

# ENVIRONMENTAL ASSESSMENT

*Section 4(f) Evaluation*

for

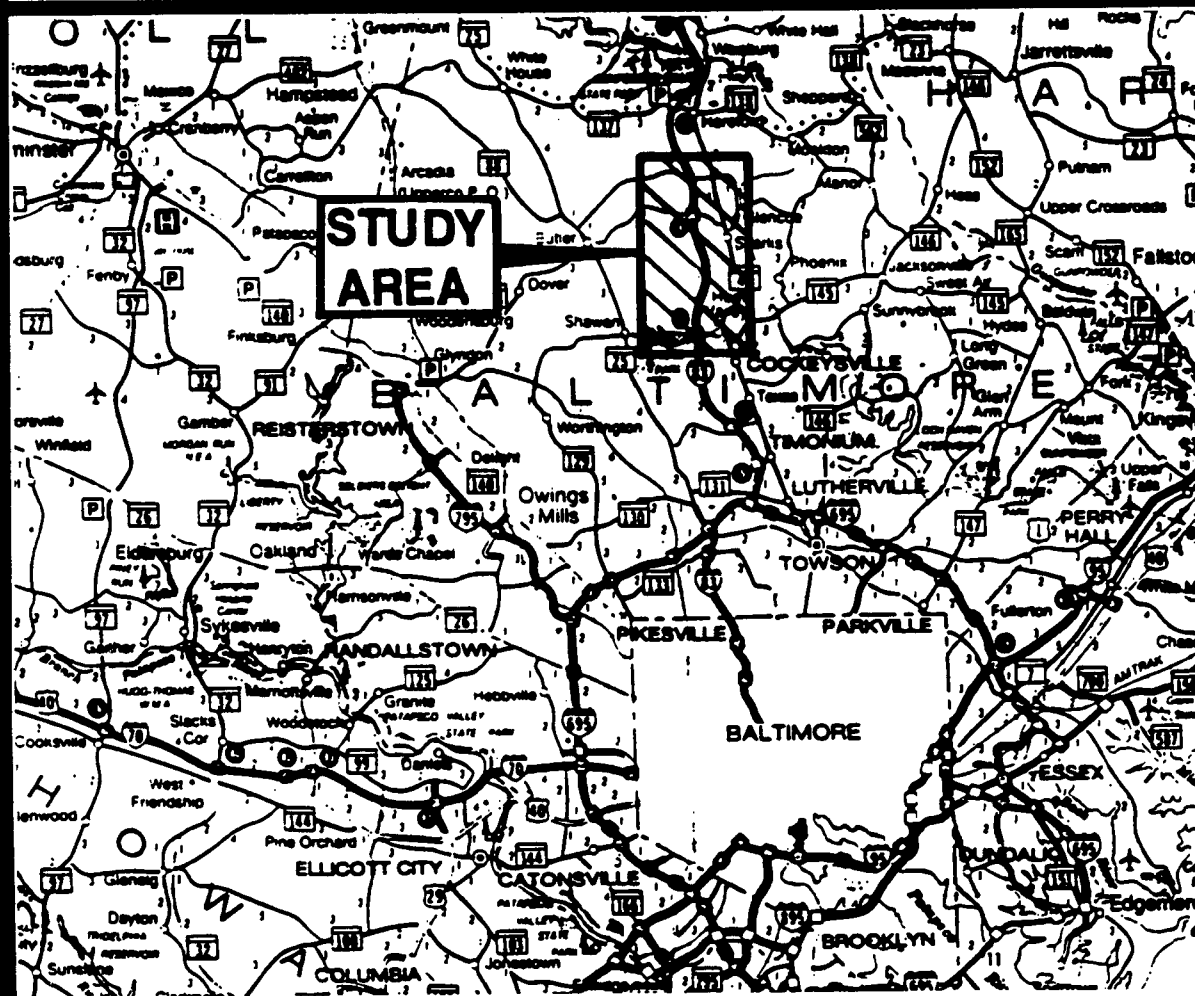
**CONTRACT NO. B881-102-471**

## **MARYLAND ROUTE 45**

**Maryland Route 145 to**

**Belfast Road**

**Baltimore County, Maryland**



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

and  
MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

Report Number: FHWA-MD-EA-92-02-D

Federal Highway Administration  
Region III

**MARYLAND ROUTE 45**

Maryland Route 145 to Belfast Road  
Baltimore County

**ADMINISTRATIVE ACTION**

**ENVIRONMENTAL ASSESSMENT  
SECTION 4(f) EVALUATION**

U.S. Department of Transportation  
Federal Highway Administration  
and  
State of Maryland  
Department of Transportation  
State Highway Administration  
Cooperating Agency: U.S. Army Corps of Engineers

SUBMITTED PURSUANT TO: 42 U.S.C. 4332(2) (C); 49 U.S.C. 303,  
23 U.S.C. 128 (a) and CEQ Regulations (40 CFR 1500 et. seq.)

HAL KASSOFF  
ADMINISTRATOR

4/10/92  
Date

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

4/15/92  
Date

Heuman Rodrigo  
Federal Highway Administration  
Division Administrator

**SUMMARY**

## SUMMARY

### 1. *Administrative Action*

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

### 2. *Additional Information*

Additional information concerning this project may be obtained by contacting:

Mr. Louis H. Ege, Jr.  
 Deputy Director  
 Office of Planning and  
 Preliminary Engineering  
 Room 506  
 State Highway Administration  
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Mr. Herman Rodrigo  
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 The Rotunda - Suite 220  
 711 West 40th Street  
 Baltimore, Maryland 21211  
 PHONE: (410) 962-4440  
 HOURS: 7:30 a.m. - 4:00 p.m.

### 3. *Description of Proposed Action*

The proposed project consists of the reconstruction of MD 45 from MD 145 (Ashland Road) to Belfast Road for a distance of approximately 3.9 miles; the relocation of MD 145 from MD 45 to Paper Mill Road (MD 145) near Ashland for a distance of approximately 0.5 mile and a new interchange with I-83 in the vicinity of Thornton Mill Road. These improvements will serve to improve traffic flow on existing MD 45, to address existing and future congestion resulting from planned development and to correct unsafe horizontal and vertical geometry. Improved access between I-83 and MD 45 would result with the new interchange at the I-83/Thornton Mill Road area. The relocation of MD 145 to intersect MD 45 opposite Shawan Road would alleviate congestion from vehicles turning right from Shawan Road to MD 45 and then turning left

5

onto MD 145 within a distance of approximately 1,650 feet. During p.m. peak periods, this congestion results in queuing in the right through lane on southbound MD 45.

4. ***Alternatives Description***

a. ***Alternative 1***

No-Build Alternative - No major improvements would be made to the existing roadway. Minor improvements, such as resurfacing and shoulder improvements, would occur over a period of time as part of normal highway maintenance and safety operations.

b. ***Alternative 2***

Alternative 2 consists of a multi-lane highway from MD 145 to Ridgebrook Road. Option 1 proposes a five-lane roadway between McCormick and Phoenix Roads consisting of two 23-foot roadways separated by a 12-foot continuous center turn lane with curbs on the outside. Option 2 between McCormick and Phoenix Roads proposes a four-lane divided highway consisting of two 24-foot roadways separated by a 20-foot grassed median with curbs on the inside and outside of each roadway. With Options 1 and 2, MD 45 would be relocated slightly east of its present location. North of Phoenix Road to Ridgebrook Road, MD 45 would return to its existing horizontal alignment with minor vertical realignment improvements. North of Ridgebrook Road to Belfast Road, MD 45 would remain a two-lane roadway with the addition of 8-10 foot shoulders. The shoulder would serve as a bypass lane at four intersections (Quaker Bottom Road, Sparks Road, Lower Glencoe Road and Belfast Road) so the existing travel lane could function as a left-turn lane.

MD 145 is also proposed to be relocated to intersect MD 45 opposite Shawan Road. It would consist of a five-lane undivided roadway with two 23-foot roadways separated by a 12-foot continuous left-turn lane with curbs on the outside.

c. **Alternative 3**

Alternative 3 is identical to Alternative 2 except in the area between McCormick and Phoenix Roads where MD 45 would be relocated to the west rather than the east.

d. **Alternative 4**

Alternative 4 proposes a new interchange with I-83 in the Thornton Mill Road area after Ridgebrook Road is extended to the proposed interchange area. This extension would be provided by the developer to access any new facilities which might be constructed in the future. Three interchange configurations are under consideration.

Option 1 proposes a diamond-type interchange at I-83/Thornton Mill Road with Thornton Mill Road widened to three lanes and realigned to connect to Ridgebrook Road extended. I-83 would continue to overpass Thornton Mill Road.

Option 2 proposes a modified diamond interchange at I-83/Thornton Mill Road with the same widening to Thornton Mill Road and connection to Ridgebrook Road extended.

Option 3 also proposes a modified diamond; however, it is located approximately 1,500 feet north of Thornton Mill Road. Ridgebrook Road would

extend under I-83 to connect with the interchange ramps only and would not extend west beyond the ramps.

e. *Alternative 5*

Alternative 5 is identical to Alternatives 2 and 3 except between McCormick and Phoenix Roads where MD 45 would be relocated to remove several substandard curves. The relocated portion of this alternative aims to adhere closely to the existing alignment of York Road, while still correcting the deficient geometry.

5. *Environmental Summary*

A table summarizing the impacts associated with all alternatives under consideration is presented on page S-8.

Eleven residential displacements would be required with Alternatives 2 and 5, twelve with Alternative 3 and five, four and three with Alternative 4, Options 1, 2 and 3 respectively. Three business displacements are required with Alternatives 2, 3 and 5. Right-of-way requirements are 37.1 acres for Alternative 2, 42.8 for Alternative 3, 12.5, 16.5 and 24.8 acres for Alternative 4, Options 1, 2 and 3 respectively and 38.5 for Alternative 5.

The relocation of MD 145, as well as Alternatives 2, 3, 4 and 5 are all consistent with the Baltimore County Master Plan 1989-2000. In October 1990, Baltimore County Department of Parks and Recreation completed the purchase of a property fronting MD 45 between Sparks and Lower Glencoe roads to expand existing Sparks Park. Approximately 0.8 acre of this property would be required in order to provide the 8-10 foot shoulder proposed for either Alternatives 2, 3 or 5.

Six historic sites and one historic district in the project corridor are eligible for the National Register of Historic Places and one district in the corridor is listed on the National Register. Alternatives 2, 3 and 5 would have an adverse effect on the Sparks-Glencoe historic district (requiring property from two of the sites and the district). In addition, Alternatives 2 and 5 would have an adverse effect on three other sites while Alternative 3 would have an adverse effect on two sites and a no-adverse effect on one site. Alternative 4, Options 1 and 2 require property from one historic district (Western Run-Belfast), while Option 3 requires property from two districts (Western Run and Sparks-Glencoe). The State Historic Preservation Officer has determined that all Alternative 4 options would have an adverse effect on the Western Run-Belfast historic district, while Alternative 4, Option 3 would result in a no-adverse effect on the Sparks-Glencoe Historic District.

Alternative 4, Option 3 impacts one prehistoric archeological site which is potentially eligible for the National Register because of the data it contains. Phase II investigations would be required should Alternative 4, Option 3 be selected. Phase I investigations would be required with Alternatives 2, 3 and 5 at five locations if and when right-of-way is acquired from these sites in order to determine if potentially significant archeological sites are present. Four of these sites are associated with historic standing structures. The other location was an open field adjacent to the existing right-of-way. Permission to survey these properties was denied.

Woodlands would be required with all of the alternatives under consideration. Alternative 4 impacts range from 2.5 acres for Option 1 to 11.2 for Option 3. Alternatives 2, 3 and 5 require 15.0, 20.4 and 12.4 acres respectively with 4.4 of these acres associated with the MD 145 Relocation.



Alternative 2 would impact 2.8 acres of non-tidal wetlands, Alternative 3 impacts 3.1 acres, Alternative 5 impacts 2.8 acres and Alternative 4, Options 1 and 2 impact 0.1 acres, while Alternative 4, Option 3 does not impact any wetlands. Most of the wetland acreage required for Build Alternatives 2, 3 and 5 is associated with the crossing of Western Run by relocated MD 145 (2.5 acres).

Construction would occur in the floodplains of Western Run and Piney Creek. Impacts of up to 3.0 acres, depending on the structure length selected, would be required with Alternatives 2 and 5 and approximately 1.0 - 3.7 acres would be required with Alternative 3 at Western Run. Alternatives 2, 3 and 5 would have less than 0.1 acre of floodplain involvement at Piney Creek.

Bridges for two new stream crossings of Western Run would be required with Alternatives 2, 3 and 5 (including one new crossing associated with MD 145 Relocated). In addition, Alternative 3 will require two new crossings of smaller unnamed tributaries to Western Run, while Alternatives 2 and 5 will require one. Three new crossings of unnamed tributaries are required with Alternative 4, Option 1 and four with Alternative 4, Option 2. No stream crossings are required with Alternative 4, Option 3.

Approximately 650 feet of a Piney Creek tributary would be relocated parallel to MD 45 with Alternatives 2, 3 and 5. These relocations are associated with the addition of shoulders north of Ridgebrook Road.

Sediment and erosion control measures and stormwater management practices, approved by the Department of the Environment, would be strictly enforced during construction to minimize water quality impacts to Western Run, Piney Creek and their tributaries.

No state or federally listed threatened or endangered plant or animal species would be impacted with the alternatives under consideration. Although the U.S. Fish and Wildlife Service has indicated that three candidate species for federal listing may be present within the project impact area, they could not identify the location of any known populations, and none were found during field investigations.

Alternative 2 would require 31.8 acres of prime farmland soils, Alternative 3 requires 27.0 acres, Alternative 5 requires 31.9 acres of prime farmland soil and Alternative 4, Option 1 requires 15.0 acres, Option 2 requires 16.8 acres and Option 3 requires 35.3 acres.

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

The projected noise levels would equal or exceed the Federal Noise Abatement Criteria (67dBA) or increase by 10 dBA or more over ambient noise levels at seven locations with the No-Build alternative, seven with Alternatives 2, 3 and 5, two with Alternative 4, Options 1 and 2, and at three locations with Option 3.

No hazardous waste involvement would occur with Alternatives 2, 3, 4 or 5 at the Bausch and Lomb; Diecraft Superfund site or at the Getty (Amoco) gas station.

**TABLE 1  
SUMMARY OF IMPACTS / COSTS**

	Alternative 1 (No-Build)	Alternative 2*	Alternative 3*	Alternative 5	Alternative 4		
					Option 1	Option 2	Option 3
<b>Socio-Economic Impacts</b>							
1. Residential Displacements	0	11	12	11	5	4	3
2. Minority Displacements	0	0	0	0	0	0	0
3. Business Displacements	0	3	3	3	0	0	0
4. Public Recreational or Parklands Affected - Number-Acres	0	1-0.8 ac.	1-0.8 ac.	1-0.8 ac.	0	0	0
5. Historic Sites/Districts Impacted - Number (Acres)	0	4-4.4 ac.	4-4.4 ac.	4-4.4 ac.	1-11.2 ac.	1-15.6 ac.	2-21.8 ac.
6. Archeological Sites Impacted	0	0**	0**	0**	0	0	1
7. Consistent with Master Plan	No	Yes	Yes	Yes	Yes	Yes	Yes
<b>Natural Environmental Impacts</b>							
1. Woodlands Acres Affected (MD 145 impacts)	0	15.0 (4.4)	20.3 (4.4)	12.3 (4.4)	2.5	4.0	11.2
2. New Stream Crossings (MD 145 only)	0	4 (1)	5 (1)	4 (1)	3	4	0
3. Stream Relocation (linear ft.)	0	650	650	650	0	0	0
4. Wetlands Acres Affected (MD 145 only)	0	2.8 (2.5)	3.1 (2.5)	2.8 (2.5)	0.1	0.1	0
5. 100-year Floodplains Affected (Acres)	0	.3-3.0	1.0-3.6	0.3-3.0	0	0	0
6. Prime Farmland Soils Affected (Acres)	0	31.8	27.0	31.9	15.0	16.8	35.3
7. Threatened or Endangered Species Impacted	0	0	0	0	0	0	0
<b>Air Quality Sites Exceeding S/NAAQS- 1998 &amp; 2015</b>	0	0	0	0	0	0	0
<b>Noise Sensitive Areas Exceeding Federal Noise Abatement Criteria (2015) or Noise Levels Increase by 10dBA or more over Ambient Levels</b>	7	7	7	7	2	2	3
<b>Hazardous Waste Involvement</b>	No	No	No	No	No	No	No
<b>Approximate Costs (1990 Dollars in Thousands)</b>							
1. Preliminary Engineering	0	\$ 3,097 (622)	\$ 2,912 (622)	\$ 2,912 (622)	\$ 397	\$ 557	\$ 944
2. Right-of-Way	0	\$18,818 (7,043)	\$19,457 (7,043)	\$18,818 (7,043)	\$ 2,563	\$ 2,589	\$ 2,414
3. Construction	0	\$39,266 (7,882)	\$36,129 (7,882)	\$36,969 (7,882)	\$ 5,037	\$ 7,062	\$11,969
4. TOTAL	0				\$ 7,997	\$10,208	\$15,327

\* Impacts for either Options 1 or 2 included.

\*\* Phase Ib investigations required for five sites to determine if potentially significant archeological sites are present.

\*\*\*\* Depending on structure length.

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

The checklist identifies specific areas of the natural and social-economic environment which have been considered while preparing this environmental assessment. The reviewer can refer to the appropriate section of the document, as indicated in the "Comment" column of the form, for a description of specific characteristics of the natural or social-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>IV-E4</u>
2. Will the action require a permit for construction or alteration within the 50 year floodplain?	<u>          </u>	<u>X</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>IV-E6</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>          </u>
5. Will the action occur on slopes exceeding 15%?	<u>X</u>	<u>          </u>	<u>IV-E3</u>
6. Will the action require a grading plan or a sediment control permit?	<u>X</u>	<u>          </u>	<u>IV-E3</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>
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>X</u>	<u>          </u>	<u>IV-A2</u>

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</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>	_____
13. Will the action affect the use of an archeological or historical site or structure?	<u>X</u>	_____	<u>IV-D</u>
<b>B. Water Use Considerations</b>			
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>IV-E3</u>
15. Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	_____	<u>X</u>	_____
16. Will the action change the overland flow of stormwater or reduce the absorption capacity of the ground?	<u>X</u>	_____	<u>IV-E3</u>
17. Will the action require a permit for the drilling of a water well?	_____	<u>X</u>	_____
18. Will the action require a permit for water appropriation?	_____	<u>X</u>	_____
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	_____	<u>X</u>	_____
20. Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?	_____	<u>X</u>	_____

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
21. Will the action result in any discharge into surface or sub-surface water?	<u>X</u>	<u>          </u>	<u>IV-E</u>
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	<u>          </u>	<u>X</u>	<u>          </u>
<b>C. Air Use Considerations</b>			
23. Will the action result in any discharge into the air?	<u>X</u>	<u>          </u>	<u>IV-E</u>
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	<u>X</u>	<u>          </u>	<u>IV-E</u>
25. Will the action generate additional noise which differs in character or level from present conditions?	<u>X</u>	<u>          </u>	<u>IV-G</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>
<b>D. Plants and Animals</b>			
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>I-C5</u>
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?	<u>          </u>	<u>X</u>	<u>          </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>X</u>	_____
E. Socio-Economic			
31. Will the action result in a pre-emption or division of properties or impair their economic use?	<u>X</u>	_____	<u>IV-B</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>IV-A</u>
33. Will the action alter land values?	<u>X</u>	_____	<u>IV-B</u>
34. Will the action affect traffic flow and volume?	<u>X</u>	_____	<u>II-F</u>
35. Will the action affect the production, extra-action, harvest or potential use of a scarce or economically important resource?	_____	<u>X</u>	_____
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	_____	<u>X</u>	_____
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans-including zoning?	<u>X</u>	_____	<u>IV-C</u>
38. Will the action affect the employment opportunities for persons in the area?	<u>X</u>	_____	<u>IV-B</u>



- 39. Will the action affect the ability of the area to attract new sources of tax revenue?  X     IV-C
- 40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?    X
- 41. Will the action affect the ability of the area to attract tourism?    X

F. Other Considerations

- 42. Could the action endanger the public health, safety or welfare?    X
- 43. Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?    X
- 44. Will the action be of statewide significance?    X
- 45. Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action could result in a cumulative or synergistic impact on the public health, safety, welfare, or environment?    X
- 46. Will the action require additional power generation or transmission capacity?    X
- 47. This agency will develop a complete environmental effects report on the proposed action.    X   \*

\* This Environmental Assessment/Section 4(f) Evaluation has been prepared in accordance with the National Environmental Policy Act. This document also satisfies all of the requirements of the Maryland Environmental Policy Act.

**TABLE OF CONTENTS**

TABLE OF CONTENTS

	<u>Page</u>
Summary	S-1
Summary of Impacts/Costs Table	S-7 (follows)
Environmental Assessment Form	S-7A
I. Description of Proposed Action	I-1
A. Project Location	I-1
B. Project Description	I-1
C. Description of Existing Environment	I-2
1. Social Environment	I-2
a. Population	I-2
b. Community Facilities and Services	I-5
2. Economic Environment	I-8
3. Land Use	I-11
a. Existing	I-11
b. Future	I-12
4. Historic and Archeological Resources	I-14
5. Natural Environment	I-21
a. Topography	I-21
b. Geology	I-22
c. Soils	I-23
d. Surface Water and Groundwater	I-27
e. Floodplains	I-32
f. Wildlife and Terrestrial Habitat	I-33
g. Endangered Species	I-35
h. Aquatic Habitat	I-36
i. Wetlands	I-37
6. Existing Air Quality	I-46
7. Existing Noise Conditions	I-46
8. Hazardous Wastes	I-47
II. Purpose and Need	II-1
A. Purpose	II-1
B. Roadway Function and Trip Character	II-3
C. Project Background	II-4
D. Existing Roadway	II-5
E. Traffic Conditions	II-8
F. Level-of-Service Analysis	II-10
G. Accident Statistics	II-13
H. Associated Improvements	II-16

**TABLE OF CONTENTS (Cont'd.)**

III.	Alternatives Under Consideration	III-1
	A. Study Alternatives Presented at the Alternates Meeting	III-1
	B. Alternatives Selected for Detailed Study	III-7
IV.	Environmental Impacts	IV-1
	A. Social Impacts	IV-1
	1. Residential Displacements	IV-1
	2. Public Parks and Recreation Areas	IV-4
	3. Access to Services and Facilities	IV-6
	4. Disruption of Neighborhoods and Communities	IV-9
	B. Economic Impacts	IV-10
	C. Land Use	IV-12
	D. Historic and Archeological Site Impacts	IV-13
	E. Natural Environmental Impacts	IV-25
	1. Topography and Geology	IV-25
	2. Soils	IV-26
	3. Surface Water and Groundwater	IV-28
	4. Floodplains	IV-36
	5. Terrestrial Habitat	IV-38
	6. Wetlands	IV-40
	F. Air Quality Impacts	IV-48
	G. Noise Impacts	IV-52
	H. Hazardous Wastes	IV-62
V.	Section 4(f) Evaluation	V-1
	A. Introduction	V-1
	B. Description of Proposed Action	V-1
	C. Description of 4(f) Resources	V-2
	D. Description of Impacts	V-5
	E. Avoidance and Minimization of Impacts	V-8
	F. Coordination	V-14
VI.	Comments and Coordination	VI-a
VII.	Appendices	VII-1
	A. Surface Water Quality Assessment	VII-1
	B. Fish Species Collected in Gunpowder River Basin, 1974-1984	VII-13
	C. Summary of the Relocation Assistance Program of the State Highway Administration of Maryland	VII-14

## LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Following Pages</u>
1	Summary of Impacts/Costs	S-7
2	Vegetative Community Types	I-33
3	Wetlands	I-38
4	Existing Noise Levels and NSA Descriptions	I-47
5	Summary of Intersection Levels of Service	II-12
6	Summary of Historic Resources Effect Determinations	IV-13
7	Prime and Statewide Important Soil Impacts	IV-26 *
8	Vegetative Community Impacts	IV-38
9	Wetland Impacts	IV-40
10	Air Quality Receptor Sites	IV-51
11	CO Concentrations at Each Receptor Site, PPM	IV-51
12	Noise Abatement Criteria	IV-53
13	Noise Abatement Analysis	IV-55

\* Included on page cited.

02

## LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Following Pages</u>
1	Project Area Map	I-1
2	Study Area	I-1
3	Census Tracts	I-3
4	Community Facilities and Services	I-5
5	Existing Land Use	I-11
6	Future Land Use	I-12
7	Historic Sites Overview	I-14
8	Prime and Statewide Important Farmland Soils	I-26
8A	Drainage Areas	I-27
9	Vegetative Communities	I-33
10	1988/2015 A.D.T. - No-Build	II-9
11	2015 A.D.T. - Build	II-9
12-13	Typical Sections	III-8a
14	Alternatives 2, 3 and 5 (MD 145 Rel.)	III-8a
15-16	Alternative 2 - Option 1 (five-lane)	III-8a
17-18	Alternative 2 - Option 2 (four-lane divided)	III-8a
19-20	Alternative 3 - Option 1 (five-lane)	III-8a
21-22	Alternative 3 - Option 2 (four-lane divided)	III-8a
23-24	Alternative 5 - Option 1 (five-lane)	III-8a
25-26	Alternative 5 - Option 2 (four-lane divided)	III-8a
27-29	Alternatives 2, 3 and 5	III-8a
30	Alternative 4 - Option 1	III-8a
31	Alternative 4 - Option 2	III-8a
32	Alternative 4 - Option 3	III-8a
33	4(f) Avoidance - Gardner House	V-8
34	4(f) Avoidance - Loveton	V-8
35	4(f) Minimization - 10-foot Bypass Lanes	V-9
36	4(f) Minimization - 10-foot Shoulder	V-9
37	4(f) Avoidance - Sparks Park	V-12

I  
DESCRIPTION OF  
PROPOSED ACTION

I. **DESCRIPTION OF PROPOSED ACTION**

A. ***Project Location***

The Maryland Route 45 (York Road) project is located in central Baltimore County, Maryland (see Figure 1). MD 45 is a north-south roadway which extends from Baltimore City to the Pennsylvania State Line.

The project planning study also includes a portion of Interstate Route 83 (I-83), another north-south roadway extending from Baltimore City to Pennsylvania and the Maryland Route 145 (MD 145) relocation east of MD 45 in Hunt Valley.

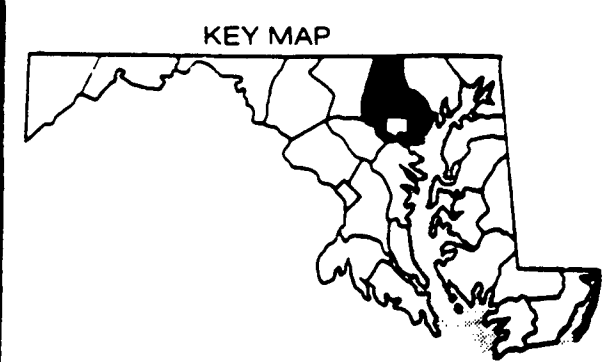
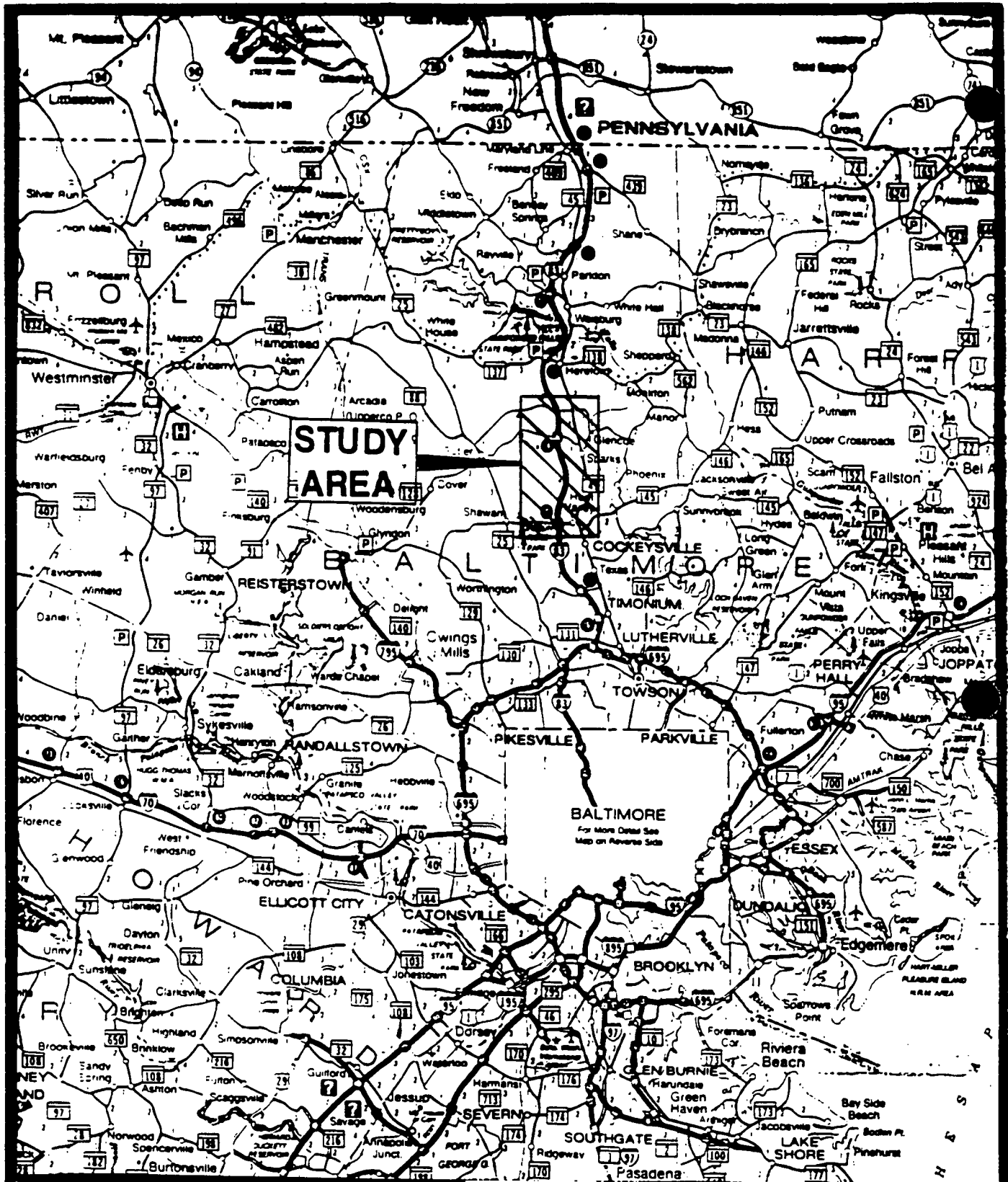
The project study area is within a corridor surrounding MD 45 from south of Ashland Road (MD 145) to north of Belfast Road for a distance of approximately 3.9 miles. The study area also includes an area surrounding I-83 in the vicinity of its crossing of Thornton Mill Road west of MD 45 and east of York Road opposite Shawan Road (see Figure 2).

B. ***Project Description***

The proposed action involves the reconstruction of approximately 3.9 miles of MD 45 from Ashland Road (MD 145) to Belfast Road, the relocation of MD 145 between Paper Mill Road and MD 45, and a new interchange with I-83 in the vicinity of Thornton Mill Road.

The MD 45 reconstruction (Alternatives 2, 3 and 5) consists of widening the roadway to five (5) lanes from MD 145 to Schilling Road, seven (7) lanes from Schilling Road to Shawan Road and then returning to five (5) lanes from Shawan Road to McCormick Road. North of McCormick Road to Phoenix Road, MD 45 would be relocated either slightly to the east (Alternative 2), to the west

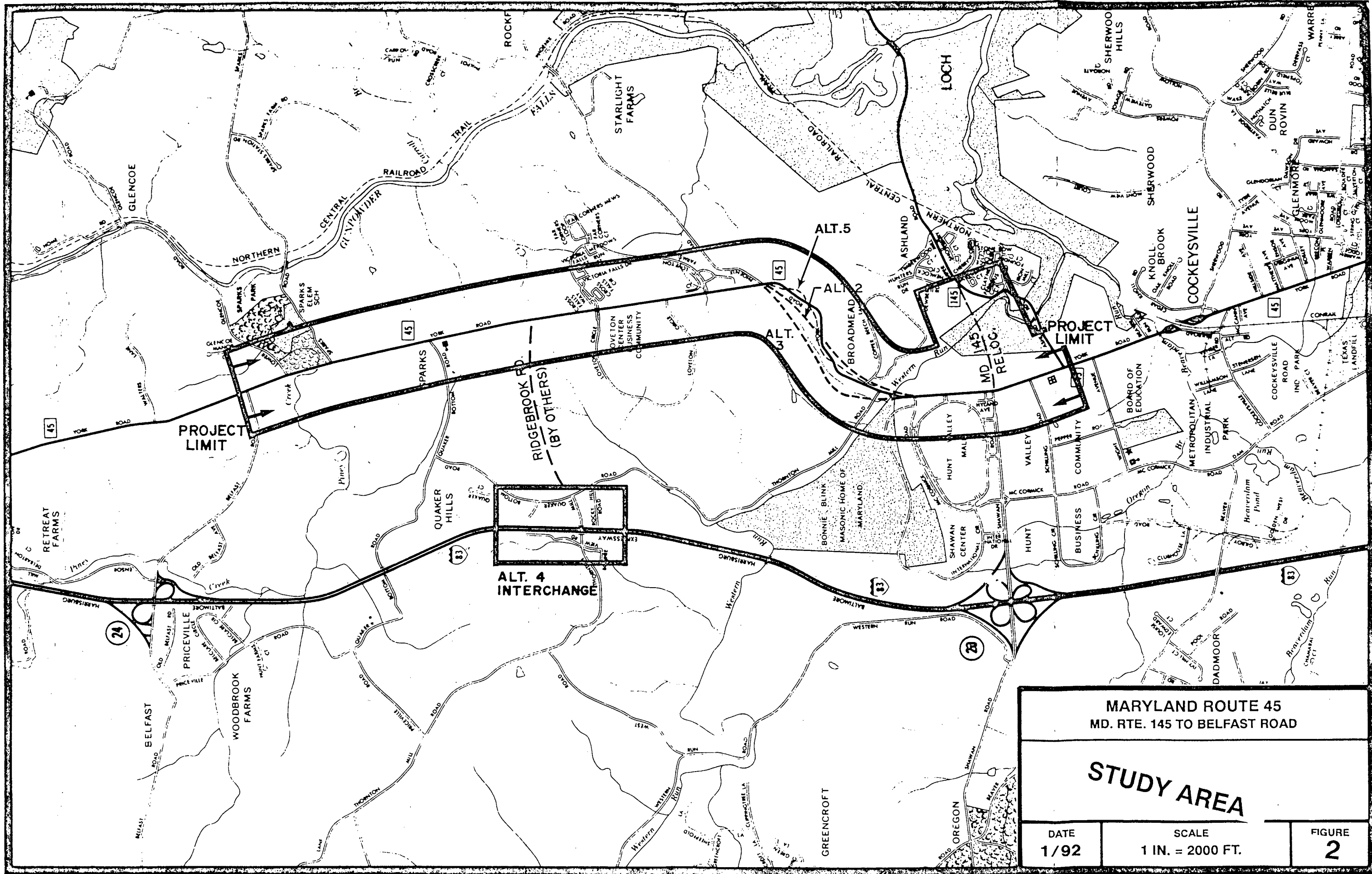




**MARYLAND ROUTE 45**  
**MD. RTE. 145 TO BELFAST RD.**

**PROJECT AREA MAP**

DATE 11 / 90	SCALE 1" = 6 MILES	FIGURE 1
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MARYLAND ROUTE 45  
 MD. RTE. 145 TO BELFAST ROAD

**STUDY AREA**

DATE  
 1/92

SCALE  
 1 IN. = 2000 FT.

FIGURE  
 2

(Alternative 3) or adhere closely to the existing centerline (Alternative 5), with either a five-lane (Option 1) or a four-lane (Option 2) roadway. From Phoenix Road to Ridgebrook Road, MD 45 would be reconstructed as a five-lane roadway with improvements to the vertical geometry only. From Ridgebrook Road to Belfast Road, MD 45 would remain a two-lane facility with the addition of eight-foot shoulders and/or ten-foot bypass lanes opposite intersecting roadways.

Alternatives 2, 3 and 5 also include the relocation of approximately 0.5 mile of MD 145 to intersect MD 45 opposite Shawan Road. Relocated MD 145 would be constructed as a five-lane roadway.

A new interchange is also proposed to be constructed with I-83 in the vicinity of Thornton Mill Road which would connect to proposed Ridgebrook Road (Alternative 4). Option 1 proposes a diamond interchange while Option 2 proposes a modified diamond interchange to connect with Thornton Mill Road and the proposed extension of Ridgebrook Road. Option 3 also proposes a modified diamond interchange connecting I-83 to proposed Ridgebrook Road approximately 1,500 feet north of Thornton Mill Road.

### C. *Description of Existing Environment*

#### 1. *Social Environment*

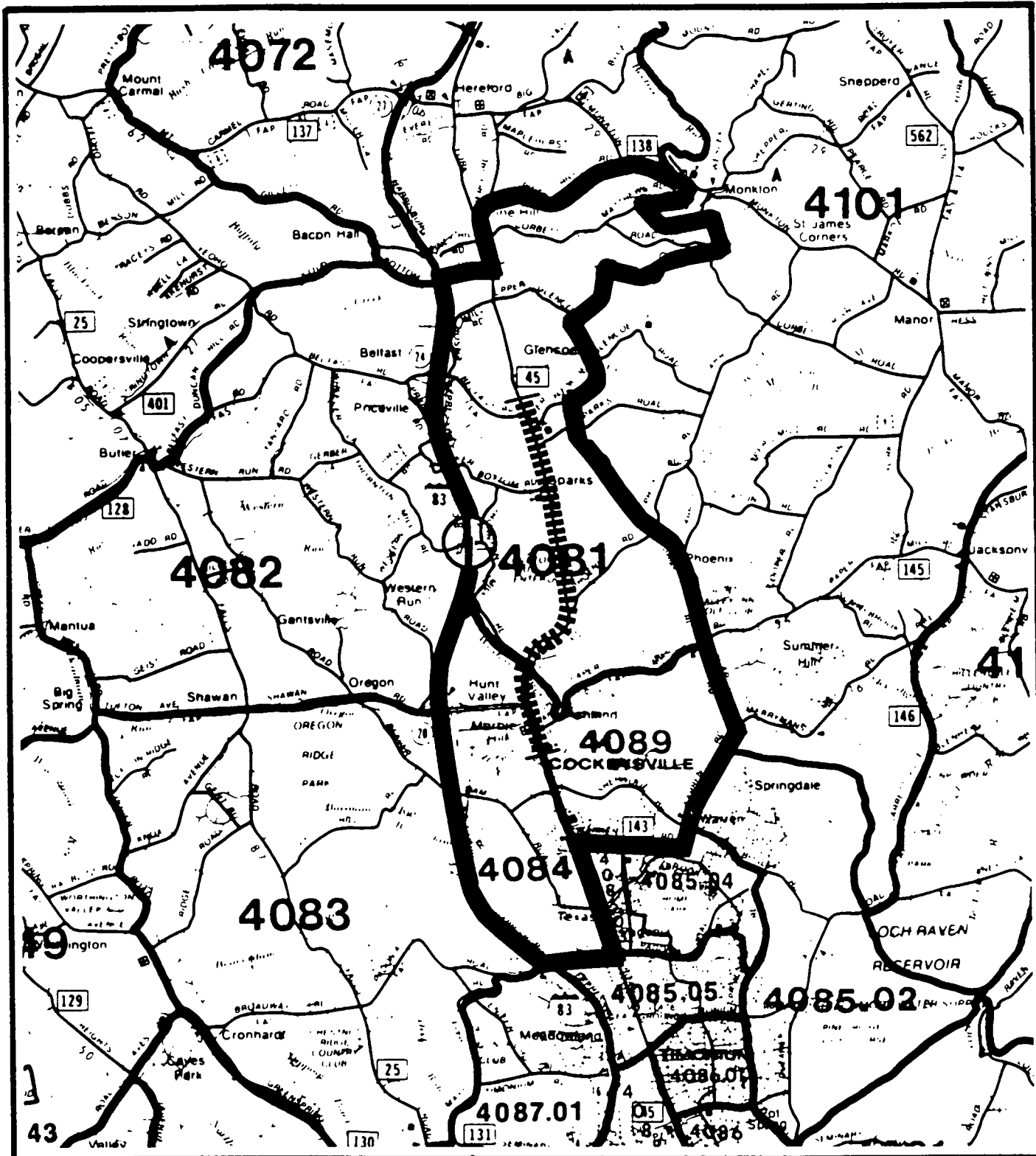
##### a. *Population*

The study area is located in north central Baltimore County north of Baltimore City. Baltimore County's population has steadily increased since the 1930's and consistently led the Baltimore region in population growth since that time. The rate of population growth peaked during the 1950's with an 82% population increase between

1950 and 1960. Since that time, growth has continued, but at slower rates. The 1970 population was 26% higher than that in 1960, while the 1970's witnessed only a 6% population increase to 655,615 people by 1980, according to the U.S. Bureau of the Census. Initial 1990 counts released by the Bureau of the Census indicate that the county's population had increased by an additional 6% during the previous decade to 692,134 people. This increase is less than the rate for the Baltimore region as a whole as well as for each of the five counties in the region.

The Maryland Office of Planning predicts additional population growth for Baltimore County through 2010, but at slower decennial rates. It reports that the population will only grow by slightly more than 2% between 1990 and 2000 (to 707,000 people) and by approximately 0.5% between 2000 and 2010 (to 713,800 people). The rates of population change for all counties in the Baltimore region are expected to be slower than the rates experienced in previous decades; however, Baltimore County's share of the regional and state's populations will slowly decline through 2010.

The project's study area lies within the boundaries of Census Tract Nos. 4081, 4084 and 4089 (see Figure 3). Between 1970 and 1980, the population in this combined area decreased by a net 9%, from 4,336 to 3,979 people. This decline was more evident in Census Tract Nos. 4084 and 4089, as Census Tract No. 4081 actually



MARYLAND ROUTE 45  
MD. RTE. 145 TO BELFAST ROAD

**CENSUS TRACTS**

SCALE  
NOT TO SCALE

FIGURE  
**3**

experienced a nearly 38% increase in population. This increase corresponds to additional development in the Sparks and Loveton areas. Data from the 1990 Census indicate that the population in these three census tracts have increased by over 60% to 6,383 people between 1980 and 1990. Again, population growth was most evident in Census Tract No. 4081, as the number of people increased by over 144% since the 1980 census. This increase corresponds with the additional residential development which has occurred in recent years in the Sparks and Loveton areas. To illustrate, the number of housing units in the area defined by the three census tracts nearly doubled from 1,471 to 2,843 between 1980 and 1990. Census Tract No. 4081 experienced the largest jump in the number of housing units, increasing by over 177% during this time period (to 1,787 units). In addition, this census tract accounts for 63% of all housing in the study area census tracts.

The county has developed an Urban/Rural Demarcation Line (URDL) within their recent master plan. The Master Plan indicates that growth (population and economic) would be directed into "urban" areas where it could be accommodated by existing and planned improvements to services, utilities, roads and other elements of the infrastructure. The URDL is located in the study area and is shown on Figure 6. It separates the urban Hunt Valley, Broadmead and Ashland developments from the more rural northern half of the study area. The URDL encircles residential and light

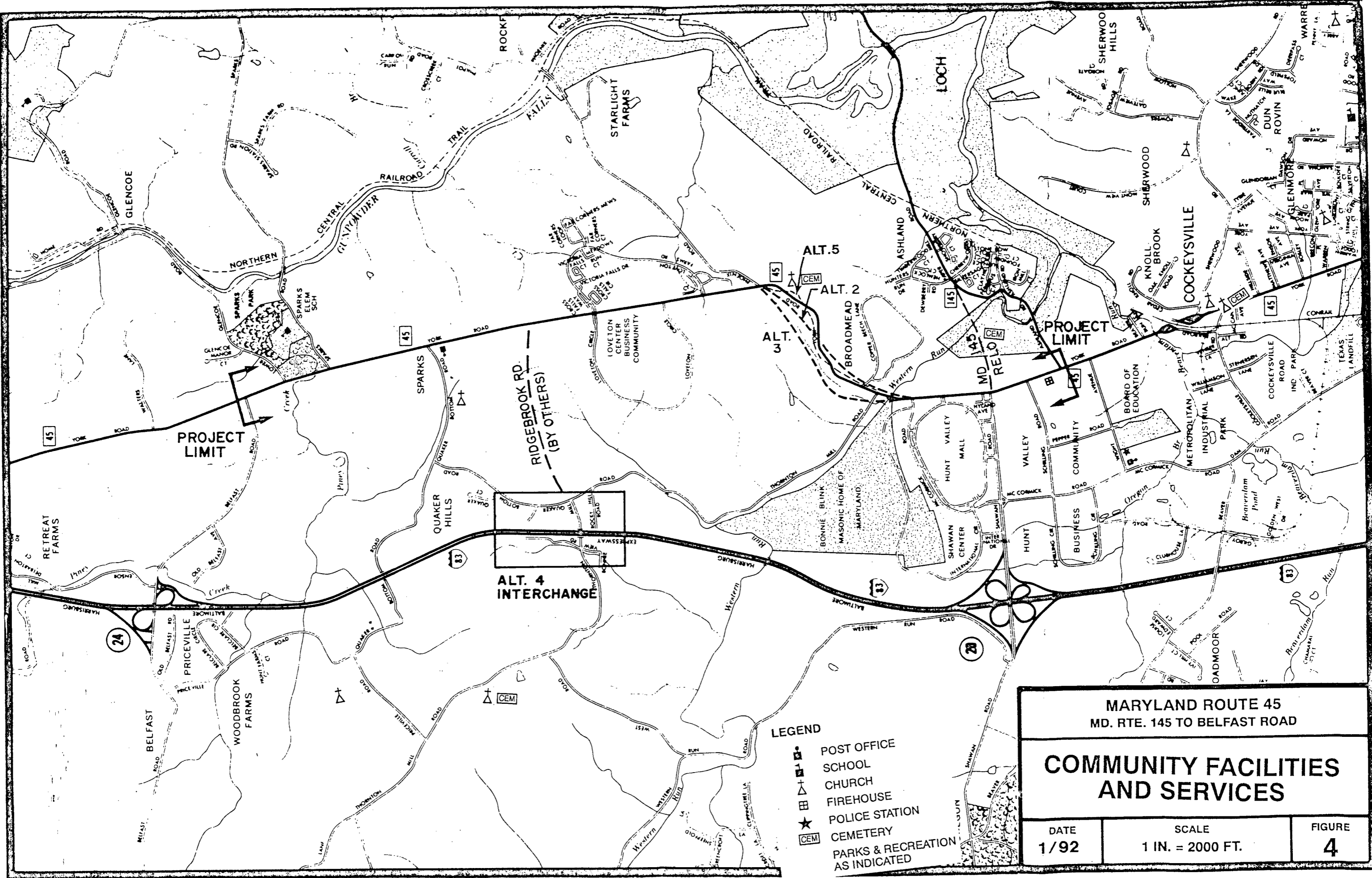
industrial/office (urban) developments in the Loveton area.

As a result of development being directed into these "urban" areas, population growth in the study area will continue until build-out and in-fill of the "urban" areas are complete. Owings Mills and White Marsh are the official growth centers in the county; however, this direction of growth within the URDL has helped to make this area a center of growth on a smaller scale. This growth is evident today with the number of housing developments recently built or under construction in the MD 45 corridor near Hunt Valley and Loveton. This growth will slow early next century as the amount of buildable land within the "urban" area is exhausted. The county's master plan indicates that if the county retains its commitment to the concept of the URDL, residential growth in the study area and vicinity could be substantial.

An analysis of 1990 census data reveals that 94.9% of the population in the three study area census tracts was white, 2.6% was black, and 2.5% was classified as others. In addition, nearly 19% of this combined population were age 60 or older. Concentrations of minority individuals have been identified in a community on Quaker Bottom Road just west of MD 45. Concentrations of elderly people are located at the Broadmead Retirement Community and the Bonnie Blink Masonic Home of Maryland in Hunt Valley.

b. *Community Facilities and Services* (see Figure 4)

The following churches are located within and in close



MARYLAND ROUTE 45  
MD. RTE. 145 TO BELFAST ROAD

**COMMUNITY FACILITIES  
AND SERVICES**

DATE 1/92	SCALE 1 IN. = 2000 FT.	FIGURE 4
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**LEGEND**

- POST OFFICE
- SCHOOL
- CHURCH
- FIREHOUSE
- POLICE STATION
- CEMETERY
- PARKS & RECREATION  
AS INDICATED



proximity to the study area: Ashland Presbyterian, Jessop Methodist, Immanuel Episcopal, Stevenson AME, Faith Lutheran, Sherwood Episcopal, Basil AME, Cockeyville Baptist, Epworth United Methodist, Poplar Grove United Methodist, Gunpowder Meeting House and Bosley United Methodist. Cemeteries are associated with the Ashland Presbyterian, Jessop Methodist, Sherwood Episcopal, Bosley United Methodist, Gunpowder Meeting House and Stevenson AME churches. Only Jessop Methodist Church, which is located on MD 45 south of Phoenix Road, and Ashland Presbyterian Church, which is located on MD 145 adjacent to Loch Raven Reservoir, is within the project area.

Fire protection and ambulance services are provided by the Cockeyville Volunteer Fire Company in the southern end of the project area. Although they are located to the west and north of the study area, the Butler and Hereford Volunteer Fire Companies service the northern portion of the project area. Police protection is provided by the Baltimore County Police Department, which has a precinct station in Cockeyville, and the Maryland State Police, whose barracks are in Brooklandville to the south.

The United States Post Office has two postal stations in the study area at Cockeyville-Hunt Valley and Sparks-Glencoe. The closest hospitals to the study area are St. Joseph's Hospital and the Greater Baltimore Medical Center in Towson. However, the Baltimore County Department of Health has a district health center

and community mental health center in the Hunt Valley area. The Cockeyville branch of the Baltimore County Public Library is located just south of the study area. The Mass Transit Administration provides bus service to the Hunt Valley and Cockeyville portion of the study area.

Schools in the study area and vicinity include Sparks Elementary, Cockeyville Middle and Oldfields. In addition, the Baltimore County Board of Education has offices in Cockeyville.

Recreational opportunities include: 1) the Sparks County Park and Nature Trail, located on Sparks Road immediately east of MD 45 which contains a hiking/biking trail; 2) Northern Central Railroad Trail (Maryland Department of Natural Resources), which extends from the Loch Raven Reservoir at Ashland Road to north of Monkton. The trail is 10 feet wide on a railroad bed and is used for hiking, jogging, bicycling and horseback riding and provides access to fishing on the Loch Raven watershed and Gunpowder River. Maryland Program Open Space and the National Park Service "Rails to Trails" program monies were used to develop the trail; and 3) the watershed area of Loch Raven Reservoir, which is located east of MD 45 in the Ashland Road/Paper Mill Road area and includes the Northern Central Railroad Trail and a fishing center, which is operated by the Baltimore County Department of Parks and Recreation. The fishing center and trail are outside the project area. These recreational areas are shown on Figure 4. Only

Sparks Park and the reservoir property crossed by MD 145 is within the project area.

Public water and sewerage are available to serve development in the MD 45 corridor in the Loveton, Hunt Valley and Cockeysville areas (generally those areas to be served by public water and sewerage are on the "urban" side of the County's Urban/Rural Demarcation Line). The less developed areas along I-83 north of Hunt Valley, close to the Gunpowder Falls and north of Sparks, utilize wells and septic systems.

2. Economic Environment

The economic base of Baltimore County is comprised of manufacturing, retail and services with the White Marsh (eastern Baltimore County) and Owings Mills (western Baltimore County) areas designated as major growth areas for new development. However, to a slightly lesser extent, the central portion of the county centering on the I-83/MD 45 corridor has attracted a large share of light manufacturing, service related and office-based businesses in the last 20 years. In fact, this economic development in the central portion now accounts for over a third of the available jobs in the county.

Economic development in the central area, which includes the project corridor, essentially follows the same patterns for population and residential growth, that is, economic development and its associated jobs and services are accommodated within the "urban" side of the URDL. As shown on Figure 6, this economic growth will remain within this boundary

36

in the Loveton, Hunt Valley and Cockeysville areas of the project corridor. These areas are economically active commercial and business communities.

The Baltimore County Master Plan (1989-2000) designates the Hunt Valley area as a regional growth center. Here, the scale of development is not as great as designated major growth centers, such as White Marsh. However, the county's projections of employment growth indicate that the Hunt Valley area will experience the largest gains. The Hunt Valley-Cockeysville area includes the large Hunt Valley Mall, several of the county's major manufacturing employers (McCormick and Company, Noxell Corporation, Westinghouse and AT&T Technologies), corporate office centers, several hotels and numerous other office, light industrial and service-related businesses. The Loveton area is home to the Loveton Center Business Community and Highlands Office Park, enclaves of light industrial service, office and warehousing businesses. The United Parcel Service has a large distribution center in this area.

Strip commercial development (food, services, gas, etc.) is located along MD 45 south of Shawan Road; additional small businesses are scattered or clustered along MD 45, particularly in the Sparks area.

The central area of the county in the I-83/MD 45 corridor between Hunt Valley and Timonium contains over one-third of the jobs in the county (35%, but less than one-fifth (19%) of the county's labor force and population. The concentration of economic activity results in more than twice as many jobs available in the central area than there are workers who reside there. Thus, there is an influx of workers from other parts of the

county or other jurisdictions. Compare this to the county level, where there are less than 10% more jobs available than the labor force living in the county. Non-retail employment (offices, services, manufacturing, etc.) is greatest in the central portion of the county compared to other areas of the jurisdiction. This fact is emphasized by the scale of ongoing and planned economic development in the Loveton area. This disparity in job opportunities/labor force availability as the central area attracts workers from other areas pose potential traffic congestion implications.

The master plan indicates that if the county retains its commitment to the URDL concept, future employment growth will continue in the Hunt Valley and Loveton areas. The plan also emphasizes agricultural preservation to help support the county's economic base. The county has designated the area west of I-83, including that portion of the study area around the proposed Thornton Mill Road interchange, for agricultural preservation to protect its ability as a long-term economic resource.

An analysis of 1980 census data indicates that a majority of the working population in the study area census tracts were employed in wholesale and retail trade, health services, manufacturing and construction, which is generally consistent with the central areas as a whole. Of the working population in these census tracts, a majority (66%) are employed in jobs in Baltimore County. Nearly 31% commute to jobs out of the county (such as Baltimore City) and the remainder work out of the state. The 1979 median household income averaged for the three census tracts was \$22,156, which was slightly higher than the county-wide median figure

of \$21,640. A 1987 estimate by the Maryland Office of Planning shows that the county-wide median income had risen to \$34,000. Employment and income updates from the 1990 census are not available at this writing.

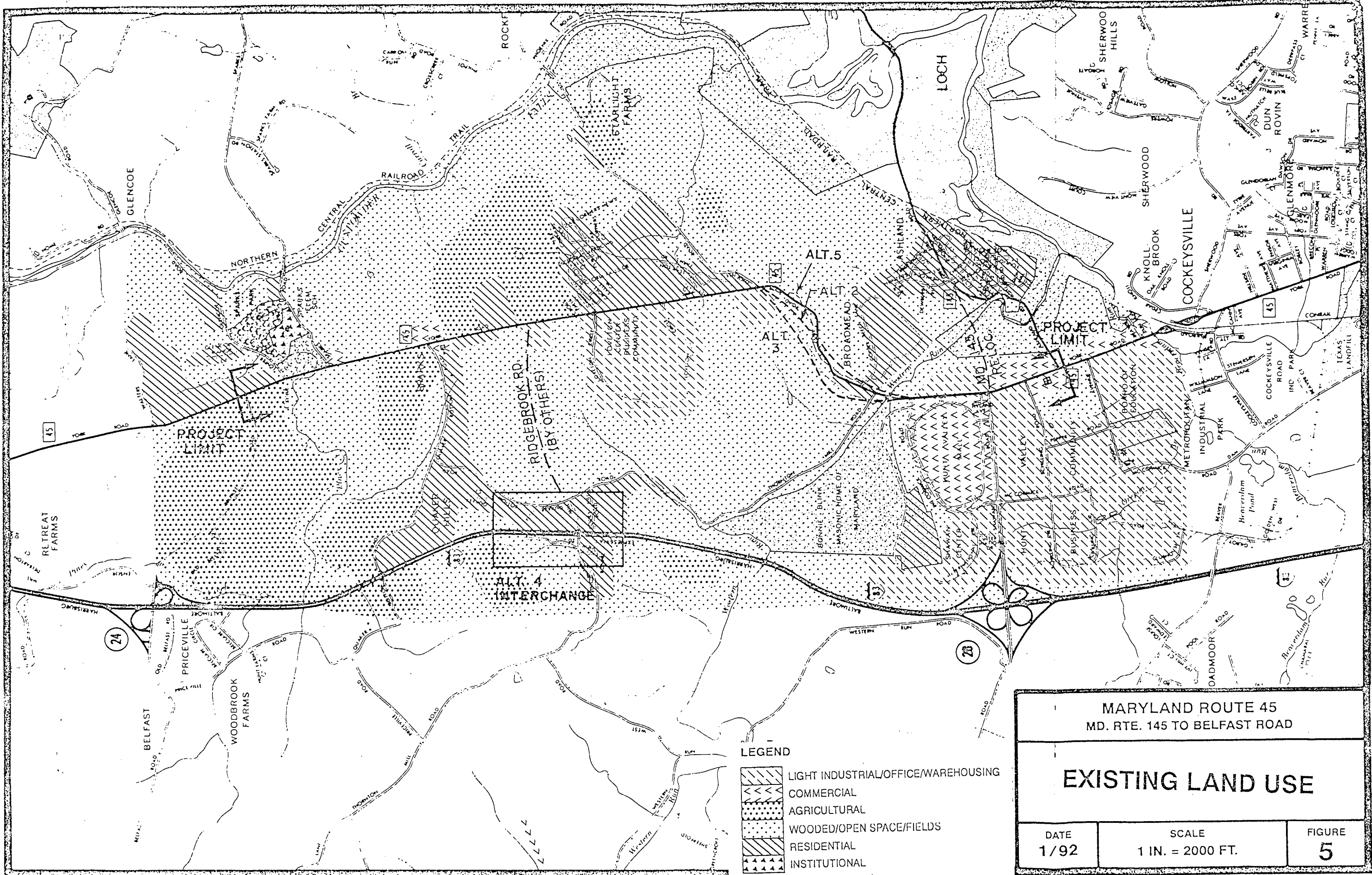
3. Land Use

a. *Existing* (see Figure 5)

Up until the 1950's, development in the study area was a collection of small villages, such as Sparks and Cockeyville, scattered along MD 45. Beginning at that time, suburban development radiating out from Baltimore City along the MD 45 and I-83 corridors gradually resulted in an urbanized character in these corridors as far north as Hunt Valley and Cockeyville.

