roads, such as Eastern Boulevard, Earls Road, and Ebenezer Road, experience above average accidents rates, suffer from congestion, and are not capable of accommodating additional traffic.

By extending MD 43, daily travel will be safer and more convenient plus a great opportunity for economic development will become accessible. Our area is in a desperate need to retain existing jobs and to create new job positions to support our families and neighborhoods. The land that could be developed in the Middle River Employment Center would produce thousands of jobs. Some estimates have predicted that close to 14,000 new jobs could result in this area. The extension of this route also enhances the highway access for the existing employers in the region and should encourage them to continue investing in employment opportunities for our area.

A project of this size and importance can not be completed without impacting local residents, historic sites, and the environment. All of these factors must be considered in determining an appropriate path for the MD 43 extension to follow and still provide access to the areas eligible for economic development.

SUPPORT YOUR FELLOW CHAMBER MEMBERS!

479  
b7d



*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*

Essex-Middle River Chamber of Commerce

Page 2

Several Essex-Middle River Chamber of Commerce members have participated in the Focus Group established for the Route 43 Extension project. Also, our board of directors have reviewed the materials submitted by the State Highway Administration regarding the alternative routes including their impacts and costs.

After careful consideration, the Essex-Middle River Chamber of Commerce supports Alternative D-Modified as the alignment that best serves the existing communities and provides the greatest opportunity for economic development.

Alternative D-Modified has a low impact on area residents and poses the lowest noise impact of any of the alternatives. This route has the lowest impact on streams, the second lowest amount of flood plain encroachment, and avoids the highest quality wetlands in the immediate area. Of major consideration is the fact that Alternative D-Modified requires the least amount of access road construction to utilize available development sites, and exits onto Eastern Boulevard at a location that would not require extensive widening or community disruption.

We would like to see this project move forward quickly and see the roadway built so that the available benefits can be realized.

Sincerely,



Frank J. Brush, Jr.  
Executive Director

cc: Robert L. Hannon

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 18, 1999

Mr. Barry J. Turska  
7 Mariners Walk Way  
Baltimore MD 21220

Dear Mr. Turska:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process. We agree that the high accident rates on Earls and Ebenezer Roads is a concern that should be addressed by building the proposed roadway.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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

From: "Barry Turska" <bturska@home.com>  
To: MDSHAHQ.SHADGN(HMurphy)  
Date: Wed, Jun 16, 1999 10:14 PM  
Subject: MRECAS Alternative D (modified)

I attended the June 16, 1999, hearing on the Middle River Employment Center Access Study at Kenwood High School.

I currently live in the community known as Fairwinds at 7 Mariners Walk Way having moved with my family from Forest Hill, MD in Harford County 4 years ago.

I wish to congratulate you and your team for developing the information presented at tonight's meeting.

I believe Alternative D (modified) is the best of all options because it will provide the best economic opportunities for eastern Baltimore County.

A no build option is not acceptable especially in light of the stated high incidents of accidents on Earls and Ebenezer Roads.

I look forward to the selection of the final design and the funding of the Right-of-Way Acquisition.

Thank you for a job well done.

Barry J. Turska  
7 Mariners Walk Way  
Baltimore, MD 21220

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 18, 1999

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

Mr. J. Raymond Roquemore  
Executive Vice President and General Manager  
Middle River Aircraft Systems  
193 Chesapeake Park Plaza  
Baltimore MD 21220

Dear Mr. Roquemore:

Thank you for the Middle River Aircraft System's (MRAS) comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. The support for the project has been noted. The company's comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the public hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for the comments. MRAS's is on the mailing list and will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



MIDDLE RIVER AIRCRAFT SYSTEMS  
MRA Systems, Inc. - A Subsidiary of GE

June 18, 1999

Dear Sir or Madam:


On behalf of Middle River Aircraft Systems I would like to reaffirm our support of the completion of the Route 43 extension.

It is our belief that the swift completion of this project will effectively serve two purposes. First, it will make currently inaccessible and unused parcels of land ~~for~~ available for development. Second, it will provide a more direct route to the business section of Eastern Avenue.

We believe that both of these objectives will serve the interests of the community along the Essex/Middle River corridor and, consequently, all of Baltimore County.

Please feel free to contact me if you would like to discuss this with me personally.

Sincerely,

  
J. Raymond Roquemore  
Executive Vice President and General Manager

130 Chesapeake Park Plaza Baltimore, Maryland 21220  
Telephone 410.582.1000

2 P

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Middle River Employment Center Access Study  
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Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 17, 1999

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

Mr. Thomas J. Quinn  
LMC Properties, Inc.  
100 S. Charles Street  
Suite 1400  
Baltimore MD 21201

Dear Mr. Quinn:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your support for Alternative D-modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

Recently, the State Highway Administration held a Public Hearing on June 16 where citizen comments were received. After a full and thorough evaluation of all comments, the study team will formulate a recommendation for the selection of an alternative.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

LMC Properties, Inc.  
100 S. Charles Street, Suite 1400 Baltimore, Maryland 21201  
Telephone: 410.468.1005 Facsimile 410.468.1075

LOCKHEED MARTIN 

Thomas J. Quinn  
President

June 14, 1999

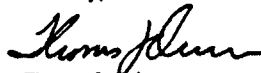
Ms. Heather Murphy  
Project Manager  
State Highway Administration  
Mail Stop C-301  
P.O. Box 717  
Baltimore, Maryland 21203-0717

Dear Ms. Murphy:

I am writing to register my organization's support of Maryland Route 43, Alignment "D Modified". As you may know the Chesapeake Industrial Park complex at Middle River is owned and operated by LMC Properties, Inc., the real estate arm of Lockheed Martin Corporation. We continue to strongly support the Route 43 extension from two perspectives. First, it would greatly improve access and egress for our employees at Lockheed Martin Launching Systems as well as our tenant's employees at Middle River Aircraft Systems (a subsidiary of General Electric). Secondly, Chesapeake Industrial Park contains excess acreage on Dark Head Cove, Martin Boulevard and Eastern Avenue whose commercial development potential would certainly be enhanced by the Route 43 extension. Alternative "D" Modified would clearly accomplish our objectives for Chesapeake Industrial Park while minimizing environmental impacts yet opening other key parcels of land for potential development.

On behalf of Lockheed Martin Corporation, I encourage you to adopt Alignment "D Modified" for the Route 43 extension.

Sincerely,

  
Thomas J. Quinn

Middle River Employment Center Access Study  
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Maryland Department of Transportation  
 State Highway Administration

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

June 17, 1999

Mr. Ronald E. Missel  
 11710 A. Hamilton Place  
 White Marsh MD 21162

Dear Mr. Missel:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your support of Alternative I modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

Recently, the State Highway Administration held a Public Hearing on June 16 where citizen comments were received. After a full and thorough evaluation of all comments, the study team will formulate a recommendation for the selection of an alternative.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

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STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME RONALD E. MISSEL DATE 6/7/99

ADDRESS 11710 A HAMILTON PLACE

CITY/TOWN WHITE MARSH STATE MD ZIP CODE 21162

I/We wish to comment or inquire about the following aspects of this project:

*I think we should use Alt. I modified so the Chase, Bengie area can have a major highway improvement for housing and business accessibility. There is already excess congestion of traffic at the MREC station, Middle River Federal Depot. and they have Martin Blvd + Eastern Avenue access. The Chase area has no improved highway and a lot of building is going on there. They need more access. Ebenezer Road is in traffic mess! Too much traffic for such a narrow road.*

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

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Middle River Employment Center Access Study  
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Maryland Department of Transportation  
 State Highway Administration

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

June 17, 1999

Mr. John R. Roth  
 102 Whistle Stop Rd  
 Baltimore MD 21220

Dear Mr. Roth:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your support for Alternative D or D modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

Recently, the State Highway Administration held a Public Hearing on June 16 where citizen comments were received. After a full and thorough evaluation of all comments, the study team will formulate a recommendation for the selection of an alternative.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

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STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME JOHN R. ROTH DATE 6/7/99

ADDRESS 102 WHISTLE STOP RD

CITY/TOWN BALTE. STATE MD. ZIP CODE 21220

We wish to comment or inquire about the following aspects of this project:

I FAVOR ALT. D-D MOD. BECAUSE IT  
WOULD TERMINATE AT MD. 150 (EASTERN BLVD.)  
FOUR LANE PORTION. THIS WOULD NOT REQUIRE  
EXTENSIVE WIDENING AND ACQUISITION OF  
HEMES AND PROPERTYS AS WOULD ALT E-1.  
ALT D-D MOD. ENDING AT THE MARB STATION  
AND MD. AIR NATIONAL GUARD, CLOSE TO MARTIN  
STATE AIRPORT AND CHESAPEAKE INDUSTRIAL  
PARK IS IN MY OPINION THE BEST LOCATION.

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BAB47A11

*gdt*

Middle River Employment Center Access Study  
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Maryland Department of Transportation  
 State Highway Administration

June 17, 1999

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

Mr. & Mrs. John A. Novotny Sr.  
 1816 Wilson Point Road  
 Middle River MD 21220-5430

Dear Mr. & Mrs. Novotny:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your support of Alternative F1 modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

Recently, the State Highway Administration held a Public Hearing on June 16 where citizen comments were received. After a full and thorough evaluation of all comments, the study team will formulate a recommendation for the selection of an alternative.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Mr + Mrs John A. Novotny Sr DATE 6-4-99

ADDRESS 1816 Wilson Point Road

CITY/TOWN Middle River STATE MD ZIP CODE 21220-5430

I wish to comment or inquire about the following aspects of this project:

That ALT-F1-Modified would be the most direct and preferable route to access the White Marsh and Middle River Areas into and out of each. The tie into I150 at the MARC Railway Station & Maryland Air National Guard is ideal. ALT-E & ALT-I-Modified exit and entrance of 43 at I50 would really exacerbate the congestion at the junction and access to the MARC Station would be hampered by the need to drive thru congested prone areas at Carroll Island Rd on I50. We have studied the IMPACTS & COSTS and realize what extras would be required but still feel ALT-F1 Modified justifiable.

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List.  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

98h

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 17, 1999

Mr. & Mrs. Dave Kasmer  
 116 Covered Wagon Road  
 Baltimore MD 21220

Dear Mr. & Mrs. Kasmer:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your support of Alternative F1 modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

Recently, the State Highway Administration held a Public Hearing on June 16 where citizen comments were received. After a full and thorough evaluation of all comments, the study team will formulate a recommendation for the selection of an alternative.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

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 Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Kasmer DATE JUNE 6, 1999  
 ADDRESS \_\_\_\_\_  
 CITY/TOWN \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

We wish to comment or inquire about the following aspects of this project:

I HAVE LOOK AT YOUR MAP, ACT-F1 MODIFIED LOOKS THE BEST, FOR THE FOLLOWING REASON, THE EXIT GOES INTO EASTMAN BLVD, WHICH IS A DEAD END ROAD, THE EXIT EAST OF WILLIAMS ESTATES IS JUST TWO LANE WHICH IS NOW OVERTRAVELED, AND WOULD WIDENING THE ROAD, THE ACT F1 ROAD WOULD DO THE LEAST AMOUNT OF RESIDENT MOVING

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List.  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

487



Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

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

June 17, 1999

Mr. & Mrs. Curtis Kidwell  
 22 Right Wing Drive  
 Baltimore MD 21220

Dear Mr. & Mrs. Kidwell:

Thank you for your comments concerning the Middle River Employment Center Access Study, formerly MD 43 extended. Your support for the No-Build Alternative has been noted and will be considered during the decision making process.

Recently, the State Highway Administration held a Public Hearing on June 16 where citizen comments were received. After a full and thorough evaluation of all comments, the study team will formulate a recommendation for the selection of an alternative.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
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 Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME Curtis & Carolyn Kidwell DATE 6-4-99

ADDRESS 22 Right Wing Drive

CITY/TOWN BALTO STATE MD ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

WE CHOOSE THE NO-BUILD ALTERNATIVE.  
WE WILL NOT VOTE FOR ANY POLITICIAN WHO  
SUPPORTS THE BUILDING OF FREEWAYS IN  
OUR AREA. DEVELOPERS MUST CONTINUE TO  
DOUBT EXISTING TREES IN BALTIMORE COUNTY. WE DON'T  
JUST REMOVE BALTIMORE TREES AND CALL IT  
BALTIMORE CITY AS IT IS BECOMING NOT TO  
RESEMBLE A RURAL AREA AT ALL! INCREASES  
PUBLIC TRANSPORTATION AND SERVICES TO OVER  
PROPERTY VALUES. OUR TAXES ARE HIGH AND  
EXISTING HIGHWAYS ARE NOT KEPT UP & NOW THEY JUST WANT

\*Persons who have received a copy of this brochure through the mail are tabular  
 already on the project Mailing List Development destroys native

Please add my/our name(s) to the Mailing List How many the which

Please delete my/our name(s) from the Mailing List rates, more protection

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

WE SAY NO!

488

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

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

May 14, 1999

Mr. John W. Reames  
10228 Bird River Road  
Baltimore MD 21220-1530

Dear Mr. Reames:

Thank you for your recent letters on the Middle River Employment Center Access Study (MRECAS), formerly known as MD 43 Extended. We appreciate your interest in this project.

In reference to the questions you posed in your April 21 letter, we offer the following:

1. For each of the alternates that travel east of the Holly Hills Memorial Cemetery, Alternatives D, D-Mod, E and I-Mod., the new roadway will pass over the existing Bird River Road. Due to topography, poor soils and a high water table this is the only feasible way to cross Bird River Road without providing an at-grade crossing.
2. The area of Hilltop Drive and Bird River Road meets the initial eligibility criteria for noise abatement. The final determination on noise barriers will not be made until final design is initiated on the selected alternate. This determination is not made until the final design phase has begun. I have enclosed a brochure on Sound Barriers for your information.
3. As this study has progressed all of the discussions with the community have included the strong desire not to have access to the new roadway. The reasoning of those we have talked with is the desire to keep cut-through traffic out of the neighborhood. The extension of Campbell Boulevard will provide a much needed relief valve for the new housing developments on the west end of Bird River Road and help the desire to -keep the level of traffic on Bird River Road close to what it is today.

My telephone number is 410-545-8571

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1-800-735-2258 Statewide Toll Free

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. John W. Reames  
Page Two

In response to your letter dated May 4, a copy of the Draft Environmental Impact Statement (DEIS) is enclosed. As advertised, the DEIS will be available in the White Marsh and Essex Libraries on Friday May 14. Representatives of the Army Corp of Engineers (ACOE) will be in attendance at the upcoming June 16 Joint Public Hearing. You will be mailed more details of that meeting soon. Also, your desire to discuss issues with the ACOE representatives has been sent to their representative.

Thank you again for your letters. If you have any additional questions regarding MRECAS, please feel free to contact the project manager, Ms. Heather Murphy. Heather can be reached at 410-545-8571 or toll free at 800-548-5026.

Very truly yours,

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

By:   
Heather Murphy  
Project Manager  
Project Planning Division

Enclosure

cc: Mr. Steve Harmon, Army Corps of Engineers (w/incoming)  
Mr. David Malkowski, District Engineer, State Highway Administration (w/incoming)  
Mr. Ken Polcak, Environmental Analyst, State Highway Administration (w/incoming)

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*

21 April, 1999  
10228 Bird River Road  
Baltimore, Md. 21220-1530

State Highway Administration  
Project Planning Division  
707 North Calvert street  
Baltimore, Maryland 21202

Heather Murphy, Project Manager

Re: Route 43 Extension  
(MRECAS) Study

Dear Ms. Murphy

As a property owner who will be affected should Alternative D be selected for the proposed project, I have several questions:

1. How will the grade separation with Bird River road be accomplished? Will the proposed roadway be elevated to cross over Bird River Road, or will the proposed roadway be depressed to pass under Bird River Road?
2. Will noise barriers be constructed to mitigate traffic noise from the proposed roadway in the area of Hilltop Drive and Bird River Road?
3. Why has the grade separation option been set forth? The highway will drastically impact its abutters while denying the property owners any potential economic benefit from the proximity of the highway

Thank you for your attention to these questions

Sincerely,  
*John W. Reames*  
John W. Reames

4 May, 1999  
10228 Bird River Road  
Baltimore, Md. 21220-1530

State Highway Administration  
Project Planning Division  
707 North Calvert Street  
Baltimore, Maryland 21202

Heather Murphy, Project Manager

Re: Route 43 Extension  
(MRECAS) Study

Dear Ms. Murphy

As a property owner who may be affected should Alternative D be selected for the proposed project, I am herewith requesting a copy of the Environmental Impact Statement for the project. I would hope to have the statement in hand at least 30 days prior to the next public meeting on the project, so that, as interested citizen, I can formulate informed questions for the Representative Of the Corps of Army Engineers, whom I am also requesting be in attendance and available for questions.

Thank you for your attention to these questions.

Certified Mail, Return Receipt Requested

Sincerely,  
*John W. Reames*  
John W. Reames

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 29, 1999

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

Mr. John Polek  
 1651 Browns Road  
 Baltimore MD 21221

Dear Mr. Polek:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the project has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

My telephone number is \_\_\_\_\_

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STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME JOHN POLEK DATE 6/19/99

ADDRESS 1651 BROWNS RD

CITY/TOWN BALTO STATE MD ZIP CODE 21221

I/We wish to comment or inquire about the following aspects of this project:

As V.P. OF THE PIPELINE TRADERS ASSOC OF BALTO BALTIMORE COUNTY &  
MONTGOMERY, AS WELL AS A MARINE CONTRACTOR, I AM WELL AWARE OF  
THE DECLINE IN BUSINESS ON THE COUNTY WATERFRONT, PARTICULARLY  
COMPARED TO OTHER AREAS. BALTIMORE COUNTY WATERFRONT NEEDS  
AN ECONOMIC BOOST! A 45 EXTENSION WILL BRING MANY PP, NT  
& DE BOATS TO OUR MARINES WHO OTHERWISE ARE PASSING  
BY. THE ECONOMIC BENEFIT OF THE PIPELINE BUSINESS IN  
BALTIMORE IS EVEN MORE INCREDIBLE, GIVEN THE CONSTRAINTS  
UNDER WHICH WE MUST OPERATE

\*Persons who have received a copy of this brochure through the mail are  
 already on the project Mailing List

Please add my/our name(s) to the Mailing List

Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BAB47A11

491

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



Maryland Department of Transportation  
 State Highway Administration

June 29, 1999

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

Mr. John Polek  
 1651 Browns Road  
 Baltimore MD 21221

Dear Mr. Polek:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for the project has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

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

STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS

Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School

PLEASE PRINT

NAME JOHN POLEK DATE 6/19/99

ADDRESS 1651 BROWNS RD

CITY/TOWN BALTO STATE MD ZIP CODE 21221

We wish to comment or inquire about the following aspects of this project:

As V.P. OF THE MARINE TRADES ASSOC OF BOTH BALTIMORE COUNTY & MARYLAND, AS WELL AS A MARINA OPERATOR, I AM WELL AWARE OF THE DECLINE IN BUSINESS ON THE COUNTY WATERFRONT, PARTICULARLY COMPARED TO OTHER AREAS. BALTIMORE COUNTY WATERFRONT NEEDS AN ECONOMIC BOOST! RY 45 EXTENSION WILL BRING MANY PP, NOT Y DE BOATS TO OUR MARINAS WHO OTHERWISE ARE PASSING BY. THE ECONOMIC BENEFIT OF THE MARINE BUSINESS IN BALTIMORE IS EVEN MORE INCREDIBLE, GIVEN THE CONSTRAINTS UNDER WHICH WE MUST OPERATE

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

- Please add my/our name(s) to the Mailing List  
 Please delete my/our name(s) from the Mailing List

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BA847A11

492

Choose Alternative D.

**STATE HIGHWAY ADMINISTRATION  
 QUESTIONS AND/OR COMMENTS**

*Middle River Employment Center  
 Access Study (MRECAS)  
 Combined Location/Design Public Hearing  
 Wednesday, June 16, 1999  
 Kenwood High School*

PLEASE PRINT

NAME Golden Watters DATE 6/99

ADDRESS 11522 Eastern Avenue

CITY/TOWN Balto. STATE Md. ZIP CODE 21220

I/We wish to comment or inquire about the following aspects of this project:

My concern is Alternative E and I Modified.  
These two alternatives will affect a  
minority community that has been in  
existence for many, many years. It is  
one of a very few properties that Afro-  
Americans have maintained in Balto. County.  
Alternative E and I Modified would  
have the greatest Socio-Economic and  
cost Impact of all the alternatives.  
The impact on Natural Environment is also  
the greatest. Please choose Alternative D!

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List

Please add my/our name(s) to the Mailing List.

Please delete my/our name(s) from the Mailing List.

Choose Alternative D.

Middle River Employment Center  
 Access Center Study (MRECAS)  
 PROJECT NO. BAB47A11

\*New statements have been approved by  
 Wm. Watters @ Margaret Beasley also  
 4/13/99

GBN

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



Maryland Department of Transportation  
State Highway Administration

June 28, 1999

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

Ms. Golden Watters  
11522 Eastern Avenue  
Baltimore MD 21220

Dear Ms. Watters:

Thank you for your comments concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D, and your opposition to Alternatives E and I modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

cc: Ms. Normantha Goodrom, EEO/Title VI Officer

My telephone number is \_\_\_\_\_  
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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



Maryland Department of Transportation  
State Highway Administration

June 28, 1999

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

Ms. Margaret Beasley  
11520 Eastern Avenue  
Baltimore MD 21220

Dear Ms. Beasley:

Thank you for your comments provided by Ms. Watters concerning the Middle River Employment Center Access Study, MRECAS, formerly MD 43 extended. Your support for Alternative D, and your opposition to Alternatives E and I modified has been noted. Your comments have been included in the project record and will be considered during the decision making process.

The MRECAS study team is currently evaluating citizens comments received at and subsequent to the Public Hearing. After full and thorough evaluation of these comments, the study team will formulate a recommendation to present to the State Highway Administrator for the selection of an alternative. In meantime, refinements will continue to be made to the proposed alternatives, where feasible, to address citizens concerns.

Thank you again for your comments. Your name is on the mailing list and you will be notified of any future events on this project. If you have any questions in the meantime, please contact the Project Manager, Ms. Heather Murphy, at 410-545-8571 or at 1-800-548-5026.

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

cc: Ms. Normantha Goodrom, EEO/Title VI Officer

My telephone number is \_\_\_\_\_  
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Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



C.A. Dutch Ruppertsberger  
 Baltimore County Executive

Executive Office  
 400 Washington Avenue  
 Towson, Maryland 21204  
 410-887-2450  
 Fax: 410-887-4049

June 16, 1999

Mr. Parker F. Williams  
 Administrator  
 State Highway Administration  
 707 North Calvert Street  
 Baltimore, MD 21202

Dear Mr. Williams:

Economic development is a top priority for Baltimore County. We are particularly intent on creating quality employment opportunities in the eastern part of our county, which has experienced tremendous economic dislocation over the past two decades as large manufacturers - including Lockheed Martin - have reduced their workforces and or closed. A central component of our strategy for revitalizing Eastern Baltimore County is to create employment-generating business development on close to 1,800 acres of prime, industrially-zoned land in the Middle River area. Development of this land is crucial to the economic future of the Middle River area, holding the potential to bring between 10,000 and 15,000 new jobs to a community that needs them. However, this development cannot occur unless a major new roadway is constructed to access these prime sites.

I know that SHA has been working hard to evaluate ways to improve access to this Middle River Employment Center, and to determine which of several possible new roadway alignments best balances environmental, property acquisition and economic development factors. As a result of your effort, there are currently five alternative alignments under consideration: "D," "D-Modified," "E," "F1-Modified," and "I-Modified." Together with the U.S. Army Corps of Engineers, SHA will present these alignments to the public at a hearing Wednesday evening at Kenwood High School.

I would like to communicate Baltimore County's official position on our preferred alignment. After extensive consultation with our environmental, public works, economic development and planning staffs, the county has determined that Alignment "D-Modified" offers the optimal balance of economic development and environmental objectives. Our reasoning is as follows:

- *Alternative D Modified is clearly the superior alignment in terms of its ability to open up key parcels of land for development. It crosses and accesses five of the six "pods" of industrially-zoned property available for development, providing direct access to more than 560 acres of land. Alternatives D, E and I Modified provide direct access to*

Mr. Parker F. Williams  
 June 16, 1999

Page 2

significantly fewer acres of land, while Alternative F1 Modified offers the poorest access to the development parcels. Alignment D Modified would make possible the most efficient and timely development of the major opportunity sites, which is the primary objective for a new road in this Employment Center.

- *Alternative D Modified (as well as Alternatives D and F1 modified) provides the most direct access to about 80 additional acres of developable industrial land at the Chesapeake Industrial Park and major multi-modal transportation facilities. The most important existing economic development facilities in the Middle River Employment Center are concentrated along MD150 where Martin State Airport, an Amtrak station, a MARC station, a major Lockheed Martin/Middle River Aircraft Systems facility, and 80 acres of industrially-zoned waterfront land at Chesapeake Park sit side by side. The three alignments that intersect MD150 at Martin State Airport directly link this economic development hub to the planned development sites and to Interstate 95. Alternatives E and I Modified provide poorer access to this hub because they intersect MD150 approximately 1.3 miles to the east and would require widening of MD150.*
- *Alternative D Modified would result in less overall environmental disturbance than the alternatives when secondary and cumulative environmental effects are taken into consideration. Our review of the Draft Environmental Impact Statement indicates Alternative D Modified poses the least overall environmental impact among the five alternatives due to the fact that it circumvents the highest-quality wetlands and would require the least amount of secondary roadway construction.*

Thank you again for your ongoing effort on this project.

Sincerely,

C.A. Dutch Ruppertsberger  
 County Executive

CADR/ask

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>cc: The Honorable Vincent J. Cardina, 5<sup>th</sup> Council District</li> <li>The Honorable Michael J. Collins, 6<sup>th</sup> District</li> <li>The Honorable Norman R. Stone, 7<sup>th</sup> District</li> <li>The Honorable Thomas L. Brownwell, 8<sup>th</sup> District</li> <li>The Honorable Diane DeCarlo, 6<sup>th</sup> District</li> <li>The Honorable Nancy Hubert, 6<sup>th</sup> District</li> <li>The Honorable Michael H. Weir, 6<sup>th</sup> District</li> </ul> | <ul style="list-style-type: none"> <li>The Honorable John S. Arnick, 7<sup>th</sup> District</li> <li>The Honorable Joseph J. Minnick, 7<sup>th</sup> District</li> <li>The Honorable Jacob J. Moberovic, Jr., 7<sup>th</sup> District</li> <li>The Honorable Katherine Klausmeier, 8<sup>th</sup> District</li> <li>The Honorable James F. Ports, Jr., 8<sup>th</sup> District</li> <li>The Honorable Alfred W. Radmer, Jr., 8<sup>th</sup> District</li> </ul> |
|---|--|

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*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*



**Maryland Department of Transportation  
State Highway Administration**

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

July 1, 1999

The Honorable C.A. Dutch Ruppertsberger  
Baltimore County Executive  
Executive Office  
400 Washington Avenue  
Towson MD 21204

Dear County Executive Ruppertsberger:

Thank you for your recent letter regarding the Middle River Employment Center Access Study (MRECAS), formerly known as MD 43 Extended. We appreciate your support for this project. We also appreciate your informing us of your official position of preferring Alternative D Modified.

That the development of this road is extremely important to the economic future of the Eastern Baltimore County area, is a concept with which we concur. Alternative D Modified does provide for the most direct access to almost all of the developable industrial land, taking into account the environmental constraints of this area. This alternate would minimize additional environmental impacts associated with access roads into the new development. We appreciate the importance of the location of the intersection with MD 150 to provide improved access to multi-modal facilities as well as land that can be developed at the Chesapeake Industrial Park.

Thank you again for your letter. We look forward to continuing the excellent working relationship we have developed with Baltimore County on this project. If you have any further comments or questions, please feel free to contact me or Mr. Neil J. Pedersen, our Planning Director, who may be reached at 410-545-0411 or 1-800-548-5026.

Sincerely,

A handwritten signature in black ink, appearing to read 'Parker F. Williams', written over a horizontal line.

Parker F. Williams  
Administrator

cc: Mr. Neil J. Pedersen, Director, State Highway Administration

My telephone number is 410-545-0400 or 1-800-365-0778

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

7/6/99

**D. Synopses of Comments from Public Hearing and of SHA Responses**

Approximately 300 people attended the Location/Design Public Hearing for the MRECAS held on June 16, 1999 at Kenwood High School in Essex, Maryland. A total of thirty-one people participated in public or private testimony. The majority of the respondents supported D-mod, while a number of others supported the no-build or had concerns about any of the alternatives or transportation, in general. Persons who spoke publicly at the meeting are listed below along with a synopsis of each speaker's concerns. SHA's response to each speaker's concerns are also provided below. In addition to public testimony, some persons expressed their concerns privately to the court recorder. Synopses of their concerns and respective SHA responses are provided at the end of this section.

***Public Testimony***

1. Mr. Robert Hannon, Director of Baltimore County Dept. of Economic Development

On behalf of County Executive Ruppertsburger, he is in support of Alt. D-mod. The reasons for the selection are: 1) less overall environmental disturbance than the other alternatives when secondary and cumulative effects are taken into consideration; 2) Opens key parcels, crossing five of six development pods, 3) provides the most direct access to about 80 acres of industrially zoned land at the Chesapeake Industrial Park, and 4) Baltimore County's ability to attract family supporting jobs is directly linked to transportation access.

**SHA Response:**

Alternate D-modified is the selected alternate.

2. Mr. Phil Edwards, Bowley's Quarters Community Association

He supports Alternative D-mod.

**SHA Response:**

Alternate D-modified is the selected alternate.

3. Mr. Tom Lehner, Bowley's Quarters Improvement Association and resident

He is supporting the no-build, due to many concerns, including volume of traffic, marketing of the airport, archeological sites on the A.V. Williams site, and re-utilizing brownfields.

**SHA Response:**

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. The decision to select D-modified reflects an attempt to balance environmental issues and concerns of all interested parties. Traffic on Ebenezer Road should decrease after construction of the proposed highway.

4. Mr. Frank Brush, Essex/Middle River Chamber of Commerce

The Chamber supports Alt. D-mod as the alignment that best serves the existing communities and provides the greatest opportunity for economic development. On behalf of Middle River Aircraft Systems, he read a statement supporting the completion of the Route 43 extension.

SHA Response:

Alternate D-modified is the selected alternate.

5. Ms. Linda Felts, Bird River RD resident

Speaking on behalf of the Bird River Community, she supports the no-build. She is concerned about the displacements, particularly the elderly, on fixed incomes. She feels that there are alternatives for revitalizing Middle River.

SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties.

6. Norm Sines, Essex/Middle River resident

He supports D-mod and opposes the no-build. He feels the proposed road is key to the revitalization of Essex/Middle River, which will alleviate the traffic on local roads, making them safer.

SHA Response:

Alternate D-modified is the selected alternate.

7. Michelle Wingerd, Bird River Road resident

She expresses concern about the residents who will be displaced. She is elderly, on a fixed income and is living in one of the houses that are in danger of being taken.

SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties. The current mapping indicates that the cut/fill line will be 40 feet from the corner of the house, but the house is not listed as a displacement. A noise wall is being considered.

499

8. Robert Romadka, Vincent Road resident and an attorney

He is in support of D-mod, but is concerned about the 5-6 displacements. He feels that the road will help bring jobs and reduce the unemployment.

Representing his client. Mr. Tomer, who has property on Earls Road and Bengies Road, he is also questioning the access to Bengies Road, and whether or not there are studies under way as to what secondary roads will be built to service the east properties.

SHA Response:

Alternate D-modified is the selected alternate. No existing roads will be cut off by D-mod. There will be 3 access points to MD 43 between I-95 and Eastern Boulevard.

9. Wayne Miskiewicz, Green Trades Association of Baltimore County

He supports Alt. D-mod as the alignment that best serves the existing communities, minimizes environmental impacts and provides the greatest opportunity for economic development

SHA Response:

Alternate D-modified is the selected alternate.

10. Jack Wise, Sierra Club

Sierra Club is concerned about the loss of woodlands and wetlands, and feels that the road will cause urban sprawl. They would prefer to see brownfields being used, and the money spent on achieving open space.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties. If current regulations are stringently enforced, wetland loss will be minimal (less than 10% of the 450 to 500 acres of wetlands in the MREC), with regulatory permitting through MDE, ACOE and Baltimore County.

Secondary impacts to water quality and wetlands caused by MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records. These Forest Buffers and associated protective covenants ride with the deed of the property in perpetuity.

500

Secondary impacts to forest habitat caused by MREC development would also be limited by Baltimore County's Forest Conservation Regulations. These regulations require a forest stand delineation to distinguish forest stands of higher ecological quality in order to direct proposed development activities away from those areas wherever possible. Additionally, a forest conservation worksheet (FCW) is required to determine any reforestation or afforestation requirements. The FCW is prorated to require less reforestation if forest disturbance is less than the break-even point on a forested property, and more reforestation for clearing beyond the reforestation threshold. The objective of the Forest Conservation Regulations is not just to protect and enhance forest cover in general, but to preserve large, existing forest corridors in perpetual protective easements similar to the easements required for stream and wetlands buffers.

11. Robert Palmer, Bowley's Quarters resident

He supports Alt. D-mod as the alignment that best serves the existing communities, minimizes environmental impacts and provides the greatest opportunity for economic development

SHA Response:

Alternate D-modified is the selected alternate.

12. Pat Winter, Eastern Baltimore Area Chamber of Commerce

The Eastern Baltimore Area Chamber of Commerce supports D-mod.

SHA Response:

Alternate D-modified is the selected alternate.

13. Mr. Jim Dresher, Baltimore County Chamber of Commerce

The Chamber of Commerce supports Alt. D-mod as the alignment that best serves the existing communities, minimizes environmental impacts and provides the greatest opportunity for economic development

SHA Response:

Alternate D-modified is the selected alternate.

14. Mr. Ray Porter, marine business owner

He supports Alt. D-mod because it makes the greatest economic and environmental sense.

SHA Response:

Alternate D-modified is the selected alternate.

15. Mr. Joseph Bruno, Hilltop Road resident

He is not in favor of building the road because it will displace his family. He desires fair market value or over fair market value for the pain, suffering and anguish.

301

SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. When final right-of-way limits are determined, plats will be prepared and SHA Real Estate personnel will begin the appraisal process, and then contact property owners to begin negotiations. Current mapping indicates that the house is 110 feet from the cut/fill line, and will not be taken. A noise wall is being considered.

16. Mr. Mike Galiazzo, Regional Manufacturing Institute

The Regional Manufacturing Institute supports D-mod. He wants the roads developed in a planned, purposeful way that has the least amount of disruption and pain.

SHA Response:

Alternate D-modified is the selected alternate. Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns.

17. Mr. Adam Paul, White Marsh Civic Association; representative of Delegate Diane DeCarlo

He supports Alt. D-mod because it will best utilize the vacant land to be used for development. The new road will provide job opportunities.

SHA Response:

Alternate D-modified is the selected alternate.

18. Mr. Chris Costello, Baltimore County Chamber of Commerce

He considers the safety issue very important, and feels that the community of people interested in seeing highways improved for efficiency and safety certainly support the highway expansion.

SHA Response:

Alternate D-modified is the selected alternate. Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns.

19. Bob Rosenberg, Bird River Road resident

He prefers improving the roads in the Middle River and Bird River areas. He doesn't believe the extension would benefit the residents, but would rather allow more traffic to flow.

502

SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns.

Baltimore County has designated a portion of the Middle River area as an Employment Center, where employment growth is planned to occur. The Middle River Employment Center (MREC) includes the 1,000-acre undeveloped A.V. Williams tract, Martin State Airport and the Chesapeake Industrial Park, which includes Middle River Aircraft Systems facility. The full development potential of the MREC is dependent on improved access to national transportation facilities that serve travel demand between the Baltimore area and other regions of the country.

20. Ronald Wingerd, Bird River Road resident

He is concerned with the road conditions and traffic levels along Ebenezer Road, which will worsen if MD 43 is extended. He mentioned an old configuration for the MD 43 extension. He also commented on the poor quality of the schools.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. Previous alignments were examined during project planning studies. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties. Traffic on Ebenezer Road should decrease after construction of the proposed highway.

*Private Testimony:*

21. Ms. Melinda Reames, Bird River Road resident

She is recommending no-build or further study. She objected to the lack of study availability. She is affected by four of the alternatives and states that the displacement count is incorrect. Ms. Reames questions the historic properties affected, including a farmhouse, 5701 Hilltop Drive, built in 1913, and another farmhouse at 10216 Bird River Road, built in 1900. The noise analysis was questioned. Alternate F has several contradictions concerning farmlands.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. Alternate D-modified is the selected alternate. The number of properties displaced or impacted was calculated from aerial photography used for study purposes and by field checks, and is subject to revision. It appears that there may be 6 displacements by D-mod. During final design of the project a more detailed property survey will be conducted. When final right-of-way limits are determined, plats will be prepared and SHA Real Estate personnel will begin the appraisal process, and then contact property owners to begin negotiations.

503

Maryland Real Property System lists the construction dates of the above-mentioned homes, as 1913 and 1900, respectively. Houses over 50 years old as evaluated for historic designation. A noise wall is being considered for White Marsh Estates.

22. Jack Wise, Sierra Club

Sierra Club is concerned about the loss of woodlands and wetlands, and feels that the road will cause urban sprawl. They would prefer to see brownfields being used, and the money spent on achieving open space.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. If current regulations are stringently enforced, wetland loss will be minimal (less than 10% of the 450 to 500 acres of wetlands in the MREC), with regulatory permitting through MDE, ACOE and Baltimore County.

Secondary impacts to water quality and wetlands caused by MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records. These Forest Buffers and associated protective covenants ride with the deed of the property in perpetuity.

Secondary impacts to forest habitat caused by MREC development would also be limited by Baltimore County's Forest Conservation Regulations. These regulations require a forest stand delineation to distinguish forest stands of higher ecological quality in order to direct proposed development activities away from those areas wherever possible. Additionally, a forest conservation worksheet (FCW) is required to determine any reforestation or afforestation requirements. The FCW is prorated to require less reforestation if forest disturbance is less than the break-even point on a forested property, and more reforestation for clearing beyond the reforestation threshold. The objective of the Forest Conservation Regulations is not just to protect and enhance forest cover in general, but to preserve large, existing forest corridors in perpetual protective easements similar to the easements required for stream and wetlands buffers.

23. Ms. Golden Waters, Eastern Avenue resident

She supports Alt. D. She is concerned about Alt. E and I-modified affecting a minority community, possibly located between Perril Island Road and Bowley's Quarters Road. These alternatives have the greatest socioeconomic and natural environment impacts, and costs.



SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. Alternate D-modified is the selected alternate, and it does not affect the minority community.

24. Ms. Sandra Magsman, Bird River Road resident

She is opposed F-1 mod, since it takes family homes.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. Alternate D-modified is the selected alternate.

25. Ms. Michele Vetter-Moker, Bird River Road resident;

She is speaking for her mother, who will be displaced by 4 of 5 alternates. Supports no-build.

SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties. The current mapping indicates that the house is listed as a displacement. A noise wall is being considered for the remaining residences.

26. Mr. John Reames, Bird River Road resident:

He supports the no-build. He questions the historic designation process for houses.

SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties. Houses over 50 years old are evaluated for historic designation.

27. Mr. Raymond Glock, Korean War Veterans Association

He requests that the highway be named in memory of the Korean War Veterans.

505

SHA Response:

All public comments, written or verbal, are carefully considered and where applicable, responses provided. Elected officials should be approached about naming the highway.

28. Mr. Joseph Moxham, Bird River Road resident

He questions how close the highway will come to his house, and his septic field. He also is concerned about noise.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. During final design of the project a more detailed property survey will be conducted. When final right-of-way limits are determined, plats will be prepared and SHA Real Estate personnel will begin the appraisal process, and then contact property owners to begin negotiations. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties.

Current mapping shows an outbuilding being taken, with the cut/fill line 100 feet from the house. The house is not shown as being taken. A noise barrier is recommended for consideration for the north side of Alternative D-mod, for White Marsh Estates.

29. Mr. Ed Schmidt, Rowe Farm Lane resident.

He opposes F-1 mod, and recommends I-mod or E.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. Alternate D-modified is the selected alternate. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all interested parties.

30. Mr. Charles Kennedy, Rowe Farm Lane resident

He is opposed to F-1 mod.

SHA Response:

All public comments, written or verbal, including alignment suggestions are carefully considered and where applicable, responses provided. Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. Alternate D-modified is the selected alternate.

31. Ms. Joyce Schmidt, Rowe Farm Lane resident


She is opposed to F-1 mod, not happy with D or E, but would not mind I-mod.

SHA Response:

Public participation is an integral part of the planning process and is also mandated by the National Environmental Policy Act (NEPA). Public comments play an important role in the selection of an alternate and help make government agencies such as SHA responsive to citizen concerns. Alternate D-modified is the selected alternate. The decision to select Alt. D-mod reflects an attempt to balance environmental concerns and concerns of all.