The northern limits of this urbanized development (just north of the Hunt Valley Mall) correspond to the southern portion of the project area. This area is occupied predominantly by light manufacturing and industrial uses (such as McCormick and Company and Noxell Corporation), warehouses, corporate and general office space, and retail businesses (Hunt Valley Mall) to the west of MD 45. To the east, predominant uses are low to medium density, residential and strip commercial developments, and wooded lands associated with the Loch Raven Watershed and North Central Railroad Trail.

The middle portion of the project area (Thornton Mill Road to Quaker Bottom Road) consists of office, warehousing, light industrial and medium to high density residential uses centering on



<b>MARYLAND ROUTE 45</b> MD. RTE. 145 TO BELFAST ROAD		
<b>EXISTING LAND USE</b>		
DATE 1/92	SCALE 1 IN. = 2000 FT.	FIGURE <b>5</b>

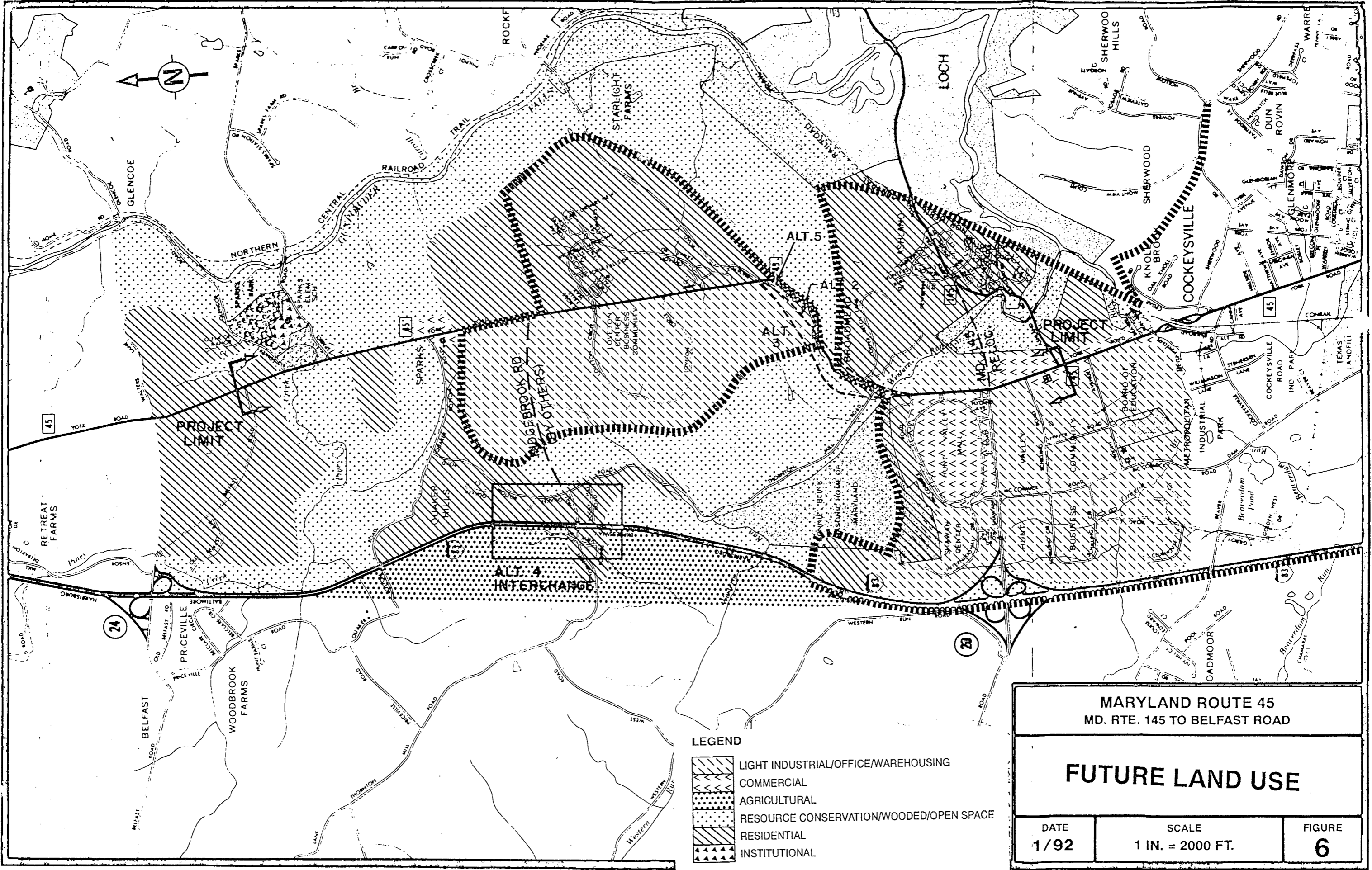
the Loveton area and surrounded by rural residential, wooded, agricultural and open space uses. The Loch Raven Watershed and North Central Railroad Trail are located to the east. This rural fringe buffers development between the Loveton and Hunt Valley business communities. West of I-83, agriculture and scattered residential lots are the predominant land uses.

The northern portion of the project area (Quaker Bottom Road to Belfast Road) is predominantly rural and characterized by rural residential, agriculture and wooded/open field uses. A small enclave of commercial development is situated at Sparks.








b. *Future* (see Figure 6)

In February 1990, Baltimore County adopted a new master plan for guiding future growth in the county through the turn of the century (Master Plan: 1989-2000). The master plan does not propose any major shifts in land use within the project area. Development will follow the current trends, whereby all major residential and non-residential uses would be relegated to the Loveton and Hunt Valley-Cockeysville areas of the "urban" side of the Urban/Rural Demarcation Line (URDL). The URDL is shown on Figure 6. The current master plan reinforces the concept of the URDL to channel growth into those areas capable of supporting it with an adequate infrastructure and to preserve rural landscapes and natural resources. The master plan also indicates that if the county retains its commitment to the URDL concept, future residential and





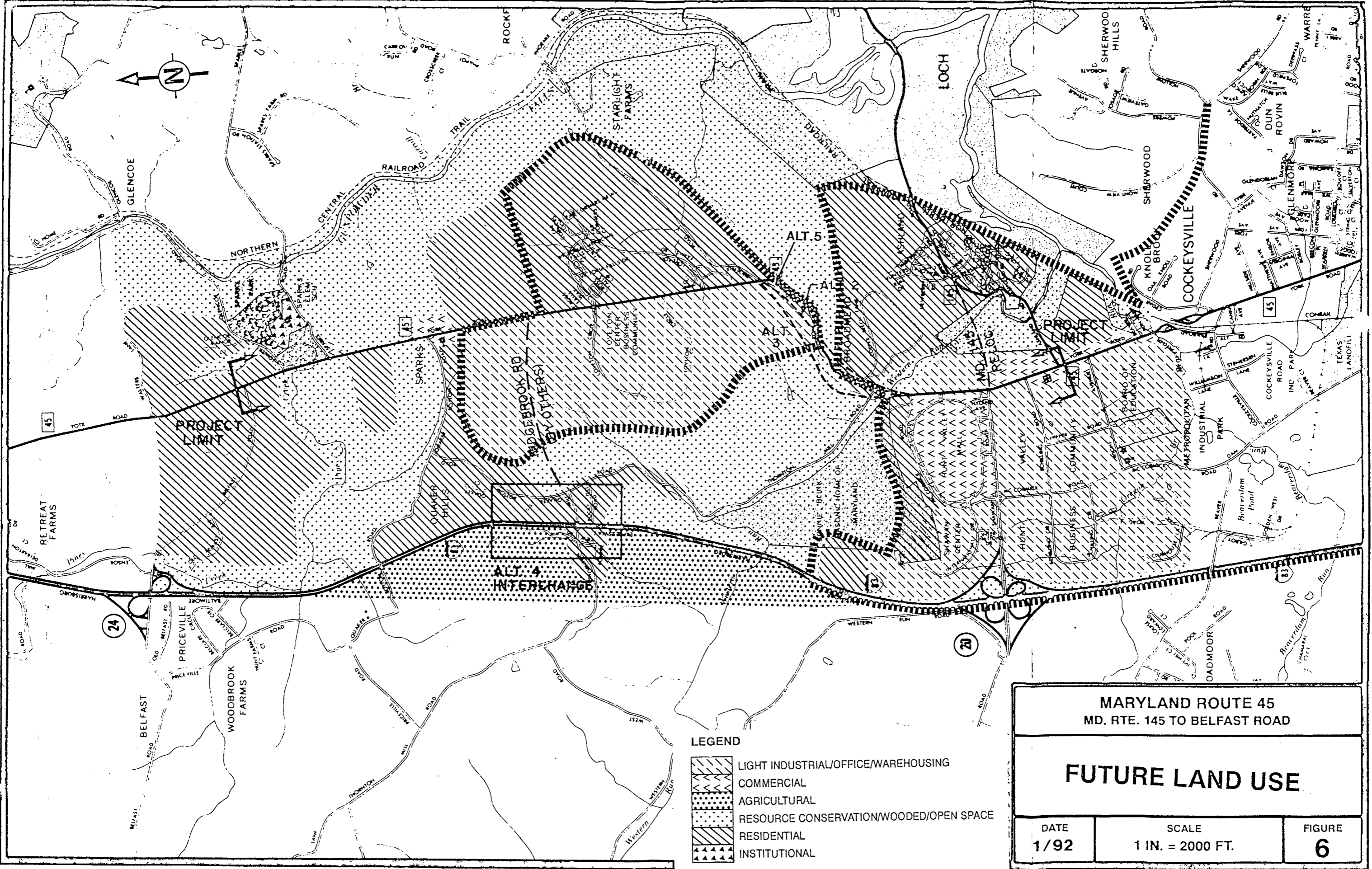
LEGEND

-  LIGHT INDUSTRIAL/OFFICE/WAREHOUSING
-  COMMERCIAL
-  AGRICULTURAL
-  RESOURCE CONSERVATION/WOODED/OPEN SPACE
-  RESIDENTIAL
-  INSTITUTIONAL
-  URBAN/RURAL DEMARCATION LINE

MARYLAND ROUTE 45  
MD. RTE. 145 TO BELFAST ROAD

# FUTURE LAND USE

DATE 1/92	SCALE 1 IN. = 2000 FT.	FIGURE 6
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**MARYLAND ROUTE 45**  
MD. RTE. 145 TO BELFAST ROAD

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**FUTURE LAND USE**

DATE <b>1/92</b>	SCALE 1 IN. = 2000 FT.	FIGURE <b>6</b>
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- LEGEND**
- LIGHT INDUSTRIAL/OFFICE/WAREHOUSING
  - COMMERCIAL
  - AGRICULTURAL
  - RESOURCE CONSERVATION/WOODED/OPEN SPACE
  - RESIDENTIAL
  - INSTITUTIONAL
  - URBAN/RURAL DEMARCATION LINE

The resource conservation area includes lands designated for watershed protection, forestry, wildlife and plant habitat, groundwater protection and unique natural areas. Development of these areas is difficult at best and long-term protection in their current states is the designated use.

West of I-83 and north of Shawan Road (specifically, west of the proposed interchange at I-83/Thornton Mill Road), the master plan has designated this area for agricultural preservation to help support and retain farming as an important county industry. In turn, this results in maintaining and protecting the rural character of the area.

4. Historic and Archeological Resources

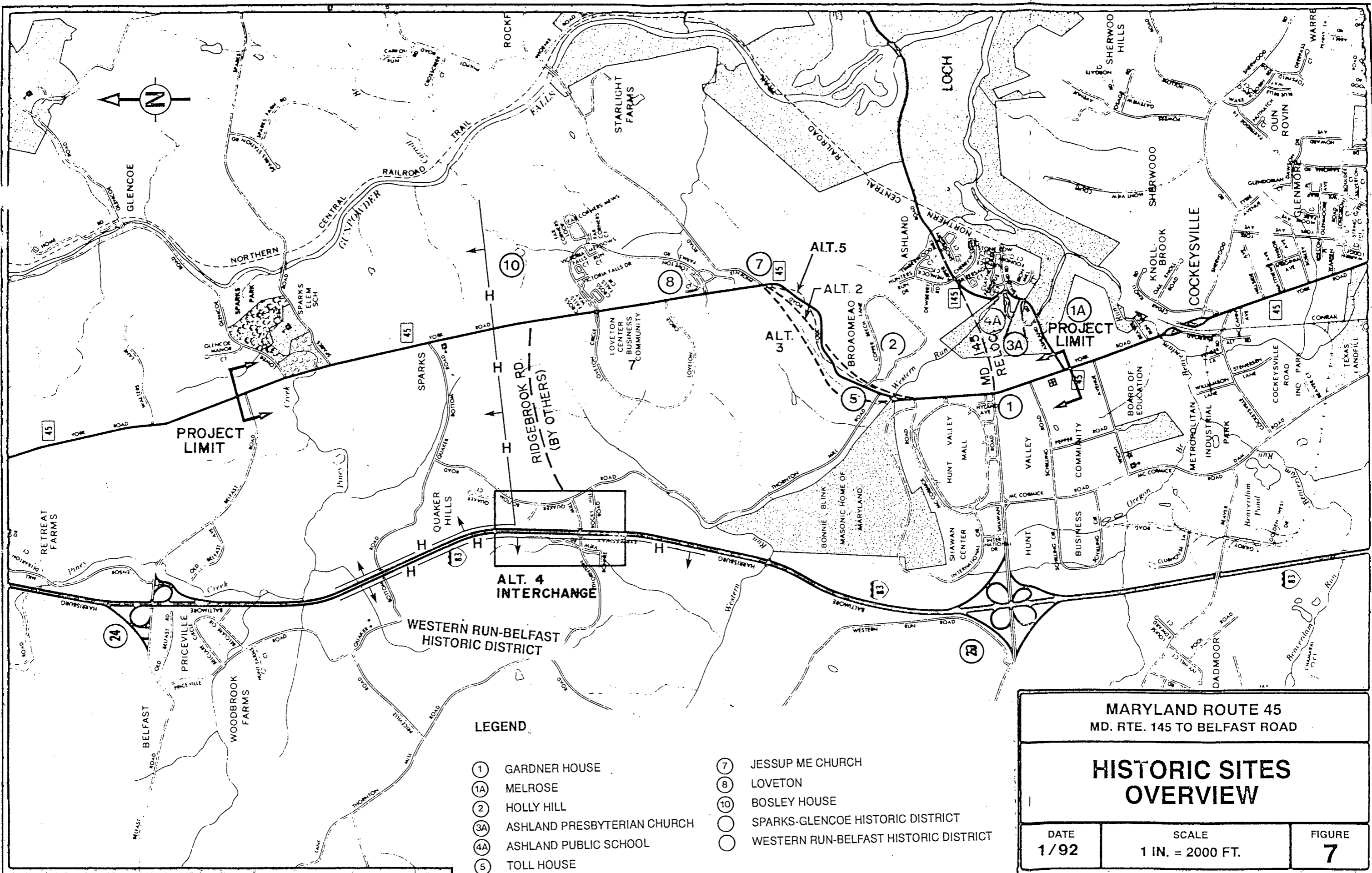
The following standing historic sites within the project area are listed on or are eligible for listing on the National Register of Historic Places and are shown on Figures 7, 14 - 32:

- Gardner House (BA 917) - National Register eligible (Site No. 1)
- Melrose (BA 77) - National Register eligible (Site No. 1A)
- Holly Hill (BA 187) - National Register eligible (Site No. 2)
- Ashland Presbyterian Church (BA 201) - National Register eligible (Site No. 3A)
- Ashland Public School (BA 202) - National Register eligible (Site No. 4A)
- Tollhouse (BA 190) - National Register eligible (Site No. 5)
- Jessop M.E. Church (BA 93) - National Register eligible (Site No. 7)
- Loveton (BA 92) - National Register eligible (Site No. 8)
- Bosley House (BA 266) - National Register eligible (Site No. 10)

employment growth will continue in the Hunt Valley area.

The Hunt Valley-Cockeysville area within the URDL will continue to experience in-fill of existing developed areas. Additional growth west of MD 45 will result in no additional developable land in the Hunt Valley and Shawan business communities. Master plan strategies also call for redevelopment opportunities in this area. East of MD 45, residential development in the Broadmead and Ashland vicinity will fill up developable land adjacent to the Loch Raven Watershed and North Central Railroad Trail. Likewise, the Loveton area within the "urban" side of the URDL will experience continual medium to high density residential development in former agricultural areas east of MD 45. The Loveton Center Business community and Highlands Office Park will occupy land within the URDL west of MD 45.

North of Hunt Valley and encircling the Loveton development core, the master plan has designated these areas for resource conservation and rural protection. The rural protection area is to be a balanced mixture of residential development and woodlands, farmfields, stream valleys and open space. This area can accommodate additional growth, but not at the expense of its natural resources. It is the master plan's goal that residential development achieve visual and functional compatibility with the rural setting. These areas are located along Belfast Road, Quaker Bottom Road and south of Sparks.



**LEGEND**

- ① GARDNER HOUSE
- ①A MELROSE
- ② HOLLY HILL
- ③A ASHLAND PRESBYTERIAN CHURCH
- ④A ASHLAND PUBLIC SCHOOL
- ⑤ TOLL HOUSE
- ⑦ JESSUP ME CHURCH
- ⑧ LOVETON
- ⑩ BOSLEY HOUSE
- SPARKS-GLENCOE HISTORIC DISTRICT
- WESTERN RUN-BELFAST HISTORIC DISTRICT

<p><b>MARYLAND ROUTE 45</b>          MD. RTE. 145 TO BELFAST ROAD</p>		
<p><b>HISTORIC SITES OVERVIEW</b></p>		
<p>DATE 1/92</p>	<p>SCALE 1 IN. = 2000 FT.</p>	<p>FIGURE 7</p>

- Sparks-Glencoe Historic District - National Register eligible
- Western Run-Belfast Historic District - Listed on the National Register

The Maryland Historical Trust has concurred with these levels of site significance and their boundaries (see Comments and Coordination Section letters dated 2/21/89, 4/12/89, 6/13/89, 5/30/90). A description of each site follows:

**MELROSE (BA 77)** is located south of the project limits off of MD 145, and is only included for the purpose of evaluating wetland minimization alternatives. It is a large stone and brick telescoping house, the first one-story section of which may have been started in 1740. The site is significant for its association with the Cockey family who were major figures in the establishment and development of Cockeyville. The brick middle section was built by Joshua F. Cockey (the first) in 1800. Joshua was the heir of Thomas Cockey Dyes who was Speaker of the Maryland General Assembly when George Washington resigned his commission. It is also significant as a well-preserved dwelling that clearly shows an evolution of architectural form throughout the late 18th and 19th centuries.

**ASHLAND PRESBYTERIAN CHURCH (BA 201)** is located along existing MD 145 (Ashland Road) and is approximately 640 feet at its closest point from the proposed relocation of MD 145. The area in between is heavily wooded. This site is discussed here only for the purpose of evaluating a wetland minimization alternative which would improve existing MD 145. The small, stone, Gothic Revival Church was built to accommodate the parishioners of the once prosperous company town of

47  
the Ashland Iron Company, which sponsored its construction. This church, with its carefully dressed stonework, is significant as one of the two remaining focal points of the company town of the Ashland Iron Company.

**ASHLAND PUBLIC SCHOOL (BA 202)** is located on the opposite side of existing MD 145 from the Ashland Presbyterian Church. It is also included only for the purpose of evaluating a wetland minimization alternative which would improve existing MD 145. This one-story, three-room stone structure was built in 1882 on land donated by the Ashland Iron Company. It is significant for its association with the company town as it was built to educate the children of the mostly Irish iron workers. In addition, it is significant as one of the first architect-designed schools in Baltimore County, and one of the few extant buildings designed by Frank E. Davis.

**GARDNER HOUSE (BA 917)** is significant as a good example of the Queen Anne style. Also significant are the extant period outbuildings, of which the circular ice house is a particularly rare example. The buildings are in excellent condition and constitute a highly picturesque remnant of the nineteenth-century Marble Hill Community.

**THE TOLLHOUSE (BA 190)**, built in 1809 on the Baltimore and York Turnpike, is significant as one of the few extant tollhouses in Baltimore County. It was build on land acquired from Joseph Thornburgh, an organizer and one of the first managers of the turnpike company. Although expanded in subsequent years, the building retains the original core with its massive chimney. It is significant for its link with the history

of transportation.

**HOLLY HILL (BA 187)** is a large Federal style mansion which, with a stable, barn and ice house, is now surrounded by the Broadmead Retirement Community. It is significant as one of the few remnants of the residential and industrial community which grew up around Thornton's Mill, which is no longer extant. In addition, some of its owners, like Abraham Johnson and Abraham Green, are significant in early Baltimore County history.

**JESSOP M.E. CHURCH (BA 93)** is significant as one of the oldest Methodist churches in the county. Some of the original 1820's fabric of the building was retained in the rebuilding of the structure near the end of the century. The church is an excellent example of the Queen Anne style.

**LOVETON (BA 92)** is a fine fieldstone Federal house of the mid-nineteenth century. This manor house, built by Dr. Thomas Love, was the centerpiece of a prosperous dairy and grain farm in the nineteenth century.

**BOSLEY HOUSE (BA 266)** is an eighteenth century stone house which may be the oldest extant house in the area of Sparks, Maryland. Rebuilt from a ruin by the present owner, the east facade may incorporate features which are not historically accurate. Nonetheless, this long two-story farmhouse powerfully conveys a bold vernacular form and constitutes a significant link to the agrarian history of the area.

**WESTERN RUN-BELFAST HISTORIC DISTRICT** is significant as a roughly 10,000 acre, remarkably cohesive and intact rural agricultural area in which the descendents of the original settlers have continued to live



and farm, occupying, in many cases, the original homes of their ancestors. Exhibiting traditional land patterns relating to its agricultural and residential use, there is only one commercial village, Butler, which has a general store, post office and firehouse. The district is highly significant as an intact, rural area, all the more remarkable in light of the rapid suburbanization occurring in other parts of Baltimore County.

There are two (2) sites that are contributing elements to the district in the general area of I-83/Thornton Mill Road. They are Smallwood (BA 449) and Strawberry Hill (BA 189). Only Smallwood is in the vicinity of the interchange area, as shown on the alternatives mapping as Site No. 25. Strawberry Hill is outside the coverage area of the alternatives mapping.

**SPARKS-GLENCOE HISTORIC DISTRICT** is significant as a well-preserved rural village that grew up alongside the York Turnpike to provide transportation-related facilities to the traveling public. It was also the focus of the agrarian economy that thrived in the mid-Baltimore County area. The housing stock of the district ranges from roughhewn vernacular structures to high-style manor houses, to humble bungalows, spanning in date from the eighteenth century through the early twentieth century. Particularly notable structures are Prices Store, which has been the focus of the Sparks (then Philopolis) community since 1833, and the Milton Inn, an early nineteenth century fieldstone house built by two prominent Quaker families for use as a tavern. It is highly significant individually as a county landmark. The Rogne House Complex is very closely related to the York Turnpike as it includes what once was a blacksmithing complex and

rooming house. Matthews Mill House is the sole remnant of a once thriving mill complex at Piney Run called Caro or Matthews Mill.

Seven sites that are particularly significant resources which contribute to and are within the Sparks/Glencoe Historic District are:

- Sax House (Site No. 11)
- Huff House - School No. 9 (Site No. 13)
- Price's Store (Site No. 15)
- Milton Inn (Site No. 17)
- Rogney House Complex (Site No. 20)
- Matthew's Mill House (Site No. 23)
- Merryman House (Site No. 24)

Seven sites which also contribute to the historicity of the district, but which may not be as individually significant as the sites above are:

- Price House (Site No. 12)
- Huff Tenant House (Site No. 14)
- Ensor House (Site No. 16)
- Nicholas Price House (Site No. 18)
- Huff House (Site No. 19)
- Frame Dwelling (Site No. 21)
- Matthew's House Complex (Site No. 22)

The 14 sites listed above are shown on the alternatives mapping and are labeled with the appropriate site number.

The potential for archeological sites was evaluated by the former Division of Archeology of the Maryland Geological Survey (see letter dated 6/9/88) and a Phase I archeological survey was completed.

One prehistoric site (18 BA 399) has been determined to be potentially eligible for the National Register because the site consists of prehistoric deposits in a context that has not been well studied in this region. The lithic artifacts identified at the site appear to represent intact deposits from the prehistoric use of a hilltop location. A Phase II study will be conducted if Alternative 4 Option 3 is selected for construction. This site is important chiefly for what can be learned by data recovery.

51

Eight historic archeological properties, which are listed on State Historic Sites Inventory, were located near the MD 45 corridor. Four of these sites (Numbers 93, 187, 201 and 202) are located over 250 feet outside of the proposed right-of-way and will not be impacted. One historic site (BA 277) has been demolished, which has destroyed the integrity of the site. Access was denied to three sites (BA 86 - Milton Inn, 92 - Loveton and 917 - Gardner House) which are associated with historic standing structures located directly adjacent to the proposed right-of-way of MD 45. The Milton Inn is a site within the Sparks-Glencoe Historic District. The District, Loveton and the Gardner House are described in the discussion on standing historic sites on pages I-16 to 19. No previous professional archeological investigations have been conducted and no site reports exist for these sites. Phase Ib archeological investigations will need to be conducted for Alternatives 2, 3 or 5 to assess whether intact archeological deposits are associated with each site.

Access was also denied at two potentially significant archeological sites located on MD 45 (18 BA 249 and Belloma Farms). Site 18 BA 249 is the remains of a mill which collapsed in 1902, while the Belloma Farms site may be potentially significant due to its environmental setting. If Alternatives 2, 3 or 5 is selected, then a supplemental Phase Ib investigation will be needed to identify and evaluate any potentially significant archeological sites in these areas. No previous professional archeological investigations have been conducted and no site reports exist for these sites.

5. Natural Environment

a. *Topography*

The northwestern two-thirds of Baltimore County, which includes all of the study area, lies within the Piedmont Plateau Physiographic Province. This province is characterized by uplands, dissected by many small streams and drainageways. The rock formations found in this province are typically hard Precambrian or lower Paleozoic schists, quartzites, granites, gabbros, marbles and phyllites.

The project study area and vicinity is characterized by gently rolling to somewhat steep topography. The northern portion of the study area consists of gently rolling uplands, characterized by elevations greater than 500 feet above sea level. These uplands represent an elongated dome capped with gneiss. This dome is roughly 12 miles long and trends to the northeast. Originally, this gneiss was overlain by limestone, the majority of which has eroded away. Along the borders of the dome, however, there are still exposures of limestone. This limestone is much less resistant to weathering than the gneiss, so the limestone areas are where valleys and streams tend to form. These low lying areas, such as around Cockeysville, are very gently rolling to flat.

The transition area between the uplands and the lowlands is characterized by steeper slopes, some as steep as 25 percent.

Elevations in the study area range from roughly 280 feet

53  
above sea level near the Paper Mill Road - York Road intersection to over 500 feet above sea level along I-83.

Throughout most of the study area, elevations range from 300 to 500 feet above sea level.

b. *Geology*

There are four geologic formations which occur in the study area and vicinity. Just southwest of Marble Hill is an area of Quaternary Deposits. These are unconsolidated sediments composed of gravel, sand and silt. This formation is typically up to 150 feet thick. The remainder of the study area south of the Thornton Mill Road - York Road intersection is underlain by the Precambrian Cockeysville Marble formation. As a whole, this formation is composed of poorly cemented, coarsely crystalline calcite to fine-grained, dense dolomite. The thickness of the Cockeysville Marble as a whole is estimated to be 300 to 500 feet.

A small strip of the study area, around Jessops Church, is underlain by the Setters formation. As a whole, this formation is composed of gneiss, quartzite and mica schists, and ranges from 200 to 500 feet thick. The remaining northern two-thirds of the study area is underlain by the Precambrian Baltimore Gneiss formation. As a whole, this unit is composed of heavily banded granitoid biotite gneiss to thinly banded "ribbon" gneiss. The domes which form the topographic highs in the study area are capped with the gneiss.

c. *Soils*

There are two main categories of soils within the study area: soils of floodplains and drainageways and upland soils.

A general description of the drainageways and floodplains soils follows:

**Baile silt loam (BaB)** - This series consists of level to gently sloping, deep, poorly drained soils found in upland depressions and minor drainageways. Within the study area, these soils are associated with minor tributaries of Western Run along MD 45.

**Captina silt loam (CaA and CaB2)** - These soils are nearly level to gently sloping, deep, and moderately well-drained. In the project area, these soils occur in the proposed right-of-way for the relocated MD 145, in the floodplain of Western Run.

**Codorus silt loam (Cu)** - This series consists of deep, moderately drained to somewhat poorly drained, level soils on floodplains. Within the study area, they are found in the floodplains of Western Run and Piney Creek.

**Glenville silt loam (GnA and GnB)** - These soils are deep, moderately well drained to somewhat poorly drained, nearly level to gently sloping and are found in flats and depressions. In the study area, these soils are found north of Thornton Mill Road along I-83 and north of the Loveton Farm complex on MD 45.

**Melvin silt loam (Mo)** - This series consists of deep, poorly drained, level soils found on floodplains. The permeability is

moderate to moderately slow, and flooding is irregular. Within the project area, this series is found between East Shawan Road and Western Run.

The soils associated with uplands and their descriptions are as follows:

**Baltimore silt loam (BmB2 and BmC2)** - These soils are deep, well-drained, nearly level to moderately sloping and are found in valleys of the Piedmont Plateau. Within the study area, these soils are found south of Western Run.

**Chester silt loam (CcB2 and CcC2)** - This series consists of deep, well-drained, moderately sloping soils on ridges. In the project area they occur along MD 45 from Loveton Farms to near the intersection with Quaker Bottom Road. They also occur along I-83, 1,500 feet north of Thornton Mill Road.

**Conestoga loam (CwB2 and CwC2)** - This series consists of deep, well-drained, gently sloping soils of uplands. These soils are found at the northern and southern limits of the study area.

**Glenelg loam (GcB2, GcC2 and GcC3)** - This series consists of deep, well-drained, sloping to strongly sloping soils of uplands. These soils occur throughout most of the study area of both MD 45 and I-83. This series also contains Glenelg channery loam and the Glenelg urban land complex, both of which are described below.

**Glenelg channery loam (GgB2, GgC2, GgD2 and GgD3)** - These soils have similar properties as the Glenelg loams. However, they

contain large, flat fragments of mica schist that makes them difficult to till. These soils are found solely at the northern end of the I-83 study area.

**Glenelg urban land complex (G1B)** - This soil also has similar qualities as Glenelg loams, but human activities have disturbed the soil significantly. Within the study area, this soil is found along MD 45 north of Jessops Church.

**Hollinger and Conestoga loams (HrD3)** - This series contains qualities similar to Conestoga loams, but is composed of more than 50 percent Hollinger loam and less than 50 percent Conestoga loams. This soil is found on gently sloping to steep sloping uplands (8-15%), is severely eroded and is cut by numerous gullies. Within the project area, this soil is found along MD 45 near Belfast Road and Western Run.

**Manor loam (MbB2, MbC2, MbC3, MbD2 and MbD3)** - This series consists of deep, well-drained to somewhat excessively well-drained, gently sloping to steeply sloping soils of upland areas (15-25%). In the project area, these soils are found north of Western Run along MD 45 and in the southern half of the I-83 area. This series also contains Manor channery loam, Manor and Brandywine very stony loams and Manor soils, which are described below.

**Manor channery loam (McB2, McB3, McC2, McD2 and McD3)** - These soils have similar qualities and were formed in a similar manner as Manor loams. They differ because of the presence of flat

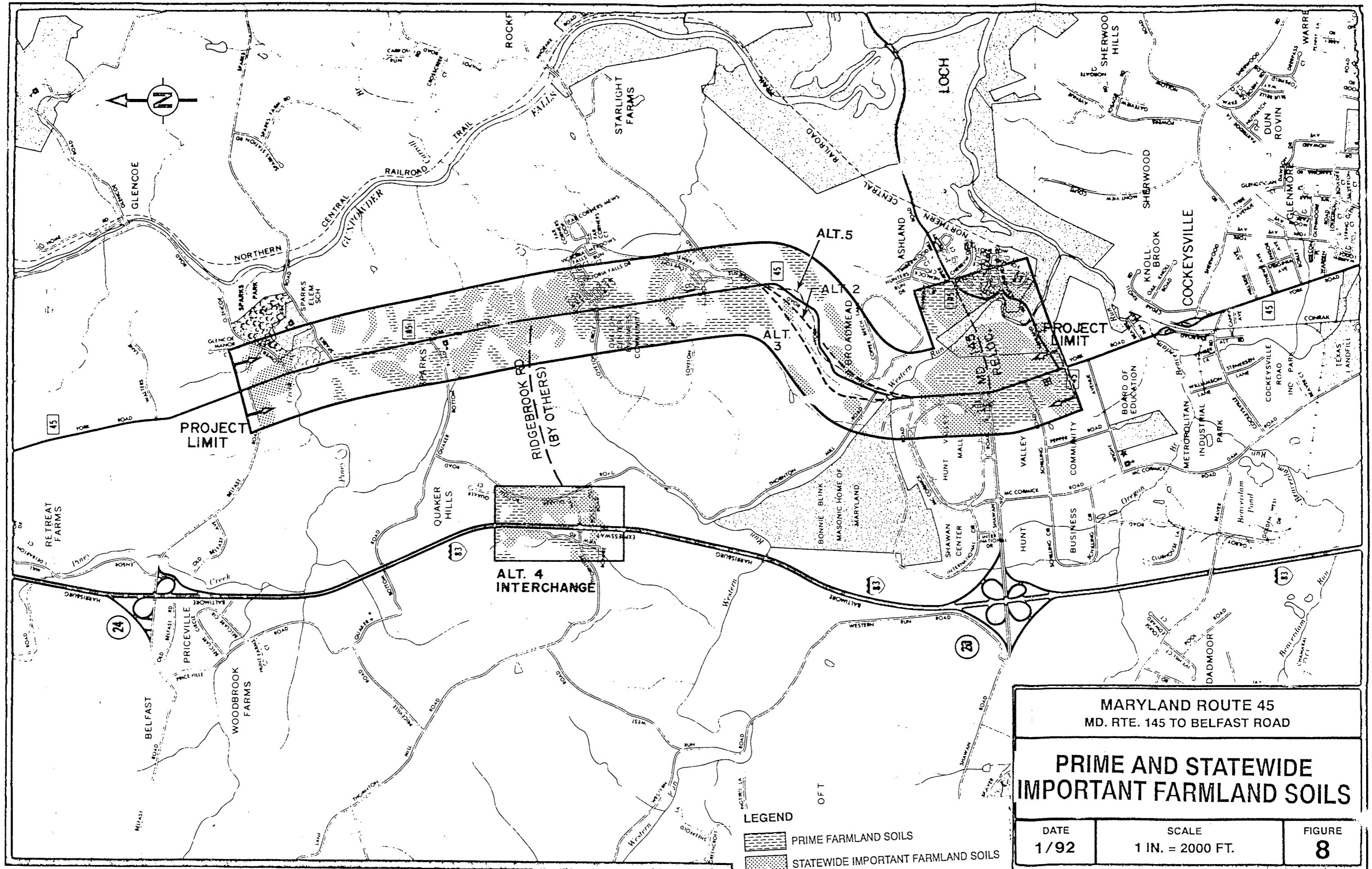


fragments of mica schist and that they are particularly steep and eroded (15-25%). Within the study area, they are found between Western Run and Jessops Church on MD 45 and north of Thornton Mill Road along I-83.

**Manor and Brandywine very stony loam (MhE)** - This soil has qualities that are representative of either Manor or Brandywine loams, but they are seldom mixed. Brandywine very stony loams are gently sloping to steeply sloping, excessively well-drained soils. Large stones, some larger than 10 inches in diameter, are found at the surface of this series. In the study area, this soil is found between Western Run and Jessops Church along MD 45.

**Manor soils (MdE)** - This soil has qualities that are representative of Manor loams, but they have a more shallow depth to bedrock. Occasionally these soils are gravelly at the surface or throughout the profile. Within the study area, these soils are found between Western Run and Phoenix Road along MD 45 and north of Quaker Bottom Road.

Prime farmland soils and Statewide Important farmland soils are located within the study area. The location of these soil classifications are shown on Figure 8. In accordance with the coordination requirements of the Farmland Protection Policy Act, the U.S. Department of Agriculture, Soil Conservation Service has been provided the Farmland Conversion Impact Rating form for completion.



**MARYLAND ROUTE 45**  
MD. RTE. 145 TO BELFAST ROAD

**PRIME AND STATEWIDE**  
**IMPORTANT FARMLAND SOILS**

DATE 1/92	SCALE 1 IN. = 2000 FT.	FIGURE <b>8</b>
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**LEGEND**

PRIME FARMLAND SOILS

STATEWIDE IMPORTANT FARMLAND SOILS

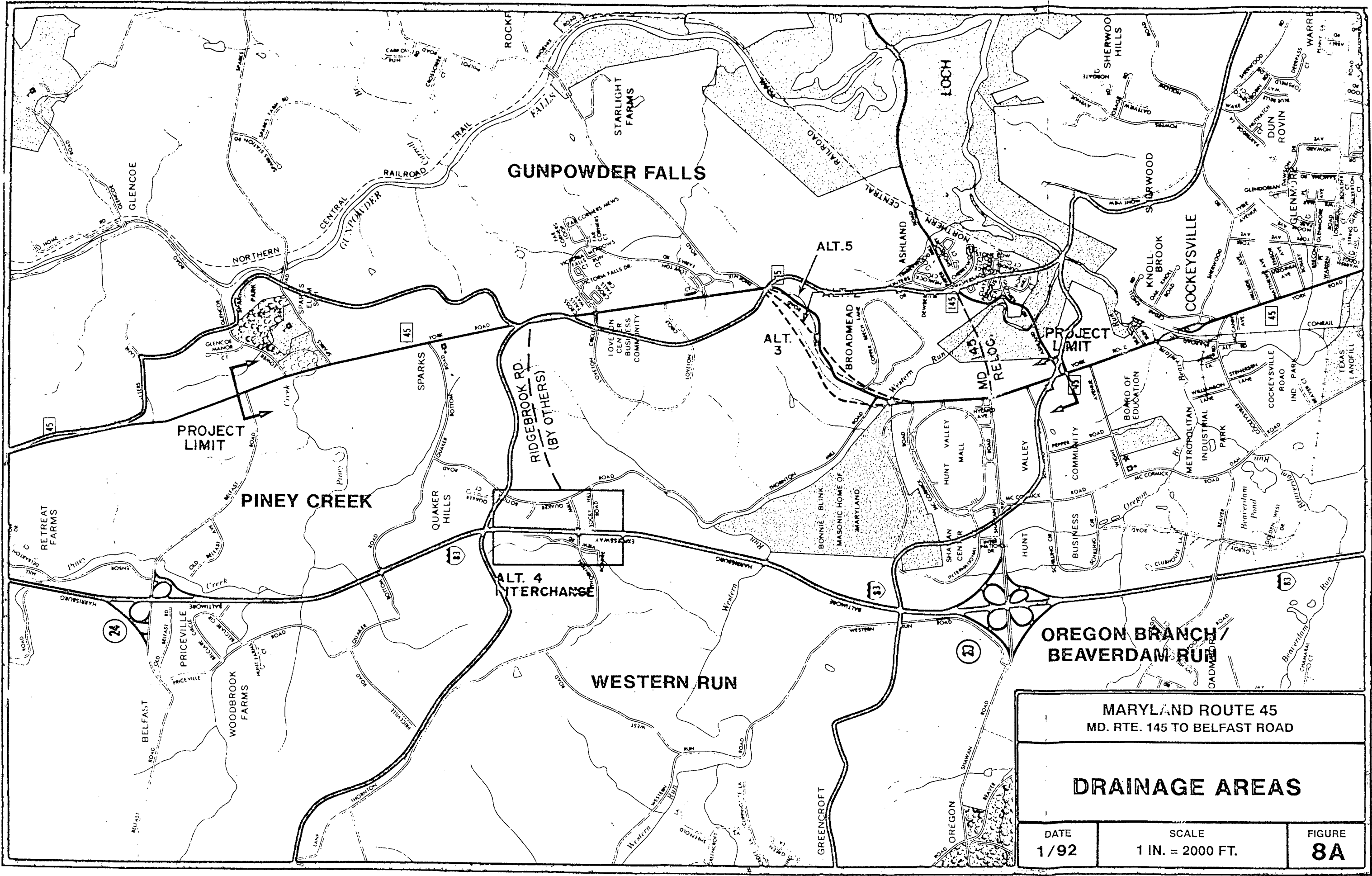
d. *Surface Water and Groundwater*

(1) Surface Water

The study area is drained by Piney Creek and Western Run. Both of these creeks drain into Gunpowder Falls. Piney Creek joins Gunpowder Falls just south of Glencoe and Western Run drains into Gunpowder Falls at the upper end of Loch Raven Reservoir (Figure 8A). The drainage area of Western Run, as measured at the Western Run Bridge, is 59.8 square miles. The drainage area of Western Run, as measured at MD 45, is 63 square miles. The drainage area of Piney Creek is approximately 10 square miles, as measured from MD 45.

At the time of study, the width of Western Run within the project area ranged from 30 to 40 feet. Depth of the stream ranged from two to three feet and contained a large amount of suspended sand and silt. The streambed substrate appeared to consist mostly of sand and other unconsolidated materials.

During field investigations, Piney Creek was determined to be approximately 35 feet wide in the study area. At MD 45, it flows through a three cell box culvert and continues eastward out of the study area. Depth of Piney Creek ranged from one and one-half (1.5) to two and one-half (2.5) feet. The water was clear with few suspended



MARYLAND ROUTE 45  
 MD. RTE. 145 TO BELFAST ROAD

**DRAINAGE AREAS**

DATE  
 1/92

SCALE  
 1 IN. = 2000 FT.

FIGURE  
 8A

particles and the streambed substrate appeared to be mostly sand.

Several small tributaries of Western Run and Piney Creek flow through the study area, joining the creeks at many locations.

A water quality evaluation of the Western Run and Piney Creek surfacewaters was conducted. The evaluation included field measurements, sample collection and laboratory analyses for 23 water quality parameters. Details regarding methodology, sampling station locations and results are included in Appendix A - Surfacewater Quality Assessment. The water quality analyses indicate that the water quality of the streams in the study area is generally good to excellent.

The U.S. Geological Survey (USGS), in conjunction with the Maryland Geological Survey, has operated and maintained a stream flow gaging station since 1944. The Western Run gaging station is located approximately two miles upstream of the project area. Monthly discharge data for Western Run at the Western Run gaging station for the period October, 1988 to September, 1989 had a mean discharge rate ranging from a low of 30.9 cubic feet per second (c.f.s.) in October to a high of 215 c.f.s. in May. No other gaging stations were operated on Western Run or Piney

62

Creek.

The Department of the Environment has categorized Western Run, Piney Creek and the unnamed tributary to Gunpowder Falls (identified by Maryland DNR as Quail Creek/Phoenix Road tributary - Wetland #8) as Class III - Natural Trout Waters. Reflecting this classification, brook trout and brown trout populations exist in both Western Run, Piney Creek and their tributaries. The Phoenix Road tributary (Wetland #8) was surveyed last on November 16, 1990 and it was confirmed that it supports a naturally reproducing brook trout population (see 6/18/91 letter from Maryland DNR in Section VI). Instream construction may be prohibited for Class III streams from October 1st through April 30th, inclusive.

It is also noted that Maryland has designated the Big Gunpowder River, which includes Gunpowder Falls, as a Category III River. Category III Rivers are rivers which have local or regional significance. It is also a nominee for Scenic River status in the Maryland Scenic and Wild Rivers Program due to its recreation and natural values.

Land uses in the watershed present the potential for detrimental effects to the water quality of Piney Creek and Western Run. The dominant land uses of the watersheds are commercial and residential. Key sources of pollution include

agricultural runoff, consisting mostly of pesticides, herbicides and sediment. The possibility for accidental sewage or septic discharge to the creeks does exist, due to the highly residential character of parts of the watershed.

(2) Groundwater

Groundwater is water that percolates into soils and has not run off or been evapotranspired. This water is that portion of the hydrologic cycle that is the source of water for plants and for stream recharge. The volume and movement of groundwater are governed by differences in porosity and permeability.

A review of Maryland Geological Survey technical publications indicated that nine wells are found within roughly one mile of the study area. The rock units from which these wells produce water include the Wissahickon formation, the Setters formation and the Cockeyville Marble formation. The openings in these rocks that contain or transmit water are chiefly joints and other fractures, but in the mantle of weathered rock, water occurs in the pore spaces between the particles.

The Cockeyville Marble formation underlies the southern half of the study area south of the Jessops Church area. This rock unit is the best crystalline-rock aquifer in the area. Yields of wells in the Cockeyville formation range

64

from 0.2 to 80 gallons per minute (gpm), and average about 19 gpm. The depths of these wells range from 50 to 1,800 feet and average 210 feet. This formation is also notable as the location of many springs.

The Wissahickon formation occurs extensively throughout northern Baltimore County and can be found just north of the study area. This formation occurs in two forms, each with a distinct mineral composition, known as facies. These facies are the Oligoclase - Mica facies and the Chlorite - Albite facies and each has its own hydrological characteristics. Yields of well tapping the Oligoclase - Mica facies average 11.2 gpm and range from 0 to 200 gpm. Wells tapping this facies extend to depths of 300 feet on ridges. Yields of the wells tapping the Chlorite - Albite facies range from 2 to 50 gpm with an average of 10 gpm. These wells range from 40 to 233 feet in depth, average 92 feet.

None of the wells recorded within roughly one mile of the study produced yields from the Baltimore gneiss, even though this formation can be used for residential purposes. It is likely that there are some wells in the study area and/or vicinity that tap this formation; however, none were indicated in the data sources consulted.

The Setters formation underlies only a small strip of the study area along the ridge containing Jessops Church.



This rock unit is also one of the best crystalline-rock aquifers in the region. Yields of wells tapping the Setters formation range from roughly 1 to 135 gpm and average roughly 104 feet in depth.

e. *Floodplains*

The project study area lies within the Western Run and Piney Creek watersheds of the Gunpowder Falls drainage basin.

The project area is located within an unincorporated community of Baltimore County that participates in the Federal Emergency Management Agency (FEMA), Flood Insurance Program. The 100-year and 500-year flood elevations for all water bodies have been established. Flood Insurance Rate Maps (FIRM), prepared by FEMA, indicate that the 100-year flood area of Western Run crosses the project impact area in two locations: along the proposed relocation of MD 145 and at MD 45 Western Run crossing. The Piney Creek 100-year flood area crosses the project impact area just north of Sparks Road. Figures 14, 17-19, 21 and 23 show the limits of the 100-year floodplains of Piney Creek and Western Run.

It is important to note that the floodplain of Western Run near the proposed MD 145 relocation has not been studied by FEMA. This is due to a FEMA policy of not including state or federally owned land on the floodway maps as no permits for construction would be necessary in these areas. Undoubtedly, the

46

floodplain does continue through the Loch Raven Reservoir area.

f. *Wildlife and Terrestrial Habitat*

Vegetative cover types located within the project area consist of a mixture of upland forest, wetland forest, early successional herbaceous land, secondary successional scrubland, agricultural lands and emergent wetland. The approximate distribution of land uses and cover types with the impact area of the MD 45 project is as follows:

- 35% deciduous forest
- 25% commercial
- 20% residential
- 10% agricultural land
- 10% scrub-shrub land

A vegetative survey of the project area was conducted and revealed the presence of seven community types. These include:

- Upland deciduous forest association (yellow poplar and sycamore)
- Transitional upland forest association (black walnut and black locust)
- Wetland forest association (ash and boxelder)
- Early successional herbaceous land association
- Secondary successional shrubland association
- Palustrine emergent association
- Agricultural land (cropland and pasture)

A summary of each community type is shown on Table 2. Figure 9 shows the distribution of these communities within the study area.

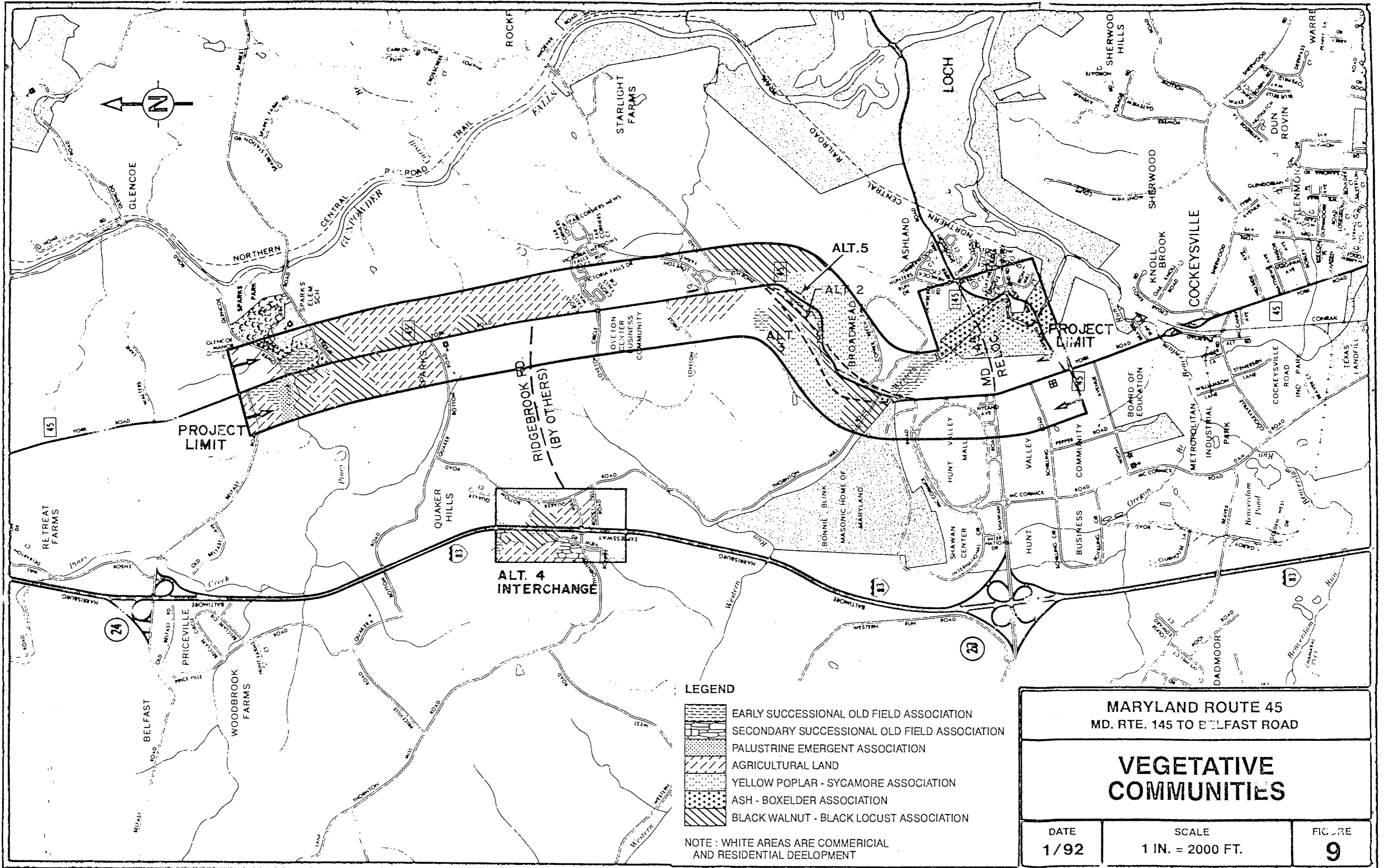
Wildlife species occupying the study area are typical of the habitat types described in the Terrestrial Habitat section. Most of this wildlife habitat within the study area is found along the curve in








TABLE 2  
VEGETATIVE COMMUNITY TYPES

<u>Community Type</u>	<u>Dominant Species</u>		<u>Associated Species</u>	
	<u>Canopy</u>	<u>Understory</u>	<u>Canopy</u>	<u>Understory</u>
Early Successional Old Field Association (herbaceous)	chick weed ( <u>Stellaria media</u> ) soap wort ( <u>Saponaria officinalis</u> ) goldenrod ( <u>Solidago spp.</u> ) perennial ryegrass ( <u>Lolium perenne</u> )			
Secondary Successional Shrubland Association (shrub and brush)	choke cherry ( <u>Prunus virginiana</u> )	chokecherry ( <u>Prunus virginiana</u> ) honeysuckle ( <u>Lonicera tartarica</u> ) goldenrod ( <u>Solidago puberula</u> )	red cedar ( <u>Juniperus virginiana</u> )	dogwood ( <u>Cornus florida</u> ) wild strawberry ( <u>Fragaria virginiana</u> ) red maple ( <u>Acer rubrum</u> )
Palustrine Emergent Association (variable throughout the study area)	common cattail ( <u>Typha latifolia</u> ) jewelweed ( <u>Impatiens capensis</u> ) slender wedgrass ( <u>Sphinochloa pallens</u> ) soft rush ( <u>Juncus effusus</u> )		Frank's sedge ( <u>Carex frankii</u> ) Louisiana sedge ( <u>Carex louisianica</u> ) sweet flag ( <u>Iris versicolor</u> ) whitegrass ( <u>Leersia virginica</u> ) perennial ryegrass ( <u>Lolium perenne</u> ) foxtail ( <u>Alopecurus caroliniana</u> ) monkey flower ( <u>Mimulus ringens</u> )	
Agricultural Land	pastureland, cultivated fields of corn and soybean			

TABLE 2 (Cont'd.)  
VEGETATIVE COMMUNITY TYPES

Community Type	Dominant Species		Associated Species	
	Canopy	Understory	Canopy	Understory
Yellow Poplar - Sycamore Assoc. Mature Upland Forest	Yellow poplar ( <u>Liriodendron tulipifera</u> )  Lower Canopy flowering dogwood ( <u>Cornus florida</u> ) boxelder ( <u>Acer negundo</u> )	spicebush ( <u>Lindera benzoin</u> ) honeysuckle ( <u>Lonicera sempervirens</u> )	None	flowering dogwood ( <u>Cornus florida</u> ) boxelder ( <u>Acer negundo</u> ) Japanese honeysuckle ( <u>Lonicera japonica</u> ) Virginia Creeper ( <u>Parthenocissus quinquefolia</u> ) jewelweed ( <u>Impatiens capensis</u> ) enchanter's nightshade ( <u>Circaea quadrisulcata</u> )
Ash-Boxelder Association	green ash ( <u>Fraxinus pennsylvanica</u> ) boxelder ( <u>Acer negundo</u> )	boxelder ( <u>Acer negundo</u> ) spicebush ( <u>Lindera benzoin</u> ) honeysuckle ( <u>Lonicera sempervirens</u> )	sycamore ( <u>Platanus occidentalis</u> ) silver maple ( <u>Acer saccharium</u> )	silver maple ( <u>Acer saccharinum</u> ) green ash ( <u>Fraxinus pennsylvanica</u> ) jewelweed ( <u>Impatiens capensis</u> ) day lily ( <u>Hemerocallis fulva</u> )
Black Walnut - Black Locust Assoc. Transitional Upland Forest	black walnut ( <u>Juglans nigra</u> ) black locust ( <u>Robinia pseudoacacia</u> ) black cherry ( <u>Prunus serotina</u> )  Lower Canopy black cherry ( <u>Prunus serotina</u> )	sycamore ( <u>Platanus occidentalis</u> ) flowering dogwood ( <u>Cornus florida</u> ) boxelder ( <u>Acer negundo</u> ) yellow poplar ( <u>Liriodendron tulipifera</u> ) spice bush ( <u>Lindera benzoin</u> ) rose ( <u>Rosa sp.</u> )		Virginia Creeper ( <u>Parthenocissus quinquefolia</u> ) clearweed ( <u>Pilea pumila</u> ) enchanter's nightshade ( <u>Circaea quadrisulcata</u> ) wild strawberry ( <u>Fragaria virginiana</u> ) blackberry ( <u>Rubus allegheniensis</u> )



- LEGEND**
-  EARLY SUCCESSIONAL OLD FIELD ASSOCIATION
  -  SECONDARY SUCCESSIONAL OLD FIELD ASSOCIATION
  -  PALUSTRINE EMERGENT ASSOCIATION
  -  AGRICULTURAL LAND
  -  YELLOW POPLAR - SYCAMORE ASSOCIATION
  -  ASH - BOXELDER ASSOCIATION
  -  BLACK WALNUT - BLACK LOCUST ASSOCIATION

NOTE : WHITE AREAS ARE COMMERCIAL AND RESIDENTIAL DEVELOPMENT

<b>MARYLAND ROUTE 45 MD. RTE. 145 TO BELFAST ROAD</b>		
<b>VEGETATIVE COMMUNITIES</b>		
DATE 1/92	SCALE 1 IN. = 2000 FT.	FIGURE <b>9</b>

MD 45 at Jessops Church, within the proposed MD 145 relocation area and the proposed I-83 interchange area. The composition and diversity of wildlife species supported in the project area was determined from consultation with federal and state wildlife agencies and field observations and sightings.

Species that were either seen, heard or for which signs of their presence were observed are listed below:

- |                       |                               |
|-----------------------|-------------------------------|
| red fox               | <u>Vulpe fulva</u>            |
| great horned owl      | <u>Bubo virginianus</u>       |
| common screech owl    | <u>Otus asio</u>              |
| white-tailed deer     | <u>Odocoileus virginianus</u> |
| eastern cottontail    | <u>Sylvilagus floridanus</u>  |
| eastern chipmunk      | <u>Tamias striatus</u>        |
| eastern grey squirrel | <u>Sciurus carolinensis</u>   |
| raccoon               | <u>Procyon lotor</u>          |
| wood duck             | <u>Aix sponsa</u>             |
| mallard               | <u>Anas platyrhynchos</u>     |
| indigo bunting        | <u>Passerina cyanea</u>       |
| northern cardinal     | <u>Cardinalis cardinalis</u>  |
| yellow-billed cuckoo  | <u>Coccyzus americanus</u>    |
| American goldfinch    | <u>Carduelis tristis</u>      |
| brook trout           | <u>Salvelinus fontinalis</u>  |

Species commonly inhabiting the mature upland forests community type include wood turtle, box turtle and other reptiles, white-tailed deer, cottontail rabbit, eastern grey squirrel, eastern chipmunk, red fox, opossum, striped skunk, raccoon and many bird species, including raptors.

Species which typically inhabit the early successional shrubland community type within the study area include woodchuck, cottontail rabbit and small rodents. These areas additionally provide hunting grounds for raptors. Agricultural fields provide an

important food source for white-tailed deer, cottontail rabbit and various birds.

Species such as waterfowl and wading birds find more suitable habitat within Piney creek and Western Run and their associated forested and emergent floodplains. The numerous waterways of the Gunpowder Falls, which flow through the study area, provide freshwater habitat for many fish. These include two unnamed tributaries to Western Run, Western Run, an unnamed tributary to Gunpowder Falls, three unnamed tributaries to Piney Creek and Piney Creek, a total of eight waterways.

g. *Endangered Species*

Coordination with the U.S. Fish and Wildlife Service (U.S.F.W.S.) and the Maryland Department of Natural Resources - Forest and Park Service, indicates that there are no state or federally listed or proposed endangered or threatened plant or animal species known to exist within the study area (see Comments and Coordination letters dated 6/21/88, 8/1/90 and 8/14/90). The U.S.F.W.S. indicated that there are three "candidate" species (those placed under review in the Federal Register to determine suitability for listing) that may be present within the project impact area. These include the Bog turtle, Pygmy shrew and the Wolf's milk spurge. The U.S.F.W.S. could not identify any known populations of these species in the project area. These species were also not sighted during field investigations held during the summer of 1990.

To date, their status as "candidate" species remains unchanged.

Coordination with the Maryland Department of Natural Resources - Tidewater Administration indicates that Western Run, Piney Run and the unnamed tributary (identified by Maryland DNR as the Phoenix Road tributary) to Gunpowder Falls (Wetland No. 8) are Class III (natural trout) streams (see letter in Comments and Coordination section dated 8/8/88).

h. *Aquatic Habitat*

An assessment of aquatic habitat and macroinvertebrate communities was performed for the Western Run and Piney Creek streams in the study area. Details of this assessment are included in Section VII - Appendix A - Surface Water Quality Assessment. The results of the habitat assessment of the sampling stations is that the habitat is considered to be good to excellent. The macroinvertebrate community assessment demonstrated that the streams contain diverse and stable communities with a high percentage that is sensitive to pollution.

As stated in Section I.c.5d., Western Run, Piney Creek and Phoenix Road tributary (Wetland No. 8) are natural trout waters. Brook and brown trout populations exist in both Western Run and Piney Creek and their tributaries. The Phoenix Road tributary (Wetland No. 8) was confirmed in a May, 1986 survey to support a naturally reproducing brook trout population. The Tidewater Administration noted at this sighting that extreme damage to the



tributary was being precipitated by the construction of the Loveton Farms development. The future of the reproducing population was questionable at the time due to the sensitivity of trout to increases in sediment and elevated water temperatures. Stream rehabilitation was undertaken in July of 1990. In the most recent DNR stream survey (11/16/90), brook trout and adult brown trout were again found to inhabit the stream. Young-of-year brook trout indicated successful reproduction in 1991 (see correspondence dated 6/18/91 from DNR - Freshwater Fisheries). The Tidewater Administration has indicated that no anadromous finfish are known to inhabit the waterways which flow within the project limits.

A listing of fish species collected within the Gunpowder Falls watershed from 1974-1984 is included in Section VII - Appendix B.

i. *Wetlands*

Wetlands are areas characterized by hydric soils, hydrophytic vegetation and frequent flooding or inundation during the growing season.

All wetlands were delineated according to the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (Federal Interagency Committee for Wetland Delineation, 1989). Wetland delineation was conducted in accordance with the Routine Onsite Determination Method using the plant community assessment procedure. Wetlands were classified according to the Cowardin System as contained in A Classification of Wetlands and Deepwater

Habitats of the United States (1979). Vegetation wetland indicator status was identified from Wetland Plants of the State of Maryland, 1986 (Reed).

A total of 17 wetlands were found within the project limits. One wetland is located within the proposed I-83 interchange area. A summary of the wetlands as to type and functions is given on Table 3. The approximate location of each wetland is indicated on Figures 14-30.

**Wetland 1** (Figures 15, 17, 19, 21, 23 and 25)

This wetland is located approximately 50 feet west of MD 45, north of Shawan Road and is a stormwater basin. Its Cowardin classification is a palustrine open water wetland (POW). No wetland vegetation was visible at the time of field studies. The substrate consists of stone rip-rap. This stormwater basin is supported by runoff from the adjacent Hunt Valley Mall parking area. The U.S. Army Corps of Engineers has determined that this area does not meet the criteria for a jurisdictional wetland and has declined to take jurisdiction.

**Wetland 2** (Figures 15, 17, 19, 21, 23 and 25)

Wetland 2 is classified as palustrine emergent and palustrine scrub/shrub (PEM1/SS1). This wetland is confined to a stormwater basin serving the Hunt Valley Mall and is located approximately 60 feet west of MD 45 and 6,500 feet south of Western Run.

Dominant vegetation consists of common cattail (Typha latifolia)

**TABLE 3  
WETLANDS**

Wetland #	General Location	Cowardin System Classification	Functions and Values
1 *	About 50 feet west of MD 45, north of Shawan Road  * Non-Jurisdictional (COE)	Palustrine open water unknown bottom (POW)	Groundwater recharge Floodflow alteration Sediment/toxicant retention Sediment stabilization
2	About 60 feet west of MD 45, 6500 feet south of Western Run	palustrine emergent and palustrine scrub-shrub persistent (PEM/SS1)	Groundwater recharge Floodflow alteration Sediment/toxicant retention Sediment stabilization
3	About 1300 feet east of Shawan Road	riverine lower perennial with an unconsolidated sand and cobbles bottom (R2UB1/2) palustrine forested, broad-leaved deciduous (PF01) palustrine emergent, persistent (PEM1)	Floodflow alteration Wildlife diversity/abundance Groundwater recharge Sediment stabilization Sediment/toxicant retention
4	Both sides of MD 45, 500 feet north of McCormick Road	riverine lower perennial, unconsolidated bottom of sand and cobbles (R2UB1/2)	Recreation Aquatic diversity/ abundance
5	About 50 feet south of Thornton Mill Road and 50 feet west of MD 45	palustrine forested broad-leaved deciduous (PF01)	Groundwater recharge Sediment/toxicant retention
6	About 220 feet west of MD 45 at Thornton Mill Road	riverine upper perennial, unconsolidated bottom of sand and cobbles (R3UB1/2)	Wildlife diversity/ abundance
7	100 feet north of Western Run along the east of MD 45	palustrine emergent, persistent (PEM1) riverine intermittent, unconsolidated bottom of cobbles (R4UB1)	Groundwater discharge

15

TABLE 3 (Cont'd.)

8	About 430 feet west of MD 45, 1700 feet south of Phoenix Road	palustrine forested, broad-leaved deciduous (PF01); riverine intermittent, unconsolidated bottom of sand (R4UB1)	Groundwater discharge Wildlife diversity/abundance
9 *	West of MD 45, 20 feet north of Loveton Drive  * Non-Jurisdictional (COE)	palustrine open water, unknown bottom (POW)	Groundwater recharge Floodflow alteration Sediment/toxicant retention Sediment stabilization
10	Directly across from Wetland #10, east of MD 45	riverine intermittent, unconsolidated bottom, sand and mud (R4UB2/3)	Aquatic diversity/abundance Uniqueness/heritage
11	East of MD 45, 1100 feet south of Quaker Bottom Road	riverine intermittent, unconsolidated bottom, sand (R3UB2)	Aquatic diversity/abundance
12	1800 feet south of Sparks Road	riverine upper perennial, unconsolidated bottom, sand (R4UB2)	Wildlife diversity/abundance
13	West and east of MD 45 at Sparks Road	riverine upper perennial, unconsolidated bottom, cobbles and sand (R3UB1/2)	Wildlife diversity/abundance Aquatic diversity/abundance
14	About 120 feet north of Sparks Road east side of MD 45	palustrine forest, broad-leaved deciduous (PF01)	Floodflow alteration Sediment/toxicant retention Wildlife diversity/abundance
15	Parallelling MD 45 for 600 feet, just south of Lower Glencoe Road	riverine lower perennial, unconsolidated bottom, cobble and sand (R2UB1/2)	Recreation Aquatic diversity/abundance
16	About 40 feet west of MD 45, 40 feet north of Piney Creek	palustrine emergent, persistent (PEM1)	Groundwater discharge Floodflow alteration Sediment/toxicant retention Wildlife diversity/abundance
17	Along west side of Bonnie View Lane, north and south of Thornton Mill Road in I-83 study area.	riverine upper perennial, unconsolidated bottom, cobble and sand (R3UB1/2)	Wildlife diversity/abundance Aquatic diversity/abundance

76

and saplings of black willow (Salix nigra) and weeping willow (Salix babylonica). This wetland is supported by runoff from the adjacent parking area. No soils within this wetland were observed due to difficulty in accessing the site.

### Wetland 3 (Figure 14)

Wetland 3 is located about 1,300 feet east of Shawan Road and contains three distinct wetland communities: riverine, palustrine forested and palustrine emergent.

Western Run is classified as a riverine lower perennial wetland which has a sand and cobble bottom (R2UB1/2). This river flows southeast into the Loch Raven reservoir. At the time of investigation, approximate width measured 60 feet and depth varied from two to three feet.

Surrounding Western Run in this area is a palustrine forested broad-leaved deciduous wetland (PFO1). This system is supported by floodwaters and a seasonal high water table. Dominant vegetation consisted of boxelder (Acer negundo), silver maple (Acer saccharinum), sycamore (Platanus occidentalis) and spicebush (Lindera benzoin). These species are facultative or wetter. A soil pit revealed bright mottling within a dark matrix. Hydrologic indicators include the presence of standing water, water-stained leaves, surface scoured areas and drift lines.

West of Western Run, forested vegetation from MD 45 at Shawan Road to the river has been removed due to placement of a

sewer line. This corridor is approximately 60 feet wide and has revegetated as a palustrine emergent wetland (PEM1). Dominant vegetation consists of Frank's sedge (Carex frankii), Louisiana sedge (Carex louisianica), and jewelweed (Impatiens capensis). These species are rated as obligate and facultative wet. A soil pit revealed bright mottles within a dark matrix. This wetland is supported by floodwaters and a seasonal high water table. Hydrologic indicators included standing water and soil saturation.

**Wetland 4** (Figures 15, 17, 19, 21, 23 and 25)

Wetland 4 consists of Western Run. At the time of field studies, the stream measured approximately 60 feet in width with a depth of roughly two feet. Flowing southeast, this stream eventually enters the Loch Raven Reservoir. This wetland is classified as riverine, lower perennial with a sand and cobble bottom (R2UB1/2).

**Wetland 5** (Figures 15, 17, 19, 21, 23 and 25)

This is an isolated palustrine forested broad-leaved deciduous wetland (PFO1). It is located approximately 50 feet south of Thornton Mill Road and 50 feet west of MD 45. A soil pit excavated in this area revealed bright mottles within a dark matrix and a strong sulfur odor. Dominant vegetation consisted of black willow (Salix nigra), boxelder (Acer negundo), red maple (Acer rubrum), sycamore (Platanus occidentalis) and silver maple (Acer saccharinum). These species are facultative or wetter. This wetland is supported by runoff from higher slopes and a seasonal high water

table. Hydrologic indicators include water-stained leaves and standing water.

19

**Wetland 6** (Figures 15-26)

Wetland 6 consists of an unnamed tributary of Western Run. Located on the west side of MD 45, this riverine, upper perennial tributary flows south and has a sand and cobble substrate (R3UB1/2). Channel width measures approximately six feet with a depth of six inches. The tributary collects runoff from higher elevations and drains into Western Run in the vicinity of Thornton Mill Road.

**Wetland 7** (Figures 15, 17, 19, 21, 23 and 25)

This wetland is classified as palustrine emergent, persistent and riverine, intermittent with a cobble bottom (PEM1/R4UB1). The wetland is a spring which discharges groundwater from a slope about 100 feet north of Western Run along the east side of MD 45. Soil test pits observed within the wetland have a low chroma matrix with bright mottles. Soils are saturated to the surface and abundant water discharges to form an intermittent stream to Western Run.

Dominant plants present within this wetland include:

jewelweed	( <u>Impatiens capensis</u> )
blue vervain	( <u>Verbena hastata</u> )
Carolina foxtail	( <u>Alopecurus caroliniana</u> )
monkey-flower	( <u>Mimulus ringens</u> )
whitegrass	( <u>Leersia virginica</u> )

All of these species are facultative or obligate.

**Wetland 8** (Figures 16, 18, 20, 24 and 26)

This wetland is a small palustrine forested (PFO1) area located in an extreme topographic low about 430 feet west of MD 45 and 700 feet south of Phoenix Road. A spring floods this forested area which is hydraulically connected to Wetland 6. The stream that flows from the palustrine forest is classified as riverine intermittent with an unconsolidated sand bottom (R4UB1). Dominating plant species within Wetland 8 include black willow (Salix nigra) and sensitive fern (Onoclea sensibilis). A soil test pit studied here showed low chroma matrix saturation to the surface.

**Wetland 9** (Figure 27)

Wetland 9, a stormwater basin, is located west of MD 45 and 20 feet north of Loveton Drive. This stormwater basin receives runoff from the adjacent parking area. Its Cowardin classification is palustrine open water (POW). The depth and substrate of the wetland is unknown. The U.S. Army Corps of Engineers has determined that this area does not meet the criteria for a wetland and has declined to take jurisdiction.

**Wetland 10** (Figure 27)

This is an intermittent riverine wetland with a sand and mud bottom (R4UB2/3) and is located directly across from Wetland 9 on the east side of MD 45. This wetland receives runoff from higher elevations. The wetland is confined to the channel since no wetland vegetation or hydric soils were observed elsewhere. At the time of



41  
field studies, the channel width measured approximately two feet and contained up to one inch of water.

**Wetland 11 (Figure 28)**

Wetland 11 is a spring which commences east of MD 45 and is piped under the roadway. Located 1,100 feet south of Quaker Bottom Road, this riverine intermittent wetland has a sandy bottom (R4UB2). It is confined to the channel (approximately two feet in width). Flowing water was present at the time of study.

**Wetland 12 (Figure 28)**

Located 1,800 feet south of Sparks Road, this is an intermittent riverine wetland with a sandy bottom (R4UB2). It begins east of MD 45, is piped beneath the roadway and drains into a tributary of Piney Creek. East of the roadway, the stream is contained in a grassy channel. West of the roadway, the four foot wide channel is flanked by upland forest vegetation. No water was present at the time of study.

**Wetland 13 (Figures 28 and 29)**

Wetland 13 is a riverine upper perennial tributary of Piney Creek with a cobble and sand bottom (R3UB1/2). Channel width measured approximately six feet and contained flowing water at a depth of four to six inches.

This tributary flows northerly on the west side of MD 45, then flows beneath the roadway and empties into Piney Creek just north of Sparks Road. A hydrologic indicator noted was inundation.

Since hydric soils were lacking, this wetland is confined to the channel.

Associated with this tributary is a small palustrine emergent area with non-persistent vegetation (PEM2). This is located west of MD 45 at the point which the tributary flows beneath the roadway. Soil within this wetland is an entisol. Dominant vegetation consists of jewelweed (Impatiens pallens), which is rated as facultative wet. The wetland is supported by roadway runoff and flooding from the tributary. Soil saturation occurs at three inches below the surface.

**Wetland 14 (Figure 29)**

This wetland borders the northern edge of Sparks Road, east of MD 45 and is palustrine, forested broad-leaved deciduous (PFO1). This wetland is supported by groundwater discharge. Dominant vegetation consists of sycamore (Platanus occidentalis), silver maple (Acer saccharinum), boxelder (Acer negundo), jewelweed (Impatiens pallens) and green ash (Fraxinus pennsylvanica). Observation of a soil test pit revealed strong mottling within a dark matrix. Groundwater filled the soil test pit up to five inches below the soil surface. Indicators of hydrology are soil saturation within the rooting zone and water-stained leaves.

**Wetland 15 (Figure 29)**

Wetland 15 is Piney Creek, a riverine lower perennial stream, with an unconsolidated bottom of cobble and sand (R2UB1/2). Paralleling MD 45 for 600 feet, just south of Lower Glencoe Road,

83

it eventually empties into Gunpowder Falls. Within the study area, Piney Creek ranges up to 40 feet in width and 12 to 18 inches in depth. West of MD 45, the creek is flanked by a maintained grassy area on the north bank and a palustrine forested wetland (Wetland 12) on the south bank. East of MD 45, Piney Creek is bordered by maintained grassy area to the south and old field to the north.

#### **Wetland 16 (Figure 29)**

This palustrine emergent wetland (PEM1) is situated west of MD 45 north of Piney Creek. It is supported by a seasonal high water table and floodwater from Piney Creek. Dominant vegetation consists of common cattail (*Typha latifolia*) and Carolina foxtail (*Alopecurus caroliniana*). These species are rated as obligate and facultative wet, respectively. Hydric soils were determined to be present.

#### **Wetland 17 (Figures 30, 31 and 32)**

This wetland consists of a tributary of Western Run and parallels the north side of Bonnie View Road and passes beneath Thornton Mill Road. This four foot wide tributary is classified as riverine upper perennial with a cobble, sand bottom (R3UB1/2). Surrounding this tributary are banks of palustrine forested broad-leaved deciduous wetland (PFO1). Dominant vegetation consisted of red maple (*Acer rubrum*), sycamore (*Platanus occidentalis*), boxelder (*Acer negundo*), arrow-wood (*Viburnum dentatum*) and spicebush (*Lindera benzoin*). These species are rated as facultative

84

or wetter. A pit excavated at this site revealed soils with a low chroma matrix and strong mottling, confirming the presence of hydric soils.

6. Existing Air Quality

The MD 45 project is within the Metropolitan Baltimore Intrastate Air Quality Control Region. While only a portion of the region does not meet the primary standards for carbon monoxide (CO), the entire 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 CO impact of the proposed project, which is described in further detail in Section IV-F.

7. Existing Noise Conditions

Twenty noise sensitive areas (NSA's) have been identified in the MD 45 study area. Measurements were made for 15 minutes at each location utilizing a Metrosonics db-308 Sound Level Dosimeter/Analyzer, which automatically records and calculates noise exposure in a wide range of formats. The noise descriptor used in this study was the Equivalent Noise Level (Leq), which conforms to the noise abatement criteria established by the Federal Highway Administration (FHWA). Descriptions of the NSA's are provided in Table 4. The locations of the NSA's are shown on the Alternatives mapping (Figures 14-32). A copy of the Technical Noise Analysis Report is available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202

45

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

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

It was determined that for most of the NSA's, the most typical noise conditions occur during the non-rush period (9:00 a.m. - 4:00 p.m.). During this time, the highest noise levels are experienced for the greatest length of time. Ambient noise levels ranged from 52 dBA to 73 dBA and are shown for each NSA in Table 4.

#### 8. Hazardous Wastes

A known hazardous waste site has been identified in the study area. The site is known as the Bausch & Lomb (B&L)/Diecraft site. B&L/Diecraft manufactured and treated metal parts for scientific optical equipment with a metallic coating process, known as electroplating. The waste products of the electroplating process, such as heavy metals (e.g. chrome, nickel, cadmium, copper and magnesium), volatile organics (e.g. trichloroethylene - TCE) and etching acid solutions, were deposited in a

**Table 4  
Existing Noise Levels and  
Noise Sensitive Area Descriptions**

<b>Noise Sensitive Area</b>	<b>Description/Location</b>	<b>Ambient Leq, dBA</b>
1	Ashland Presbyterian Church MD 45	63
2	Gardner House (Historic, NRE) York and Shawan Roads	73*
3	Loch Raven Reservoir Point of R-O-W	59
4	Holly Hill (Historic, NRE) Broadmead Retirement Community	62
5	Toll House (Historic, NRE) 13822 York Road (MD 45)	68*
6	1-1/2 Story Frame Residence 13856 York Road (MD 45)	56
7	2-Story Frame Residence 13927 York Road (MD 45)	54
8	Jessop M.E. Church (Historic, NRE) MD 45	52
9	3-Story Brick Condominiums 2 Shelbys Path	67*
10	Loveton Mansion (Historic, NRE) 14301 York Road (MD 45)	59
11	3-Story Brick Townhouses 2 Cross Falls Way	53
12	1-1/2 Story Frame Residence 14734 York Road (MD 45)	61
13	2-Story Frame Residence 14905 York Road (MD 45)	64
14	2-Story Frame Residence/Apartments 15017/15021 York Road (MD 45)	68*
15	2-Story Stone & Frame Residence 15112 York Road (MD 45)	61
16	1-1/2 story Frame Residence 14426 Thornton Mill Road	67*
17	1-Story Brick Residence 628 E Rocky Hill Road	56
18	1-1/2 Story Frame Residence 14536 Thornton Mill Road	60
19	1-Story Brick Residence 14552 Quaker Bottom Road #2	62
20	2-Story Frame Residence 14608 Quaker Bottom Road #2	59

\*Exceeds FHWA Noise Abatement Criteria

20

lagoon or into one of the three dry wells located behind the plant. The electroplating process was discontinued in 1975 in favor of anodizing.

The facility is on the U.S. Environmental Protection Agency's list of Controlled Hazardous Substances Generators.

Although the property is currently owned by Cambridge Instruments, B&L has been conducting environmental investigations since 1982. The studies were related to the former plating waste disposal system and its subsequent effect on the surrounding environment. The Maryland Hazardous and Solid Waste Management Administration (HSWMA) has worked with B&L since 1984 in providing regulatory oversight and management assistance and conducted an on-site preliminary assessment of the site in September, 1985. A sampling plan developed by B&L's consultant to determine the extent of vertical contamination is being reviewed by HSWMA.

Meetings have been held between representatives of Maryland SHA and the HSWMA on July 19, 1989 and October 5, 1990 to discuss the status and findings of studies to date, extent of contamination and the potential for hazardous waste involvement resulting from the proposed MD 45 project (see Comments and Coordination Section letters dated 7/21/89, 8/17/89 and 10/15/90). It was determined by representatives of HSWMA that all waste disposal took place behind the facility and that no historical evidence or technical data demonstrate evidence of contamination between MD 45 and the facility.

The boundary of the shallow groundwater TCE plume for the B&L,

88

Diecraft site is shown on Figure 16.

A gas station (Getty) is also located in the study area as shown on Figure 17 (Station 169+00). The new shoulder area would encroach on the gas station pump area, although it is within the State-owned right-of-way. It is anticipated that the operation of the station and the pumps will be unaffected by the addition of the shoulders.



II  
NEED FOR THE PROJECT

## II. PURPOSE AND NEED

### A. Purpose

The purpose of this project is to provide additional traffic capacity to address the problems resulting from existing congestion and future traffic demand on MD 45 and to correct existing safety deficiencies. The relocation of MD 145 (Ashland Road) is proposed to provide a more direct connection to I-83 via Shawan Road, which currently has an interchange with the interstate, and to improve the traffic circulation through the intersections in the lower portion of the study corridor. A new interchange with I-83 between Shawan Road and Belfast Road is also proposed to address the future traffic demand on MD 45 resulting from completion of the office/industrial parks in the Loveton area.

Currently, MD 45 (York Road), Shawan Road, MD 145 (Ashland Road) and other roads within the study area experience traffic congestion and delays during both a.m. and p.m. periods of peak travel demand. This congestion is characterized by the MD 45/MD 145 intersection, which operates at almost 40 percent over its capacity in the a.m. peak period. The congestion and delay are a direct result of the traffic volumes exceeding the existing capacity of these roadways. Traffic volumes along MD 45 have increased as planned development has occurred throughout the study area. The traffic projections indicate that the traffic volumes will continue to increase as the planned development activities continue.

Residential developments along MD 145, Phoenix Road, in the Loveton Farms development, and throughout Baltimore and Harford counties north and east of the study area will continue to increase traffic growth throughout the study

91

area. In the center of the study corridor, the Loveton area is continuing to develop as a residential/industrial park center. Development continues within the Loveton Center Business Community, with the addition of large employment centers. In addition, the Highlands Corporate Office park is planned for development immediately north of the Loveton Center Business Community. Both of these developments will generate extensive traffic volumes throughout the MD 45 corridor.

Throughout much of the study corridor, MD 45, as well as MD 145, consists of segments of substandard horizontal and vertical geometry. Together with lack of shoulders or other adequate recovery area for errant vehicles and steadily increasing traffic congestion, York and Ashland Roads are unable to safely accommodate the projected traffic demand. The indirect distribution and circuitous traffic patterns in portions of the study corridor further diminishes the effectiveness of the roadway network. This pattern is characterized by the travel patterns from MD 145 to I-83 via MD 45 and Shawan Road.

Alternatives under consideration propose improvements to the horizontal and vertical geometry, as well as the typical sections along MD 45. A new interchange in the vicinity of the I-83 crossing of Thornton Mill Road and the relocation of MD 145 to intersect MD 45 opposite Shawan Road are also included in this study. Three interrelated components of need have been defined within the study corridor. Each of the three portions, MD 45 mainline improvements, MD 145 relocated and a new interchange with I-83, address a distinct transportation demand. However, none of the alternatives alone address all of the project need. For example, based on level of service data, if MD 145 were not

relocated to allow for more direct access to I-83, any improvements along MD 45 between existing MD 145 and Shawan Road would not be fully realized.

Approximately 7,000 vehicles/day would continue to travel from existing MD 145 along MD 45 and left through the MD 45/Shawan Road intersection to access the interstate. Therefore, more extensive improvements than the current proposals to MD 45 at the MD 45/Shawan Road and MD 45/MD 145 intersections would be required to provide adequate levels of service (Table 5). To accommodate the 7,000 vehicles/day, additional lanes would be needed along MD 45, including additional turn lanes at both MD 45 intersections with Shawan and Ashland Roads.

**B. Roadway Function and Trip Character**

MD 45 (York Road) is classified as a major collector in both the Maryland State Highway Administration's and the Federal Highway Administration's Secondary Highway System. A collector is an intermediate type of roadway serving as a connector between residential and employment centers and/or major traffic carriers. Before I-83 was built in the late 1950's, MD 45 served as the only major north-south route through Baltimore County linking Baltimore City and York, Pennsylvania. However, York Road currently serves as a major north-south route for commuters from northern Baltimore and western Harford counties traveling toward Hunt Valley, Timonium and Baltimore City. It is estimated that approximately 40% of the traffic through the corridor is destined for I-83 via either Shawan or Belfast Roads. Due to the intense planned industrial development in the center of the project corridor, traffic including heavy truck traffic is expected to increase. At present, trucks must travel from the Loveton

93

Industrial Park on MD 45 to either Shawan or Belfast Road to gain access to the interstate.

MD 145 (Paper Mill/Ashland Road) also serves as a collector, providing access to Cockeysville, Hunt Valley and I-83 for Baltimore and Harford County commuters, via MD 145, MD 45 and Shawan Road. Moreover, existing MD 145 serves the continuing planned development in Ashland.

I-83 serves a high-speed expressway linking Baltimore and York, Pennsylvania. Locally within the project limits, I-83 provides a route for Baltimore and Harford county commuters. The introduction of the numerous industrial uses in and around the project limits has generated large concentrations of trips; specifically, varying sizes of trucks. It would be desirable to route this component of the traffic onto a high type facility such as I-83. Currently, this traffic, which in part is generated in the mid-section of the study corridor, has to utilize MD 45 to access I-83 via Shawan Road or Belfast Road.

**C. *Project Background***

The MD 45 project has been listed in the State Highway Administration's Highway Needs Inventory since 1964. Originally, the project limits were from Shawan Road to the Pennsylvania State Line and the recommended improvements included a two-lane reconstruction and resurfacing project. In the 1973 Highway Needs Inventory, the northern limits were modified to end at Belfast Road and the recommended improvements proposed to reconstruct MD 45 as a four-lane urban divided highway. Currently, the majority of the planned development is contained between Hunt Valley and Sparks, between the two existing interstate access points. This trend is characterized by the dramatic decrease in project

94

traffic volumes north of Belfast Road (Figures 10 and 11). The project was included for project planning in the Secondary Development and Evaluation Program of the Maryland Department of Transportation's Consolidated Transportation Program (CTP) for fiscal year 1988-1993 and remains in the current (1990-1995) CTP. Throughout the project history, changes have been made that are consistent with changes made in the Baltimore County Master Plan.

The scope of the project has been expanded since the fiscal year 1988-1993 CTP was published to include studying the relocation of MD 145 and to include a new interchange with I-83 in the vicinity of its crossing of Thornton Mill Road.

Funding is currently provided for the completion of project planning studies. It is anticipated that future editions of the CTP will provide funding for the final design, right-of-way acquisition and construction phases. Also, the project planning study is consistent with Baltimore County's Master Plan 1989-2000, which identifies MD 45 as a multi-lane highway.

An Alternates Public Meeting was held for this project in June, 1989 at Dulaney Senior High School in Timonium.

D. *Existing Roadway*

MD 45 is currently a five-lane closed typical section between MD 145 and Shawan Road with two of the lanes becoming left and right turn lanes at the Shawan Road intersection. North of Shawan Road, MD 45 (recently widened) consists of three lanes, one travel lane in each direction and a center turn lane. Right turn lanes are provided at various private entrances along MD 45. At the bridge over Western Run, MD 45 tapers to a two-lane roadway with no usable

45

shoulders and maintains that section approaching the Phoenix Road intersection. The roadway consists of several closely spaced horizontal curves which presents a safety concern. North of Phoenix Road, MD 45 widens to approximately 58 feet and is striped for four through lanes and one center turn lane. This section consists of several closely spaced vertical curves, which limits driver sight distance further compromising safety. At Quaker Bottom Road, the roadway again tapers to the existing two-lane section with no usable shoulders for the remainder of the study corridor. The lane widths throughout the corridor are eleven feet. As mentioned, there are portions of shoulders less than eight feet which are considered the minimum usable shoulder. A usable shoulder should be wide enough to accommodate vehicles and provide refuge from vehicles in the travel lanes.

MD 145 (Ashland Road) between MD 45 and Paper Mill Road is a two-lane undivided roadway with eleven foot lanes and no usable shoulders. Ashland Road also crosses Western Run within the Loch Raven Reservoir. The roadway widens to a five-lane undivided section for a short distance approximately 2,850 feet east of MD 45 through the new development area of Hunters Run. MD 145 also consists of several sharp horizontal curves as it passes through the town of Ashland, just east of Western Run.

I-83 is a fully controlled access facility with four lanes and shoulders separated by a grass median. The interchanges at Shawan Road and Belfast Road are currently the only two access points to be interstate within the study area.

Research of the existing right-of-way for MD 45 indicates that a 66-foot turnpike right-of-way, 33 feet each side of the original centerline of surfacing was

96

granted to the State Highway Administration. Just north of Shawan Road, the SHA owns approximately 100 feet of right-of-way. The existing right-of-way along I-83 is approximately 250 to 300 feet, 125 to 150 feet on either side of the centerline within the study area. Along MD 145 the existing right-of-way is approximately 35 feet.

The speed limit on MD 45 is currently posted at 40 miles per hour with advisory signs as low as 25 miles per hour provided at sharp curves. The existing horizontal and vertical geometry on portions of York and Ashland roads does not meet the American Association of State Highway and Transportation Officials (AASHTO) criteria for a 40 miles per hour design speed. For example, both the horizontal and vertical alignments between the crossing of Western Run and Phoenix Road on MD 45 and between Hunters Run and Western Run on MD 145, represent a design speed of only 25-30 miles per hour. North of Phoenix Road, MD 45 consists of several consecutive vertical deficiencies, which in some areas meet less than a 30 miles per hour design speed.

In order to achieve a safe, smooth-flowing roadway, it is important for the horizontal geometry to be designed to at least meet the AASHTO criteria for the posted speed limit and it is desirable for the design of the roadway to be 10 miles per hour above the posted speed limit. When the horizontal geometry does not meet the AASHTO criteria because of excessive curvature or poor combinations of curves, the roadway experiences increased accident potential, limited highway capacity, economic losses due to increased travel time and operating costs, and detracts from the aesthetics and function of the roadway.



97

The existing vertical alignment on MD 45 fails to meet SHA acceptable criteria for 40 miles per hour throughout various segments within the project limits. The existing vertical alignment imposes conditions where the driver's sight distance may not be sufficient to allow adequate time to react to stopped or turning vehicles, a hazard on the roadway, pedestrians, or any conditions requiring driver decision. The segment of MD 45 between MD 145 and Phoenix Road contains three isolated areas where the vertical alignment meets a design speed less than 30 miles per hour. Between Phoenix and Quaker Bottom Roads, there are approximately seven consecutive vertical deficiencies. The result of these consecutive vertical curves is an unstable "roller coaster" effect experienced by the driver. In the final segment of the MD 45 corridor, there are four areas that meet less than a 30 miles per hour design speed. Like the horizontal deficiencies, the lack of adequate sight distance causes high accident potential, economic loss and detracts from the efficiency and aesthetics of the roadway.

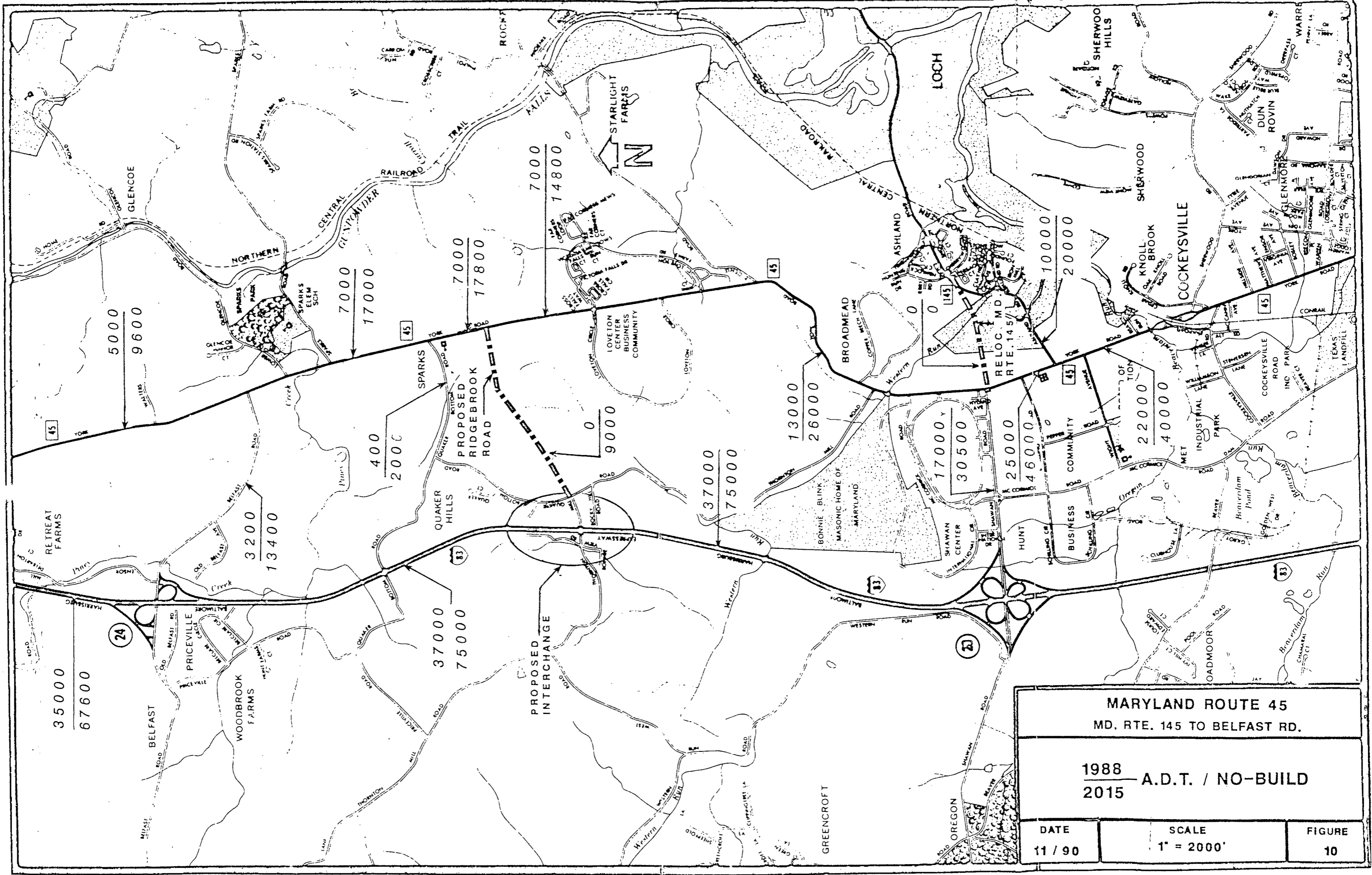
E. *Traffic Conditions*

Currently, the peak hour traffic volumes exceed or are approaching the capacity of the existing roadway in the southern segment of the study corridor. In the northern section of the study corridor, MD 45 still operates at an acceptable level of service. However, as the development activities intensify throughout the study area, the existing network of roadways will be unable to meet the demand. The project area is continuing to experience steady growth in employment, residential and commercial development as characterized by the Loveton/Highlands industrial parks and the residential developments along York Road and MD 145. The Loveton Farms community is also continuing to develop. Originally

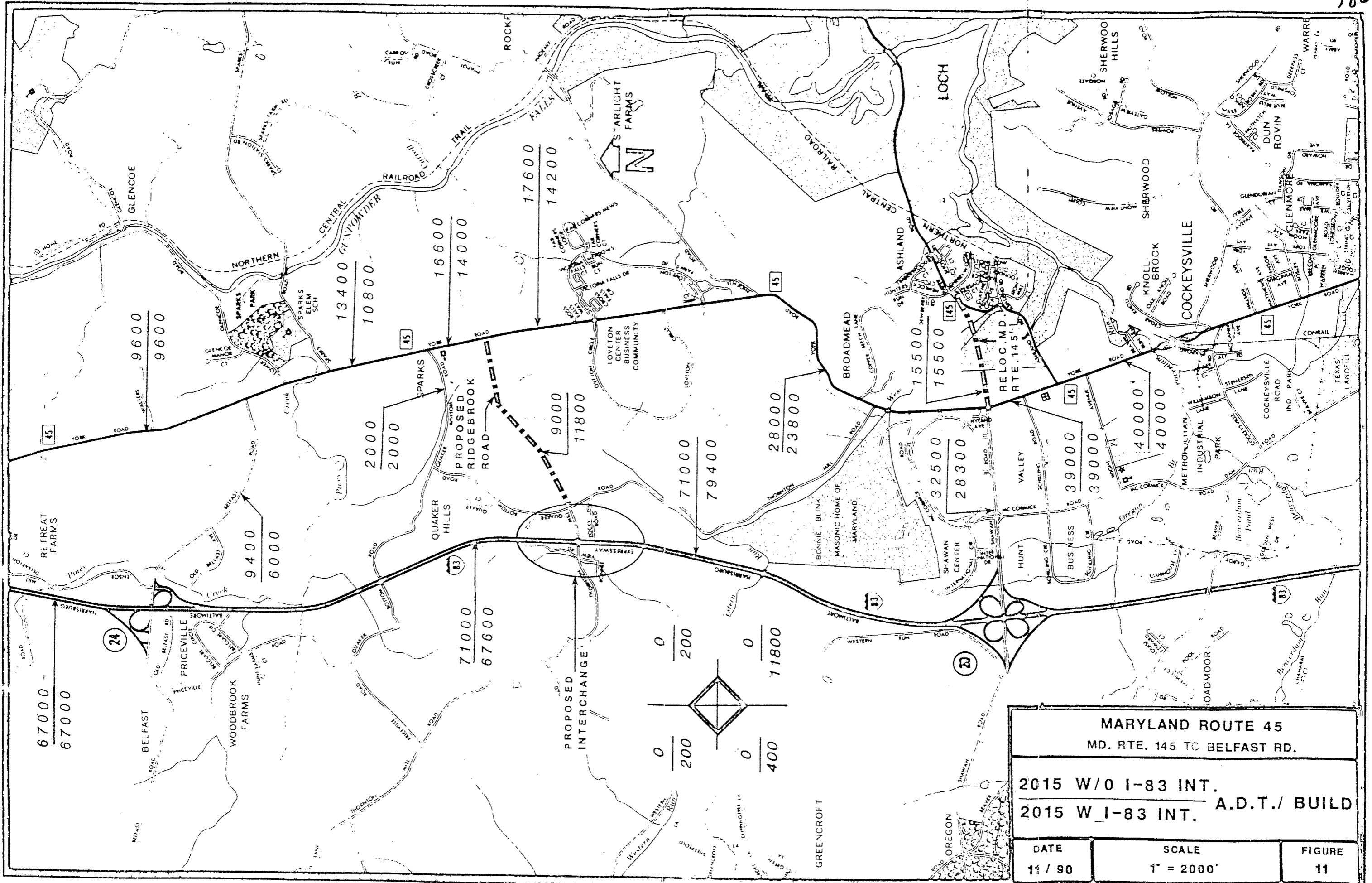
98

conceived and approved in the mid to late 1970's as an apartment/townhome community of approximately 1,200 units, Loveton Farms is currently about three-fourths complete with approximately 1,010 lots developed. The Loveton Industrial Park, also conceived in the seventies, is also nearing completion. On the other hand, the Highlands Industrial Park is currently in the preliminary stages of the development process. Although building has not yet begun, the existing zoning will permit 992,661 square feet of development. The park will contain approximately 546,400 square feet of office space, 68,500 square feet of research and development and 377,700 square feet of office and warehouses. The residential development, known as Hunters Run, occurring east of MD 45 adjacent to (MD 145) Paper Mill Road is planned to consist of approximately 615 units. Currently, only about 195 lots have been developed. North of these major development, Baltimore County has strived to preserve the rural nature of the community by maintaining low density residential uses.

Traffic counts compiled in 1988 reflect an average daily traffic (ADT) volume ranging from approximately 7,000 to 25,000 vehicles per day on MD 45 and 10,000 on MD 145 (Figure 10). Traffic forecasted for the project design year 2015 indicate an ADT ranging from approximately 17,000 to 46,000 vehicles per day on MD 45 and 20,000 on MD 145 (Figures 10 and 11). The projected traffic volumes, based on approximately 80% of the Baltimore County Master Plan (1989 to 2000) build out condition, represent approximately a doubling of the ADT throughout the study area. In addition, truck traffic is projected to increase with the Average Daily Traffic. Currently, approximately 4% of MD 45 traffic and 11% of I-83 traffic is truck traffic. With the continuing industrial development,



<p><b>MARYLAND ROUTE 45</b> MD. RTE. 145 TO BELFAST RD.</p>		
<p>1988 A.D.T. / NO-BUILD 2015</p>		
<p>DATE 11 / 90</p>	<p>SCALE 1" = 2000'</p>	<p>FIGURE 10</p>



**MARYLAND ROUTE 45**  
 MD. RTE. 145 TO BELFAST RD.

2015 W/O I-83 INT.  
 2015 W I-83 INT. A.D.T./ BUILD

DATE 11 / 90	SCALE 1" = 2000'	FIGURE 11
-----------------	---------------------	--------------

the truck traffic is expected to grow proportionately to the increase in ADT. The direct connection to I-83 via Ridgebrook Road is expected to reduce the percentage of heavy trucks on MD 45. The truck traffic generated by the Loveton and proposed Highlands Industrial parks would access the interstate via this direct connection and not travel MD 45 to access I-83 via Belfast or Shawan Roads.

The 2015 No-Build volumes reflect a roadway at capacity and indicate the need for additional through lanes in each direction along MD 45 from Shawan Road to Ridgebrook Road with a fifth lane or median to facilitate left turns. Intersection improvements at MD 145, Shawan Road, Quaker Bottom Road, Sparks Road, Lower Glencoe Road and Belfast Road are also proposed to provide the needed additional capacity. The relocation of MD 145 would improve the service and remove circuitous traffic movements in the southern portion of the corridor by providing a direct connection to I-83 via Shawan Road. The interchange with I-83 in the vicinity of its crossing of Thornton Mill Road is proposed to further help relieve congestion along York Road. In addition to removing truck traffic from MD 45, the interchange will service approximately 12,000 vehicles per day. These movements would otherwise have to be handled at either Shawan or Belfast Roads, requiring additional travel along MD 45.

F. *Level-of-Service Analysis*

The quality of traffic flow along a highway segment is measured by the level-of-service (LOS) which is based on a simple grading system. The measure is based on the geometrics, volumes of traffic operating characteristics and typical section of the highway. LOS designations range from LOS "A" (Best) to LOS "F" (Worst or Failing). A LOS of "C" or "D" is generally considered acceptable in

most cases. However, in some instances higher levels of congestion are accepted due to engineering and environmental constraints. Alternatives for the improvements along MD 45, MD 145 and I-83 have been developed to achieve a LOS "D" or better. Table 5 on the following page summarizes the results of the traffic analyses for the various alternatives. The LOS figures are shown for both 1988 (existing) and 2015 (design year).

With 1988 traffic volumes, all but one of the existing intersections operate at a LOS "D" or better throughout the corridor. Only the MD 45/MD 145 intersection operates at a LOS "F". However, projections for the design year of 2015 for the no-build indicate that all but three study area intersections will operate in LOS "F". The results of the intersection traffic analyses are summarized in Table 5. The highway segments between the intersections generally operate satisfactorily based on 1988 traffic volumes. However, as the volumes increase to the 1998 and 2015 projected levels, even these segments of MD 45 will experience decreased efficiency. By 1998, five intersections will be at or above capacity, and by the design year 2015, all but three intersections will be operating above capacity. Moreover, the existing highway geometrics further diminish the roadway capacity.

Analysis of the build alternatives indicate that four through lanes, two in each direction, along MD 45 and MD 145 Relocated are required to relieve most of the failing intersections. In conjunction with intersection improvements such as dedicated turn lanes and signal phasing, the mainline improvements will increase the safety and capacity of MD 45 and MD 145.

Only the MD 45 intersections with existing MD 145, Schilling Road and Shawan Road are directly affected by the proposed MD 145 relocation. By providing a direct connection opposite Shawan Road, approximately 7,000 vehicles per day would be removed from MD 45 between MD 145 and Shawan Road. These trips would merely travel straight through the MD 45/Shawan Road intersection instead of turning left, improving the LOS at the intersection. The direct connection would improve the design levels of service at MD 45/Shawan Road and MD 45/MD 145 by approximately 80% and 100% respectively (Table 5).

The interchange with I-83 and the developer funded roadway (Ridgebrook Road) to provide a connection to MD 45 between Shawan and Belfast roads will further improve the LOS on MD 45 by providing direct access to I-83 for most of the intense development in the middle of the corridor. The improvement in the LOS associated with the interchange construction in conjunction with the mainline MD 45 improvements are outlined in the last column of Table 5. By removing traffic, especially trucks generated by the industrial land uses, other roadways in the area including MD 45 will function more efficiently. The heavy industrial truck traffic would not have to travel a great distance along York Road to access the interstate at either the Belfast or Shawan road interchanges. A level-of-service analysis for the proposed I-83/Ridgebrook Road interchange was performed based on the Highway Capacity Manual. Because of the relatively low peak hour traffic volumes, all of the interchange ramps will function at a LOS of "A" or "B". As shown in figures 10-11a, I-83 handles a large volume of traffic. With or without the interchange at Ridgebrook Road, operating speeds on the interstate are

**TABLE 5**  
**SUMMARY OF INTERSECTION**  
**LEVELS OF SERVICE (LOS)**

MD 45 INTERSECTION	NO-BUILD			BUILD		
	1988	1998	2015	ALT 2/3/5 2015	ALT 4 2015	ALT 2/3/5 ALT 4 2015
MD 145	F(1.39)	F(1.39)	F(2.02)	E	F(2.02)	E
Schilling Rd.	D	D	F(1.19)	E/F	F(1.19)	E/F
Shawan Rd.	D	F(1.23)	F(1.75)	E	F(1.75)	E
McCormick Rd.	A	C	F(1.11)	C	F(1.02)	B
Thornton Mill Rd.	A	E	F(1.46)	D	F(1.29)	C
Phoenix Rd.	A	C	F(1.07)	D	E	B
Loveton Farms Rd.	A	B	E	C	C	A
Loveton Circle	A	A	C	B	B	A
Loveton Farms/ Loveton Circle	A	A	C	A	B	A
Ridgebrook Rd.	N/A	C	F(1.05)	C	F(1.03)	C
Quaker Bottom Rd.	A	C	F(1.10)	E/F(1.0)	F(1.08)	E
Sparks Rd.	A	E	F(1.31)	F(1.16)	F(1.25)	F(1.15)
Lower Glencoe Rd.	A	D	F(1.11)	E	F(1.01)	E
Belfast Rd.	A	F(1.10)	F(1.79)	E	F(1.44)	D

- N/A = Not Applicable  
 - Volume to capacity ratios are given in parenthesis

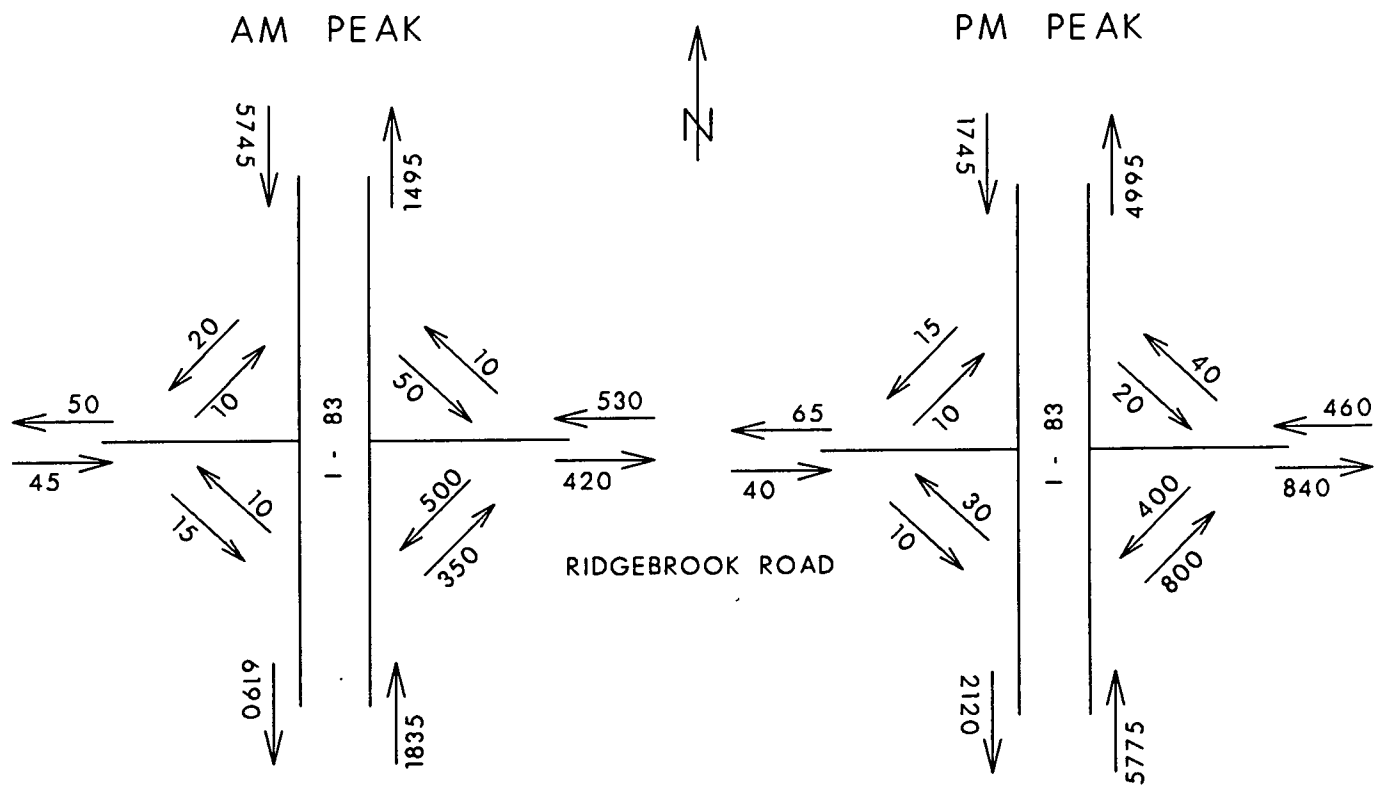
**NOTES:**

1. Level-of-service for Alternatives 2 and 3 apply for both Options 1 and 2.
2. Level-of-service for Alternative 4 apply for all three interchange options.



FIGURE 11 - A

PEAK HOUR TRAFFIC VOLUMES  
I-83 AT PROPOSED INTERCHANGE  
WITH RIDGEBROOK ROAD EXTENDED



106

approaching "forced flow" conditions. For example, during peak hours in the peak direction with 1988 volumes, the operating speeds drop below 33 miles per hour. The addition of a new interchange would represent another conflict point for merging vehicles. The merge and diverge areas for the proposed interchange would suffer a failing LOS. Once the weave with mainline traffic is complete, the volumes of traffic being added to the interstate is not expected to significantly contribute to the steadily declining LOS on I-83. However, even the low volumes being added are expected to greatly benefit the mid-section of the MD 45 corridor. By removing the truck traffic generated by the industrial parks, operations and safety along MD 45 will be improved.

SHA will continue to conduct detailed analyses and submit the data to FHWA in the Interstate Access Point Approval report. This document, addressing the regional impacts of a new interchange, will be completed before an alternative is selected and forwarded into final design.

#### G. *Accident Statistics*

MD 45 experienced a total of 125 accidents during the study period, 1987 through 1989, resulting in an accident rate of 295 accidents per one hundred million vehicle miles (acc/100mvm) of travel. This study period average rate is greater than the statewide average rate (252 acc/100mvm) for similarly designed roadways. The cost of these accidents to the motorists and general public is estimated at \$5.3 million 100mvm of travel. The accidents are itemized below by year and severity.

<u>Severity</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>Total</u>	<u>Rate per 100 MVM</u>	<u>Statewide Rate</u>
Fatal Accidents	2	1	1	4	9.4*	3.0
Injury Accidents	20	20	23	63	148.4	135.7
Property Damage	19	18	21	58	136.7	114.1
Total Accidents	41	39	45	125	294.5*	252.9

\* Significantly higher than the statewide rate.

The rate of fatal accidents, which claimed the lives of six people, is much higher than the statewide average. The fatality rate is attributed to poor highway geometrics leading to insufficient sight distance. York Road within the study limits experiences a propensity for opposite direction and left-turn type collisions, both higher than the statewide average. The accident rates by collision type in comparison to the statewide average accident rates are shown in the following table:

<u>Collision Type</u>	<u>Number of Accidents</u>	<u>Rate</u>	<u>Statewide Average Rate</u>
Angle	27	63.6*	37.1
Rear End	21	49.5	59.2
Fixed Object	21	49.5	48.2
Opposite Direction	12	28.3*	11.4
Sideswipe	1	2.4	16.5
Left Turn	34	80.1*	24.3
Pedestrian	1	2.4	4.7
Parked Vehicle	3	7.1	4.9
Other Collision	5	11.8	32.9

\* Significantly higher than the statewide rate.