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination

E. Agency Coordination Letters for Preparation of Final EIS/Section 4f Evaluation



**Maryland Department of Transportation  
 State Highway Administration**

199903426

December 7, 1999

*ER/AEB*

*SHA*

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

RE: Project No. BA847A11  
 MRECAS Proposed Wetland  
 Mitigation Sites  
 Baltimore County, MD  
 USOS Middle River Quad

Mr. J. Rodney Little  
 State Historic Preservation Officer  
 Maryland Historical Trust  
 100 Community Place  
 Crownsville, MD 21032-2023

Dear Mr. Little:

**Introduction and Project Description**  
 As part of the Middle River Employment Center Access Study the Maryland State Highway Administration (SHA) proposes three potential sites for wetland mitigation. (Attachment I: Location Mapping)

**Funding**  
 Federal funds are anticipated for this project.

**Area of Potential Effect**  
 The area of potential effect (APE) for this project consists of the parcels themselves and any historic properties from which they are visible as indicated on the attached SHA-GIS quadrangle maps for the Middle River quad. (Attachment II)

**Identification Methods and Results**  
 Potentially significant architectural and archeological resources were both researched as part of the historic investigation instigated by the proposed wetland mitigation sites.

**Architecture:** SHA architectural historian Heather Confer consulted the SHA-GIS quadrangle mapping and the Survey Report: Evaluation and Historic Documentation for the MD 43 Planning Study by Tracerics.

*Middle River Quad*  
*theo: gpc BC 12/29/99*  
*Ph. I survey warrants of all 3 parcels*

*13 1/2 100*

DEC 9

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  
 Street Address: 707 North Calvert Street • Baltimore, Maryland 21292

Mr. J. Rodney Little  
 USOS Middle River Quad  
 Page Two

The APE for this project is restricted to the parcels and any properties from which they are visible. There are no historic properties within the APE. According to the report prepared by Tracerics and the SHA-GIS quad map for Middle River, there are no historic properties in the parcels indicated as 1 and 2 on the mapping. There are no inventoried properties near Parcel 1 while the National Register eligible Old Chase School (BA-1852) and Ebenezer Methodist Church are shown in the vicinity of Parcel 2. Both of these eligible properties are removed from the project area by at least 2,000 feet, are screened by mature trees, and are not within the APE. Other inventoried properties, previously determined not eligible, exist in the vicinity of Parcel 2 but are also not within the APE. Parcel 3 is not located within the previous study area but no inventoried properties are located within the APE for Parcel 3 as shown on the SHA-GIS quad map.

Based on the nature of the work and on the fact that there are no historic properties within the APE, SHA asserts that no historic standing structures will be affected by the proposed wetland mitigation.

**Archeology:** SHA archeologist Richard Ervin assessed the potential of the project area through consultation of historic mapping and previous studies.

- Parcel 424 (# 3 on mapping)  
 This site is located at Holly Neck on Brown's Creek, a tidal bay along the Chesapeake. Elevation ranges from 0 to 7 m (0 to 20 feet) above sea level. Prehistoric site 18BA76 (possibly dating to the Archaic period) has been recorded within the proposed wetland mitigation site. Several other sites have been recorded in the immediate vicinity, including prehistoric sites 18BA75 and 18BA77, and historic period site 18BA78. Stearns also recorded five sites near Holly Beach, about 200 m northeast of the proposed wetland site. These unconfirmed sites are designated Middle River Quad File Numbers 4 through 8.

Soils are mapped as moderately well drained Mettspex silt loam (2-5% slopes), somewhat poorly drained Barclay silt loam, and Tidal Marsh. Archeological sites have been found in association with Mettspex soils in the region.

Nineteenth century US Coast and Geodesic Survey maps dated 1849, 1859, and 1877 show that the present road system was present by the mid 19<sup>th</sup> century. A structure shown on all three maps is probably located in present tax parcel 423, adjacent to the northwest corner of the proposed wetland site. What may be the same structure is designated "F. Uhler" on Sidney and Browne's (1850) Map of Baltimore County, and "O. Vollmer" on the Hopkins (1877) Atlas. The USOS (1901) Gunpowder quadrangle shows four structures in the project vicinity.

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Middle River Employment Center Access Study  
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Section VI. Comments and Coordination

Mr. J. Rodney Little  
USGS Middle River Quad  
Page Three

Based on the above information, significant archeological resources are considered likely to be present within Parcel 424, and Phase I archeological survey is warranted.

\* Parcels 132 and 133 (#2 on mapping)

This site is located on an upland about 200 m south of the estuarine waters of Bird River. Elevations range from 10 to 30 m (30 to 100 feet) above sea level, and the USGS (1985) Middle River quad indicates that part of the property has been quarried. A hilltop is located at the west end of the property, and a first order stream flows just outside the eastern boundary of the property. The intervening area is a relatively gentle slope. No archeological sites have previously been recorded within the proposed project area, although sites have been recorded in similar settings in the surrounding region.

Soils are mapped as well drained Joppa gravelly sandy loam, Loamy and Clayey land, somewhat poorly drained Lenoir silt loam (5-12% slopes), well drained Matapeake silt loam (5-12% slopes), well drained Sassafras-Urban land complex (0-5% slopes), and sand and gravel pits. Archeological sites have been found in association with Matapeake and Sassafras soils in the region.

Sidney and Browne's (1850) Map of Baltimore County and Hopkins (1877) Baltimore County Atlas show several structures in the project vicinity.

Based on the above information, significant archeological resources may be present in the proposed project area, and Phase I archeological survey of undisturbed parts of the proposed wetland site is recommended.

\* Parcels 220, 221, 741, and 630 (#1 on mapping)

This site is located on a well-drained, level upland between two tributaries of Windless Run. Elevation ranges from 15 to 33 m (50 to 110 feet) above sea level. Part of the area is cultivated. Fiedel (1998) surveyed the portion of the property crossed by Alternate F-1 with negative results. However, the field crew received reports that prehistoric artifacts had been found in cultivated fields in or near the proposed wetland site.

Soils are mapped as somewhat excessively drained Galestown loamy sand (0-5% slopes), Loamy and Clayey land (0-5% slopes), moderately well drained Woodstown sandy loam (2-5% slopes), and well-drained Sassafras sandy loam (2-10% slopes). Archeological sites have been found in association with Sassafras and Woodstown soils in the region.

Mr. J. Rodney Little  
USGS Middle River Quad  
Page Four

Sidney and Browne's (1850) Map of Baltimore County, Hopkins (1877) Baltimore County Atlas, and the USGS (1901) Gunpowder quadrangle show multiple structures in or near the project area.

Based on the above information, significant archeological resources may be present at this proposed wetland location. Phase I archeological survey is warranted.

Review Request

Please consult the attached mapping and review the determination generated by the Maryland State Highway Administration for this project. We request your concurrence by January 5 that this project will have no impacts on historic standing structures. Further coordination will follow after Phase I archeology has been completed. By carbon copy we invite the Baltimore County Historical Society and the Baltimore County Historical Trust, Inc., the previously identified consulting parties, to provide comments and consult in the Section 106 review process for this project. Please call Ms. Heather Confer at 410-545-8560 with questions regarding standing structures for this project. Concerns regarding archeology should be directed to Mr. Richard Ervin at 410-545-2878.

Very truly yours,

Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: B. M. Grey  
Bruce M. Grey  
Deputy Division Chief  
Project Planning Division

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

Mr. J. Rodney Little  
USGS Middle River Quad  
Page Five

CONCURRENCE:

*Erin J. Cole*  
State Historic Preservation Officer

Date 1/4/2000

Attachment I: Location Mapping  
Attachment II: Middle River Quad Mapping

BMG:HMC:lc

cc: Ms. Heather Confer  
Mr. Bruce M. Grey  
Ms. Allison Grooms  
Dr. Charles Hall (w/attachments)  
Ms. Judith Kremen, Baltimore County Historical Trust Inc. (w/attachments)  
Ms. Myra Ann Rutledge, Baltimore County Historical Society (w/attachments)



Maryland Department of Transportation  
State Highway Administration

January 7, 2000

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

Elder Ghigiarelli  
Nontidal Wetlands and Waterways Division  
Maryland Department of the Environment  
2500 Broening Highway  
Baltimore Maryland 21224

Attention: Robert P. Cooper, Environmental Specialist

Dear Mr. Ghigiarelli:

Thank you for your letter dated September 2, 1999 regarding the Middle River Employment Center Access Study (MRECS) Draft Environmental Impact Statement (DEIS). We have attached your incoming letter with the responses to your comments, as they will appear in the FEIS.

In terms of our wetland mitigation work, a detailed Wetland Mitigation concept plan is contained in the SHA Selected Alternative & Mitigation Concurrence Package, which discusses potential sites and SHA's conceptual proposal for each. I have attached a copy for your convenience. Additionally, agency field reviews have taken place since the distribution of the above mentioned package and a new site is being proposed. I am attaching minutes of the wetland mitigation meeting and a preview of the updated Wetland Mitigation discussion that will be included in the Preliminary Final Environmental Impact Statement (P-FEIS).

We anticipate that the attached responses address your comments and concerns and look forward to your concurrence on the SHA Selected Alternative and Mitigation Package. Please do not hesitate to contact the Project Manager, Heather Murphy or the Environmental Manager, Allison Grooms, if you need any additional information or have any questions. They can be reached at (410) 545-8571 and (410) 545-8568 respectively.

Very truly yours,

*Cynthia D. Simpson*  
Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

Attachments

cc: all with Incoming

Trevor Clark, USFWS  
Ray Dintaman, DNR  
Larry Duket, OP  
Mary Huie, FHWA  
J. Rodney Little, MHT  
Denise Rigney, EPA  
Paul Wetlaufer, ACOE  
Cynthia Wilkerson, NPS

Danella Bernard, SHA Bridge Design Division  
Bill Buetner, SHA Envir. Programs Division  
Allison Grooms, SHA Environmental Planning  
Joe Kresslein, SHA Environmental Planning  
Mike Lynch, SHA Highway Hydraulics  
Dava Manly, Century Engineering  
Bob Riley, SHA Highway Design Division  
Tom Vidmar, Baltimore Co. DEPREM

My telephone number is \_\_\_\_\_

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

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*

SEP03'99 -- 2:04 ppe

**MDE**  
**MARYLAND DEPARTMENT OF THE ENVIRONMENT**  
 2500 Broening Highway • Baltimore Maryland 21224  
 (410) 631-3000 • 1-800-633-6101 • http://www.mde.state.md.us

**arris N. Glendening**  
 Governor

Maryland Department of the Environment  
 Water Management Administration  
 Nontidal Wetlands and Waterways Division  
 2500 Broening Highway  
 Baltimore, MD 21224  
 (410) 631-4094

**Jane T. Nishida**  
 Secretary

September 2, 1999

Maryland Department of Transportation  
 State Highway Administration  
 Attn: Ms. Heather Murphy, Project Planning Division  
 707 North Calvert Street  
 Baltimore, Maryland 21202

Re: SHA Project BA847A11 – Middle River Employment  
 Center Access Study, Baltimore County

Dear Ms. Murphy:

The Wetlands and Waterways Program of the Water Management Administration has reviewed the "Draft Environmental Impact Statement" (DEIS) for the referenced project. As a result of this review, significant concerns over the direct and indirect impacts to regulated resources have been identified. At this time, we do not have adequate information to concur with the recommended alternative, identified as "Alternative D-Modified", as presented during the July 21, 1999 Interagency Project Review meeting. In addition, a few inaccuracies in the DEIS should be corrected. It should also be noted that the signed DEIS document was not received by the Wetlands and Waterways Program until after the July 21, 1999 meeting, therefore making it impossible to provide comments by the due date of July 16, 1999 listed in document.

The DEIS identifies six "build" alternatives all of which would have direct adverse impact to nontidal wetlands, wetland buffers, waterways and 100-year floodplains. The direct impacts range from 6.4 to 9.6 acres of wetlands, 390 to 585 linear feet of stream channel loss and 1.4 to 1.5 acres of floodplain encroachment. The DEIS also discusses the potential for indirect adverse impacts due to the cumulative effects of the highway construction and development of the employment center. The potential additional environmental impacts, as identified in the DEIS, include:

- Additional loss of wetlands for access to development parcels in the study area (p. IV-110).
- "Wide fluctuations in stream volumes and velocity" resulting from "higher runoff rates and lower groundwater recharges" and the resultant degradation of the stream beds, banks and

habitat value (p. IV-11).

- Post-construction impacts to wetland functions and values including "loss of wetland flora, fauna, and habitat from sediment and pollution depohion or hydrology changes" (p. IV-22).
- Forest loss due to highway construction (38.3 to 59.5 acres) secondary access roads (1.0 to 15.0 acres) and from development of the employment center (approximately 440 acres) (p. IV-55 and IV-107).
- Degradation of habitats due to fragmentation, "contamination with pollutants and/or the introduction and/or the introduction of exotic species (p. IV-57).

The environmental impacts identified in the DEIS raise permitting concerns under the following regulatory criteria:

- COMAR 26.17.04.11B(5): "Proposed projects that eliminate or significantly and adversely affect aquatic or terrestrial habitat and their related flora and fauna are not in the public interest".
- COMAR 26.23.02.04A(3): "The Department may not issue a permit for a regulated activity unless the Department finds that the applicant has demonstrated that the regulated activity does not cause or contribute to a degradation of ground or surface waters".
- COMAR 26.23.02.05B(3)(e, h, & k): The Department shall consider avoidance and minimization of direct or indirect adverse impacts to nontidal wetlands including "hydrologic regime of the areas upstream and downstream of the area of impact", "subsurface water flow into or out of any nontidal wetland area", and "cumulative impact to nontidal wetlands".
- COMAR 26.23.02.06A(1)(a) & (2)(b): A regulated activity may not cause an individual or cumulative effect that degrades aquatic ecosystem diversity, productivity and stability or that degrades surface and ground water quality.

At the July 21, 1999 Interagency Project Review meeting, SHA identified "Alternative D-Modified" as the preferred alternative. At the meeting, a handout was provided outlining some basic considerations in SHA's recommendation. Please be aware that a detailed analysis of the selection process, and the factors cited in the handout should be provided for review. Once this is reviewed, and the permitting concerns outlined above are addressed, we can consider whether concurrence can be made or if additional comments are warranted.

The DEIS also contains a few inaccurate statements that should be corrected, in particular:

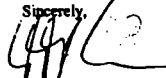
- P. III-36 incorrectly states that all nontidal streams in the study area are designated as Use I. Please be aware that Whitemarsh Run and all tributaries are Use IV waters. 14
- P. III-36 also states that "six surface streams drain portions of the study area". The study should note that there are several smaller tributary streams in addition to the six larger streams identified. 15
- P. III-37 states that at no point is Windlass Run wider than ten feet while P. III- 40 discusses a 15 foot wide study reach on Windlass Run. 16
- P. III-36 discusses the number of wetlands in each watershed. This should be clarified to indicate the number of wetlands studied within the watershed and not the total number of wetlands. 17
- P. IV-4 states that "the only road connections planned for the project" will be at the existing US 40/Md. 43 interchange and at Md. 150. How will new development be served without additional road connections? 18

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- P. IV-108 incorrectly states that MDE has delegated authority to Baltimore County for regulation of development in floodplains.

Thank you for providing the opportunity to comment of the DEIS for this project. If you have any questions regarding this letter, please call me at the above number.

Sincerely,



Robert P. Cooper  
Environmental Specialist  
Nontidal Wetlands and Waterways Division

Cc: Elder Ghigiarelli, Jr.

MDE letter dated September 2, 1999

1. SHA's consultant hand delivered five DEIS documents to the Wetlands and Waterways Program on May 14, 1999. Unfortunately, appropriate MDE staff did not receive the documents in a timely manner. In the future, SHA will deliver documents return/receipt or if hand delivered with recipients signature required to ensure that they are provided to your offices or staff in a timely manner.
2. To address the COMAR regulations cited in your letter dated September 2, 1999 we are providing the following information. While acknowledging that the proposed build alternates will result in some adverse effects to aquatic and terrestrial habitats, we believe that commitments made in the DEIS and to be reiterated in the FEIS to avoid, minimize and mitigate these effects will help preserve the quality of the most sensitive habitats in the study area. Page IV-50 of the DEIS states that "The loss of aquatic habitat resulting from permanent discharges will be compensated with compensatory wetland mitigation and the establishment of natural bottoms in culverts".

Page IV-53 of the DEIS goes on to describe the Wetland Mitigation site search process that is currently under way in accordance with the guidelines contained in the Maryland Compensatory Mitigation Guidance, August 1994. The conceptual mitigation proposal utilizes Sites 6 and 21 which have been agreed upon by the U.S Army Corps of Engineers and the Maryland Department of the Environment's (MDE) mitigation section representative as indicated in the minutes of the Potential Wetland Mitigation Site field review. It is SHA's goal to mitigate the permanently impacted wetlands by a factor of 2:1 as described in the conclusion of the attached minutes.

Page IV-28 of the DEIS discusses the crossing of Windlass Run and Whitemarsh Run. As recommended by agency representatives, SHA proposes to span each of the major stream crossings with a 100-foot simple span bridge, minimizing impacts to these streams. The type and final length will be determined during final design. For the remaining smaller stream crossings, SHA proposes to carry the "water's" through depressed culverts allowing for the deposition of natural sediments in culvert bottoms, thereby providing for the creation of benthic habitat.

Page VI-57 of the DEIS states "The associated loss of terrestrial wildlife caused by the alternatives may be mitigated by the enhancement of wildlife habitat through reforestation and wetland mitigation, including the use of vegetation that has high food value for wildlife or that will provide effective cover. Vegetation with high food value includes mast-producing trees as well as seed or berry-producing shrubs". With regard to wetland mitigation, Site 21 is proposed as a mosaic of forested wetlands and uplands, which will create both aquatic and terrestrial habitat and increase habitat diversity on the site.

Page IV-58 states that "the greatest potential impact to riparian areas would be new construction parallel to a stream or an impoundment of a stream." This type of impact has been avoided in the project planning process, thereby minimizing impacts to riparian areas as much as possible. The State and County each require maintaining a buffer along streams and wetlands of varying degrees as I'm sure you're aware. The requirements are intended to



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protect the riparian areas along the stream corridors.

As discussed on page IV-17 of the DEIS, "Adverse impacts to water quality during construction of the roadway or borrow pits will be minimized through strict adherence to the SHA erosion and sediment control procedures." The project will also include water quality management provisions subject to review and approval by MDE to mitigate any impacts as per their requirements and guidelines. No significant adverse impacts will be a requirement to obtain the permit. All borrow material will be obtained from MDE approved sites.

Included in the construction contract documents will be all of the requirements contained in the 1994 Maryland Standards and Specifications for soil Erosion and Sediment Control. This includes the Standard Stabilization Note requiring all areas of exposed soil to be vegetatively or structurally stabilized within the time frames indicated. Other measures to minimize construction related impact include the requirements contained within the Best Management Practices (BMP's) for working in Nontidal Wetlands, Wetland Buffers, Waterways, and 100-year Floodplain. The BMP's will also be included in the construction contract documents.

A detailed discussion on minimization and avoidance of wetland and stream impacts proposed by the project including an evaluation of potential avoidance and minimization measures had been provided in the DEIS, starting on page IV-28. The project will include both sediment and erosion control as well as stormwater management plans subject to review and approval by MDE. The hydrologic system upstream and downstream of the project will be maintained by the use of culverts and bridges. Any indirect impacts to the watershed, such as future development, will also be required to meet the local Stormwater Management Regulations.

As discussed on page IV-107 in the secondary and cumulative effects analysis portion of the DEIS, "Secondary (and cumulative) impacts to water quality and wetlands caused by the MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP areas. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called forest buffers) are required on plats along with protective covenants in Baltimore County Land Records. These forest buffers and associated protective covenants ride with the deed of the property in perpetuity".


3. Since the July 21, 1999 Interagency Project Review Meeting the "SHA Selected Alternative & Mitigation Concurrence Package" dated October 7, 1999 was distributed. It contains the detailed analysis supporting the selection process and provides the necessary information to concur on the selected alternative. Please note that the SHA Selected Alternative does not impact the Chesapeake Bay Critical Area. Also, the impacts proposed by the DEIS have been further minimized as requested during the September 15, 1999 Interagency Review

Meeting by reducing the width of the median to 24' in areas of impact and reducing the outside graded area on the right by 10' as well.

4. This has been corrected on pg. III-36.
5. This has been corrected.
6. This has been changed to "no wider than fifteen feet" on pg. III-38.
7. This has been changed on pg. III-58 to "Of the number of wetlands studied, there are fourteen wetlands in Whitemarsh Run watershed...".
8. This has been addressed in the Secondary and Cumulative Effects discussion beginning on page IV-107. The sentence was misleading and has been changed to read, "Indeed, the only road connections planned for the project will be existing US 40/MD 43 interchange, MD 150 and two to three access points into the proposed employment center.
9. Agreed, the last two sentences on page IV-116 are misleading and will be eliminated.

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DEC 28 '99 02:35PM U.S. ARMY CORPS P.2



**Maryland Department of Transportation  
State Highway Administration**

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

December 1, 1999


Paul Wetlaufer  
 Transportation Program Manager  
 U.S. Army Corps of Engineers  
 Baltimore District (CENB-OP-R)  
 PO Box 1715  
 10 S. Howard Street  
 Baltimore, MD 21203

Re: Project No.: BA847A11  
 Middle River Employment  
 Center Access Study  
 Baltimore County, MD


Dear Mr. Wetlaufer:

Attached please find the Meeting Minutes on the mitigation proposal for the Middle River Employment Center Access Study. The Maryland State Highway Administration (SHA) seeks your concurrence on the signature line below indicating your agreement with the attached minutes.

Please provide us with your concurrence by December 30, addressed to the attention of Mr. Bill Buettner in the Environmental Programs Division. If you have any questions, feel free to contact Mr. Buettner at 410-545-8582.

Very truly yours,  
  
 Susan M. Jacobs, Chief  
 Environmental Programs Division

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

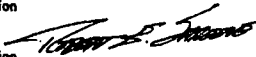


**Maryland Department of Transportation  
State Highway Administration**

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

MEMORANDUM

TO: Susan M. Jacobs, Chief  
 Environmental Programs Division

THROUGH: Rob Shreeve, Team Leader  
 Environmental Programs Division 

FROM: Bill Buettner  
 Environmental Programs Division

DATE: November 30, 1999

SUBJECT: Contract No.: BA847A11  
 Description: MRECAS Wetland Mitigation

RE: Minutes of Meeting

This letter summarizes the discussions between representatives of the Army Corps of Engineers (ACOE), Maryland Department of the Environment (MDE), and the State Highway Administration's Environmental Programs Division (EPD) on November 16, 1999 at a 10:00 am office meeting. The purpose of the meeting was to present the SHA's proposed approach to satisfying wetland mitigation requirements for the MRECAS project. In attendance at this meeting were:

Paul Wetlaufer	ACOE-Transportation Coordinator
George Beston	MDE-NTW&W, Mitigation Section
Joe Hamilton	MDE-NTW&W, Mitigation Section
Rob Shreeve	SHA-EPD
Bill Buettner	SHA-EPD
Joe Berg	Biohabitats, Inc.

Discussion

The context for the meeting was to gain Corps and MDE consensus on the SHA mitigation approach to be included in the EIS for the MRECAS project. The SHA approach included using two specific sites to provide the estimated 16.6 ac of wetland mitigation required to offset the approximately 8.3 ac of unavoidable forested and emergent wetland impact associated with this project.

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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Minutes of Meeting  
 November 30, 1999  
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After an introductory review of the mitigation site selection efforts undertaken to date, SHA presented the concept mitigation approach for Site 21, the University of Maryland Foundation site. The creation site and surrounding drainage area totals approximately 34 acres. Of this area, SHA proposes to create approximately 7.20 ac of forested wetland. Through a combination of wetland preservation (10:1 credit ratio), wetland enhancement (2:1 credit ratio), wetland restoration (1:1 credit ratio) and upland watershed preservation/afforestation (10:1 and 3:1 credit, respectively), SHA proposes an additional 5.55 ac. of mitigation credit. The total wetland mitigation credit from this site is estimated to be 12.75 ac. SHA believes that the owner representative of this site may be willing to make the site available. In addition, the current condition of the site (i.e., abandoned sand and gravel surface mine) lends itself to a variety of mitigation-related site improvements (e.g., habitat creation, water quality improvement through cessation of erosion, etc.). As a result, SHA will attempt to maximize the mitigation opportunities on this parcel.

The second site, the Holly Neck Road site (Site 6), consists of an area of approximately 28.5 ac. Of this, SHA proposes to create approximately 3.70 ac of wetland. Through preservation of existing onsite wetlands, SHA proposes an additional 2.75 ac. of mitigation credit. The total wetland mitigation credits from this site are estimated to be 6.50 ac. Additional mitigation credits may be available on this property, but SHA feels that the other areas of this site may be more difficult and costly to control for mitigation purposes. In addition, the current agricultural use may be the highest and best use of the remaining portion of the site not identified for wetland creation.

Conclusion

Together, the two sites included in SHA's mitigation approach (Site 21 and 6) are estimated to yield 19.25 ac. of wetland mitigation credit. This exceeds the estimated 16.6 ac. of mitigation required for the project. The combination of 7.20 ac. and 3.70 ac. of wetland creation in the Bird River and Middle River watersheds, respectively, is more than the 8.3 ac. of creation required to fulfill the no net loss of wetlands for the project. In short, the combination of the two sites provides sufficient credit to meet and exceed the projected impacts for the project.

This is an account of the events and discussions that took place on November 16, 1999. Please indicate your concurrence on the signature line below by December 30, indicating your agreement with the minutes as written. Should your understanding differ from those presented here or if you detect material omissions, please provide comments or contact Bill Buettner at 410-545-8582.

Cc: Attendees  
 Heather Murphy, SHA-OPPE  
 Allison Groomes, SHA-OPPE

DEC 20 '99 02:36PM U.S. ARMY CORPS P. 3

Mr. Paul Wetlaufer  
 Middle River Employment Center Access Study  
 Page Two

Please check one:

Concur (without comments) *Please circulate minutes to agencies.*

Concur (comments attached)

Do not concur (comments attached)

Paul H. Wetlaufer 12/17/99  
 U.S. Army Corps of Engineers Date

SMJ:WLB  
 Attachment

Cc: Ms. Heather Murphy, SHA-OPPE  
 Ms. Allison Groomes, SHA-OPPE

dl

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7/8/99	We concur that there is no prudent or feasible alternative to the proposed project, if project objectives are to be met. However we do not believe that all possible planning has been done to minimize harm to Section 4(f) resources. We recommend continued cooperation and coordination with the State Historic Preservation Officer in order to prepare the proposed Memorandum of Agreement (MOA) which should include measures to avoid and/or minimize harm to the Glenn L. Martin Airport Complex, the three archaeological sites (sites 18BA467, 18BA469, and 18BA470) and other historic properties which may be affected by the proposed project, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. A signed copy of the MOA should be included in the Final Section 4(f) Evaluation.	Section 4(f) Evaluation	DOI - FWS	We will continue to cooperate and coordinate with the State Historic Preservation Officer in order to prepare the MOA. The signed MOA will be included in the Final Section 4(f) Evaluation.
7/8/99	The U.S. Fish and Wildlife Service (FWS) advises that it would be beneficial to the review process if a map showing all eleven sampling sites (sites that were sampled for aquatic habitat, benthic macroinvertebrates, fish and herpetofauna, and water quality) was added to this document.	General	DOI - FWS	Sampling points were added to Fig. III-9.
7/8/99	The FWS advises that it prefers the selection of Alternative F1-Modified as the Final Build Alternative because it has fewer natural resource impacts. Alternatives D and D-Modified are not preferred alternatives because they will impact large amounts of wetland, floodplain, and forest. On the other hand, Alternatives E and I-Modified are not preferred because they will impact large amounts of floodplain, forest and Chesapeake Bay Critical Area Habitat.	Alignment Preferences	DOI - FWS	We acknowledge your preference of Alt. F-mod. We acknowledge Alt. D and D mod are not preferred by FWS, due to wetland, floodplain and forest impacts, and Alt. E and I-mod. are not preferred due to floodplain, forest and Critical Area impacts. SHA feels that alternative D-Modified will result in less overall natural environmental impacts once the access roads to the developable parcels are examined. Alternative F1-Modified will require the most additional road construction to access the developable parcels. Alternative F1-Modified could require over 10,000 feet of new roadway and the crossing of four wetland systems. See discussion in the DEIS on pages IV-107 through IV-110 for more details.

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7/16/99	P. IV-122 We suggest that this chapter include a summary or a reference to the summary of Secondary and Cumulative Effects Analysis completed for the project.	SCEA	OP	See Table IV-37: Comparison Summary of Potential Secondary and Cumulative Effects, on page IV-122.
7/16/99	C2 (p. II-8) We understand that implementation of these multi-modal options relies upon the extent of future employment development in the Middle River Employment Center. If a build alternative is selected, we recommend that along with highway improvements, policies be recommended to reduce the single occupant vehicle (SOV) travel resulting from planned employment development in the Center. In coordination with Baltimore County and the Baltimore Metropolitan Council, the Maryland Department of Transportation should monitor employment development in the Center and implement congestion mitigation strategies as demand for such options is warranted.	Multi-Modal and Congestion Mitigation Options for Further Study	OP	The implementation of an employer-based Transportation Demand Management program for the employers locating within the MREC area will be examined. Employers applying for a development permit within the MREC could be held responsible through the County development process for developing and implementing a transportation and flex time plan to reduce signal occupancy demand during the peak periods.
7/16/99	F. II-9 A bus/shuttle service connected to the MARC service seems to be the only strategy considered for the Bus option. Has the Metropolitan Transportation Administration evaluated bus connections to other activity centers? Without a study of alternative bus strategies, it does not seem adequate to recommend only a shuttle service to the MARC station for the Bus option.	Bus	OP	Extension of local bus service, adding commuter bus service and adding local circulator service will be planned for Alternative D-Modified to be coordinated with the opening of the roadway. We have coordinated this analysis with the Mass Transit Administration. In terms of local bus service they intend to extend the proposed Route 66 into the employment center, extend the Route 23 to meet with the Route 66 at the same location and have the Route 24 make a stop at that same location. In terms of the commuter bus service the MTA will investigate locating a park and ride lot near the intersection of US 40/MD 43 and extend the Route 120 to serve the lot. In terms of local circulator bus service they will examine the implementation of a local circulator bus service to transport people through the study area on the new road to locations such as the White Marsh Mall, Martin Airport, the Martin Airport MARC station, and the proposed employment center. Shuttle service from the Martin Airport MARC Station to the proposed employment center was included in the TMA discussion.

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Comments	Subject	EPA Response
7/16/99 P. II-37, Table II-4 The environmental impacts for each alternative shown in Table II-4 and Table S-1 (p. S-5) are different. Which table presents correct information?	Summary of impacts matrix	OP Table S-1 contains the latest information, while Table II-4 bases the impacts on a 150 ft bandwidth.
7/16/99 IV.B.3. We suggest the following revisions on page IV-7 (revisions are shown in <i>bold and italic</i> ; strikethrough indicates deletion:  "...will be substantially affected by local priority <del>avoiding</del> area designations. <del>These local jurisdictions must certify and PFA areas in</del> addition to those PFAs designated in the law (e.g.,...), counties can designate additional PFAs that meet the <i>Smart Growth Area Act's</i> criteria for density and public facilities."  "The MDAQ certified PFA for the study area coincides with..."	Land Use	OP Suggested changes were made.
7/16/99 P. IV-122, Table IV-37 The description on "Potential Secondary Effects" for "Forest" seems to be inaccurate. Based on the information provided on page IV-107, about 400 acres of forest (40% to 45% of the total forest in the Middle River Employment Center) could be lost.	SCEA	OP Table IV-37 is accurate. The SCEA boundary encompasses a larger area than the MREC boundary, therefore a loss of 400 acres of forest is only a 7% loss of forested area within the SCEA boundary.
7/16/99 This project is consistent with our plans, programs, and objectives.	General	MDE - Water Management Administration No response required.

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Comments	Subject	EPA Response
7/16/99 P. II-8 and II-9 Requiring Middle River Employment Center (MRECC) employers to develop and implement a Transportation Demand Management (TDM) plan would help to reduce additional traffic generated by the Center into the I-95 corridor in the White Marsh area. This is an already congested location where trip reductions would help lessen any negative air quality impacts caused by traffic to and from the proposed development. Shuttle service to the Martin Airport MARC station and enhanced bus service to MRECC are also desirable options.	TDM	MDE - Air and Radiation Management Administration The implementation of an employer-based Transportation Demand Management program for the employers locating within the MRECC area will be examined. Employers applying for a development permit within the MRECC could be held responsible through the County development process for developing and implementing a transportation demand management program to encourage carpooling, use of public transportation and flex time to reduce single occupancy demand during the peak periods.  Extension of local bus service, adding commuter bus service and adding local circulator service will be planned for Alternative D-Modified to be coordinated with the opening of the roadway. Shuttle service from the Martin Airport MARC Station to the proposed employment center could be included with the local circulator bus service, if demand warrants this service once development plans are finalized.
7/16/99 II.I.M. ...a summary of the Initial Site Assessment Results is provided and Table III-32 Hazardous Waste Site Ranking by Impact Potential lists site numbers, parcel numbers, and environmental concerns associated with the 54 sites of potential environmental concern. Although it may be possible to discern the locations of the 54 sites from other maps and diagrams within the document, it would be more useful if the sites could be located on a separate map or diagram and listed with site names and addresses. This information could assist the Waste Management Administration in locating these sites within our databases and perhaps providing additional information to the Maryland Department of Transportation regarding them. Since the exact location of the sites is difficult to determine, we can only offer general comments regarding the information provided.	Municipal and Industrial Waste Sites	MDE - Waste Management Administration The detailed study report was sent to MDE.

Middle River Employment Center Access Study  
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			BIA Response
7/16/99	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) listed sites MD-304, Martin State Airport, Box 1, 701 Wilson Point Road, Baltimore, MD 21220 and MD-310, Martin State Airport Site II (Air National Guard), Eastern Avenue and Wilson Point Road, Baltimore, MD 21220 are located within the study area. Contact the Environmental Restoration and Redevelopment Program at (410) 631-3437 for additional information.	CERCLA Sites	MDE - Waste Management Administration We will coordinate with the Environmental Restoration and Redevelopment Program.
7/16/99	Hazardous, solid, and oil wastes must be properly disposed at permitted facilities. Contact the Hazardous Waste Program at (410) 631-3343, the Solid Waste Program at (410) 631-3424, and the Oil Control Program at (410) 631-3442 for additional information.	Waste Disposal	MDE - Waste Management Administration We will coordinate with the Hazardous Waste Program, Solid Waste Program, and the Oil Control Program.
7/21/99	EPA remains concerned with the direct, cumulative and secondary impacts. The impacts of access roads and the development that will follow have the potential to cause significant environmental impacts.	Impacts	EPA Secondary (and cumulative) impacts to water quality and wetlands caused by MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP areas. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records.

Middle River Employment Center Access Study  
 Draft Environmental Impact Statement, May 1999

Comments and Response Matrix - October, 1999

			BIA Response
7/21/99	EPA urges Baltimore County to implement aggressive conservation practices when reviewing plans and processing permits for the MREC. EPA would be happy to assist Balto. County in the identification of sensitive resources that should be avoided. Preservation and conservation of these sensitive areas may lessen the overall impacts of the build out for this project.	Sensitive resources	EPA The State Highway Administration is not involved in permitting the land use, but will pass this concern and offer of help to Baltimore County.
8/2/99	COMAR 26.17.04.11B(5) "Proposed projects that eliminate or significantly and adversely affect aquatic or terrestrial habitat and their related flora and fauna are not in the public interest"	Aquatic and terrestrial habitat	MDE, Water Management As discussed on page IV-50, "The loss of aquatic habitat resulting from permanent discharges will be compensated with compensatory wetland mitigation and the establishment of natural bottoms in culverts". On page IV-52, the document goes on to say "Permanent impacts to wetland resources will be offset by compensatory mitigation. Encouraging the deposition of natural sediments in culvert bottoms, thereby creating benthic habitat will minimize impacts to aquatic resources. Research indicates that while highway construction destroys habitats within the construction corridor and increases the possibility of migratory animal mortality, it has little effect on the distribution or density of non-migratory animals within adjacent habitats (Michael, 1975). Furthermore, the change of vegetation types within the right-of-way (such as forest to grasses) may attract new species (e.g. American robin and woodchuck) to replace species lost by the destruction of the previous habitat. Other species, such as the whitetail deer and black rat snake, can benefit from the newly created "ecotone," or edge between the new habitat type and the adjacent existing habitat (Leedy and Adams, 1982). Within the MRECS that effect will be minimal due to the large amount of ecotones already existent there". On page VI-57, the document states "The associated loss of terrestrial wildlife caused by the alternatives may be mitigated by the enhancement of wildlife habitat through reforestation, including the use of vegetation that has high food value for wildlife or that will provide effective cover. Vegetation with high food value includes mast-producing trees as well as seed or berry-producing shrubs".

Middle River Employment Center Access Study  
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Comments and Response Matrix - October, 1999

Comment	Subject	Agency	SHA Response
9/2/99 COMAR 26.23.02.04A(3): "The Department may not issue a permit for a regulated activity unless the Department finds that the applicant has demonstrated that the regulated activity does not cause or contribute to the degradation of ground or surface water"	Water quality	MDE, Water Management	As discussed on page IV-17 of the document, "Adverse impacts to water quality during construction of the roadway or borrow pits will be minimized through strict adherence to the SHA erosion and sediment control procedures. All borrow material will be obtained from clean upland sites. All areas of exposed soil will be vegetatively or structurally stabilized as soon as practical". Other measures to minimize construction related impact include: <ul style="list-style-type: none"> <li>• Installing temporary stream closures where necessary.</li> <li>• Minimizing equipment operation within the stream channels</li> <li>• Constructing temporary in-stream measures (Coffer dams, stream crossings) with clean materials.</li> <li>• Locating equipment fueling and service staging areas away from aquatic resources.</li> <li>• Constructing culvert extensions or new structures at stream crossings in such a manner as to promote continued easy fish migration and/or avoid any additional impact within stream channels.</li> </ul>
9/2/99 COMAR 26.23.02.05B(3)(c), (d), (k): "The Department shall consider avoidance and minimization of direct or indirect adverse impacts to non-tidal wetlands including "hydrologic regime of the areas upstream and downstream of the area of impact", "subsurface water flow into or out of any non-tidal wetland area", and Cumulative impact to non-tidal wetlands"	Wetlands	MDE, Water Management	A detailed discussion on mitigation of impacts to non-tidal wetlands, including an extensive evaluation of avoidance and minimization, is provided in the document, starting on page IV-28.

Middle River Employment Center Access Study  
 Draft Environmental Impact Statement, May 1999

Comments and Response Matrix - October, 1999

Comment	Subject	Agency	SHA Response
9/2/99 COMAR 26.23.02.06A(1)(a) & (2)(b): "A regulated activity may not cause an individual or cumulative effect that degrades aquatic ecosystem diversity, productivity, and stability or that degrades surface and groundwater quality."	Cumulative effects	MDE, Water Management	As discussed on page IV-107, "Secondary (and cumulative) impacts to water quality and wetlands caused by MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP areas. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records. These Forest Buffers and associated protective covenants ride with the deed of the property in perpetuity". The document goes on to say on page IV-112, Secondary impacts to water quality and wetlands caused by MREC development will be substantially limited by Baltimore County's Regulations for the Protection of Water Quality, Streams, Wetlands, and Floodplains. No wetlands fill for buildings or stormwater management (SWM) facilities is permitted under these regulations. Furthermore, the properties to be developed in the MREC do not enjoy the grandfathering rights which could lead to permit application to fill wetlands for lot development as is the case in portions of the Middle River and Back River SAMP areas. Moreover, no disturbance of wetlands, wetland buffers, stream buffers, or protected forest for road utilities, and SWM can occur unless an alternatives analysis clearly demonstrates that impacts could not be avoided, have been minimized as much as possible, and can be adequately mitigated. Finally, stream and wetland buffers (called Forest Buffers) are required on plats along with protective covenants in Baltimore County Land Records. These Forest Buffers and associated protective covenants ride with the deed of the property in perpetuity".

Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination

Ms. Denise Rigney  
 Middle River Employment Center Access Study  
 Page Two

Please check one:

- Concur (without comments)
- Concur (comments attached)
- Do not concur (comments attached)

*[Signature]* 10/22/99  
 US Environmental Protection Agency Region III Date

CDS:AEG  
 Attachment

- Ms. Allison Grooms
- Ms. Mary Huie
- Mr. Joseph Kresslein
- Mr. Dave Manly
- Ms. Heather Murphy
- Ms. Gay Olsen
- Mr. Robert Sanders
- Ms. Cynthia D. Simpson
- Ms. Jane Wagner

*Attn: Heather Murphy*

Middle River Employment Center Access Study  
 Draft Environmental Impact Statement, May 1999  
 Comments and Response Matrix - October, 1999

Comment ID	Comment	Response
92299	P. 11-36 incorrectly states that all road systems in the study were set to the I, Whitehurst Run & etc.	Use Class MDE, Water Management Corrected on pg. 11-36
92299	P. 11-36 also states that "the surface stream drain portions of the area". The study should state that there are several smaller tributary streams in addition to the main tributary streams.	Stream & Wetlands MDE, Water Management Corrected on pg. 11-36
92299	P. 11-37 states that a 400-foot wide road is 15 ft wider than 10 feet, while p. 11-40 discusses a 15 ft wide road reach.	Wetlands MDE, Water Management Changed to "no wider than fifteen feet" on pg. 11-38
92299	P. 11-56 discusses the number of wetlands per watershed. This should be changed to include the total number of wetlands.	Wetlands MDE, Water Management Changed on pg. 11-56 "of the number of wetlands studied, there are fourteen wetlands in Whitehurst Run watershed."
92299	P. 11-74 states that "the only road connections planned for the project will be an existing US 40/MD 43 interchange and an MD 156. There will be no new development to serve without additional road connections."	Road MDE, Water Management See the discussion in the SCEA, pg. IV-107. The sentence was misleading. The sentence now reads, "Indeed, the only road connections planned for the project will be existing US 40/MD 43 interchange, MD 156 and two to three access points into the proposed employment center."
92299	P. IV-108 incorrectly states that MDE has delegated authority to Baltimore County for regulation of development in floodplains.	Floodplains MDE, Water Management The last two sentences on page IV-116 are misleading and will be eliminated.



*Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination*

*KLISON*

**BALTIMORE COUNTY HISTORICAL TRUST inc.**

Complaint Department  
 707 North Calvert Street  
 Baltimore, MD 21203-0717  
 (410) 321-1812

January 3, 2000

Ms Cynthia D. Simpson, Deputy Director  
 Office of Planning and Preliminary Engineering  
 State Highway Administration  
 P. O. Box 717  
 Baltimore, Md. 21203-0717


Re: Project No. BA847A11

Dear Ms Simpson,

The Baltimore County Historical Trust, Inc. reviewed the information sent last month regarding wetlands mitigation and concur that historic structures will not be affected. We agree that a Phase I archaeology survey is warranted based on the evidence found thus far and because the area has not been fully surveyed in the past.

Sincerely,  
*Judith S. Kremen*  
 Judith S. Kremen  
 Executive Director

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


**Maryland Department of Transportation  
 State Highway Administration**

DECORATED BY: [unclear] (RPE)

**MEMORANDUM**

**TO:** Susan M. Jacobs, Chief  
 Environmental Programs Division

**THROUGH:** Rob Shreeve, Team Leader  
 Environmental Programs Division *[Signature]*

**FROM:** Bill Buettner  
 Environmental Programs Division

**DATE:** November 30, 1999

**SUBJECT:** Contract No.: BA847A11  
 Description: MRECAS Wetland Mitigation

**RE:** Minutes of Meeting

This letter summarizes the discussions between representatives of the Army Corps of Engineers (ACOE), Maryland Department of the Environment (MDE), and the State Highway Administration's Environmental Programs Division (EPD) on November 16, 1999 at a 10:00 am office meeting. The purpose of the meeting was to present the SHA's proposed approach to satisfying wetland mitigation requirements for the MRECAS project. In attendance at this meeting were:

Paul Weilauffer	ACOE-Transportation Coordinator
George Beston	MDE-NTW&W, Mitigation Section
Joe Hamilton	MDE-NTW&W, Mitigation Section
Rob Shreeve	SHA-EPD
Bill Buettner	SHA-EPD
Joe Berg	Biohabitats, Inc.

Discussion

The context for the meeting was to gain Corps and MDE consensus on the SHA mitigation approach to be included in the EIS for the MRECAS project. The SHA approach included using two specific sites to provide the estimated 16.6 ac of wetland mitigation required to offset the approximately 8.3 ac of unavoidable forested and emergent wetland impact associated with this project.

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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Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination

Minutes of Meeting  
November 30, 1999  
Page 2 of 2

After an introductory review of the mitigation site selection efforts undertaken to date, SHA presented the concept mitigation approach for Site 21, the University of Maryland Foundation site. The creation site and surrounding drainage area totals approximately 54 acres. Of this area, SHA proposes to create approximately 7.20 ac of forested wetland. Through a combination of wetland preservation (10:1 credit ratio), wetland enhancement (2:1 credit ratio), wetland restoration (1:1 credit ratio) and upland watershed preservation/afforestation (10:1 and 5:1 credit, respectively), SHA proposes an additional 5.55 ac. of mitigation credit. The total wetland mitigation credit from this site is estimated to be 12.75 ac. SHA believes that the owner representative of this site may be willing to make the site available. In addition, the current condition of the site (i.e., abandoned sand and gravel surface mine) lends itself to a variety of mitigation-related site improvements (e.g., habitat creation, water quality improvement through cessation of erosion, etc.). As a result, SHA will attempt to maximize the mitigation opportunities on this parcel.

The second site, the Holly Neck Road site (Site 6), consists of an area of approximately 28.5 ac. Of this, SHA proposes to create approximately 3.70 ac of wetland. Through preservation of existing onsite wetlands, SHA proposes an additional 2.75 ac. of mitigation credit. The total wetland mitigation credits from this site are estimated to be 6.50 ac. Additional mitigation credits may be available on this property, but SHA feels that the other areas of this site may be more difficult and costly to control for mitigation purposes. In addition, the current agricultural use may be the highest and best use of the remaining portion of the site not identified for wetland creation.

Conclusion

Together, the two sites included in SHA's mitigation approach (Site 21 and 6) are estimated to yield 19.25 ac. of wetland mitigation credit. This exceeds the estimated 16.6 ac. of mitigation required for the project. The combination of 7.20 ac. and 3.70 ac. of wetland creation in the Bird River and Middle River watersheds, respectively, is more than the 8.3 ac. of creation required to fulfill the no net loss of wetlands for the project. In short, the combination of the two sites provides sufficient credit to meet and exceed the projected impacts for the project.

This is an account of the events and discussions that took place on November 16, 1999. Please indicate your concurrence on the signature line below by December 30, indicating your agreement with the minutes as written. Should your understanding differ from those presented here or if you detect material omissions, please provide comments or contact Bill Buettner at 410-545-8582.

Cc: Attendees  
Heather Murphy, SHA-OPPE  
✓ Allison Grooms, SHA-OPPE



Maryland Department of Transportation  
State Highway Administration

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

December 1, 1999

Paul Wetlaufer  
Transportation Program Manager  
U.S. Army Corps of Engineers  
Baltimore District (CENB-OP-R)  
PO Box 1715  
10 S. Howard Street  
Baltimore, MD 21203

Re: Project No.: BAB47A11  
Middle River Employment  
Center Access Study  
Baltimore County, MD

Dear Mr. Wetlaufer:

Attached please find the Meeting Minutes on the mitigation proposal for the Middle River Employment Center Access Study. The Maryland State Highway Administration (SHA) seeks your concurrence on the signature line below indicating your agreement with the attached minutes.

Please provide us with your concurrence by December 30, addressed to the attention of Mr. Bill Buettner in the Environmental Programs Division. If you have any questions, feel free to contact Mr. Buettner at 410-545-8582.

Very truly yours,

Susan M. Jacobs, Chief  
Environmental Programs Division

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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*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*

R. W. S. E. N  
11/11/Jan 12/13/99 202 SEP03'99 PM 2:04 CPPE

**MDE** MARYLAND DEPARTMENT OF THE ENVIRONMENT  
2500 Broening Highway • Baltimore Maryland 21224  
(410) 631-3000 • 1-800-633-6101 • http://www.mde.state.md.us

Harry N. Glendening Governor  
Maryland Department of the Environment Water Management Administration  
Nontidal Wetlands and Waterways Division  
2500 Broening Highway  
Baltimore, MD 21224  
(410) 631-4094  
Jane T. Nishida Secretary

- Bill Brubaker  
- Mark Whitson

September 2, 1999

Maryland Department of Transportation  
State Highway Administration  
Attn: Ms. Heather Murphy, Project Planning Division  
707 North Calvert Street  
Baltimore, Maryland 21202

Re: SHA Project BA847A11 - Middle River Employment  
Center Access Study; Baltimore County

Dear Ms. Murphy:

The Wetlands and Waterways Program of the Water Management Administration has reviewed the "Draft Environmental Impact Statement" (DEIS) for the referenced project. As a result of this review, significant concerns over the direct and indirect impacts to regulated resources have been identified. At this time, we do not have adequate information to concur with the recommended alternative, identified as "Alternative D-Modified", as presented during the July 21, 1999 Interagency Project Review meeting. In addition, a few inaccuracies in the DEIS should be corrected. It should also be noted that the signed DEIS document was not received by the Wetlands and Waterways Program until after the July 21, 1999 meeting, therefore making it impossible to provide comments by the due date of July 16, 1999 listed in document.

The DEIS identifies six "build" alternatives all of which would have direct adverse impact to nontidal wetlands, wetland buffers, waterways and 100-year floodplains. The direct impacts range from 6.4 to 9.6 acres of wetlands, 390 to 585 linear feet of stream channel loss and 1.4 to 1.5 acres of floodplain encroachment. The DEIS also discusses the potential for indirect adverse impacts due to the cumulative effects of the highway construction and development of the employment center. The potential additional environmental impacts, as identified in the DEIS, include:

- Additional loss of wetlands for access to development parcels in the study area (p. IV-110).
- "Wide fluctuations in stream volumes and velocity" resulting from "higher runoff rates and lower groundwater recharges" and the resultant degradation of the stream beds, banks and

- habitat value (p. IV-11).
- Post-construction impacts to wetland functions and values including "loss of wetland flora, fauna, and habitat from sediment and pollution deposition or hydrology changes" (p. IV-22).
- Forest loss due to highway construction (38.3 to 59.5 acres) secondary access roads (1.0 to 15.0 acres) and from development of the employment center (approximately 440 acres) (p. IV-55 and IV-107).
- Degradation of habitats due to fragmentation, "contamination with pollutants and/or the introduction and/or the introduction of exotic species (p. IV-57).

The environmental impacts identified in the DEIS raise permitting concerns under the following regulatory criteria:

- COMAR 26.17.04.11B(5): "Proposed projects that eliminate or significantly and adversely affect aquatic or terrestrial habitat and their related flora and fauna are not in the public interest".
- COMAR 26.23.02.04A(3): "The Department may not issue a permit for a regulated activity unless the Department finds that the applicant has demonstrated that the regulated activity does not cause or contribute to a degradation of ground or surface waters".
- COMAR 26.23.02.05B(3)(e, h, & k): The Department shall consider avoidance and minimization of direct or indirect adverse impacts to nontidal wetlands including "hydrologic regime of the areas upstream and downstream of the area of impact", "subsurface water flow into or out of any nontidal wetland area", and "cumulative impact to nontidal wetlands".
- COMAR 26.23.02.06A(1)(a) & (2)(b): A regulated activity may not cause an individual or cumulative effect that degrades aquatic ecosystem diversity, productivity and stability or that degrades surface and ground water quality.

At the July 21, 1999 Interagency Project Review meeting, SHA identified "Alternative D-Modified" as the preferred alternative. At the meeting, a handout was provided outlining some basic considerations in SHA's recommendation. Please be aware that a detailed analysis of the selection process, and the factors cited in the handout should be provided for review. Once this is reviewed, and the permitting concerns outlined above are addressed, we can consider whether concurrence can be made or if additional comments are warranted.

The DEIS also contains a few inaccurate statements that should be corrected, in particular:


- P. III-36 incorrectly states that all nontidal streams in the study area are designated as Use I. Please be aware that Whitemarsh Run and all tributaries are Use IV waters.
- P. III-36 also states that "six surface streams drain portions of the study area". The study should note that there are several smaller tributary streams in addition to the six larger streams identified.
- P. III-37 states that at no point is Windlass Run wider than ten feet while P. III-40 discusses a 15 foot wide study reach on Windlass Run.
- P. III-56 discusses the number of wetlands in each watershed. This should be clarified to indicate the number of wetlands studied within the watershed and not the total number of wetlands.
- P. IV-4 states that "the only road connections planned for the project" will be at the existing US 40/Md. 43 interchange and at Md. 150. How will new development be served without additional road connections?

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Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination

• P. IV-108 incorrectly states that MDE has delegated authority to Baltimore County for regulation of development in floodplains.

Thank you for providing the opportunity to comment on the DEIS for this project. If you have any questions regarding this letter, please call me at the above number.

Sincerely,  
  
 Robert P. Cooper  
 Environmental Specialist  
 Nontidal Wetlands and Waterways Division


Cc: Elder Ghigarello, Jr.

Middle River Employment Center Access Study  
 Draft Environmental Impact Statement, May 1999  
 Comments and Response Matrix - October, 1999

Comment	Response	Agency	Response
Darkhead Creek and Honeygo Run are not listed in the charts for wetland impacts. Why not?	Wetlands	SHA	Darkhead Creek and Honeygo Run wetlands are not being impacted.
Fig. IV-29: What is "bridge scenario #1" for the Windless Run crossing. We should probably leave "scenario #1" out.	Wetland minimization	SHA	
Fig IV-30. Rewording suggested.	Wetland minimization	SHA	Reworded.
IV-30. Cost seems high for a structure only 280 ft long. Should be approx. 3 million.	Cost	SHA	
This section discusses only Whitesnark Run and Windless Run. Other crossings?	Wetland minimization	SHA	
P. III-36 incorrectly states that all nontidal streams in the study area are Use I. Whitesnark Run & tribs are Use IV.	Use Class	MDE, Water Management	Corrected on pg. III-36.
P. III-36 also states that "six surface streams drain portions of the area". The study should state that there are several smaller tributary streams in addition to the six larger ones identified.	Streams #	MDE, Water Management	Corrected on pg. III-36.
P. III-37 states that at no point is Windless Run wider than 10 feet, while p. III-40 discusses a 15 ft wide study reach.	Windless width	MDE, Water Management	Changed to "no wider than fifteen feet" on pg. III-38.
P. III-36 discusses the number of wetlands per watershed. This should be clarified to indicate the number studied within the watershed and not the total number of wetlands.	Wetlands	MDE, Water Management	Changed on pg. III-38. "of the number of wetlands studied, there are fourteen wetlands in Whitesnark Run watershed..."
P. IV-4 states that "the only road connections planned for the project" will be at the existing US 40/MD 43 interchange and at MD 150. How will new development be served without additional road connections?	Road connections	MDE, Water Management	See the discussion in the SCEA, pg. IV-107. The sentence was misleading. The sentence now reads, "Indeed, the only road connections planned for the project will be existing US 40/MD 43 interchange, MD 150 and two to three access points into the proposed employment center."
P. IV-108 incorrectly states that MDE has delegated authority to Baltimore County for regulation of development in floodplains.	Floodplains	MDE, Water Management	The last two sentences on page IV-116 are misleading and will be eliminated.

3A

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination*



**Maryland Department of Transportation  
State Highway Administration**

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

**MEMORANDUM**

**TO:** Susan M. Jacobs, Chief  
Environmental Programs Division

**THROUGH:** Rob Shreeve, Team Leader  
Environmental Programs Division *[Signature]*

**FROM:** Bill Buettner  
Environmental Programs Division

**DATE:** November 30, 1999

**SUBJECT:** Contract No.: BA847A11  
Description: MRECAS Wetland Mitigation

**RE:** Minutes of Meeting

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Paul Wetlaufer	ACOE-Transportation Coordinator
George Beston	MDE-NTW&W, Mitigation Section
Joe Hamilton	MDE-NTW&W, Mitigation Section
Rob Shreeve	SHA-EPD
Bill Buettner	SHA-EPD
Joe Berg	Biohabitats, Inc.

Discussion

The context for the meeting was to gain Corps and MDE consensus on the SHA mitigation approach to be included in the EIS for the MRECAS project. The SHA approach included using two specific sites to provide the estimated 16.6 ac of wetland mitigation required to offset the approximately 8.3 ac of unavoidable forested and emergent wetland impact associated with this project.

My telephone number is \_\_\_\_\_

Maryland Relay Service - Impaired Hearing or Speech  
1-800-735-2255 Statewide Toll Free

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

Minutes of Meeting  
November 30, 1999  
Page 2 of 2

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The second site, the Holly Neck Road site (Site 6), consists of an area of approximately 28.5 ac. Of this, SHA proposes to create approximately 3.70 ac of wetland. Through preservation of existing onsite wetlands, SHA proposes an additional 2.75 ac. of mitigation credit. The total wetland mitigation credits from this site are estimated to be 6.50 ac. Additional mitigation credits may be available on this property, but SHA feels that the other areas of this site may be more difficult and costly to control for mitigation purposes. In addition, the current agricultural use may be the highest and best use of the remaining portion of the site not identified for wetland creation.

Conclusion

Together, the two sites included in SHA's mitigation approach (Site 21 and 6) are estimated to yield 19.25 ac. of wetland mitigation credit. This exceeds the estimated 16.6 ac. of mitigation required for the project. The combination of 7.20 ac. and 3.70 ac. of wetland creation in the Bird River and Middle River watersheds, respectively, is more than the 8.3 ac. of creation required to fulfill the no net loss of wetlands for the project. In short, the combination of the two sites provides sufficient credit to meet and exceed the projected impacts for the project.

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**Cc:** Attendees  
Heather Murphy, SHA-OPPE  
Allison Grooms, SHA-OPPE

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Mr. Paul Wetlaufer  
 Middle River Employment Center Access Study  
 Page Two

Please check one:

Concur (without comments) *Please circulate minutes to agencies.*

Concur (comments attached)

Do not concur (comments attached)

Paul R. Wetlaufer  
 U.S. Army Corps of Engineers

12/12/99  
 Date

SMJ:WLB  
 Attachment

Cc: Ms. Heather Murphy, SHA-OPPE  
 Ms. Allison Grooms, SHA-OPPE

**DRAFT**

IV. WETLAND MITIGATION

A. Introduction

The Alternate D-modified alignment involves the unavoidable impact to coastal plain forested and emergent wetlands within the watersheds of Bird River and Middle River. As a result, the SHA has conducted a site search, consistent with the guidelines of the Maryland Compensatory Mitigation Guidance (1994), to identify one or more sites sufficient to mitigate for the unavoidable wetland impact.

This information describes the efforts undertaken by the SHA to identify sites with the potential to be used for compensating for unavoidable wetland impacts associated with the MRECAS project. In addition, this information presents the results of the wetland mitigation site identification and selection study for the MRECAS project. Finally, this description provides information on the consensus reached with the Corps of Engineers of Engineers and Maryland Department of the Environment on the selected mitigation approach.

The technical approach used to identify sites with the greatest potential to provide opportunities for wetland creation consisted of the following:

- objectively identify the universe of potential forested wetland mitigation sites in the project area, the Bird River watershed and the Middle River watershed;
- score and rank this list of potential mitigation sites and select a number of the highest ranked sites suitable for further investigation; and
- subject this second set of sites to a further prioritization effort to identify sites appropriate for regulatory agency consideration; and
- review this set of sites with regulatory staff and obtain a consensus on the best sites for wetland compensatory mitigation.

The remainder of this section provides more detail on the methodology used to identify the most promising potential mitigation sites and summary information on the proposed mitigation sites on which consensus was obtained.

B. Methodology

The process of identifying the best site for wetland mitigation was an iterative approach using a variety of characteristics at each iteration. The first iteration used a geographic information system (ArcView) and readily available digital map information to identify all sites in the project area and the watersheds of the Bird River and Middle River. Characteristics used in this identification process consisted of:

- land cover to identify non-forested areas;
- soils information to identify areas underlain by soils with wetness limitations;
- stream and National Wetland Inventory information to identify areas within 300-ft of a stream or NWI-mapped wetland.

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Middle River Employment Center Access Study  
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- FEMA floodplain mapping to identify areas within the mapped 500-yr floodplain of a stream; and
- Minimum areas greater than 5-acres in size.

Non-forested sites greater than 5-acres in area underlain by soils with wetness limitation or adjacent to NWI-mapped wetlands, floodplains or streams were identified as potential mitigation sites. A total of 60 such properties were identified.

These 60 sites were then ranked on the basis of another set of characteristics. This set of characteristics included:

- site acreage;
- watershed location;
- existing landcover;
- proportion of site underlain by soils with wetness limitations;
- depth to groundwater based on the County soil survey;
- presence of a surface water feature (e.g., stream, wetland or floodplain); and
- surface slope.

This ranking approach identified the 24 highest scoring sites for field evaluation and further consideration. In order to conduct field evaluations, SHA contacted the property owners of these sites for permission to access the sites. During this process, permission was denied for some properties and on other properties SHA was informed by the owners that development plans (or other competing plans) were underway. As a result, a total of 12 properties identified in this study were evaluated in the field for their feasibility as wetland mitigation sites.

These 12 sites were then ranked on the basis of a third set of characteristics, which included:

- surficial soil characteristics (e.g., evidence of groundwater);
- site hydrology (i.e., evidence of flooding);
- existing vegetative cover (e.g., farm field);
- type of modifications required to establish hydrology (i.e., amount of earthwork);
- expected benefits to accrue (e.g., connecting woodlands, etc.); and
- adjacent and future land-use in vicinity.

In addition to the sites identified in the GIS site identification process, three additional sites were identified during the course of contacting property owners and reviewing existing information. Also, an older SHA mitigation study (citation) focused on a portion of the Middle River watershed was reviewed for potential mitigation sites.

Based on the field evaluation and ranking, the five (5) highest scoring sites were identified for presentation to the regulatory and resource agency team for consideration.

The remainder of this report presents a summary of available information for each of these potential mitigation sites. SHA conducted a site visit at each of these properties with Mr. Paul Weillauer of the Corps of Engineers of Engineers and Mr. Joe Hamilton of Maryland Department of the Environment. Mr. George Beston and Mr. Bob Cooper of

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Maryland Department of the Environment visited some but not all of the sites. During this field meeting, regulatory opinions on each of these sites were solicited.

### C. Results

Each site included in the field review with the Corps of Engineers and Maryland Department of the Environment is summarized with a narrative description of the existing conditions, a brief discussion of the proposed mitigation approach, and the consensus final site disposition. All sites were visited before the final consensus was reached. In this respect, the regulatory and SHA consensus decision that a site could be dropped from further consideration as a mitigation site for MRECAS project impacts indicates only that better mitigation opportunities exist on another potential mitigation site evaluated during the course of this study.

#### 1. Site 1 Hubble Farm

Site 1 was the only site identified within the MRECAS Study Area. It consists of four (4) privately owned parcels. The area is approximately 115 acres of farm field with areas subjected to surface mining.

This site drains to Windlass Run and tributaries of Windlass Run. Portions of the site have interrupted surface drainage resulting from previous sand mining. A storm water management basin associated with residential development along Bird River Road discharges to the upstream limit of the potential mitigation site. Only limited areas of surface ponding were observed in the portions of the site subjected to mining.

The concept for this site is to create a stable, broad depressional swale through the existing mined areas connecting the outfall from the existing stormwater detention basin with Windlass Run through its tributaries. The excavation of this broad flow path would also be designed to intensify groundwater hydrology. This flow path would include secondary structure (e.g., sills, microtopographic diversity) and native forest plant community elements to enhance wildlife and water quality values.

The regulatory and SHA consensus on this potential mitigation site is that the hydrology and soils present introduce more than an acceptable degree of uncertainty that wetland conditions could be developed. Significant questions on constructability related to the soil structure (interbedded layers of sand and clay), the presence of an interrupted fragipan (due to historical mining activities), and related concerns regarding unpredictable surface and groundwater hydrologic issues were a concern of both SHA and the regulatory agencies.

#### 2. Site 6 Holly Neck Road Site

This site consists of three privately owned properties totaling approximately 68 acres of corn field.

These sites drain to the tidal marshes and coves at the end of Back River Neck on the Middle River side of the peninsula (vicinity of Breezy Point Beach). Surface drainage has been

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Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
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modified through the creation of shallow surface ditches designed to facilitate the movement of surface waters out of the crop field and into adjacent wet woods.

The preliminary mitigation concept is to increase the duration/extent of the existing hydroperiod by excavation, creating a system of low perimeter berms, and/or modifying existing drainage ditches. In the areas modified by the above actions, establish a broad flatwoods wetland at the head of two tidal channels and enlarge the forest buffer at the head of a third tidal channel. This approach will slow/detain surface waters from the adjacent farmed/developed areas prior to flowing into the tidal channels.

The potential mitigation scenario identified here will compensate for unavoidable project impacts, improve the quality of water draining from the site into embayments in the vicinity of the confluence of Middle River with the Chesapeake Bay, connect isolated fragments of forest in the vicinity of tidal marsh, and increase the area available for forest wildlife habitat.

This site was identified as a potential mitigation site, which could be used to compensate for project impacts. The consensus opinion was that this site offered a high degree of certainty that the site could be modified to create a functionally important wetland.

3. Site 11 Graces Quarter DNR Site

This site consists of four (4) parcels of agricultural land totaling approximately 62 acres. Three of the parcels are owned by the State of Maryland (DNR and Forest and Parks), and the other parcel is owned by a private owner.

This site drains to a tributary of Dundee Creek. Tidal waters come to within 100-ft of the farm fields. During the September site visit, groundwater was encountered in the top 36-in and evidence of redoximorphic conditions was observed in the top 12-in along the edges of the farm field. Existing vegetative cover was a mixed hayfield.

The concept for this area is to excavate and place soils to enhance surface ponding and lower the soil surface relative to the seasonal high ground water table. These activities will result in the creation of a more significant forested wetland buffer to two tidal water features and a significant tidal oligohaline/mesohaline marsh.

The regulatory agency consensus is that excessive excavation would be required to establish a dependable wetland hydrology.

4. Site 21 University of Maryland Foundation Site

This site consists of two parcels totaling 131 acres owned by the University of Maryland Foundation.

This site drains to the Bird River downstream of the confluence of Williams Run with the Bird River. The portion of the two parcels under consideration for mitigation consists of unclaimed

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mined lands. Unvegetated open water, unvegetated mud flats, unvegetated clay pans actively eroding and a variety of vegetated wetland and upland areas currently are present on the site.

The general concept is to re-grade portions of the site to create vegetated wetlands while stabilizing slope erosion on the site. The areas for wetland creation will be located to compliment and enhance the values of the existing wetlands.

The regulatory agency and SHA consensus is that this site presents a genuine opportunity to restore degraded land, create compensatory wetland areas, and stabilize and afforest the areas draining to the wetlands. This potential mitigation site was judged to be the most desirable of the six potential mitigation sites evaluated by the Corps of Engineers of Engineers and MDE for this project.

5. Site 24 Baltimore County Site

This site, known as the former Zelinsky Farm, is owned by Baltimore County and is adjacent to County and State Park lands. The property is maintained in row crop vegetable farming and horse pasture and hay fields.

This site drains to Dundee Creek. The areas considered for wetland mitigation are separated from the tidal waters of Dundee Creek by a mesic wetland forest. Surface ponding was evident in low areas adjacent to a perimeter road and groundwater was encountered within three (3) ft of the soil surface.

The concept for this potential mitigation site is to excavate surface soils to increase the extent and duration of surface soil saturation and surface ponding. In addition, the excavated area would be planted in native wet hardwood canopy and shrub species and seeded with a custom wetland seed mix. This approach would contribute to improvements in the values of existing wetlands and would provide wetland functions for habitat, water quality, and heritage value.

The regulatory agency consensus is that this site would require excess excavation to establish a dependable groundwater hydrology.

D. Summary

More than 60 potential mitigation sites were evaluated in the effort to identify suitable opportunities for compensatory wetland mitigation. Through a series of increasingly more detailed site-specific evaluations, the five most promising potential sites were selected for a field review with the regulatory agencies.

Following the field review, the Corps of Engineers and Maryland Department of the Environment staff identified Site 6 Holly Neck Road Site and Site 21 University of Maryland Foundation Site as their preferred potential mitigation sites. Through a combination of wetland creation, enhancement, restoration and preservation, Sites 6 and 21 can provide more than sufficient wetland mitigation opportunity to compensate for the MRECAS project wetland

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*Middle River Employment Center Access Study  
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impacts (See Section VI, Comments and Coordination – Minutes of Meeting, November 30, 1999). The SHA's final wetland mitigation approach will need to be approved by the regulators following additional SHA site evaluation, planning, and design.

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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



DEC03/99 PM 1:06 OFFE

December 1, 1999

Ms. Gay Olsen  
State Highway Administration  
Project Planning Division  
707 North Calvert Street  
Baltimore, MD 21202

Re: Project No. BA847A11  
Middle River Employment Center  
Access Study  
Baltimore County, Maryland

Dear Ms. Olsen:

The Service is providing comments on the Selected Alternate and Mitigation for the Middle River Employment Center Access Study. After reviewing the Selected Alternate and Mitigation, we concur with the selection of Alternate D-Modified Revised and the four potential mitigation sites for the Middle River Employment Center Access Study.

We appreciate the opportunity to provide information relevant to fish and wildlife resources. If you have any questions about these comments, please contact Trevor Clark at (410) 573-4527 or Trevor.Clark@fws.gov.

Sincerely,

John P. Wollin  
Supervisor  
Chesapeake Bay Field Office

cc:  
NMFS, Oxford, MD (John Nichols)  
EPA, Philadelphia, PA (Jamie Stark)  
Corp, Baltimore, MD (Paul Wettlaufer)  
MDE, Baltimore, MD (Bob Cooper)  
DNR, Annapolis, MD (Larry Hughes)

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Middle River Employment Center Access Study  
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Maryland Department of Transportation  
 State Highway Administration

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

**MEMORANDUM**

**TO:** Ms. Marsha Kaiser, Director  
 Office of Planning and Capital Programming  
 Maryland Department of Transportation

**FROM:** Cynthia D. Simpson  
 Deputy Director *CD*  
 Office of Planning and  
 Preliminary Engineering

**DATE:** February 9, 2000

**SUBJECT:** Project Consistency Report

**RE:** Project No. BA847A11  
 Middle River Employment Center Access Study (MRECAS)  
 Baltimore County, Maryland

Enclosed is the Project Review Checklist and Project Consistency Report with comment sheets for the Middle River Employment Access Study. Alternative D-Modified has been selected by the Administrator. The Selected Alternative was presented at the Interagency Review meeting on September 15, 1999. The Maryland Office of Planning subsequently concurred with the selection of Alternative D-Modified on November 11, 1999.

Please submit this report to the Maryland Office of Planning. This will ensure consistency of the proposed project with the Maryland Economic Growth, Resource Protection and Planning Act of 1992. If you have any questions, please contact either the Project Manager, Ms. Heather Murphy at (410) 545-8571 or the Environmental Manager, Ms. Allison Grooms at (410) 545-8568.

**Enclosures**

cc: Mr. Bruce Grey  
 Ms. Allison Grooms (w/enclosure)  
 Mr. Joseph Kresslein (w/enclosure)  
 Ms. Heather Murphy (w/enclosure)  
 Mr. Robert Sanders  
 Ms. Cynthia D. Simpson  
 Mr. Dimas Tedpahogo (w/enclosure)

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

**Project Consistency Report**  
 (Fills with Maryland Office of Planning)

This review is undertaken by the State of Maryland pursuant to SS-7A-02 of the State Finance and Procurement Article. Projects or actions are evaluated for consistency with the State's Economic Growth, Resource Protection, and Planning Policy in accordance with Executive Order 01.01.1992.27.

**Project Title:** Middle River Employment Center Access Study (MRECAS)

**Project Location:** Baltimore County. The project Study area extends from I-95 to MD 150 (Eastero Boulevard) and from Martin Boulevard to Ebenezer Road.

**Project Description:** SHA-Selected Alternative D (Modified) proposes a four-lane divided roadway (two general lanes per direction) on new location with partial access control, beginning at the interchange of I-95 and MD 43, then proceeding south, and terminating at MD 150 adjacent to the Middle River Federal Depot and the Martin Aircraft Complex. Alternative D (Modified) differs from original Alternative D only at the location of Windlass Run Crossing, which is at the location recommended by the U.S. Army Corps of Engineers. Multi-modal components of this alternative may include enhanced bus service, expansion of the existing MARC station and implementation of Transportation Demand Management (TDM) options. This alternative would traverse all three of the upland areas that are included as part of the developable area. Alternative D (Modified) requires a Section 4(f) Evaluation, because it requires right-of-way from the Martin State Airport/Federal Depot Historic District. The amount of right-of-way required is 3.1 acres.

**Approximate Funding Share**

STATE	LOCAL	FEDERAL	OTHER
\$10,800,000	\$0	\$43,200,000	\$0

(Cost based on 80% Federal & 20% State)

Determination  Consistent

Inconsistent with extraordinary circumstances

Brief description of extraordinary circumstances:  
 \_\_\_\_\_  
 \_\_\_\_\_

Sponsor Agency: Maryland Department of Transportation Date: February 10, 2000

Sponsor Agency Contact: Ms. Marsha Kaiser

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*Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination*

Return to: State Clearinghouse  
 Maryland Office of Planning  
 301 West Preston Street  
 Baltimore, MD 21201  
 (410) 225-4500; FAX: (410) 225-4480

**Project Review Checklist**

(When complete, record determination on Project Consistency Report)

Project Title Middle River Employment Center Access Study (MRECAS)  
 Project Location Baltimore County - from the I-95/MD 43 interchange east to MD 150  
 (County and nearest major Intersections)  
 Project Description SHA-Selected Alternative D Modified proposes a four lane divided roadway (2 general use lanes per direction) on new location with partial access control, beginning at the interchange of I-95 and MD 43, then proceeding south, and terminating at MD 150 adjacent to the Middle River Federal Depot and the Martin Aircraft Complex. Alternative D Modified includes the location for the Windlass Run crossing recommended by the U.S. Army Corps of Engineers. Multi-modal components of this alternative may include enhanced bus service, expansion of the existing MARC station and implementation of Transportation Demand Management (TDM) options.

**Appropriate Funding Share**

STATE	LOCAL	FEDERAL	OTHER
\$10,800,000	\$0	\$43,200,000	\$0

**Tier 1**

- Y N  
 X 1. Does the project add capacity to an existing facility or provide new capacity for an area not currently served by the facility?  
 X 2. Does the project facilitate changes in the existing pattern of growth?

If answer to either questions is "yes" proceed to Tier 2

**Tier 2**

- X 1. Is the project consistent with the local comprehensive plan?  
 X 2. Does the project support development in a suitable area, a designated development area, or a redevelopment area?  
 X 3. Can the project be designed to prevent adverse impacts to sensitive areas?  
 N/A 4. If in a rural area, does the project promote compact growth in existing population centers?  
 X 5. Does the project provide opportunities to conserve resources?  
 X 6. Does the project promote economic growth and development in accord with other elements of the State's Growth Policy?

Explain "no" answers on reverse. If determination is that project is "inconsistent," proceed to Tier 3.

**Tier 3**

1. Do extraordinary circumstances exist which make the project or action necessary to construct despite a finding of inconsistency in Tier 2? If so, document.  
 2. Is there no reasonably feasible alternative to the project? If so, document.

Determination: Consistent Inconsistent with extraordinary circumstances

Sponsor Agency Contact: Maryland Department of Transportation

SHA-Selected Alternative D-Modified

Tier 1

1. Yes This project provides access for the Middle River Employment Center (MREC) to promote the full economic potential of the developable area. The Employment Center consists of the Middle River Federal Depot, Martin Aircraft Complex, the Chesapeake Industrial Park, the undeveloped 1,000 acre A.V. Williams Tract and other smaller undeveloped industrially zoned properties. The purpose of this project is to provide direct access to the Employment Center properties from Interstate/Commerce routes.
2. Yes The construction of the Alternative D-Modified alignment will provide direct access from I-95 and MD 150 to the Middle River Employment Center, Chesapeake Industrial Park, Middle River Federal Depot, and the Martin Airport complex. This new roadway will facilitate access to prime commercial property, support the implementation of the planned major economic development sites within the Urban Rural Demarcation Line (URDL) and foster increased utilization of the established employment areas. The URDL defines the limit of public water and sewer service, as well as the major public transportation system. Thus, this project is expected to promote employment opportunities for the citizens of the local area and facilitate commuting traffic to and from the Baltimore Metropolitan area.

Tier 2

1. Yes SHA-Selected Alternative D Modified follows the alignment shown on the Baltimore County Master Plan 1989 to 2000, which is adopted in accordance with, or as amendments to, their general plan. Alternative D Modified differs from original Alternative D only with regard to the location of the crossing of Windlass Run. The crossing of Windlass Run for Alternative D Modified occurs at the location recommended by the U.S. Army Corps of Engineers. Alternatives D-Modified lies within the urban service boundary or URDL. Areas within the URDL are supported by Baltimore County as a designated growth area. Alternative D-Modified is also consistent with Baltimore County's revitalization Strategy for the Middle River Area.
2. Yes SHA-Selected Alternative D-Modified promotes development within the undeveloped portion of the Middle River Employment Center (MREC) and redevelopment of the existing adjacent government and commercial properties. This alternative provides safe and efficient access to the area designated for dense development. Alternatives D-Modified is consistent with Baltimore County's Revitalization Strategy for the Eastern Baltimore County area and lies within the URDL which designates the MREC as a supported development area.
3. No SHA-Selected Alternative D-Modified impacts streams, 100-year floodplains, forested areas, non-tidal wetlands, several residential properties, and two National Register Eligible historic sites. Due to the generally east-west orientation of the streams and associated wetlands, impacts to these resource areas by the proposed transportation facility which is intended to tie the MREC to the existing interstate highway system, are unavoidable. However, impacts to sensitive areas are minimized by considering the following options: using elevated structures to cross sensitive wetland areas and streams, using steeper supporting slopes to minimize roadway width, reduction in median width to minimize the overall width of the roadway impacts, shifts in the alignment, adjustments to the typical section and profile, and employing retaining walls, where practicable. Impacts to other sensitive areas, including historic sites and communities (issues such as community cohesion, property acquisition and/or displacements, noise, etc.) will be avoided and mitigated to the extent practicable.

4. N/A

Alternatives D-Modified

Tier 2 (cont.)

5. Yes Compared to the No-Build, SHA-Selected Alternative D Modified will facilitate travel, including single occupant vehicles (SOV's) in the study area between I-95 and MD 150, resulting in improved overall air quality and opportunities for fuel economy. Alternative D Modified also includes enhancements to the MARC station, enhancements to the bus service, and the implementation of Transportation Demand Management (TDM) options. This should result in fewer SOV's, and may result in additional fuel conservation and reduction of air pollutants.
6. Yes The project is necessary to provide an adequate transportation network to support Baltimore County goals for land use, development, and economic growth. This project will support the planned developments as designated by Baltimore County within the URDL.

Middle River Employment Center Access Study  
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Maryland Department of Transportation  
 State Highway Administration  
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Pamela N. Glendening  
 Governor  
 John D. Porcari  
 Secretary  
 Parker F. Williams  
 Administrator

April 20, 2000

Re: Project No. BAB47A11  
 Middle River Employment  
 Center Access Study  
 Baltimore County, Maryland

Mr. J. Rodney Little  
 State Historic Preservation Officer  
 Maryland Historical Trust  
 100 Community Place  
 Crownsville MD 21032-2023

Dear Mr. Little:

**Introduction and Project Description**

The purpose of this letter is to inform you of changes made to the subject project. Alternate D has been modified in three areas (Enclosure 1, 200 scale plans). The first change was done to avoid impacts to electrical transmission towers, and involves an area measuring 635 m long, extending a maximum of 90 m east of the previous right-of-way. The second change was made to flatten a curve and reduce wetland impacts, and involves an area measuring 425 m long, extending a maximum of 55 m east of the previous right-of-way. The third change was done to minimize impacts at the Whitemarsh Run crossing, and involves a minor shift to the northeast to produce a perpendicular stream crossing, and a change to the ramp configuration at the interchange of MD 43 and US 40.

**Project History**

On January 11, 1999, we wrote to you with our determination that the project will have an adverse effect on historic properties, and received your concurrence on February 9, 1999. On December 7, 1999, we wrote to you regarding proposed wetland mitigation sites for the project, and received your concurrence that archeological identification only is warranted. Since that time, Site 1 has not been pursued, and we have been unable to gain access to Site 3, the Holly Neck site (Parcel 424) to perform archeological studies. We are trying to determine whether we will continue to pursue Site 3. Enclosure 2 provides our re-evaluation of the archeological potential of Site 2, the University of Agreement for your approval and signature.

**Results of Identification**

Historic Structures Reconnaissance  
 SHA architectural historian Heather Confer consulted project mapping, previous coordination, and

App: 19 BC 5/1/2 000  
 Included in final survey and mapping

My telephone number is  
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 1-800-735-2248, Statewide Toll Free

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

Mr. J. Rodney Little  
 MRBCAS Alignment Shifts  
 April 20, 2000  
 Page 2

The MD 43 Survey Report prepared by Tracerics. The alignment shifts to Alternate D Modified are located within the area previously surveyed by Tracerics. No historic standing structures were identified in these areas as documented by the MD 43 Survey Report. The properties documented as being eligible for National Register listing, the Ebenezer Methodist Church, the Old Chase School, and the Martin Airport Historic District (see Enclosure 3), are located well away from the alignment shifts, and the shifts will have no impact on those structures.