There were no High Accident Intersections (HAI) identified within the study corridor during the three year study period. However, there were two High Accident Sections (HAS). The section of MD 45 between MD 145 (Ashland Road) and Shawan Road and the segment between Shawan and Phoenix Roads

experienced accident rates of 558 and 331 acc/100mvm respectively. Both of these rates are higher than the statewide averages of 431 and 258 acc/100mvm. There was a prominence of angle and left turn type collisions attributed to poor highway geometrics and numerous access points in the first segment. The second segment experienced two fatal accidents resulting in a rate of 14.5 acc/100mvm, which is substantially higher than the 3.1 acc/100mvm statewide average. The build alternatives would correct the deficient highway geometrics and improve sight distance throughout much of the corridor.

As traffic volumes increase over time, the existing roadway is likely to experience an increase in the number and severity of accidents. It is anticipated that with no improvements, the roadway will continue to experience an affinity for serious or fatal accidents. The high rate of fatal accidents will still be attributed to the poor highway geometrics. The projected accident rates associated with the build alternatives are shown below.

<u>Alternative</u>	<u>Accident Rate (acc/100mvm)</u>	<u>Total Cost (millions)</u>
No-Build	295	5.3
Alternative 2/3 (five-lane) **	448	4.2
Alternative 2/3 (four-lane)**	343	3.4

\*\* Typical section noted applies to the relocated section between McCormick and Phoenix Roads.

The major reason for the unusually high monetary cost for the No-Build condition is the rate of fatal accidents, which is expected to be triple the statewide average by the design year.

The increase in accident rate is somewhat deceiving due to lack of an accurate database. The proposed five-lane section experiences the highest

109

accident rate of any section currently under state maintenance. However, many of the existing five-lane sections, which these statistics are based on, do not meet the current AASHTO standards. If MD 45 were to be reconstructed as a five-lane section which meets current design standards, the projected accident rate would be reduced. This reduction is primarily due to the decrease in severe and fatal accidents. The accident rates tend to increase due to the changes in roadway character and function. However, with improved geometrics and capacity provided by the build alternatives, the severity of these accidents will be greatly reduced.

#### H. *Associated Improvements*

MD 45 was widened and restriped in 1990 to accommodate a three-lane roadway just north of Shawan Road to the crossing of Western Run. This improvement provides room for a left-turn lane for McCormick Road and the entrance to North Park Office Complex. This intermediate improvement is consistent with the proposed build alternatives and represents maintenance and/or immediate roadway needs.

Baltimore City has completed rehabilitation activities on the Paper Mill Road bridge over the Loch Raven Reservoir east of MD 45. During the reconstruction, Paper Mill Road was closed at the location of the existing bridge, producing a redistribution of traffic patterns within the study corridor. The traffic was being rerouted to enter MD 45 at Phoenix Road. A temporary traffic signal was installed at this intersection, but was removed in February, 1991 when the work was completed.

The developers of the Highlands Industrial Park are constructing a roadway to service the park traffic. The roadway is called Ridgebrook Road and could eventually serve as a link to the proposed interchange at I-83. Ridgebrook Road is entirely the responsibility of the developers and is not to be considered part of the MD 45 proposed construction. The State Highway Administration would not construct the proposed I-83 interchange (Alternative 4) if the developer roadway is not completed. Currently, only a 2,000-foot section of the ultimate roadway has constructed and will be expanded when final development plans for the Highlands Industrial Park are completed. The existing portion of Ridgebrook Road is phase 1 of 3 for the development. The developer anticipates to complete construction of Ridgebrook Road in 3 to 5 years.

III  
ALTERNATES UNDER  
CONSIDERATION

### III. ALTERNATIVES UNDER CONSIDERATION

#### A. *Study Alternatives Presented at the Alternates Meeting*

The Alternates Public Meeting for this project planning study was held at Dulaney Valley High School on Tuesday, June 13, 1989 in Timonium to present the preliminary study alternatives. The study alternatives that were presented included:

1. The No-Build Alternative includes only spot safety improvements and routine maintenance as required. These improvements would be administered by State Highway Administration's District Office in Brooklandville.
2. Alternative 2, as presented, proposed to reconstruct MD 45 as a five-lane undivided roadway with a 13-foot continuous left turn lane from MD 145 to McCormick Road and from Phoenix Road to Ridgebrook Road. Between McCormick and Phoenix Roads, MD 45 would be relocated slightly to the east and consist of a four-lane divided section with a 30-foot raised grass median. The travel lanes along York Road would be 12 feet wide. North of Ridgebrook Road, MD 45 would taper to the existing two-lane facility. Eight-foot shoulders were proposed to improve safety and capacity. Alternative 2 also included the northern relocation of MD 145 to intersect MD 45 opposite Shawan Road. The section would include four 12-foot travel lanes separated by a 13-foot center lane identical to the section proposed on MD 45.



- 113
3. Alternative 3 consisted of the same typical section and limits as Alternative 2, but included a western shift of MD 45 between McCormick and Phoenix Roads. Alternative 3 also included the northern relocation of MD 145 as described above.
  4. Alternative 4 consisted of three options for a new interchange with I-83 in the vicinity of its crossing of Thornton Mill Road. Option 1 proposed a diamond-type interchange at the I-83 crossing of Thornton Mill Road. Option 2 proposed a modified diamond-type interchange at the same location. Option 3 proposed a modified diamond-type interchange approximately 1,500 feet north of Thornton Mill Road.

A project brochure was prepared to describe the project and the study alternatives in detail. Following the Alternates Public Meeting, the project team analyzed the comments received from the neighboring communities. The suggestions and the results of the additional studies are summarized below:

The Greater Sparks-Glencoe Community Council (GSGCC) suggested a three-lane typical section following the general alignment of existing MD 45 between McCormick and Phoenix Roads. The three-lane section does not adequately address the need for capacity improvements. The suggested section, which includes two northbound lanes and one southbound lane, fails to accommodate the design year traffic projections. A capacity analysis shows that the southbound lane is unable to handle more than approximately 1,350 vehicles per lane per hour (VPLPH), whereas the northbound lanes can accommodate approximately 3,500 VPLPH. The design year projected southbound morning

peak hour volumes for this segment of MD 45 range from 1,470 to 1,895. To continue to address the suggested alternative, a five-lane section along the same alignment was studied. Although the alignment differs only slightly from Alternative 2, it has been added as study Alternative 5. Alternative 5 aims to adhere more closely to the existing alignment of existing MD 45, thus reducing some of the right-of-way impacts. Alternative 5 is described in detail later in this section.

The Greater Sparks-Glencoe Community Council and other involved area residents also recommended either a direct connection between Loveton Circle and I-83 or a direct connector road from Loveton Circle to proposed Ridgebrook Road. Either two-lane roadway would help ease traffic congestion and safety concerns along York Road by removing a portion of the traffic generated by the industrial parks. The first concept investigated was a two-lane roadway linking Loveton Circle directly to I-83, just south of Thornton Mill Road. The second concept for the connection proposed a two-lane roadway linking Loveton Circle to Thornton Mill Road, eventually connecting to an interchange with I-83. The third concept proposed a two-lane roadway joining Loveton Circle and Ridgebrook Road, a proposed developer roadway eventually linking MD 45 and I-83. Ridgebrook Road would connect to I-83 with a new interchange in the Thornton Mill Road area as proposed with Alternative 4.

All of the connections involve a crossing, and in some instances more than one crossing, of the Western Run watershed. The topography associated with the watershed is not conducive for roadway design or construction. The steep grades would require a tremendous amount of earthwork in order to construct a safe

115

roadway. For example, the grading impacts scribe as much as a 300-foot band. The normal width of grading impact for a two-lane roadway ranges between 60 and 120 feet. The roadway would have to be constructed on large amounts of fill.

In addition, the bridges necessary to cross Western Run's stream valley would range from 250 to 850 feet depending on the connection option. The direct connection (Concept 1) to I-83 requires a single 850-foot crossing of Western Run. Concept 2, which winds around to connect with Thornton Mill Road, requires a 575-foot crossing of Western Run. Finally, Concept 3, which provides a connection to Ridgebrook Road, requires two crossings of 230 and 270 feet. The structure lengths are based on spanning the stream itself. Although a detailed wetland and floodplain reconnaissance was not completed, the potential impacts are expected to be substantial. Consequently, to avoid the wetland impact, the aforementioned structures would have to be lengthened to span a portion or the entire wetland area.

Several of the connections involve possible residential displacements. Concept 1 would require acquisition of two residences, while Concept 2 would result in four displacements. Concept 3 would not cause any residential displacements. Again, most of these displacements are associated with the grading of the existing topography.

Preliminary construction cost estimates were performed on the three concepts. The costs do not include final design, right-of-way or the cost of a new interchange at I-83. Concept 1 is the most expensive and is estimated to cost \$10.2 million. Concepts 2 and 3 are estimated to cost \$8.7 and \$8.8 million respectively. The results of this study are summarized below.

	<u>Bridge Lengths*</u>	<u>Displacements</u>	<u>Construction Cost</u>
Concept 1	850'	2 residences	\$10.2 million
Concept 2	575'	4 residences	\$8.7 million
Concept 3	230' and 270'	N/A	\$8.8 million

\*Bridge lengths for crossing of waterway itself, no wetlands of floodplain span is included.

Due to the large grading impacts and prohibitive costs, these suggested alignments were not considered prudent alternatives. Another suggestion stemming from the Alternates Meeting was to construct a two-lane roadway parallel to existing MD 45 between McCormick and Phoenix Road. The new section would function as the southbound roadway, while the existing alignment of MD 45 would serve as the northbound lanes. The existing section of MD 45 is substandard and would need to be reconstructed to meet current design characteristics. As described in previous sections this poor geometry leads to increased accident potential and severity. The topography immediately adjacent to the existing roadway dictates that even the two-lane reconstruction would result in severe impacts. In this segment, both sides of existing MD 45 experience large grade changes immediately adjacent to the roadway. Therefore, the majority of the grading impacts are realized immediate to the existing roadway. The two-lane reconstruction has nearly the same grading impacts as the four or five-lane sections because of these steep grade changes. Due to the similar impacts and cost, this suggestion was dropped from further consideration.

Reconstruction of existing MD 145 (Ashland/Paper Mill Roads) was investigated along with several alternate relocated alignments. Existing MD 145

117

consists of several sharp substandard horizontal and vertical curves through the town of Ashland. In order to reconstruct the existing roadway to standards, these curves would have to be removed. Any alignment shifts within the town of Ashland would impact two historic sites. The Ashland School (BA 202) is Possibly National Register Eligible (PNRE) and is located in the northeast quadrant of the Ashland Road/Paper Mill Road intersection. The Ashland Presbyterian Church (BA 201) is Maryland Inventory (M.I.) and is located west of MD 145 approximately 400' south of Ashland/Paper Mill Road intersection. In addition, portions of the Hunters Run subdivision have been constructed adjacent to existing MD 145 and would be impacted by the necessary alignment shifts and/or widening.

MD 145 also crosses Western Run within Loch Raven Reservoir. The existing structure would need to be reconstructed to accommodate the new section and a new alignment. Like the proposed structure along the relocated alignment, this structure would need to span a portion or the entire associated wetland area. Equally as important, a direct connection to I-83 would not be provided by improvements to existing MD 145. Traffic would continue to utilize an already overburdened portion of MD 45 between MD 145 and Shawan Road. Increased left-turn capacity on northbound MD 45 would be required, thus decreasing the effectiveness of the Shawan Road intersection. Therefore, improvements along the existing MD 145 alignment were deemed not feasible and prudent.

Next, a MD 145 realignment to intersect MD 45 opposite Schilling Road or Wight Avenue was investigated. Again, a direct link to I-83 is not provided, thus requiring traffic to utilize the internal roadway networks of the Hunt Valley

Business community to access Shawan Road and eventually the interstate. In this case, traffic would be forced to travel through the Hunt Valley business community and Metropolitan Industrial Park or along MD 45 as today; therefore, this alignment was dropped from consideration. Both of these options were suggested as wetland mitigation options and are more thoroughly discussed in Section IV of this document.

A MD 145 relocation to intersect MD 45 opposite McCormick Road north of Shawan Road was also studied as a mitigation option. This relocation would also not provide a direct connection to I-83, thus requiring traffic to utilize McCormick Road adjacent to Hunt Valley Mall or MD 45 to access the Shawan Road interchange with I-83. McCormick Road, which is currently used as a loop road for the mall would not suffice as this link. This connector would also require a new signal at the intersection of McCormick and York roads. In addition, the traffic at the intersections of McCormick Road/Shawan Road and MD 45/Shawan Road would not be relieved. Therefore, this connection was not considered for further study.

The environmental impacts of these suggested alternatives are discussed in detail in subsequent sections of this document.

The results of the aforementioned studies, as well as engineering refinements, have yielded the alternatives selected for detailed study.

**B. *Alternatives Selected for Detailed Study***

1. *The No-Build Alternative*

Alternative 1, the No-Build Alternative includes previously completed widening/restriping improvements discussed in Section II-H, but

119

would not include any significant improvements that would measurably affect the capacity or safety of MD 45 within the study corridor in the future. Normal maintenance and spot safety improvements, such as signing, marking and resurfacing, could be made as needed; however, the roadway capacity would not be altered.

## 2. Build Alternatives

Although this is one project planning study, the study alternatives will be described in three separate portions.

- The proposed reconstruction of MD 45 from MD 145 (Ashland Road) to Belfast Road.
- The proposed relocation of MD 145 to intersect MD 45 opposite Shawan Road.
- The proposed interchange with I-83 in the vicinity of Thornton Mill Road.

Although described and analyzed separately, the proposed relocation of MD 145 remains part of the build alternatives for mainline MD 45 (Alternatives 2, 3 and 5). The estimated costs for Alternatives 2, 3 and 5 include the MD 145 relocation.

The build alternatives (shown on Figures 14 through 32) proposed within the study area aim to address both projected traffic demand and safety concerns. York Road (MD 45) is classified as a collector roadway, therefore, the roadway would be designed to meet a 40 mile per hour design speed. The design speed is a speed determined for design and correlation of the physical features of a highway or roadway segment that influence vehicle operation. It represents the maximum safe operating

120

speed that can be maintained in that section of roadway when conditions are so favorable that the design features of the highway segment govern. To account for inclement weather and other factors that could diminish these favorable conditions, the posted speed limit is typically 5-10 miles per hour lower than the design speed. The parameters associated with a 40 mile-per-hour design speed ( $D_s=40$ ) are summarized below:

Maximum Horizontal Curve: 10 degrees or 573 foot radius

Maximum Vertical Curve: 8 percent grade

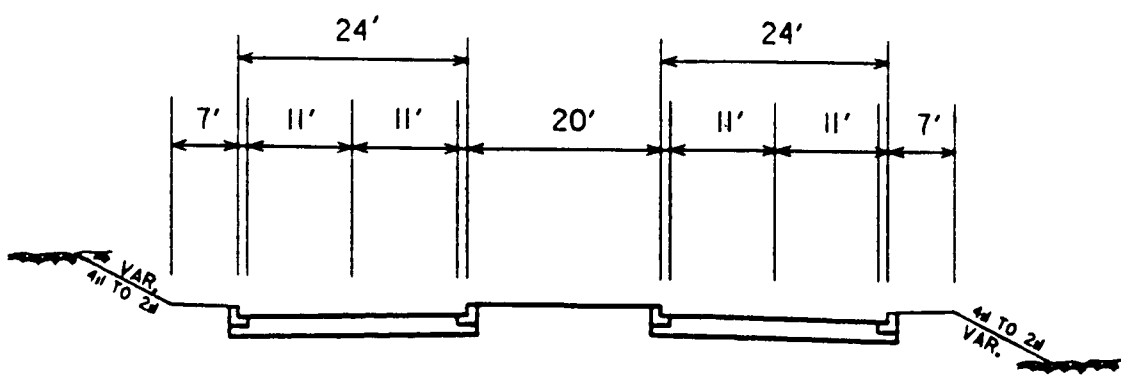
Typical Section Characteristics: Minimum lane width is 11 feet  
and center turn lane width is 12 feet

Maximum Rate of Superelevation: 4 percent for a closed section  
roadway

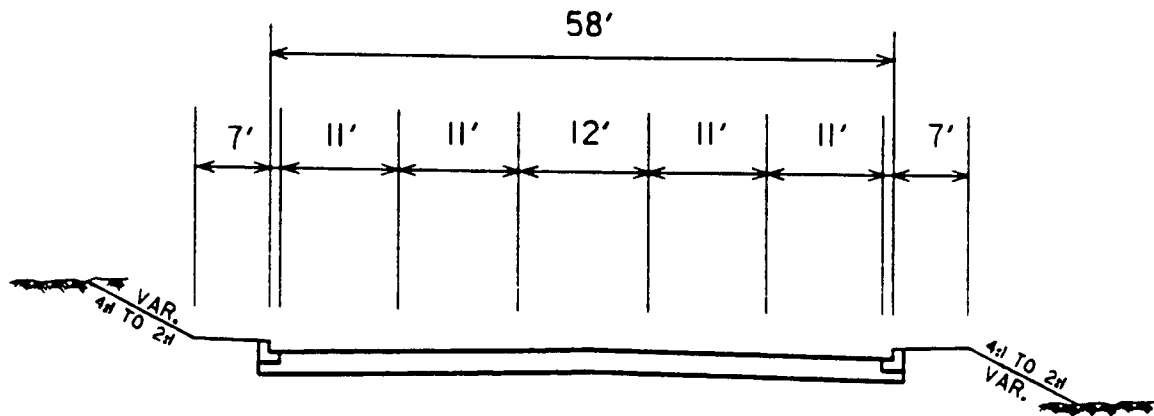
The proposed design parameters along MD 45 meet the minimum parameters described above. In many areas, the proposed horizontal characteristics satisfy a 50 miles-per-hour design speed. The minimum typical section parameters were selected due to the number and extent of impacts throughout the corridor. By reducing the width of the travel lanes and center turn lane, impacts to historic sites/districts, wetland areas, right-of-way, etc. can all be reduced.

A major collector serves as a transportation link between local streets accessing employment and residential centers and major traffic carriers. The proposed design speed represents a discernible improvement





4 LANE DIVIDED  
CLOSED SECTION  
(OPTION 2)



5 LANE  
CLOSED SECTION  
(OPTION 1)

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

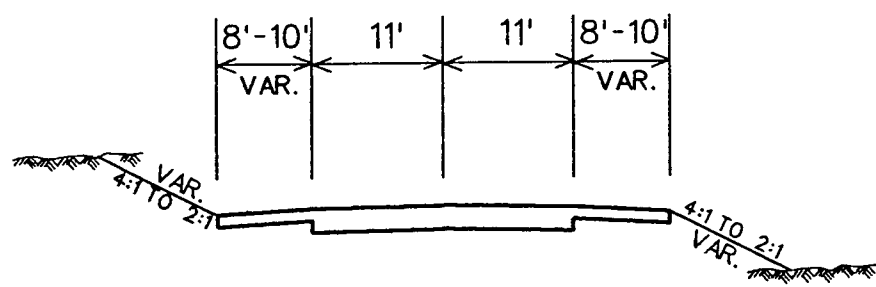
MARYLAND ROUTE 45  
FROM MD 145 TO BELFAST RD

TYPICAL SECTIONS

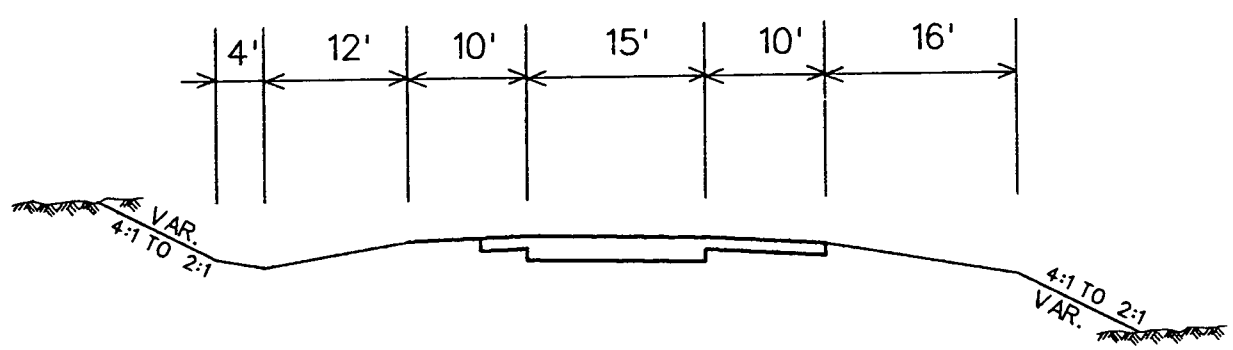
DATE  
1/91

NOT TO SCALE

FIGURE  
12



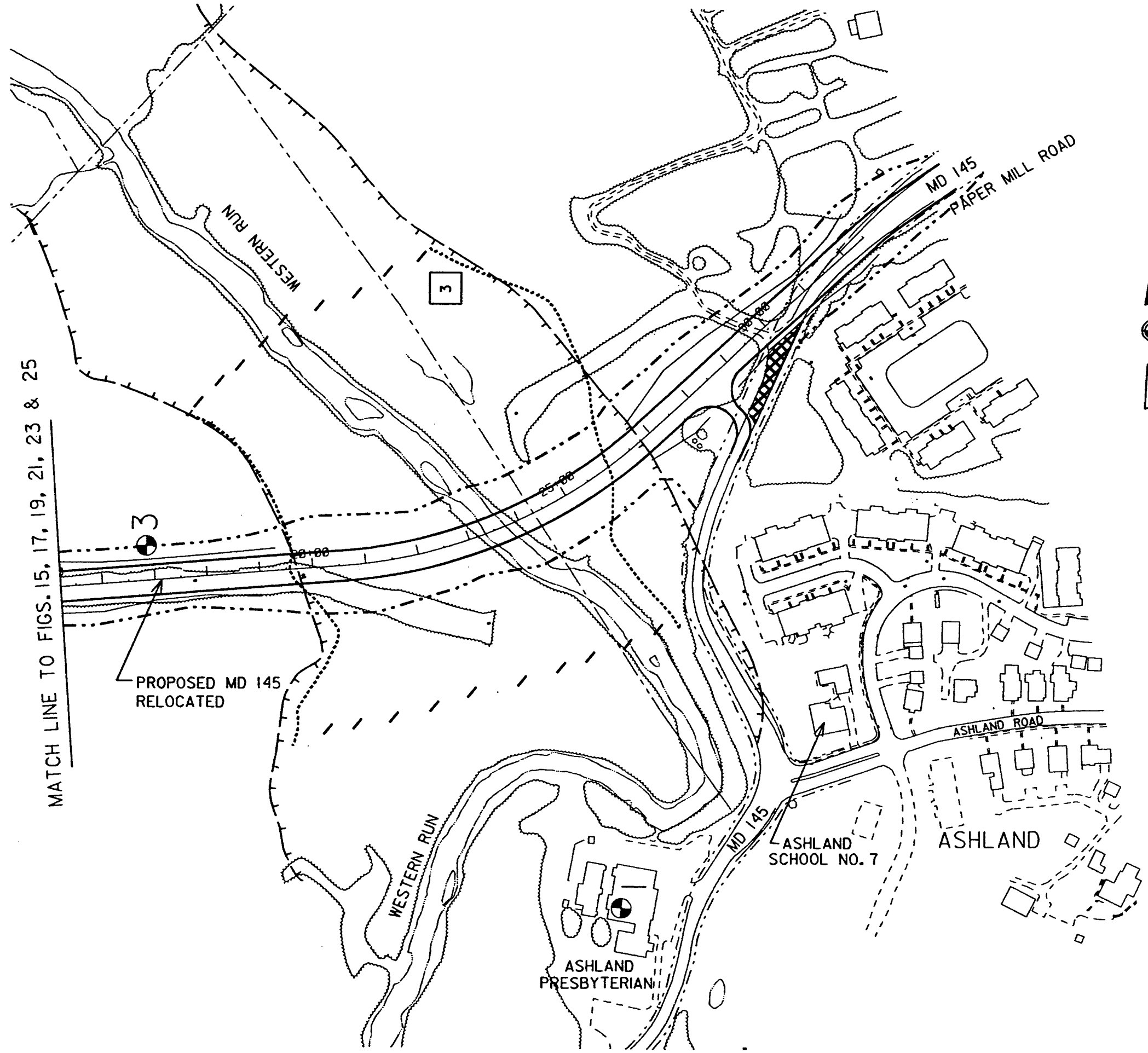
2 LANE  
OPEN SECTION



1 LANE RAMP  
OPEN SECTION

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
TYPICAL SECTIONS		
DATE 1/92	NOT TO SCALE	FIGURE 13

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



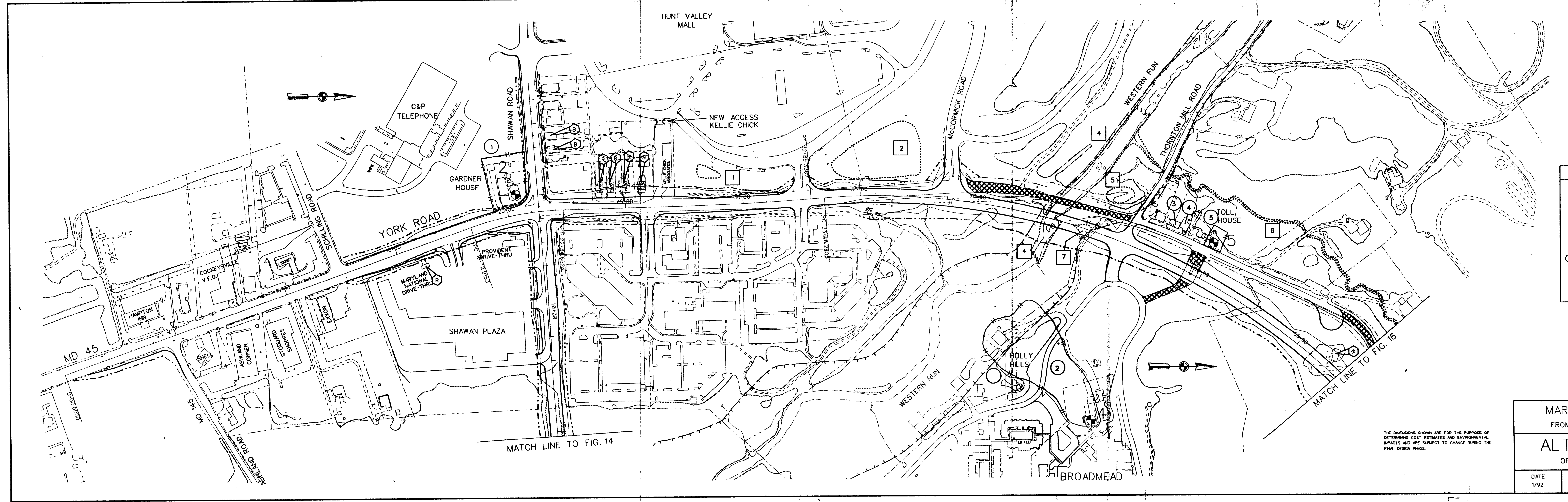
MATCH LINE TO FIGS. 15, 17, 19, 21, 23 & 25

PROPOSED MD 145 RELOCATED

LEGEND	
	PROPOSED ROADWAY
	PROPOSED SHOULDER
	PROPOSED RIGHT-OF-WAY LINE
	EXISTING RIGHT-OF-WAY LINE
	100-YEAR FLOODPLAIN
	WETLAND BOUNDARY
	STREAM
	PROPERTY LINE
	PARK BOUNDARY
	HISTORIC BOUNDARY
	AIR & NOISE RECEPTOR SITES
	REQUIRED RELOCATIONS
	SLOPE LIMITS
	PAVEMENT TO BE REMOVED

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

<p>MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD</p>		
<p>ALTERNATIVES 2, 3 &amp; 5 PROPOSED MD 145 RELOCATED</p>		
<p>DATE 1/92</p>	<p>SCALE 1 IN. = 200 FT.</p>	<p>FIGURE 14</p>



**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- - - 100-YEAR FLOODPLAIN
- ▨ WETLAND BOUNDARY
- STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ⊙ HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- ∠ SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

MARYLAND ROUTE 45  
FROM MD 145 TO BELFAST RD

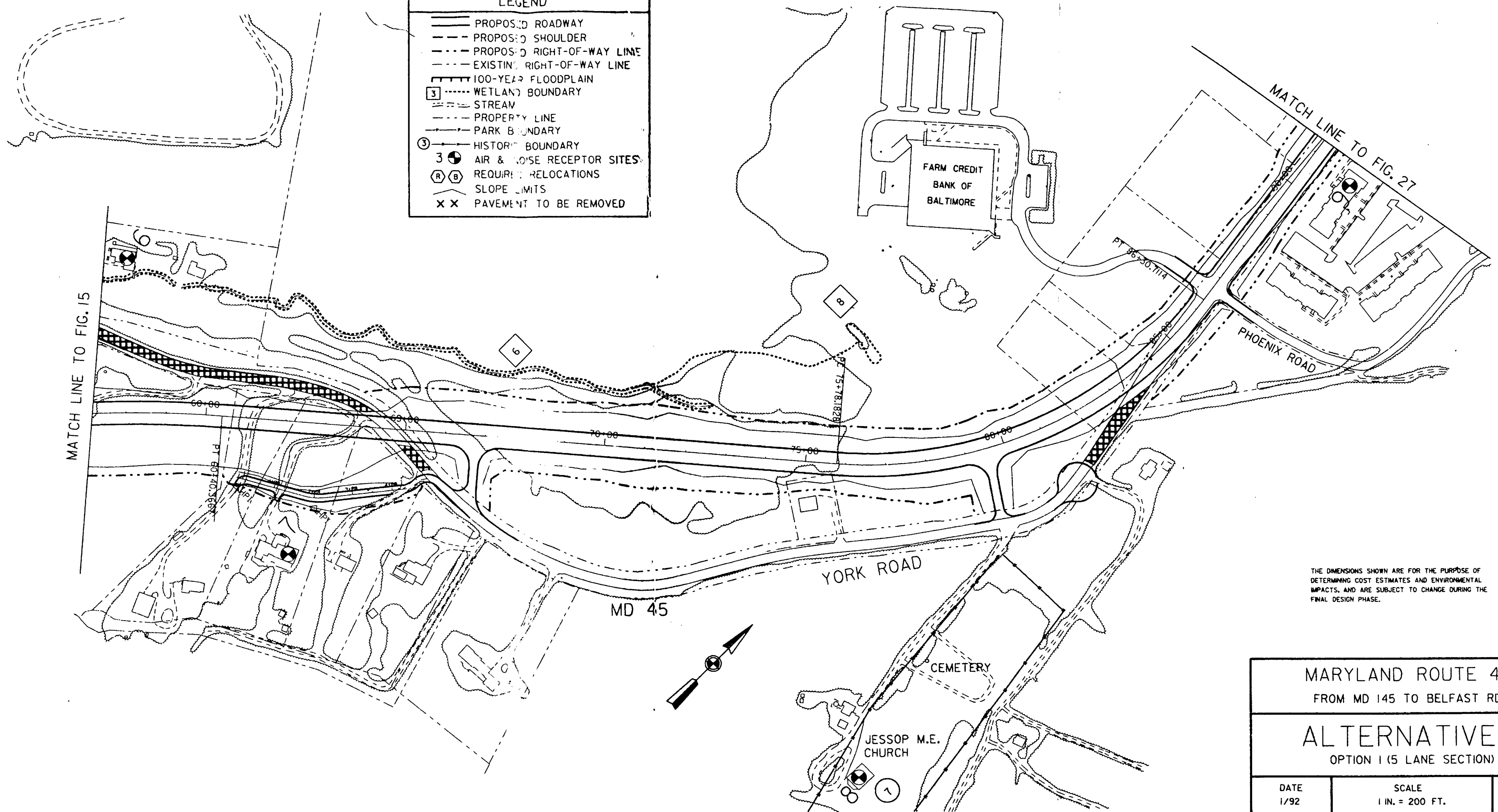
**ALTERNATIVE 2**  
OPTION 1 (5 LANE SECTION)

DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 15
--------------	--------------------------	--------------

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

**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- · - · - PROPOSED RIGHT-OF-WAY LINE
- - - - EXISTING RIGHT-OF-WAY LINE
- ▨ 100-YEAR FLOODPLAIN
- ③ - - - - WETLAND BOUNDARY
- ▨ STREAM
- - - - PROPERTY LINE
- - - - PARK BOUNDARY
- ③ - - - - HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- ▾ SLOPE LIMITS
- × × PAVEMENT TO BE REMOVED

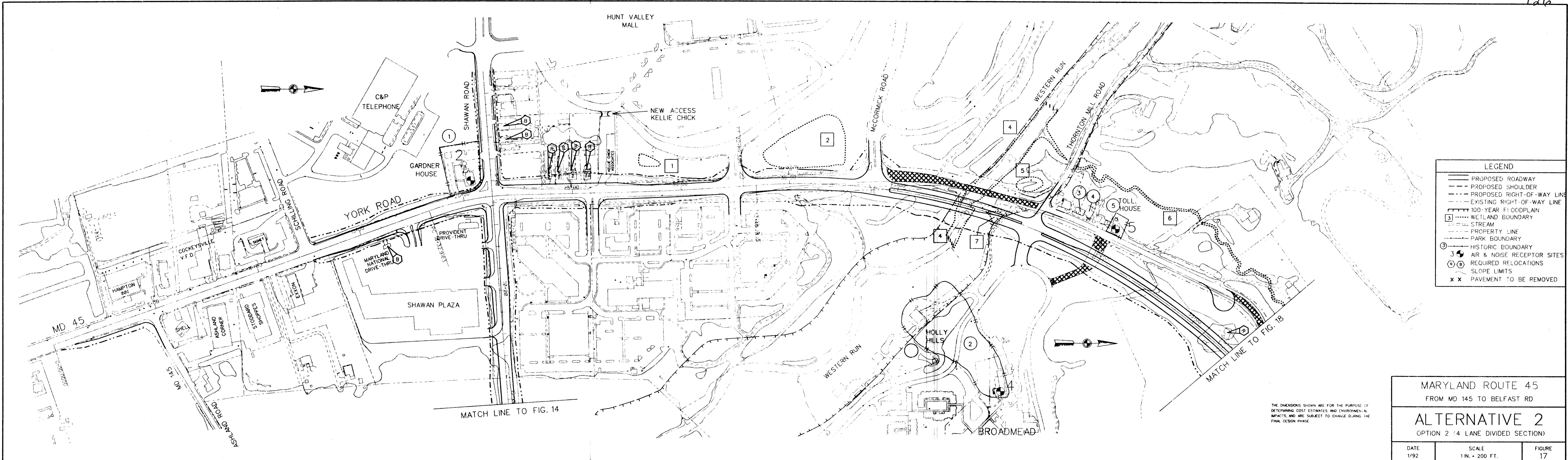


MATCH LINE TO FIG. 15

MATCH LINE TO FIG. 27

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

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
ALTERNATIVE 2 OPTION 1 (5 LANE SECTION)		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 16



**LEGEND**

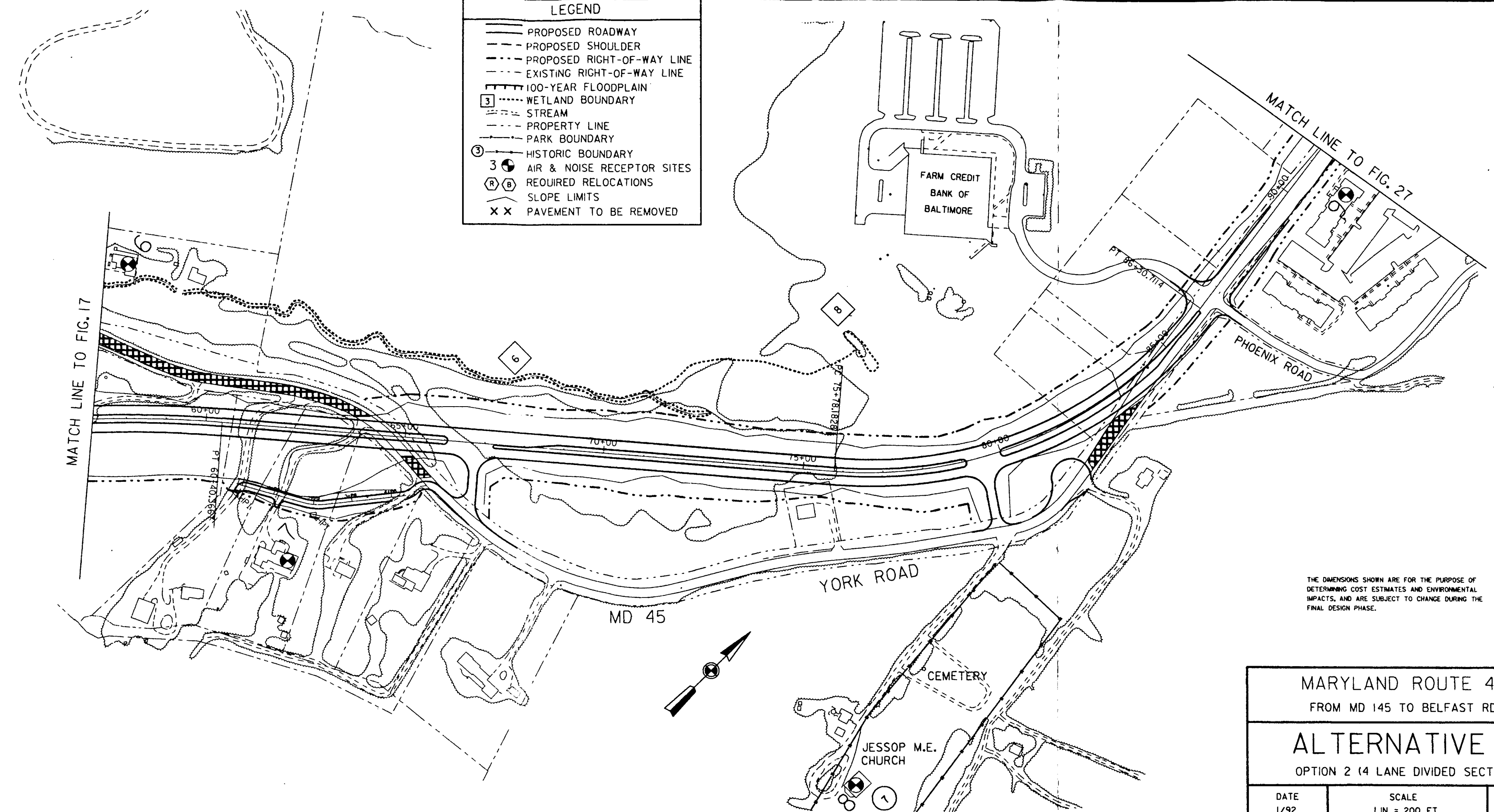
- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- · - · - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- ▨ 100-YEAR FLOODPLAIN
- ③ WETLAND BOUNDARY
- ~ STREAM
- - - PROPERTY LINE
- · - · - PARK BOUNDARY
- ③ HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- ~ SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

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

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
<b>ALTERNATIVE 2</b> OPTION 2 (4 LANE DIVIDED SECTION)		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 17

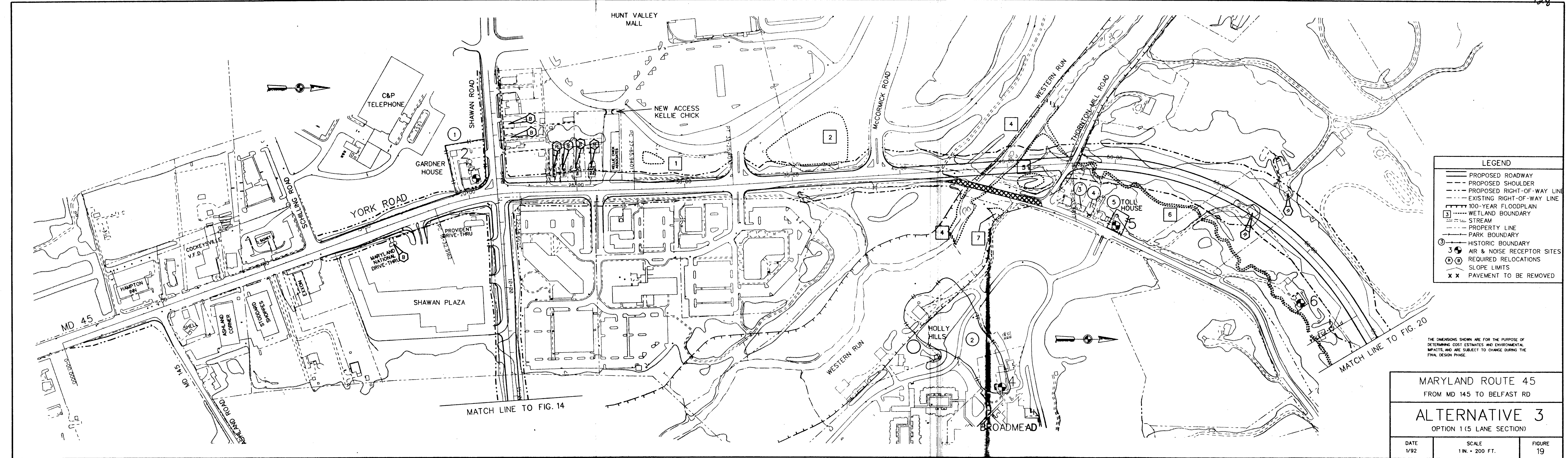
**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- · - · - PROPOSED RIGHT-OF-WAY LINE
- · - · - EXISTING RIGHT-OF-WAY LINE
- ▨ 100-YEAR FLOODPLAIN
- ③ - - - WETLAND BOUNDARY
- · - · - STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ③ - - - HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- ∧ SLOPE LIMITS
- X X PAVEMENT TO BE REMOVED



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

<p><b>MARYLAND ROUTE 45</b> FROM MD 145 TO BELFAST RD</p>		
<p><b>ALTERNATIVE 2</b> OPTION 2 (4 LANE DIVIDED SECTION)</p>		
<p>DATE 1/92</p>	<p>SCALE 1 IN. = 200 FT.</p>	<p>FIGURE 18</p>



LEGEND	
	PROPOSED ROADWAY
	PROPOSED SHOULDER
	PROPOSED RIGHT-OF-WAY LINE
	EXISTING RIGHT-OF-WAY LINE
	100-YEAR FLOODPLAIN
	WETLAND BOUNDARY
	STREAM
	PROPERTY LINE
	PARK BOUNDARY
	HISTORIC BOUNDARY
	AIR & NOISE RECEPTOR SITES
	REQUIRED RELOCATIONS
	SLOPE LIMITS
	PAVEMENT TO BE REMOVED

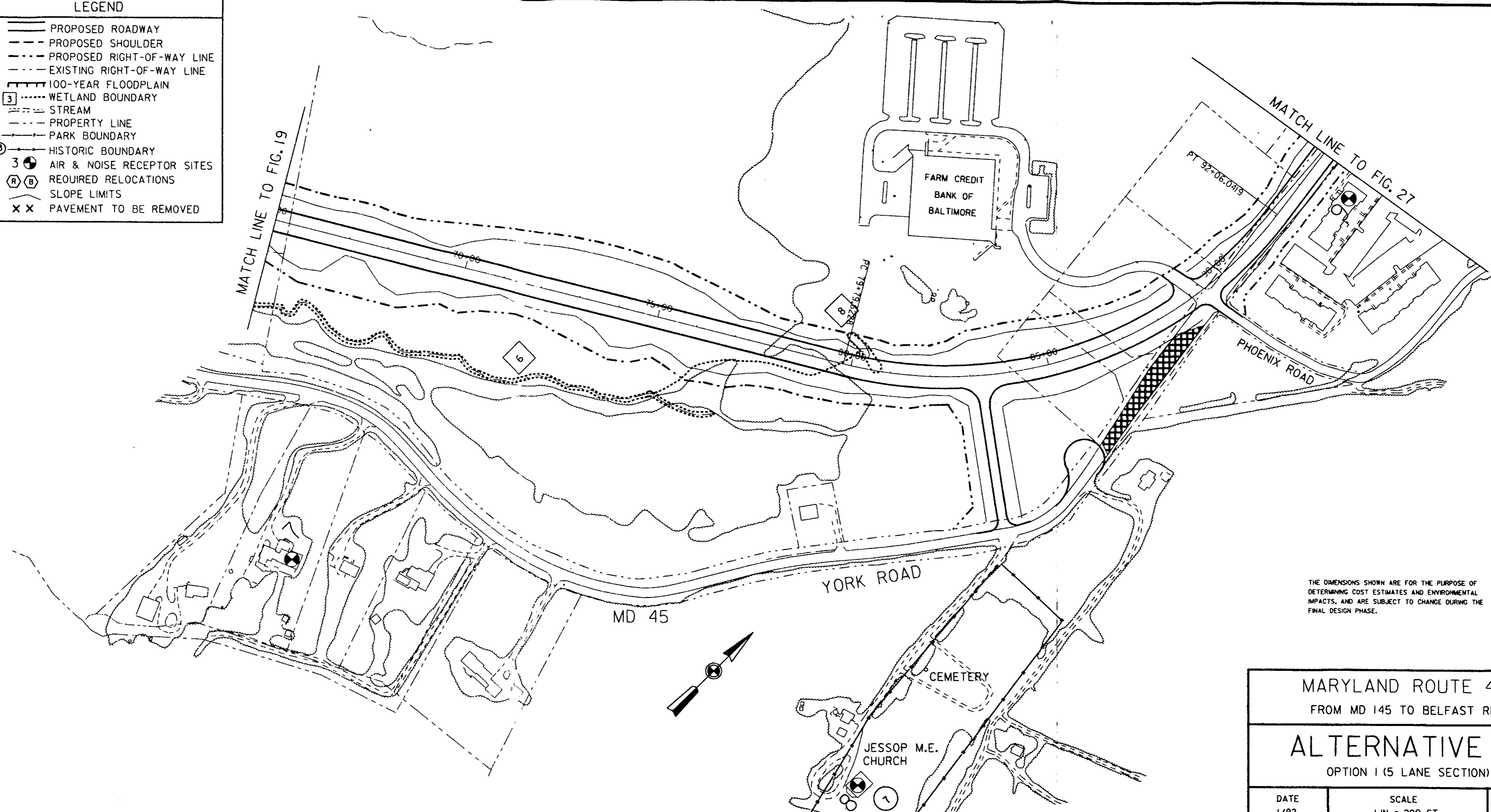
THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
<b>ALTERNATIVE 3</b> OPTION 1 (5 LANE SECTION)		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 19



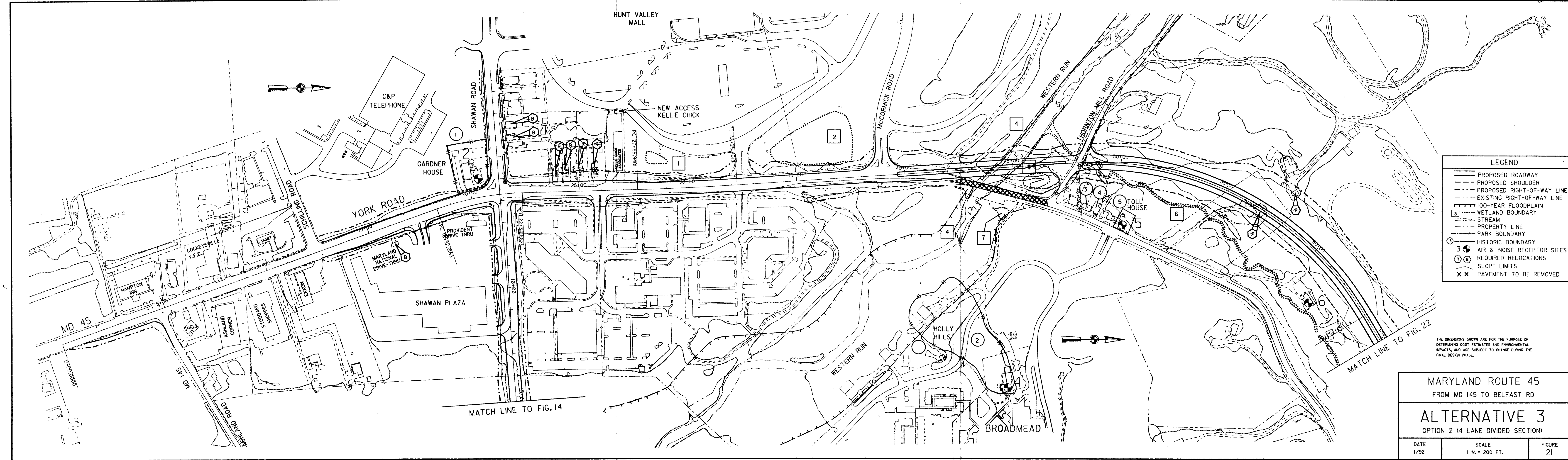
LEGEND

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- ▬ 100-YEAR FLOODPLAIN
- ③ - - - WETLAND BOUNDARY
- - - STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ③ - - - HISTORIC BOUNDARY
- 3 ● AIR & NOISE RECEPTOR SITES
- (R) (B) REQUIRED RELOCATIONS
- - - SLOPE LIMITS
- X X PAVEMENT TO BE REMOVED



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

<p>MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD</p>		
<p><b>ALTERNATIVE 3</b> OPTION 1 (5 LANE SECTION)</p>		
<p>DATE 1/92</p>	<p>SCALE 1 IN. = 200 FT.</p>	<p>FIGURE 20</p>



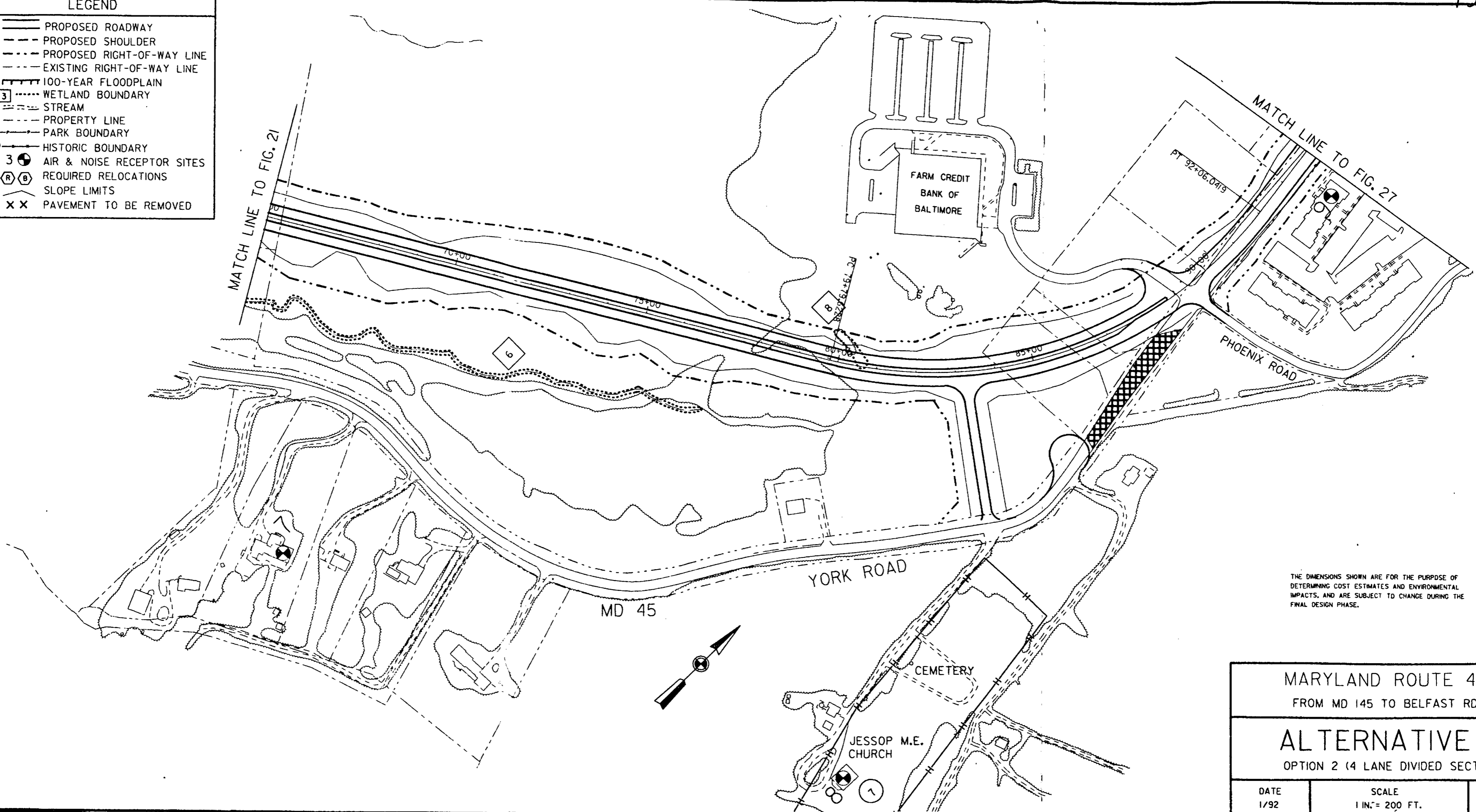
LEGEND	
	PROPOSED ROADWAY
	PROPOSED SHOULDER
	PROPOSED RIGHT-OF-WAY LINE
	EXISTING RIGHT-OF-WAY LINE
	100-YEAR FLOODPLAIN
	WETLAND BOUNDARY
	STREAM
	PROPERTY LINE
	PARK BOUNDARY
	HISTORIC BOUNDARY
	AIR & NOISE RECEPTOR SITES
	REQUIRED RELOCATIONS
	SLOPE LIMITS
	PAVEMENT TO BE REMOVED

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

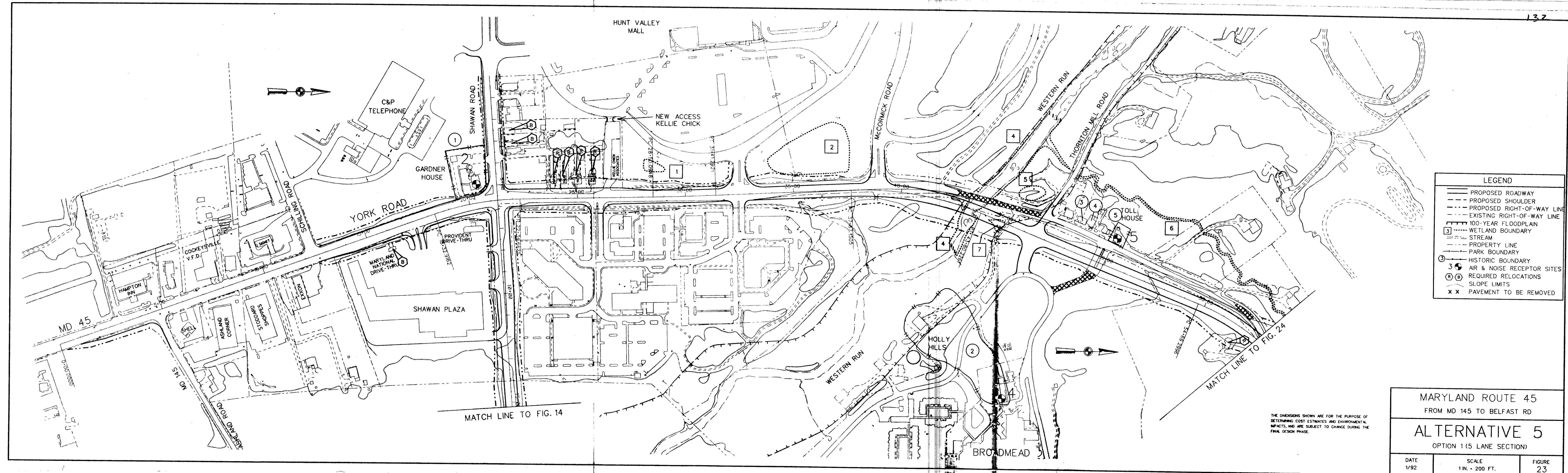
MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
ALTERNATIVE 3 OPTION 2 (4 LANE DIVIDED SECTION)		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 21

**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- · - · - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- ▬ 100-YEAR FLOODPLAIN
- ⊠ WETLAND BOUNDARY
- ▬ STREAM
- - - PROPERTY LINE
- ▬ PARK BOUNDARY
- ③ HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- ⊠ ⊡ REQUIRED RELOCATIONS
- ▬ SLOPE LIMITS
- × × PAVEMENT TO BE REMOVED



<p>MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD</p>		
<p><b>ALTERNATIVE 3</b> OPTION 2 (4 LANE DIVIDED SECTION)</p>		
<p>DATE 1/92</p>	<p>SCALE 1 IN. = 200 FT.</p>	<p>FIGURE 22</p>



**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- - - 100-YEAR FLOODPLAIN
- [3] WETLAND BOUNDARY
- ~ STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ③ HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- (R/B) REQUIRED RELOCATIONS
- △ SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
<b>ALTERNATIVE 5</b> OPTION 1 (5 LANE SECTION)		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 23

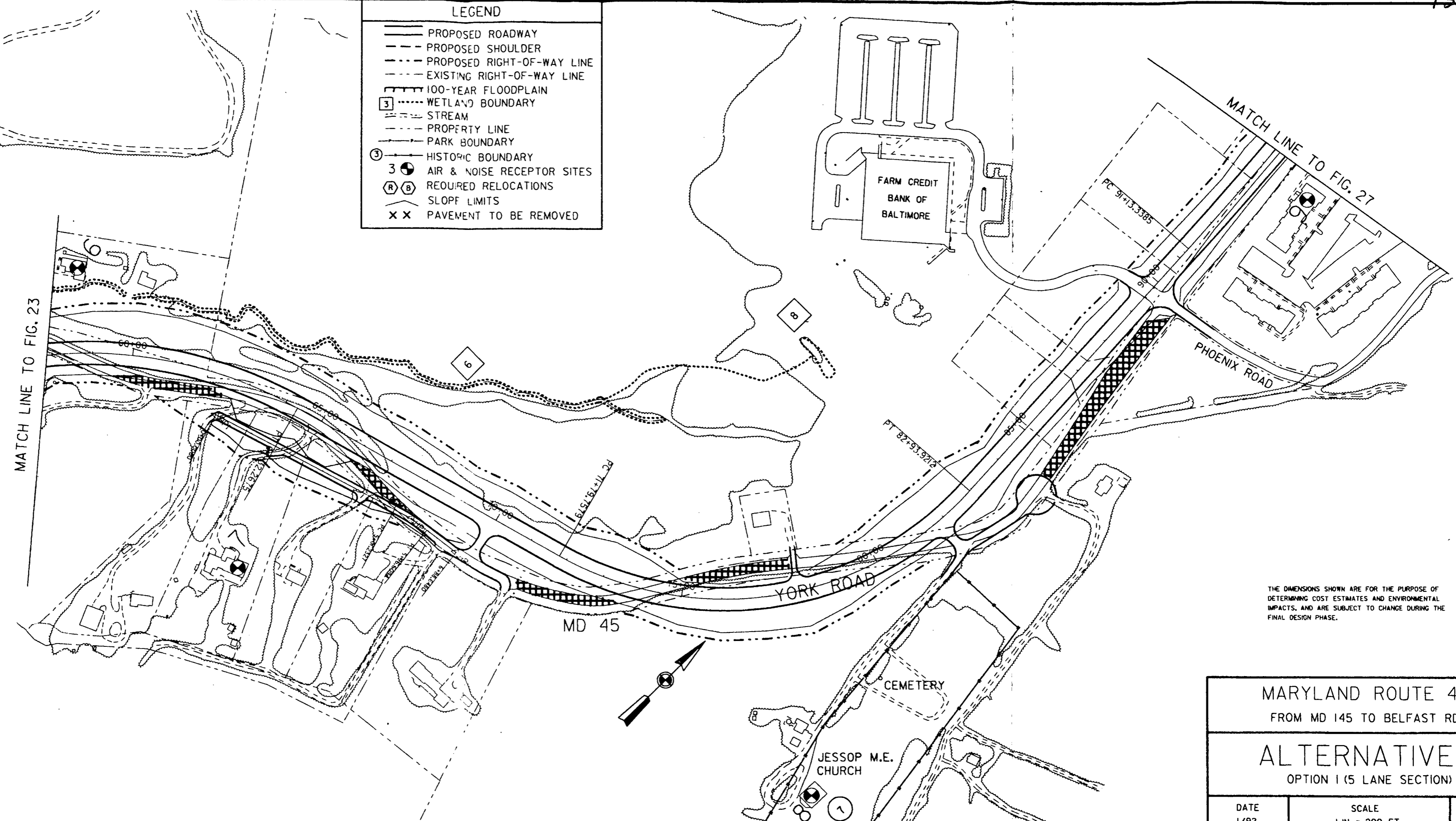
THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.

**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- · - · - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- · - · - 100-YEAR FLOODPLAIN
- ③ - · - · - WETLAND BOUNDARY
- · - · - STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ③ - - - HISTORIC BOUNDARY
- 3 ● AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- ∧ SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

MATCH LINE TO FIG. 23

MATCH LINE TO FIG. 27

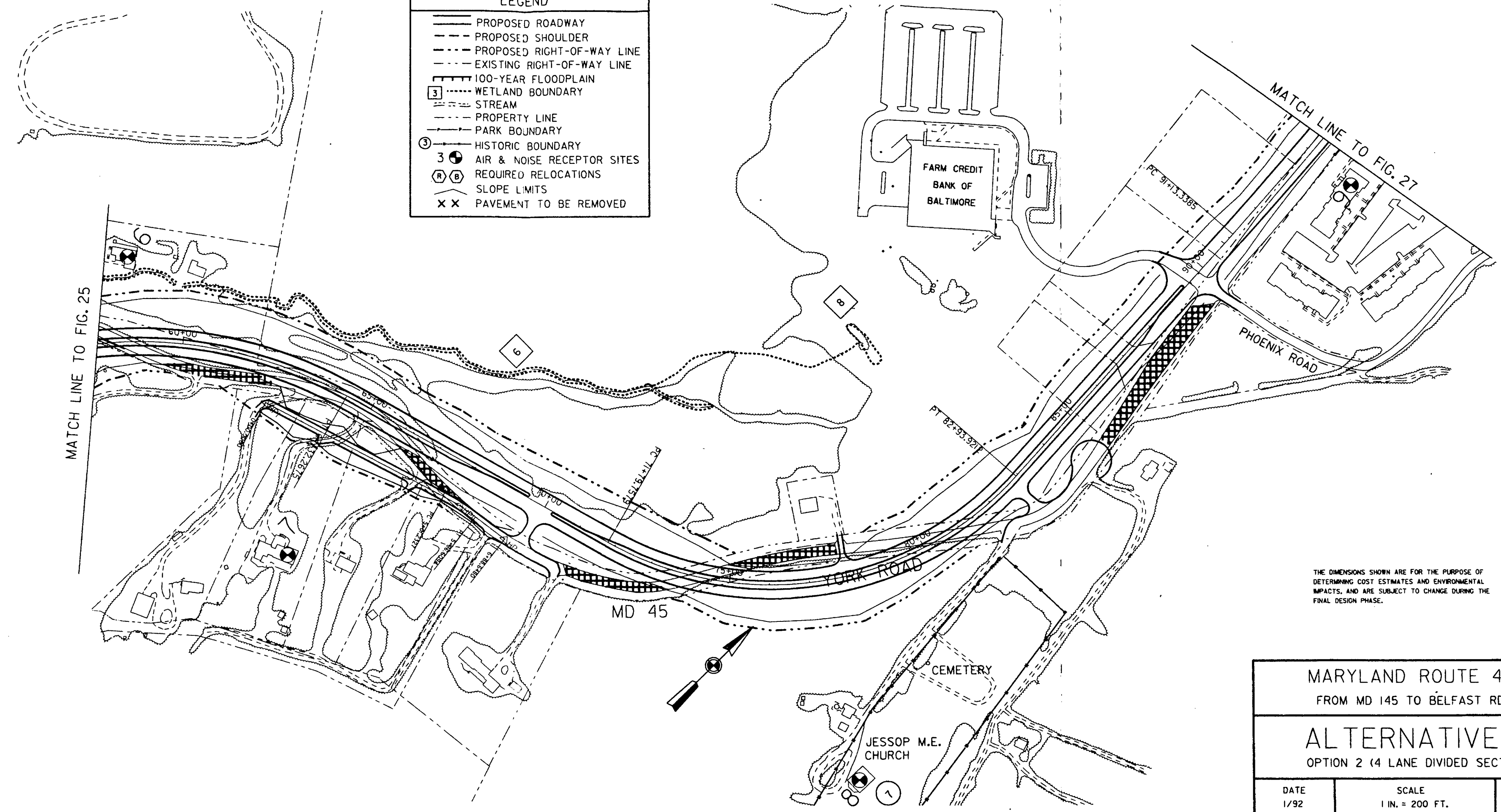


THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
ALTERNATIVE 5 OPTION 1 (5 LANE SECTION)		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 24

**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- · - · - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- ▨ 100-YEAR FLOODPLAIN
- ⊠ WETLAND BOUNDARY
- ~ STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ⊙ HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- ⊠ REQUIRED RELOCATIONS
- ⊠ SLOPE LIMITS
- × × PAVEMENT TO BE REMOVED



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

<p>MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD</p>		
<p><b>ALTERNATIVE 5</b> OPTION 2 (4 LANE DIVIDED SECTION)</p>		
<p>DATE 1/92</p>	<p>SCALE 1 IN. = 200 FT.</p>	<p>FIGURE 26</p>

MATCH LINE TO FIGS. 16, 18, 20, 22, 24 & 26

MATCH LINE TO FIG. 28

LOVETON BUSINESS CENTER

UPS

JMT

BECTON DICKINSON

EIL INSTRUMENTS INC

DIECRAFT

PROPOSED HIGHLANDS INDUSTRIAL PARK

MD 45

YORK ROAD

LOVETON FARMS ROAD

LOVETON FARMS ROAD

LOVETON

UTILITY EASEMENTS

APPROXIMATE HAZARDOUS WASTE SUPERFUND SITE BOUNDARY

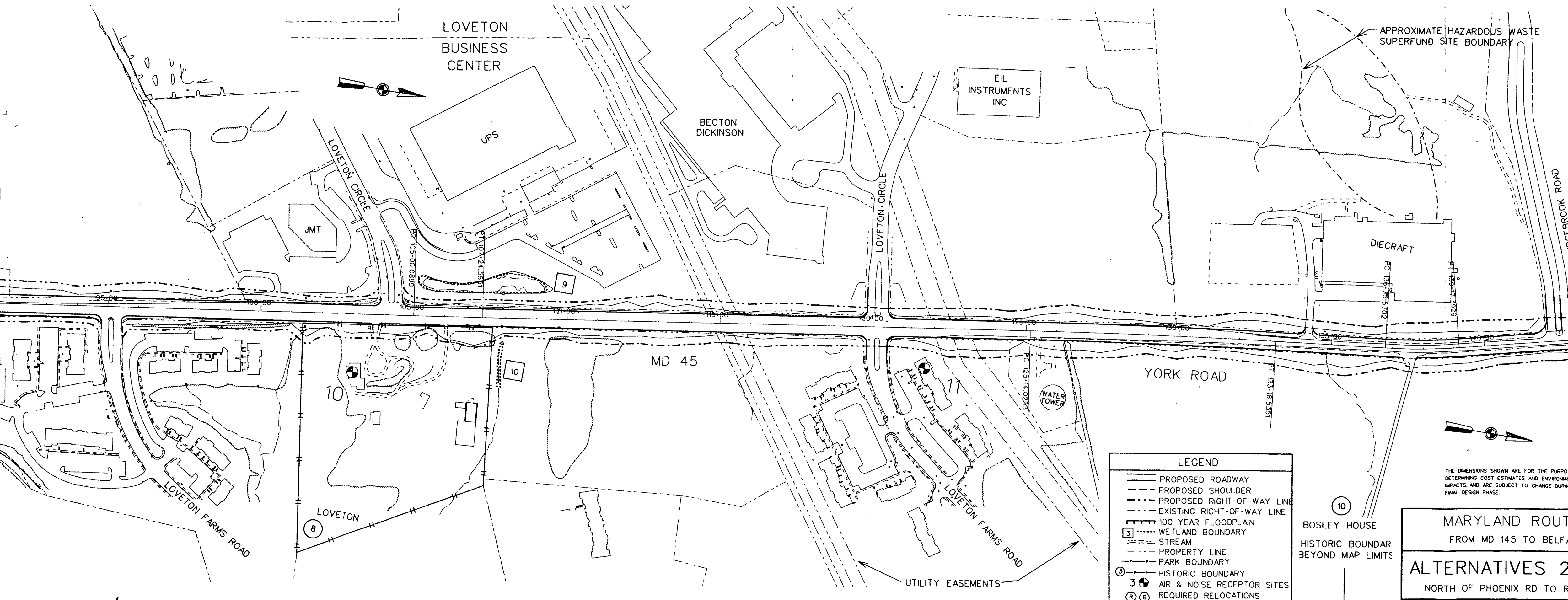


LEGEND	
	PROPOSED ROADWAY
	PROPOSED SHOULDER
	PROPOSED RIGHT-OF-WAY LINE
	EXISTING RIGHT-OF-WAY LINE
	100-YEAR FLOODPLAIN
	WETLAND BOUNDARY
	STREAM
	PROPERTY LINE
	PARK BOUNDARY
	HISTORIC BOUNDARY
	AIR & NOISE RECEPTOR SITES
	REQUIRED RELOCATIONS
	SLOPE LIMITS
	PAVEMENT TO BE REMOVED

10  
BOSLEY HOUSE  
HISTORIC BOUNDAR  
BEYOND MAP LIMITS

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

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
ALTERNATIVES 2, 3 & 5 NORTH OF PHOENIX RD TO RIDGEBROOK RD		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 27



**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- - - 100-YEAR FLOODPLAIN
- ③ WETLAND BOUNDARY
- STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ③ HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- - - SLOPE LIMITS
- × × PAVEMENT TO BE REMOVED

MATCH LINE TO FIG. 27

MATCH LINE TO FIG. 29

SPARKS - GLENCOE HISTORIC DISTRICT

PROPOSED STREAM RELOCATION BETWEEN APPROXIMATELY STA. 159+00 AND STA. 163+25

19 HUFF HOUSE (HISTORIC SITE BEYOND MAP LIMITS)

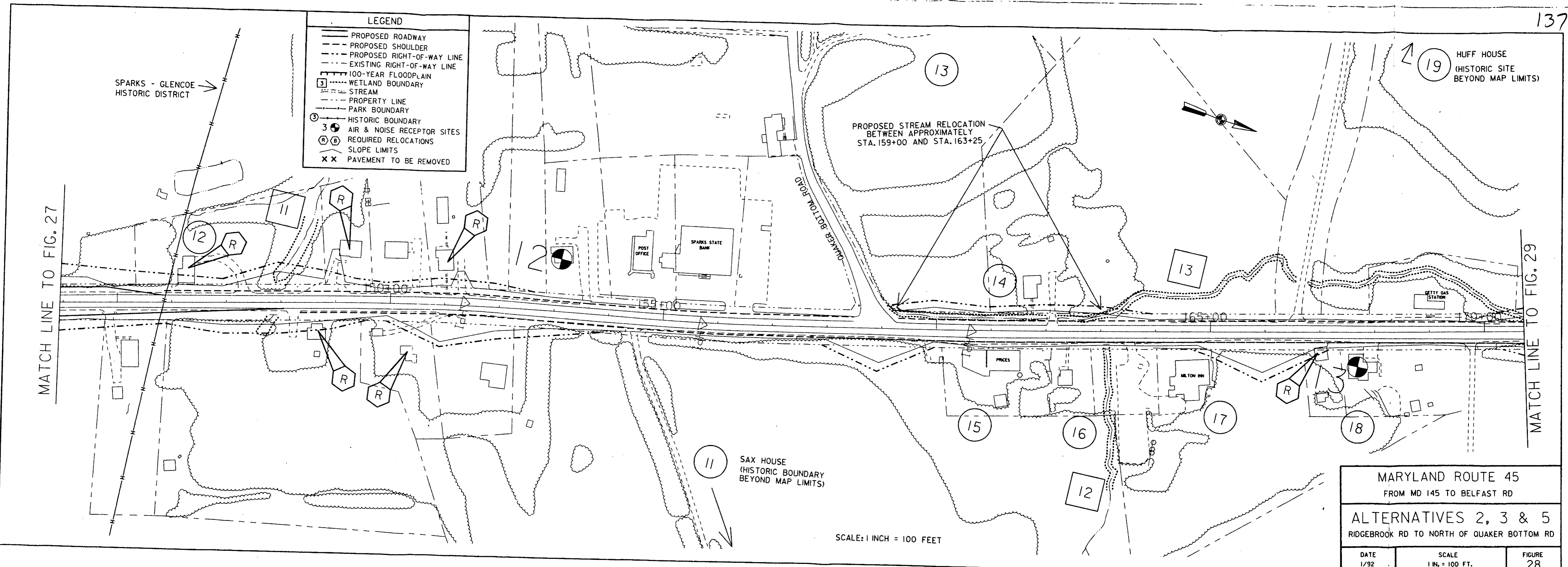
11 SAX HOUSE (HISTORIC BOUNDARY BEYOND MAP LIMITS)

SCALE: 1 INCH = 100 FEET

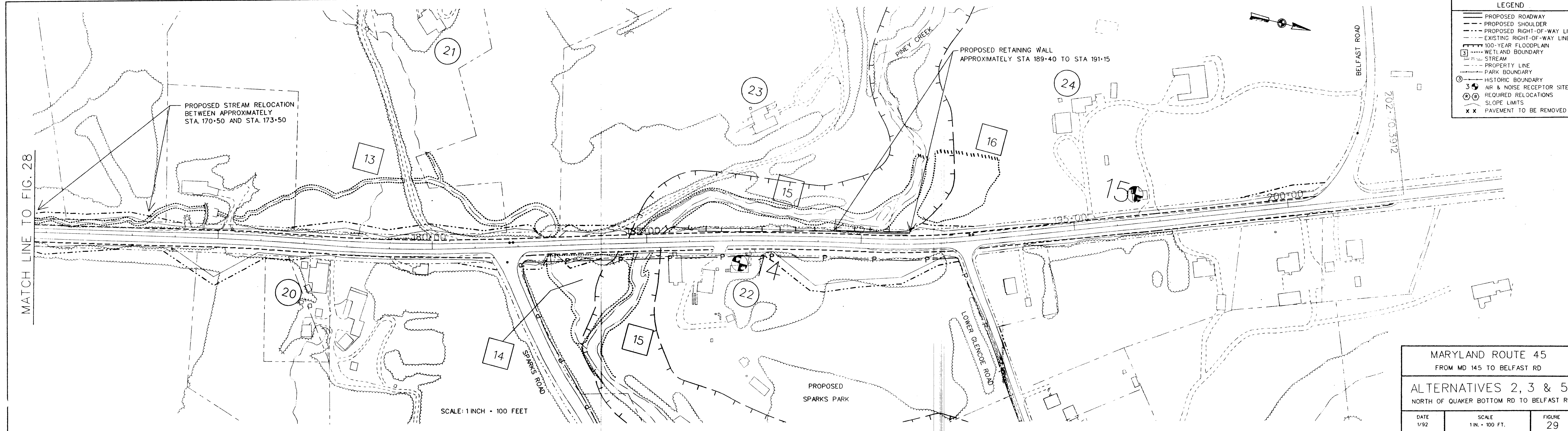
**MARYLAND ROUTE 45**  
FROM MD 145 TO BELFAST RD

**ALTERNATIVES 2, 3 & 5**  
RIDGEBROOK RD TO NORTH OF QUAKER BOTTOM RD

DATE 1/92	SCALE 1 IN. = 100 FT.	FIGURE 28
--------------	--------------------------	--------------







MATCH LINE TO FIG. 28

PROPOSED STREAM RELOCATION  
BETWEEN APPROXIMATELY  
STA. 170+50 AND STA. 173+50

PROPOSED RETAINING WALL  
APPROXIMATELY STA 189+40 TO STA 191+15

SCALE: 1 INCH = 100 FEET

PROPOSED  
SPARKS PARK

LEGEND	
	PROPOSED ROADWAY
	PROPOSED SHOULDER
	PROPOSED RIGHT-OF-WAY LINE
	EXISTING RIGHT-OF-WAY LINE
	100-YEAR FLOODPLAIN
	WETLAND BOUNDARY
	STREAM
	PROPERTY LINE
	PARK BOUNDARY
	HISTORIC BOUNDARY
	AIR & NOISE RECEPTOR SITES
	REQUIRED RELOCATIONS
	SLOPE LIMITS
	PAVEMENT TO BE REMOVED

MARYLAND ROUTE 45  
FROM MD 145 TO BELFAST RD

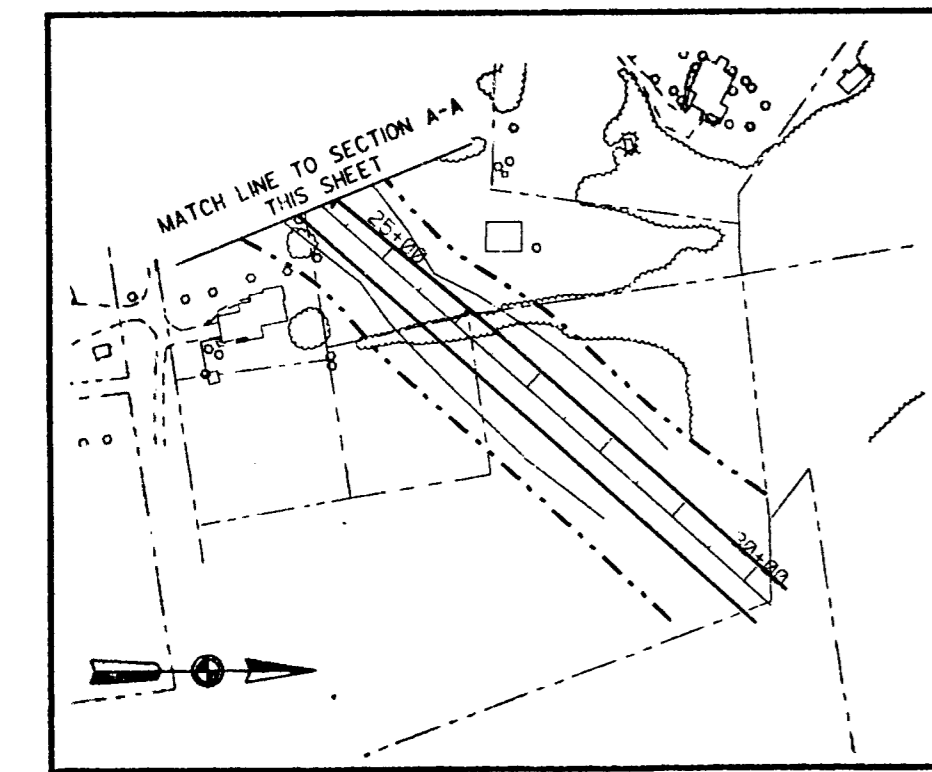
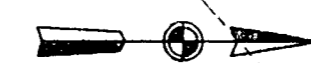
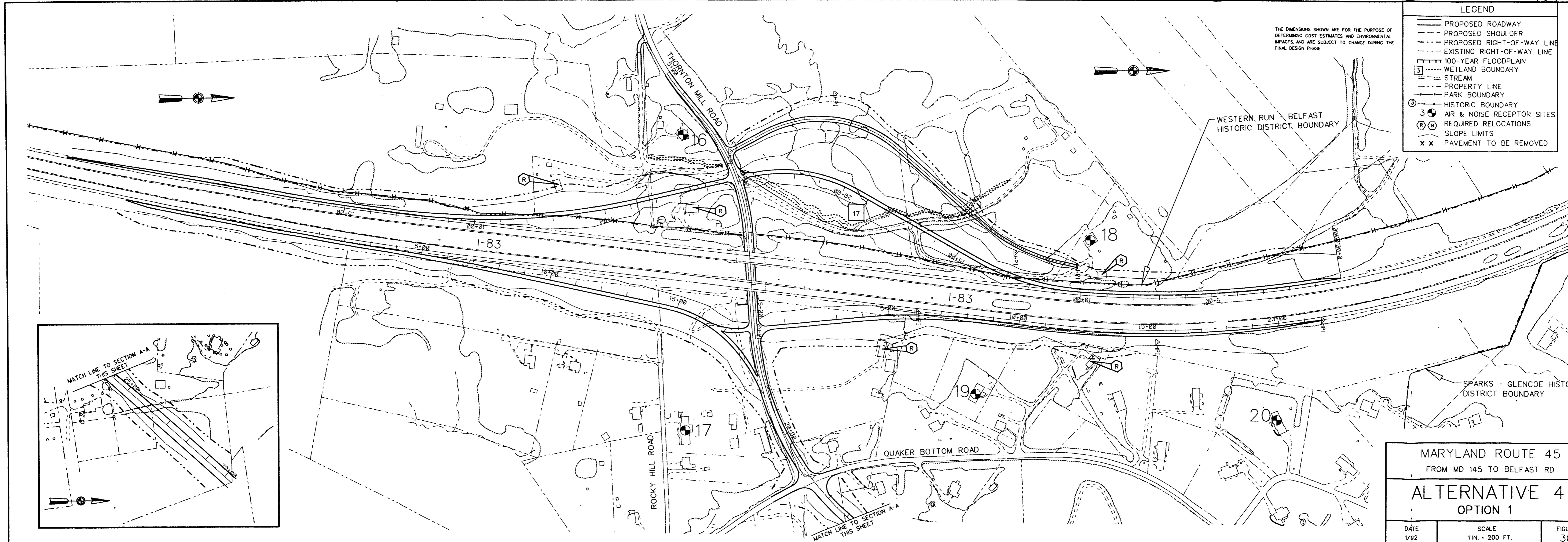
ALTERNATIVES 2, 3 & 5  
NORTH OF QUAKER BOTTOM RD TO BELFAST RD

DATE 1/92	SCALE 1 IN. = 100 FT.	FIGURE 29
--------------	--------------------------	--------------

**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- ▬ 100-YEAR FLOODPLAIN
- ⊠ WETLAND BOUNDARY
- STREAM
- PROPERTY LINE
- PARK BOUNDARY
- ③ HISTORIC BOUNDARY
- 3 ● AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

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

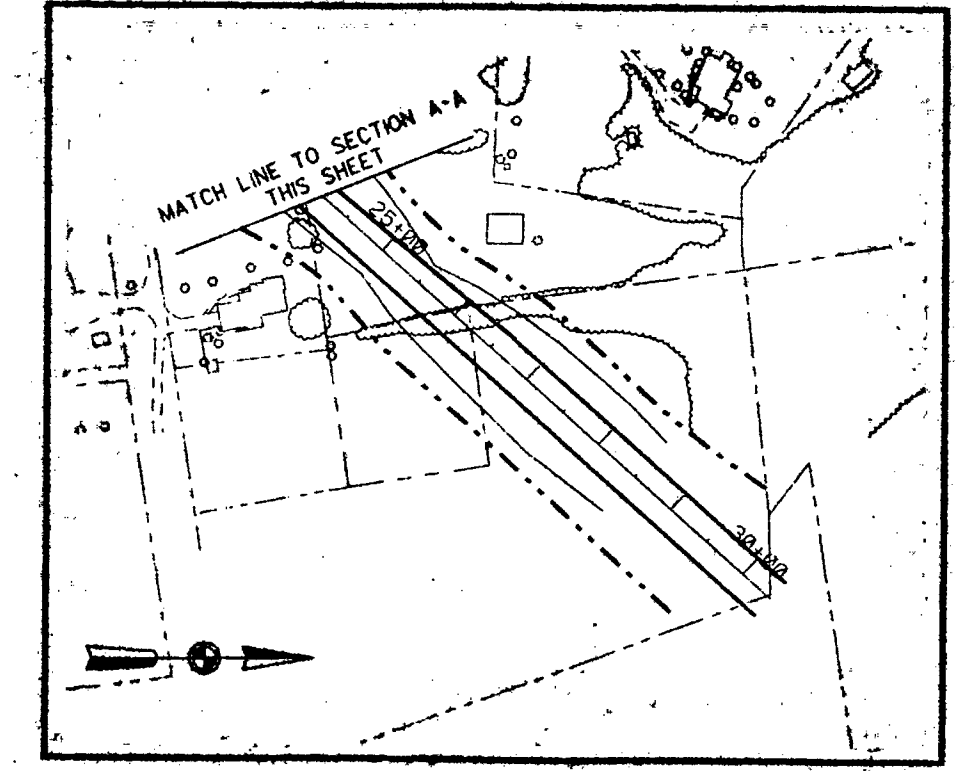
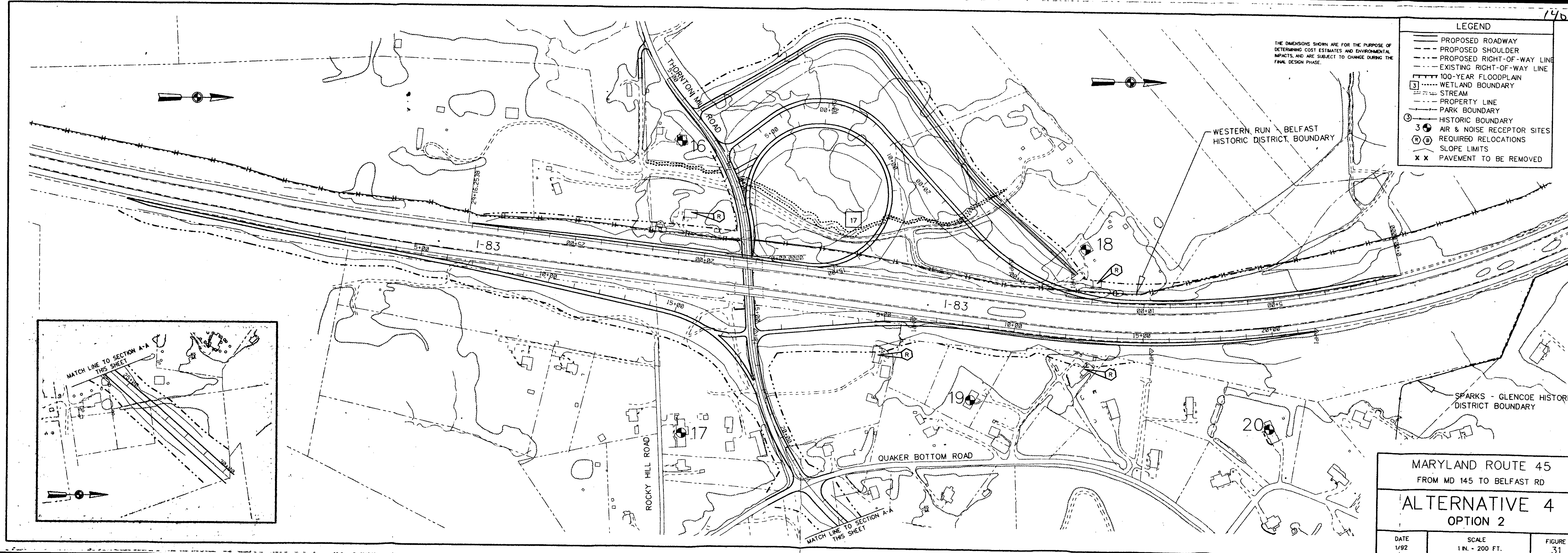


MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
<b>ALTERNATIVE 4 OPTION 1</b>		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 30

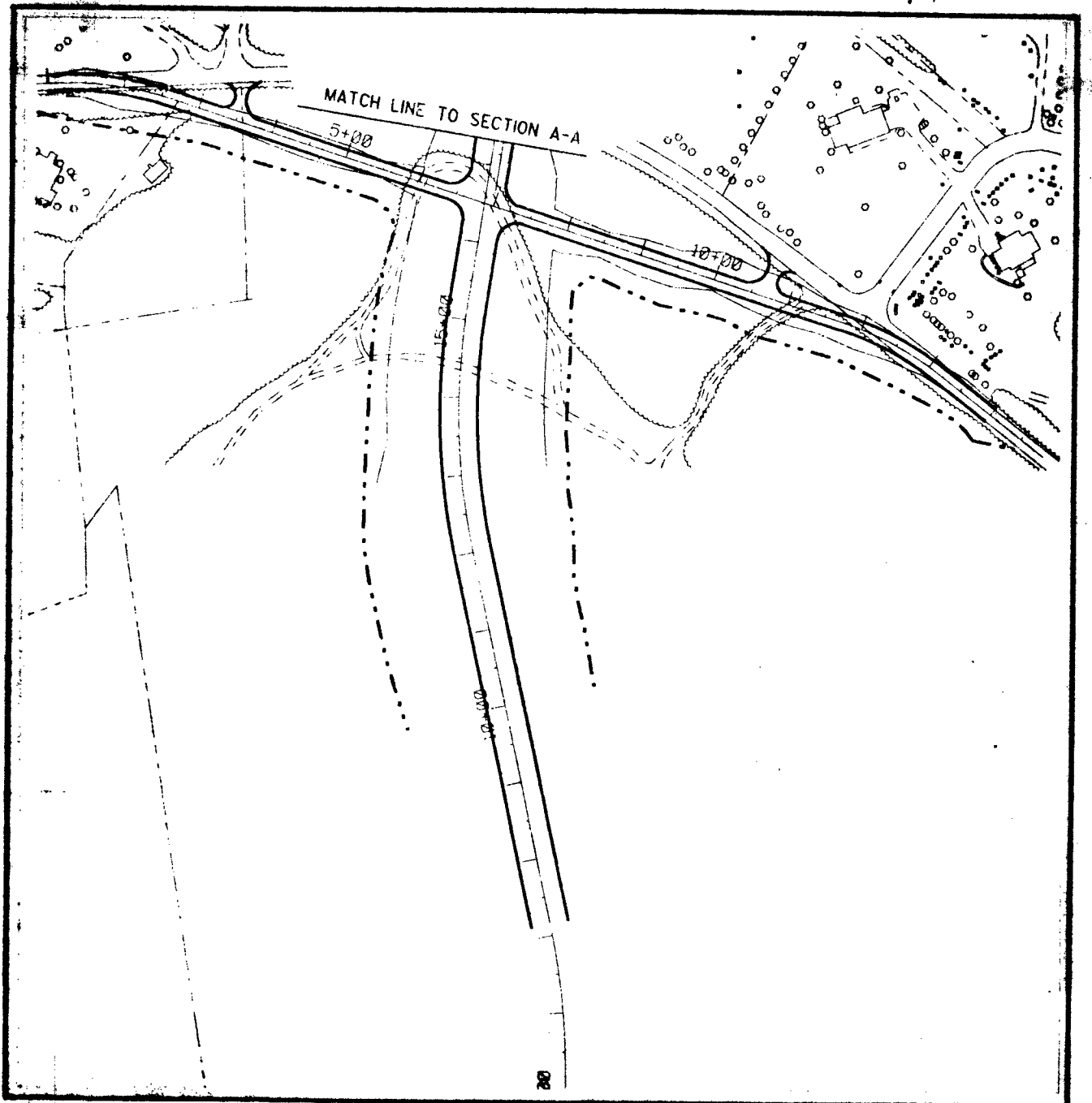
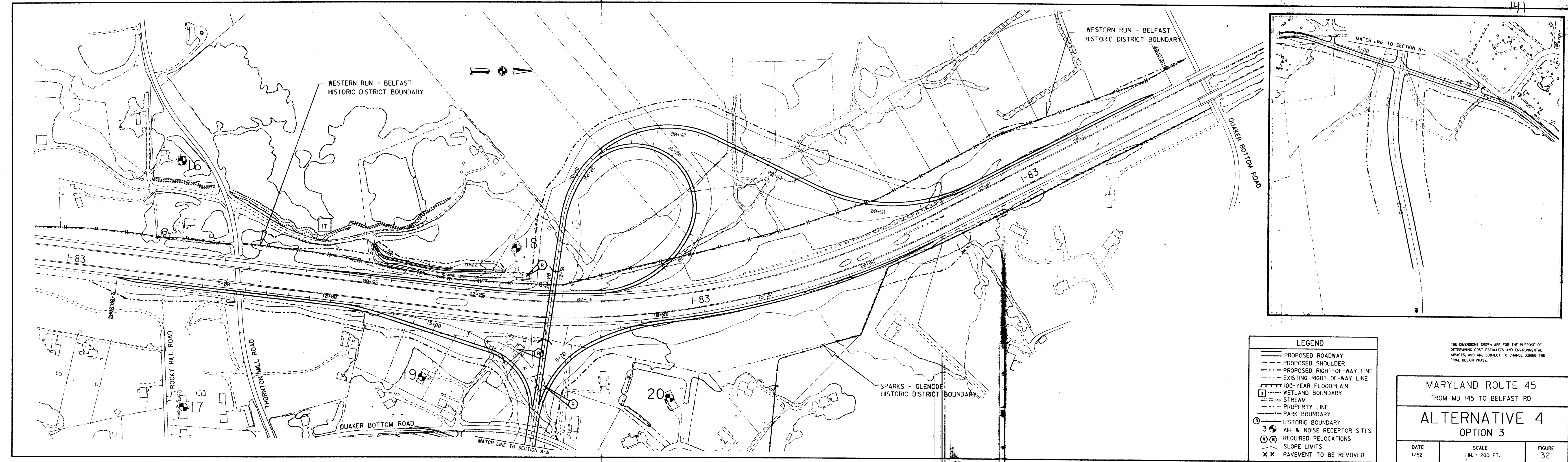
**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- ||||| 100-YEAR FLOODPLAIN
- 3- - - WETLAND BOUNDARY
- STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ③ - - - HISTORIC BOUNDARY
- 3 ⊕ AIR & NOISE RECEPTOR SITES
- (R) (B) REQUIRED RELOCATIONS
- - - SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

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



<b>MARYLAND ROUTE 45</b> FROM MD 145 TO BELFAST RD		
<b>ALTERNATIVE 4</b> <b>OPTION 2</b>		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 31