**Archeology**

SHA archeologist Richard Ervin evaluated the first and second alignment shifts of selected Alternate D-Modified using project mapping, SHA copies of the site files, and archeological reports by Waite (1989) and Fiedel (1998). A March 15, 2000 field visit showed that the northernmost shift traverses a hillside disturbed by previous sand and gravel quarrying, then crosses a relatively undisturbed hilltop setting. The southernmost shift crosses well drained terraces overlooking a tributary of Windlass Run. Undisturbed parts of both areas are considered likely to contain significant archeological resources. Historic maps (Hopkins 1877, USGS 1901) show several structures in the vicinity of the shifts, although they appear to be outside the project area.

Both shifts largely follow the project area surveyed by Waite (1989; Phase I Archeological Investigations of Moryland Route 43). Only part of the first shift is outside Waite's survey area, and this crosses terrain disturbed by construction of an electric substation. Waite assigned moderate to high archeological potential to parts of both areas (1989; Figure 8). His subsequent archeological survey recorded two sites in or near the proposed alignment shifts (Waite 1989; Figure 24). Site 18BA384 is a 20<sup>th</sup> century farmstead, and site 18BA379 is a 19<sup>th</sup> and 20<sup>th</sup> century farmstead. Both sites have poor integrity, and have been determined ineligible for the National Register (MHT letter dated August 29, 1989). No resources were recorded in areas adjacent to the alignment shifts by Fiedel (1998; SHA Archeological Report 211).

Most of the proposed project area has previously been examined for significant archeological resources, with no significant archeological resources recorded. No further archeological investigations are warranted for the first and second alignment shifts.

SHA archeologist Richard Ervin evaluated the third alignment shift in September of 1999, using project mapping, SHA copies of the site files, and archeological reports by Waite (1989) and Fiedel (1998). All or most of the shift appears to be within the previously surveyed right-of-way, although provided mapping does not allow this to be determined conclusively. No archeological sites have previously been recorded near the alignment shift, and neither Stacey's (1858) Map of the City and County of Baltimore or Hopkins' (1877) Atlas of Baltimore County depict any

Middle River Employment Center Access Study  
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Mr. J. Rodney Little  
 MRECAS Alignment Shifts  
 April 20, 2000  
 Page 3

structures there. A September 2, 1999 field visit indicated the area has been graded during previous quarry operations along Whitemarsh Run. Based on prior disturbance, the project change is unlikely to impact significant archeological resources, and no further archeological work is warranted.

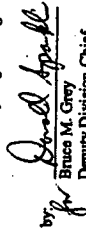
**Review Request**

Our evaluation has determined that the project, as modified, will have no additional impacts to historic properties. We request your concurrence with our determination, and with our archeological re-assessment, by May 19, 2000.

Thank you very much for your assistance with this project. If you have any questions, feel free to contact Mr. Richard Ervin at (410) 545-2878 about archeology, or Ms. Jill Dowling at (410) 545-8559 about structures. We look forward to receiving the signed copy of the project Memorandum of Agreement.

Very truly yours,


Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

by   
 Bruce M. Grey  
 Deputy Division Chief  
 Project Planning Division

**Enclosures (3)**

- cc: Mr. Jill Dowling (w/enclosures)
- Mr. Richard Ervin (w/enclosures)
- Ms. Allison Grooms (w/enclosures)
- Dr. Charles Hall
- Mr. Joe Kreslein
- Ms. Heather Murphy
- Mr. Don Sparklin

The Maryland Historical Trust concurs that no additional impacts will occur to historic properties as a result of the proposed alignment shifts in the MRECAS Project, Baltimore County, Maryland.

  
 Aune E. Broder, Preservation Officer  
 Maryland Historical Trust  
 June 2, 2000



Maryland Department of Transportation  
 State Highway Administration

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

**MEMORANDUM**

**TO:** Ms. Cynthia D. Simpson  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering

**FROM:** Mr. Joseph Kreslein JK  
 Assistant Division Chief  
 Project Planning Division

**DATE:** June 26, 2000

**SUBJECT:** Project No. BA&47A11  
 Middle River Employment Center Access Study (MRECAS)  
 Baltimore County

**RE:** Wetland Field Review of April 10, 2000

**ATTENDEES:**

- Heather Murphy
- Bill Buchter
- Jane Wagner
- Bob Cooper
- Trevor Clark
- Mary Dircks Frazier
- SHA-Project Planning Division
- SHA-Environmental Programs Division
- SHA-Project Planning Division
- Maryland Department Environment
- US Fish Wildlife Service
- Century Engineering

The purpose of the field review was to verify any additional wetlands/boundaries which are now impacted as a result of the alignment shifts to the selected alternative, D-Modified (which is currently referred to as Revised D-Modified). The team met at the BOE entrance road, which extends from Bird River Road and runs behind the substation to the stream. We visited D-Mod W15A. This is an extension of the previously delineated D-Mod W15. Bob Cooper (MDE) added a flag between #10 and #11. He asked that we delineate the groundwater discharge from the well as Waters of the U.S. He also indicated that we must differentiate between wetlands and Waters of the U.S. when preparing impact plates. He stated that stream mitigation would be required for impacts to the streams.

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 • Beltsville, MD 21203-0717  
 Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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Ms. Cynthia D. Simpson  
MRECAS  
Page Two

Next, the team walked along the alignment shift west of Bird River Road. We found no new wetlands along Revised D-Modified. Bob Cooper (MDE) did request that we flag 2 wetlands located along the BGE entrance road. On the north side of the entrance road, the area in question is a septic field with cattails along a ditch. The other one is located on the south side of the entrance road. We agreed to flag these areas. Bob Cooper (MDE) indicated that we should flag them, GPS the locations, and add the wetlands.

The first of the two wetlands were located along the cattail ditch, north of the BGE entrance road, and was flagged and identified as W1A. The dominant plant is cattail, (*Typha latifolia*), and reducing conditions were present (water was present). The source of hydrology is effluent from the septic field, therefore no examination was done of the soil. The ditch was flowing the day of the subsequent field review. The wetland has a Wildlife Functional Capacity Index (FCI) of 0.21, a Sediment Stabilization FCI of 1.00, and a Water Quality FCI of NA.

The wetland south of the BGE entrance road was flagged and identified as W1B. Along the road, the wetland is palustrine emergent, with the palustrine-forested portion of the wetland within the woods. We flagged the entire limits of the wetland, however it flows into a stream outside of the study area. Dominant plants include black willow (*Salix nigra*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), elderberry (*Sambucus canadensis*), jewelweed (*Impatiens capensis*), horsetail (*Equisetum arvense*), and yellow rocket (*Barbarea vulgaris*). Wetland hydrology indicators include inundation or saturation, and drainage patterns. Hydric soil indicators include reducing conditions and low-chroma colors. The wetland has Wildlife FCI of 0.33, a Sediment Stabilization FCI of 0.90, and a Water Quality FCI of 0.89.

At the request of Bob Cooper, we flagged the limits of the groundwater discharge from the well near W15A. This was flagged and labeled Waters of the U.S. (W15B), since there were no wetland plants associated with the groundwater discharge.

Enclosed are copies of the revised and additional wetlands, data forms and functional assessment. These revisions will be included in the Final Environmental Impact Statement. Please review, sign the following concurrence line, and return by July 5. If you have any questions or comments, regarding these minutes contact Allison Grooms at (410) 545-8568 or Ms. Heather Murphy at 410-545-8571.

CONCURRENCE:

\_\_\_\_\_  
U.S. Corps of Engineers

\_\_\_\_\_  
Date

Enclosures

Ms. Cynthia D. Simpson  
MRECAS  
Page Three

cc: Attendees (w/attachments)  
Mr. Mark Duvall, (w/attachments)  
Mr. Greg Goiden, DNR (w/attachments)  
Ms. Allison Grooms (w/attachments)  
Mr. Joseph Kresslein  
Mr. Bob Riley (w/attachments)  
Ms. Jamie Stark, EPA (w/attachments)  
Mr. Paul Wettlaufer, COE (w/attachments)

Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation  
Section VI. Comments and Coordination



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401



July 10, 2000

Ms. Cynthia D. Simpson  
Deputy Director  
Office of Planning and Preliminary Engineering  
State Highway Administration  
707 North Calvert Street  
Baltimore, MD 21202

Attn: Ms. Allison Grooms

RE: Project No. BA847A11  
Middle River Employment Center  
Access Study (MREAS)  
Baltimore County, Maryland

Dear Ms. Simpson:

The Service is providing comments on the wetland field review which occurred on April 10, 2000.

The purpose of the wetland field review was to verify any additional wetlands/boundaries which are now impacted as a result of the alignment shifts to the selected alternative, D-Modified (which is currently referred to as Revised D-Modified).

We have reviewed the wetland field review minutes, Routine Wetland Determination data forms, EPW existing wetland data sheets and the Revised D-Modified alignment plans. We concur with all of the aforementioned information and data.

We appreciate the opportunity to provide information relevant to fish and wildlife resources. If you have any questions about these comments, please contact Trevor Clark at (410) 573-4527 or Trevor.Clark@fws.gov.

Sincerely,

  
John P. Wolfen  
Supervisor  
Chesapeake Bay Field Office


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cc: NMFS, Oxford, MD (John Nichols)  
EPA, Philadelphia, PA (Jamie Stark)  
Corp, Baltimore, MD (Paul Wetzlauffer)  
MDE, Baltimore, MD (Bob Cooper)  
DNR, Annapolis, MD (Larry Hughes)

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Middle River Employment Center Access Study  
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Section VI. Comments and Coordination



MARYLAND Office of Planning

November 19, 1999

Ms. Cynthia D. Simpson, Deputy Director  
Office of Planning & Preliminary Engineering  
Maryland State Highway Administration  
P.O. Box 717  
Baltimore, MD 21203-0717

Attention: Ms. Guy Olsen

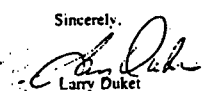
Dear Ms. Simpson:

This is in response to the request for OP's comments on the SHA's Selected Alternative and Mitigation Concurrence Package for the Middle River Employment Center Access Study. We have reviewed the information provided in the package and concluded that the selected alternative, Alternative D-Modified, is consistent with the intent of the State's growth management policies.

Alternative D-Modified would provide needed transportation improvements to facilitate development/redevelopment in a Baltimore County's priority funding area, the Middle River Employment Center which includes the 1000-acre undeveloped A.V. Williams tract, Martin State Airport and the Chesapeake Industrial Park. Under the selected alternative, a direct highway access from I-95 to the Employment Center will be provided. We understand that such a transportation link is vital to attract economic development into this portion of the eastern Baltimore County revitalization area. We also note that overall, Alternative D-Modified would have relatively fewer direct and secondary/cumulative adverse impacts on natural and socio-economic resources. It is commendable that SHA recommends multi-modal options as components of the selected alternative. We believe that implementation of such components would help to reduce SOV travel resulting from the future development in the Employment Center.

Ms. Cynthia D. Simpson  
Page 2

Should you have any questions regarding our comments, please contact Bihui Xu or me at 410-767-4551.

Sincerely,  
  
Larry Duket  
Deputy Chief  
Local Planning Assistance

cc: Ray Dintaman, DNR  
John Forren, EPA  
George K. Frick, Jr. FHWA  
Elder Ghigiarelli, MDE  
Timothy Goodger, NMFS  
Attention: John Nichols  
Keith Harris, COE  
Attention: Vance Hobbs  
J. Rodney Little, MHT  
Bob Pennington, USFWS  
Cynthia Wilkerson, NPS

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*Middle River Employment Center Access Study  
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**Maryland Department of Transportation**  
The Secretary's Office

Farris N. Glendening  
Governor  
Kathleen Kennedy Townsend  
Lt. Governor  
John D. Porcari  
Secretary  
Beverly K. Swalm-Staley  
Deputy Secretary

August 18, 2000

Ms. Harriet Tregoning, Secretary  
Maryland Department of Planning  
301 West Preston Street  
Suite 1101  
Baltimore MD 21201-2305

Re: Smart Growth Approval of MD 43 Extended  
(Middle River Employment Center Access Study)

Dear Secretary Tregoning:

Attached please find a letter dated July 25, 2000 from the Baltimore County Office of Planning stating that they believe the project to be within the Priority Funding Area. Please be advised that MDOT has determined that the MD 43 Extended selected alternative (Alternative D-modified) is consistent Maryland's growth management policies. Pursuant to documentation procedures developed in cooperation with the Maryland Department of Planning we now seek your signature to complete that concurrence.

Thank you for your timely review and handling of this report. If you should have any questions please contact Ms. Cynthia D. Simpson, Deputy Director, Office of Planning and Preliminary Engineering, Maryland State Highway Administration. She may be reached by telephone by dialing 410-545-8510.

Sincerely,

Marsha Kaiser, Director  
Office of Planning and Capital Programming

cc: Ms. Cynthia D. Simpson, Deputy Director, Office of Planning and Preliminary Engineering, Maryland State Highway Administration.

My telephone number is (410) \_\_\_\_\_  
Toll Free Number 1-888-713-1414 TTY For the Deaf: (410) 866-1342  
Post Office Box 8735, Baltimore/Washington International Airport, Maryland 21260-0736

*Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
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Baltimore County  
 Office of Planning

401 Bosley Avenue • Ste 406  
 Towson, Maryland 21284  
 410-887-3211  
 Fax: 410-887-5862  
 E-mail: [planning@co.ba.md.us](mailto:planning@co.ba.md.us)

July 25, 2000

Ms. Heather Murphy, Project Manager  
 State Highway Administration  
 707 N. Calvert Street, C-301  
 Baltimore, Maryland 21202

Re: MD Route 43

Dear Ms. Murphy:

The Office of Planning has reviewed the location of the subject request, and the property is within the Baltimore County Priority Funding Area.

This is not an approval, nor an endorsement of the development, but only a concurrence that the property is within the area approved by the State of Maryland as consistent with their Smart Growth initiatives. Attached is a map verifying the location of your project within the Priority Funding Area.

Should you have any additional questions or concerns, please contact me on 410-887-3211.

Sincerely,

Albert Svehla, Jr.  
 Special Projects Coordinator

ASjw

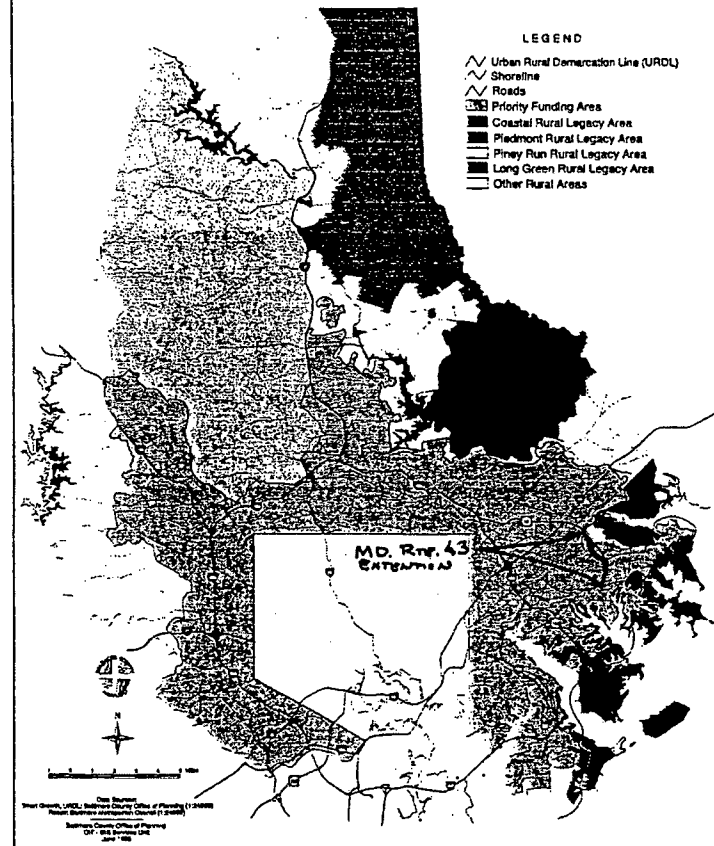
Attachment

Census 2000 For You, For Baltimore County Census 2000

Printed with Recycled Ink on Recycled Paper


Come visit the County's Website at [www.co.ba.md.us](http://www.co.ba.md.us)

**SMART GROWTH**  
 Baltimore County, Maryland



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Middle River Employment Center Access Study  
 Final Environmental Impact Statement/Final Section 4(f) Evaluation  
 Section VI. Comments and Coordination



**MDP**  
 Maryland Department of Planning

Parris N. Glendening  
 Governor

Kathleen Kennedy Townsend  
 Lt. Governor

Harriet Tregonim  
 Secretary

Ronald N. Yon  
 Deputy Secretary

August 31, 2000

RECEIVED

SEP 5 2000

OFFICE OF PLANNING &  
 CAPITAL PROGRAMMING

Ms. Marsha Kaiser  
 Director  
 Office of Planning and Capital Programming  
 Maryland Department of Transportation  
 BWI Airport, MD 21240-0755

Re: Smart Growth Approval of MD43 Extended (MRECAS)

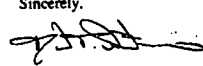
Dear Ms. Kaiser:

Attached is the document titled, "Smart Growth Determination for Transportation Projects: for the MD43 Extended selected alternative (Alternative D-modified). This project is consistent with Maryland's Smart Growth policies and the attached document has been signed.

The MD43 Extended project was the focus of a review due to a PFA mapping issue. It has been determined that this was the result of a minor mapping error due to an imprecise PFA boundary line resulting from the scale of the original PFA certification map as submitted by Baltimore County. The project is clearly consistent.

We appreciate the Cooperative process that has been developed and the work of MDOT and SHA to resolve issues such as this. Please contact me at 410-767-4564, should you have any questions or comments.

Sincerely,



David Whitaker, AICP  
 Principal Planner

cc: Don Halligan, MDOT  
 Cynthia Simpson, SHA  
 Jim Noonan, MDP  
 Bihui Xu, MDP

301 West Preston Street • Suite 1101 • Baltimore, Maryland 21201-2315  
 Tel: 410.767.4500 • Fax: 410.767.4490 • Toll Free: 1.800.767.6272 • TTY Users: Maryland Relay  
 Internet: www.mdp.state.md.us

**MARYLAND STATE HIGHWAY ADMINISTRATION**  
**SMART GROWTH DETERMINATION FOR TRANSPORTATION PROJECTS**

DATE: August 1, 2000  
 PROJECT NAME/NUMBER: Middle River Employment Center Access Study (MRECAS)  
 LIMITS: US 40 to MD 150

**PART IA (PRELIMINARY DETERMINATION FOR PROJECTS)**

Part IA is completed by RIPD when major projects are added to CTIP for Project Planning funding and submitted to the SHA Smart Growth Review Committee during the development of the Purpose and Need.

YES  NO 1. Could any of the project limits be outside a Priority Funding Area? (attach map)

If answer to question 1 is "no," project is likely to comply with the Smart Growth Areas Act. If answer is "yes," complete Part IA.

YES  NO 2. Is project required to protect public health and safety?

YES  NO 3. Is the project related to a commercial or industrial activity that due to its operational or physical characteristics must be located away from other development (e.g., mining, forestry)?

If answer to either question 2 or 3 is "yes," project is likely to comply with the Smart Growth Areas Act.

**PART IB (DETERMINATION FOR PRELIMINARY ALTERNATIVES)**

Part IB is completed by PPD during Stage 1 for each preliminary alternative (separate sheet for each alternative if necessary) and presented to the SHA Smart Growth Committee for review and discussion prior to Alternates Public Meeting.

YES  NO 1. Is any of the project study area outside a Priority Funding Area? (attach map and documentation of PFA boundaries from County)

If the answer is "no," the project complies with the Smart Growth Areas Act as long as there is NO CHANGE in the study area. If the answer is "yes," complete Part IB.

YES  NO 2. Is the project required to protect public health and safety?

YES  NO 3. Is the project related to a commercial or industrial activity that due to its operational or physical characteristics must be located away from other development (e.g., mining, forestry)?

If the answer to either question 2 or 3, if "yes," the project complies with the Smart Growth Areas Act under the applicable transportation exception. If the answer to both questions is "no,"

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Middle River Employment Center Access Study  
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PART 2 (DETERMINATION FOR DETAILED STUDY ALTERNATIVES AND THE SELECTED ALTERNATIVE)

DATE: AUGUST 1, 2000  
 PROJECT NAME/ROUTE: Middle River Employment Center Access Study (MRECAS)  
 LIMITS: MD 43 EXTENDED US 40 to MD 150  
 ALTERNATIVE: REVISED D-MODIFIED  
 SELECT ONE: DETAILED STUDY ALTERNATIVE or **SELECTED ALTERNATIVE**

To be completed by PPD for each Alternative Retained for Detailed Study (complete a separate sheet per alternative if necessary) and submitted to the SHA Smart Growth Review Committee. Part 2 is also to be completed for the Selected Alternative if it is different from those previously evaluated.

YES	NO	1. Is the alternative outside the Priority Funding Area as certified by the county? (attach map and written statement from County documenting this determination)
-----	----	---

If the answer to question 1 is "No", the alternative complies with the Smart Growth Areas Act. Attach comments if necessary and submit to the SHA Smart Growth Review Committee for approval.

Determination of Transportation Exceptions (attach documentation):

YES	NO	2. Does the project maintain the existing system and not serve to significantly increase highway capacity as determined jointly with the Office of Planning?
YES	NO	3. Does the Alternative serve to connect Priority Funding Areas: 3a. and are adequate access control or other measures in place as determined jointly with the Office of Planning to prevent development that is inconsistent with the State's Growth Policy or to constrain development which potentially detracts from main street business areas?
YES	NO	3b. and have MDOT and the Office of Planning determined whether alternative transportation modes, such as mass transit and transportation demand management, provide a reasonable alternative to the project and that no reasonable alternative exists?
YES	NO	4. Does the project have the sole purpose of providing control of access along an existing highway corridor?
YES	NO	5. Does the project have physical or operational characteristics that must be located away from other development?

If the answer to any question 2-5 is "yes", submit to the SHA Smart Growth Review Committee to acquire approval under the applicable transportation exception. If none of the Part 2 Transportation exceptions apply, proceed to Part 3.

PART 3 (EXTRAORDINARY CIRCUMSTANCES DETERMINATION)

Part 3 is to be completed following the selection of a Preferred Alternative if none of the previous reviews comply with the Smart Growth Areas Act. It is then submitted to the SHA Smart Growth Review Committee to acquire approvals. For Part 3 determinations, Board of Public Works approval is required for a project to enter the Construction Program.

YES	NO	6. Are there extraordinary circumstances that warrants proceeding with the project considering the following provisions: 6A. the failure to fund the project in question creates an extreme inequity, hardship, or disadvantage that clearly outweighs the benefits from locating a project in a Priority Funding Area. 6B. there is no reasonable alternative for the project in a Priority Funding Area in another location within the county or an adjacent county
-----	----	---

ADDITIONAL INFORMATION REQUIRED FOR STATEWIDE SMART GROWTH COORDINATING COMMITTEE REVIEW PRIOR TO APPROVAL UNDER PART 2 OR PART 3:

1. If any portion of the project is outside the PFA or if the project is approved as an exception what remedial actions will be taken to mitigate negative impacts (steps to make sure that by funding this project further growth outside the PFA would not be encouraged)?

2. Additional Comments for Consideration

For Part 2 Questions 2.-5., this documentation and determination has been undertaken in accord with procedures developed in cooperation with the Maryland Office of Planning.

Concur:

*Mark J. Kasan*  
 MDOT Representative

*J. P. White*  
 MDP Representative

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# VII. LIST OF PREPARERS

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*

VII. LIST OF PREPARERS



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

**VII. LIST OF PREPARERS**

**A. Federal Highway Administration**

Mary F. Huie  
Environmental Engineer

Daniel W. Johnson  
Environmental Program Manager

**B. Maryland State Highway Administration**

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Deputy Director of Planning and Preliminary Engineering

Joseph Kresslein  
Assistant Division Chief Environmental Planning

Heather Murphy  
Project Manager

Catherine Romero  
Project Engineer

Jane Wagner  
Project Engineer

Allison Grooms  
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Jason Groth  
Environmental Manager

Heather Confer  
Architectural Historian

Jill Dowling  
Architectural Historian

**C. Century Engineering, Inc. Team**

1. Century Engineering

Anthony R. Frascarella, P.E.  
Vice President  
Project Manager

543

David L. Manly  
Senior Environmental Planner

Mary Frazier  
Environmental Scientist

Dixon Wood  
Environmental Engineer

Frederick Lease  
Environmental Planner

Vien Thai  
Transportation Engineer

2. A.D. Marble & Company

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Senior Environmental Scientist

Eric Almquist  
Environmental Scientist

Jessica L. Morrow  
Environmental Scientist

3. W. T. Ballard & Company

Michael Kelly  
Environmental Engineer



# VIII. DISTRIBUTION LIST

*Middle River Employment Center Access Study  
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**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

## **VIII. DISTRIBUTION LIST**

### **Federal Agencies**

Mr. Davis P. Doss  
State Conservationist  
Natural Resources Conservation Service  
U.S. Department of Agriculture  
339 Busch's Frontage Road, Suite 301  
Annapolis MD 21401

Mr. Willie Taylor, Director  
Office of Environmental Policy and Compliance  
U.S. Department of the Interior  
Main Interior Building, MS 2340  
18th and C Streets, N.W.  
Washington, D.C. 20240

Ms. Denise Rigney  
NEPA Program Manager (3ES30)  
Office of Environmental Programs  
U.S. Environmental Protection Agency  
1650 Arch Street  
Philadelphia PA 19103-2029  
Attention: Ms. Jamie Stark

U.S. Environmental Protection Agency  
Office of Federal Activities  
NEPA Compliance Division  
EIS Filing Section  
Mail Code 2252-A  
401 M Street, S.W.  
Washington D.C. 20460

Mr. Timothy E. Goodger  
National Marine Fisheries Service  
Habitat and Protected Resources  
Oxford Laboratory  
Oxford, MD 21650  
Attention: Mr. John Nichols

Mr. Donald Klima, Chief  
Office of Planning and Review  
Advisory Council on Historic Preservation  
The Old Post Office Building  
1100 Pennsylvania Avenue, N.E.  
Suite 809  
Washington D.C. 20004

Mr. Robert Pennington  
U.S. Department of the Interior  
Fish and Wildlife Service  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis MD 21401  
Attention: Mr. Trevor Clark

Director  
NOAA/CS/EX/Room 6222  
Department of Commerce  
14th and Constitution Avenue, N.W.  
Washington D.C. 20230

Commander  
U.S. Army Corps of Engineers  
P.O. Box 1715  
10 S. Howard Street  
Baltimore MD 21201  
Attention: Mr. Richard Spencer

Regional Administrator  
Federal Transit Administration  
Region III  
Suite 500  
1760 Market Street  
Philadelphia PA 19103-4124

Planning, Analysis and Support Division  
Office of Planning, TGM-22  
Federal Transit Administration  
Room 9301  
400 7th Street, S.W.  
Washington D.C. 20590

Ms. Maria Stephens  
Federal Aviation Administration  
Washington Airports District Office  
P.O. Box 16780  
Washington, DC 20041-6780

Ms. Cathryn Pomerantz  
Environmental Officer  
Federal Emergency Management Agency  
Libert Square Building  
105 South 7th Street  
Philadelphia PA 19106  
Attention: Mr. Walter Pierson

Mr. Steve Grimm  
Federal Railroad Administration  
Office of Economic Analysis  
Mailstop #15 (RRP-32)  
1120 Vermont Avenue, N.W.  
Washington D.C. 20590

**State Agencies**

Ms. Kathleen Fay  
Maryland State Department of Education  
State Depository Distribution Center  
Public Depository and Distribution Program  
Enoch Pratt Free Library  
400 Cathedral Street  
Baltimore MD 21201

Ms. Regina Aris  
Baltimore Metropolitan Council  
601 North Howard Street  
Baltimore, MD 21201-4585

Mr. Lynn Bezilla, Director  
Maryland Aviation Administration  
Division of Planning  
P.O. Box 8766  
BWI Airport, MD 21240-0766

*Middle River Employment Center Access Study*  
*Final Environmental Impact Statement/Final Section 4(f) Evaluation*  
*Section VIII. Distribution List*

---

Ms. Linda Janey, Chief  
State Clearinghouse  
Maryland Office of Planning  
301 West Preston Street, Room 1101  
Baltimore MD 21201

State Clearinghouse Distribution  
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Department of Natural Resources  
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Department of Housing and  
Community Development  
Department of Education  
Department of Health and Mental Hygiene  
Interagency Committee for School Construction  
Maryland Historical Trust  
Department of Public Safety and  
Correctional Service

Judge John North  
Chesapeake Bay Critical Areas Commission  
45 Calvert Street, 2nd Floor  
Annapolis MD 21401  
Attention: Ms. Claudia Jones

Mr. Ray Dintaman, Director  
Maryland Department of Natural Resources  
Environmental Review Unit  
Tawes State Office Building, B-3  
Annapolis MD 21401

Mr. Elder Ghigiarelli  
Water Management Administration  
Maryland Department of the Environment  
2500 Broening Highway  
Baltimore MD 21224

Maryland Department of Natural Resources  
Greenways and Resource Planning  
Tawes State Office Building, D-3  
Annapolis MD 21401  
Attention: Mr. Gene Cheers

Director  
Public Affairs  
Maryland Department of Transportation  
BWI Airport

Ms. Marsha Kaiser, Director  
Office of Systems Planning and Evaluation  
Maryland Department of Transportation  
BWI Airport

Office of General Counsel  
Maryland Department of Transportation  
BWI Airport

Mr. Henry Kay  
Director of Planning  
Maryland Mass Transit Administration  
6 St. Paul Street  
Baltimore MD 21202

Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240-0766  
Attention: Ms. Barbara Grey

Maryland State Law Library  
Upper Level Court of Appeal Building  
361 Rowe Boulevard  
Annapolis MD 21401

Ms. Lynda Davis, Director  
Library and Information Services Division  
Legislative Reference Library  
90 State Circle  
Annapolis MD 21401-1991

Ms. Nanette Schieke  
State Legislative Officer  
Legislative Reference Library  
90 State Circle  
Annapolis MD 21401-1991

**County Government**

Mr. Charles R. Olsen, Director  
Baltimore County Department of Public Works  
111 West Chesapeake Avenue, Room 326  
County Office Building  
Towson, MD 21204  
Attention: Mr. Jeff Dreyer

Mr. George Perdikakis, Director  
Baltimore County Department of Environmental  
Protection and Resource Management  
401 Bosley Avenue, Suite 416  
Towson, MD 21204  
Attention: Mr. Tom Vidmar

Mr. Robert Hannon, Director  
Baltimore County Department of Economic Development  
400 Washington Avenue  
Towson MD 21204  
Attention: Ms. Sharon Klots

Mr. Arnold F. "Pat" Keller, III, Director  
Office of Planning  
Baltimore County  
County Courts Building, Suite 406  
401 Bosley Avenue  
Towson MD 21204

The Honorable C.A. Dutch Ruppertsberger  
400 Washington Avenue  
Towson, MD 21204

Chairperson of the Baltimore County Council  
Old Courthouse, 2<sup>nd</sup> Floor  
Towson, MD 21204

The Baltimore County Council  
Old Courthouse, 2<sup>nd</sup> Floor  
Towson, MD 21204  
Attention: Mr. Thomas J. Peddicord, Jr.

**Other**

Mr. Andrew Galloway, Director  
Amtrak Transportation Planning  
30<sup>th</sup> Street Station - 5<sup>th</sup> Floor South  
Box 21  
Philadelphia, PA 19104

**Available for Public Review**

State Highway Administration – District #4  
2323 W. Joppa Road  
Brooklandville, MD 21022

State Highway Administration  
Resource Center  
707 North Calvert Street, 6<sup>th</sup> floor  
Baltimore, MD 21202

State Highway Administration – Maintenance Shop  
Golden Ring Shop  
8375 Pulaski Highway  
Rosedale, MD 21237

Essex Library  
1110 Eastern Boulevard  
Essex, MD 21221

White Marsh Library  
8133 Sandpiper Circle  
White Marsh, MD 21236



# IX. GLOSSARY OF TERMS

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

## IX. GLOSSARY OF TERMS

**Access Control** - The restriction of direct access between a roadway and an immediately adjacent property. These restrictions generally are categorized as full control of access, partial control of access and access management.

- **Full control** of access allows access to the highway facility via interchanges only (i.e., no at-grade crossings), eliminates all median crossovers except for emergency vehicles and eliminates private driveway access (e.g. Interstate-97).
- **Partial control** of access allows access to the highway facility only from public roads (no private driveways) through intersections or interchanges.
- **Access management** limits and/or removes the number of points at which a vehicle may enter or exit a highway. Access management may include combining entrances and parking lots and adding service roads.

**Aerial Photography** - High resolution photographs taken from aircraft which are used to assess features in a study area. Aerial photographs are also used to produce topographic base maps of varying scales for alignment studies, engineering, and final design work.

**Aerotriangulation** - A mapping technique used for the geographic location of submerged land(s) such as wetlands, littoral zones and floodplains.

**Affected Environment** - The physical features, land, area, or areas to be influenced, affected or created by an alternative alignment under consideration; also includes various social and environmental factors and conditions pertinent to an area.

**Alignment** - The actual location of a highway or transit facility or improvement.

**Alternative** - One of a number of specific transportation improvement proposals, alignments, options, designs choices, etc., in a study. Following detailed analysis, one improvement alternative is chosen for implementation. Sometimes, the term "alternate" is used interchangeably with the term "alternative".

**Anadromous** - Refers to certain species of fish which migrate upstream to spawn in freshwater.

**Aquifer** - A water-bearing unit or stratum of permeable rock, sand, or gravel capable of yielding considerable quantities of water to wells or springs.

**Avoidance Alternative** - Any alignment proposal that has been developed, modified shifted or downsized specifically in order to avoid affecting one or more resources regarded as significant.

**Benthic Macro Invertebrates** - Bottom-dwelling organisms having no backbone or internal skeleton and visible to the naked eye.

**Best Management Practices (BMPs)** - Measures used 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.

**Capacity** - The maximum number of vehicles that can reasonably be expected to pass over a lane or a roadway during a given time period under prevailing roadway and traffic conditions. Typically, the maximum expressway capacity for automobiles is 2000 vehicles per lane per hour.

**Categorical Exclusions (CE)** - 1. A classification given to federal aid projects or actions that do not have a significant effect on the environment either individually or cumulatively. Categorical Exclusions do not require extensive levels of environmental documentation. 2. The written documentation to support a Class of Action that satisfies federal criteria describing non-significant impacts.

**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.

**Circulator Bus** - Collector buses which serve local trips and make frequent stops on demand.

**Clean Air Act Amendments of 1990 (CAAAAs)** - Federal legislation passed in 1990 to change both federal and state approaches to regulating air quality, mandating programs to curb acid rain, urban air pollution, and toxic air emissions. The CAAAs call for emission reduction 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.

**Cluster Development** - Concentration of development on one part of a site or area, including reducing the size of residential lots, to preserve open space on the remainder of the site or area.

**Comment Period** - Time allocated for review and comment on an environmental document (e.g. the Draft and Final Environmental Impacts Statements) 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 (EISs). Their comments are considered by the lead agency in the preparation of the Final EIS and Record of Decision.

**Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)** - 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.

**Comprehensive Plan** - An overall plan stating public policy intentions for the future development of a community or jurisdiction, including the general location and character of development. Also called a general or master plan, it provides official guidelines for growth and change in a community.

**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 U. S. Clean Air Act stipulates that any approved transportation project, plan, or program must conform to the State Implementation Plan, 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, communities facilities, or topographic features.

**Cooperating Agency** - As defined in the Council on Environmental Quality's *Regulations for Implementing the Procedural Provisions of the NEPA*, "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 environment." The CEQ emphasizes that agency cooperation should begin early in the NEPA process.

**Cumulative Impact** - The sum of all direct, indirect, and secondary impacts resulting from a transportation improvement project.

**Design Criteria** - Established state and national 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 Exception** - An approval issued by a state or federal agency to permit certain deviation from a specified, accepted standard granted on the basis of a report explaining the need for the exception and the consequences that will result from the action.

**Designated Development Areas** - Areas designated by local governments in comprehensive or general plans as the primary areas for future development, usually planned for urban densities of development and served by water and sewer systems.

**Ecosystem** - A functional system which includes the organisms of a total community together with their environment.

**Environmental Assessments (EA)** - A document prepared for a federal action where the significance of the environmental impact is not clearly established.

**Environmental Impact Statements (EIS)** - A document which must be prepared for "major federal" actions significantly affecting the quality of the environment.

**Express Bus Service** - Service which is usually associated with longer distance commuter travel. Outside the downtown area, these buses normally only stop at Park and Ride facilities or densely developed town centers.

**Feeder Bus Service** - Local bus service serving communities and transporting people generally from residential developments to locations where commuters can access express bus service or other forms of high speed transit.

**Findings of No Significant Impact (FONSI)** - A document which proceeds an EA and briefly presents why an action does not have a significant impact.

**Floodplain** - A flat or nearly flat lowland that borders a stream, and is covered by its waters at flood stage.

**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.

**Hazardous Waste** - Wastes identified by characteristics, source 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 environment when improperly treated, stored, transported, disposed or otherwise managed.

**High Occupancy Vehicle (HOV)** - A passenger vehicle that meets or exceeds a minimum number of passengers (e.g. HOV 2+: two or more occupants per vehicle). Examples of HOVs include buses, car pools and vanpools. HOV lanes are designed to move more people in fewer vehicles, which helps to reduce congestion and increase the traffic carrying capacity of the roadway.

**Hydric Soil** - Soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

**Hydrophyte, Hydrophytic Vegetation** - Plant adapted for life in water or periodically flooded and/or saturated soils and growing in wetlands and deepwater habitats.

**Independent Utility** - A specified segment of highway, or a link in a transportation system that the traveling public can use and that represents a reasonable expenditure of public funds even if no additional transportation improvements in the adjoining area or areas are made.

**Intermittent** - Carries water a considerable portion of the time, but which ceases to flow occasionally or seasonally.

**Level of Service** - Combinations of operating conditions that can occur on a given lane or roadway when it is accommodating various traffic volumes.

**Light Rail Transit** - A rail transit system which includes electrically powered, low-to-medium speed trains operating in an exclusive or shared right-of-way. Light rail is characterized by short-to-medium trip lengths, 2-3 car trains, and frequent station stops.

**Logical Termini** - Known features (land uses, economic areas, population concentrations, cross route locations, etc.) at either end of a proposed transportation route that enhance good planning and which serve to make the route usable. Logical termini are considered rational end points for a transportation improvement.

**Major Investment Study (MIS)** - A cooperative process to establish a range of alternatives, including the effectiveness and cost effectiveness, direct and indirect costs, mobility improvements, environmental effects, safety, operating efficiencies, land use and economic development, financing and energy consumption. The goal of a MIS is to have results adopted by MPO to be included in the Comprehensive Long Range Transportation Plan.

**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.

**Multi-modal** - The provision of alternatives for transportation of people and goods, including bus, pedestrians, bicycles, trains, light rail, highways, etc. Recent federal legislation ties transportation funding to incorporation of multi-modal considerations in the planning of transportation improvements.

**National Environmental Policy Act** - The National Environmental Policy Act (NEPA) 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.

**NEPA/404** - An integrated process for which Section 404 of the Clean Water Act Requirements and authorization are considered concurrently with NEPA. Section 404 addresses specific project impacts to Waters of the U.S., including wetlands.

**Normal circumstances** - Under the definition of wetlands, refers to the soil and hydrology conditions that are normally present, without regard to whether the vegetation has been removed.

**National Register (NR)** - Cultural resources (e.g. historic or archeological sites) which are on the National Register of Historic Places.

**National Register Eligible (NRE)** - Cultural resources (e.g. historic or archeological sites) which are eligible for listing on the National List of Historic Places.

**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.

**Perennial** - Contains water at all times except during extreme drought.

**Pool** - A portion of a stream with reduced current velocity, often with water deeper than the surrounding areas.

**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.

**Public Involvement** - Coordination events and informational materials geared at encouraging the public to participate in the Transportation Project Development Process. A successful Public Information Plan facilitates the exchange of information among project sponsors and outside groups and the general public, and includes meetings, surveys, committees, presentations, etc.

**Public Meeting** - An announced 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.

**Record of Decision (ROD)** - A document prepared by the Division Office of the Federal Highway Administration that presents the basis for selecting the approving 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 identifies the alternative selected in the Final EIS, the alternatives considered, measure to minimize harm, monitoring or enforcement programs, and in itemized of commitments and mitigation measures.