**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - - PROPOSED RIGHT-OF-WAY LINE
- - - - EXISTING RIGHT-OF-WAY LINE
- ~~~~~ 100-YEAR FLOODPLAIN
- ..... STREAM
- ..... PROPERTY LINE
- - - - PARK BOUNDARY
- ③ HISTORIC BOUNDARY
- ⊙ AIR & NOISE RECEPTOR SITES
- ⊙ REQUIRED RELOCATIONS
- SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

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

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
<b>ALTERNATIVE 4 OPTION 3</b>		
DATE 1/92	SCALE 1 IN. = 200 FT.	FIGURE 32

over the existing conditions along MD 45. In several sections of existing MD 45, the vertical geometry has a design speed of less than 30 miles per hour. Combined with portions of substandard horizontal alignment, lack of adequate shoulders and increasing traffic congestion, York Road will be unable to safely handle the projected traffic demand.

All of the build alternatives meet or exceed the standards contained in the American Association of State Highway and Transportation Officials' "A Policy on Geometric Design of Highways and Streets". This publication is fashioned to guide the engineer in the design of a safe and efficient highway and is used throughout the United States as a guideline for highway design.

Mainline MD 45 (York Road) - There are three build alternatives for this portion of the project, MD 145 to Belfast Road. Alternatives 2, 3 and 5 are similar proposals except in the relocated segment between McCormick and Phoenix Roads. In this portion, two typical sections are proposed for each alternative on distinct alignments.

**Alternative 2** (Figures 14-18 and 27-29) has been modified since the Alternates Public Meeting and proposes to reconstruct MD 45 to a multi-lane highway from existing MD 145 to proposed Ridgebrook Road. The segment between existing MD 145 and Schilling Road would remain a five-lane section with a continuous center turn lane. Provisions have been made for the addition of a northbound right turn lane, which would improve the traffic flow, at the existing MD 45/MD 145 intersection.

143

MD 45 between Schilling and Shawan Roads would be widened to seven lanes to accommodate double northbound left turning lanes and a right turn lane. A retaining wall approximately 400 feet long to replace the existing wall is proposed along MD 45 adjacent to the Shawan Plaza shopping center in the southeast quadrant of the Shawan Road intersection.

From Shawan Road north to McCormick Road, MD 45 would be reconstructed as a five-lane undivided closed section. This section consists of a 58-foot roadway, including a 12-foot center turn curbed on the outside (Figure 12). An existing pipe south of McCormick Road carrying a tributary of Western Run under MD 45 would be extended.

Between McCormick and Phoenix Roads, MD 45 would be reconstructed on a relocated alignment slightly east of its present location with two typical section options. The relocated alignment would remove a series of sharp curves by splitting the curves with a tangent section. The shift would improve both existing horizontal and vertical geometry. A new bridge just east of the existing bridge will be constructed to carry MD 45 over Western Run. The new structure would be approximately 160 feet long. Additional hydraulic studies are being performed to substantiate the proposed bridge characteristics and length. Thornton Mill Road would be extended approximately 95 feet to intersect the new alignment of MD 45. In addition, the entrance road to the Broadmead

144

community would be realigned to intersect York Road opposite Thornton Mill Road.

Portions of existing York Road would remain and serve as local access roads to area facilities and residences. A 20-foot wide service road with a connection to relocated MD 45 would also be constructed to provide access to the homes on the east side of MD 45. The portions of MD 45 remaining for access would be connected to the relocated section approximately 750 feet south of Phoenix Road. Typical section, Option 1 consists of a five-lane section, similar to the roadway south of McCormick Road (Figure 12). Two 23-foot roadways, curbed on the outside, separated by a 12-foot continuous center turn lane would be provided. Typical section, Option 2 consists of a four-lane divided section. The four-lane urban section consists of a 20-foot raised grass median separating two 24-foot roadways, curbed on both sides (Figure 12).

North of Phoenix Road to Ridgebrook Road, MD 45 would return to the five-lane closed section on the current horizontal alignment. In this section, MD 45 currently accommodates this section. However, the vertical alignment must be adjusted to provide adequate sight distance. The right-of-way needed is associated with the vertical realignment.

North of Ridgebrook Road to the project limit at Belfast Road, MD 45 would remain as a two-lane undivided roadway with no major horizontal or vertical realignment. However, to improve

143

safety along York Road and provide additional capacity at the MD 45 intersections with Quaker Bottom, Sparks, Lower Glencoe and Belfast Roads, eight foot shoulders would be added on both sides of existing MD 45. At the aforementioned intersections, the shoulders would be ten feet wide and striped in such a manner to function as a bypass lane for left turning vehicles (Figure 13). Between intersections, the shoulders would narrow to eight feet and serve as a recovery area for errant and disabled vehicles, a pedestrian facility and a buffer for roadside obstacles.

There are two longitudinal stream relocations between Quaker Bottom and Sparks Roads. Totalling about 650 feet, they both extend approximately 325 feet parallel to the west side immediately adjacent to existing MD 45. The tributaries of Western Run and Piney Creek meander longitudinally adjacent to MD 45 just north of Quaker Bottom Road. Any improvement to the roadway in this area would require stream relocation. Longitudinal pipes placed beneath the roadway and alignment shifts within the historic district were considered not prudent. Several structures including steel pipes and box culverts would have to be extended to accommodate the new shoulders and carry the streams under MD 45. The pipes located at approximately stations 148+00, 163+00 and 170+00 would all be extended four to six feet on both sides of York Road. A stone box culvert located just north of Sparks Road would also be reconstructed to allow for the new shoulders. However, the existing



box culvert over Piney Creek just north of Sparks Road is wide enough to accommodate the new section. Additional hydraulic studies will be performed to determine the exact characteristics of the structures.

The cost of Alternative 2, including final engineering, right-of-way and construction, is estimated to be \$43.5 million. As stated earlier, the cost includes the relocation of MD 145 as described below.

**Alternative 3** (Figures 14, 19-22, 27-29) is similar to Alternative 2, except for the relocated portion between McCormick and Phoenix Roads. Alternative 3 proposes to relocate MD 45 to the west of its existing alignment through this segment. At the farthest point, relocated MD 45 would be approximately 700 feet west of existing York Road. Alternative 3 was developed to provide an improved section while reducing the number of displacements and like Alternative 2 consists of two typical options. Alternative 3 includes a new bridge approximately 170 feet long, spanning Western Run just west of the existing structure. Additional hydraulic studies will be performed to determine the length and characteristics of the bridge. The existing pipe carrying a tributary of Western Run under Thornton Mill Road would be reconstructed. The new alignment would intersect Thornton Mill Road approximately 200' west of the existing intersection. The portion of Thornton Mill Road between existing and relocated MD 45 would

remain to provide access to residences of the Broadmead community and residences along existing MD 45. Another connection with existing MD 45 would be provided 750 feet south of Phoenix Road.

The cost of Alternative 3, including final engineering, right-of-way and construction, is estimated to be \$41.5 million. Again, the cost includes the relocation of MD 145 as described below.

**Alternative 5** (Figures 14, 23-26, 27-29) has evolved as a result of community input and is similar to Alternatives 2 and 3, except between McCormick and Phoenix Roads. Between McCormick and Phoenix Roads, Alternative 5 adheres more closely to the existing alignment of MD 45. A slight eastern shift just north of McCormick Road is introduced to avoid impacts to the residences and historic resource (The Toll House) on the west side of York Road, just north of Thornton Mill Road.

Continuing north, the proposed roadway alignment crosses existing MD 45 to avoid severe impact to the forested hill and homes to the east. Just south of the pumping station (Sta. 75+00), the proposed alignment again crosses existing York Road to follow the existing alignment between the pumping station and the Jessops M.E. Church.

Like Alternatives 2 and 3, two typical section options are proposed for the relocated portions between McCormick and Phoenix Roads. Typical Section Option 1 consists of a five-lane section, similar to the sections north and south. Two 23-foot

roadways, curbed on the outside, separated by a 12-foot continuous center turn lane would be provided (Figure 12). Typical Section Option 2 is a four-lane urban divided section consisting of a 20-foot raised grass median separating two 24-foot roadways. Each roadway section would be curbed on either side (Figure 12).

A new structure approximately 160 feet long would carry MD 45 over Western Run. Additional hydraulic studies will be performed to determine the exact characteristics of the new structure.

A 600-foot service road would be constructed to provide access to the residences on the east side of existing MD 45. Portions of existing MD 45 just north of Thornton Mill Road and possibly south of Phoenix Road would remain to provide access to the new alignment.

MD 145 (Ashland Road) Relocated (Figures 14, 15) - Only one build option for the MD 145 (Ashland Road) relocation remains for detailed study. MD 145 would be relocated to the north to intersect MD 45 opposite Shawan Road. The new roadway would be constructed as a five-lane undivided section which consists of two 23-foot roadways, curbed on the outside, separated by a 12-foot continuous left turn lane (Figure 12). The relocated segment would join existing Paper Mill Road in Ashland approximately 2,650 feet east of MD 45. A connection to existing MD 145 would be provided 500' north of Western Run.

The new roadway would provide a more direct route for northern Baltimore County and western Harford County commuters to I-83 via Shawan Road. In addition, approximately 7,000 vehicles per day would be removed from MD 45 between existing MD 145 and Shawan Road, further relieving the traffic congestion on York Road between existing MD 145 and Shawan Road.

The relocation of MD 145 would require a new crossing of Western Run and its associated wetlands and/or floodplain. Several distinct structures with variable lengths have been investigated; one of which includes spanning the entire wetland area associated with Western Run. The shortest structure would span only the 50-foot waterway itself at a cost of approximately \$320,000. In order to span the entire wetland, the structure required would be approximately 650 feet and cost \$4,730,000. To span approximately half of the wetland area, a 325-foot bridge would be required at a cost of \$2,365,000. Hydraulic studies are continuing to determine the exact characteristics of the structure.

The cost of the MD 145 relocation alone including the 650-foot structure is estimated to be \$15.5 million. This estimate includes final design, right-of-way and construction.

Interchange with I-83 - There are three options proposed for a new interchange with I-83 between Shawan and Belfast Roads. However, all of the options rely on the construction of Ridgebrook Road to eventually connect MD 45 with the interchange. Ridgebrook Road is a proposed developer roadway to be constructed by the developers of the

Highlands Industrial Park. A small segment of the four-lane divided roadway totaling approximately 2,000 feet has been constructed by the developer. The State Highway Administration would not construct the I-83 interchange if Ridgebrook Road was not in place. However, coordination with the developer is ongoing to ensure proper design of the roadway. Preliminary environmental assessments, performed by the developer, indicate there are no historic or archeological sites, endangered species or hazardous waste sites present on the site. A wetland assessment will be prepared by the developer to gain the necessary permits.

In addition, the State Highway Administration is currently working with the FHWA to obtain Interstate Access Approval for the new interchange. An Interstate Access Point Approval Request will be prepared and submitted to FHWA. The request includes a description of the project planning study, along with detailed information on traffic, roadway geometrics, engineering criteria and funding issues. Also included in the report is a discussion of the regional traffic demand and service.

The request for this project will discuss the planned intense development and its effects on the existing roadway network. In addition, the effects of a new interchange on the existing interchanges and mainline I-83 will be summarized.

**Alternative 4, Option 1** (Figure 30) proposes construction of a diamond-type interchange at the I-83 crossing of Thornton Mill Road. Thornton Mill Road would be widened to three lanes through the interchange and would be realigned to connect with the

five-lane section of Ridgebrook Road east of I-83. A diamond-type interchange consists of four ramps (Figure 13) forming a diamond shape around the crossing. I-83 would remain grade separated over Thornton Mill Road as it is today. The four ramps would intersect Thornton Mill Road and elevate to meet the I-83 grade. All potential movements between the two roadways will be accommodated with this interchange. The existing pipe at Station 101+50 under Thornton Mill Road would be extended to accommodate the new section. A 1,550-foot service road is also proposed in the northwest quadrant adjacent to two residences to provide access otherwise denied by the interchange construction. The current intersection of Thornton Mill and Quaker Bottom roads would be modified to accommodate Ridgebrook Road.

The cost for interchange Option 1 including final engineering, right-of-way and construction is estimated to be \$8.0 million.

**Alternative 4, Option 2** (Figure 31) proposes a modified diamond-type interchange at the I-83 crossing of Thornton Mill Road. Option 2 includes a loop ramp to replace one of the ramps of the diamond configuration in the northwest quadrant. This modification is proposed to facilitate the heaviest westbound to southbound traffic movement (Figure 11). The diamond type ramps remain in the other three quadrants of the interchange. Therefore, ramps for all movements between the two roadways are provided. The existing pipe at Station 10+50 under Thornton Mill Road would

152  
be extended to accommodate the new section. Two additional pipes would be provided to carry the stream under the interchange loop ramp. Additional hydraulic studies would determine the exact characteristics of the proposed pipes. A service road approximately 1,950-foot long is proposed to provide residential access otherwise removed by the interchange construction. The current intersection of Thornton Mill and Quaker Bottom Roads would be modified to connect to proposed Ridgebrook Road.

The cost for interchange Option 2 including final engineering, right-of-way and construction is estimated to be \$10.5 million.

**Alternative 4, Option 3** (Figure 32) consists of a modified diamond-type interchange approximately 1,500 feet north of the I-83 crossing of Thornton Mill Road. An extension of Ridgebrook Road would be constructed under I-83, serving the interchange ramps only. A new structure carrying I-83 over the extended portion of Ridgebrook Road would be constructed similar to the interstate's crossing of Thornton Mill Road. Ridgebrook Road would not be extended west past the interchange. The interchange configuration would include a loop ramp in the northwest quadrant to facilitate the heaviest westbound to southbound movement similar to Option 2. Because Ridgebrook Road does not extend west of the interchange, ramps for movements to and from the west are not provided. Diamond-type directional ramps on the east of I-83 and a directional ramp adjacent to the loop ramp to the west of the

153

interstate accommodate the remaining movements. A 655-foot service road is provided in the southwest quadrant to provide residential access otherwise denied by the interchange construction. In addition, Quaker Bottom Road would be relocated approximately 125 feet east of its existing alignment. The new 1,400-foot portion of Relocated Quaker Bottom Road would allow adequate space for the new interchange ramps. Portions of existing Quaker Bottom Road would remain to provide access to residences.

The cost for interchange Option 3, including final engineering, right-of-way and construction, is estimated to be \$14.5 million.



IV  
ENVIRONMENTAL IMPACTS

#### IV. ENVIRONMENTAL IMPACTS

##### A. Social Impacts

##### 1. Residential Displacements

An analysis of the possible displacements caused by the proposed alternatives and interchange options has been made by the State Highway Administration and is based on preliminary relocation and right-of-way studies. The preliminary right-of-way and relocation reports are available for review at the District 4 office of the Office Real Estate, State Highway Administration, 2323 West Joppa Road, Brooklandville, Maryland.

A summary of the displacements required for the proposed project is shown as follows:

	<u>Residential Displacements</u>	<u>Business Displacements</u>	<u>Total Displacements</u>
Alternative 1 (No-Build)	0	0	0
Alternative 2	11	3	14
Alternative 3	12	3	15
Alternative 4			
Option 1	5	0	5
Option 2	4	0	4
Option 3	3	0	3
Alternative 5	11	3	14

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

With Alternatives 2 and 5, nine of the eleven residential displacements are owner-occupants. The remaining three residences are tenant-occupied. The estimated number of individuals displaced is 44. An

156

additional owner-occupied residence will lose a detached garage. None of the displacements are associated with the relocation of MD 145.

The relocation of MD 45 to the west of its current alignment (Alternative 3) avoids the displacement of one house counted under Alternatives 2 and 5. Ten of the eleven residential displacements associated with Alternatives 2 and 5 are common to Alternative 3 as well. Eight of the displacements are owner-occupants and three are the tenant-occupied dwellings. The estimated number of individuals displaced for Alternatives 2 and 5 is 44. In addition, the detached garages of two other owner-occupied dwellings would be removed under Alternative 3. None of the anticipated displacements are associated with the relocation of MD 145.

Alternative 4 (interchange at I-83/Thornton Mill Road) Option 1 would result in five residential displacements, all of which are owner-occupied. Approximately 24 people would be affected. One additional storage building associated with a residential property would also be acquired under this option. Alternative 4 Option 2 will displace the owner-occupants of four dwellings accounting for 20 people. The same storage building would also be affected. Alternative 4 Option 3 has the least number of displacements. Approximately 12 persons in three owner-occupied dwellings would be displaced with this option.

None of those displaced by any of the proposed alternatives or options is believed to be minority or handicapped. Income levels of affected families are in the low to medium range.

Relocation of the individuals and families displaced by the proposed project would be accomplished in accordance with the "Uniform Relocation Assistance and Land Acquisition Policies Act of 1970, as amended in 1987" (see Appendix C for a summary of the State's relocation assistance program). The relocations would be satisfactorily completed within a 12-18 month period and in a timely, orderly and humane manner. The required acquisitions can be accomplished with minimal impact to the economic well-being of those affected or the areas into which they would move.

A survey of the local real estate rental and sales market (Central Maryland Multiple Listing Service, Baltimore County region) indicates that there is sufficient comparable replacement housing for the displaced families and individuals. If required, "housing as a last resort" would be utilized to provide decent, safe and sanitary replacement housing for affected families. Replacement housing is ample and there should not be any major difficulties in relocating displaced families. In addition, enough housing appears to be available in the area so there would be no adverse impact on neighborhoods into which affected families would move. No significant change in population density or distribution is anticipated. No other federal, state or local projects are foreseen that would affect the supply and availability of needed replacement housing.

In addition to the required displacements, strip right-of-way acquisition is required from properties adjacent to existing MD 45, on both the east and west sides of MD 45. Between McCormick and Ridgebrook roads, the right-of-way is required due to the partial relocation and vertical

realignment of York Road. North of Ridgebrook Road to Belfast Road, the impact is associated with the addition of eight to ten foot shoulders. Alternatives 2, 3, and 5 would require approximately 37, 43 and 39 acres of additional right-of-way, respectively. The acquisitions for Alternative 4 range from 13 to 25 acres, depending on the option selected.

TITLE VI STATEMENT

It is the policy of the Maryland State Highway Administration to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, sex, national origin, age, religion, physical or mental handicap in all State Highway Administration program projects funded in whole or in part by the Federal Highway Administration. The State Highway Administration will not discriminate in highway planning, highway design, highway construction, the acquisition of right-of-way or the provision of relocation advisory assistance. This policy has been incorporated into all levels of the highway planning process in order that proper consideration may be given to the social, economic and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Equal Opportunity Section of the Maryland State Highway Administration for investigation.

2. Public Parks and Recreation Areas

No property would be required from the North Central Railroad Trail under any of the alternatives.

Although some areas of the Loch Raven Watershed are used for recreational purposes (a secondary purpose), the portion of the watershed crossed by the relocation of MD 145 (included with Alternatives 2, 3 and 5) is not utilized nor planned for recreational use. The approximately 3.7 acres of right-of-way required for the relocation of MD 145 is located north of existing MD 145 and west of MD 45 in the Western Run watershed (Figure 14). No management plan for recreational use exists for the

reservoir. Instead, this land protects Western Run (and its associated floodplain) which feeds into Loch Raven Reservoir. This land's primary purpose is to serve as a buffer between the stream and adjacent development to preserve adequate water quality for ultimate drinking water purposes. Lands which serve multiple purposes, such as Loch Raven Reservoir, are designated as multiple use lands. Section 4(f) of the U.S. Department of Transportation Act does not apply to areas of multiple use lands when no recreational uses are affected. Therefore, Section 4(f) requirements do not apply to the portion of Loch Raven Reservoir crossed by relocated MD 145. The Federal Highway Administration concurred with this determination on 12/11/90 (see letter in Section VI).

Approximately 0.8 acre of right-of-way would be required with Alternatives 2, 3 or 5 from a property purchased by Baltimore County in 1990 with Program Open Space Funds, which was added to Sparks Park. The property required is directly adjacent to the existing MD 45 right-of-way and does not contain any recreational facilities or uses. A hiking/biking trail does exist in the eastern portion of the park, but would not be affected by the proposed project. Impacts to the park and avoidance alternatives are discussed in the 4(f) Section (Section V) of this document.

In the Master Plan, Piney Creek, which crosses MD 45 just north of Sparks Road, is designated as a proposed stream valley park/greenway. However, most land along this stream on the north is now privately owned and the county has no immediate plans or timetable to acquire or develop land in the stream valley for recreational use. This planned use is part of

1/60

the county's goal to establish a county-wide stream valley greenway network. Property acquisition for the proposed improvements to MD 45 are expected to occur in advance of any property acquisition for the stream valley greenway. The State Highway Administration will continue coordination with the Baltimore County Department of Planning and Zoning throughout the remaining phases of this project to ensure that this future use is compatible with the proposed two-lane improvements to MD 45 in this area. The proposed project would not preclude development of the stream valley greenway due to the minor amount of additional right-of-way required for the proposed improvements to the MD 45 roadway which already bisects the proposed greenway.

3. Access to Services and Facilities

The No-Build Alternative (Alternative 1) would not alleviate the existing and projected traffic congestion or safety problems in the study area, particularly in the Hunt Valley-Cockeysville and Loveton portions. Due to expanding industrial and residential development, projected traffic volumes are expected to exceed capacity for a majority of the project area by the design year 2015. Consequently, access to area services and facilities would become increasingly difficult and more unsafe for area residents as traffic volumes increase and the level of service at many locations worsens to "F". Increasing truck traffic servicing industrial development in the project areas also contributes to the congestion and unsafe conditions. Travel time and associated costs, as well as distances traveled, would increase as motorists experience delays or seek alternate routes to avoid

161  
congestion. Other than I-83, there are no direct alternate north-south routes.

All mainline build alternatives (Alternatives 2, 3 and 5) would increase capacity on MD 45 between Relocated MD 145 and Phoenix Road, which in turn would provide relief from congestion and improve traffic service. Safety and access to services and facilities would also improve in these areas. Travel time would be shortened as fewer delays are experienced, especially during peak hour periods. However, the improvements and relief would only be slightly improved in the Hunt Valley area (south of Shawan Road) and Sparks area (north of Quaker Bottom Road) without the relocation of the MD 145 intersection as proposed with Build Alternatives 2, 3 or 5.

Relocation of some residential driveway entrances would be required in the relocated sections of Alternatives 2, 3 and 5 and with Alternative 4, Options 1-3.

Alternative 4 would improve access to I-83 from planned development in the Loveton area; consequently, these improvements would reduce travel time and costs for residents bound to and from the Loveton area. In and of itself, any of the Alternative 4 options would not substantially reduce congestion and improve traffic service to the north and south of the Loveton area. Again, many of the access problems associated with the No-Build Alternative would still occur in the Sparks and Hunt Valley areas if Alternative 4 alone was constructed without the relocation of MD 145 or any improvements along MD 45. Optimum benefit is



162

derived when Alternative 4 and any of the mainline build alternatives are built together. Provision of this interchange also would divert truck traffic originating from existing and proposed industrial facilities located between I-83 and the Loveton business community off of MD 45. Due to the closer proximity of the proposed interchange with I-83 to the industrial parks (less than two miles) than either the Shawan Road or Belfast Road interchanges (approximately three miles), trucks would tend to use this new interchange instead of traveling along MD 45 to access I-83 at either Belfast Road or Shawan Road interchanges, thereby reducing congestion and improving safety throughout the project area.

For the most part, the response times for emergency services would improve with Alternatives 2, 3 and 5 in the design year, even though some congestion would still be present in the Hunt Valley and Sparks areas. Although police and fire equipment would still encounter some congestion on MD 45 south of Shawan Road and near Quaker Bottom Road, reduced congestion and improved traffic service and safety in all portions of the study area would reduce the chance for time and speed delays, as compared to the No-Build condition. Provision of an interchange with Alternative 4 would enhance emergency vehicle access between I-83 and the Loveton area. This would provide additional access to a parallel roadway within the study limits. This need is especially vital in light of the level of proposed residential development and the fact that some congestion still may occur with construction of associated proposed improvements.

4. Disruptions of Neighborhoods and Communities

Due to the planned development of separate communities on each side of MD 45, Alternatives 2, 3 or 5 would not disrupt the integrity of existing neighborhoods or cause changes in patterns of social interaction and behavior. In fact, many communities are set back a distance from MD 45. Disruption and division of existing communities that do front along MD 45 would be minimal since the majority of improvements are proposed along the existing roadway. The realignment of MD 45 south of Phoenix Road with Alternatives 2, 3 or 5 also would not substantially disrupt the cohesiveness of existing residential neighborhoods. The six residential displacements required by Alternatives 2, 3 and 5 in the Sparks/Glencoe communities reflect the only impacts to these communities. Due to the limited scope of improvements to MD 45 in this area (widening shoulders), no other disruption to these communities is anticipated.

The relocation of MD 145 would not disrupt or divide any existing communities as the realignment passes through undeveloped wooded land and terminates at a commercial area along MD 45.

Some disruptions are anticipated to the rural neighborhood centering on the Thornton Mill Road underpass at I-83. Nearly 10% of the homes in this neighborhood would be acquired due to construction of the proposed interchange. Although trucks now use I-83 through this area, additional truck traffic would utilize this interchange to directly access industrial development in the Loveton area via proposed Ridgebrook Road (to be built by others). This additional truck traffic may be perceived as a

164  
disruptive effect to homes in this subdivision (e.g., air, noise, vibration).

Access would be provided to remaining properties even though some driveways and a small portion of Quaker Bottom Road (Option 3 only) will be relocated. These relocations would not cause any significant increases in travel times or distance from Thornton Mill or Quaker Bottom Roads.

**B. *Economic Impacts***

Alternatives 2, 3 and 5 would require the acquisition of two small businesses on Shawan Road near MD 45 and the drive-in portion of the Maryland National Bank. The drive-in portion of the bank is situated in a small building, separate from the main bank building. The bank will continue its operations and could relocate its drive-in operations elsewhere on the shopping center property. However, business sites are scarce in the highly developed southern portion of the MD 45 corridor. As a result, the other two affected businesses may have difficulties relocating near their current locations. These businesses would be relocated in accordance with the provisions of the "Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 as amended in 1987". A summary of the state's relocation assistance program is located in the Appendix of this document.

There are no business displacements associated with the No-Build Alternative, the MD 145 relocation portion of Alternatives 2, 3 and 5 or the interchange options as proposed for Alternative 4.

The No-Build Alternative does not accommodate the projected traffic volumes associated with existing and planned industrial and commercial development in the Hunt Valley and Loveton area. Lack of an adequate and

165

improved roadway system would not allow economic growth to proceed as planned in the study area - it may even discourage potential employers from locating into the area. Local commercial businesses may experience some loss of business due to the perceived difficulty of ingress/egress resulting from traffic congestion in the Hunt Valley-Cockeysville area. Potential customers may be discouraged from patronizing these businesses if they must contend with congestion, delays and unsafe travel and turning conditions. This alternative also does not provide an adequate facility for the delivery of goods and services (especially by truck) and would add additional commuting time for area employees.

Alternatives 2, 3 and 5 are consistent with the Baltimore County Master Plan's goal of providing improved access and increased capacity to support existing and proposed economic development in the study area. These improvements would help make this portion of the county attractive for future economic and employment growth. The new interchange at I-83/Thornton Mill Road (Alternative 4) will also provide improved access to the existing and planned industrial developments in the Loveton business community. Some of these businesses are truck-oriented (United Parcel Service) and this interchange would provide a direct link to I-83, thus relieving MD 45 of the impacts associated with this type of traffic (i.e., congestion and safety).

The proposed widening would require the relocation of the entrance to Kellie-Chick Associates which is currently located on MD 45 north of Shawan Road. Access to this business would be provided from the Hunt Valley Mall loop road. No other adverse impacts to business access are anticipated and the

146  
proposed improvements are generally expected to improve local access to these areas. Some driveway entrances may be reconstructed to meet the new roadway grades. Some businesses will lose minor strips of frontage, but most existing parking would remain intact. The non-divided highway portions would not interfere with turning movements into commercial areas and the four-lane divided highway typical section is in an area void of an existing or planned commercial development.

Local commuters to areas of employment in the Hunt Valley and Loveton portions of the study area would benefit by improved travel time and traffic safety with all the build alternatives.

Agricultural areas west of I-83 would not be affected by the proposed interchange with Alternative 4. As a result, there would be no economic impacts to farming operations in this area. An advantage would be the direct connection to an interstate highway for the transport of agricultural products to markets in York and Baltimore.

### C. *Land Use*

The proposed improvements are consistent with the Baltimore County Master Plan (1989-2000) and would accommodate planned industrial, residential and commercial growth within the "urban" side of the UDRL (urban/rural demarcation line) and future travel demand. The No-Build Alternative is not consistent with the Master Plan. According to the Master Plan, MD 45 is to be upgraded and improved between MD 145 and Belfast Road. In addition, a new interchange at I-83/Thornton Mill Road with direct access into the Loveton

167

business community and the relocation of MD 145 to intersect MD 45 opposite Shawan Road are also indicated in the Master Plan.

The MD 45 corridor is an important mixed use center in the county. Improved access to I-83 and upgrading the MD 45 alignment are consistent with the land use plans for the area and are key elements for future development and redevelopment opportunities in this area. Failure to improve the MD 45 transportation corridor in accordance with the Master Plan could result in development pressures to the portions of the project area designated for rural use and resource conservation, but which may have better access to I-83 or less congestion on local roadways. Furthermore, as long as the county is committed to the concept of the URDL, agricultural preservation to the west of I-83 and resource conservation to the east, there will be little impetus or pressures for additional development around the proposed interchange at I-83 and Thornton Mill Road.

**D. *Historic and Archeological Site Impacts***

The following discussion of the impacts to historic sites within the project area is based on coordination with the Maryland State Historic Preservation Officer (SHPO) (pages VI-1 through VI-18F in the Comments and Coordination section). Table 6 provides a summary of impacts.

1. *Gardner House - BA 917 (Site No. 1)*

Alternatives 2, 3 and 5 (Figures 15, 17, 19, 21, 23 and 25)

The Gardner House is located in the southwest quadrant of the MD 45/Shawan Road intersection. The historic structure is 18 feet from the edge of roadway at its closest point. The historic boundary, which is the

168

**TABLE 6**  
**SUMMARY OF HISTORIC RESOURCE**  
**EFFECT DETERMINATIONS**

	Alter. 2	Alter. 3	Alter. 4	Alter. 5
Gardner House	A.E.	A.E.	N.E	A.E.
Holly Hill	N.E.	N.E.	N.E.	N.E.
Toll House	A.E.	N.A.E.	N.E.	A.E.
Jessop M.E. Church	N.E.	N.E.	N.E.	N.E.
Loveton	A.E.	A.E.	N.E.	A.E.
Bosley House	N.E.	N.E.	N.E.	N.E.
Western Run/Belfast Historic District	N.E.	N.E.	A.E.	N.E.
Sparks/Glencoe Historic District	A.E.	A.E.	N.E. (Opt.1&2) N.A.E. (Opt.3)	A.E.
N.E. =No Effect/ N.A.E. =NoAdverse Effect/ A.E. = Adverse Effect				

169  
same as the existing right-of-way lines, varies from 3 to 15 feet from the edge of the roadway.

The existing width of pavement along MD 45 is 58 feet. The proposed improvements would widen MD 45 to 79 feet. The proposed western edge of pavement will be in the same approximate location as existing MD 45. The sideslopes will encroach approximately six feet on the historic boundary requiring approximately 0.1 acre of property from the site. No modifications are required for the vertical alignment along this segment of MD 45.

The existing width of pavement along Shawan Road is 42 feet. Shawan Road would be widened to 68 feet. The proposed roadway will be approximately eight feet closer to the historic site. The sideslopes tie in along the historic site boundary. No modifications are required for the vertical alignment along this segment of Shawan Road. Approximately 0.1 acres of right-of-way would be acquired from within the historic site boundary. The State Historic Preservation Officer (SHPO) has indicated that this site would be adversely affected because Alternatives 2, 3 and 5 would place it in closer proximity to MD 45 (see letter dated 11/15/90 in the Comments and Coordination Section).

#### Alternative 4

Improvements to MD 45 are not proposed with Alternative 4 and would have no effect on this historic site as determined by the SHPO.

2. Holly Hill - BA 187 (Site No. 2) (Figures 15, 17, 19, 21, 23 and 25)



Holly Hill (the house), which is nestled within the Broadmead community, is located approximately 750 feet from existing MD 45 at its closest point.

Alternatives 2 and 5

Alternatives 2 and 5 both propose shifting the roadway alignment to the east in the vicinity of this resource. With Alternative 2, the proposed roadway, which would be either 58 feet or 68 feet wide, would be approximately 620 feet from the structure at its closest point and the right-of-way line would be approximately 585 feet away. With Alternative 5, the edge of roadway and proposed right-of-way limits would be approximately ten feet closer. No right-of-way would be required from within the historic boundary. The SHPO has indicated that Alternatives 2 and 5 would have no effect on this site.

Alternative 3

Alternative 3 proposes shifting the roadway alignment to the west of the existing alignment. The proposed roadway, 58 feet or 68 feet wide, would be approximately 860 feet from Holly Hill at its closest point. The right-of-way line would be approximately 800 feet away. No right-of-way would be required from within the historic boundary. The SHPO concurred in a no effect determination for this site.

Alternative 4

Alternative 4 does not include improvements to MD 45 and would not impact this historic site. No interchange alternative option would have an effect on this site as determined by the SHPO.

171

3. Toll House - BA 190 (Site No. 5) (Figures 15, 17, 19, 21, 23 and 25)

Alternatives 2 and 5

With Alternatives 2 and 5, the roadway alignment would be shifted to the east in the vicinity of this resource. The proposed roadway, which would be either 58 feet or 68 feet wide, would be located approximately 110 feet from the building with Alternative 2 and approximately 80 feet from the building with Alternative 5. The existing roadway would remain in place to provide for local access. No right-of-way would be required from within the historic boundary. Although alternatives 2 and 5 relocate the MD 45 roadway farther away from the existing structure, an adverse effect determination was given by the SHPO for this site due to alteration of the environmental setting resulting from widening MD 45 to five lanes.

Alternative 3

Under Alternative 3, the roadway alignment would be shifted to the west of existing MD 45. The proposed roadway, which would be either 58 feet or 68 feet wide, would be approximately 235 feet from the building and 180 feet from the historic boundary. The existing roadway would remain in place to provide for local access. No right-of-way would be required from within the historic boundary. The SHPO determined that the proposed improvement would result in a no adverse effect at this site because the roadway would be located behind the site and screened by vegetation and topography.

172

Alternative 4

Alternative 4 does not propose improvement to MD 45 and would have no effect on this historic site as determined by the SHPO.

In conclusion, Alternative 2 would result in an adverse effect on the toll house site, while Alternative 3 would not adversely affect the site and Alternative 4 would have no effect.

4. Jessop M. E. Church - BA 93 (Site No. 7) (Figures 16, 18, 20, 22, 24 and 26)

Alternatives 2 and 5

In the vicinity of this resource, Alternative 2 is shifted slightly to the west and Alternative 5 slightly to the east of the existing alignment of MD 45. Alternative 2 would be located approximately 240 feet from the historic boundary and approximately 730 feet from the church. Alternative 5 would be located approximately 100 feet from the historic site boundary and approximately 450 feet from the church. The existing roadway would remain in place to provide for local access. No right-of-way would be required from within the historic boundary. A no effect determination has been provided by the SHPO.

Alternative 3

Alternative 3, which proposes the shifting of the new 58-foot or 68-foot roadway to the west, would be located approximately 450 feet from the historic boundary and approximately 980 feet from the church. The existing roadway would remain in place to provide for local access. No

right-of-way would be required from within the historic boundary. A no effect determination has rendered by the SHPO.

Alternative 4

Alternative 4 does not propose improvements to MD 45 and would have no effect on this historic site as determined by the SHPO.

In conclusion, Alternatives 2, 3 and 4 would have no effect on this site.

5. Loveton - BA 92 (Site No. 8) (Figure 27)

Loveton is located east of existing MD 45 opposite Loveton Circle. The historic boundary is located approximately three to five feet from the existing roadway. The historic building is approximately 130 feet from the existing roadway.

Alternatives 2, 3 and 5

Alternatives 2, 3 and 5 include proposed improvements to the vertical alignment (profile) of MD 45. These improvements are necessary to improve the safety through increased sight distance along this segment of MD 45. Modifications to the vertical alignment would result in impacts to the Loveton frontage along MD 45. Approximately 0.70 acre of right-of-way would be required from this site. For these reasons, the SHPO has determined that Alternatives 2, 3 and 5 would adversely affect this site.

Alternative 4

Alternative 4 does not propose improvements to MD 45 and would have no effect on this historic site as determined by the SHPO.

174

6. Bosley House - BA 266 (Site No. 10) (Figure 27)

The Bosley House, which is located on the east side of MD 45 opposite Ridgbrook Road, is located more than 1,000 feet from the existing roadway.

Alternatives 2, 3 and 5

With Alternatives 2, 3 and 5, MD 45 would be widened from 22 feet to 58 or 68 feet. The horizontal alignment of the roadway would not be shifted. No right-of-way would be required from within the Bosley House historic boundary. A no effect determination was rendered by the SHPO on 11/15/90 (see letter in the Comments and Coordination section).

Alternative 4

Alternative 4 does not propose improvements to MD 45 and would not impact this historic site.

7. Western Run/Belfast Road Historic District (Figures 30, 31 and 32)

Alternatives 2, 3 and 5

Alternatives 2, 3 and 5 do not propose improvements within this historic district. The district would not be affected by improvements along mainline MD 45. There would be no effect on this district according to the SHPO.

Alternative 4

Alternative 4 proposes the construction of an interchange connecting I-83 and Ridgebrook Road in the vicinity of Thornton Mill Road. Option 4-1 requires approximately 11.2 acres of right-of-way from the historic district. Options 4-2 and 4-3 require 15.6± and 21.8± acres of right-of-way

respectively. None of the standing structures within the district that will be affected contribute to the significance of the historic district. They are non-historic structures. However, the SHPO has determined that this district will be adversely affected by all of these options, as a result of the construction of the interchange within the historic district, as well as the associated loss of farmlands and wooded areas.

8. Sparks/Glencoe Historic District (Figures 28 and 29)

Alternatives 2, 3 and 5

Alternatives 2, 3 and 5 propose to improve MD 45 within the district from Quaker Bottom Road to Belfast Road by providing a roadway which is 38 feet wide (two lanes 11 feet wide plus two shoulders 8 feet wide).

The existing roadway varies between 32 feet and 38 feet in width throughout this segment. Alternatives 2, 3 and 5 would require approximately 3.62 acres of right-of-way from the Sparks/Glencoe Historic District. The SHPO determined that the district will be adversely affected due to alteration of the historic character of the road, alteration of the environmental setting, the loss of four buildings which contribute to the district and placing the paved roadway in closer proximity to contributing buildings in the district.

A description of the impact of Alternatives 2, 3 or 5 on those sites within the district that contribute to the historicity of the district follows:

**Sax House** (No. 11), which is on the east side of MD 45 opposite Quaker Bottom Road, is located more than 1,000 feet from the existing roadway. The addition of eight to ten foot shoulders, as proposed by

Alternatives 2, 3 and 5, would have no impact on the Sax House, but would encroach approximately 35 feet into the tax parcel boundary resulting in .10 acre of impact.

**Huff House - School No. 9** (No. 13) is located on a hill on the west side of MD 45 along Quaker Bottom Road approximately 550 feet from the existing roadway. It is estimated that the edge of the improved roadway will be 545 feet from the Huff House.

**Price Store** (No. 15) is adjacent to the east side of MD 45 (approximately 12 feet from the edge of the road). Currently, MD 45 is approximately 33 feet wide in front of the Price Store. This section does not require any widening adjacent to the site, therefore, no right-of-way is required from the Price Store tax parcel boundary.

**Milton Inn** (No. 17) is located on the east side of MD 45 approximately 32 feet from the edge of the road. Currently, MD 45 is approximately 32 feet wide in front of the Milton Inn. Approximately 0.17 acre of right-of-way will be required on the north end of the property from the Milton Inn tax parcel boundary.

**Rogney House Complex** (No. 20) is located on the east side of MD 45 south of Sparks Road. The closest building is located approximately 10 feet from the edge of the road. MD 45 is currently approximately 38 feet wide in front of the Rogney House. The proposed grading limits fall within the existing right-of-way, therefore, no property is required from the Rogney House Complex.

**Matthews Mill House (No. 23)** is located on the west side of MD 45<sup>277</sup> south of Lower Glencoe Road approximately 225 feet from the edge of the shoulder. MD 45 is approximately 30 feet wide in front of Matthews Mill. A strip of right-of-way approximately .12 acre is required from the Matthews Mill tax parcel boundary.

**Merryman House (No. 24)** is located on the west side of MD 45 south of Belfast Road. The closest structure is approximately 40 feet from the edge of the roadway. MD 45 is currently approximately 30 feet wide in front of the Merryman House. Approximately 0.05 acre of right-of-way is required from the Merryman House tax parcel property.

**Price House (No. 12)** is located on the west side of MD 45 approximately 18 feet from the edge of the shoulder. MD 45 is currently approximately 32 feet wide in front of the Price House. Improvements in this area consist of transitioning from a multi-lane highway to a two-lane section. This structure would be acquired as part of the proposed MD 45 improvements.

**Huff Tenant House (No. 14)** is located on the west side of MD 45, north of Quaker Bottom Road, approximately 45 feet from the edge of the shoulder. MD 45 is approximately 35 feet wide in front of the Huff Tenant House. No right-of-way is required from the Huff Tenant House tax parcel property.

**Ensor House (No. 16)** is located on the east of MD 45 approximately 60 feet from the edge of the shoulder. MD 45 is



approximately 35 feet wide in front of the Ensor House. No right-of-way is required from the Ensor House tax parcel property.

**Nicholas Price House** (No. 18) is located on the east side of MD 45 approximately 20 feet from the edge of the shoulder. MD 45 is approximately 35 feet wide in front of the Nicholas Price House. No right-of-way is required from the Nicholas Price House tax parcel property.

**Huff House** (No. 19) is located on the west side of MD 45 approximately 725 feet from the edge of the shoulder. MD 45 is approximately 35 feet wide in front of the Huff House. No right-of-way is required from the Huff House tax parcel property.

**Frame Dwelling** (No. 21) is located on the west side of MD 45 approximately 475 feet from the edge of the shoulder. MD 45 is approximately 35 feet wide in front of the frame dwelling. A strip of right-of-way approximately 0.12 acre is required from the tax parcel of the frame dwelling.

**Matthew's House Complex** (No. 22) is located on the east side of MD 45 approximately 15 feet from the edge of the roadway. Currently, MD 45 is approximately 38 feet wide in front of Matthew's House Complex. Approximately 0.60 acre of right-of-way is required from the Matthew's House Complex tax parcel property.

Alternative 4

Alternative 4 consists of the construction of an interchange connecting I-83 with Ridgebrook Road in the vicinity of Thornton Mill Road. Options 1 and 2 do not require right-of-way from the

Sparks/Glencoe Historic District. Option 3 would require 0.89 acre of right-of-way from the Sparks/Glencoe Historic District for the construction of the westbound interchange ramp. For this reason, the SHPO has determined that Alternative 4 Option 3 would have a no adverse effect on the Sparks/Glencoe Historic District.

Archeological field surveys were completed for the project area, however, several areas were not surveyed due to denial of access. Phase I archeological investigations must be conducted at three standing historic sites (BA 86, 92 and 917) located adjacent to the proposed right-of-way to assess whether archeological deposits are associated with each site. These studies will be completed if and after Alternative 2, 3 or 5 is selected. In addition, Phase I investigations are required at two potential archeological sites located on MD 45 (18BA249 and Bellama Farms) where access was denied. The Phase I investigation will be completed if and when right-of-way is obtained from these sites.

With Alternative 4, no significant archeological sites are impacted by Options 1 and 2. Phase I archeological surveys revealed one site (18BA399), a prehistoric Huffard site which would be impacted by Option 3. Because site 18BA399 consists of prehistoric deposits in a context that has not been well studied in this region, it may be potentially eligible for the National Register, chiefly because of what can be learned by data recovery (i.e., for the information it contains). Based on this information, Section 4(f) does not apply to this site in accordance with 23CFR771.135(g)(2). Should Option 3 be selected and the site cannot be avoided, Phase II testing will be required to determine National

180

Register eligibility and identify the need for further research and the extent of data recovery.

E. *Natural Environmental Impacts*

1. *Topography and Geology*

All of the alternatives propose improvements along existing MD 45 or I-83. Construction along the areas of existing roadway would have minor impacts to the topography and geology of the study area. Most of the project involves the widening of existing roadway. The scattered cuts and fills associated with this road work will have a minor impact on existing topography. The realignment of MD 45 between McCormick and Phoenix Roads, as presented in Alternatives 2, 3 and 5, would involve more extensive cuts and fills and would therefore have more substantial impacts on the topography. The proposed interchange options along I-83 near Thornton Mill Road and Quaker Bottom Road as presented in Alternative 4 Options 1, 2 and 3, will require numerous minor cuts and fills which will have a small to moderate impact on the topography.

The relocation of MD 145 to opposite Shawan Road, east of Marble Hill, would cross Western Run. This extension would require some cuts, but mostly fill. The bulk of the fill would occur in the floodway of the Western Run where approximately two to ten feet of fill would cover areas below approximately 265 feet elevation above sea level. These impacts are associated with the worst-case structure length of bank to bank.

All of the study area north of Jessops Church is underlain by gneisses and schists. Excavation of these rocks would have a minor impact

on the geology of the study area, although the impact would increase in areas of steeper slopes. Impacts on the Cocksylville Limestone and Quaternary Deposits can be expected to be minor if proper construction techniques are utilized.

2. Soils

Each of the proposed alternatives would affect soils through displacement and/or erosion. Displacement impact to soils would occur due to cuts which would remove much or all of the soil profile and fills, which would bury soils in place. Displacement impacts would be long-term effects.

Prime farmland soils and Statewide Important farmland soils would be required by all of the alternatives.

Table 7  
Prime and Statewide Important Soil Impacts (acres)

	<u>Prime</u>	<u>Statewide Important</u>
Alternative 2	31.8	15.4
Alternative 3	27.0	16.6
Alternative 4:		
Option 1	15.0	21.5
Option 2	16.8	20.9
Option 3	35.3	23.2
Alternative 5	31.9	24.4

Coordination was undertaken with the USDA, Soil Conservation Service through submission of the Farmland Conversion Impact Rating Form, as required by the Farmland Protection Policy Act (FPPA). The Soil Conservation Service has failed to provide the land evaluation information and response to the form within 45 days in accordance with

142

Soil Conservation Service regulations implementing the FPPA and to date has not responded subsequent to the 45-day period.

The total acreage of soil disturbance would be fairly equal for Alternatives 2, 3 and 5; these alternatives would affect 73.3, 72.1 and 74.3 acres respectively. The total acreage of soil disturbance for Alternative 4 Options 1, 2 and 3 would be 55.9, 60.6 and 63.1 acres, respectively.

All of the alternatives would result in the potential for soil erosion and sedimentation. Erosion and sedimentation impacts from the project would be generally short-term, construction related effects and would be expected to be minor in nature. The severity of these impacts would be dependent on a number of factors, including length of time soils are left unstabilized, rainfall intensity during construction periods, types of soil erosion and sediment control measures implemented and maintenance of said measures. These factors aside, the potential for soil erosion impacts would be greatest for soils with the highest erosion hazard.

Soils within the project impact area that are classified as having severe erosion hazard are Hollinger loam, 8-15 percent slopes (HrD3); Manor soils, 25-50 percent slopes (MdE); Manor and Brandywine very stony loams, 25-65 percent slopes (MhE); Manor channery loam, 15-25 percent slopes (McD) and Manor loam, 15-25 percent slopes (MdD). These soils have a severe erosion hazard primarily because of their slopes. The greatest concentration of these soils in the impact area is along MD 45 between Thornton Mill Road and the Jessops Church Cemetery with

143

scattered areas of severe erosion hazard soils in the northeastern, northwestern and southwestern corners of the study area.

3. Surface Water and Groundwater

a. Surface Water Effects

(1) Short Term Impacts

Implementation of any of the proposed project alternatives would introduce the potential for temporary and minor adverse impacts to surfacewater and groundwater hydrology and surfacewater quality. These potential short-term impacts would be associated with project construction activities. Short-term impacts include:

- Siltation from increased erosion and sedimentation.
- Changes in water quality stemming from altered riparian habitat associated with Western Run and Piney Creek and their tributaries at proposed stream crossings/relocations.
- Changes in stream flow patterns resulting from impoundments and debris.

To minimize these potential impacts, sediment control plans will be developed by the State Highway Administration during final design and approved by the Maryland Department of the Environment. Since the alternatives will pass through areas of varying slope, soil erodibility, stream size and vegetation associations, specific control measures cannot now be identified but will include:

104

- Staging of construction activities to permanently stabilize ditches at the tops of cuts and at the bottom of fill slopes prior to excavation and formation of embankments.
- Seeding, sodding or otherwise stabilizing slopes as soon as practicable to minimize the area exposed at any time.
- Appropriate placement and maintenance of sediment traps, temporary slope drains and other control measures.
- Placement of diversion dikes, energy dissipators, mulches and netting on slopes too steep to support vegetation.

Appropriate mitigation techniques will be selected during final design. Such techniques include, but are not limited to, flexible pipe to carry clean water over the construction site and revegetation with natural grasses, shrubs and trees.

The final contract documents will limit the area to be disturbed to that area actually required for construction of the project and for the proper wasting of excess material.

Impoundments such as sediment ponds will be sized and located so as to maintain as much base flow as possible, generally by allowing the drainage from undisturbed areas to bypass the construction site and flow to its natural drainage

course. The construction will be closely monitored to minimize debris and control waste areas.

With the application of the above procedures, short-term impacts to surface waters will be minimal.

(2) Long Term Impacts

Long-term adverse impacts to surfacewater quality and hydrology would be expected to occur as increased stormwater runoff. Construction of a new highway would result in an increase in impervious surfaces relative to the existing condition. Increasing the area of impervious surfaces would reduce infiltration and decrease runoff travel time, thereby increasing peak discharges and volumes of runoff. Concurrently, loading of roadway pollutants such as rubber particles, oils and grease to surfacewaters would also increase. It is unlikely that the concentrations of these pollutants would increase under the build condition.

During construction, the potential for soil erosion and sedimentation would become greater as soils are disturbed. Soils which are classified as severely erodible would have the highest potential for erosion. Where adjacent to or in close proximity to surfacewaters, erosion of these soils also has the highest potential for sedimentation to receiving waters. Soils of the project impact area classified as severely erodible are:

- Hollinger loam, 8 to 15 percent slopes (HrD3)
- Manor soils, 25 to 50 percent slopes (MdE)



- Manor and Brandywine very stony loams, 25 to 65 percent slopes (MhE)
- Manor channery loam, 15 to 25 percent slopes (McD)
- Manor loam, 15 to 25 percent slopes (MdD)

Given these considerations, it is important that soil erosion and sedimentation be minimized as much as possible. Measures to mitigate against these impacts would include structural, vegetative and operational methods. These methods will be developed as part of a project Soil Erosion and Sediment Control Plan, which will be prepared in accordance with the Maryland Standards and Specifications for Soil Erosion and Sediment Control.

Dewatering may be required for construction of bridge abutments. The need and extent of dewatering would depend on the type and locations of abutments, season of the year, soil permeability, recent weather conditions and other factors. In the event that abutments must be set deep and/or the water table is near the surface at the time of construction, dewatering operations would result in a temporary lowering of the water table in the immediate vicinity of the construction area. No long-term effects to ground or surfacewater hydrology would be expected. Dewatering operations, if required, would not be expected to adversely affect water supply wells in the study area due to the project distance from the wells and the short-term nature of the potential water table lowering.

1467

Long-term impacts apply primarily to stream relocations, but certain impacts may also be associated with stream crossings as well as stream draining areas where construction activities have occurred. Stream crossings and relocations are shown on Figures 14, 15, 17, 19, 20, 21-23, 25, 28, and 29, and are addressed in the following subsection,