**Resource Conservation and Recovery Act (RCRA)** - The RCRA program identifies and tracts hazardous wastes from the point of generation to the point of disposal.

**Riffle** - Shallow rapids where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

**Rights-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.

**Rural Areas** - Areas designated by local governments in comprehensive or general plans for protection from intensive development and preservation of farming, natural resources, environmentally sensitive lands, and open space.

**Scoping** - As defined by the CEQ *Regulations*, the process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

**Section 4(f)** - Enacted as a portion of the Department of Transportation Act of 1966 (49 USC 303b), Section 4(f) declares "that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Section 4(f) applies to all historic sites, but only to publicly-owned parks, recreation areas, and wildlife/waterfowl refuges.

**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 archaeological 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 a site.

**Section 404 Alternatives Analysis** - Examines practical alternatives to the possible discharge or dredged or fill material into certain aquatic ecosystems, such as wetlands, mudflats, vegetated shallows or other special aquatic system. Practical means available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes. Criteria guiding such an analysis are derived from the provisions of Section 404(b)(1) of the 1972 Federal Clean Water Act as amended in 1977. The analysis is performed during the environmental



studies of the Transportation Project Development Process and is required before the issuance of a permit by the Corps of Engineers for the discharge of dredged or fill materials.

**Semi-anadromous fish** - Fish which live in brackish water but spawn in freshwater.

**Service Roads** - Parallel roadways constructed on the outside of major highways to accommodate local traffic and provide access to adjacent land owners.

**Significant Impact** - Any number of social, environmental, or economic effects or influences that may result from the implementation of a transportation improvement; classified as direct, secondary, or cumulative. The FHWA mandates environmental clearance documents based upon the significance of impacts. Categorical exclusions, for example, are those actions which do not have significant effects. In most cases, Environmental Impact Statement projects do result in significant impacts.

**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.

**Systems Planning** - A methodical approach to the formation of plans and programs for safe, efficient, and balanced transportation network; involves setting goals and objectives, collecting data on existing conditions, simulating future activities, formulating alternative planned changes, evaluating changes against the desired goals and objectives, and recommending feasible, desirable, and appropriate action.

**Telework Centers** - Local centers near residential development which provide computing and other office support services so that employees do not have to commute to their normal workplace to perform their job duties.

**Terrestrial** - Of or pertaining to the earth.

**Transferable Development Rights** - The sale of property development rights by landowners in non-development areas to landowners in areas designated for development. The transferred rights can be used to increase the amount of permitted development in designated development areas while preserving land in non-development areas.

**Transit Oriented Development** - A development pattern designed to provide proximity and convenient access to bus routes, rail stations, and nearby day-to-day services such as shops and schools through a network of interconnected streets, pedestrian walks, and bicycle paths.

**Transportation Control Measures (TCM)** - Also known as Travel Demand Management (TDM), TCMs focus on reducing the number of vehicles on a roadway by changing the behavior of motorists. The Clean Air Act Amendments of 1990 mandate consideration of certain TCMs as ways to reduce vehicle emissions in air quality non-attainment areas, for example, promoting the use of public transit, encouraging ridesharing and carpooling, and organizing employer-sponsored flexible work hour programs.

**Transportation Improvement Plan (TIP)** - A program of transportation projects drawn from or consistent with the transportation plan and developed pursuant to Title 23, U.S.C. and the Federal Transit Act.

**Transportation Management Associations (TMAs)** - Public or private non-profit organizations that provide TDM-oriented services to employers and businesses in designated activity centers. Traditionally, TMAs have concentrated on providing TDM support services such as rideshare matching, guaranteed ride home, etc.

**Transportation Systems Management (TSM)** - 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. TSM is considered to be a viable alternative only in urban areas.

**Upgrade Alternative** - A study alternative or a proposed action in which all proposed improvement efforts are focused within the corridor or land area of facility that is already built. This alternative is examined and studied first, often in conjunction with a TSM Alternative, before other alignments that may be on a new location are considered.

**Wetlands** - Lands that are transitional between terrestrial (land) and aquatic (water) systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands serve an important environmental function such as filtering runoff and providing high quality natural habitats.

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# X. INDEX

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

## *Middle River Employment Center Access Study Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
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*Middle River Employment Center Access Study  
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XI. APPENDICES



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# APPENDIX A

## MRECAS Purpose and Need Statement

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY  
PURPOSE AND NEED STATEMENT  
December 17, 1997**





**MREC Access Study  
LOCATION MAP**

### **Purpose of the Project**

The purpose of this project is to provide improved access from the regional transportation network to enable the planned development of major economic development opportunity sites and to foster increased utilization of established employment areas in the Middle River Employment Center (MREC).

### **Need for the Project**

The need for this project is to provide a sufficient level of access and mobility to support economic development efforts in the Middle River Employment Center (MREC), as identified in the Eastern Baltimore County Revitalization Strategy adopted by the Baltimore County Council in July, 1996.

Baltimore County has designated a portion of the Middle River area as an *Employment Center*, where employment growth is planned to occur. The Middle River Employment Center (MREC) includes the 1,000-acre undeveloped A.V. Williams tract, Martin State Airport and the Chesapeake Industrial Park, which includes a Lockheed Martin/General Electric facility. The full development potential of the MREC is dependent on improved access to national transportation facilities that serve travel demand between the Baltimore area and other regions of the country.

The Amtrak northeast corridor railroad line is one such national transportation facility that already serves the MREC. The Amtrak line cuts through the MREC, providing access to the Chesapeake Industrial Park and the General Services Administration (GSA) building via spurs. However, the Amtrak line also acts as a barrier to movement between the developed section of the MREC south of the railroad and the undeveloped section of the MREC north of the railroad and is a *de facto* line of demarcation between the two sections of the MREC. The barrier effect of the railroad inhibits non-railroad movement within the MREC and between the MREC and other regional transportation facilities, such as the Interstate highway system.

Of the two sections of the MREC, the northern section, which contains the 1,000-acre A.V. Williams parcel and some smaller parcels, has a much greater potential for employment growth. The northern section of the MREC also suffers from much more deficient multi-modal access than the southern section of the MREC.

The existing roads throughout the study area are deficient in that they lack the capacity and continuity to provide adequate freight, employee and customer access to the entire MREC from the national highway network. The substandard alignment and design features of many of the roads within the study area contribute to accident rates that are significantly higher than the statewide average.

## Long-Term Planning Context

### *Growth Management and the Urban Rural Demarcation Line (URDL)*

For many suburban jurisdictions throughout the country, decisions regarding land use and growth management are now being debated and discussed. Baltimore County took on these important questions twenty years ago. After intensive analysis and discussion, the County then embarked upon an aggressive Growth Management Program based on the assumption that communities should make conscious decisions about the scope and direction of growth. The Program was embodied in the *Baltimore County Master Plan 1979-1990*, adopted by the County Council in November, 1979. It created an urban service boundary -- the "Urban Rural Demarcation Line" (URDL) -- which defines the limit of public water and sewer service, as well as the major transportation system. It also established growth areas in White Marsh and Owings Mills and asserted that rural areas should remain rural.

Since the URDL was created in 1979, capital projects, transportation improvements, zoning changes and development actions must conform to this clear separation between the County's developable areas and its rural areas. Only one-third of Baltimore County's land area is zoned for higher density residential and industrial uses. The attached *Map 1* clearly illustrates the extent to which the URDL has been effectively used to demarcate the limits of development in the County.

### *Eastern Baltimore County Revitalization Strategy*

The strong need for an economic development initiative in this area can be demonstrated by the five indicators of economic and community health identified in the Eastern Baltimore County Revitalization Strategy. (Map 2 shows the area studied in the revitalization strategy.)

1. *Population* - the study area has lost 15,000 residents since 1970
2. *Employment* - the study area was the only regional employment area (exclusive of Baltimore City) to experience net loss of jobs. Good paying manufacturing jobs have been replaced by lower paying retail and service jobs
3. *Income* - the study area has the highest concentration of poverty in Baltimore County, with a majority of the area below the County's median household income
4. *Education* - only 65% of area residents have a high school diploma. Less than 10% have advanced degrees
5. *Crime* - the study area has the highest concentration of violent crime, drug-related crime, juvenile arrests and order maintenance calls in the County.

## Economic Development

Baltimore County has targeted much of the study area for future employment growth through its countywide Growth Management Plan. An objective of the plan is to maintain an adequate supply of prime industrial land served by public infrastructure to encourage employment-generating development and redevelopment, while still preserving the rural character of 2/3 of the County's land area. Toward this end, the County designated several areas, including Middle River, as



# Landsat Satellite Image

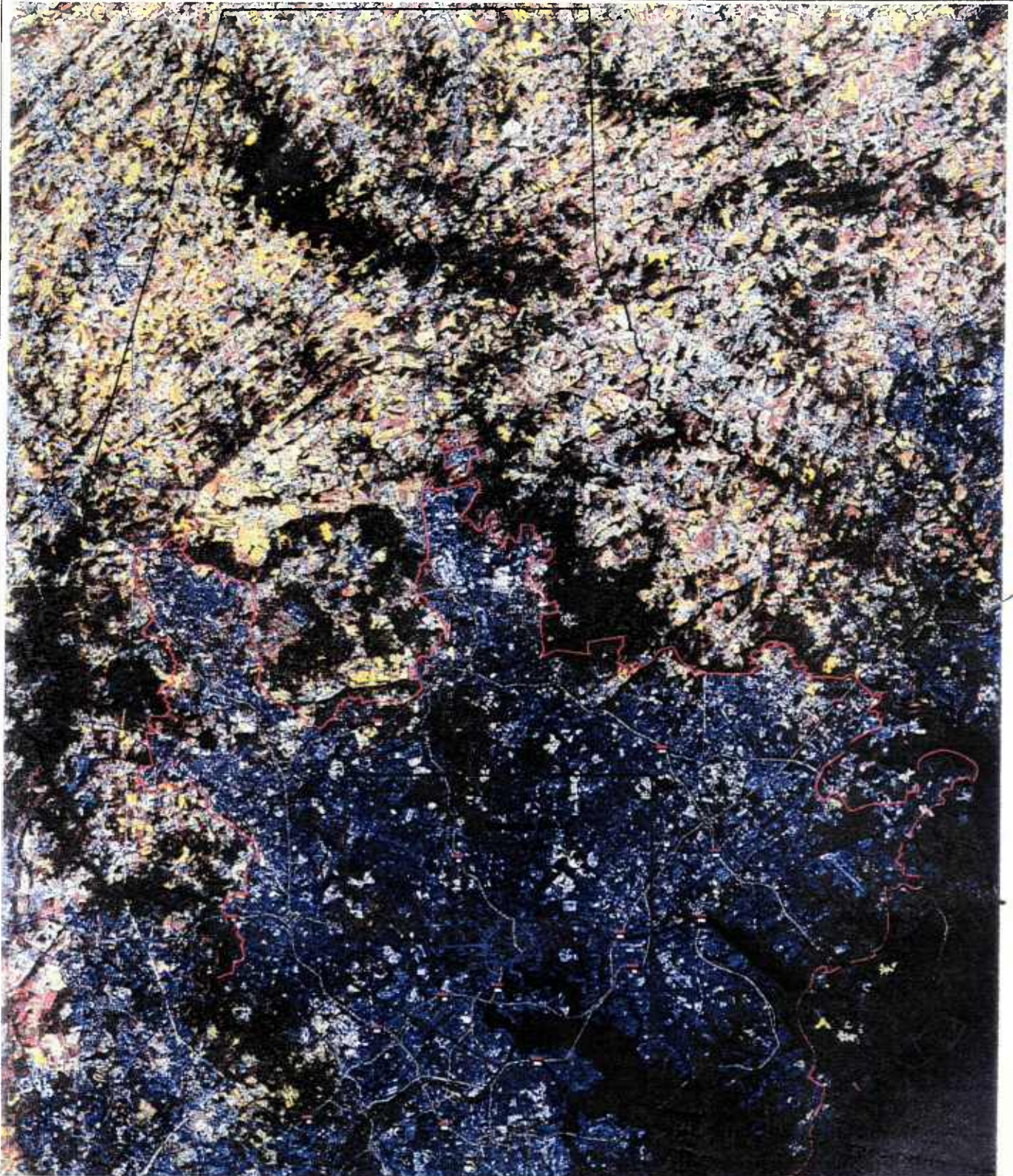
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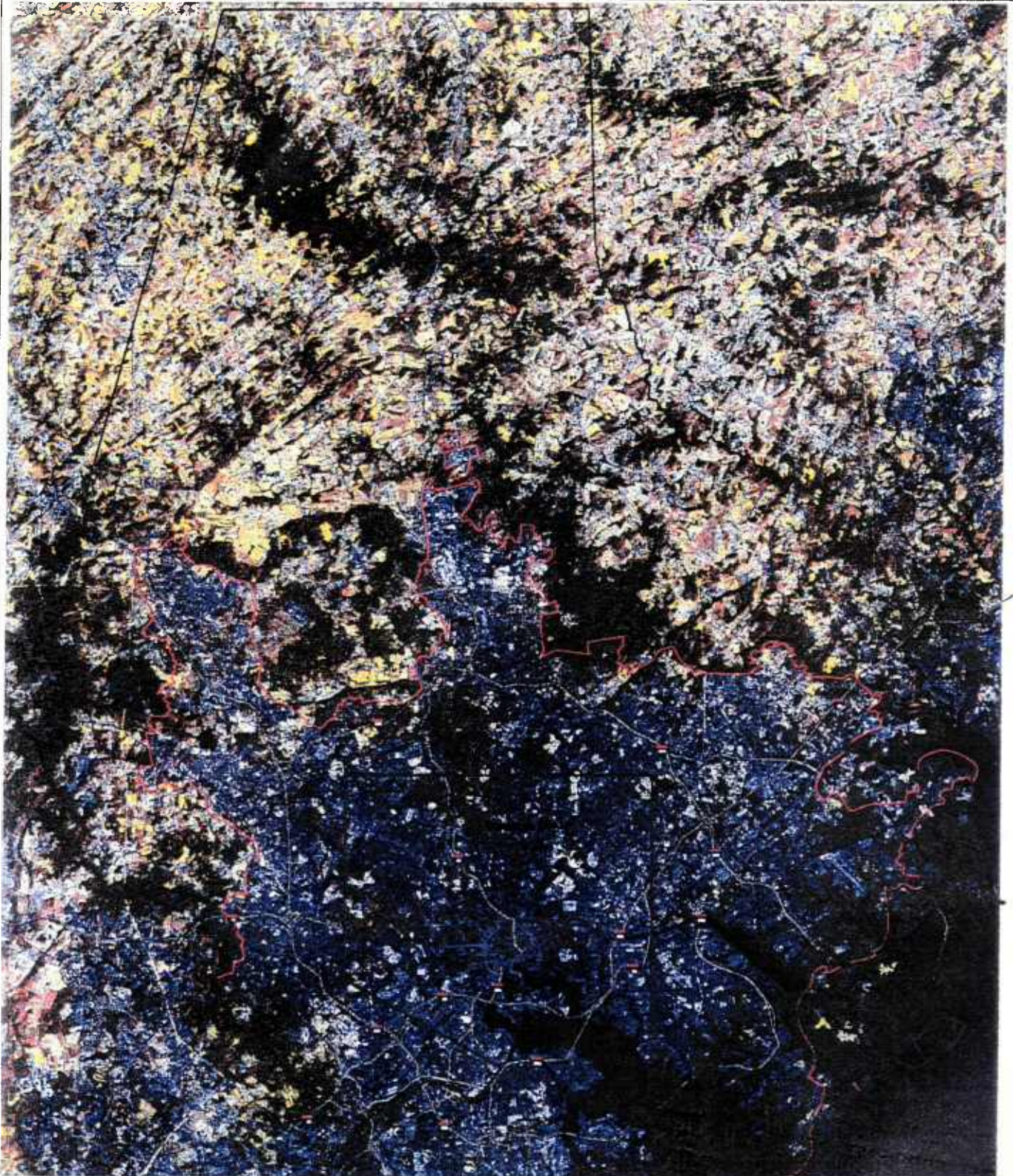
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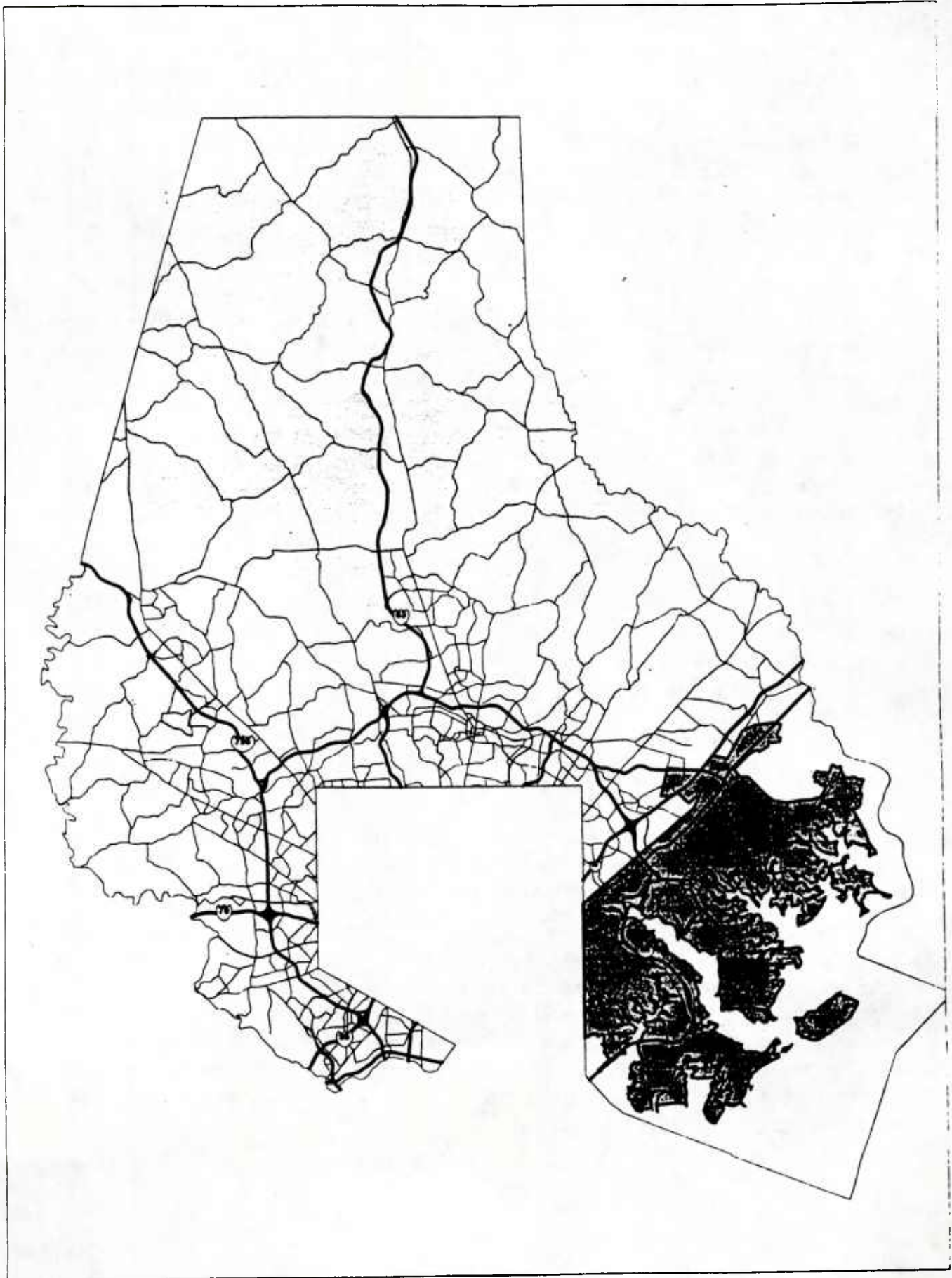
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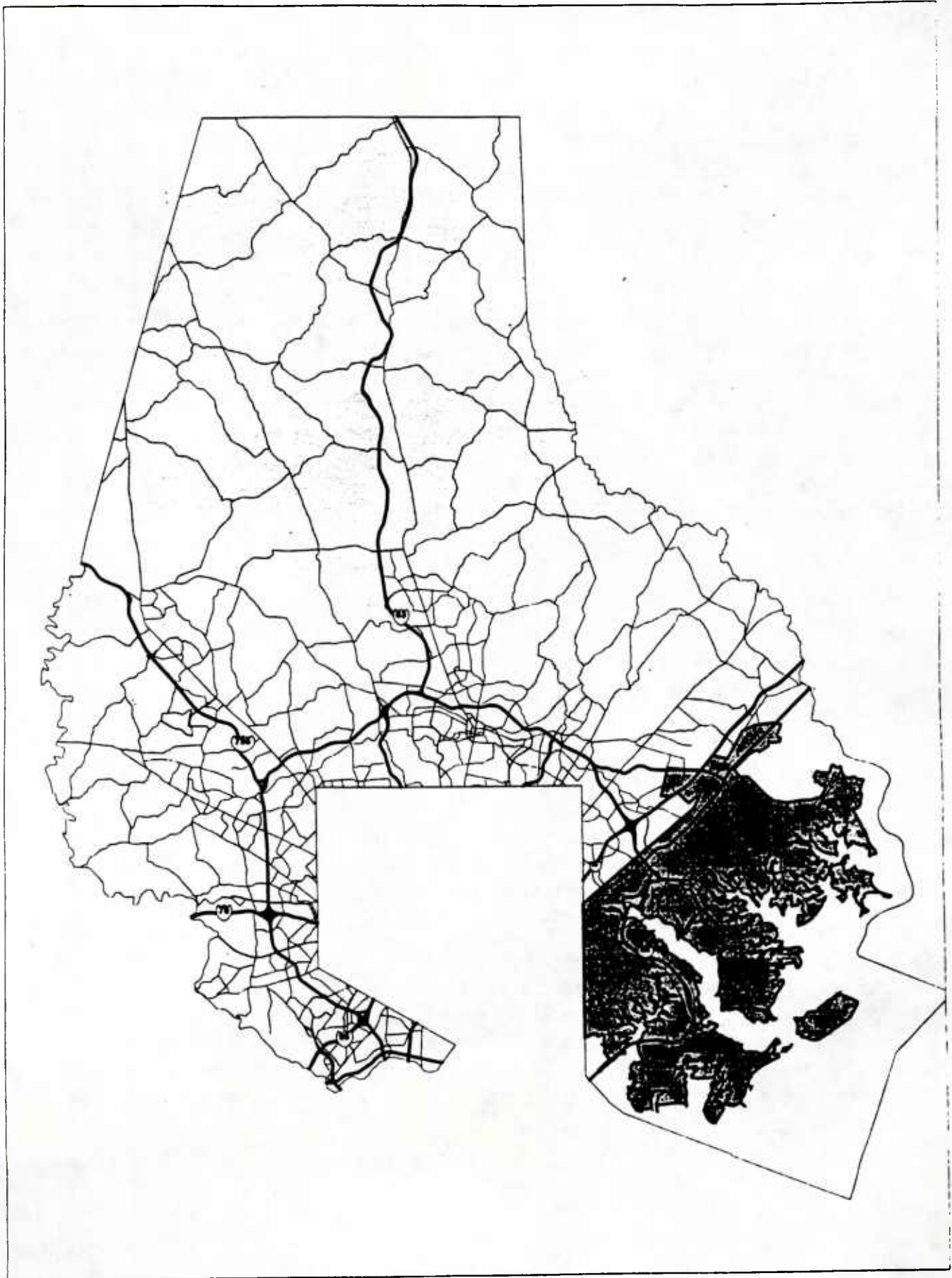
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# Eastern Baltimore Revitalization Area



# Eastern Baltimore Revitalization Area



*Employment Centers.* The Employment Center classification is defined as "existing and proposed retail office and manufacturing areas which provide significant County-wide service and employment opportunities" (June 2, 1997, Master Plan Amendment).

The Middle River Employment Center includes the Martin State Airport, the Chesapeake Industrial Park, the Lockheed Martin Aerostructures/General Electric (LMA/GE) facility, the former US Army Publications Depot, and the 1,000-acre undeveloped A.V. Williams tract (See Map 3).

The economic anchor was LMA/GE operation, which during the 1930's and 1940's, as the Glenn L. Martin Company, became a leading aircraft manufacturer. Because of corporate down-sizing and consolidation in the defense and commercial jetliner industries, production at this facility has decreased significantly in the past 50 years from a peak of 50,000 jobs during World War II to less than 1,200 jobs in 1996. This has had a negative impact on the surrounding communities which depended on the company for employment.

The newly renamed "Baltimore Aerostructures," formerly Lockheed Martin Aerostructures and recently purchased by General Electric (GE), has experienced significant growth in the last 18 months. In 1997, the company has expanded their aircraft parts machining and manufacturing business having been awarded a number of new contracts. New activity to the plant includes an additional jet engine thrust reverser project for the Air Force, a military aircraft components bonding contract and an aerostructures sub-contract for Boeing. This new activity has expanded the workforce by over 700 employees, up from 1,000 in December of 1996. GE has signed a 15 year lease with Lockheed Martin Properties (lessor of the land and buildings), and has committed to keep the existing management in place, which holds open the potential for additional business expansion at the facility in the future.

Lockheed Martin Properties also owns and represents nearly 80 acres of industrial property, known as Chesapeake Industrial Park, that is distributed among 6 parcels and available for development. The development of these parcels is zoned to include manufacturing, warehouse/distribution and office uses. Access to this undeveloped land will be greatly enhanced with improved transportation service.

Next to the GE facility is Martin State Airport (MSA), which is presently undergoing expansion. MSA has 265,000 square feet of office/industrial and hangar space available for lease, with a current occupancy rate of 95%. A number of area businesses maintain flight operations and office facilities at MSA, including Black & Decker Corporation, Crown Central Petroleum, USF&G, PHH, Ward Machinery and Lockheed Martin. A new 40,000 square foot hangar for Lockheed Martin Flight Operations is proposed, as well as a new Midfield Terminal.

Across the street from Martin State Airport is the 1.7 million square foot General Services Administration (GSA) building. This building, owned by GSA, was the site of a major Army Publications Depot facility until that operation was relocated in 1996 as part of the Base Realignment and Closing (BRAC) process. The building is presently 53% leased and houses the Social Security Administration, an Air Force Publications facility, and the State Department as tenants. The remaining 47% is being actively marketed by GSA, with the potential of an additional 400,000 square feet being leased in the immediate future. GSA plans to maintain control of the facility for lease to government entities.



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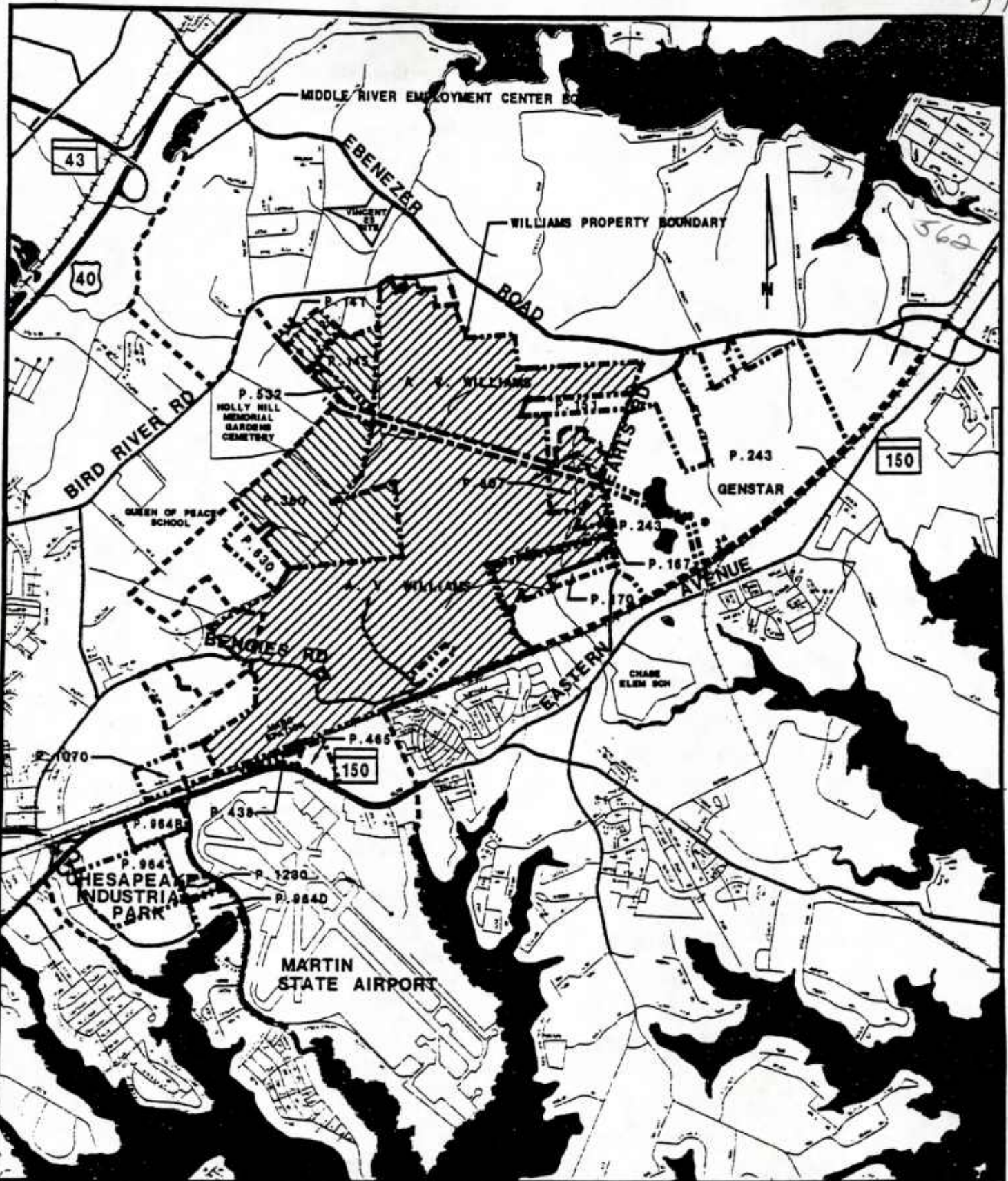
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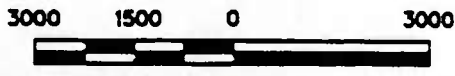
Lockheed Martin Properties also owns and represents nearly 80 acres of industrial property, known as Chesapeake Industrial Park, that is distributed among 6 parcels and available for development. The development of these parcels is zoned to include manufacturing, warehouse/distribution and office uses. Access to this undeveloped land will be greatly enhanced with improved transportation service.

Next to the GE facility is Martin State Airport (MSA), which is presently undergoing expansion. MSA has 265,000 square feet of office/industrial and hangar space available for lease, with a current occupancy rate of 95%. A number of area businesses maintain flight operations and office facilities at MSA, including Black & Decker Corporation, Crown Central Petroleum, USF&G, PHH, Ward Machinery and Lockheed Martin. A new 40,000 square foot hangar for Lockheed Martin Flight Operations is proposed, as well as a new Midfield Terminal.

Across the street from Martin State Airport is the 1.7 million square foot General Services Administration (GSA) building. This building, owned by GSA, was the site of a major Army Publications Depot facility until that operation was relocated in 1996 as part of the Base Realignment and Closing (BRAC) process. The building is presently 53% leased and houses the Social Security Administration, an Air Force Publications facility, and the State Department as tenants. The remaining 47% is being actively marketed by GSA, with the potential of an additional 400,000 square feet being leased in the immediate future. GSA plans to maintain control of the facility for lease to government entities.

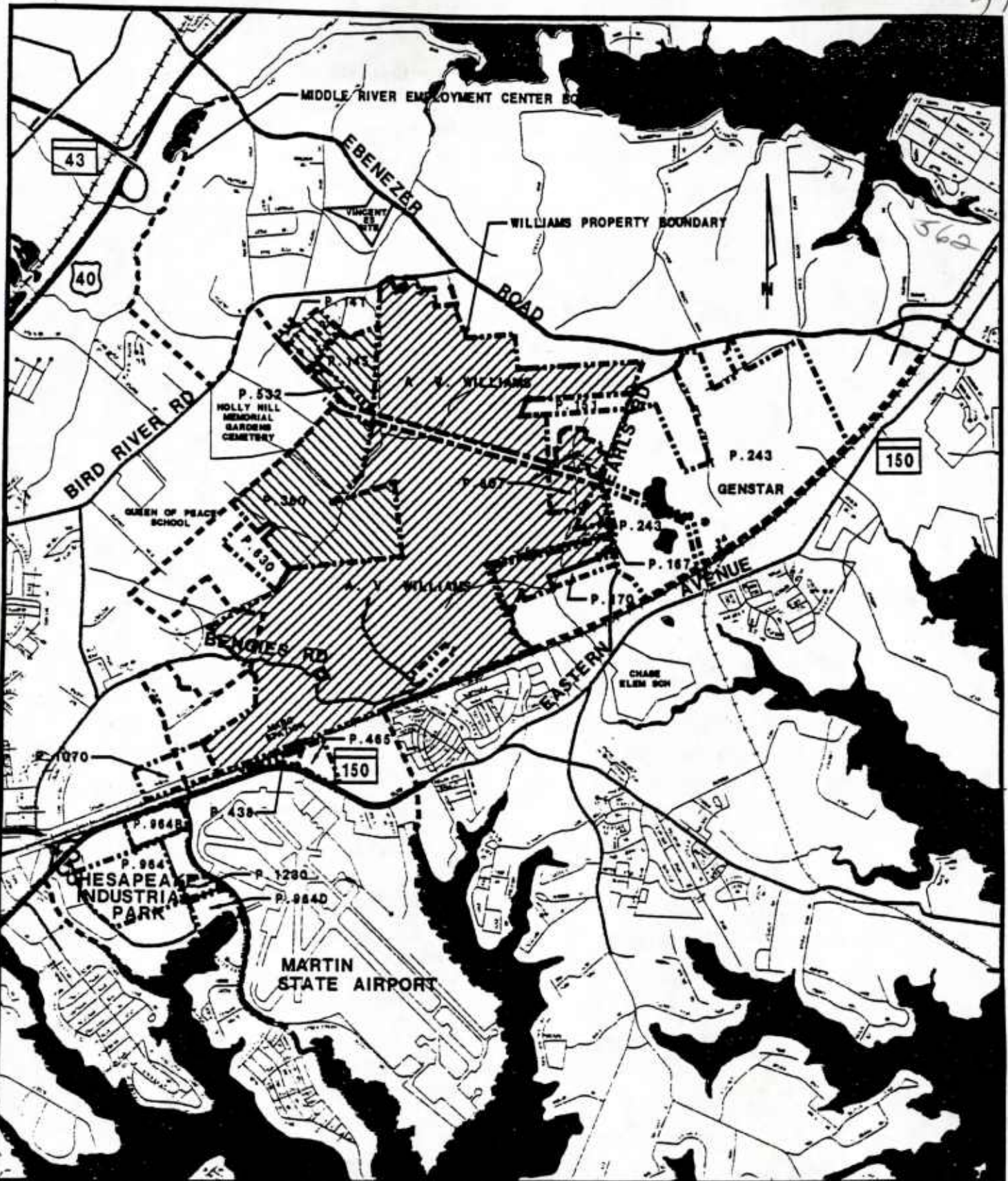


MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
 MIDDLE RIVER EMPLOYMENT CENTER



MAP 3

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MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
 MIDDLE RIVER EMPLOYMENT CENTER



MAP 3

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Nottingham Properties, the primary developer of the White Marsh Town Center has experienced significant growth over the past decade. Today, the Town Center has nearly 3.7 million square feet of commercial space. When the 250 undeveloped acres are brought on-line, total potential build-out will be 5.0 million square feet. The development of the Town Center has been most dramatic since the extension of Route 43 from I-695 to Route 40. The road extension has contributed to the development of many projects, specifically the Warner Bros., Danfoss Automatic Controls, CSS Power and Metris facilities.

***Economic Development Potential of the MREC: Conservative and Expected Scenarios***

The Middle River Employment Center has tremendous economic development potential with its existing industrial uses, waterfront access, airport, railroad, and large inventory of undeveloped, industrially-zoned land. To estimate the development potential and fiscal impact of likely commercial development in the study area resulting from increased access in the area, Baltimore County created a development model including all vacant parcels with five or more acres in the study area that would likely be developed for commercial or industrial uses. (Map 4 identifies the development parcels considered in the model and the wetlands delineated in the study area). The County evaluated two alternative scenarios -- the first assuming the most conservative development factors, and the second assuming development factors that more closely represent what is expected to happen. Because of the extensive nature of the environmental constraints within the study area, both development models assume that only 50% of the available land will be developable.

Assumptions for the Expected Scenario differ from those for the Conservative Scenario in the following four ways:

1. The Expected Scenario assumed that for the A.V. Williams Tract alone, a somewhat higher proportion of manufacturing and flex space and a lower proportion of warehouse distribution development would occur than did the Conservative Scenario (see Table A). The assumed use distribution for all other parcels in the study area was the same under both scenarios.
2. The Expected Scenario assumed a less conservative coverage ratio for the development expected to occur on the target parcels than the Conservative Scenario used (see Table B).
3. The Expected Scenario used a less conservative estimate of the construction costs per square foot for the various types of development than did the Conservative Scenario (see Table C).
4. The Expected Scenario assumed a somewhat denser employee/square foot ratio than did the Conservative Scenario (see Table D).

Table A represents the assumed development breakdown of the A.V. Williams tract. Note that the remaining parcels were all assumed to be developed in the same manner under both scenarios. Table 2 in Appendix A contains a complete listing of development types by parcel.

<b>Table A - Development Breakdown of A.V. Williams Tract</b>		
	<i>Conservative</i>	<i>Expected</i>
Warehouse Distribution	50%	33%
Flex Space	30%	33%
Manufacturing	20%	33%

Nottingham Properties, the primary developer of the White Marsh Town Center has experienced significant growth over the past decade. Today, the Town Center has nearly 3.7 million square feet of commercial space. When the 250 undeveloped acres are brought on-line, total potential build-out will be 5.0 million square feet. The development of the Town Center has been most dramatic since the extension of Route 43 from I-695 to Route 40. The road extension has contributed to the development of many projects, specifically the Warner Bros., Danfoss Automatic Controls, CSS Power and Metris facilities.

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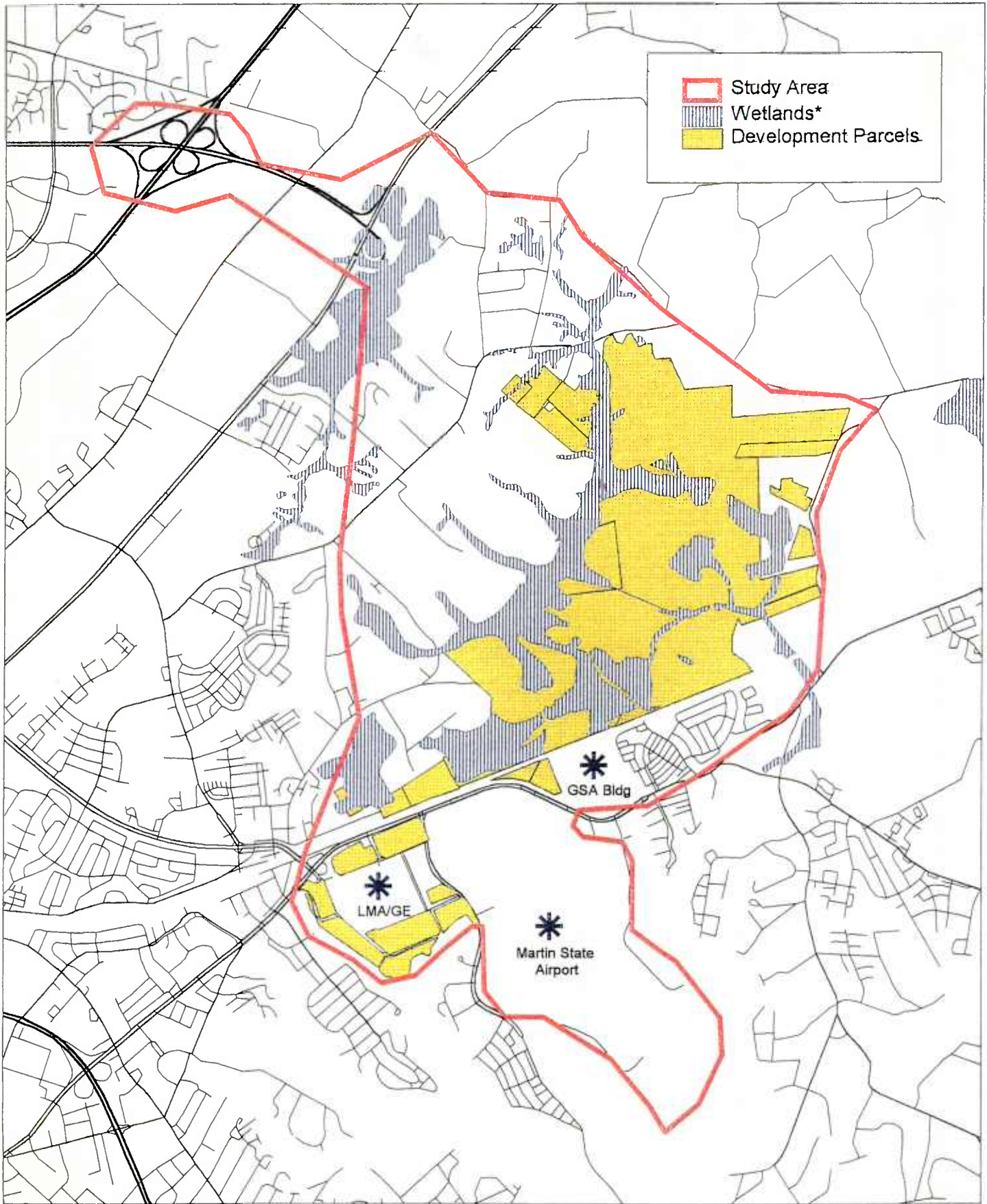
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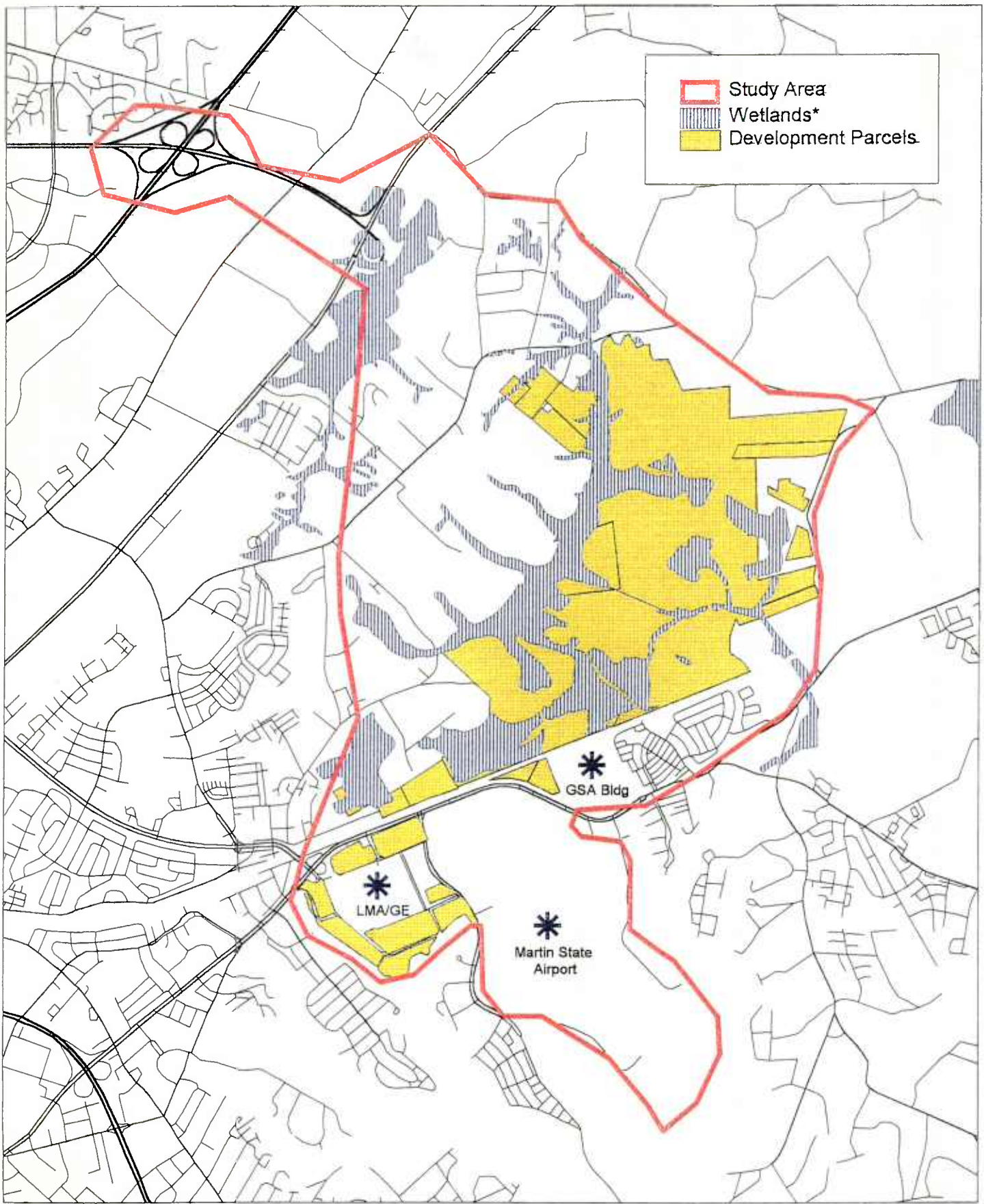
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Flex Space	30%	33%
Manufacturing	20%	33%



\*Wetlands information provided by the Baltimore County Department of Environmental Protection & Resource Management



Study Area  
Wetlands\*  
Development Parcels.

\*Wetlands information provided by the Baltimore County Department of Environmental Protection & Resource Management

Table B represents the expected coverage ratios for the development expected to occur on the target parcels. The coverage ratios represent the expected amount of building space in relation to the total area of the parcel. These ratios take into account the County's standard development regulations for setbacks, reforestation, stream buffers, parking, etc. The coverage ratios were derived by examining other similar developments in the area.

<b>Table B - Expected Coverage Ratios (entire study area)</b>		
	<i>Conservative</i>	<i>Expected</i>
Light Industrial	0.23	0.28
Office	0.33	0.40
Commercial	0.27	0.32
Distribution Warehouse	0.20	0.24
Manufacturing	0.20	0.24
Flex Space	0.23	0.28

Table C represents the estimate construction cost per square foot to build each development type. These figures were derived by examining comparable development costs for various building types in the area.

<b>Table C - Construction Costs per Square Foot (entire area)</b>		
	<i>Conservative</i>	<i>Expected</i>
Light Industrial	\$60	\$70
Office	\$90	\$100
Commercial	\$70	\$80
Distribution Warehouse	\$40	\$45
Flex Space	\$60	\$65
Exhibition Space	\$50	\$50
Manufacturing	\$65	\$70

Table D represents the expected allocation of square feet per employee to derive an expected total employment for each development parcel. These figures were developed by examining other similar business operations in the area.

<b>Table D - Estimated Square Feet per Job (entire acreage)</b>		
	<i>Conservative</i>	<i>Expected</i>
Light Industrial	500	400
Office	300	200
Commercial	300	300
Distribution Warehouse	1,000	800
Flex Space	625	500
Exhibition Space	2,000	1,500
Manufacturing	500	400



Table E summarizes the results of the model, as well as the level of development expected under a “no-build” scenario, i.e., if improved access is not provided. A complete summary of the conservative impact model and the “no-build” model can be found in Tables 2 - 5 in Appendix A. Based on the above stated assumptions, the development of the parcels in the study area is expected to yield between 9,600 and 15,500 new jobs for the area, and result in new private investment of \$330 million to \$460 million if improved access is provided. If improved access is not provided, the parcels are expected to yield only 2,000 new jobs and \$58 million in private investment. A complete summary of how the model was formulated and the underlying assumptions can be found in Attachment 1 in Appendix A.

<b>Table E - Development Model Results Summary</b>			
	<i>Conservative</i>	<i>Expected</i>	<i>No-Build</i>
Acres Developed	647	647	84
Square Feet Built	6,080,639	7,307,479	890,117
Employment	9,638	15,564	2,052
Capital Investment	\$331,052,435	\$462,395,964	\$58,197,822
30-NPV of County Taxes	\$28,304,897	\$41,745,056	\$5,351,895

The following conditions were used in estimating the intensity of development if no improvements were to be made to the existing roadway network:

- The undeveloped land within the study area has either limited or remote access to two 2-lane roadways, Bird River Road and Ebenezer Road, which serve residential areas and are not designed to accommodate large trucks or tractor-trailers.
- Ebenezer Road connects to US 40, however access to the Interstate system is circuitous.
- No direct access to MD 150 now exists from the land parcels north of the Amtrak line because the line acts as a barrier and an above-grade crossing would be required.
- Windlass Run and associated wetland areas make access to all parcels difficult.
- Bird River Road does not now connect with a major highway facility. (Campbell Boulevard is a master-planned road that was assumed to be extended from MD 7 to Bird River Road in the future.)

The A.V. Williams property is the largest industrial tract of land under single ownership in the County (1,000 acres), but has not been developed to its planned potential primarily because of poor highway access, although sewer service is also needed. With over 7,500 feet of frontage on Amtrak's northeast corridor, rail access is excellent. However, the Amtrak railroad acts as a barrier, preventing access between this property and MD 150. The Master Sewer and Water Plan was amended in 1996 to designate this property as a capital facilities area, which means that water and sewer services would be made available within the framework of the six-year capital program. Over the past few years, the A.V. Williams parcel has been proposed at different times for development as an automobile assembly plant, an amusement park with a foreign trade zone, and an automobile raceway with a 100,000-seat stadium. Each of these proposals was critically dependent on significantly improved regional highway access to accommodate large volumes of freight, employees and/or customers.

In addition to the Williams tract, the Chesapeake Industrial Park has about 80 acres of developable land with access to MD 150, a rail spur to the Amtrak line, and shoreline frontage along Dark Head Creek. The site has been proposed as a mixed use waterfront conference and convention center. Across from the Martin State Airport is 800,000 square feet of warehouse space available in the GSA building. A comparison of Tables 2 and 3 indicates that development of these sites, located in the southern portion of the MREC, is not dependent on improved access. Recent experience shows, however, that new business attraction to the area has been slow or non-existent. It is a real estate judgment that the area is being by-passed for other regional areas that have advantageous highway access.

Table 1 of Appendix A outlines a potential for developing nearly 1,200 residential units within the study area. Four parcels are also included in Tables 2 and 3, indicating a potential for re-zoning from residential to zoning that would allow light industrial uses. The traffic generated by the residential development will contribute significantly to congestion on existing local roads that currently provide access to the northern section of the MREC.

**Potential Benefits and Fiscal Impacts**

The following Table F displays growth projections of population, households, labor force and employment for the Middle River Employment Center and the study area. Round 5A is the most recent projection which includes an assumption that a new four-lane highway would be constructed between US 40 and MD 150 with access to the A.V. Williams parcel, in accordance with the Baltimore Metropolitan Council's Constrained Long Range Plan.

<b>Table F - Projected Growth:1995-2020</b>			
	1995	2020	% Change
Population	16,273	16,021	-1.5%
Households	6,236	6,524	4.6%
Labor Force	8,681	8,561	-1.4%
Employment	12,186	23,528	93.1%

Source: Baltimore County Office of Planning, Round 5A projections for transportation zones 411, 441, 442, 486, 487 and 499.

The growth projections show that employment is expected to increase significantly with the highway network assumptions. Households are expected to increase slightly, and population and labor force are expected to remain near the current level. This data indicates that the future need for employees living outside the Middle River Employment Center to commute to jobs within the Middle River Employment Center will be greater in the future than it is today.

Transportation improvements in the study area are the critical element of realizing the economic development potential for the Middle River Employment Center. Specifically, transportation improvements would:

- allow the A.V. Williams tract to develop as planned,
- improve freight access to the under-utilized Lockheed Martin/GE facility and to the GSA building,
- advance the development of Chesapeake Industrial Park
- provide convenient access to Baltimore County's waterfront sites and shoreline,
- provide convenient access to the MARC station and Martin State Airport from I-95, facilitating intermodal transfers between highway, rail and air transportation systems.

Of the 1,760 acres of commercially and industrially zoned land that was studied, it is estimated that 647 acres would be developed over a 30-year period. On these 647 acres, there is a potential for 6.1 million to 7.3 million square feet of commercial and industrial space, representing between \$330 million and \$460 million in new investment. This development is expected to create between 9,600 and 15,500 new jobs in Baltimore County with associated wages of \$270 million to \$440 million annually.

The projected impact of the expected development on Baltimore County revenues is very significant. New real property tax revenue is expected to be between \$3.8 million and \$5.3 million annually at buildout. Baltimore County income tax revenues resulting from the new jobs created are expected to be between \$2.1 million and \$3.4 million annually at build-out. Based on straight-line 30-year build-out, the net present value of the county tax revenues to be received over the 30-year period is expected to be between \$28 million and \$42 million. This figure does not take into account any spin-off or multiplier effects of the development.

If regional access is not provided, it is estimated that only 87 acres of the nearly 1,800 acres of industrially zoned land in the Study Area would be developed due to an inadequate transportation infrastructure serving the area. The total fiscal impact is expected to be less than one-fourth of what it would be if a major transportation facility providing direct access became a reality. New real property tax revenue would be just under \$665,000 annually with less development at build-out. Income tax revenues resulting from the 2,000 new jobs created will be only \$449,000 annually. Based on straight-line 30-year build-out, the net present value of the county tax revenues to be received over the 30-year period would result in little more than \$5 million. This is \$23 million to \$36 million less than the full build-out scenario if a transportation facility were constructed.

**Existing Transportation Infrastructure**

The existing infrastructure includes the Martin State Airport, an Amtrak rail line, Mass Transit Administration service and a joint County/State highway network. (See Map 5 )

***Martin State Airport***

Martin State Airport (MSA) is Maryland's largest general aviation facility. The airport is located eight miles east of the City of Baltimore and occupies 707 acres in the Middle River area of

Baltimore County. MSA is owned by the State of Maryland and is operated by the Maryland Aviation Administration (MAA). With its control tower and long runway, it is capable of handling additional corporate air traffic.

Martin State Airport is the home base for the Maryland Air National Guard (MANG), the Maryland State Police Aviation Division, the Baltimore City Police Helicopter Unit, the Baltimore County Police Marine/Aviation Unit, a number of aviation sections of major Maryland corporations and 262 general aviation aircraft.

The MAA conducted a Master Plan Study in 1994 to identify improvements required to ensure the airport is capable of satisfying expected demand over the next twenty years; and update forecasts on the airport's activities. The number of general aviation aircraft registered in the Baltimore Region is projected to grow at approximately 0.25 percent annually to 1,510 by the year 2000, slightly increasing to 0.75 percent to 1,627 in the year 2010. These growth rates reflect the continued good health of the Region's economy over the long-term. The objectives of the Martin Master Plan are to preserve the airport as a general aviation facility in the Baltimore Region and protect its capacity to accommodate existing and future levels of demand, ensuring that the airport will continue to operate as a general aviation reliever for Baltimore-Washington International Airport (BWI), and ensuring a continuing base for the MANG.

***Amtrak Rail Service***

Amtrak, the high speed rail line serving the Northeast Corridor, traverses the study area along the west side of MD 150, however, no service is provided within the area. Amtrak is currently investigating the possibility of locating a new station within the study area between Earls Road and the MARC Station. Improved highway access is critical to the feasibility of the new Amtrak station to provide adequate attraction potential from a larger area than exists today to justify station use.

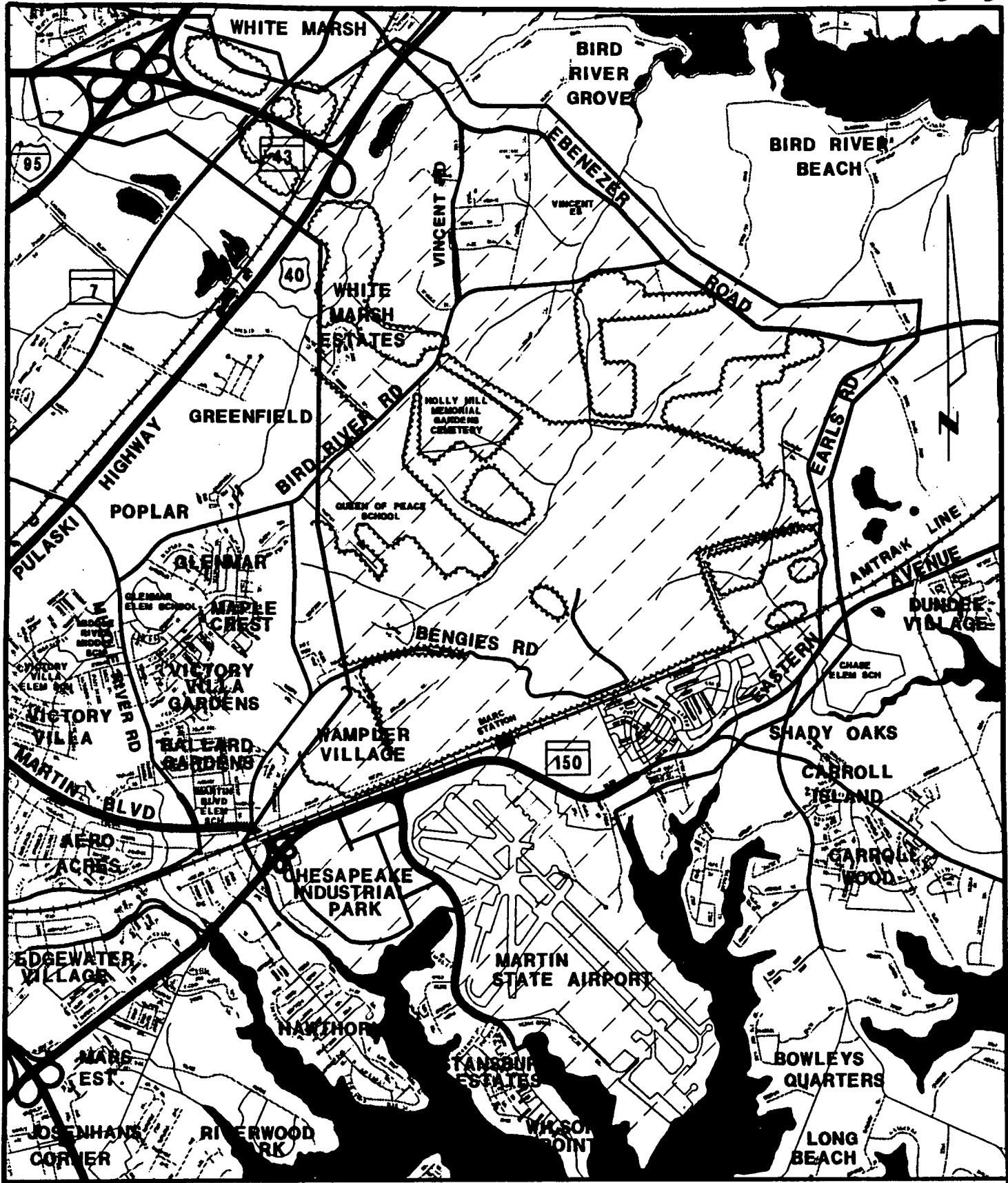
***MTA Service***

***Rail***

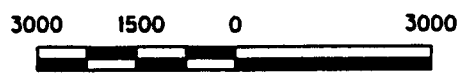
The Maryland Commuter Rail Service (MARC) operated by MTA initiated service to eastern Baltimore County, within the study area, in 1991 when the Penn Line service was extended from Baltimore City to Perryville in Cecil County. The MSA Station was established at that time on MD 150 across from MSA. The Penn Line provides commuter rail service over the Amtrak northeast corridor between Union Station in Washington, DC and Perryville. Although this line serves Baltimore's Penn Station, its primary function is to provide commuter service to Washington, DC.

***Bus***

Bus service within the study area is provided by the MTA's #24 bus line. This a core bus route that operates via Pulaski Highway, Kelso Road, Martin Boulevard and Middle River Road to Eastern Boulevard. It provides service between Oliver Beach/ Tidewater Village and Middle River/ Franklin Square Hospital.



**MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
TRANSPORTATION INFRASTRUCTURE**



**MAP 5**

## ***Highway Network***

The MREC area is serviced by a mixed network of highways and local roads on the State highway and Baltimore County road systems.

US 40 is a four-lane divided arterial highway providing east-west movement for both local and through traffic between Baltimore City and Harford County. I-95, located approximately one mile west of US 40, is the principal north-south interstate highway on the east coast\*. MD 7 (Philadelphia Road), a secondary two-lane roadway situated parallel to, and between US 40 and I-95, provides additional north-south movement, primarily serving local traffic needs. MD 150 (Eastern Avenue) is a two to four-lane highway leading to, and providing access from, the predominantly residential areas of Bowleys Quarters and Carroll Island, Middle River, the Martin State Airport, Essex, and Baltimore City. Major east-west traffic movements within the MREC area between US 40 and MD 150 are provided by Ebenezer Road and Earls Road. Additional traffic circulation within the area is provided primarily by Bird River Road, and Vincent Road.

Ebenezer Road located along the northern boundary of the MREC area is maintained and owned by Baltimore County. The roadway has a two-lane section with 11-foot lanes, no shoulders or access controls with twelve at-grade intersections and approximately 115 driveways accessing the roadway. A cemetery is located close to the roadway just east of Earls Road. Land use is predominantly residential with agricultural and local service businesses also present.

Vincent and Bird River Roads are located in the western portion of the MREC area. These roadways are primarily older, established residential streets with some evidence of new development along the western end of Bird River Road. The two-lane roadways have 10 foot lanes and no shoulders or access controls.

Earls Road, a connecting link between MD 150 and Ebenezer Road, has severe design deficiencies in both horizontal and vertical alignments. The roadway section includes two 10-foot lanes with no shoulders. Land use is predominantly commercial with a sand and gravel plant, nursery, auto junkyard and other similar uses. Scattered residential uses are also evident. The existing land use results in significant truck traffic along the roadway. The bridge on Earls Road crossing Amtrak is restricted, with a maximum weight limit of five tons and a speed limit of 30 miles per hour. The bridge is scheduled for complete in-kind replacement to begin in the later part of 1997. The deficiencies, in both the road and bridge crossing, contribute to a high accident rate on Earls Road.

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\* Although I-95 is designated a north-south highway and US 40 is designated an east-west highway, they run parallel to each other between Baltimore and New Castle, Delaware, and actually have a northeast-southwest orientation through eastern Baltimore County.

**Safety**

An accident analysis was performed for the MREC Area for the three-year period of January 1, 1994 to December 31, 1996. The analysis indicated there was a total of 336 reported accidents on the network of roads in the study area during this period. The following roadways were included:

- MD 150; Martin Blvd. (MD 700) to Ebenezer Road
- MD 43; I-95 to US 40
- Ebenezer Road; US 40 to MD 150
- Bird River Road; Ebenezer Road to Middle River Road
- Vincent Road; Ebenezer Road to Bird River Road
- Earls Road; MD 150 to Ebenezer Road

The results of the analysis reveal that Earls Road, Vincent Road, Bird River Road and MD 150 are operating with accident rates that are statistically significantly higher than the statewide average rate for similar type and design highways. Of the 336 reported accidents on the study area road network, there were six fatalities, 352 personal injuries and 140 accidents involving only property damage.

Ebenezer Road, MD 150, Earls Road, Bird River Road and Vincent Road have significantly higher rates of rear end, opposite direction, sideswipe, fixed object, pedestrian and parked vehicle type accidents than the statewide average. Data in Appendix B shows the type and severity of accidents that occurred on the specific roadways. There were no High Accident Intersections identified in the study area.

**Summary**

The Middle River Employment Center Area (MREC) is targeted for revitalization and for additional employment growth through its Eastern Baltimore County Revitalization Strategy and its countywide Growth Management Plan. The MREC is planned for significant economic growth that can not be accommodated with the existing transportation infrastructure. In order for this development to occur, as Baltimore County has planned, additional multi-modal access needs to be examined. The need for this study is to examine ways to enable development to occur that can result in the 10,000 -15,000 proposed new jobs for the area.

# APPENDIX A

## Development Potential

### Residential Development Potential

Table 1

Owner	Map	Parcel	Land Area	Existing Zoning	Potential Zoning	Density	Potential Units
BALTIMORE GAS & ELECTRIC CO..	82	0230	31.00	RC-3	DR 1	1	31
BALTIMORE GAS & ELECTRIC CO.	82	0608	14.32	RC-3	DR 1	1	14
BALTIMORE GAS & ELECTRIC CO	83	0143	19.61	RC-3	DR-2	2	38
BEVANS CHARLES C.	83	0145	25.64	RC-3	DR-2	2	50
GAMBRILL CHARLES A.. JR.	83	0035	31.02	RC-3	DR-2	2	61
GOLDSBERRY FLORENCE A.	83	0532	17.29	RC-3	DR-2	2	34
GROSS HELEN M.	90	0980	11.00	DR-2	DR-2	2	21
LAUBACH GEORGE, JR.	82	0197	12.18	DR-1, 2	DR 1	1	12
NOTTINGHAM FARMS INC.	82	0111	55.69	RC-3	DR-2	2	110
NOTTINGHAM FARMS INC.	82	0594	12.46	DR-3.5	DR-3.5	3.5	42
NOTTINGHAM PROPERTIES INC.	82	0109	15.49	RC-3	DR-2	2	30
PAUL SARAH F.	83	0377	14.31	RC-2	DR-2	2	28
ROHE FARM LANE DEVELOPMENT INC.	82	0741	22.99	DR-2	DR-2	2	45
ROSEDALE ROOFING COMPANY INC.	83	0677	13.26	RC-3	DR-2	2	26
SECURITY MANAGEMENT CORP.	83	0360	110.00	RC-3, DR-1	DR-2	2	219
SHERMAN GEROLD D.	82	0238	52.04	DR-1, 2, 3	DR-1,2,3,5	3	155
SKALSKI ANDREA	83	630	31.50	ML-1M	DR-2	2	62
SLOWIK JOHN A.	90	0093	10.13		DR-2	2	19
STATE HIGHWAY ADMINISTRATION	83	0452	11.49		DR-2	2	22
TITO INC.	82	0149	17.73	DR-3.5	DR-3.5	3.5	60
TREMPER HERMAN H.	83	0142	16.21	RC-3	DR-2	2	31
WELSH SCOTT LEBRUN	83	0220	11.09	RC-2	DR-2	2	21
WHITE, RANDY W.	83	387	18.05	MLR-1M	DR-2	2	35
	83	10	10.13	RC-3	DR-2	2	19
<b>TOTAL</b>			<b>584.63</b>				<b>1185</b>



# NEW Commercial and Industrial Development Potential

Owner	Map	Parcel	Zoning	Total Acres	% by use	Development Type	Acres for Develop. 50%	Square Feet		
AV Williams and Univ. of Maryland	83	147	"M" - IM	984	50%	Distribution Warehouse	246	2,143,152		
		148				30%	Flex Space	148	1,478,775	
		164				20%	Manufacturing	98	857,261	
		91				196				
Chesapeake Park  (Lockheed Martin)	90	964	MH-IM			Office	7	93,436		
		A				MH-IM	13	Office	9	129,373
		B				MH-IM	18	Distribution Warehouse	3	26,136
		C-1230				MH-IM	6	Commercial/Office	7	76,448
		D				MH-IM	13	Commercial	6	70,567
		F				MH-IM	12	Exhibition Space	11	75,000
		G & H				MH-IM	21	Lockheed Martin		
Security Management	83	360	"M" - IM	60	50%	Light Industrial	15	150,282		
					50%	Flex Space	15	150,282		
Genstar	83	243	"M" - IM	399		Mining				
Kellner	83	141	RC 3	5		Light Industrial	3	25,047		
Tremper	83	142	RC 3	16		Light Industrial	8	80,150		
Bevans	83	145	RC 3	16		Light Industrial	8	80,150		
Goldsberry	83	532	RC 3	24		Light Industrial	12	120,226		
Comer	83	607	MH-IM	13		Light Industrial	7	65,122		
Casson	83	167	MH-IM	8		Light Industrial	4	40,075		
Chase Auto	83	170	MH-IM	10		Light Industrial	5	50,094		
MARC	91	438	MH-IM	5		Transit Center	3	21,780		
MD Transportation	91	465	MH-IM	9		Distribution Warehouse	5	39,204		
Leland Industrial	90	1070	ML-IM	14		Light Industrial	7	70,132		
	90	773	ML-IM	8		Light Industrial	4	40,075		
	90	514	ML-IM	8		Light Industrial	4	40,075		
Rosser, Thomas E.	90	1112	ML-IM	13		Light Industrial	7	65,122		
Northpoint Holding	83	151	MLR-IM	19		Light Industrial	9	92,674		
<b>TOTAL DEVELOPMENT</b>				<b>1,760</b>			<b>647</b>	<b>6,080,639</b>		

## ASSUMPTIONS:

### 1. FLOOR AREA RATIOS:

Light Industrial =	0.23	Distribution Warehouse or Manufacturing =	0.20
Office =	0.33	Flex Space =	0.23
Commercial =	0.27		

- Area for MD 43 Right-of-Way is not subtracted from parcel total.
- Existing development is not included in total development summary.
- "M" = multiple industrial zones currently located on parcel.
- RC 3 zoned parcels would be rezoned to an "M" classification.

# NEW Development Potential w/o Master-Planned Access

Owner	Map	Parcel	Zoning	Total Acres	% by use	Development Type	Acres for Develop. 50%	Square Feet	
AV Williams and Univ. of Maryland	83	147	"M" - IM	984	50%	Distribution Warehouse	-	-	
		148				30%	Flex Space	-	-
		164				20%	Manufacturing	-	-
	91	196							
Chesapeake Park  (Lockheed Martin)	90	964							
		A	MH-IM	13		Office	7	93,436	
		B	MH-IM	18		Office	9	129,373	
		C-1230	MH-IM	6		Distribution Warehouse	3	26,136	
		D	MH-IM	13		Commercial/Office	7	76,448	
		F	MH-IM	12		Commercial	6	70,567	
		G & H	MH-IM	21		Exhibition Space	11	75,000	
Security Management	83	630	"M" - IM	60	50%	Light Industrial	-	-	
					50%	Flex Space	-	-	
Genstar	83	243	"M" - IM	399		Mining			
Kellner	83	141	RC 3	5		Light Industrial	-	-	
Tremper	83	142	RC 3	16		Light Industrial	-	-	
Bevans	83	145	RC 3	16		Light Industrial	-	-	
Goldsberry	83	532	RC 3	24		Light Industrial	-	-	
Comer	83	607	MH-IM	13		Light Industrial	-	-	
Casson	83	167	MH-IM	8		Light Industrial	-	-	
Chase Auto	83	170	MH-IM	10		Light Industrial	5	50,094	
MARC	91	438	MH-IM	5		Transit Center	3	21,780	
MD Transportation	91	465	MH-IM	9		Distribution Warehouse	5	39,204	
Leland Industrial	90	1070	ML-IM	14		Light Industrial	7	70,132	
	90	773	ML-IM	8		Light Industrial	4	40,075	
	90	514	ML-IM	8		Light Industrial	4	40,075	
Rosser, Thomas E.	90	1112	ML-IM	13		Light Industrial	7	65,122	
Northpoint Holding	83	151	MLR-IM	19		Light Industrial	9	92,674	
<b>TOTAL DEVELOPMENT</b>				<b>1,760</b>			<b>84</b>	<b>890,117</b>	

## ASSUMPTIONS:

### 1. FLOOR AREA RATIOS:

Light Industrial =	0.23	Distribution Warehouse or Manufacturing =	0.20
Office =	0.33	Flex Space =	0.23
Commercial =	0.27		

2. Area for MD 43 Right-of-Way is not subtracted from parcel total.

3. Existing development is not included in total development summary.

4. "M" = multiple industrial zones currently located on parcel.

5. RC 3 zoned parcels would be rezoned to an "M" classification.

## Fiscal Impact of New Development on County Revenues

Owner	Parcel	Market Value of Imprvts.	Property Tax Revenue	New Jobs	Total Annual Wages	Income Tax Revenue	Total New Tax Revenue	30-Year NPV
AV Williams and Univ. of Maryland	147	\$85,726,080	\$978,992	2,143	\$60,625,484	\$468,900	\$1,447,892	\$6,958,724
	148	\$88,726,493	\$1,013,257	2,366	\$66,930,534	\$517,666	\$1,530,922	\$7,357,776
	164	\$55,721,952	\$636,345	1,715	\$48,500,387	\$375,120	\$1,011,465	\$4,861,208
	196							
Chesapeake Park (Lockheed Martin)	964							
	A	\$8,409,258	\$96,034	311	\$8,810,411	\$68,143	\$164,177	\$789,051
	B	\$11,643,588	\$132,970	431	\$12,199,030	\$94,352	\$227,322	\$1,092,532
	C-1230	\$1,045,440	\$11,939	26	\$739,335	\$5,718	\$17,657	\$84,862
	D	\$5,351,346	\$61,112	255	\$7,208,518	\$55,753	\$116,866	\$561,669
	F	\$4,939,704	\$56,411	235	\$6,654,017	\$51,465	\$107,876	\$518,464
	G & H	\$3,750,000	\$42,825	38	\$1,060,800	\$8,205	\$51,030	\$245,254
Security Management	360	\$9,016,920	\$102,973	301	\$8,502,354	\$65,760	\$168,734	\$810,952
		\$9,016,920	\$102,973	240	\$6,801,884	\$52,608	\$155,582	\$747,741
Genstar	243							
Kellner	141	\$1,502,820	\$17,162	50	\$1,417,059	\$10,960	\$28,122	\$135,159
Tremper	142	\$4,809,024	\$54,919	160	\$4,534,589	\$35,072	\$89,991	\$432,508
Bevans	145	\$4,809,024	\$54,919	160	\$4,534,589	\$35,072	\$89,991	\$432,508
Goldsberry	532	\$7,213,536	\$82,379	240	\$6,801,884	\$52,608	\$134,987	\$648,761
Comer	607	\$3,907,332	\$44,622	130	\$3,684,354	\$28,496	\$73,118	\$351,412
Casson	167	\$2,404,512	\$27,460	80	\$2,267,295	\$17,536	\$44,996	\$216,254
Chase Auto	170	\$3,005,640	\$34,324	100	\$2,834,118	\$21,920	\$56,245	\$270,317
MARC	438	\$0	\$0		\$0	\$0	\$0	\$0
MD Transportation	465	\$1,568,160	\$17,908	39	\$1,109,003	\$8,577	\$26,486	\$127,294
Leland Industrial	1070	\$4,207,896	\$48,054	140	\$3,967,765	\$30,688	\$78,742	\$378,444
	773	\$2,404,512	\$27,460	80	\$2,267,295	\$17,536	\$44,996	\$216,254
	514	\$2,404,512	\$27,460	80	\$2,267,295	\$17,536	\$44,996	\$216,254
Rosser, Thomas E.	1112	\$3,907,332	\$44,622	130	\$3,684,354	\$28,496	\$73,118	\$351,412
Northpoint Holding Ent	151	\$5,560,434	\$63,500	185	\$5,243,119	\$40,552	\$104,052	\$500,087
<b>TOTAL</b>		<b>\$331,052,435</b>	<b>\$3,780,619</b>	<b>9,638</b>	<b>\$272,645,470</b>	<b>\$2,108,742</b>	<b>\$5,889,361</b>	<b>\$28,304,897</b>

### ASSUMPTIONS:

#### 1. Construction costs and jobs created per square foot of construction:

Use	Cost/SF	SF/Job
Light Industrial =	\$60	500
Office =	\$90	300
Commercial =	\$70	300
Distribution Warehouse =	\$40	1000
Flex Space =	\$60	625
Exhibition Space =	\$50	2000
Manufacturing =	\$65	500

#### 2. Total wages based on Baltimore County average annual wage of \$28,288.

#### 3. For income tax wages are reduced by 25% to adjust for expected tax deductions.

#### 4. Fifty percent of new jobs will be held by Baltimore County residents.

#### 5. Seventy five percent of jobs created will be net new to the County.

#### 6. Straight-line absorption over 30 years (21.6 acres per year)

#### 7. Net present value (NPV) assumes 6.5% annual cost of capital.

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## Fiscal Impact of New Development on County Revenues w/o Master-Planned Access

Owner	Parcel	Market Value of Imprvts.	Property Tax Revenue	New Jobs	Total Annual Wages	Income Tax Revenue	Total New Tax Revenue	30-Year NPV
AV Williams and Univ. of Maryland	147	\$0	\$0	0	\$0	\$0	\$0	\$0
	148	\$0	\$0	0	\$0	\$0	\$0	\$0
	164	\$0	\$0	0	\$0	\$0	\$0	\$0
	196	\$0	\$0	0	\$0	\$0	\$0	\$0
Chesapeake Park (Lockheed Martin)	964							
	A	\$8,409,258	\$96,034	311	\$8,810,411	\$68,143	\$164,177	\$789,051
	B	\$11,643,588	\$132,970	431	\$12,199,030	\$94,352	\$227,322	\$1,092,532
	C-1230	\$1,045,440	\$11,939	26	\$739,335	\$5,718	\$17,657	\$84,862
	D	\$5,351,346	\$61,112	255	\$7,208,518	\$55,753	\$116,866	\$561,669
	F	\$4,939,704	\$56,411	235	\$6,654,017	\$51,465	\$107,876	\$518,464
	G & H	\$3,750,000	\$42,825	38	\$1,060,800	\$8,205	\$51,030	\$245,254
Security Management	630	\$0	\$0	0	\$0	\$0	\$0	\$0
		\$0	\$0	0	\$0	\$0	\$0	\$0
Genstar	243							
Kellner	141	\$0	\$0	0	\$0	\$0	\$0	\$0
Tremper	142	\$0	\$0	0	\$0	\$0	\$0	\$0
Bevans	145	\$0	\$0	0	\$0	\$0	\$0	\$0
Goldsberry	532	\$0	\$0	0	\$0	\$0	\$0	\$0
Comer	607	\$0	\$0	0	\$0	\$0	\$0	\$0
Casson	167	\$0	\$0	0	\$0	\$0	\$0	\$0
Chase Auto	170	\$3,005,640	\$34,324	100	\$2,834,118	\$21,920	\$56,245	\$270,317
MARC	438	\$0	\$0		\$0	\$0	\$0	\$0
MD Transportation	465	\$1,568,160	\$17,908	39	\$1,109,003	\$8,577	\$26,486	\$127,294
Leland Industrial	1070	\$4,207,896	\$48,054	140	\$3,967,765	\$30,688	\$78,742	\$378,444
	773	\$2,404,512	\$27,460	80	\$2,267,295	\$17,536	\$44,996	\$216,254
	514	\$2,404,512	\$27,460	80	\$2,267,295	\$17,536	\$44,996	\$216,254
Rosser, Thomas E.	1112	\$3,907,332	\$44,622	130	\$3,684,354	\$28,496	\$73,118	\$351,412
Northpoint Holding Ent	151	\$5,560,434	\$63,500	185	\$5,243,119	\$40,552	\$104,052	\$500,087
<b>TOTAL</b>		<b>\$58,197,822</b>	<b>\$664,619</b>	<b>2,052</b>	<b>\$58,045,058</b>	<b>\$448,942</b>	<b>\$1,113,561</b>	<b>\$5,351,895</b>

**ASSUMPTIONS:**

## 1. Construction costs and jobs created per square foot of construction:

Use	Cost/SF	SF/Job
Light Industrial =	\$60	500
Office =	\$90	300
Commercial =	\$70	300
Distribution Warehouse =	\$40	1000
Flex Space =	\$60	625
Exhibition Space =	\$50	2000
Manufacturing =	\$65	500

2. Total wages based on Baltimore County average annual wage of \$28,288.

3. For income tax wages are reduced by 25% to adjust for expected tax deductions.

4. Fifty percent of new jobs will be held by Baltimore County residents.

5. Seventy five percent of jobs created will be net new to the County.

6. Straight-line absorption over 30 years (2.8 acres per year)

7. Net present value (NPV) assumes 6.5% annual cost of capital.

**Detail of Steps Taken to Calculate Development Potential & Impact**

1. Identify all vacant parcels in the study area with 5 or more acres that are likely to be developed for a commercial or industrial use if MD 43 is extended.
2. Estimate the number of acres available for development. Because of the extensive nature of the environmental constraints in this area, the total acreage was reduced by 50%.
3. Determine the expected development type based on parcel location, size and configuration (e.g. distribution warehouse, office, light industrial, etc.)
4. Calculate potential square feet of development based on the expected coverage ratio for each type of development. A coverage ratio or floor area ratio (FAR), estimates the expected percentage of the total land area of the parcel that will be covered by building area (e.g. the estimated coverage ratio for light industrial is .23 or stated differently, the expected amount of square feet likely to be developed on a light industrial parcel is 23% of the total area of the parcel itself.
5. Estimate the value of the real property improvements. Using an estimated cost of construction per square foot, calculate the total construction cost for each parcel based on the total square feet expected to be developed.
6. Estimate the real property tax rate to be received by Baltimore County. Multiply the market value of the real property improvements by the County's 40% assessment ratio and apply the property tax rate of \$2.855 per \$100 of assessed value.
7. Estimate the number of new jobs that will be created as a result of the new development in the study area using data on the average ratio of employees to square feet of development for different types of development. Based on the development type, divide the estimated square feet of development by the corresponding ratio of jobs per square feet. For example, since the employee per square feet ratio for light industrial is 1 per 500 square feet, a 500,000 square foot light industrial building would be estimated to employ 1,000 people.
8. Calculate total annual wages of the new jobs. Multiply the number of new jobs by the Baltimore County average annual wage of \$28,288. Given the types of uses projected under this analysis, the average annual wage would most likely be higher. But to ensure that estimates are conservative, the analysis used the most recent County average wage figure available.
9. Estimate annual new income tax revenues to be received by Baltimore County. Assuming that only 75% on the jobs created on the parcels will be new to the County (i.e. 25% of the jobs are likely to have relocated to the new parcels from other County locations) multiply the total annual wages by 75%. Next, assuming that only 50% of the jobs will be held by Baltimore County residents (the remaining 50% of the jobs will likely be held by residents of Baltimore City, Harford County and other surrounding jurisdictions) multiply the results again by 50%. Then multiply the results by an additional 75% to adjust the income for tax deductions and apply the County's marginal income tax rate of 2.75%.
10. Calculate total new tax revenue to Baltimore County by adding the property tax and income tax figures.
11. Calculate a 30-year net present value of the total tax revenues, assuming straight-line absorption of the property of 22.5 acres per year and using a discount rate of 6.5%.