Individual Stream Impacts. Long-term impacts include:

- Potential changes in water quantity in receiving streams from alteration of drainage patterns or sources and stream flow characteristics.
- Potential changes in water quality parameters in receiving streams from:
  - erosion and sedimentation
  - roadway runoff carrying pollutants such as vehicular oil, grease, gasoline and solvents; wear particles from clutches, brake linings and tires; exhaust emissions which collect on the roadway and nearby vegetation; and seasonal inputs of salt and other deicing compounds
  - exposure of acidic compounds resulting from cut and fill operations
- Habitat loss or alteration resulting from stream relocation and/or modification of riparian habitat.

The project will be designed in accordance with the Maryland Stormwater Management Act which limits increases

108

in downstream discharges. Infiltration practices will be considered.

As mentioned earlier, revegetation will be applied and the minimum area required for construction will be disturbed. These measures will minimize erosion and sedimentation.

Stormwater management practices to be applied on the project, such as vegetated swales and retention and detention ponds, will tend to filter out pollutants and decrease their concentration.

Mitigation of relocated streams can be achieved by the following practices:

- Construction will be subject to seasonal restrictions to minimize adverse effect on gamefish.
- Effective sedimentation and erosion control procedures will be utilized during the process of relocation to minimize downstream siltation.
- The length and the width of the new stream channels will be the same or nearly the same as the original stream channels.
- Riffle to pool ratios will be maintained throughout all relocated streams.
- Fall zone areas will be reconstructed and, to the extent possible, protective habitat such as rocks and backwater areas, will be duplicated.

- Bank vegetation will be reestablished as soon as possible.

169

The final design for the proposed improvements will include plans for grading, erosion and sediment control, stormwater management, staging of construction activities, stream channel alterations and revegetation.

Stream relocations and crossings will require Waterway Construction Permits from the Maryland Department of Natural Resources, Water Resources Administration and, in some cases, Section 404 Permits from the U.S. Army Corps of Engineers.

With the use of the above described techniques and procedures, no long-term impacts to surfacewaters are anticipated.

### (3) Individual Stream Impacts

Specific stream relocations and crossings are addressed below. Where major streams are crossed, consideration will be given during final design to providing bottomless culverts. If subsurface conditions preclude their use, the culvert bottom will be depressed in order to provide a natural bottom.

#### Western Run

No relocation of Western Run is required with either the relocation of MD 145 or with the Alternatives 2, 3 or 5 crossings. At both locations, Western Run will be crossed with a structure. Sedimentation impacts associated with

190

construction may temporarily lower aquatic habitat quality. These measures can be mitigated by the strict implementation of sediment control measures.

Alternatives 3 would require the use of a pipe for an unnamed tributary of Western Run (Wetland 6) for approximately 300 feet. The current stream channel length is approximately 360 feet. This alternative will also require the piping of the headwaters of the unnamed tributary to Western Run (Wetland 6 at Wetland 8) for a distance of 430 feet. The existing tributary length is 460 feet.

Alternatives 2 and 5 would impact approximately 100 feet of an intermittent stream to Western Run (Wetland 7).

#### Piney Creek

Alternatives 2, 3 and 5 would require the extension of existing pipes associated with an unnamed tributary to Piney Creek (Wetland 11 - Station 148+00, Wetland 12 - Station 163+00 and at Station 170+00). The pipes would be extended four to six feet on either side of York Road.

A tributary to Piney Creek (Wetland 13) would need to be relocated at two locations from adjacent and parallel to MD 45 to the proposed right-of-way line with Alternatives 2, 3 or 5. Each stream relocation is approximately 325 feet for a total of 650 feet and closely approximates the length of the existing streams.

191  
Alternatives 2, 3 and 5 would utilize the existing box culvert at Piney Creek (Wetland 15). The unnamed tributary (Wetland 13) crossing under MD 45 would require the reconstruction of the existing stone box culvert to allow for the addition of shoulders.

Alternative 4 Options 1 and 2 would require the extension of the existing piping under Thornton Mill Road of a tributary to Western Run. The options would also require the addition of pipes to carry the stream under the ramps and the relocated driveway proposed in the northwest quadrant of the interchange.

4. Floodplains

Implementation of Alternatives 2, 3 and 5 as proposed would result in placement of fill in the 100-year floodplains of both Western Run and Piney Creek. None of the options for Alternative 4 would have 100-year floodplain involvements.

Alternatives 2, 3 and 5 would require the following amounts of impact in the 100-year floodplain of Western Run, for the proposed relocation of MD 145, and will vary depending on which structure length is selected: 50 feet - 2.66 acres, 325 feet - 1.55 acres, 650 feet - 0.33 acres. At the relocated crossing of Western Run by MD 45 north of McCormick Road, Alternative 2 would require 0.31 acre of floodplain involvement, Alternative 3 would require 0.97 acre of floodplain involvement, and Alternative 5 would require 0.33 acre of floodplain involvement.

192

Alternatives 2, 3 and 5 at the Piney Creek crossing would have 0.03 acre of floodplain involvement associated with minor grading impacts on either side of the existing structure.

These estimates are based on preliminary bridge lengths. Final determination of bridge length will be made during the design phase of the project.

The State Highway Administration will prepare a detailed hydrologic and hydraulic study for the Selected Alternative during final design to identify the existing 100-year storm discharge and floodplain. Stormwater management will be provided and all hydraulic structures will be designed to accommodate the 100-year flood without causing substantial impact.

The use of standard hydraulic design techniques for all waterway openings which limit upstream flood level increases and approximate existing downstream flow rates will be utilized where feasible.

Use of state-of-the-art sediment and erosion control techniques and stormwater management controls will ensure that none of the encroachments would result in risks or impacts to the beneficial floodplain values or provide direct or indirect support to further development within the floodplain.

In accordance with the requirements of FHPM 6-7-3-2, which is a FHWA guideline for ensuring compliance with Executive Order No. 11988, the impacts of each encroachment have been evaluated to determine if it is a significant encroachment. A significant encroachment would involve one of the following:

- a significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route,
- a significant risk, or
- a significant adverse impact on natural and beneficial floodplain values.

Preliminary analyses indicate that no significant floodplain impacts are expected to occur as a result of any proposed build alternates. A floodplain finding, if required, will be presented in the final environmental document.

5. Terrestrial Habitat

Impacts to terrestrial habitats in the study area by the relocation alternatives have been quantified and are listed in Table 8.

According to the Natural Resources Article Section 5-103 (State Reforestation Program), the forest area to be removed will have to be replaced at a one to one ratio (acre) or a cost not to exceed \$500.00 an acre. The Reforestation Program prefers that replacement occur on site. If on-site replacement is not possible, off-site replacement within the same watershed sub-basin is permitted. In the event that no suitable off-site area is available, a contribution of \$500.00 for each acre deforested is to be deposited in the Reforestation Fund of the Department of Natural Resources (DNR).

Due to the potential woodland takes associated with the project, coordination with the State Forester for his evaluation of the project and



194

**TABLE 8**  
**VEGETATIVE COMMUNITY IMPACTS**  
**ACRES WITHIN PROPOSED**  
**RIGHT-OF-WAY**

	Alt. 2	MD 145 Reloc. Sec.*	Alt. 3	Alternative 4			Alt. 5
				Opt. 1	Opt. 2	Opt. 3	
1. <u>Agricultural Land</u> including pasture and cropland	2.7	0.00	2.7	4.2	3.1	8.5	2.7
2. <u>Early Successional Old Field</u> herbaceous	7.1	0.00	7.1	5.6	5.6	1.8	7.1
3. <u>Secondary Successional</u> <u>Shrubland</u> shrub and brush	0.00	0.00	0.00	2.8	8.4	4.0	0
4. <u>Deciduous Forest Land</u> including transitional (Black Walnut-Locust) and mature (Yellow Poplar-Sycamore ) upland forests	15.0	4.4(1)	20.3	2.5	4.0	11.2	12.3
5. <u>Palustrine Wetland</u> including Palustrine Emergent and Ash - Boxelder	2.7	2.6(2)	3.0	0.1	0.1	0.0	3.0
<b>TOTAL ACRES OF IMPACT</b>	<b>27.5</b>	<b>7.0</b>	<b>33.1</b>	<b>15.2</b>	<b>21.2</b>	<b>25.5</b>	<b>25.1</b>

- 1) Entire acreage is Yellow-Poplar-Sycamore forest.
- 2) Includes 2.60 acres of Ash-Boxelder forested wetland and 0.04 acre of Emergent wetland.
- \* These acreages are included in the total acreages for Alternatives 2, 3 and 5.

195

any subsequent approvals for on-site and off-site reforestation must be obtained before construction begins.

Alternatives 2 and 5 would have less impact than Alternative 3 on the entire terrestrial habitat within the study area although the impacts would not vary significantly.

Alternative 4 Option 1 would have the least impact to terrestrial habitat within the I-83 interchange construction area.

The loss of upland deciduous forestland to highway use with Alternatives 2, 3 and 5 may alter the wildlife carrying capacity of the transitional and mature forestland. Most of this acreage loss would occur on mesic and lower slopes in the following areas: near Jessops Church along MD 45, at the proposed relocated MD 145 area and at the proposed I-83 interchange area.

At the request of the U.S. Fish and Wildlife Service, bridge lengths of 100 feet and 125 feet were investigated for the relocation of MD 145 across Western Run (Wetland W-3) for the purpose of providing structures that would permit passage by deer and other wildlife. Since the stream is approximately 40 feet wide, structures of these lengths would provide wildlife corridors of 60 and 85 feet respectively. A cost/impact comparison is provided in Section IV-E-6 of this document. The final determination of bridge length will be made during the design phase of this project.

Coordination with the U.S. Fish and Wildlife Service (U.S.F.W.S.) and the Maryland Department of Natural Resources Forest, Park and Wildlife Service indicates that there are no state or federally listed or

196

proposed endangered or threatened plant or animal species known to exist within the study area (see Comments and Coordination letters dated 6/21/88, 8/1/90 and 8/14/90).

It is unlikely that vegetative diversity will be measurably diminished given the number of habitats that exist outside the project corridor. It is more likely that a shift in the relative abundance of those species that are already present will take place.

6. Wetlands

Pursuant to Executive Order 11990, Protection of Wetlands, palustrine and riverine wetland areas were identified in the project study area by use of Routine On-Site Procedures as described in the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands", (January, 1989). National Wetlands Inventory (USFWS) maps and hydric soils maps were used to support and confirm the findings.

Seventeen wetlands were found within the project area with Alternatives 2 and 5 impacting five wetlands, Alternative 3 impacting seven wetlands and Alternative 4 Options 1 and 2 impacting one wetland. Alternative 4 Option 3 would not impact any wetlands. Table 9 shows the wetland impacts associated with each alternative and wetland area.

Concurrence with these wetland boundaries was confirmed during a field investigation on March 12, 1990 with the representatives from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and the Maryland Department of Natural Resources. Minutes of the wetland field review

**TABLE 9**  
**WETLAND IMPACTS (Acres)**

Wetland\Class Symbol	Alternatives 2 and 5	Alternative 3	Alternative 4		
			Option 1	Option 2	Option 3
1 - POW +	0	0	0	0	0
2 - PEM/SS1	0	0	0	0	0
3 - PFO/EM1	2.4*	2.4*	0	0	0
4 - Western Run	0**	0**	0	0	0
5 - PFO1	0	>0.2	0	0	0
6 - R3UB1/2	0	>0.1	0	0	0
7 - PEM1/R4UB1	>0.1	0	0	0	0
8 - PFO1/R4UB1	0	>0.1/>0.1	0	0	0
9 - POW +	0	0	0	0	0
10 - R4UB2/3	0	0	0	0	0
11 - R4UB2	>0.1	>0.1	0	0	0
12 - R4UB2	0	0	0	0	0
13 - PEM2/R3UB1/2	0.2/0.1	0.2/0.1	0	0	0
14 - PFO1	>0.1	>0.1	0	0	0
15 - Piney Creek	0***	0***	0	0	0
16 - PEM1	0	0	0	0	0
17 - R3UB1/2	0	0	0.1	0.10	0
<b>TOTAL IMPACT ACRES</b>	<b>2.8</b>	<b>3.115</b>	<b>0.1</b>	<b>0.10</b>	<b>-</b>

+Not ACOE Jurisdictional Wetlands

\*Based on a worst-case structure length of approximately 50 feet. A ± 325 ft. structure impacts 1.20 acres, a ± 650 ft. structure impacts 0 acres.

\*\*Alternatives 2 and 3 propose to bridge this wetland.

\*\*\*Alternatives 2 and 3 will not modify existing structure.

194

meeting are included in the Comments and Coordination Section.

Avoidance and Minimization

Wetland 3 is a riverine wetland associated with Western Run at the proposed relocation of MD 145. The impacted wetland acreages associated with different structure lengths and their costs is as follows:

<u>Length</u>	<u>Wetland Impact</u>	<u>Cost</u>
50 feet	2.4 acres	\$ 320,190
100 feet	2.1 acres	727,704
125 feet	2.0 acres	909,630
325 feet	1.2 acres	2,365,050
650 feet	0 acres	4,730,075

Widening existing MD 145 as a minimization alternative would not serve the primary purpose of providing a direct connection to Shawan Road for the majority of traffic destined to I-83. It would not eliminate the turning movements required or alleviate existing and projected congestion on MD 45 between existing MD 145 and Shawan Road associated with these turning movements. In addition, if the substandard curves were not corrected, safety problems would not be adequately corrected on MD 145. The widening of MD 145 would still require right-of-way from a National Register eligible historic site (Ashland School). If the curves on existing MD 145 were corrected, the Ashland Presbyterian Church (NRE), would be impacted and an additional crossing of Western Run of equal or greater width than that proposed for the relocation of MD 145 would be required due to the stream's proximity and meander. This would result in increased wetland impacts ranging from 2.9 - 3.2 acres and floodplain impacts ranging from 4.8 - 5.4 acres depending on structure length. In addition, if a direct

199

connection to Shawan Road was not provided, MD 45 between MD 145 and Shawan Road would need to be widened beyond that proposed under Alternatives 2, 3 or 5 in order for the intersections to at least operate at capacity. This widening would require an additional 0.1 acre of impact to the Gardner House (NRE historic site) and increased impacts to commercial properties in this section. This option did not seem reasonable and was dropped from consideration because it resulted in greater impacts than the MD 145 Relocation.

A realignment of MD 145 to intersect MD 45 opposite McCormick Road was studied as a minimization option, but would not serve the project purpose of providing a direct connection to I-83. Traffic would need to proceed south on MD 45 and then west on Shawan Road which would be as circuitous as the existing condition. An alternative route for traffic destined to I-83 would be to utilize McCormick Road which would conflict with the function of the roadway which is to serve as an internal loop road within Hunt Valley Mall for mall traffic and other area businesses. The realignment would require the displacement of approximately two townhomes located in the Hunt Valley Station community and result in a longitudinal impact on Western Run with greater wetland (2.5 acres) and floodplain (3.5 acres) impacts than with MD 145 Relocated as proposed. Because this option does not minimize the impact, it was dropped from further consideration.

Relocating MD 145 opposite Schilling Road or Wight Avenue south of Shawan Road would allow the existing crossing of Western Run to be

maintained. However, approximately 3.7 acres of wetland and 4.3 acres of floodplain impacts would still be required to bridge over Western Run with five lanes. Traffic destined to I-83 could then use Schilling Road or Wight Avenue to access I-83 with Shawan Road or Beaverdam Road. However, in either case, a direct connection to I-83 would not be provided and would result in circuitous traffic flow and congestion through the Hunt Valley business community and Metropolitan Industrial Park created by conflicts between through and local traffic. The connection to Schilling Road would possibly require two displacements while the Wight Avenue connection would impact a garden center and possibly affect a National Register eligible historic site (Melrose - BA 77).

**Wetland 4** is a riverine wetland associated with Western Run at its crossing with MD 45. Alternatives 2 and 5 currently propose a structure of 160 feet (\$1,278,350) and Alternative 3 an approximately 170-foot long structure (\$1,361,000) which avoid any wetland impact. The final structure length will be determined as a result of more detailed hydraulic studies in final design. Since MD 45 crosses Western Run perpendicularly, alignment shifts would not minimize or avoid any potential impacts.

**Wetland 5** is a palustrine forested wetland adjacent to MD 45 and Western Run. Alternative 3 requires 0.2 acre while Alternatives 2 and 5 have no impact. In order to avoid impacting both Wetland 4 and 5 with Alternative 3, a structure approximately 270 feet long with a cost of \$2,226,775 would be required. The avoidance of Wetland 5 in conjunction with Wetland 4 results in additional cost to avoid Wetland 5 of \$865,775 to

201  
save 0.2 acre of wetland. This is not considered reasonable. The widening of existing MD 45 would require an additional impact to Wetlands 5 (0.06 acre) and 7 (0.04 acre) and would require acquisition of the Tollhouse (NRE historic site).

**Wetland 6**, which is a riverine wetland, is an unnamed tributary to Western Run that parallels MD 45 to the west. Alternatives 2 and 5 avoid Wetland 6 while Alternative 3 impacts 0.06 acre. Any shift of Alternative 3 east to avoid Wetland 6 would be similar to Alternatives 2 and 5. A western shift of the alignment would require approximately four residential relocations and a longer diagonal bridge crossing of Wetland 4 (Western Run).

**Wetland 7** is a palustrine emergent wetland adjacent to MD 45 and Western Run. Alternatives 2 and 5 impact less than 0.1 acre of the palustrine emergent wetland and also less than 0.1 of the riverine portion of this wetland. Alternative 3 avoids the wetland entirely. The only avoidance of Wetland 7 with Alternatives 2 or 5 would be to extend the 160-foot structure that spans Wetland 4 (\$1,278,350) to 280 feet (\$2,309,250) for an additional cost of \$1,030,900. To save less than 0.1 acre of wetland, this is not considered reasonable. A widening of the existing roadway may minimize the impact to Wetland 7 but this would result in an additional impact to Wetland 5 and would not address the purpose of this portion of the project which is to correct the safety deficiencies of the existing roadway.



207

**Wetland 8** is a small palustrine forested wetland with a riverine intermittent wetland connecting Wetland 8 to Wetland 6. Less than 0.1 acre of the palustrine and less than 0.1 acre of riverine wetlands would be impacted with Alternative 3. Alternatives 2 and 5 avoid this wetland. A shift of Alternative 3 west to avoid Wetland 8 would displace a large commercial structure and a shift to the east would increase impacts to Wetland 6.

**Wetland 11** is a spring which is currently piped under MD 45. Alternatives 2, 3 and 5 would impact less than 0.1 acre of riverine wetland with the required pipe extension. Avoidance is not possible given the wetland's perpendicular crossing of MD 45. The typical section at this location is transitioning from a five-lane section to the existing two-lane roadway with the addition of eight-foot shoulders. The only minimization available would be to reduce the shoulder width. This is not a prudent engineering solution and would not adequately address the need for the proposed improvements since it would not provide an adequate shoulder width to permit through traffic to safely pass stopped vehicles, reduce the space needed to escape potential accidents and not allow recovery space for errant vehicles. A shoulder less than eight feet for this type of facility is considered not usable for the intended uses as previously described.

**Wetland 13** is a riverine tributary to Piney Creek with an associated palustrine wetland. Alternatives 2, 3 and 5 impact 0.2 acre of the palustrine wetland and 0.1 acre of the riverine wetland. The impact is associated with the reconstruction of the existing stone box culvert and the

203

widening of the shoulder. Two portions of the riverine wetland, each 325 feet, would need to be relocated. Avoidance is not possible given the proximity of the riverine wetland adjacent and parallel to MD 45, its perpendicular crossing of MD 45 at the culvert location and the proximity of the palustrine wetland to the existing culvert. Shifting the roadway eastward would require taking the Price's Store complex, which is an individually significant historic resource, as well as a contributing element to the Sparks-Glencoe Historic District (NRE). The only minimization of the wetland impact would be to reduce the shoulder width, which is not a prudent engineering solution for the reasons stated above for Wetland 11.

**Wetland 14** is a palustrine wetland adjacent to Wetlands 13 and 15. Alternatives 2, 3 and 5 impact less than 0.1 acre. Given the wetland's immediate proximity to MD 45, avoidance is not possible if a build alternate is chosen. Any shifting of the roadway east would increase the impact to Wetland 13 and impact Wetland 15. Reduction of the shoulder width would minimize the impact but would not be a prudent engineering solution for the reasons stated above for Wetland 11.

**Wetland 17** is a riverine wetland that is a tributary of Western Run located west of I-83 at Thornton Mill Road. Alternative 4 Option 1 impacts 0.1 acre, Option 2 impacts 0.1 acre, while Option 3 avoids Wetland 17. Avoidance of the impact with Options 1 and 2 would require the deletion of the I-83 southbound to Thornton Mill Road ramp and its counter movement. Deletion of these movements is not reasonable and would not serve the purpose of the project.

204

Wetland Mitigation

A preliminary assessment of potential wetland replacement sites was conducted to determine where mitigation of wetlands unavoidably impacted by construction of the proposed build alternatives may be feasible. The total impacts anticipated for any combination of build alternatives are no greater than 3.2 acres of palustrine forested and emergent wetlands. The following locations will be further investigated as wetland replacement sites:

Potential Mitigation Site 1

Location: Texas, Maryland

Owner: SHA

Topography: flat, abandoned quarry, adjacent to Beaver Dam Run

Soils: Baltimore Silt Loam, Codorus Silt Loam, Dunning Silt Loam

Hydrology: Beaver Dam Creek

Acreage: 1.40 acres

Potential Mitigation Site 2

Location: Southeast of I-83/Belfast Road interchange

Owner: Archbishop of Baltimore

Topography: flat to gently rolling, adjacent to Piney Creek

Soils: Baltimore Silt Loam, Chester Silt Loam, Codorus Silt Loam, Conestoga Silt Loam

Hydrology: Piney Creek

Acreage: 1.80+ acres

205

F. *Air Quality Impacts*

1. *Analysis Objectives, Methodology and Results*

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

A microscale CO pollution diffusion analysis was conducted using the third generation California Line Source Dispersion Model, CALINE 3QHC. This microscale analysis consisted of projections of one-hour and eight-hour CO concentrations at sensitive receptor sites under worst-case meteorological conditions for the No-Build (Alternative 1) and Build Alternatives 2, 3 and 5 for the design year (2015) and the estimated year of completion (1998).

a. *Analysis Inputs*

A summary of analysis inputs is given below. More detailed information concerning these inputs is contained in the MD 45 Air Quality Analysis which is available for review at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

**Background CO Concentrations**

In order to calculate the total concentration of CO which occurs at a particular receptor site during worst-case meteorological

206

conditions, the background CO concentrations are considered in addition to the levels directly attributable to the facility under consideration.

The background levels were derived from the application of rollback methodology to on-site monitoring conducted by the Maryland Air Management Administration at their Essex Monitoring Site during the period of 1988.

Background CO, PPM

	<u>One-Hour</u>	<u>Eight-Hour</u>
1990	7.1	3.8
2015	7.1	3.8

**Traffic Data, Emission Factors and Speeds**

The appropriate traffic data were utilized as supplied by the Traffic Forecasting Section (March and December 1989, June 1990) of the Maryland State Highway Administration.

The composite emission factors used in the analysis were derived from the Environmental Protection Agency (EPA) Compilation of Air Pollutant Emission Factors: Highway Mobile Sources and were calculated using the EPA MOBILE 4.1 computer program. An ambient air temperature of 20°F was assumed in calculating the emission factors for the one-hour and 35°F was used for the eight-hour analysis in order to approximate worst-case results for each analysis case.

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

**Meteorological Data**

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

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

b. *Sensitive Receptors*

Site selection of sensitive receptors were made on the basis of proximity to the roadway, type of adjacent land use and changes in traffic patterns on the roadway network. Twenty receptor sites were chosen for this analysis consisting of 16 residences, two churches, a commercial historic site and one edge of right-of-way site (see Table 10). The receptor site locations were verified during study area

206

visits by the analysis team. The receptor sites are shown on Figures 14-32.

c. *Results of Microscale Analysis*

The results of the calculations of CO concentrations at each of the sensitive receptor sites for the No-Build and Build Alternatives are shown on Table 11. The values shown consist of predicted CO concentration attributable to traffic on various roadway links plus projected background levels. A comparison of the values in Table 11 with the S/NAAQS shows that no violations would occur for the No-Build or Build Alternatives in 1998 or 2015 for the one-hour or eight-hour concentrations of CO.

The projected CO concentrations vary between alternates depending on receptor locations as a function of the roadway locations and traffic patterns associated with each alternate.

2. Construction Impacts

The construction phase of the proposed project has the potential of impacting the ambient air quality through such means as fugitive dust from grading operations and materials handling. The State Highway Administration has addressed this possibility by establishing Specifications for Construction and Materials procedures to be followed by contractors involved in state work.

The Maryland Air Management Administration was consulted to determine the adequacy of the specifications in terms of satisfying the requirements of the Regulations Governing the Control of Air Pollution in

209

**TABLE 10**

**Air Quality Receptor Sites**

<b><u>Site No.</u></b>	<b><u>Description/Location</u></b>
1	Ashland Presbyterian Church MD 145
2	Gardner House (Historic - NRE) York and Shawan Roads
3	Loch Raven Reservoir Point of Right-of-Way
4	Holly Hill (Historic - NRE) Broadmead Retirement Community
5	Toll House (Historic - NRE) 13822 York Road
6	Residence, 1-1/2 Story Frame 13856 York Road
7	Residence, 2 Story Frame 13927 York Road
8	Jessop M.E. Church (Historic - NRE) York Road
9	Residence, 3 Story Brick Condominiums 2 Shelby's Path
10	Loveton Mansion (Historic - NRE) 14301 York Road
11	Residence, 3 Story Brick Townhouse 2 Cross Falls Way
12	Residence, 1-1/2 Story Frame 14734 York Road
13	Residence, 2 Story Frame 14905 York Road
14	Residence/Apt., 2 Story Frame 15017/15021 York Road



**TABLE 10 (Cont'd.)  
Air Quality Receptor Sites**

<b>15</b>	<b>Residence, 2 Story Stone/Frame 15112 York Road</b>
<b>16</b>	<b>Residence, 1-1/2 Story Frame 14426 Thornton Mill Road</b>
<b>17</b>	<b>Residence, 1 Story Brick 628E Rocky Hill Road</b>
<b>18</b>	<b>Residence, 1-1/2 Story Frame 14536 Thornton Mill Road</b>
<b>19</b>	<b>Residence, 1 Story Brick 14552 Quaker Bottom Road #2</b>
<b>20</b>	<b>Residence, 2 Story Frame 14608 Quaker Bottom Road #2</b>

Table 11

## MARYLAND ROUTE 45 AIR QUALITY ANALYSIS

1998 1-HOUR CO CONCENTRATIONS  
(PPM)

211

Receptor	Description	No-Build	Alternate 2	Alternate 3	Alternate 4			Alternate 5
					Option 1	Option 2	Option 3	
1	Ashland Presbyterian Church, MD Route 145	7.8	7.3	7.3				
2	Gardner House (NRE) Southwest, York and Shawan	10.2	8.1	8.1				
3	Loch Raven Reservoir, Point on Right-of-Way	7.5	7.8	7.8				
4	Holly Hill (NRE) Broadneck Retirement Community	7.6	7.3	7.2				7.3
5	Toll House (NRE), 13822 York Road	11.1	8.0	7.4				7.8
6	1½ Story Frame Residence, 13856 York Road	9.0	7.6	7.6				7.8
7	2 Story Frame Residence, 13927 York Road	7.9	7.6	7.4				7.4
8	Jessup Methodist Church, MD Route 45	8.8	7.9	7.8				7.4
9	3 Story Brick Condos, 2 Shelbys Path	8.7	8.0	7.7				
10	Loveton Mansion (NRE), 14301 York Road	8.2	7.6	7.6				
11	3 Story Brick TH, 2 Cross Falls Way	8.3	7.5	7.5				
12	1½ Story Frame Residence, 14734 York Road	8.2	7.5	7.5				
13	2 Story Frame Residence, 14905 York Road	9.4	8.0	8.0				
14	2 Story Frame Residence/Apartment, 15017/15021 York Road	9.6	7.9	7.9				
15	2 Story Stoned Frame Residence, 15112 York Road	8.5	7.5	7.5				
16	1½ Story Frame Residence, 14426 Thorton Mill Road	8.2			8.3	8.2		
17	1 Story Brick Residence, 628E Rocky Hill Road	8.1			8.1	8.1		
18	1½ Story Frame Residence, 14536 Thorton Mill Road	9.1			9.1	9.0	9.0	
19	1 Story Brick Residence, 14552 Quaker Bottom Road	8.6					8.5	
20	2 Story Frame Residence, 14608 Quaker Bottom Road	8.9					8.8	

The S/NAAQS for 1-Hour CO: 35 ppm

February 11, 1992

Table 11

2/12

**MARYLAND ROUTE 45 AIR QUALITY ANALYSIS**  
**1998 8-HOUR CO CONCENTRATIONS**  
**(PPM)**

Receptor	Description	No-Build	Alternate 2	Alternate 3	Alternate 4			Alternate 5
					Option 1	Option 2	Option 3	
1	Ashland Presbyterian Church, MD Route 145	3.9	3.9	3.9				
2	Gardner House (NRE) Southwest, York and Shawan	4.0	4.0	4.0				
3	Loch Raven Reservoir, Point on Right-of-Way	3.8	3.9	3.9				
4	Holly Hill (NRE) Broadneck Retirement Community	3.8	3.8	3.8				3.8
5	Toll House (NRE), 13822 York Road	4.0	3.9	3.8				4.0
6	1½ Story Frame Residence, 13856 York Road	3.9	3.8	3.9				3.9
7	2 Story Frame Residence, 13927 York Road	3.8	3.8	3.8				3.8
8	Jessup Methodist Church, MD Route 45	3.8	3.8	3.9				3.9
9	3 Story Brick Condos, 2 Shelbys Path	3.9	3.9	3.9				
10	Loveton Mansion (NRE), 14301 York Road	3.8	3.8	3.8				
11	3 Story Brick TH, 2 Cross Falls Way	3.8	3.9	3.9				
12	1½ Story Frame Residence, 14734 York Road	3.9	3.8	3.8				
13	2 Story Frame Residence, 14905 York Road	3.9	3.9	3.9				
14	2 Story Frame Residence/Apartment, 15017/15021 York Road	3.9	3.9	3.9				
15	2 Story Stoned Frame Residence, 15112 York Road	3.9	3.9	3.9				
16	1½ Story Frame Residence, 14426 Thorton Mill Road	4.0			4.1	4.1		
17	1 Story Brick Residence, 628E Rocky Hill Road	3.9			3.9	3.9		
18	1½ Story Frame Residence, 14536 Thorton Mill Road	4.1			4.1	4.1	4.1	
19	1 Story Brick Residence, 14552 Quaker Bottom Road	4.0					4.0	
20	2 Story Frame Residence, 14608 Quaker Bottom Road	4.0					4.0	

The S/NAAQS for 8-Hour CO: 9 ppm

Table 11

213

## MARYLAND ROUTE 45 AIR QUALITY ANALYSIS

2015 1-HOUR CO CONCENTRATIONS  
(PPM)

Receptor	Description	No-Build	Alternate 2	Alternate 3	Alternate 4			Alternate 5
					Option 1	Option 2	Option 3	
1	Ashland Presbyterian Church, MD Route 145	7.9	7.3	7.3				
2	Gardner House (NRE) Southwest, York and Shawan	10.5	8.4	8.4				
3	Loch Raven Reservoir, Point on Right-of-Way	7.6	8.0	8.0				
4	Holly Hill (NRE) Broadneck Retirement Community	7.6	7.4	7.4				7.3
5	Toll House (NRE), 13822 York Road	11.5	8.1	7.5				8.0
6	1½ Story Frame Residence, 13856 York Road	9.2	7.7	7.7				7.9
7	2 Story Frame Residence, 13927 York Road	7.9	7.7	7.5				7.5
8	Jessup Methodist Church, MD Route 45	8.9	8.1	7.9				7.5
9	3 Story Brick Condos, 2 Shelbys Path	8.9	8.1	7.9				
10	Loveton Mansion (NRE), 14301 York Road	8.3	7.6	7.6				
11	3 Story Brick TH, 2 Cross Falls Way	8.4	7.7	7.7				
12	1½ Story Frame Residence, 14734 York Road	8.4	7.6	7.6				
13	2 Story Frame Residence, 14905 York Road	9.7	8.3	8.3				
14	2 Story Frame Residence/Apartment, 15017/15021 York Road	9.9	8.1	8.1				
15	2 Story Stoned Frame Residence, 15112 York Road	8.8	7.7	7.7				
16	1½ Story Frame Residence, 14426 Thorton Mill Road	8.2			8.5	8.5		
17	1 Story Brick Residence, 628E Rocky Hill Road	8.2			8.3	8.3		
18	1½ Story Frame Residence, 14536 Thorton Mill Road	9.1			9.3	9.3	9.8	
19	1 Story Brick Residence, 14552 Quaker Bottom Road	8.7					9.1	
20	2 Story Frame Residence, 14608 Quaker Bottom Road	8.9					9.6	

The S/NAAQS for 1-Hour CO: 35 ppm

Table 11

**MARYLAND ROUTE 45 AIR QUALITY ANALYSIS**  
**2015 8-HOUR CO CONCENTRATIONS**  
**(PPM)**

Receptor	Description	No-Build	Alternate 2	Alternate 3	Alternate 4			Alternate 5
					Option 1	Option 2	Option 3	
1	Ashland Presbyterian Church, MD Route 145	3.9	3.8	3.8				
2	Gardner House (NRE) Southwest, York and Shawan	4.1	4.0	4.0				
3	Loch Raven Reservoir, Point on Right-of-Way	3.8	4.0	4.0				
4	Holly Hill (NRE) Broadneck Retirement Community	3.8	3.8	3.8				3.8
5	Toll House (NRE), 13822 York Road	4.2	3.9	3.8				4.0
6	1½ Story Frame Residence, 13856 York Road	4.0	3.8	3.9				3.9
7	2 Story Frame Residence, 13927 York Road	3.9	3.8	3.8				3.9
8	Jessup Methodist Church, MD Route 45	3.9	3.8	3.9				3.9
9	3 Story Brick Condos, 2 Shelbys Path	4.0	3.9	3.9				
10	Loveton Mansion (NRE), 14301 York Road	3.9	3.8	3.8				
11	3 Story Brick TH, 2 Cross Falls Way	3.9	3.9	3.9				
12	1½ Story Frame Residence, 14734 York Road	3.9	3.9	3.9				
13	2 Story Frame Residence, 14905 York Road	4.0	3.9	3.9				
14	2 Story Frame Residence/Apartment, 15017/15021 York Road	4.0	3.9	3.9				
15	2 Story Stoned Frame Residence, 15112 York Road	4.0	3.9	3.9				
16	1½ Story Frame Residence, 14426 Thorton Mill Road	4.0			4.0	4.1		
17	1 Story Brick Residence, 628E Rocky Hill Road	3.8			3.8	3.8		
18	1½ Story Frame Residence, 14536 Thorton Mill Road	4.0			4.0	4.0	4.0	
19	1 Story Brick Residence, 14552 Quaker Bottom Road	4.0					4.0	
20	2 Story Frame Residence, 14608 Quaker Bottom Road	4.0					4.0	

The S/NAAQS for 8-Hour CO: 9 ppm

215

the State of Maryland. The Maryland Air Management Administration found that the specifications are consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures (Code of Maryland Regulations 10.18.06.03D) will be taken to minimize the impact on the air quality of the area.

3. Conformity with Regional Air Quality Planning

The project is in an air quality nonattainment area which has transportation control measures in the State Implementation Plan (SIP). The Baltimore Regional Council of Governments added the MD 45 project to the long range transportation plan in March 1992, and as a result of conformity testing, determined that the project does not result in higher hydrocarbon or carbon monoxide emissions.

4. Agency Coordination

Copies of the technical Air Quality analysis will be circulated to the U.S. Environmental Protection Agency and the Maryland Air Management Administration for review and comment.

G. Noise Impacts

1. Abatement Criteria and Land Use Relationships

This noise analysis was completed in accordance with the FHWA Noise Abatement Criteria and 23 CFR, Part 772 (see Table 12). The factors that were considered in identifying noise impacts are:

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

7/16

The noise impacts of the project were based upon the relationship of the projected noise levels to the FHWA Noise Abatement Criteria and to the ambient noise levels. Noise impacts occur when the Federal Highway Administration noise abatement criteria (Table 12) are approached or exceeded or when the predicted traffic noise levels are substantive or exceed the existing or ambient noise levels. The Maryland State Highway Administration uses a 10 dBA increase to define a substantive increase. Noise abatement measures or mitigation will be evaluated when a noise impact is identified.

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

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

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

Cost-effectiveness is determined by dividing the total number of impacted sensitive sites in a specified noise sensitive area that will receive

217

Table 12

**NOISE ABATEMENT CRITERIA  
SPECIFIED IN 23 CFR 772.**

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



218

at least a 5 dBA reduction of noise levels into the total cost of the noise mitigation. For the purpose of comparison, a total cost of \$16.50 per square foot is assumed to estimate total barrier cost. This cost figure is based upon current costs experienced by the Maryland State Highway Administration and includes the cost of panels, footing, drainage, landscaping and overhead. The State Highway Administration has established approximately \$40,000 per residence protected as being the maximum cost for a barrier to be considered reasonable.

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

2. Impact Analysis and Feasibility of Noise Abatement

a. *No-Build Alternative*

Evaluation of the No-Build Alternative was performed to serve as a base case from which to assess the specific noise level increases resulting from the proposed improvements. The No-Build Alternative assumes that no highway improvements, other than normal maintenance, will occur within the project area. The results of the modeling revealed four NSA locations where the predicted noise level is actually lower than the ambient level. Such an occurrence is attributable to fluctuations in traffic volumes by time of day and vehicle miles. NSA's 5, 13-14, 16 and 18-20 will equal or exceed the FHWA noise abatement criteria of 67 dBA. Noise

abatement measures will not be provided under the No-Build Alternative.

b. *Build Alternatives 2, 3 and 5*

Seven of the 15 NSA's modeled for Alternatives 2, 3 and 5 (NSA's 2, 9, 11-15) will have resultant noise levels that exceed the noise abatement criteria of 67 dBA (see Noise Abatement Analysis Summary - Table 13). None of the NSA's will have resultant build noise levels that exceed ambient levels by 10 dBA or more.

The analysis of noise barrier feasibility was initiated by placing barriers between MD 45 and the previously described NSA's. Each barrier was divided into segments that were subsequently placed to intersect the access created between the driveways of existing residences and the subject roadway. This allows for the analysis to model scenarios both with and without a potential access change to each of the residences.

Preliminary barrier heights and lengths were determined through the use of the OPTIMA model.

The analysis involved consideration of noise barriers for the following seven noise sensitive areas:

**NSA 2**

Noise Sensitive Area 2 is the Gardner House (NRE) located at the southwest corner of York and Shawan Roads. An ambient noise level of 73 dBA was recorded at the site. A No-Build noise level of 65 dBA and build noise levels of 70 dBA would result at the

**TABLE 13  
NOISE ABATEMENT ANALYSIS  
MD 45 - MD 145 TO BELFAST ROAD**

REC.	DESCRIPTION	AMBIENT	NO-BUILD	ALT. 2	ALT. 3	ALT. 5	ALTERNATIVE 4			FOR ALTS.	ABATEMENT SUMMARY						
							Option 1	Option 2	Option 3		No. Impacted	No. Protected	Barrier Length	Barrier Height	Total Cost	Cost Per Res. Prot.	Access Denied
1	Ashland Pres. Church	63	65	65	65	65				N/A							
2	Gardner House (NRE) SW x York & Shawan	73*	65	70*	70*	70*				2,3	1	1	350'	12'	67,200	67,200	Yes**
3	Loch Raven Reservoir Point on R-O-W	59	47	65	65	65				N/A							
4	Holly Hill (NRE) Broadneck Ret. Comm.	62	50	56	53	54				N/A							
5	Toll House (NRE) 13822 York Road	68*	71*	65	62	66				N/A							
6	1 1/2 story frame res. 13856 York Road	56	59	59	64	62				N/A							
7	2 story frame res. 13927 York Road	54	54	60	54	59				N/A							
8	Jessop M.E. Church MD 45	52	58	60	58	56				N/A							
9	3 story brick condos 2 Shelbys Path	67*	65	70*	70*	70*				2,3	7	6	750'	16'	192,000	32,000	No
10	Loveton Mansion (NRE) 14301 York Road	59	60	65	65	65*				N/A							
11	3 story brick TH 2 Cross Falls Way	53	62	68*	68*	68*				2,3	3	3	350'	16'	89,600	29,900	No

Table 13 (Cont'd)

REC.	DESCRIPTION	AMBIENT	NO-BUILD	ALT. 2	ALT. 3	ALT. 5	ALTERNATIVE 4			FOR ALTS.	ABATEMENT SUMMARY						
							Option 1	Option 2	Option 3		No. Impacted	No. Protected	Barrier Length	Barrier Height	Total Cost	Cost Per Res. Prot.	Access Denied
12	1 1/2 story frame res. 14734 York Road	61	63	68*	68*	68*				2,3	1	1	300'	10'	48,000	48,000	Yes**
13	2 story frame res. 14905 York Road	64	68*	73*	73*	73*				2,3	1	1	350'	12'	67,200	67,200	Yes**
14	2 story frame res. 15017/15021 York Road	68*	68*	73*	73*	73*				2,3	3	3	450'	14'	100,800	33,600	Yes**
15	2 story stone & frame res. 15112 York Road	61	66	71*	71*	71*				2,3	1	1	250'	12'	48,000	48,000	Yes**
16	1 1/2 story frame res. 14526 Thornton Mill Road	67*	67*				67*	67*		4 opt. 1,2	1	1	700'	14'	156,800	156,800	No
17	1 story brick res. 628 E. Rocky Hill Road	56	64				64	64		N/A							
18	1 1/2 story frame res. 14536 Thornton Mill Road	60	71*				71*	71*	71*	4 all opt.	1	1	400'	16'	102,400	102,400	No
19	1 story brick res. 14552 Quaker Bottom Road #2	62	68*						68*	4 opt. 3	1	1	350'	14'	78,400	78,400	No
20	2 story frame res. 14608 Quaker Bottom Road #2	59	69*						70*	4 opt. 3	1	1	420'	12'	80,640	80,640	No

\* Exceed FHWA Noise Abatement Criteria

\*\* Unable to abate noise levels without denying access to property as currently exists.

222

site. The higher ambient noise level is the result of an abnormally high truck percentage during the monitoring period. For Build Alternatives 2, 3 and 5, a barrier approximately 350 feet in length at a height of 12 feet would abate noise levels 7 dBA. The total cost for the barrier would be approximately \$67,200 for one residence. There are no outdoor activities associated with this property. This NSA has direct access from York and Shawan Roads. This barrier would not be reasonable or feasible as a barrier could not be constructed without denying access to the properties involved.

#### **NSA 9**

Noise Sensitive Area 9 is comprised of groups of condominiums located on Shelbys Path of the Loveton Farms development. These residences are air-conditioned. There are no outdoor activities associated with this site. An ambient noise level of 67 dBA exists at the site. No-build levels of 65 dBA would result. For both Build Alternatives 2, 3 and 5, noise levels would be 70 dBA. A total of seven units would exceed noise abatement criteria. A barrier approximately 750 feet in length at a height of 16 feet would lower the noise levels a minimum of 5 dBA at six of the seven units. The construction cost would be approximately \$192,000 or \$32,000 per residence protected. This is considered reasonable and feasible and will be further evaluated during final design.

223

### NSA 11

Noise Sensitive Area 11 is comprised of townhomes on Cross Falls Way of the Loveton Farms development. These townhomes are air-conditioned. There are no outdoor activities associated with this site. An ambient noise level of 53 dBA exists at the site. A no-build noise level of 62 dBA is predicted at the site, while build alternative noise levels are 68 dBA for both alternatives. A total of three townhomes would exceed noise abatement criteria. To attenuate noise levels a minimum of 7 dBA, a noise wall approximately 350 feet in length at a height of 16 feet would be needed. The construction cost of the noise wall would be approximately \$89,600 or \$29,900 per residence that is protected. This barrier is considered reasonable and feasible and will be evaluated further during final design.

### NSA 12

A one and a half story single-family residence at 1473 York Road is the site of NSA 12. The ambient noise level at the site is 61 dBA. Predicted future-year noise levels are 63 dBA for the No-Build alternative and 68 dBA for both Build Alternatives 2, 3 and 5. To provide abatement, a barrier approximately 300 feet in length and 10 feet in height would be required. The cost for the barrier would be approximately \$48,000 for one residence. This residence has direct access to York Road. This barrier would not be a

reasonable mitigation measure and could not be constructed without denying residential access.

**NSA 13**

Noise Sensitive Area 13 is a two-story frame residence at 14905 York Road. An ambient noise level of 64 dBA was monitored at the site. The predicted No-Build noise level is 68 dBA, while the noise level for both Build Alternatives 2, 3 and 5 is 73 dBA. In order to abate noise levels, a barrier approximately 350 feet in length at a height of 12 feet would be needed. The cost of construction for one residence is \$67,200. This barrier would not be reasonable or feasible as it could not be constructed without denying access to properties.

**NSA 14**

Three residential structures located between 15017 and 15021 York Road comprise NSA 14. In this area, the ambient noise level is 68 dBA. The predicted No-Build Alternative noise level is 68 dBA. For both Build Alternatives 2, 3 and 5, the predicted noise level is 73 dBA. To abate noise levels at the three residences, a noise wall approximately 450 feet in length and 14 feet in height would be needed. The cost of the barrier system is approximately \$100,800 for construction or \$33,600 per residence protected. This barrier would not be considered feasible as it could not be constructed without denying access to properties.

275

**NSA 15**

Noise Sensitive Area 15 is the site of a two-story stone and frame residence located at 15112 York Road just south of Belfast Road. An ambient noise level of 61 dBA exists at the site. For the no-build alternative, a noise level of 66 dBA is predicted. For Build Alternatives 2, 3 and 5, a noise level of 71 dBA is predicted. In order to provide abatement, a noise barrier approximately 250 feet in length at a height of 12 feet would be required. The cost of construction for one residence is \$48,000. This barrier would not be reasonable or feasible as it would exceed the allowable cost-per-residence criteria and could not be constructed without denying access to properties.

c. *Build Alternative 4*

Four (NSA's 16-18, 20) of the five NSA's modeled for Alternative 4 will have resultant noise levels that exceed the FHWA noise abatement criteria of 67 dBA. In addition, NSA's 18 and 20 will have resultant build noise levels that increase over ambient levels by 10 dBA or more.

The following is a discussion of the feasibility of abatement for the four sites mentioned above:

**NSA 16**

Noise Sensitive Area 16 is a one and a half story frame residence located at 14426 Thornton Mill Road. The ambient noise level at the site is 67 dBA. Predicted noise levels for the No-Build



226

Alternative and Build Alternative 4 Options 1 and 2 are 67 dBA. In order to abate noise levels at the site, a noise wall approximately 700 feet long at a height of 14 feet would be required. The cost of such a barrier system would be \$156,800 for one residence. This barrier would not be reasonable as it would exceed the allowable cost-per-residence criteria of \$40,000.

**NSA 18**

Noise Sensitive Area 18 is a one and a half story frame residence at 14536 Thornton Mill Road. The ambient noise level at the site is 60 dBA. The predicted No-Build Alternative noise level at the site is 71 dBA. For Build Alternative 4 Options 1, 2 and 3, the predicted noise level is also 71 dBA. In order to provide abatement for the site, a noise barrier approximately 400 feet in length and 16 feet in height would be needed. The cost of the construction for one residence is \$102,400. This barrier would not be reasonable as it would exceed the allowable cost-per-residence criteria of \$40,000.

**NSA 19**

A single family residence at 14552 Quaker Bottom Road No. 2 is NSA 19. The area has an ambient noise level of 62 dBA. An expected noise level of 68 dBA is predicted for both the No-Build Alternative and Build Alternative 4 Option 3. To abate noise levels at the site, a noise wall 350 feet in length at a height of 14 feet would be required. The cost of the barrier system would be

227  
approximately \$78,400 for both construction for one residence. This barrier would not be reasonable as it would exceed the allowable cost-per-residence criteria of \$40,000.

#### NSA 20

Noise Sensitive Area 20 is a two-story frame residence at 14608 Quaker Bottom Road No. 2. At this tie, the ambient noise level is 59 dBA. The predicted No-Build Alternative noise level is 69 dBA, while for Build Alternative 4 Option 3, the predicted noise level is 70 dBA. For the one residence exceeding criteria, a noise wall approximately 420 feet in length at a height of 12 feet would be needed to abate the levels. The cost of the barrier for one residence is approximately \$80,640. This barrier would not be reasonable as it would exceed the allowable cost-per-residence criteria of \$40,000.

#### d. *Construction Impacts*

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

Generally, construction activity would occur during normal working hours on weekdays. Therefore, noise impacts experienced

228

by local residents as a result of construction activities should not occur during sleep or outdoor recreation periods.

e. *Other Mitigation Measures*

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

(1) Traffic Management Measures

Traffic management measures that could be used include traffic control devices and signing for prohibition of certain vehicles (heavy trucks), time use restrictions for certain types of vehicles, modified speed limits and exclusive lane designations. The MD 45 project area is not a heavily traveled heavy truck route and would not benefit from heavy truck restrictions.

(2) Alterations of Horizontal and Vertical Alignment

This may not be feasible due to the steep slopes and existing topography.

(3) Acquisition of Real Property or Property Rights to Establish Buffer Zones

Existing residential development adjacent to MD 45 makes it infeasible to acquire substantial amounts of property for buffer areas.

H. *Hazardous Wastes*

The No-Build Alternative would not result in any encroachment on the Bausch and Lomb (B&L); Diecraft property.

279

Although the property is currently owned by Cambridge Instruments, B&L has been conducting environmental investigations there since 1982. These studies concern the former plating waste disposal system for heavy metals and trichloroethylene (TCE) and its subsequent effects on the surrounding environment. The Maryland Department of Environment Hazardous and Solid Waste Administration (HSWMA) has been working closely with B&L since 1984 in providing regulatory oversight and management assistance. A number of old production dry wells from the 1960's surround the plant in the front and rear. A sampling from one of these wells located in front of the building indicated no evidence of contamination.

HSWMA stated that no historical evidence or technical data demonstrate evidence of contamination between the roadway and the building and that all wastes were deposited behind the building in the lagoon and three dry wells.

HSWMA requested that all surface water be diverted away from the B&L site during and after construction and that appropriate stormwater management practices would be sufficient to ensure this. It is important that during construction, stormwater runoff diverted away from the B&L site is monitored to ensure stormwater runoff diversion is maintained. HSWMA stated that the closed drainage system will serve to reduce the amount of stormwater runoff flowing towards B&L, thus improving the current condition.

HSWMA stated that the water table at MD 45 was located approximately 35 feet below the roadway surface at the interface of the saprolyte layer and bedrock. Since the proposed roadway cut will not affect the water table, HSWMA

230

did not believe that any impact on subsurface flow would occur with the MD 45 project.

Alternatives 2, 3 and 5 would result in a minor encroachment on the B&L; Diecraft property immediately adjacent to existing MD 45. The proposed slope line would extend an average of 30 feet from the existing roadway edge with an additional 10-15 feet of ground distance for construction equipment operations. A minor amount of fill and up to 10 feet of cut would be required to reach the roadway subbase with an estimate of another 2-3 feet for drainage pipes at the deepest cut point (Station 138).

Alternatives 2, 3 and 5 include a closed drainage system and all stormwater runoff will be diverted away from the B&L; Diecraft property during and after construction and will be monitored during construction to ensure that runoff diversion is maintained.

At the meeting held with HSWMA on October 5, 1990, HSWMA stated and has confirmed in the letter dated November 1, 1990 (see Comments and Coordination Section 11/1/90 letter and 10/15/90 memorandum) that Alternatives 2, 3 and 5 should have no effect on the B&L site because (1) the construction is not in the area of the waste disposal system, (2) the depth of excavation is not to the water table and (3) temporary and permanent surface water control features will be implemented which will prevent surface water from entering the B&L; Diecraft site through the use of the required sediment and stormwater management features and a closed drainage system.

The design plans will be provided to HSWMA for review and comment to ensure that stormwater management/sediment and erosion control measures and

231

the drainage system avoid any involvement with the hazardous waste at B&L; Diecraft. Any changes in the design of the project will be coordinated immediately with HSWMA for their evaluation of the potential impact on the B&L; Diecraft site.

Alternatives 2, 3 and 5 would not require any vertical or horizontal alteration at the gas station (Station 169) beyond the existing right-of-way line. A minor amount of right-of-way (0.09 acre) will be required to maintain the proposed right-of-way width in this area. Alternatives 2, 3 and 5 would not require the removal of the underground storage tanks or alteration to the feeder lines associated with the station's gas pumps.

I. ***Ridgebrook Road Extension*** (Associated with proposed I-83 interchange)

The existing portion of Ridgebrook Road intersects MD 45 between Loveton Circle and Quaker Bottom Road. It extends westward from MD 45 approximately 2,000 feet to provide access to the proposed Highlands Industrial Park.

Selection of any of the Alternative 4 options for an interchange with I-83 may limit the choices of alignments for the connecting portion of Ridgebrook Road by the developers of Highlands Industrial Park. Consistent with the existing portion of Ridgebrook Road, the extension would likely provide a roadway with two 12-foot lanes in each direction.

An assessment of potential environmental impacts associated with the extension of Ridgebrook Road indicates that the roadway extension is consistent with the Baltimore County Master Plan (1989-2000). No federally listed threatened or endangered species, National Register or eligible historic standing

232

sites or districts or archeological sites, park property, hazardous waste sites or areas of 100-year floodplain are known to occur in areas where an extension of this roadway would likely occur (Figures 2 through 9). No residential or business relocations are anticipated. The headwaters of an unnamed tributary to Western Run and Palustrine Forested wetlands associated with the stream are located south of the proposed roadway extension according to National Wetland Inventory (USFWS) and Non-tidal Wetlands Mapping (MDDNR). Any action that would impact the stream and/or associated wetlands would require the developer to obtain the appropriate permits from the U.S. Army Corps of Engineers, Maryland Department of Natural Resources and Maryland Department of the Environment.

SECTION V 4(f) EVALUATION



234

V. **SECTION 4(f) EVALUATION**

A. *Introduction*

Section 4(f) of the U.S. Department of Transportation Act (now Section 303(c) of 49 USC) states that utilizing land from a significant publicly owned public park, recreation area, wildlife refuge, or any significant historic site for a federally funded or approved transportation project is permissible only if there is no feasible and prudent alternative to the use of that property and if all possible planning to minimize harm is included as part of the project.

B. *Description of Proposed Action*

Five alternatives are under consideration: No-Build (Alternative 1), Alternatives 2, 3, 4 and 5. See Section III - Alternatives under Consideration of the NEPA document for a detailed discussion of the alternatives.

Alternatives 2, 3 and 5 consist of the reconstruction of MD 45 from MD 145 (Ashland Road) to Belfast Road and the relocation of MD 145 for a total distance of approximately 3.9 miles. A new interchange in the vicinity of I-83/Thornton Mill Road area is also under consideration (Alternative 4) with Options 1, 2 and 3. These improvements will serve to improve capacity on MD 45 to address existing and future congestion resulting from development and to correct substandard horizontal and vertical geometry. Improved access between I-83 and MD 45 would result with the new interchange at the I-83/Thornton Mill Road area and the relocation of MD 145 to intersect MD 45 opposite Shawan Road.

The No-Build Alternative (Alternative 1) would not require the acquisition of property from any Section 4(f) resource.

235-

Alternatives 2, 3 and 5 would require the same amount of property from the following 4(f) resources: Gardner House, Loveton, Sparks/Glencoe Historic District, Western Run - Belfast Historic District and Sparks Park. Alternative 4 would require different amounts of right-of-way from the Western Run-Belfast Historic District depending upon the option (i.e. 1, 2 or 3). Alternative 4 Option 3 would also require property from the Sparks/Glencoe Historic District.

C. *Description of 4(f) Resources*

1. Gardner House (BA 917) is eligible for the National Register of Historic Places. It is located in the southwest quadrant of the MD 45/Shawan Road intersection as shown on Figure 7 (Historic Sites Overview) and Figures 15, 17, 19, 21, 23, 25 and 33. Access to the site is from Shawan Road and the structure is currently used as a real estate office.

The structure is significant as an example of Queen Anne style architecture and its extant period outbuildings include a circular ice house. The buildings are in excellent condition and constitute a picturesque remnant of the 19th century Marble Hill community.

2. Loveton (BA 92) is eligible for the National Register of Historic Places. It is located on the east side of MD 45 north of Loveton Farms Road as shown on Figure 7 and Figures 27 and 34. Access to the site is from MD 45 opposite Loveton Drive.

The structure is significant as an example of a fieldstone Federal house of the mid-19th century. The manor house was the centerpiece of a prosperous 19th century dairy and grain farm.

3. Sparks/Glencoe Historic District is eligible for the National Register of Historic Places. The southern boundary district is located approximately 2,300 feet north of Loveton Circle and extends westward to I-83 and eastward beyond the project area as shown on Figures 7, 28, 29, 30, 31 and 32.

The District is significant as a well-preserved rural village that grew up alongside the York Turnpike to provide transportation-related facilities to the traveling public. It was also the focus of the agrarian economy that thrived in the mid-Baltimore County area. The housing stock of the district ranges from roughhewn vernacular structures to high style manor houses, to humble bungalows, spanning in date from the 18th century through the early 20th century.

Particularly notable structures are Prices Store, which has been the focus of the Sparks (then Philopolis) community since 1833, and the Milton Inn, an early 19th century fieldstone house built by two prominent Quaker families for use as a tavern. It is significant individually as a county landmark.

The Rorney House Complex is very closely related to the York Turnpike as it includes what once was a blacksmithing complex and rooming house. Matthews Mill House is the sole remnant of a once thriving mill complex at Piney Run called Caro or Matthews Mill. Seven sites are particularly significant resources which contribute to and are within the Sparks/Glencoe Historic District:

- 237
- Sax House (Site No. 11)
  - Huff House - School No. 9 (Site No. 13)
  - Price's Store (Site No. 15)
  - Milton Inn (Site No. 17)
  - Rogne House Complex (Site No. 20)
  - Matthew's Mill House (Site No. 23)
  - Merryman House (Site No. 24)

Seven sites which also contribute to the historicity of the district but which may not be as individually significant as the sites above are:

- Price House (Site No. 12)
- Huff Tenant House (Site No. 14)
- Ensor House (Site No. 16)
- Nicholas Price House (Site No. 18)
- Huff House (Site No. 19)
- Frame Dwelling (Site No. 21)
- Matthew's House Complex (Site No. 22)

The site numbers cited above are shown on the alternatives mapping.

4. Western Run - Belfast Historic District was listed on the National Register of Historic Places on January 23, 1979. It is located on the west side of I-83 extending north and south of the project area in the vicinity of the I-83/Thornton Mill Road interchange area. The District location is shown on Figures 7, 30, 31 and 32.

The District is significant as a roughly 10,000 acre, remarkably cohesive and intact rural agricultural area in which the descendents of the original settlers have continued to live and farm, occupying, in many cases, the original homes of their ancestors. Exhibiting traditional land patterns relating to its agricultural and residential use, there is only one commercial village, Butler, which has a general store, post office and firehouse. The District is significant as an intact, rural area; all the more remarkable in light of the rapid suburbanization occurring in other parts of Baltimore County.

230

One site that contributes to the historicity of the District within the project study area is:

- Smallwood (BA 449) - Site No. 25

This site is labeled as Historic Site No. 25 on the alternatives mapping.

5. Sparks Park is a 40.5 acre park owned by the Baltimore County Department of Recreation and Parks, including recent property acquisitions. It is located in the northeast quadrant of the MD 45/Sparks Road intersection. The only recreational facility within the park is a hiker/biker trail, located east of Sparks Elementary School and south of Piney Creek. The remainder of the property is undeveloped woodland which provides stream valley protection. Although the county envisions some future development of facilities such as ball diamonds, athletic fields, picnic areas, etc., no plans currently exist which show the proposed location of these facilities. The park property was acquired with the Department of Natural Resources Program Open Space monies.