# APPENDIX B

## MREC Area Accident Summaries

Earls Road from MD 150 to Ebenezer Road(1.48 miles)						
	1994	1995	1996	Total	Study Rate	Statewide Average Rate
Angle	1			1	32.10	32.70
Rear End		1		1	32.10	59.00
Fixed Object	7	1	3	11	353.13*	27.30
Opposite Direction	1	1		2	64.21*	10.10
Sideswipe				0		10.30
Left Turn				0		17.50
Pedestrian				0		5.60
Parked Vehicle				0		5.80
Other				0	96.31*	22.30
Fatal				0		1.30
Injury	6	2	2	10	321.03*	98.80
Property Damage	3	1	4	8	256.82*	90.40
<b>TOTAL</b>	<b>9</b>	<b>3</b>	<b>6</b>	<b>18</b>	<b>577.85*</b>	<b>190.50</b>

\* Significantly higher than statewide average

Vincent Road from Ebenezer Road to Bird River Road(0.74 mile)						
	1994	1995	1996	Total	Study Rate	Statewide Average Rate
Angle				0		18.20
Rear End				0		24.80
Fixed Object	1	1	1	3	192.62*	41.40
Opposite Direction				0		9.20
Sideswipe				0		5.50
Left Turn				0		7.70
Pedestrian				0		2.00
Parked Vehicle				0		2.50
Other				0		22.20
Fatal				0		2.40
Injury	1	1		2	128.41	70.40
Property Damage		1	1	2	128.41	60.80
<b>TOTAL</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>256.82*</b>	<b>133.60</b>

\* Significantly higher than statewide average

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Bird River Road from Ebenezer Road to Middle River Road (2.94 miles)						
	1994	1995	1996	Total	Study Rate	Statewide Average Rate
Angle				0		18.20
Rear End		1	1	2	21.18	24.80
Fixed Object	5	7	3	15	158.86*	41.40
Opposite Direction			1	1	10.59	9.20
Sideswipe	2		1	3	31.77*	5.50
Left Turn				0		7.70
Pedestrian		1	2	3	31.77*	2.00
Parked Vehicle	1	1	1	3	31.77*	2.50
Other			2	2	21.18	22.20
Fatal				0		2.40
Injury	2	6	4	12	127.09*	70.40
Property Damage	6	4	7	17	180.04*	60.80
<b>TOTAL</b>	<b>8</b>	<b>10</b>	<b>11</b>	<b>29</b>	<b>307.12*</b>	<b>133.60</b>

\* Significantly higher than statewide average

Ebenezer Road from US 40 to 0.02 mile north of MD 150 (3.83 miles)						
	1994	1995	1996	Total	Study Rate	Statewide Average Rate
Angle	3	1	3	7	15.15	18.20
Rear End	5	4	9	18	38.95*	24.80
Fixed Object	11	6	3	20	43.28	41.40
Opposite Direction	6	2	9	17	36.79*	9.20
Sideswipe	1	1		2	4.33	5.50
Left Turn	1	2	2	5	10.82	7.70
Pedestrian				0		2.00
Parked Vehicle				0		2.50
Other	1	1	1	3	6.49**	22.20
Fatal				0		2.40
Injury	17	8	18	43	93.05*	70.40
Property Damage	11	9	9	29	62.75	60.80
<b>TOTAL</b>	<b>28</b>	<b>17</b>	<b>27</b>	<b>72</b>	<b>155.80</b>	<b>133.60</b>

\* Significantly higher than statewide average

\*\* Significantly lower than statewide average

MD 150 from Martin Blvd. (MD 700) to Ebenezer Road (4.67 miles)						
	1994	1995	1996	Total	Study Rate	Statewide Average Rate
Angle	6	11	6	23	18.02	18.83
Rear End	25	23	19	67	52.49*	24.36
Fixed Object	11	10	22	43	33.69	29.49
Opposite Direction	8	4	2	14	10.79*	4.35
Sideswipe	10	2	5	17	13.32*	6.07
Left Turn	4	6	6	16	12.54	8.71
Pedestrian		4	3	7	5.48*	1.56
Parked Vehicle	1	1	1	3	2.35	1.93
Other	2	4	5	11	8.62**	18.55
Fatal	1	4	1	6	4.7*	1.96
Injury	42	40	38	120	94.02*	60.13
Property Damage	24	21	33	78	61.11	51.92
TOTAL	66	61	71	198	159.83	113.94

\* Significantly higher than statewide average

\*\* Significantly lower than statewide average

MD 43 from I-95 to US 40 (0.96 mile)						
	1994	1995	1996	Total	Study Rate	Statewide Average Rate
Angle				0		0.40
Rear End		3		3	9.77	7.40
Fixed Object		3	2	5	16.29	16.60
Opposite Direction				0		0.40
Sideswipe		1		1	3.26	4.50
Left Turn				0		0.20
Pedestrian				0		0.10
Parked Vehicle				0		1.20
Other				0		8.30
Fatal				0		0.70
Injury		2	1	3	9.77	18.40
Property Damage		5	1	6	19.55	20.00
TOTAL	0	7	2	9	29.32	39.10



# APPENDIX B

## Right-of-Way and Relocation Report

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

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Maryland Department of Transportation  
State Highway Administration  
Office of Real Estate / Right-of-Way District 4

**MEMORANDUM**

**TO:** Heather Murphy  
Project Manager  
Project Planning Division

**FROM:** \_\_\_\_\_  
Gina M. Anthony, Chief  
Right-of-Way District 4

**DATE:** February 11, 1999

**SUBJECT:** Middle River Employment Center Access Study

**RE:** Relocation Assistance Information Study

The following relocation assistance information study for the proposed alternates, is based upon a survey of the area and available market data from various sources including local newspapers and local real estate information. Generally, it is difficult to determine the exact number of residents on any particular property without interviews, however, we shall give an estimate of the total number of displacements, based upon general knowledge of the area.

**Alternate D**

**Alternate D** will require the acquisition of four improvements, believed to be three residential improvements and one "multi-use" property (residence and business). Two of the residential improvements appear to be owner occupied and the remaining residence appears to be occupied by a tenant. The property we identify as a "multi-use" property seems to be the owner's residence and his welding business. We estimate displacing 16 individuals for this alternate.

**Alternate D-Modified**

**Alternate D Modified** will require the acquisition of five improvements including four residential properties and one "multi-use" property (three of the residential properties and the "multi-use" property were identified in Alternate 3).

We believe the four residences include two owner occupied and two tenant occupied properties. The fifth improvement is the same "multi-use" property identified in Alternate D as a combination residence and welding business.

We estimate 20 individuals are displaced by this alternate.

**Alternate E**

**Alternate E** will require the acquisition of six improvements including five residential properties and one "multi-use" property (four of these properties, three residential and one "multi-use," have been previously identified in Alternates D and D modified).

The six improvements include three owner occupied, two tenant occupied and one "multi-use" property (residence and welding business).

We estimate 22 individuals will be displaced by this alternate.

**Alternate F-1 Modified**

**Alternate F-1 Modified** will require the acquisition of ten improvements, including nine residential properties and one "multi-use" property. It appears that seven of the residential properties are owner occupied and the remaining two may be tenant occupied. The "multi-use" property is owner occupied as a residence and a car repair business in the rear.

We estimate that this alternate will displace 46 individuals and require the relocation of a business with approximately 7 employees.

**Alternate I - Modified**

**Alternate I-Modified** will require the acquisition of five improvements (all of these properties have been identified in various other alternates, four of which have been included in Alternates D, D modified and E).

The five improvements affected include two owner occupied residences, two tenant occupied residences and one "multi-use" property (combination residence and welding business).

We estimate 20 individuals are being displaced by this alternate.

**Relocation Assistance Information Summary**

We have reviewed each alternate and note that several residential properties and at least one business is affected on each alternative. Although the area is an older, established community with long time residents that may include minorities, elderly and disabled persons, we are not impacting a large community of any particular group.

We believe there will be sufficient available housing to satisfy the demands for replacement housing for any of the alternates in this report. We also believe that there are locations available to satisfy relocating the businesses affected, however, it may be somewhat difficult to relocate the business/residence combinations to similar use properties due to zoning regulations.

This area is experiencing significant development, both residentially and commercially. A review of real estate in the area leads this office to believe we could complete acquisition and relocation assistance activities in a satisfactory manner. It is estimated that we could accomplish all relocation assistance activities within an eighteen month period.

Please feel free to contact me if you require additional information.

# APPENDIX C

## Land Use Analysis Committee Market Analysis Report

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
State Highway Administration

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**MIDDLE RIVER EMPLOYMENT CENTER  
ACCESS STUDY**

**DRAFT**

**LAND USE ANALYSIS COMMITTEE  
MARKET ANALYSIS REPORT**

February 20, 1998

600

**Middle River Employment Center Access Study**  
**Land Use Analysis Committee Market Analysis Report**

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***Prepared by:***

***KLNB, Inc.:***

**Mr. Thomas C. Martel, SIOR, President**

**Mr. Timothy R. Hearn, CCIM**

***Koren Development Company Inc.:***

**Mr. Steven S. Koren**

***Moncure & Associates, Inc.:***

**Mr. Robert A. Moncure, P.E., R.L.S.**

**INTRODUCTION**

The purpose of this report is to provide a review of the material which has been submitted by Baltimore County Officials to the State Highway Administration as it relates to the proposed Middle River Employment Center Access Study. Documentation previously provided include:

- 1.) Economic Development Potential Between the White Marsh Town Center and Martin State Airport
- 2.) Middle River Employment Center Access Study Purpose and Need Statement; December 17, 1997.

This market analysis will focus on the two (2) primary areas:

- A.) Access Alternatives
- B.) Marketability of the Baltimore County Plan identified in the Economic Development report above.

**I. Developable Land Analysis**

The first part of our study was to analyze the exact extent of the environmental constraints within the Employment Center boundary. These constraints included the wetlands and streams (and their appropriate buffers), cemeteries, parks, schools, etc. A 25 foot buffer was placed around all the wetlands and a 75 foot buffer was placed from the top of the stream banks.

When this task was completed the zoning designations were added and all parcels that were evaluated by Baltimore County were delineated and identified by their Tax Map number. A "land bay" analysis was then prepared only for the properties which the County identified for development. The acreage from the "land bay" analysis was then compared to the County's numbers (See Table 1 and Figure 1).

We obtained and have shown on the mapping the major interceptor sewers and force mains that exist in the area. The Vincent Farms force main and Windlass Run Pump Station will be completed by the year 2000. Located in the area between Bird River Road, Vincent Road, and Ebenezer Road, this proposed sewer system would adequately serve the developable properties within the Employment Center north of the power line. The existing Leland Avenue Force Main/Orems Road Pump Station and the Bengies Road Pump Station will also serve the Employment Center. These systems are located to southeast and south (along Eastern Boulevard) of the Employment Center. Our analysis has determined that the existing and planned sewer system is capable of servicing a full build-out of the Middle River Employment Center.

**Table 1**  
 Middle River Employment Center Access Study  
 Land Use Analysis Committee

**NEW Commercial and Industrial Development Potential**

Owner	Map	Parcel	Zoning	Total Acres	% by use	Development Type	Acres for Dev. 50%	Acres for Develop. Detailed Study	Square Feet
AV Williams and Univ. of Maryland	83	147	"M"-IM	984	50%	Distrib. Warehse.	246	218 <sup>1</sup>	2,142,152
		148			30%	Flex Space	148	186 <sup>2</sup>	1,478,775
		164			20%	Manufacturing	98	54 <sup>3</sup>	857,261
	91	196			Residential		0		
Chesapeake Industrial Park  (Lockheed Martin)	90	964							
		A	MH-IM	13		Office	7	7	93,436
		B	MH-IM	18		Office	9	9	129,373
		C-1230	MH-IM	6		Distrib. Warehse	3	3	26,136
		D	MH-IM	13		Comm./Office	7	7	76,448
		D	MH-IM	12		Commercial	6	6	70,567
		G&H	MH-IM	21		Exhib. Space	11	11	75,000
		I	MH-IM	66		Lockheed Martin			
Security Management	83	360	"M"-IM	60	50%	Light Industrial	15	37	150,282
					50%	Flex Space	15		150,282
Genstar	83	243	"M"-IM	399		Mining			
Kellner	83	141	RC 3	5		Light Industrial	3	2	25,047
Tremper	83	142	RC 3	16		Light Industrial	8	12	80,150
Bevans	83	145	RC 3	16		Light Industrial	8	13	80,150
Goldsberry	83	532	RC 3	24		Light Industrial	12	13	120,226
Comer	83	607	MH-IM	13		Light Industrial	7	5	65,122
Casson	83	167	MH-IM	8		Light Industrial	4	8	40,075
Chase Auto	83	170	MH-IM	10		Light Industrial	5	10	50,094
MARC	91	438	MH-IM	5		Transit Center	3	5	21,780
MD Transportation	91	465	MH-IM	9		Distrib. Warehse.	5	5	39,204
Leland Industrial	90	1070	ML-IM	14		Light Industrial	7	0	70,132
	90	773	ML-IM	8		Light Industrial	4	0	40,075
	90	514	ML-IM	8		Light Industrial	4	0	40,075
Rossner, Thomas E.	90	1112	ML-IM	13		Light Industrial	7	0	65,122
Northpoint Holding	83	151	MLR-IM	19		Light Industrial	9	19	92,674
<b>TOTAL DEVELOPMENT</b>				1,760			647	630	6,080,639

**ASSUMPTIONS:**

- **FLOOR AREA RATIOS:**  
 Light Industrial = 0.23                      Distribution Warehouse or Manufacturing = 0.20  
 Office = 0.33                                      Flex Space = 0.23  
 Commercial = 0.27
- Area for MD 43 Right-of-Way is not subtracted from parcel total.
- Existing development is not included in total development summary.
- "M" = multiple industrial zones currently located on parcel.
- RC 3 zoned parcels would be rezoned to an "M" classification.

1 North of Transmission Line  
 2 South of Transmission Line  
 3 S.E. Corner – Mitigation required



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**Middle River Employment Center Access Study**  
**Land Use Analysis Committee Market Analysis Report**

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Existing public water is located along Leland Road (36") and along Ebenezer Road (16"). A water line will be constructed within the proposed Campbell Boulevard right-of-way when Campbell Road is constructed. This is programmed for construction by the year 2000. The system will consist of 20" and 16" water mains from Philadelphia Road to Bird River Road. The developable area within the Employment Center would tie into the existing systems along Ebenezer Road and Leland Avenue/Eastern Boulevard. Based on the sizes of the existing mains and planned expansions, we believe that the existing and planned water system is adequate to support any development within the Middle River Employment Center.

## **II. Access Alternatives**

As we review access alternatives within the scopes of this assignment, two (2) land development areas present the primary opportunities. 1) The A.V. Williams tract, and adjacent parcels; 2) the Eastern Boulevard corridor, which includes the Chesapeake Industrial Park, and Riverdale Apartment site, Martin State Airport and the Government Service Administration (G.S.A.) Depot facility.

### **A.V. Williams and Adjacent Properties**

At present, portions of this area have frontage on roads such as Bird River Road to the north; Wampler and Bengies Road-South to the west; and Ebenezer and Earls Road to the east. Due to the presence of a high-speed Amtrak rail line along its southern border, no access is available along this boundary. With the purpose of this report focusing on economic development potential, it is critical to start with the key ingredient; access in this region to Interstate 95. In order to maximize the potential employment uses to the sites, direct access to Interstate 95 is an essential priority.

At present, the travel routes from I-95 to this area are provided via Maryland 43 to Route 40, or the Baltimore Beltway to Route 40. From Route 40, the Eastern Boulevard area is accessed via Martin Boulevard. Middle River Road provides a route to Bird River Road; Ebenezer Road has an intersection with Route 40 as well. Each of these road patterns have been in place for several decades, none of them offer an acceptable route for new business development of high employment density or quality.

The liabilities associated with this existing road network can not be overcome by upgrading their paving sections, or enhancing their appearance. A business park of the magnitude contemplated for the Middle River Employment Center will require direct access to I-95, not the circuitous routes currently in place. The future employers and operators of businesses which will locate on the A.V. Williams tract and adjacent compatible parcels will not want to introduce large scale truck traffic onto roads which have a heavy residential character because of inevitable neighborhood confrontations, such as Bird River and Ebenezer. A route which requires access to I-95 via I-695 East to Route 702 to Eastern Boulevard is both circuitous as well as offering a heavily signalized route along Eastern Boulevard with strong residential and neighborhood business characteristics.

To the extent that the existing road system was relied upon, even given upgrades, limited to no economic growth could occur on the A.V. Williams parcel and adjacent compatible parcels, a situation which has remained static over the past thirty (30) years. We concur with the County's report on this item.

With regard to the option of an extension of Campbell Boulevard, while this would be a new road way, it also provides a route which is troublesome. Once again, direct access from I-95 is not available; all vehicles and trucks would have to move through two (2) phases of the White Marsh Business Community, proceed through a heavy wetland area from Route 7 to Route 40, and intersect with Bird River Road in an area with an even stronger residential character than Maryland 43's provides. While an extension of Campbell Boulevard would provide an improvement to the current situation, the A.V.

Williams parcel would result in being the "back-end" of White Marsh, and would only offer an alternative as a low cost land source. Distribution Companies would consider the transportation route, via Campbell Boulevard, as a negative; Office/R&D/ Flex employers would not be interested in this awkward location; manufacturing users may find it acceptable. It should be noted of these product types (Distribution Warehouse, Office/R&D, and Manufacturing), a manufacturing use has the most limited market size in terms of demand.

**Access Alternatives - Maryland 43 Extension**

We agree with the County report which identifies the extension of Maryland 43 as being the only practical alternative to creating a first class employment center in this region.

Benefits to this alternative include:

- 1) Direct access to I-95, with limited interaction with adjacent residential communities.
- 2) Because of this direct access, the A.V. Williams and adjacent compatible parcels would have the opportunity to act as a primary business park, not as the "back-end" to White Marsh-Rossville.
- 3) Existing development west of the A.V. Williams parcel is significantly residential in character. We would suggest an alignment alternative which locates Maryland 43 as far west as possible, with the new roadway creating a buffer to these residential communities. This would allow for large "land bays" to be located to the east of the new roadway; when this is assembled it will maximize the development potential of the site. Existing Bengies Road-North and Earls Road could be utilized as a secondary means of ingress/egress to the site for truck traffic or cars entering the parcel from the Bengies/Chase areas (See Figure 2).
- 4) With the extension of Maryland Route 43, a commercial/service parcel could be carved out at the Route 40/Maryland Route 43/Bird River Road interchange which would provide land to users. Such users would include service hotels, a convenience shopping center which may include commercial services, a grocery store, and automotive services, similar to that which is seen at the White Marsh Center. This retail would also support the residential areas, as there has been no new neighborhood retail centers developed along Eastern Boulevard over the past twenty-five (25) years.

III. With this type of road network in place, the model for specific economic development activity which would take place on the A.V. William and adjacent compatible parcels becomes apparent. The White Marsh Business Community provides an excellent example of the potential for this site. Uses and land values for fully developed, finished sites in this area include:

- A) Warehouse Distribution Centers - similar to the Time Warner facility, which is a 600,000 square foot building. Land values for this type of project will be in the \$140,000 per acre range.
- B) Office/Flex/R&D - Similar to the McLean Ridge Development, a five (5) building 250,000 square foot office park which is home to Metris, Travelers Insurance and others. Land values in this park are in the \$200,000 per acre range.
- C) Service Retail - Similar to White Marsh Retail, a Giant grocery anchored center; the Hampton Inn Hotel facility and Exxon Service Station. Land values from these users are in the \$300-400,000 per acre range.

**Middle River Employment Center Access Study**  
**Land Use Analysis Committee Market Analysis Report**

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- D) Manufacturing - Because the White Marsh's master development plan did not encourage this use, new manufacturing business have typically looked to the Harford County area for their growth. Employers such as Clorox, Alcore and others are operating in sites which have typically been priced in the \$95,000 per acre range.
- E) Residential - Per our previous comments, we do envision the sites which will be west of the Maryland Route 43 extension as being designated for residential use. Land value for this activity will be dependent on the single family or townhouse density and yield which would be available.

Assuming 500 acres of land bays could be assembled on the east side of the Maryland Route 43 extension into this development envelope, and operating within the following Development Profile:

Distribution Warehouse	- 65%	-	325 acres @ 80% efficiency,	260 net useable
Office/Flex/R&D	- 15%	-	75 acres @ 80% efficiency,	60 net useable
Manufacturing	- 10%	-	50 acres @ 80% efficiency,	40 net useable
Retail Service	- 10%	-	<u>50 acres @ 80% efficiency,</u>	<u>40 net useable</u>
<b>Total:</b>			<b>500 acres</b>	<b>400 net useable acres</b>

We evaluate the finished land/lot values as:

Distribution Warehouse	260 acres @ \$140,000 per acre =	\$36,400,000
Office/Flex/R&D	- 60 acres @ \$200,000 per acre =	\$12,000,000
Manufacturing	- 40 acres @ \$95,000 per acre =	\$3,800,000
Retail Service	- 40 acres @ \$300,000 per acre =	<u>\$12,000,000</u>
<b>Gross Land Value:</b>		<b>\$64,200,000</b>

Residential Values are to be determined.

Potential Square Footage of Buildings and Employment to be located in each of these land bays could be:

Distribution/Warehouse	- 260 acres at 50% coverage -	5,662,800 square feet
@ 1.25 Employees per 1,000 square feet =		7,079 employees
Office/Flex/R&D	- 60 acres at 25% coverage -	653,400 square feet
@ 5 Employees per 1,000 square feet =		3,267 employees
Manufacturing	- 40 acres at 35% coverage -	609,840 square feet
@ 4 Employees per 1,000 square feet =		2,439 employees
Retail Service	- 40 acres at 20% coverage -	348,480 square feet
@ 3 Employees per 1,000 square feet =		1,045 employees

<b>Projected Total Square Footage</b>	-	<b>7,274,520</b>
<b>Projected Total Employees</b>	-	<b>13,830</b>

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**Middle River Employment Center Access Study**  
**Land Use Analysis Committee Market Analysis Report**

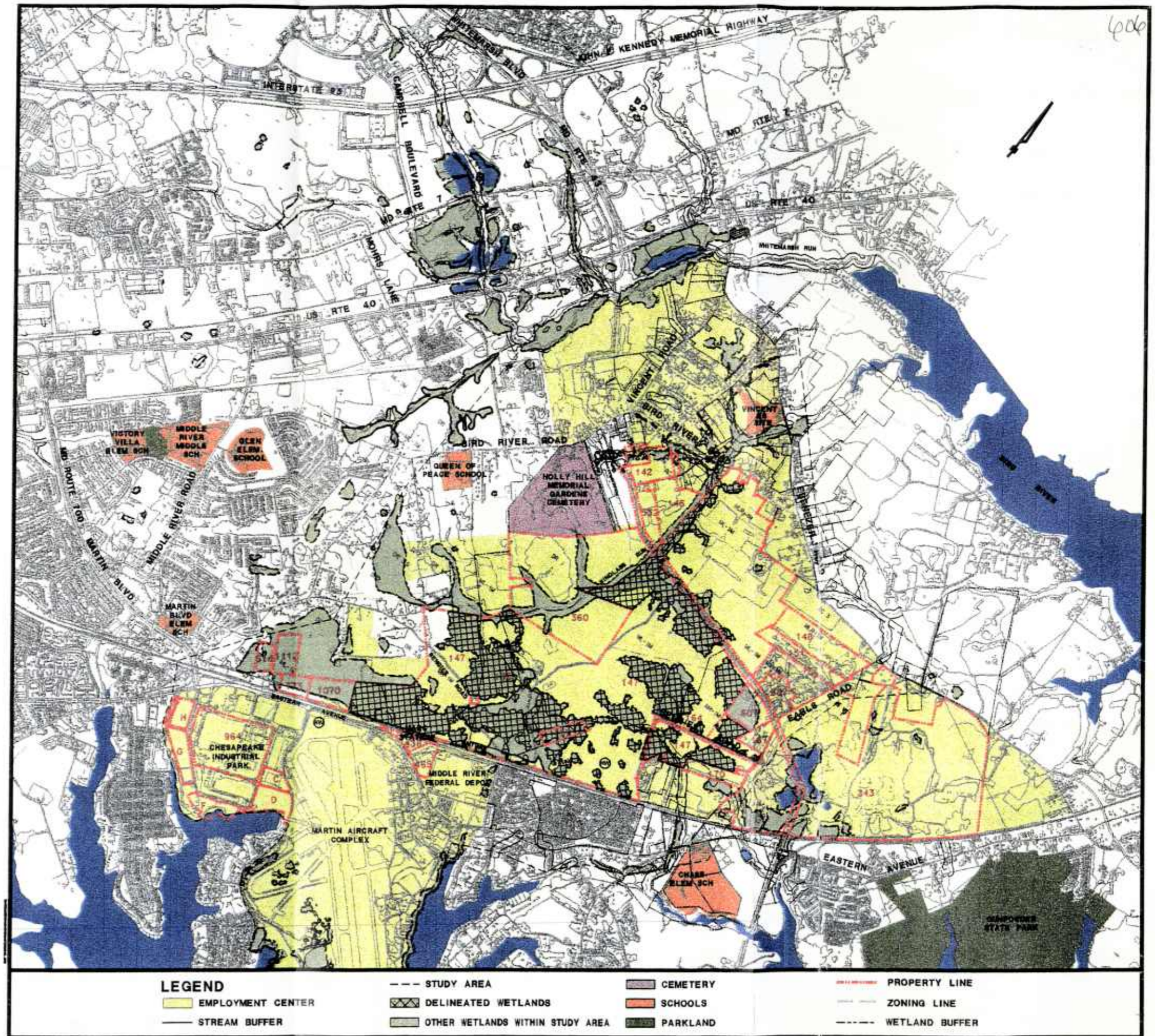
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- IV. Employers and developers of modern warehouse facilities currently evaluate the desirability of the business parks in this area as having three (3) levels:
- 1) White Marsh Business Community - Primary - as is evidenced by a typical shell rate for warehouse product in the \$5.00 p.s.f. Industrial Gross range
  - 2) Golden Ring/Rossville - Secondary - as is evidenced by a 20% decline in value from the Primary to a \$4.00 p.s.f. Industrial Gross range
  - 3) Eastern Boulevard/Chesapeake Industrial Park - Tertiary - as is evidenced by a further 25% decline in value to a \$3.00 p.s.f. Industrial Gross range

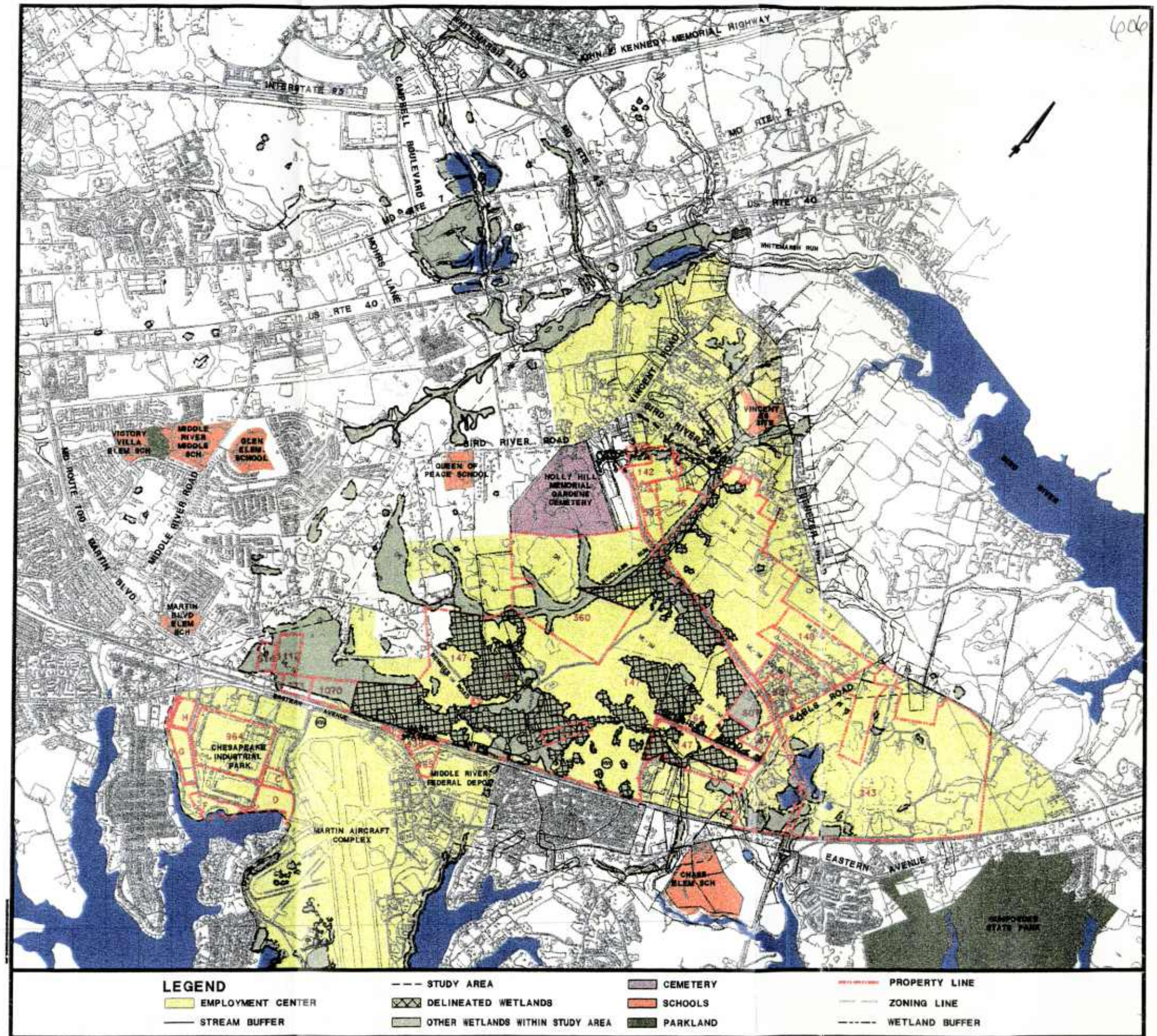
We discuss these values as to provide further evidence that it is only with the extension of Maryland 43 and its corresponding direct access to Interstate-95, that a significant increase in value along Eastern Boulevard can occur. For property owners and large employers such as the State of Maryland with Martin State Airport; Vertical Launch Systems and Lockheed Martin at the Chesapeake Industrial Park, and the G.S.A. depot facility on Eastern Boulevard, this new road pattern will have an enormous benefit to their industrial sites. Increases of no less than 25%, and in some cases 40%, will occur in the industrial property values along Eastern Boulevard once this access is provided.

The direct access will also improve the possibility of the high quality waterfront development contemplated for Middle River as discussed in other County programs. Travel access through the existing residential neighborhood along Bird River, Wampler and Vincent Road could be reduced or eliminated once the Maryland 43 extension is in place. This would create a positive benefit on these residential property values as well.

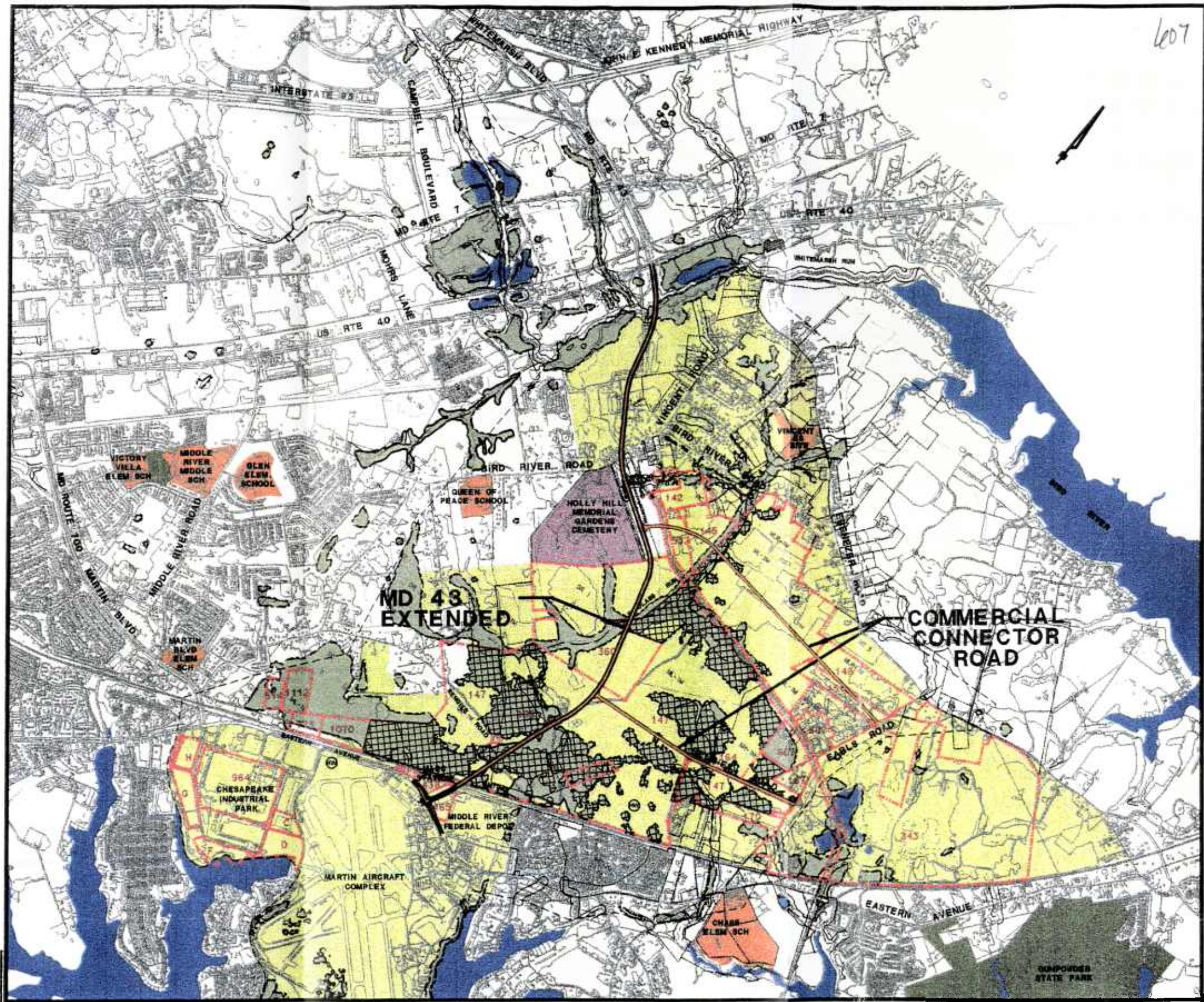
The extension of Route 43 will have a significant impact on the employment opportunities for the residents of the Middle River area. The build-out time frame for the distribution, manufacturing and retail, as well as the job creation will be significant, and can occur within a ten (10) year period.



MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
LAND USE STUDY MAP

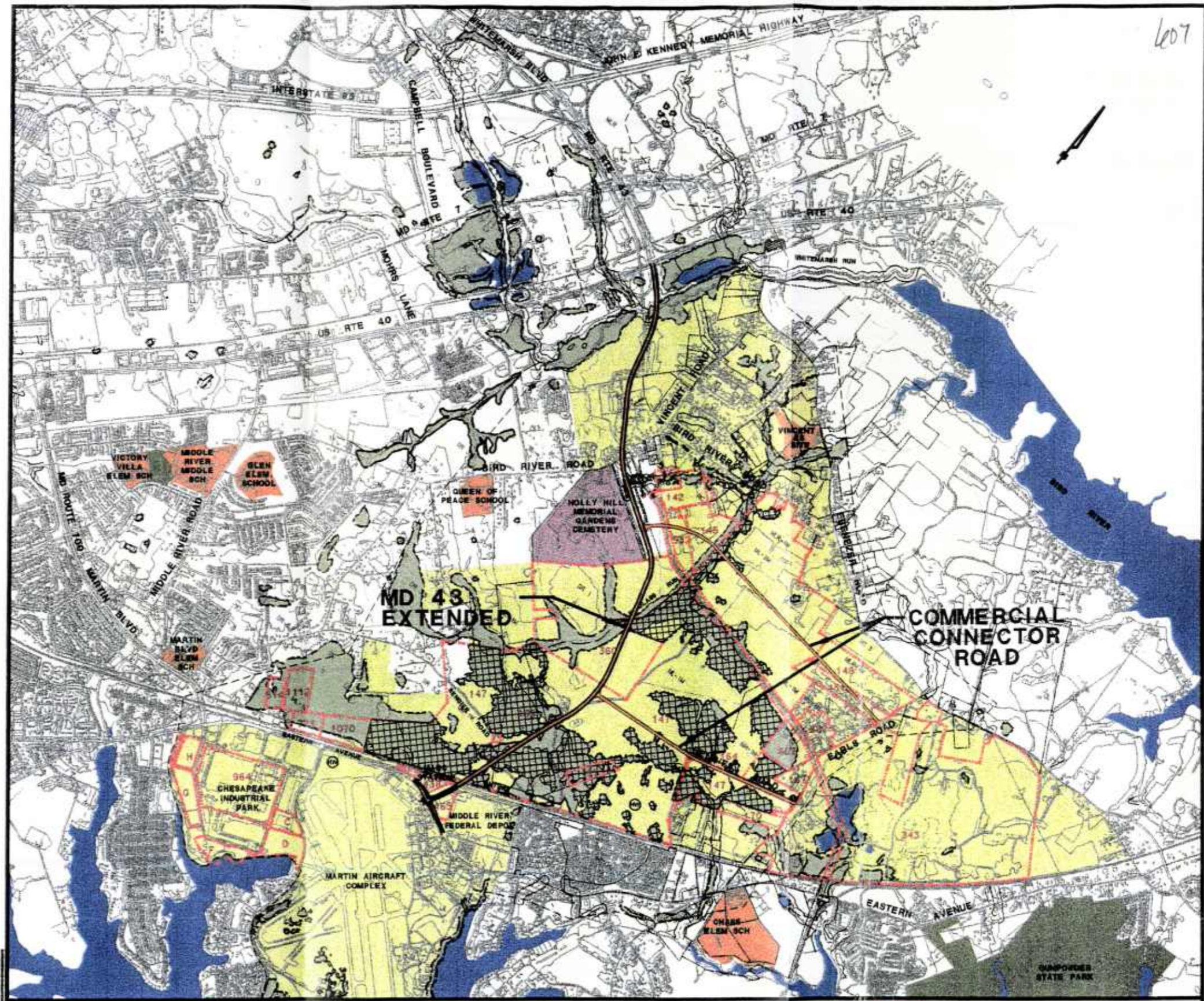


MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
LAND USE STUDY MAP



LEGEND			
	EMPLOYMENT CENTER		CEMETERY
	STREAM BUFFER		DELINEATED WETLANDS
	SCHOOLS		PARKLAND
	PROPERTY LINE		ZONING LINE
	WETLAND BUFFER		

MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
 LAND USE STUDY MAP  
 SUGGESTED MD 43 ALIGNMENT WITH COMMERCIAL CONNECTOR ROADS



LEGEND			
[Yellow Box]	EMPLOYMENT CENTER	[Dashed Line]	STUDY AREA
[Green Box]	STREAM BUFFER	[Hatched Box]	DELINEATED WETLANDS
[Green Box]	OTHER WETLANDS WITHIN STUDY AREA	[Orange Box]	SCHOOLS
[Green Box]	PARKLAND	[Red Dashed Line]	PROPERTY LINE
		[Black Dashed Line]	ZONING LINE
		[Black Dashed Line]	WETLAND BUFFER

MIDDLE RIVER EMPLOYMENT CENTER ACCESS STUDY  
 LAND USE STUDY MAP  
 SUGGESTED MD 43 ALIGNMENT WITH COMMERCIAL CONNECTOR ROADS



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# APPENDIX D

## Summary of the Relocation Assistance Program

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
*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.

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# APPENDIX E

## Memorandum of Agreement Between FHWA and MHT

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
*State Highway Administration*

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February 9, 1999

Maryland  
Department of  
Housing and  
Community  
Development

Division of Historical and  
Cultural Programs

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Secretary

Marge Wolf  
Deputy Secretary

Ms. Cynthia D. Simpson  
Deputy Division Chief  
Project Planning Division  
Maryland State Highway Administration  
P.O. Box 717  
Baltimore, MD 21203-0717

RE: Project No. BA847A11  
Middle River Employment Center Access Study (MRECAS)  
Baltimore County, Maryland

Dear *Cynthia* Ms. Simpson:

Thank you for your recent letter, dated and received by the Trust on 11 January 1999, regarding the above-referenced project. With that letter, SHA forwarded draft archeological and final architectural documentation for the project: the draft archeological report, *Phase I Archeological Survey, Middle River Employment Center Access Study, Baltimore County, Maryland* (Fiedel et al. 1998); final copies of the report, *Survey Report Evaluation and Historic Documentation for the MD 43 Planning Study BA847A11 in Baltimore County, Maryland* (Tracerics 1998); and survey forms for the project's standing structures. SHA requested the Trust's concurrence with its determination that the project will have an adverse effect on historic properties, both architectural and archeological, which are eligible for inclusion in the National Register of Historic Places. Trust staff carefully reviewed the materials and prepared the Trust's comments and concurrence presented below.

**ELIGIBILITY DETERMINATION**

**ARCHITECTURE:** In our prior correspondence, dated 12 November 1997, the Trust concurred with SHA's eligibility determinations, based on draft Maryland Inventory of Historic Properties (MIHP) forms prepared by Tracerics and draft Determination of Eligibility (DOE) forms prepared by SHA. Those determinations remain valid for the project. Therefore, the following properties within the APE are **eligible** for inclusion in the National Register of Historic Places:

- |         |   |
|---------|---|
| BA-1180 | Ebenezer Methodist Church                                 |
| BA-1852 | Old Chase School/St. John's Church                        |
| BA-2081 | Glenn L. Martin Airport (part of Martin State Airport HD) |
| BA-2824 | Middle River Depot (part of Martin State Airport HD).     |

The Trust accepts the final MIHP forms prepared by Tracerics for the inventoried properties in the project area. We are still awaiting the final DOE forms prepared by SHA for the fifty-nine remaining properties in the project area. SHA should submit the final DOE forms, as soon as possible, to complete the documentation of its identification efforts.



*Groth*

Trust staff consulted with SHA personnel regarding the final copy of the *Survey Report -- Evaluation and Historic Documentation for the MD 43 Planning Study, BA847A11 in Baltimore County, Maryland* prepared by Tracerics in November 1998. It does not appear that Tracerics addressed the remarks made in the Trust's letter of November 12, 1997 on the draft report. We are particularly concerned with the APE map, Figure 21 in the final report, which is illegible and otherwise totally unreadable at a 5 x 7" xerographic reproduction. The Trust depends on being provided with accurate APE maps which are the basis of our Inventory maps and ultimately the GIS system. Although we accept the final report, we request that SHA submit a replacement Figure 21, produced at a larger scale, which clearly marks the entire APE and includes MIHP and DOE numbers on labels which are distinguishable from the background.

**ARCHEOLOGY:** We have reviewed a copy of the following draft report, prepared for SHA by John Milner Associates, Inc.: *Phase I Archeological Survey, Middle River Employment Center Access Study, Baltimore County, Maryland* (Fiedel et al. 1998). As noted in SHA's submittal letter, the draft requires substantive revisions to meet the reporting requirements of the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). However, the document contains sufficient information for the Trust to concur with SHA's determinations of eligibility for the identified resources. Attachment 1 lists our specific comments on the draft itself. We ask SHA to have the consultant address these issues, in addition to SHA's remarks, in the preparation of the final document.

The Phase I survey identified four new archeological sites within the current APE. Site 18BA468 consists of a low density and dispersed scatter of prehistoric lithic artifacts. Shovel testing did not identify any intact features or cultural deposits in the site area. The site likely represents a short term campsite. We concur with SHA that 18BA468 does not meet the criteria for eligibility in the National Register of Historic Places due to its low information potential and lack of integrity. The remaining three sites include: 18BA467, an Early - Middle Woodland prehistoric site; 18BA469, a Late Archaic prehistoric site; and 18BA470, a mid 19th - early 20th c. farmstead. We agree that Phase II archeological investigations are warranted to conclusively determine the National Register eligibility of these three sites. While not specifically addressed in SHA's submittal, we believe that it is not necessary to reevaluate the significance of any of the previously investigated archeological resources (Waite 1989), the majority of which are now situated outside the APE for the current project. Please keep us informed regarding the schedule for implementing any Phase II investigations.

#### EFFECT DETERMINATION

Based on the information provided, the Trust concurs with SHA's determination that each of the build alternates (Alternatives D, D [Modified], E, F1 [Modified], and I [Modified]) proposed will have adverse effects on historic properties, including

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Ms. Cynthia D. Simpson  
February 9, 1999  
Page 3

architectural and archeological resources.<sup>1</sup> SHA has appropriately assumed adverse impacts for archeological resources, since it has not yet completed the Phase II evaluations. We look forward to working with SHA and the other agencies to resolve the adverse effects of the project and complete the project's Section 106 review.

Finally, we would like to take this opportunity to express our concern regarding the quality of the documentation and omission of critical information in SHA's recent submittal on this project. We understand that scheduling constraints necessitated the timing of SHA's Section 106 coordination for this proposed undertaking. However, we believe that more diligent use of the Section 106 CPPI team checklists would have resulted in a more complete submittal. Use of the checklists will ensure that SHA provides all of the necessary information to facilitate Trust review, and it will help SHA to improve the quality of its consultant's products, consistent with federal and state standards.

If you should have any questions regarding this determination, please call Ms. Anne Bruder (for structures) at 410-514-7636 or Ms. Beth Cole (for archeology) at 410-514-7631.

Sincerely,



J. Rodney Little  
Director/State Historic Preservation Officer

JRL/AEB/EJC  
9900012

cc: Mr. Bruce Grey, SHA  
Dr. Charles M. Hall, SHA  
Ms. Jill Dowling, SHA  
Ms. Pam Stephenson, FHWA  
Interagency Review Group  
Ms. Judith Kremen

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<sup>1</sup> Because the No Build Alternate is not an undertaking as defined by 36 CFR Part 800.2(o), the Trust cannot provide comments on the effect such a course of action would have on historic properties.



6/6

**ATTACHMENT 1  
MHT COMMENTS ON DRAFT REPORT  
PHASE I ARCHEOLOGICAL SURVEY - MRECAS**

1. The consultant should thoroughly address SHA's comments listed in the submittal letter's Attachment VII.
2. The report should state the length and width of the new alignments studied.
3. Figure 1 must illustrate the limits of the newly identified sites, as well as the boundaries of the previously recorded sites in the project vicinity.
4. It does not appear that the consultant utilized the results of the historic and architectural context already developed for this project (EHT Tracerics, Inc. 1998) in the Background Research section. SHA should make sure that its archeological and architectural consultants are aware of the studies underway or recently completed for its projects, to reduce duplicative efforts particularly in background research and the development of historic contexts.
5. Figure 9 must provide clear and distinguishable labels for all of the alternates illustrated.
6. In the current draft report, it is somewhat difficult to correlate the large scale shovel test pit maps presented in Appendix III with the survey areas shown on Figure 9. Furthermore, the shovel test pit maps should be placed with the corresponding discussion in the test. We trust these difficulties will be corrected in the final document.
7. The report must include a detailed description of the sites examined by the previous investigations for this project (Waite 1989). The discussion should address the sites' National Register eligibility status, describe their location in relation to the current APE, specifically address whether the survey results involve any of the previously recorded sites, and state whether or not a reevaluation of the previously recorded sites is warranted.
8. The Results section for 18BA467 must include a discussion of site stratigraphy, as revealed by the testing. In addition, it should include an explanation for the placement of excavation units.
9. The discussion of 18BAX290 should describe what efforts were made to locate the reported cemetery (18BA380) particularly when broken headstones were observed.
10. The Results discussion (page 73) mentions the identification of a small 19th c. family cemetery which "probably lies beyond the western edge of the project APE." The consultant should complete an official archeological Inventory form for the cemetery and submit it to the Trust for entry in the Inventory. In addition, the report must

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Ms. Cynthia D. Simpson

February 9, 1999

Page 5

clarify whether or not the site is located within the APE and provide relevant recommendations on site treatment.

11. Many of the site plan figures are floating in space (for example, Figures 23, 25). The consultant should add identifying features to these figures to key them to the project maps.
12. The Summary and Recommendations should include a management table listing the archeological sites examined by the current and previous study, noting their National Register eligibility status, stating the pertinent alternate affecting those resources or whether they are situated outside the APE, and presenting recommended site treatments.
13. The report should not address the National Register eligibility of isolated finds, since these items do not constitute identified sites.
14. If the current survey reexamined any of the previously identified sites in the project vicinity, the consultant should prepare updated Inventory forms for those sites and submit them to the Trust.
15. The Summary and Recommendations should include a discussion assessing the project's potential effects on the sites.



Maryland Department of Transportation  
State Highway Administration

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F  
SHA  
EJL/AEB  
618

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

April 20, 2000

Re: Project No. BA847A11  
Middle River Employment  
Center Access Study  
Baltimore County, Maryland

APR 21 2000

Mr. J. Rodney Little  
State Historic Preservation Officer  
Maryland Historical Trust  
100 Community Place  
Crownsville MD 21032-2023

Dear Mr. Little:

**Introduction and Project Description**

The purpose of this letter is to inform you of changes made to the subject project. Alternate D has been modified in three areas (Enclosure 1, 200 scale plans). The first change was done to avoid impacts to electrical transmission towers, and involves an area measuring 635 m long, extending a maximum of 90 m east of the previous right-of-way. The second change was made to flatten a curve and reduce wetland impacts, and involves an area measuring 425 m long, extending a maximum of 55 m east of the previous right-of-way. The third change was done to minimize impacts at the Whitmarsh Run crossing, and involves a minor shift to the northeast to produce a perpendicular stream crossing, and a change to the ramp configuration at the interchange of MD 43 and US 40.

**Project History**

On January 11, 1999, we wrote to you with our determination that the project will have an adverse effect on historic properties, and received your concurrence on February 9, 1999. On December 7, 1999, we wrote to you regarding proposed wetland mitigation sites for the project, and received your concurrence that archeological identification only is warranted. Since that time, Site 1 has not been pursued, and we have been unable to gain access to Site 3, the Holly Neck site (Parcel 424) to perform archeological studies. We are trying to determine whether we will continue to pursue Site 3. Enclosure 2 provides our re-evaluation of the archeological potential of Site 2, the University of Maryland property (Parcel 132/133). On March 28, 2000, we submitted the project Memorandum of Agreement for your approval and signature.

**Results of Identification**

Historic Structures Reconnaissance

SHA architectural historian Heather Confer consulted project mapping, previous coordination, and

*reheo: IA BC 5/11/2000  
included in prior  
survey coverage and  
prior disturbance*

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

*STONES  
RES 5/1/2000  
FOR THE STATE HISTORIC  
PRESERVATION*

Mr. J. Rodney Little  
MRECAS Alignment Shifts  
April 20, 2000  
Page 2

the MD 43 Survey Report prepared by Tracerics. The alignment shifts to Alternate D Modified are located within the area previously surveyed by Tracerics. No historic standing structures were identified in these areas as documented by the MD 43 Survey Report. The properties documented as being eligible for National Register listing, the Ebenezer Methodist Church, the Old Chase School, and the Martin Airport Historic District (see Enclosure 3), are located well away from the alignment shifts, and the shifts will have no impact on those structures.

Archeology

SHA archeologist Richard Ervin evaluated the first and second alignment shifts of selected Alternate D-Modified using project mapping, SHA copies of the site files, and archeological reports by Waite (1989) and Fiedel (1998). A March 15, 2000 field visit showed that the northernmost shift traverses a hillslope disturbed by previous sand and gravel quarrying, then crosses a relatively undisturbed hilltop setting. The southernmost shift crosses well drained terraces overlooking a tributary of Windlass Run. Undisturbed parts of both areas are considered likely to contain significant archeological resources. Historic maps (Hopkins 1877, USGS 1901) show several structures in the vicinity of the shifts, although they appear to be outside the project areas.

Both shifts largely follow the project area surveyed by Waite (1989; *Phase I Archeological Investigations of Maryland Route 43*). Only part of the first shift is outside Waite's survey area, and this crosses terrain disturbed by construction of an electric substation. Waite assigned moderate to high archeological potential to parts of both areas (1989: Figure 8). His subsequent archeological survey recorded two sites in or near the proposed alignment shifts (Waite 1989: Figure 24). Site 18BA384 is a 20<sup>th</sup> century farmstead, and site 18BA379 is a 19<sup>th</sup> and 20<sup>th</sup> century farmstead. Both sites have poor integrity, and have been determined ineligible for the National Register (MHT letter dated August 29, 1989). No resources were recorded in areas adjacent to the alignment shifts by Fiedel (1998; SHA Archeological Report 211).

Most of the proposed project area has previously been examined for significant archeological resources, with no significant archeological resources recorded. No further archeological investigations are warranted for the first and second alignment shifts.

SHA archeologist Richard Ervin evaluated the third alignment shift in September of 1999, using project mapping, SHA copies of the site files, and archeological reports by Waite (1989) and Fiedel (1998). All or most of the shift appears to be within the previously surveyed right-of-way, although provided mapping does not allow this to be determined conclusively. No archeological sites have previously been recorded near the alignment shift, and neither Sidney's (1858) *Map of the City and County of Baltimore* or Hopkins' (1877) *Atlas of Baltimore County* depict any

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Mr. J. Rodney Little  
MRECAS Alignment Shifts  
April 20, 2000  
Page 3

structures there. A September 2, 1999 field visit indicated the area has been graded during previous quarry operations along Whitemarsh Run. Based on prior disturbance, the project change is unlikely to impact significant archeological resources, and no further archeological work is warranted.

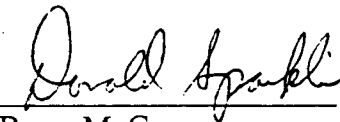
**Review Request**

Our evaluation has determined that the project, as modified, will have no additional impacts to historic properties. We request your concurrence with our determination, and with our archeological re-assessment, by May 19, 2000.

Thank you very much for your assistance with this project. If you have any questions, feel free to contact Mr. Richard Ervin at (410) 545-2878 about archeology, or Ms. Jill Dowling at (410) 545-8559 about structures. We look forward to receiving the signed copy of the project Memorandum of Agreement.

Very truly yours,

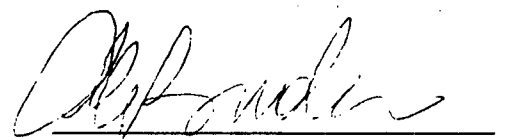
Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by:   
for Bruce M. Grey  
Deputy Division Chief  
Project Planning Division

Enclosures (3)

- cc: Ms. Jill Dowling (w/enclosures)
- Mr. Richard Ervin (w/enclosures)
- Ms. Allison Grooms (w/enclosures)
- Dr. Charles Hall
- Mr. Joe Kresslein
- Ms. Heather Murphey
- Mr. Don Sparklin

The Maryland Historical Trust concurs that no additional impacts will occur to historic properties as a result of the proposed alignment shifts in the MRECAS Project, Baltimore County, Maryland.

  
Anne E. Bruder, Preservation Officer  
Maryland Historical Trust  
June 2, 2000

**MEMORANDUM OF AGREEMENT BETWEEN  
THE FEDERAL HIGHWAY ADMINISTRATION AND  
THE MARYLAND STATE HISTORIC PRESERVATION OFFICER  
PURSUANT TO 36 CFR 800.5 (e) (4) REGARDING  
THE MD 43 MIDDLE RIVER EMPLOYMENT CENTER ACCESS PROJECT,  
BALTIMORE COUNTY, MARYLAND**

**WHEREAS**, the Federal Highway Administration (FHWA) plans to construct an extension of MD 43 in Baltimore County, Maryland for the purposes of alleviating transportation problems and encouraging development in the Middle River area, and

**WHEREAS**, the FHWA proposes to acquire right of way from the property of the MARC Train Station at the Martin State Airport as part of as part of this undertaking, and

**WHEREAS**, the FHWA has determined that the acquisition of right of way from this property, historically part of the Glenn L. Martin Airport Complex (BA-2081 and BA-2824), an historic district eligible for the National Register of Historic Places, will have an adverse effect on the property; and

**WHEREAS**, the FHWA anticipates that certain future activities associated with this undertaking, such as wetland mitigation, stormwater management, and reforestation, may be pursued and may require additional cultural resources studies, and

**WHEREAS**, the FHWA has consulted with the Maryland State Historic Preservation Officer (MD SHPO) in accordance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470), and its implementing regulations (36 CFR Part 800) to resolve the adverse effect resulting from the construction of a highway bridge and roadway, and the acquisition of right-of-way from historic properties; and

**WHEREAS**, pursuant to Section 101(d)(6)(B) of NHPA, the FHWA has invited the Maryland State Highway Administration (SHA) and the Mass Transit Administration (MTA) to be a signatory to and to concur in this MOA; and

**WHEREAS**, the Baltimore County Historical Society and the Baltimore County Historical Trust, Inc. have been identified as consulting parties and invited to participate in the consultation process and to review and comment on this MOA;

**NOW, THEREFORE**, the FHWA and the MD SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

## STIPULATIONS

FHWA shall ensure that the following stipulations are implemented:

1. National Register Eligible Glenn L. Martin Airport and Plant

The SHA, in consultation with the MD SHPO, will develop a plan for the public interpretation of the history of the Glenn L. Martin Airport Complex, including the paint hangar, currently a MARC maintenance facility. The plan may include one or more of the following items: exhibits, markers, interpretive panels, and/or oral histories of those who worked at the Glenn L. Martin Airport during its period of significance (1929-1949). The plan will be developed within one year following the completion of the highway bridge and will be submitted to the MD SHPO for review and comment.

2. Future Activities

Related ancillary activities including but not limited to wetland mitigation, stormwater management, and reforestation, may be added to this undertaking in the future. Should such activities be added for which cultural resource studies have not been completed, SHA shall implement such studies adhering to all relevant standards and guidelines referenced in Stipulation 3 and in accordance with the following:

- A. Identification. SHA professional cultural resources staff shall review any additions or changes to this undertaking and evaluate their potential to contain as-yet unidentified significant cultural resources. The results of this assessment shall be conveyed to the MD SHPO and all consulting parties under this MOA along with any recommendations for needed studies. Upon the concurrence of the MD SHPO, the SHA shall implement agreed upon identification studies. The SHA shall provide all completed information to the MD SHPO and all consulting parties under this MOA for review and comment.
- B. Evaluation. The SHA shall ensure that all historic resources identified in any areas inventoried under Stipulation 2.A. will be evaluated in accordance with 36 CFR 800.4 (c). The results of any such evaluation efforts shall be provided to the MD SHPO and all consulting parties under this MOA for review and MD SHPO concurrence. The consulting parties shall provide comment within 30 days of receipt of acceptable documentation. Should the parties not be able to reach agreement, the FHWA shall forward the documentation to the Keeper of the National Register of Historic Places for a final determination.
- C. Treatment. Should any property eligible for inclusion in the National Register of Historic Places be identified under Stipulation 2.A. and 2.B., the SHA shall make a reasonable good-faith effort to avoid adversely impacting such resources. If adverse impacts are unavoidable, SHA shall, in consultation with the MD SHPO and all consulting parties to this MOA, consider appropriate treatment options. Such options may include, but are not limited to, public interpretation, architectural salvage, landscaping, architectural recordation, sale, relocation, archeological data recovery, or loss without mitigation.

### 3. Administration

- A. Professional Guidelines: SHA shall ensure that all documentation carried out pursuant to this agreement is performed by or under the direct supervision of a person or persons meeting the Secretary of the Interior's Professional Qualifications Standards as Architectural Historian, Historic Architect, Historian, or Archeologist (see FR 44738-9 or 36 CFR Part 61).
- B. Amendment: Any signatory to this Memorandum of Agreement may request that it be amended, whereupon the parties will consult in accordance with 36 CFR § 800.6 (c) to consider the amendment.
- C. Dispute Resolution: Should any signatory party object within thirty (30) days to implementation of any action proposed pursuant to this agreement, the FHWA shall consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved, the FHWA shall forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation. Within fifteen (15) days after receipt of all pertinent documentation, the Council will provide the FHWA with either:
1. recommendations that the FHWA will take into account in reaching a final decision regarding the dispute; or
  2. notification to the FHWA that it will comment pursuant to 36 CFR § 800.7 and proceed to comment.
- Any Council recommendation or comment provided in response to such a request will be taken into account by the FHWA in accordance with 36 CFR § 800.6 (b) (2) with reference only to the subject of the dispute; FHWA's responsibility to carry out all other actions under this agreement that are not the subject of the dispute will remain unchanged.
- D. Reporting: On or before the 1st of January 2002, the SHA shall contact FHWA, the MD SHPO, and the consulting parties to this MOA and apprise them of the status of both the undertaking and the implementation of all stipulations included in this MOA. Should all parties deem an extension to this MOA necessary, such extension shall be treated as an Amendment (Stipulation 3.B. above). Otherwise, this MOA shall expire upon the receipt of no objection within a 30-day review and comment period from any party copied on the SHA letter required under this clause.
- E. Duration: This agreement shall be null and void if its terms are not carried out within ten (10) years from the date of its execution, unless the signatories agree in writing to an extension to carry out its terms.

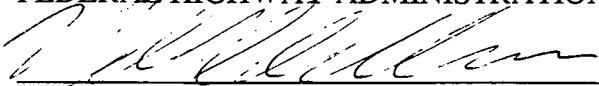


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F. Termination: Any signatory to this Agreement may terminate the Agreement by providing 30 days written notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. Termination of this Agreement would require compliance with 36 CFR 800. This Agreement may be terminated by the execution of a subsequent agreement that explicitly terminates or supersedes its terms.

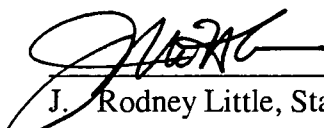
Execution of this Memorandum of Agreement by the FHWA, the MD SHPO, the MTA, and the SHA, its subsequent acceptance by the Advisory Council on Historic Preservation, and implementation of its terms evidence that the FHWA has afforded the Council an opportunity to comment on the acquisition of right-of-way from the National Register eligible Martin State Airport Complex Historic District and the construction of a new roadway within the same district for the MD 43 project in Baltimore County, Maryland and the effects on historic properties, and that the FHWA has taken into account the effects of the undertaking on historic properties.

FEDERAL HIGHWAY ADMINISTRATION

  
Nelson J. Castellanos, Division Administrator

3/13/01  
(date)

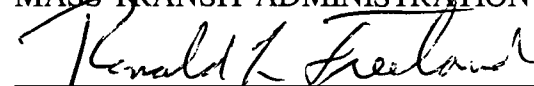
MARYLAND HISTORICAL TRUST

  
J. Rodney Little, State Historic Preservation Officer

6-13-00  
(date)


Concur:

MASS TRANSIT ADMINISTRATION

  
Ronald L. Freeland, Administrator

6/24/2000  
(date)

MARYLAND STATE HIGHWAY ADMINISTRATION

  
Parker F. Williams, Administrator

6/30/2000  
(date)

# APPENDIX F

## Minutes of Community Focus Group Meetings

*Middle River Employment Center Access Study  
Final Environmental Impact Statement/Final Section 4(f) Evaluation*



**U.S. Department of Transportation**  
Federal Highway Administration



**Maryland Department of Transportation**  
*State Highway Administration*

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Maryland Department of Transportation  
State Highway Administration

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

MEMORANDUM

TO: Focus Group

FROM: Heather Murphy *Bob Sanders for*  
Project Manager

DATE: March 24, 1999

SUBJECT: Middle River Employment Center Access Study (MRECAS)  
Focus Group Meeting Minutes for March 3, 1999

LOCATION: Williams Estates Community Center

NEXT MEETING: Tentatively Scheduled for July or August 1999

ATTENDEES:

- |                |  |
|----------------|--|
| Heather Murphy | SHA-PPD  |
| Jane Wagner    | SHA-PPD  |
| Dave Manly     | Century Engr.  |
| Robert Palmer  | Marine Trades  |
| Bob Olsen      | Balto. Co. DPW   |
| Paula Houck    | County Exec. Office  |
| Tom Vidmar     | Balto. Co. DEPRM   |
| Jean Flanagan  | The Avenue Newspaper                                       |
| Ken Coldwell   | The Avenue Newspaper & Essex, M. R. Chamber of<br>Commerce |
| Bill Poole     | A. V. Williams Trust                                       |
| Norm Sines     | Chamber - Comm. Liaison                                    |
| Sarah Paul     | White Marsh Area Assn. & Representing Del. DeCarlo         |
| Frank Bush     | Essex - Middle River Chamber of Commerce                   |
| Ellen Jackson  | East County Times  |

My telephone number is \_\_\_\_\_

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

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

DISCUSSION:

**Introductions**

Heather Murphy opened the meeting by introducing her new staff member, Ms. Jane Wagner.

**Update Since Last Meeting**

Since the last Focus Group Meeting in October, SHA has met with the Bird River Road Community, the Queen of Peace School Parents Association and the Bowley's Quarters Community. SHA plans to meet with the Bengies/Chase Communities very soon. Over the last five months, the Alternatives Retained have been refined, wetlands have been delineated and verified, a hazardous waste evaluation has been conducted, air and noise studies have been completed, cultural studies have been conducted and a Pre-Draft Environmental Document has been prepared. Currently, resource agencies are reviewing this document.

**Update on Detailed Engineering & Environmental Studies**

Heather then described the engineering and environmental features of Alternatives F, D Modified, D, E and I. She explained that the Corps of Engineers helped select two alternative crossings of Windlass Run that minimized impacts to the stream. She was asked why the Corps dictated the location of the stream crossing. Heather responded by explaining that the Corps must concur with the wetlands avoidance prior to issuing the 404 Permit. She was asked how many intersections would be allowed between US 40 and MD 150. There will be up to three intersections allowed for access to the employment center; however, an at-grade intersection will not be constructed at Bird River Road, at the request of residents on Bird River Road. She was asked why Alternatives E and I are still being considered, even though they do not intersect MD 150 at the most obvious location, which is the entrance to Martin State Airport. Heather answered that alternatives that avoid the Martin State Airport/Federal Depot Historic District must be given consideration. Heather was asked if AMTRAK was considering locating a new station based on the location of the new roadway. She said that AMTRAK was considering a new station, but was waiting for the decision on proposed MD 43.

**Next Steps**

Heather then discussed the Public Hearing, which will be scheduled for the week of June 14 or 21. There will be a display area outside the hearing room, and staff will be available to answer questions. There will be a formal presentation, followed by public testimony. An air-conditioned auditorium holding at least 500 people will be needed. Someone on the Focus Group suggested Bowley's Quarters Volunteer Fire Company. Another suggestion was the Loew's Theater in Whitmarsh.

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Heather then explained the process following the Public hearing, including the various review periods, the preparation of the Final Environmental Document, design, right-of-way acquisition and construction. She indicated that design may start early, if only State and Local funding is used, but that a decision has not yet been made. The most likely date for opening the roadway would be the year 2005. Heather was asked if the regulatory agencies remained involved during the design phase. She responded that they would be involved both during design and construction.

Heather stated that SHA would try to meet with the residents affected by the Alternatives prior to the Public Hearing, perhaps in May.

A motion was raised for the Focus Group to recommend a particular alternative. By show of hands, the Focus Group selected Alternative D Modified. The State and County representatives abstained from voting. The members of the Focus Group will be testifying at the Public Hearing in favor of Alternative D Modified. A member of the Focus Group asked if they could be provided advanced notice as to the date and location of the Public Hearing. Heather said that since the members of the Focus Group were on the project mailing list, that they will receive at least one month's notice.

**THE NEXT FOCUS GROUP MEETING WILL BE SCHEDULED SHORTLY AFTER THE UPCOMING PUBLIC HEARING.**

cc: Project Team  
File  
Mr. Dave Manly, Century Engineering, Inc.



**Maryland Department of Transportation**  
**State Highway Administration**

6079  
Parris N. Glendening  
Governor  
John D. Porcari  
Secretary  
Parker F. Williams  
Administrator

**MEMORANDUM:**

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

FROM: Heather Murphy  
Project Manager  
Project Planning Division

SUBJECT: Middle River Employment Center  
Access Study  
Project No. BA847A11

DATE: June 14, 1999

RE: Bird River Road Community Meeting Minutes

A meeting was held on June 9 at 6:30 p.m. at Our Lady Queen of Peace School on Bird River Road. The purpose of the meeting was to update members of the Bird River Road community of the ongoing Middle River Employment Center Access Study (MRECAS), to provide information about the upcoming Public Hearing and to solicit comments on the project.

Approximately 31 community residents attended, a copy of the sign-in sheet is attached. They had an opportunity to review the project mapping for each alternative under consideration, listen to a brief presentation on the project status and ask questions both individually and as a group.

The following are issues and concerns raised by the community:

- ♦ Future Noise levels brought to a quiet community
- ♦ Property owner rights (ie. Homeowners held hostage by the process unable to improve property or sell)
- ♦ Stress to community members, especially the older members including a few recently widowed

My telephone number is \_\_\_\_\_

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Bird River Road Community Meeting Minutes (6/9/99)

Page Two

- ♦ Stress counseling availability
- ♦ Proposed bike paths – existing problems with ATV's exacerbated
- ♦ Wetland impacts vs. homes
- ♦ How to have a No-build alternative selected

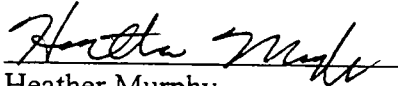
The community was made aware of the upcoming public hearing for this project that is scheduled for June 16 at Kenwood High School. Heather outlined various ways for the members to communicate their concerns and how important it was for them to be placed on the record. She discussed the time frame for alternative selection and how comments from the citizens, agencies and public officials are taken into consideration in order to make that decision.

Please contact the project manager, Ms. Heather Murphy at 410-545-8571 if you have any questions regarding these minutes.

Very truly yours,

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

By:

  
Heather Murphy  
Project Manager  
Project Planning Division

cc: Ms. Gina Anthony

631



Maryland Department of Transportation  
State Highway Administration

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

MEMORANDUM

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

FROM: Heather Murphy  
Project Manager  
Project Planning Division *HLM*

SUBJECT: Middle River Employment Center  
Access Study  
Project No. BA847A11

DATE: June 18, 1999

RE: Community Meeting Minutes

A meeting was held on June 3 at 6:00 p.m. at the Williams Estates Community Center. The purpose of the meeting was to update members of the Bengies Road community and Eastern Boulevard minority community of the ongoing Middle River Employment Center Access Study (MRECAS), to provide information about the upcoming Public Hearing and to solicit comments on the project.

A representative from each of two communities attended. Mrs. Chisholm from Bengies Road and Mr. & Mrs. Albert Wright from the minority community. They had an opportunity to review the project mapping for each alternative under consideration, listen to a brief presentation on the project status and ask questions individually.

Feedback was received during a subsequent meeting with the Bird River Road community, that information was passed back to neighbors that were unable to attend this meeting, as suggested.

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



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Mr. Louis H. Ege, Jr.  
Page Two

Mr. & Mrs. Wright and Mrs. Chisholm were made aware of the upcoming public hearing for this project scheduled for June 16 at Kenwood High School. Heather outlined various ways for the members to communicate their concerns and how important it was for them to be placed on the record. She discussed the time frame for alternative selection and how comments from the citizens, agencies and public officials are taken into consideration in order to make that decision.

Please contact me at 410-545-8571 if you have any questions regarding these minutes.

cc: Ms. Gina Anthony



**Maryland Department of Transportation  
State Highway Administration**

**MEMORANDUM**

633  
Parris N. Glendening  
Governor  
John D. Porcari  
Secretary  
Parker F. Williams  
Administrator

**TO:** Mr. Neil J. Pedersen  
Office of Planning and  
Preliminary Engineering

**FROM:** Cynthia D. Simpson  
Deputy Director  
Office of Planning and  
Preliminary Engineering

**SUBJECT:** Middle River Employment Center  
Access Study  
Project No. BA847A11

**DATE:** October 19, 1999

**RE:** Bird River Road Stakeholders Meeting

A meeting was held on Thursday October 7, 1999 with the Bird River Road Stakeholders to continue discussions concerning community impacts anticipated with the construction of MD 43. Those in attendance from the Study Team included:

Heather Murphy	Office of Planning and Preliminary Engineering
Bob Riley	Office of Highway Development
Jane Wagner	Office of Planning and Preliminary Engineering
Alazar Feleke	Office of Planning and Preliminary Engineering
Dimas Tedpahogo	Office of Planning and Preliminary Engineering
Gina Anthony	District 4 – Right of Way
Steve Maged	District 4 – Right of Way
Chuck Ferraro	District 4 – Right of Way
Margot Bartosh	Landscape Architecture Division
Ken Polcak	Office of Environmental Design
Chuck Lippy	McCormick Taylor & Associates
Tony Frascarella	Century Engineering

The meeting started with a review by the residents of the displays presented (100 scale drawings of the Alternate D-Modified, Options A and B and the proposed typical section of MD 43). The displays depicted two options considered at the MD 43/Bird River Road crossing. Option A is the original horizontal and vertical alignment of MD 43 approximately (25) feet over Bird River Road, with Bird River Road located at its existing grade. Option B lowers Bird River Road approximately ten (10) feet below existing ground and MD 43 aligned over Bird River approximately (10) feet.

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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Ms. Murphy then began the formal presentation of the project by first introducing the staff members and then giving a brief review of the history and purpose of the project. Project planning for the current project started in 1997. A workshop was held in June of 1998. A number of preliminary alternatives were presented. A Location Design Public Hearing was held in June 1999. Of those who were in support of the project, the majority favored Alternative D Modified. Those who opposed the project were mostly concerned with residential relocations on Bird River Road as well as the overall impact of the proposed highway on the community. Heather announced that Alternative D-Modified is the Alternative that was selected by SHA, but is still pending approval by the regulatory agencies and FHWA.

Heather stated that some agency representatives wanted to know why access was not being considered at Bird River Road. Heather stated that SHA is willing to consider the idea of an at grade intersection if the community wants it. The options for the MD 43 crossing at Bird River Road were then outlined as follows:

- ♦ Bird River Road at its existing location and MD 43 approx. 25' over
- ♦ Bird River Road lowered 10' and MD 43 approx. 20' over
- ♦ Bird River Road and MD 43 at grade intersection

Heather suggested that SHA would circulate a survey to all citizens invited, outlining the above options. They could convey their decision in private after having had some time to think about their response. Ms. Murphy then asked for comments and questions from the community.

A comment was raised that the process has taken much too long, considering that a roadway has been studied in this location for the past 30 years. Heather stated that the SHA understands the history behind the project and the impact this has on individuals who are kept in "limbo" waiting for a final decision. Heather also stated that she is 99% confident that this roadway will now be built because of the political support it has.

A comment was raised as to the accuracy of the number of residences displaced by D-Modified as presented in the DEIS. Ms. Murphy said that the number of residences displaced and properties impacted were calculated from aerial topography used for study purposes and by field checks. During final design of the project a more detailed property survey will be conducted. When final right-of-way limits are determined, plats will be prepared and SHA Real Estate personnel will begin the appraisal process and then contact individual property owners to begin negotiations.

A question was raised whether this project would result in a change in zoning for properties in the vicinity of proposed roadway. Ms. Murphy stated that it is her understanding that properties were not subject to a zoning change in this area.

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A subsequent question was raised whether the SHA was "reserving" property for the project, thus (paraphrasing) "artificially depressing property values on those properties similar to what was done by the state for the ICC". Ms. Murphy stated that it is her understanding that no property had been reserved in the area for construction of MD 43. She further stated that much of the property for roadway is within the A.V. Williams property and that the property owner would donate the property to the state.

A question was raised why there was a sound barrier proposed on one side of MD 43 only. (The DEIS states that a 2,100 foot barrier located along the north side of MD 43 at Bird River Road is reasonable and feasible for further study). Mr. Polcak stated that a wall located along the south side of MD 43 did not meet the minimum cost/benefit criteria contained in the SHA Sound Barrier Policy and thus was not considered reasonable and feasible for further study. A number of the residents strongly stated that they would like a wall along both sides of MD 43 to lessen the noise impacts from the proposed roadway.

A question was asked about the exact locations of barriers. It was described that in a roadway fill section the barrier would be placed at the edge of roadway and in a roadway cut section at the top of the cut.

Other questions were raised regarding the real estate process. Mr. Maged and Mr. Ferraro discussed in detail different parts of the process. Many residents expressed their disappointment because this roadway will impact their quality of life, houses and/or property.

Upon completion of the meeting, Heather stated that we would be meeting periodically with the community as the design progresses in order to continue getting their input. If there are any questions or comments regarding this meeting, please contact the project manager, Ms. Heather Murphy at 410-545-8571.

By: Heather Murphy  
Heather Murphy  
Project Manager  
Project Planning Division

cc: attendees  
Distribution List (non-attendees)



**Maryland Department of Transportation  
State Highway Administration**

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

MEMORANDUM

TO: Focus Group  
FROM: Heather Murphy  
Project Manager *HM*  
SUBJECT: Middle River Employment Center Access Study (MRECAS)  
Focus Group Meeting Minutes for July 29, 1999

LOCATION: Williams Estates Community Center

DATE: September 16, 1999

ATTENDEES:

Heather Murphy	SHA-PPD
Jane Wagner	SHA-PPD
Nancy Hubers	Delegate
Mike Collins	State Senator
Robert Palmer	Marine Trades
Tom Vidmar	Baltimore County DEPRM
Sharon Klots	Baltimore County DED
Jean Flanagan	The Avenue Newspaper
Bill Poole	A. V. Williams Trust
Randy Cougar	Windlass Run Imp.
Jackie Nickel	East County Times
Jim Dresher	

DISCUSSION:

**Introductions**

Heather Murphy opened the meeting by announcing that the MRECAS project planning team will be recommending Alternative D-modified to the Administrator as the alternative to be selected to be carried forward to the next phase of highway development, Highway Design.

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**Update Since Last Meeting**

Since the last Focus Group Meeting in March, SHA has met with the Bird River Road and the Bengies Road communities. SHA also held a Public Hearing on June 16, 1999 at Kenwood High School. Heather indicated that the summary of the Hearing comments (attached) demonstrated overwhelming support for the project. The majority of those who supported build options supported alternative D-modified.

**Next Steps**

Heather discussed the schedule, stating that we don't expect to have formal FHWA approval of the Final Document until early Spring 2000, however design will begin with state funding this Fall.

The Focus Group has expressed an interest in continuing to meet quarterly while the project is in design in order to be kept up to date as the design progresses as well as provide any input.

**THE NEXT FOCUS GROUP MEETING WILL BE SCHEDULED ONCE THE PROJECT MOVES INTO THE HIGHWAY DESIGN PHASE.**

cc: Project Team  
File  
Mr. Dave Manly, Century Engineering, Inc.

Summary of Comments  
MRECAS Public Hearing- June 16, 1999  
87 Total comments – written / verbal so far

• Attendance / Comments

300 (approx) people attended  
63 people gave written comments / letters  
20 people gave oral testimony (not including elected officials)  
4 people gave private testimony

• General Tally

	<i>* Support Alternative D-modified</i>	<i>* Support any Build Alternative</i>	<i>* Support No-Build Alternative</i>	<i>** General Comments</i>
Verbal Testimony	10	12	7	1
Written Comments	22	37	14	4
Private Testimony	Not Available	-	-	-
Total	32	49	21	5

*\*Support for Build, Build Alternative D-modified or No-Build Alternative:*  
Explicit or strong implied support or opposition to project.

In some cases,

*Support for Build Alternative* includes implied support for a new roadway in the area and often a specific Alternative.

*Support for No-Build Alternative* includes responses definitively opposed to a new roadway in the area.

*\*\* General Comments:*  
Issues or concerns but not explicitly stated or implied support or opposition to project.

• Major Issues / Concerns

Impacts to an established community  
Impacts to the environment  
The development will not happen as described

• All comments due by July 26, 1999





## Community Meeting

Bowleys Quarters Improvement Association – February 11, 1999

Gave a briefing on the project status, the alternatives retained for detailed study and the ongoing environmental impact studies. Addressed issues of process and timing.

Questions that were asked were generally on timing, environmental impacts, decision making process and who makes the decision on which alternative to build. More specific questions/concerns included:

- ◆ What does it mean that the Martin State Airport Complex is historic?
- ◆ What do the hazardous material sites have in them?
- ◆ Will the cost of each alternative enter into the decision making process?
- ◆ What is being done about the high wetland impacts?