D. *Description of Impacts*

1. Gardner House

Alternatives 2, 3 and 5 would have identical impacts on the Gardner House. Approximately 0.1 acre of right-of-way would be acquired from within the historic site boundary (see Figures 15, 17, 19, 21, 23, 25 and 33). In order to provide the improved capacity at the MD 45/Shawan Road intersection, double left-turn lanes on northbound MD 45 and one right-turn lane on Shawan Road must be provided. The historical boundary of

239

the site is coterminus with the existing right-of-way. Alternatives 2, 3 and 5 would require property from the site on both the MD 45 and Shawan Road sides of the property. The State Historic Preservation Officer determined that Alternatives 2, 3 and 5 would result in an adverse effect to this site. Section IV.G. shows that the ambient noise level is 73 dBA with a design year (2015) noise level of 70 dBA.

2. Loveton

Alternatives 2, 3 and 5 would have identical impacts to Loveton and would require approximately 0.70 acre of right-of-way from the site in the area bordering MD 45 (see Figures 27 and 34) in order to flatten the vertical alignment of the roadway and avoid impacting the stormwater basin on the west side of the roadway. An adverse effect determination was received for this site for Alternatives 2, 3 and 5. The historical boundary is coterminus with the existing right-of-way. The ambient noise level is 59 dBA and the design year (2015) noise level is 65 dBA.

3. Sparks/Glencoe Historic District

Alternatives 2, 3 and 5 would require approximately 3.62 acres of right-of-way from the district in order to provide eight-foot shoulders on MD 45. These alternatives were found to result in adverse effects to this district. It would also require five residences of which four contribute to the historicity of the district. These acquisitions include the Price House (Historic Site No. 12) and four unnamed sites (see Figures 28, 29, 30 and 31). Ambient noise levels for the four noise sensitive areas in the

district range from 61 to 68 dBA and have design year (2015) noise levels ranging from 68-73 dBA with Alternatives 2, 3 and 5.

Alternative 4 Option 3 (see Figure 32) would require approximately 0.89 acre of right-of-way from the district for the construction of the westbound Ridgebrook Road to northbound I-83 interchange ramp. The State Historic Preservation Officer indicated that this option would result in a no adverse effect to the district. Ambient noise levels at one noise sensitive area is 59 dBA and 70 dBA with Alternative 4 Option 3.

4. Western Run - Belfast Historic District

Alternative 4 Option 1 requires approximately 11.2 acres of right-of-way from the district, while Options 2 and 3 require approximately 15.6 and 20.9 acres respectively for construction of an interchange at I-83 (see Figures 30, 31 and 32). An adverse effect determination was received from the State Historic Preservation Officer. Three structures would be required with Option 1, two structures with Option 2 and one structure with Option 3. None of these structures contribute to the significance of the historic district. The ambient noise level at one noise sensitive area of 60 dBA will increase to 71 dBA for all three options.

5. Sparks Park

Alternatives 2, 3 and 5 would require approximately 0.82 acre of right-of-way from the park for the addition of the eight-foot shoulder on northbound MD 45 (Figures 29 and 37). The hiker-biker trail within the park would not be affected. The topography immediately adjacent to MD

241

45 requires a substantial amount of regrading. The right-of-way line extends into the park in order to maintain the proposed roadway section.

E. *Avoidance and Minimization of Impacts*

1. *Gardner House*

A shift of MD 45 east and Shawan Road north would avoid the impact to the Gardner House property with Alternatives 2, 3 and 5 (see Figure 33). This shift would require three additional businesses on Shawan Road and one additional business on York Road. Right-of-way and relocation costs for these businesses would be \$2.8 million. Therefore, it was considered not to be a prudent minimization option.

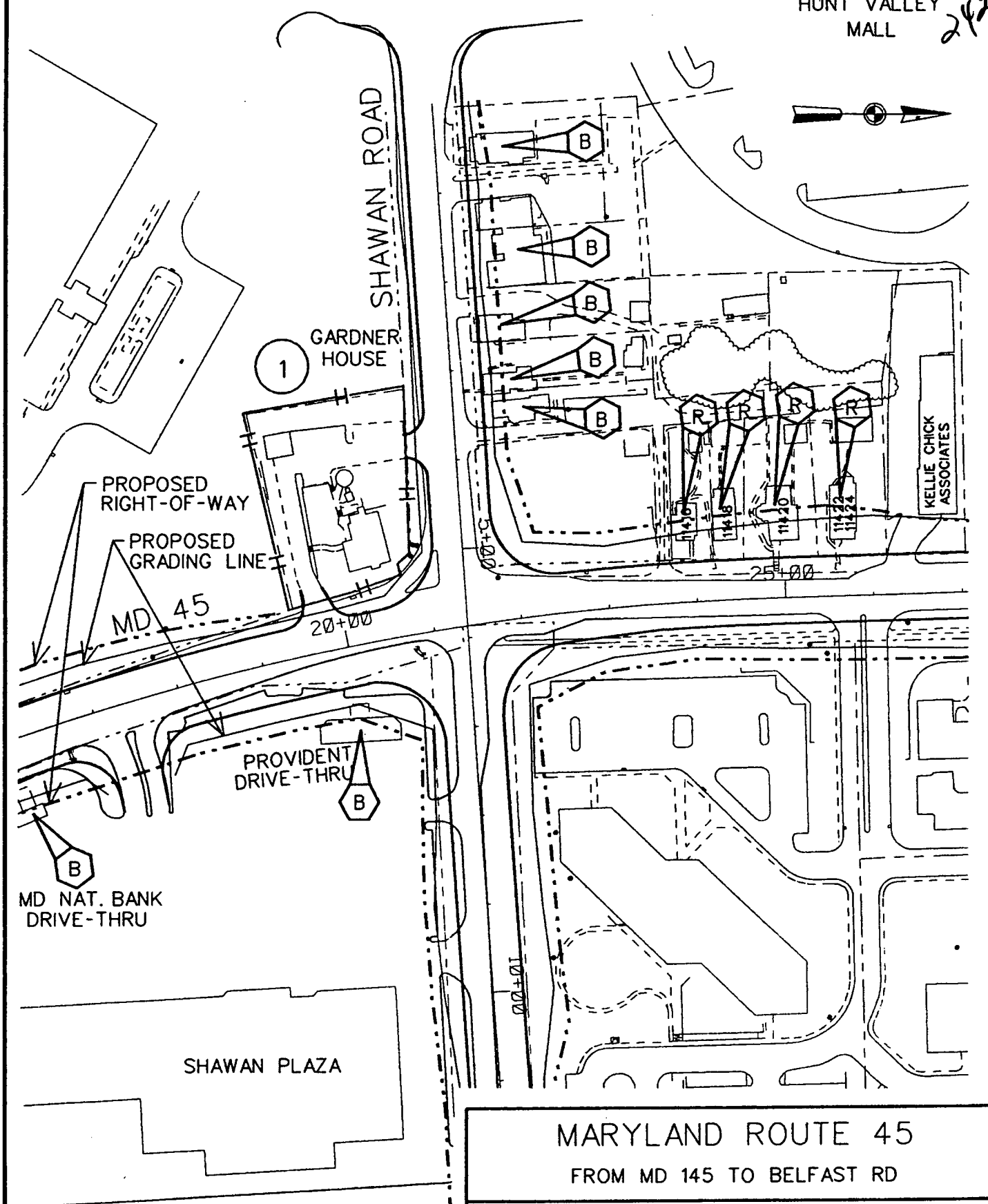
2. *Loveton*

A shift of MD 45 west will avoid Loveton but would require 0.3 acre of the UPS stormwater management pond and 0.1 acre of the JMT stormwater management pond (see Figure 34). The alignment shift would require the reconstruction of these ponds on adjacent property. The costs associated with the shifted alignment include the highway right-of-way, the right-of-way for the pond reconstruction and the cost of pond replacement. It is estimated that a shift to avoid impact to Loveton will cost an additional \$1,495,225. Therefore, the shift was not considered a prudent option.

3. *Sparks/Glencoe Historic District*

Due to the vast extent of this rural/agricultural district, the use east/west alignment shifts to avoid impacts to the Sparks/Glencoe Historic





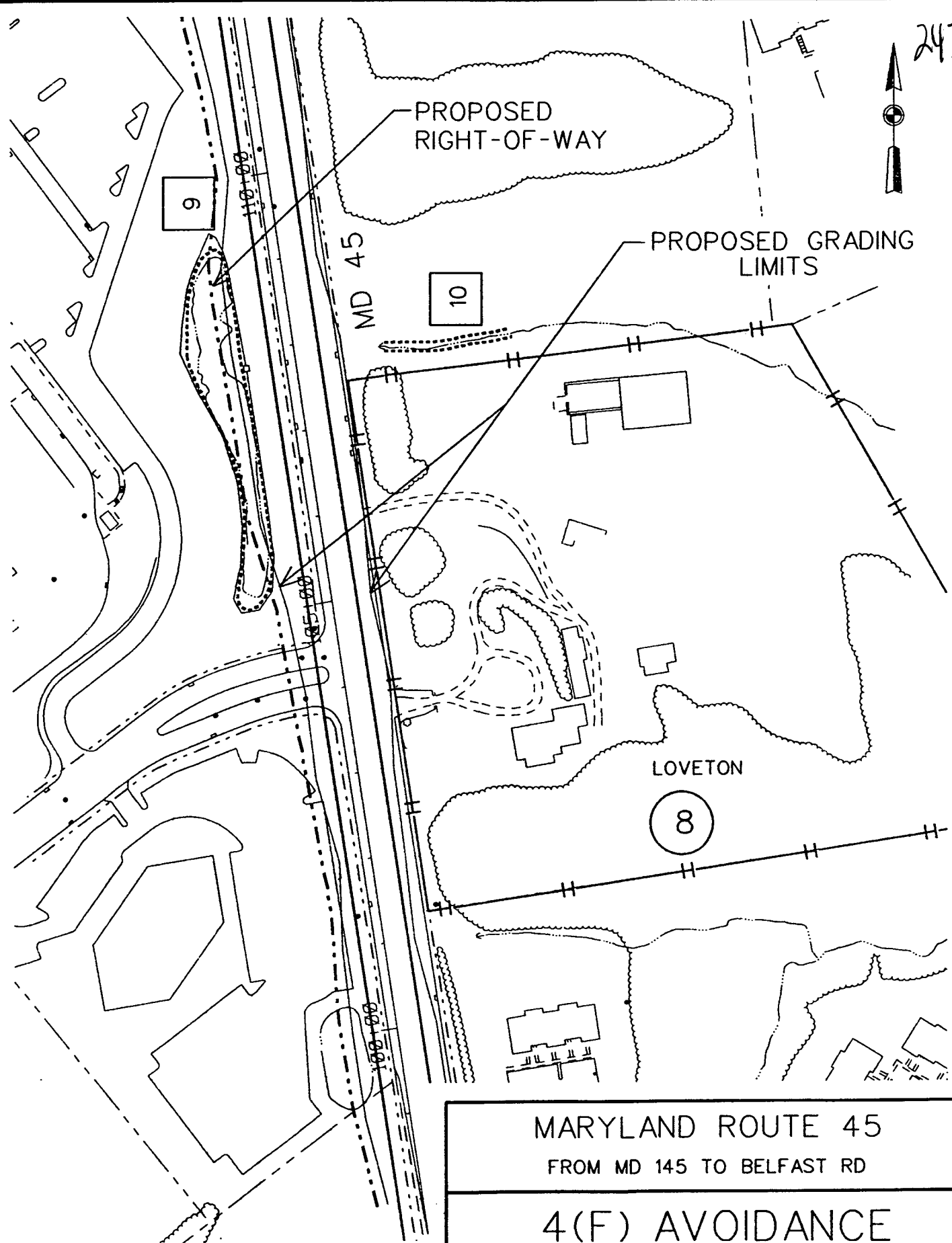
MARYLAND ROUTE 45  
FROM MD 145 TO BELFAST RD

4(F) AVOIDANCE  
(GARDNER HOUSE)

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

DATE 1/92	SCALE 1 IN. = 150 FT.	FIGURE 33
--------------	--------------------------	--------------

243



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

MARYLAND ROUTE 45  
FROM MD 145 TO BELFAST RD

4(F) AVOIDANCE  
(LOVETON)

DATE  
1/92

SCALE  
1 IN. = 150 FT.

FIGURE  
34

244

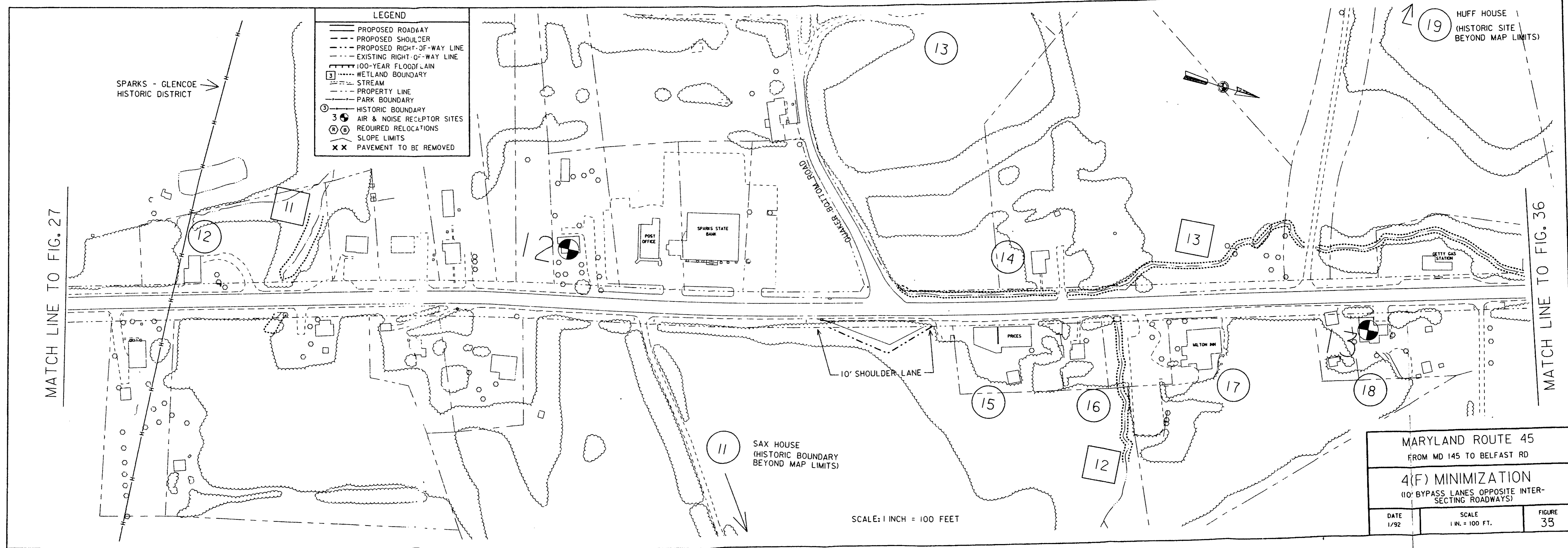
District is not possible with Alternatives 2, 3 and 5. Alternatives 2, 3 and 5 traverse the district longitudinally.

The **only feasible avoidance** alternative is Alternative 1 (No-Build). Alternative 1 would not serve to provide for an adequate shoulder width to eliminate infringement into the travel lane with stopped vehicles, would not provide the space needed for vehicles to escape potential accidents and would not allow for recovery space for errant vehicles. The No-Build Alternative would also not provide any additional capacity at the intersecting roadways.

Several options to **minimize** impacts to the historic district have been investigated (see Figures 35, 36 and 37). A reduction in shoulder width to four feet would reduce the right-of-way acreage required from 3.62 to 3.38 acres and decrease the number of structure displacements from five (of which four contribute to the district's historicity) to four. The structure that is not displaced is a shed at Station 167+00, which does not contribute to the district's historicity.

Reduction of the shoulder width to four feet is not considered a prudent engineering solution for the following reasons:

- a. Inadequate shoulder width to eliminate stopped vehicle infringement into the travel lane.
- b. Inadequate space provided for vehicles to escape potential accidents.
- c. Inadequate provision of recovery space for errant vehicles.



**LEGEND**

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- - - 100-YEAR FLOODPLAIN
- WETLAND BOUNDARY
- STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- HISTORIC BOUNDARY
- 3 ● AIR & NOISE RECEPTOR SITES
- (R) (B) REQUIRED RELOCATIONS
- ^ SLOPE LIMITS
- x x PAVEMENT TO BE REMOVED

SPARKS - GLENCOE  
HISTORIC DISTRICT

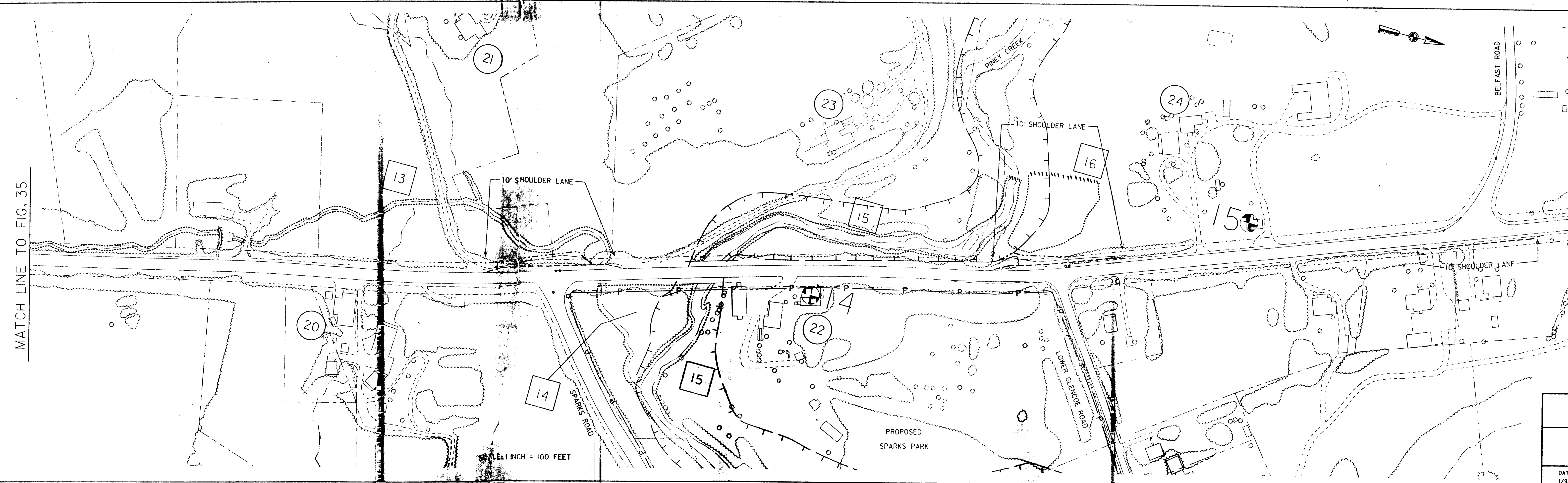
MATCH LINE TO FIG. 27

MATCH LINE TO FIG. 36

SCALE: 1 INCH = 100 FEET

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
4(F) MINIMIZATION (10' BYPASS LANES OPPOSITE INTER- SECTING ROADWAYS)		
DATE 1/92	SCALE 1 IN. = 100 FT.	FIGURE 35

LEGEND	
	PROPOSED ROADWAY
	PROPOSED SHOULDER
	PROPOSED RIGHT-OF-WAY LINE
	EXISTING RIGHT-OF-WAY LINE
	100-YEAR FLOODPLAIN
	WETLAND BOUNDARY
	STREAM
	PROPERTY LINE
	PARK BOUNDARY
	HISTORIC BOUNDARY
	AIR & NOISE RECEPTOR SITES
	REQUIRED RELOCATIONS
	SLOPE LIMITS
	PAVEMENT TO BE REMOVED



MATCH LINE TO FIG. 35

SCALE: 1 INCH = 100 FEET

PROPOSED SPARKS PARK

MARYLAND ROUTE 45 FROM MD 145 TO BELFAST RD		
4(F) MINIMIZATION (10' SHOULDER OPPOSITE INTERSECTING ROADWAYS)		
DATE 1/92	SCALE 1 IN. = 100 FT.	FIGURE 36

A shoulder less than eight feet is not considered usable for the purposes outlined above. Although four-foot shoulders would decrease the impact to the district, they would provide little additional benefit over the no-build condition. Therefore, this minimization option was not considered prudent.

Another minimization option studied for Alternatives 2, 3 and 5 was intersection capacity improvements north of Ridgebrook Road. Instead of providing eight-foot shoulders throughout the district, 10-foot shoulders would be provided opposite the four intersection roadways (Quaker Bottom, Sparks, Lower Glencoe and Belfast Roads) to function as a bypass lane. This option would greatly reduce the impacts to the historic district as well as the historic sites within the district. The right-of-way required would be reduced from 3.62 to 0.65 acres. Moreover, none of the residences would be displaced.

The bypass lane minimization option does not provide shoulders between the intersection roadways; therefore, it would not provide the benefits of a usable shoulder as previously described. However, since all four of the roadways intersect MD 45 with a T-intersection, the bypass lane will improve capacity by allowing the existing lane to function as a left-turn lane.

Alternative 4, Options 1 and 2 avoid impacts to and would have no effect on the Sparks/Glencoe Historic District. Alternative 4, Option 3 requires approximately 0.89 acre of property from within the district due to the location of the acceleration ramp/lane accessing northbound I-83.

248

A four-foot high retaining wall that is 450 feet long with a cost of \$165,000 would avoid impacting the district with Alternative 4 Option 3. This is not considered a reasonable alternative due to the high cost of the wall to preserve less than one acre of a historic district over 10,000 acres in size when other options are available which do not impact the district. Shortening of the I-83/Thornton Mill Road eastbound to northbound acceleration lane taper to 307 feet would also serve to avoid this impact. However, since the design standard for the length of the ramp taper is 500 feet, shortening of the ramp taper would result in an inadequate length for the safe merging of traffic. Due to the high volumes of high speed traffic which this facility handles, compromising safety standards by shortening the ramp taper is not considered a prudent alternative.

4. Western Run - Belfast Historic District

The only feasible avoidance of Alternative 4 impacts to the district is Alternative 1 (No-Build) or elimination of the proposed ramps on the west side of I-83 for Options 1 and 2. These ramps provide the southbound movement from I-83 to eastbound Thornton Mill Road and the westbound Thornton Mill Road to southbound I-83 movement. These avoidance measures do not serve the project purpose of providing increased access to I-83.

The acreage required from the historic district could be reduced by eliminating the driveway access road proposed in the northwest quadrant of Options 1 and 2. The acreage required would decrease from 11.2 acres with Option 1 to approximately 7.2 acres and from 15.6 acres with Option 2

249

to approximately 10.8 acres but would result in two additional residential relocations with each option. (Therefore, the service road was retained as part of the options.) Option 3 acreage requirements would be decreased from 20.9 acres to approximately 20.2 acres and require one additional residence.

5. Sparks Park

Avoidance of the park is possible with the No-Build Alternative (Alternative 1) or by shifting mainline MD 45 to the west to avoid encroachment on the park.

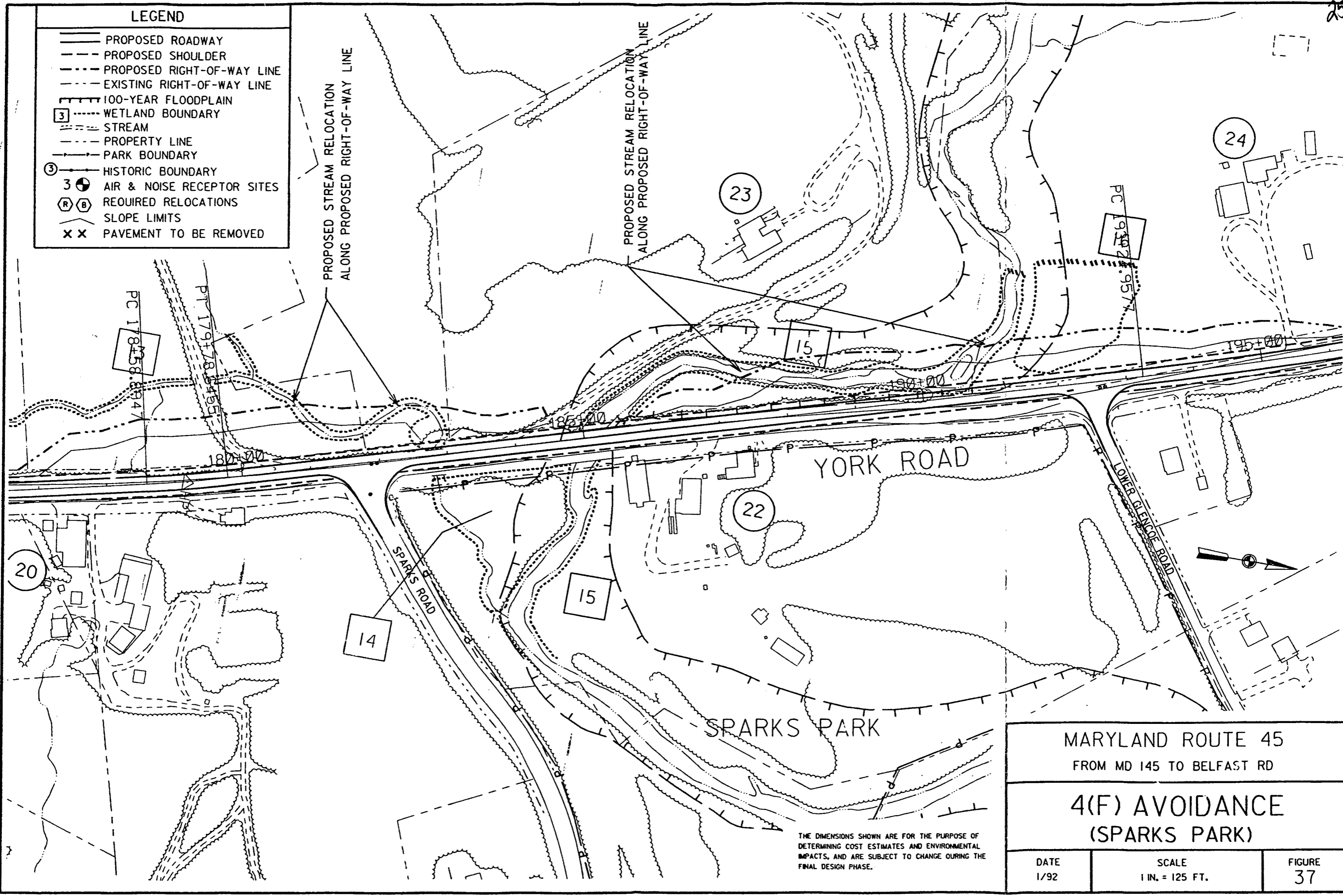
The No-Build Alternative would not serve to provide for an adequate shoulder width to eliminate infringement into the travel lane with stopped vehicles, would not provide the space needed for vehicles to escape potential accidents and would not allow for recovery of errant vehicles.

Shifting MD 45 to the west (see Figure 37) would impact 0.30 acres of Wetland 15 and 0.14 acres of Wetland 16 that are not impacted with Alternatives 2, 3 or 5. Piney Creek (Wetland 15) would need to be relocated for a distance of 400 feet and the tributary to Piney Creek (Wetland 13) would be relocated for a distance of 100 feet. In addition, it would result in 1.01 acres of increased right-of-way requirements from the Sparks/Glencoe Historic District and increase the Piney Creek floodplain impacts by 0.80 acre, compared to Alternatives 2, 3 and 5. With the shifted alignment, the existing bridge over Piney Creek would have to be widened. The additional cost of the widening is estimated at \$290,000. Due to the



LEGEND

- PROPOSED ROADWAY
- - - PROPOSED SHOULDER
- - - PROPOSED RIGHT-OF-WAY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- ▬ 100-YEAR FLOODPLAIN
- ③ - - - WETLAND BOUNDARY
- - - STREAM
- - - PROPERTY LINE
- - - PARK BOUNDARY
- ③ - - - HISTORIC BOUNDARY
- 3 ● AIR & NOISE RECEPTOR SITES
- Ⓡ Ⓟ REQUIRED RELOCATIONS
- - - SLOPE LIMITS
- xx PAVEMENT TO BE REMOVED



MARYLAND ROUTE 45  
FROM MD 145 TO BELFAST RD

4(F) AVOIDANCE  
(SPARKS PARK)

DATE 1/92	SCALE 1 IN. = 125 FT.	FIGURE 37
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THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.

cost and additional wetland impacts associated with this shift, it was determined that this minimization option was reasonable.

Minimization of the impact is also achieved with the reduction in the shoulder width from eight feet to four feet, which would reduce the right-of-way impact from 0.82 acre to 0.65 acre. The reduction of the shoulder width to four feet is not considered a prudent engineering solution for the same reasons as cited for the Sparks/Glencoe Historic District. Therefore, this minimization option was not considered a prudent option.

The intersection bypass option proposed to minimize impacts to the Sparks/Glencoe Historic District, while not providing the benefits of a usable shoulder, would serve to improve capacity/traffic flow. This option would avoid impacts to Sparks Park and is considered reasonable and feasible.

To date, Baltimore County Department of Parks and Recreation has no plans for development of active recreational facilities in the vicinity of the right-of-way required for roadway widening. As such, they have agreed to work with us to mitigate impacts resulting from the proposed improvements.

Measures to Minimize Harm

Due to the excessive costs associated with minimization of impacts at the Gardner House and Loveton with Alternatives 2, 3 and 5 and at the Western Run-Belfast Historic District with Alternative 4, Option 3, there is no prudent alternative to impacting these resources other than the No-Build Alternative. To date, the Maryland Historical Trust has not made

any recommendations for mitigation of these impacts. Coordination will continue with the Maryland Historical Trust and the Advisory Council on Historic Preservation through the design phase of the project should alternatives or options which impact these resources be selected.

The intersection bypass lane option for Alternatives 2, 3 and 5 is the only minimization/avoidance option investigated for Sparks-Glencoe Historic District/Sparks Park which would provide some improvement in the capacity of MD 45 through the historic district while reducing impacts from 3.62 acres to 0.65 acres. It would also avoid relocation of five residences within the historic district, four of which contribute to the historicity of the district. This option will be developed as an alternative to the proposed action in the final stage of project planning and coordinated with the Maryland Historical Trust prior to preparation of a final environmental document should either Alternatives 2, 3 or 5 be selected. The intersection bypass lane option also avoids impact to Sparks Park (0.8 ac.) and Piney Creek stream relocations (650 ft.), without the additional wetland impacts and costs associated with an alignment shift.

F. ***Coordination***

Coordination received from the Maryland Historical Trust (MHT) dated February 27, 1991 and September 7, 1991 indicates that all proposed build alternatives will constitute an adverse effect with respect to historic standing structures. This determination is based on their finding that each build alternative would adversely affect at least one National Register eligible historic standing structure or district. In addition, MHT has expressed concern that the proposed

253

improvements will have the secondary effect of increasing development pressure and traffic volumes north of Ridgebrook Road and has recommended a reduction in project scope.

Coordination received from Baltimore County, dated July 1, 1991, indicates that the portion of Sparks Park required for Build Alternatives 2, 3 and 5 was purchased with Program Open Space funds. Baltimore County has not indicated any objection to the proposed acquisition of park property required for Alternatives 2, 3 and 5 and has offered their cooperation in mitigating any impacts which may be required.

Coordination will continue with the Maryland Historical Trust and the Advisory Council on Historic Preservation to develop reasonable mitigation measures for the historic resources impacted and with the Baltimore County Department of Recreation and Parks and the Maryland Department of Natural Resources (DNR) for the parkland impact. If park property is required with the alternative selected for construction, then identification and acquisition of replacement property of equal value will be coordinated with DNR and Baltimore County Department of Recreation and Parks as required for parkland purchased with Program Open Space monies.

VI  
COMMENTS & COORDINATION

## VI. PUBLIC MEETINGS AND COORDINATION

An Alternates Public Meeting was held on June 13, 1989 at Dulaney High School in Timonium, Maryland. Three Build Alternatives and the No-Build Alternative were presented to the public for its review and comment.

This project was discussed at three Interagency Review Meetings. On April 19, 1989 and January 16, 1991, the No-Build and three Build Alternatives (2, 3 and 4) were presented to representatives from the U.S. Army Corps of Engineers, U.S.

Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, National Park Service and the Maryland Department of the Environment. On February 19, 1992, Alternative 5 was presented at an Interagency Review Meeting. Concerns expressed by the agencies at these meetings included:

a.) identification of reasons why a shifting of MD 145 north or south or improving

existing MD 145 to avoid impact to Western Run is not feasible; b.) that environmental document should discuss in detail the purpose and need for each segment of project;

c.) requested sufficient hydraulic analysis be completed to identify any flooding at Holly Hills historic site; d.) that wetland mitigation may include stream restoration/

rehabilitation in addition to replacement; e.) incorporating maximum use of infiltration in project design; f.) avoid impacts with optimal bridge lengths; g.) recommendation that

using stormwater management and sediment and erosion control measures that are more stringent than those specified in the Chesapeake Bay Initiative document; h.)

recommended investigating avoidance of stream relocations; i.) discuss why Ridgebrook Road is needed and how it relates to Alternative 4; j.) secondary impacts associated with

the extension of Ridgebrook Road by a developer; k.) clear identification of and non-jurisdictional wetlands (COE); l.) requested future redelineation of wetlands associated

with the project.

257

with Western Run using the 1987 manual.

Meetings were also held with the following community associations in the study area to update them on the progress of the project planning study and/or to address their concerns:

Greater Sparks-Glencoe Community Council

Loveton Farms Community Association

Broadmead Retirement Community

In their April 6, 1990 letter, the U.S. Army Corps of Engineers agreed to be a cooperating agency on the MD 45 project planning study. As part of this agreement, their comments on the development of this project (see pg. VI-40a through c) have been addressed and are incorporated into this document.

December 11, 1990

257

MD 45, from MD 145 to  
Belfast Road, Baltimore County  
Environmental Classification  
and Section 4(f) Applicability  
(Env. File)

Mr. Hal Kassoff  
State Highway Administrator  
State Highway Administration  
707 N. Calvert Street  
Baltimore, Maryland 21202

Dear Mr. Kassoff:

This is in response to your request for Environmental Classification of the proposed project and for Section 4(f) applicability determination for Loch Raven Reservoir.

We have reviewed the information provided and concur in the preparation of an Environmental Assessment/Section 4(f) Evaluation.

The information provided for Loch Raven Reservoir identifies the property's primary purpose as a drinking water supply reservoir. A secondary purpose is noted as recreational with recreational facilities and activities located at several different locations. This type of land use is considered to be multiple-use. Further your request stated that no management plan for recreation use exists for the reservoir.

For public land holdings which do not have management plans, Section 4(f) applies to those areas which function primarily for recreational purposes. Section 4(f) does not apply to areas of multiple-use lands which function primarily for purposes not protected by Section 4(f). Based on the information provided, no areas of recreational uses will be affected, therefore Section 4(f) does not apply to Loch Raven Reservoir.

The Environmental Assessment/Section 4(f) Evaluation needs to include sufficient information and discussion regarding Loch Raven Reservoir and the recreational uses to allow the reader to understand why Section 4(f) does not apply.

Should you have any questions, please call me.

Sincerely yours,

Herman D. RODRIGUEZ

A. P. Barrows  
Division Administrator



December 11, 1990

MD 45, from MD 145 to  
Belfast Road, Baltimore County  
Environmental Classification  
and Section 4(f) Applicability  
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The Environmental Assessment/Section 4(f) Evaluation needs to include sufficient information and discussion regarding Loch Raven Reservoir and the recreational uses to allow the reader to understand why Section 4(f) does not apply.

Should you have any questions, please call me.

Sincerely yours,

Herman D. Rodriguez

A. P. Barrows  
Division Administrator

MARYLAND  
HISTORICAL



TRUST

Office of Preservation Services

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

*WDS*  
William Donald Schaefer  
Governor

259  
Jacqueline H. Rogers  
Secretary, DHCD

September 7, 1991

Re: Contract No. B 881-101-471  
MD 45 from MD 145 to  
Belfast Road  
Baltimore County  
Section 106 Review

Dear Ms. Simpson:

We apologize for taking so long to respond to your July 30, 1991 letter concerning the above-referenced project. In that letter, the State Highway Administration requested the comments of the Maryland Historical Trust on Alternate 5, which was developed in response to community concerns. Alternate 5 is the same as the previously reviewed Alternates 2 and 3, except for the section of MD 45 between McCormick Road and Phoenix Road. Therefore, the effect determinations for Alternates 2 and 3 provided in our February 27, 1991 letter are applicable for Alternate 5, with the exception of the properties within the section from McCormick and Phoenix Roads. The three National Register-eligible properties within that section are discussed below:

Holly Hill (BA 187) - We concur with SHA's determination that Alternate 5 would have no effect on Holly Hill.

Toll House (BA 190) - We do not concur with SHA's determination that Alternate 5 would have no adverse effect on the Toll House. In our opinion Alternate 5 would have an adverse effect on the Toll House. Although the setting of the Toll House has historically been a roadside one, a modern highway, such as SHA is proposing, is not in character with the historic resource. Replacing the current 2-lane roadway with a 58', 5-lane highway or a 68' 4-lane highway with median strip, would have a significant impact on the setting of the Toll House, regardless of the fact that right-of-way for the expanded roadway would be no closer to the historic property.

*Maryland*

Division of Historical and Cultural Programs  
Department of Housing and Community Development  
100 Community Place, Crownsville, Maryland 21032-2023 (301) 514-7600

260

Jessop M.E. Church (BA 93) - We concur with SHA's determination that Alternate 5 would have no effect on Jessop M.E. Church.

The chart below summarizes the Trust's determinations of effect for Alternate 5:

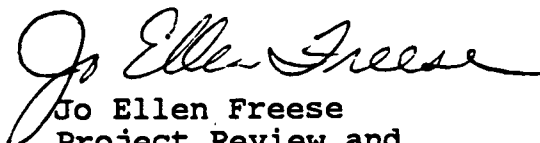
Gardner House	- Adverse Effect
Holly Hill	- No Effect
Toll House	- Adverse Effect
Jessop M.E. Church	- No Effect
Loveton	- Adverse Effect
Bosely House	- No Effect
Western Run/Belfast H.D.	- No Effect
Sparks/Glencoe H.D.	- Adverse Effect

In our letter of February 27, 1991, the Trust commented on Alternates 2, 3 and 4, noting that each of the proposed alternates would adversely affect at least one National Register-eligible historic standing structure or district. In addition, we expressed our concern about the possible secondary effects of the proposed project, in particular, increased development pressures and traffic along York Road to the north. In its next letter to the Trust, SHA should address anticipated secondary effects of increased traffic and development resulting from this project.

We were disappointed to learn that Alternate 5 does not reduce the impacts to historic resources. As in our previous letter, we strongly recommend that SHA re-design the project to involve less radical widening and realignment in the section of MD 45 from MD 145 to Ridgebrook Road. Improvements above Ridgebrook Road should be scaled back to avoid significant adverse impacts to the Sparks area and to lessen pressures on the MD 45 corridor to the north.

We would be happy to work with SHA in developing an alternate which reduces impacts to historic resources. Should you have any questions, please contact Ms. Elizabeth Hannold at (301) 514-7600.

Sincerely,

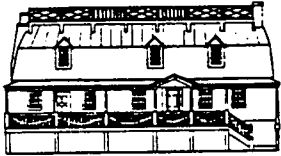


Jo Ellen Freese  
Project Review and  
Compliance  
Office of Preservation Services

JEF/EH

cc: Ms. Ruth Mascari  
Mr. Joseph McNamara  
Ms. Judith Kremen  
Mr. John W. McGrain  
Ms. Rita Suffness

MARYLAND  
HISTORICAL



TRUST

William Donald Schaefer  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

February 27, 1991

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

Re: Contract No. B 881-101-471  
MD 45 from MD 145 to Belfast  
Road, Baltimore County  
Section 106 Review

Dear Ms. Simpson:

Thank you for your December 31, 1990 letter concerning the above-referenced project. Based on the extensive information provided by the State Highway Administration, our records, and input from our Baltimore County representatives, we believe all alternates: Alternate 2, Alternate 3, and Alternate 4, Options 1-3, will constitute an adverse effect with respect to historic standing structures. Each alternate will adversely effect at least one National Register-eligible historic standing structure or district, and, in some cases, more than one (see the attached chart and explanation below).

As you know, the determination of effect for the undertaking must be based on the undertaking as a whole, and not on various segments of the undertaking. In addition, the secondary effects of the proposed undertaking on the York Road corridor north of Belfast Road must be considered. When viewed in this way, each alternate for this undertaking is adverse.

Alternate 4, which only involves the construction of an interchange with I-83 in the Western Run/Belfast Historic District, would have a more limited impact than Alternates 2 and 3, which call for extensive widening and safety improvements along MD 45. In addition, Alternate 4 would divert traffic from MD 45 to I-83, which was intended to relieve pressure from York Road. For these reasons, Alternate 4 might appear to be the least objectionable of the proposed undertakings. However, if, as your letter seems to suggest, Alternate 4 is simply viewed as a stop-gap measure, with more extensive work on MD 45 likely to follow as the area continues to develop, it is perhaps not the best solution in the long term.

*Maryland*

Division of Historical and Cultural Programs  
Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 974-5007

262

As currently designed, Alternates 2 and 3 will have an adverse effect on a number of individual historic properties at the southern end of the project and a devastating effect on the Sparks area. Moreover, we are deeply concerned that the extensive improvements proposed will have the secondary effect of encouraging additional traffic and development along York Road to the north, an area still rural in character and rich in historic resources. However, we believe that Alternates 2 and 3 represent a more long-term solution to the area's transportation problems than Alternate 4. Therefore, we recommend that either Alternate 2 or 3 be modified in such a way that what remains of the area's rural character and historic resources will be protected to the greatest extent possible.

We believe that the SHA's objectives can be accomplished with a less radical widening and alignment relocation in the section of York Road from MD 145 to Ridgebrook Road. Improvements above Ridgebrook Road should be scaled back to avoid significant adverse impacts to the Sparks area and to lessen pressures on the York Road corridor to the north. We understand that the Greater Sparks Glencoe Community Council has presented SHA with a plan calling for similar reductions in the project scope (see attached GSGCC Special Report).

Having made clear our concerns about the undertaking as a whole, we will respond in order to specific points raised in your letter of December 31, 1991. Thank you for providing additional information about the three sites in the additional study area. We concur with your determination that Melrose (BA 77), Ashland Presbyterian Church (BA 201) and Ashland Public School (BA 202) are all eligible for the National Register of Historic Places. In addition, we concur with the tax parcel boundary for Melrose.

With regard to the Toll House (BA 190), we concur that Alternate 3 would have no adverse effect on the property, as the new road would be located well behind the house and screened by woods and topography. However, we can not agree that Alternate 2 would have no adverse effect. We believe the addition of a second roadway in front of the house constitutes an adverse effect. While the setting of the Toll House has historically been a roadside one, a five lane modern highway is not in character with the 19th century resource.

Thank you for confirming that Alternate 4, Options 1-3 would not require the removal of any contributing structures. Despite the fact that the construction of an interchange in the Western Run/Belfast Historic District would not mean the loss of historic structures, we believe it would still constitute an adverse effect as it would introduce an obtrusive new feature in the district and would involve the loss of farmland and woods which contribute to the setting of the rural district. Therefore, in our opinion, Alternate 4, Options 1, 2 and 3 would have an adverse effect on the Western Run/Belfast Historic District.

263

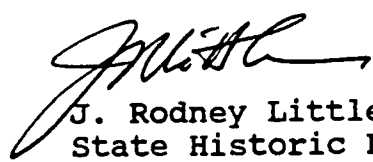
We agree that Option 3 of Alternate 4 would have no adverse effect on the Sparks/Glencoe Historic District as the 0.89 acres required is not in the vicinity of any contributing resources. Although you called this "no effect" in your most recent letter, your letter of September 20, 1990 sought a "no adverse effect" determination. We believe the latter is a more accurate description of the effect.

Thank you for the clarifications regarding Alternates 2 and 3 with respect to the Sparks/Glencoe Historic District. We believe any widening, if only to extend and pave shoulders, could have an adverse effect on the district, by altering the historic character of the roadway and by bringing the paved roadway even nearer to a number of contributing buildings which are already located in close proximity to the road. The flattening of the rolling terrain will further alter the historic character of the roadway through Sparks. Lastly, the loss of four contributing buildings would be extremely detrimental.

In conclusion, we agree with all your findings except for Alternate 2, as concerns the Toll House, and Alternate 4, as concerns the Western Run/Belfast Historic District. We hope you will be able to concur with our opinions with respect to these properties and with respect to the undertaking as a whole. We urge you to consider revising the plans to involve no more than three lanes in the developed, southern section and to substantially reduce improvements above Ridgebrook Road.

We will be unable to complete the Section 106 review for this project until we have received the outstanding archeological assessments. Should you have any questions regarding the standing structures review for this project, please do not hesitate to contact Elizabeth Hannold at (301) 974-5007.

Sincerely,

  
J. Rodney Little  
State Historic Preservation Officer

JRL/EH

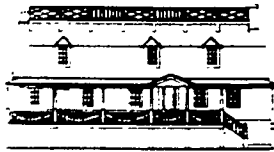
Enclosures

- cc: Ms. Ruth Mascari
- Mr. Paul McKean
- Mr. Eugene Adams
- Mr. John W. McGrain
- Ms. Rita Suffness

264

	Alternate 2	Alternate 3	Alternate 4
Gardner House	A.E.	A.E.	N.E.
Holly Hill	N.E.	N.E.	N.E.
Toll House	A.E.	N.A.E.	N.E.
Jessop M.E. Church	N.E.	N.E.	
Loveton	A.E.	A.E.	N.E.
Bosley House	N.E.	N.E.	N.E.
Western Run/Belfast Historic District	N.E.	N.E.	A.E.
Sparks/Glenco Historic District	A.E.	A.E.	N.E. Options 1 and 2 N.A.E. Option 3

MARYLAND  
HISTORICAL



TRUST

265  
William Donald Schaefer  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

November 15, 1990

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

Re: MD 45 from MD 145 to  
Belfast Road  
Baltimore County  
Section 106 Review

Dear Ms. Simpson:

Thank you for your letter of September 20, 1990 concerning the above referenced project. We are awaiting the archeological assessment for the "additional study area" identified in that letter. Our files contain little or no information for the three standing structures in or near the additional study area. Please provide a brief description, photographs, and a justification of level of significance for BA 77, BA 201 and BA 202. In addition, please explain why the additional study area does not encompass BA 77 which is located adjacent to, but outside, the boundaries of the larger study area. Does the additional study area adequately cover the area of potential effects for the undertaking being considered?

The boundary suggested for Melrose (BA 77) appears arbitrary and insufficient. The aerial photograph shows the house surrounded by a rural setting with no intrusions. This larger area would appear to be the historical setting and would provide a more effective buffer. Please show the tax parcel boundaries in relation to the proposed boundaries and provide additional justification for the proposed boundaries.

The following comments on effects to previously agreed upon National Register eligible resources follows the organization of your September 20, 1990 letter.

Gardner House - BA 917

In our opinion, Alternates 2 and 3 will have an adverse effect on the Gardner House. Although a relatively small (0.04 acres) amount of additional right-of-way is required, the impact will be significant as the house and outbuildings are already very close to both MD 45 and Shawan Road.

*Maryland*

Division of Historical and Cultural Programs  
Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolia, Maryland 21401 (301) 974-5007



266

We concur that Alternate 4 will have no effect on the Gardner House.

Holly Hill - BA 187

We concur that Alternates 2, 3 and 4 will have no effect on Holly Hill.

Toll House - BA 190

Alternates 2 and 3 call for an additional 58' roadway either behind the Toll House or in front of, and paralleling, the existing roadway. In our opinion, both Alternates would appear to significantly alter the environmental setting of the Toll House, adding traffic and an obtrusive new visual element, increasing noise and, in the case of Alternate 2, sandwiching the property between two roads.

Please provide photographs of the setting and additional justification for your determination of no effect for Alternate 2 and 3.

We concur that Alternate 4 will have no effect on the Toll House.

Jessop M.E. Church - BA 93

We concur that Alternates 2, 3 and 4 will have no effect on the Jessop M. E. Church.

Loveton - BA 92

We recommend shifting the alignment of MD 45 away from Loveton to the greatest extent possible. In our opinion, the modifications in vertical alignment and loss of approximately 0.70 acres to highway right-of-way constitutes an adverse effect. We are unable to consider this a conditional no adverse effect without further information on the impact and proposed mitigation.

We concur that Alternate 4 will have no effect on Loveton.

Bosley House - BA 266

We concur that Alternates 2, 3 and 4 will have no effect on the Bosley House.

Western Run/Belfast Historic District

We concur that Alternates 2 and 3 will have no adverse effect on the Western Run/Belfast Historic District.

We are unable to concur with your finding of no adverse effect for Alternate 4. Please confirm that all structures in potential viewing distance of the proposed interchange are non-contributing. The National Register nomination map shows three structures in the immediate vicinity of the interchange (see enclosure). Your letter of October 23, 1989, Enclosure B, mentions two historic properties in the project area: Strawberry Hill (BA 189) and Smallwood (BA 449).

Sparks/Glencoe Historic District

We concur that Alternates 2 and 3 constitute an adverse effect.

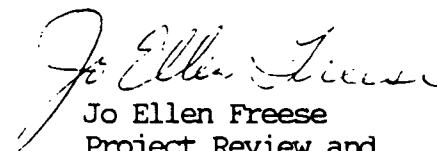
267

We concur that Alternates 4-1 and 4-2 will have no effect on the Sparks/Glencoe Historic District. We require additional information for Alternate 4-3. Please identify as contributing or non-contributing the structures in the district which are adjacent to the 0.89 acres required for right-of-way. If contributing, please further justify your finding of no adverse effect.

Our opinions of effect are summarized on the attached chart. We will be happy to complete our assessment of levels of significance and effects when we have the additional information required.

Thank you for providing us with this opportunity to comment. If you should have any questions, please contact Elizabeth Hannold at (301) 974-5007.

Sincerely,



Jo Ellen Freese  
Project Review and  
Compliance Administrator  
Office of Preservation Services

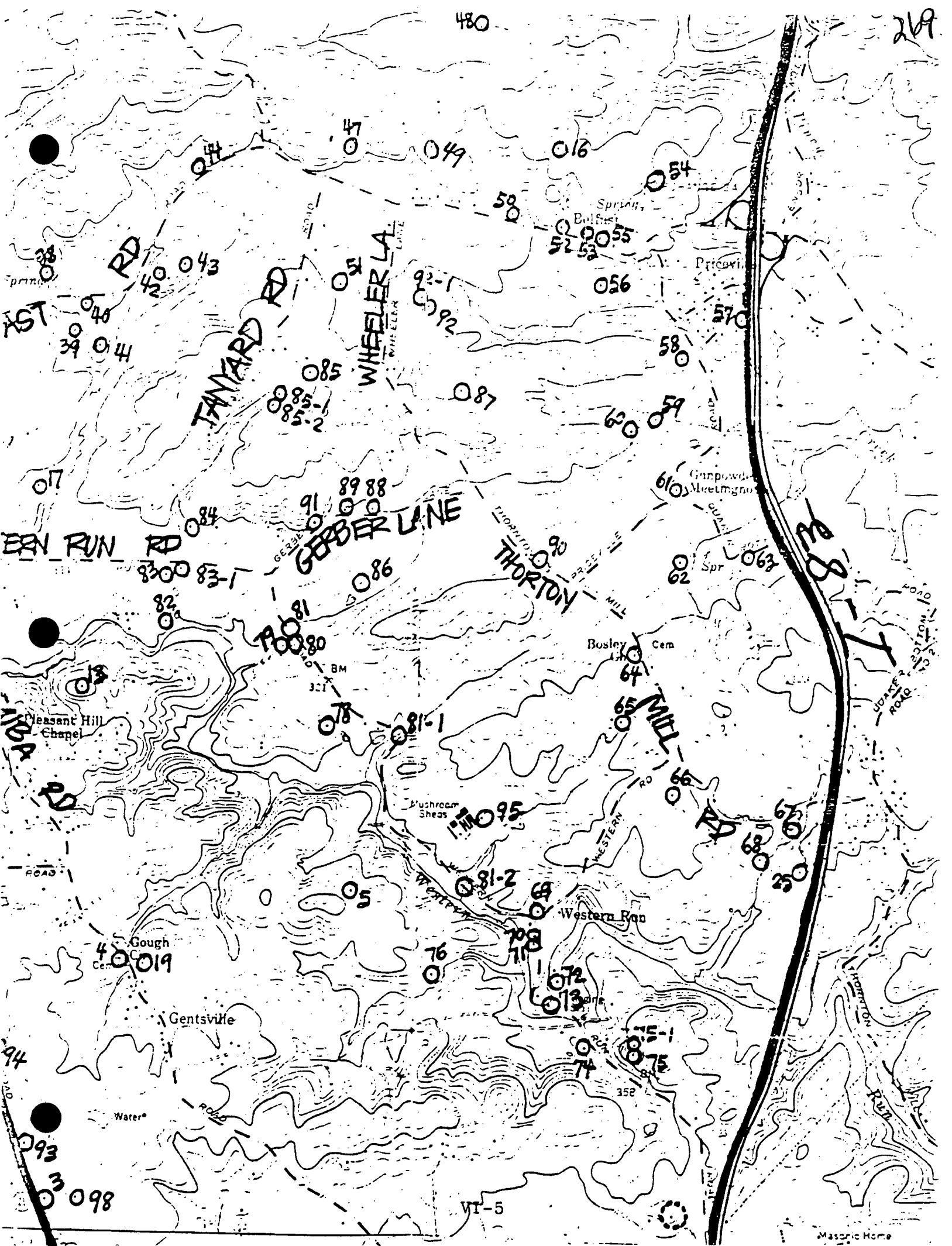
JEF:EH:lcj

cc: Ms. Rita Suffness  
Mr. Paul McKean  
Mr. Eugene Adams  
Mr. John W. McGrain

Enclosures

268

	Alternate 2	Alternate 3	Alternate 4
Gardner House	A.E.	A.E.	N.E.
Holly Hill	N.E.	N.E.	N.E.
Toll House	Additional information requested	Additional information requested	N.E.
Jessop M.E. Church	N.E.	N.E.	N.E.
Loveton	A.E.	A.E.	N.E.
Bosley House	N.E.	N.E.	N.E.
Western Run/Belfast Historic District	N.E.	N.E.	Additional information requested
Sparks/Glencoe Historic District	A.E.	A.E.	N.E. (except option 4-3 additional information requested)



219

480

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RD  
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TANVARD RD

WHEELER LA  
WHEELER LA

GERBER LANE

THORNTON MILL

MILL RD

WESTERN RD

Western Rd

ERN RUN RD

Pleasant Hill Chapel

Gough Cem

Gentsville

Water

Bosley Cem

Mushroom Sheas

Spring  
Bull  
52  
53  
55

Gunpowder Meeting

Spr

VT-5

Masonic Home

ROAD  
JUNIPER ROAD  
2017  
10/2

MARYLAND  
HISTORICAL



TRUST

William Donald Schaeter  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

May 30, 1990

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

Re: Contract No. B 881-101-471  
MD 45 from MD 145 to Belfast Road

Dear Mr. Ege:

Thank you for your letter of October 23, 1989 concerning the Marble Hill Historic District. We concur that the district is not eligible for inclusion in the National Register of Historic Places.

Sincerely,

Jo Ellen Freese  
Project Review and  
Compliance Administrator  
Office of Preservation Services

JEF/EH/meh

cc: Ms. Cynthia D. Simpson  
Ms. Rita Suffness  
Mr. Paul McKean  
Mrs. Lauri FitzGerald  
Mr. John W. McGrain

Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 974-5000

271

MARYLAND  
HISTORICAL



TRUST

PROJECT  
DEVELOPMENT

William Donald Schaefer  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

June 13, 1989

Ms. Cynthia Simpson, Chief  
Maryland Department of Transportation  
State Highway Administration  
Project Development Division  
707 N. Calvert Street  
Baltimore, Maryland 21203-0717

Re: Contract No. B 881-101-471  
MD 45 from MD 145  
Belfast Road  
PDMS No. 03309

Dear Ms. Simpson:

Thank you for your letter of April 25, 1989, concerning the above referenced project.

This office concurs with your proposed boundaries for the following:

- 1. Gardner House (BA 917)
- 5. Tollhouse (BA 187)
- 6. Holly Hill (BA 187)
- 7. Jessup M.E. Church (BA 93)
- 8. Loveton (BA 92)
- 10. Bosley House (BA 266)

Additionally, we concur with your proposed historic district boundary for Marble Hill.

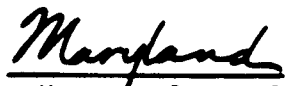
Should you have any questions, please contact George Andreve at 974-5000.

Sincerely,

J. Rodney Little  
Director/State Historic  
Preservation Officer

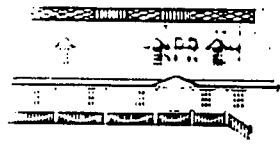
JRL/MKD/meh

cc: Ms. Rita Suffness  
Mrs. Lauri FitzGerald  
Mr. Paul McKean



Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 974-5000

MARYLAND  
HISTORICAL



TRUST

272  
William Donald Schaefer  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

April 12, 1989

Ms. Cynthia D. Simpson, Chief  
Environmental Management  
Maryland Department of Transportation  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21203-0717

Re: Contract No. B 881-101-471  
MD 45 from MD 145 to  
Belfast Road  
PDMS No. 03309

Dear Ms. Simpson:

Please consider this a continuance of our February 21, 1989 letter concerning the above referenced project. In that letter we concurred with your opinion on several possibly National Register eligible (PNRE) properties located within the project area. Some were located within the potentially eligible historic district of Sparks-Glencoe. Our proposed boundaries for that district were incorrect, in that they included a portion of the already established district of Western Run-Belfast. Please find enclosed the amended boundary for Sparks-Glencoe. We request your concurrence with our proposal.

In addition, we did not address your proposed boundaries for the following PNRE properties:

- |                       |        |                 |
|-----------------------|--------|-----------------|
| 1. Gardner House      | BA 917 | 11330 York Road |
| 2. Tollhouse          |        | 13822 York Road |
| 3. Holly Hill         | BA 187 | 13801 York Road |
| 4. Jessop M.E. Church | BA 93  | York Road       |
| 5. Loveton            | BA 92  | 14301 York Road |

The proposed boundaries for these properties were submitted on an aerial view map and had the appearance of being arbitrary. Please submit plans showing existing property lines for each of these properties and denote your proposal for appropriate boundaries. We request the same for the four remaining houses in the marble Hill Historic District.

*Maryland*

Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 974-5000

273

Ms. Cynthia D. Simpson, Chief  
April 12, 1989  
Page 2

Should you have any questions, please contact Michael Day at  
974-5000.

Sincerely,



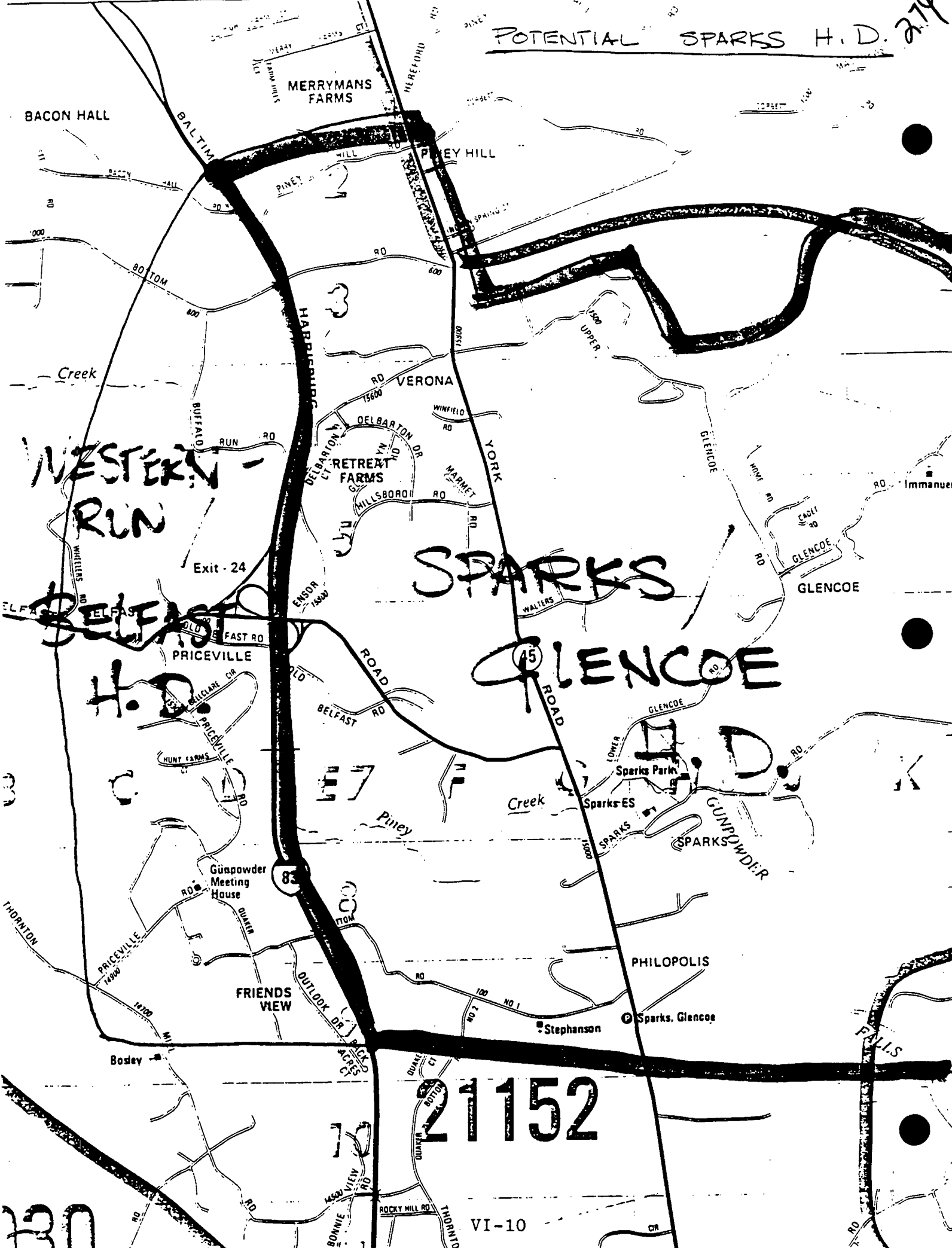
J. Rodney Little  
Director/State Historic  
Preservation Officer

JRL/MKD/meh

cc: Ms. Rita Suffness  
Mrs. Lauri Fitzgerald



POTENTIAL SPARKS H.D. 274



BACON HALL

MERRYMANS FARMS

PIEY HILL

WESTERN -  
RUN  
BELFAST  
H.D.

SPARKS  
GLENCOE

SPARKS  
GLENCOE

21152

30

VI-10

LOVETON

275

MARYLAND  
HISTORICAL



TRUST

William Donald Schaefer  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

February 21, 1989

Ms. Cynthia D. Simpson, Chief  
Environmental Management  
Maryland Department of Transportation  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21203-0717

Re: Contract No. B 881-101-471  
MD 45 from MD 145 to  
Belfast Road  
PDMS No. 03309

Dear Ms. Simpson:

As promised in our December 30, 1988 letter, we are now able to offer our opinion regarding the National Register eligibility of properties located within the referenced project area.

We concur with your proposed level of significance for the following:

<u>No.</u>	<u>Name</u>	<u>MHT #</u>	<u>Address</u>	<u>Proposed Level of Significance</u>
1.	Gardner House	BA 917	11330 York Rd.	Possibly National Register Eligible (PNRE)
3.	Frame House	-	13818 York Rd.	M.I.
4.	Stone House	-	13820 York Rd.	M.I.
5.	Tollhouse	-	13822 York Rd.	PNRE
6.	Holly Hill	BA 187	13801 York Rd.	PNRE
7.	Jessop M.E. Church	BA 93	York Rd.	PNRE
8.	Loveton	BA 92	14301 York Rd.	PNRE

*Maryland*

Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 974-5000

276

Ms. Cynthia D. Simpson  
February 21, 1989  
Page 2

- 9. 15 Mile Marker - east side of M.I.  
York Rd. south  
of Loveton Farms Rd.

Further, we disagree with your evaluation of the Marble Hill Historic District (BA 2119-2122), which we believe continues to be National Register eligible in spite of the loss of two of the properties (BA 277 and BA 2118).

The following properties are located within the potentially National Register eligible Sparks-Glencoe rural historic district:

<u>No.</u>	<u>Name</u>	<u>MHT#</u>	<u>Address</u>
10.	Bosley House	BA 266	14611 York Rd.
11.	Sax House	BA 630	14803 York Rd.
12.	Price House	-	14700-14710 York Rd.
13.	Huff House (School #9)	BA 428	Quaker Bottom Rd. at junction of York Rd.
14.	Huff Tenant House	BA 429	14824 York Rd.
15.	Prices Store	BA 430	14821 York Rd.
16.	Ensor House	BA 1716	14825 York Rd.
17.	Milton Inn	BA 86	14833 York Rd.
18.	Price House	BA 432	14905 York Rd.
19.	Huff House	BA 377	14900 York Rd.
20.	Rogney House Complex Includes Woods Antiques Piney Creek and Cornerstone Antiques	BA 431	14943 York Rd. 14949 York Rd. 14939 York Rd.
21.	Frame Dwelling	-	14954 York Rd.
22.	Matthews House Complex	-	15015, 15017 and 15021 York Rd.
23.	Matthew's Mill	BA 376	14626 Thornton Mill Rd.
24.	Merryman House	BA 375	15111 York Rd.

277

Ms. Cynthia D. Simpson  
February 21, 1989  
Page 3

A map with potential boundaries and a preliminary description of the district are enclosed for your information. Additionally, we recognize Western Run-Belfast Historic District as a National Register district.

Should you have any questions concerning the above, please contact Michael Day at 974-5000.

Sincerely,



J. Rodney Little  
Director

JRL/MKD/meh

cc: Ms. Rita Suffness  
Mr. John McGrain  
Mrs. Lauri FitzGerald  
Mr. Paul McKean

MARYLAND  
HISTORICAL



TRUST

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT  
William Donald Schaefer  
Governor

JAN 5 1989  
Jacqueline H. Rogers  
Secretary, DHCD

December 30, 1988

Ms. Cynthia D. Simpson, Chief  
Environmental Management  
Maryland Department of Transportation  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21203-0717

Re: Contract No. B 881-101-471  
MD 45 from MD 145 to  
Belfast Road  
PDMS No. 03309

Dear Ms. Simpson:

Thank you for your letter of November 7, 1988 concerning the above referenced project.

While reviewing the documentation submitted, it was brought to my attention that a portion of the project area is currently being evaluated by this office for National Register eligibility as the rural historic district of Sparks/Glenco. Therefore, I am holding our response to your letter until that evaluation has been completed, at which time our opinion will be forwarded to you.

Comment on the proposed boundaries, illustrated on the aerial photographs (your enclosure C), will also be based on the outcome of our evaluation of the proposed district.

Should you have any questions concerning the above, please do not hesitate to call me at 974-5000.

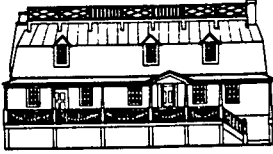
Sincerely,

Michael K. Day  
Assistant Administrator  
Office of Preservation Services

MKD:dlt

cc: Ms. Rita Suffness  
Ms. Lauri Fitzgerald  
Mr. Paul McKean

MARYLAND  
HISTORICAL



TRUST

William Donald Schaefer  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

279

October 29, 1990

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

Re: Intensive Archeological  
Identification Survey of the Maryland  
Route 45 Improvements between  
Maryland Route 145 and Belfast Road,  
Baltimore County, Maryland  
Contract No. B 881-101-471

Dear Ms. Simpson:

Thank you for sending us two copies of above-referenced final report. Greenhorne & O'Mara, Inc., prepared the documents. We appreciate the consultant's attention to addressing our comments on the draft report; the final volumes are valuable additions to our library.

As indicated in our letter of 29 June 1990, we anticipate further coordination with your office on this project's remaining Phase I and II archeological investigations. If you have any questions or require further information, please contact Dr. Gary Shaffer at (301) 974-5007.

Sincerely,

Elizabeth J. Cole  
Administrator  
Archeological Services  
Office of Preservation Services

EJC/GDS

cc: Dr. Ira Beckerman  
Dr. Joseph Hopkins, III  
Mr. Paul McKean  
Mr. Eugene Adams  
Mr. John W. McGrain

Division of Historical and Cultural Programs  
Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 974-5004

MARYLAND  
HISTORICAL



TRUST

William Donald Schaefer  
Governor

Jacqueline H. Rogers  
Secretary, DHCD

June 29, 1990

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

Re: Intensive Archeological  
Identification Survey of  
the Maryland Route 45  
Improvements, Baltimore  
County  
Contract No. B 881-101-471

Dear Mr. Ege:

Thank you for sending us the draft report on the above-referenced project for our review. The document was prepared by Greenhorne & O'Mara, Inc.

The report presents the necessary documentation of the survey's goals, methods, and results; and it is consistent with the "Guidelines for Archeological Investigations in Maryland" (McNamara 1981). A thoughtful sampling strategy was employed during the fieldwork. The level of background research and field investigations was sufficient to identify the range of archeological resources located within the accessible portions of the proposed Maryland Route 45 improvement areas. However, as discussed in the report, Phase I field survey still remains to be conducted in several areas where right of entry was denied (Figure 1; discussion of Belama Farms and 18BA294 on p. 30).

In addition to isolated prehistoric and historic artifacts that warrant no further research, the present survey discovered one archeological site: 18BA399. This prehistoric Huffard Site yielded rhyolite and quartz flakes and one piece of steatite. While no chronologically diagnostic artifacts were recovered, we concur that additional investigation of this site has the potential to provide

*Maryland*

Department of Housing and Community Development  
Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 974-5000

281

Mr. Louis H. Ege, Jr  
June 29, 1990  
Page 2

important information relating to the following themes defined in The Maryland Comprehensive Historic Preservation Plan (Weissman 1986): settlement; technology; and environmental adaptation. Further Phase II archeological investigations are necessary to determine the site's eligibility for the National Register of Historic Places.

This office recommends that Phase II archeological research be conducted at 18BA399. The purpose of the investigations is to: a) identify the site's vertical and horizontal boundaries; b) interpret the site's cultural affiliations, functions, and significance; c) evaluate the site's integrity; d) conclusively determine the site's eligibility for the National Register and e) define the need for further archeological work. The investigations should be undertaken by a qualified professional archeologist and performed in accordance with the "Guidelines for Archeological Investigations in Maryland." Based on the investigations' results, we will be able to determine whether or not the project will have an effect on National Register eligible archeological resources, and make appropriate recommendations. Implementation and review of the Phase II research should be closely coordinated with our office, and we will be happy to provide guidance on the recommended work.

The survey also identified eight historic structures from the Maryland Historic Sites Inventory "along" the Route 45 corridor (p. 26). Greenhorne & O'Mara noted that one structure (BA 277, Wight and Highland's Store) had been torn down, and any historic archeological resources associated with the building would have been destroyed during this action. We concur that further archeological research is needed for the lots of the seven other historic properties (BA86, 92, 93, 187, 201, 202, and 917), if these areas are to be impacted. However, these initial archeological investigations should take the form of a Phase I identification survey -- not Phase II evaluative testing. As the consultants indicated, the seven lots are only potential archeological resource areas. The final Phase I report needs to delimit the seven historic properties on large scale maps (similar to Figures 3 - 12) which show the relationship of the lots to the proposed right of way. According to the report (p. 30), only new alternate right of ways might affect the seven properties.

We have a few additional, yet minor comments on the report itself, and suggested revisions should be incorporated into the final document.

- 1) The report should state that the work was conducted towards fulfillment of Section 106 of the National Historic Preservation Act regulations, since there is involvement from the Federal Highway Administration.



Mr. Louis H. Ege, Jr  
June 29, 1990  
Page 2

2) The report should note the repository that will curate the artifacts and documentation resulting from the project.

3) Figure 1's Site "18BA249" should read "18BA294."

4) The discussion (pp. 6-7) of the Thornton Mill site (18BA294) should be expanded to include the results of the excavations by the Towson High School Archeology Club.

We look forward to receiving a copy of the final report when it is available. Additionally, we anticipate further coordination with your office on this project's remaining Phase I and II investigations.

If you have any questions or require further information, please contact Gary Shaffer at (301) 974-5007.

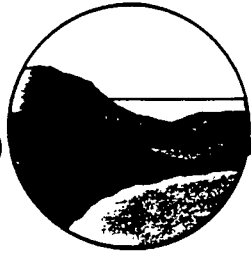
Sincerely,



Elizabeth J. Cole  
Administrator  
Archeological Services  
Office of Preservation Services

EJC/GDS/meh

cc: Ms. Cynthia Simpson  
Mr. Dennis Atkins  
Dr. Joseph Hopkins, III  
Dr. Ira Beckerman



PROJECT  
REVEAL  
JUN 15 1988

Maryland Department of Natural Resources

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

William Donald Schafer  
*Governor*

Torrey C. Brown, M.D.  
*Secretary*

Division of Archeology  
(301) 554-5530

Kenneth N. Weaver  
*Director*

Emery T. Cleaves  
*Deputy Director*

9 June 1988

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

RE: MD 45 from MD 145 to  
Belfast Road  
Baltimore County  
Contract No. B 881-101-471

Dear Mr. Ege:

As per your request of 1 June 1988, we have reviewed the above-referenced project with regards to archeological resources. Examination of the State Site Files indicates one prehistoric (18Ba19) and one historic (18Ba294) site within the project area and one prehistoric (Quad Site 5) and one historic (18Ba142) site adjacent to the project area.

The project area lies within the uplands of the Piedmont Plateau, with MD 45 generally following the high ground between Gunpowder Falls Creek to the east and small tributaries to the west that feed into Gunpowder Falls Creek. Most of the soils within the project area belong to the Manor-Glenelg association. At the northern and southern ends of the project area, the more fertile Baltimore-Conestoga-Hagerstown association is found. Upland sites in the region are usually located on hilltops and toes of ridges, on deep, well-drained soils with moderate or high fertility. Given the large size of the project area, the potential for significant prehistoric sites is considered high, although in any particular location the probability would be moderate. Sites can be expected in higher densities in the northern and southern ends of the project area than in the middle.

283

784

One historic mill is identified within the project area and an iron works is located adjacent to the project area. Maryland Route 45 is an old road, visible on the 1885 Martenet and Bond map of the state. This is possibly the same road shown on the 1794 Griffith map. Several buildings are present on the 19th century map. Given the presence of known historic archeological resources in the project area and the long persistence of Maryland Route 45, the potential for significant historic sites is considered high.

Please contact me at 554-5539 if you have any questions about this assessment or if I can be of further assistance on this proposed project.

Sincerely,



Ira Beckerman

IB:cab

cc: Cynthia Simpson  
Rita Suffness



**DEPARTMENT OF THE ENVIRONMENT**

2500 Broening Highway, Baltimore, Maryland 21224  
Area Code 301 • 631- 3438

**William Donald Schaefer**  
Governor

**Martin W. Walsh, Jr.**  
Secretary

November 1, 1990

Mr. Bruce Grey  
Maryland Department of Transportation  
State Highway Administration  
707 N. Calvert Street  
Baltimore, Maryland 21202

Dear Mr. Grey:

This is a follow-up to the recent meeting between the Hazardous and Solid Waste Management Administration (HSWMA) and State Highway Administration (SHA) on October 5, 1990 concerning the SHA proposed highway construction project along MD Route 45 (York Road) and SHA's request for the Department's evaluation of the project's potential impact on investigation and remediation of an adjacent hazardous waste site.

During the summer of 1989, discussions were initiated between our two Administrations because of the proximity of the Bausch & Lomb; Diecraft site at 14600 York Rd. to a proposed SHA construction project. Although the property is currently owned by Cambridge Instruments, Bausch & Lomb (B&L) has been conducting environmental investigations there since 1982. These studies concern the former plating waste disposal system and its subsequent effects on the surrounding environment. HSWMA has been working closely with B&L since 1984 in providing regulatory oversight and management assistance.

During the meeting, you and your staff provided us with information regarding the highway construction project. This information included the following:

- 1) proposed cut and fill locations and depths;
- 2) a description of a permanent closed drain system for surface water runoff collection; and
- 3) a description of the sediment and stormwater management features to be employed during construction.

Mr. Bruce Grey  
Page 2

28

HSWMA staff provided information about the B&L site conditions including: the location of the former waste disposal system, locations of monitoring wells, extent of the shallow plume, and surface water and groundwater flow directions.

After review of this information, we are of the opinion that the proposed construction project should have no effect on the study site because (1) the construction is not in the area of the waste disposal system; (2) the depth of excavation is not to the water table; and (3) temporary and permanent surface water control features will be implemented which will prevent surface water from the construction project from entering the B&L site through use of the required sediment and stormwater management features and a permanent closed drain system. We wish to emphasize, however, that this opinion is based upon our current knowledge of the B&L site and upon SHA's representation to the Department of the nature and scope of the proposed construction project adjacent to the site. Accordingly, it is incumbent upon SHA to advise us of any proposed changes in the construction project as represented to the Department so that we may properly evaluate the potential impact on the B&L site.

The Department makes no representation regarding the effect on SHA's project of the listing of the B&L site by the United States Environmental Protection Agency on the National Priorities List, and further the Department takes no position regarding the potential liability of any party in the event the B&L site becomes the subject of any litigation.

If we can be of any further assistance or if you have any questions regarding this matter, please call me at (301) 631-3438.

Sincerely,



Frank Henderson, Chief  
CERCLA Response Division

FH:amj

cc: Mr. Richard Collins  
Mr. Charles B. Lewis III



**Maryland Department of Transportation  
State Highway Administration**

267  
Richard H. Trainor  
Secretary  
Hal Kassoff  
Administrator

October 15, 1990

**MEMORANDUM**

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

**FROM:** Cynthia D. Simpson  
Assistant Division Chief  
Project Planning Division

**SUBJECT:** Contract No. B 881-102-471  
MD 45, MD 145 to Belfast Road  
P.D.M.S. No 033309

The following serves as minutes for a meeting held on October 5, 1990 with the Maryland Department of Environment/Hazardous and Solid Waste Management Administration (HSWMA) regarding the Bausch and Lomb (B&L) Superfund site. Those in attendance were:

- Ms. Ronie Larmore - Hazardous & Solid Waste Mgmt. Admin. (HSWMA)/Project Manager
- Mr. Tom DeReamer - HSWMA/Project Geologist
- Mr. Doug Simmons - State Highway Admin./Project Manager
- Mr. Jeff Wingfield - State Highway Admin./Project Engineer
- Mr. Martin Cohn - State Highway Admin./Project Engineer
- Mr. Bruce Grey - State Highway Admin./Envir. Manager

The purpose of the meeting was to describe the MD 45 detailed alternate adjacent to the B&L site, discuss the status of HSWMA's B&L Site Assessment studies, and discuss the potential for hazardous waste involvement resulting from the proposed project.

The plan sheet, the vertical profile and the typical sections for stations along MD 45 at the B&L site were reviewed. It was explained that the project would include a closed drainage system in this area and all stormwater runoff would be diverted away from the B&L property. It was determined that a minor amount of fill and up to 10' of cut would be required to reach the subbase with an estimate of another 2'-3' for drainage pipes at the deepest cut point (sta. 138). The distance from the existing roadway edge to the proposed slope line at the B&L site averaged 30' with an additional 10-15' of ground disturbance for construction equipment.

VI-23                      333-1177  
My telephone number is (301) \_\_\_\_\_

Mr. Louis H. Ege, Jr.  
Page Two

HSWMA stated that no historical evidence or technical data demonstrate evidence of contamination between the roadway and the building and that all wastes were deposited behind the building in the lagoon and three (3) dry wells.

HSWMA requested that all surface water be diverted away from the B&L site during and after construction and that appropriate stormwater management practices would be sufficient to ensure this. It is important that during construction stormwater runoff diverted away from the B&L site is monitored to ensure stormwater runoff diversion is maintained. HSWMA stated that the closed drainage system will serve to reduce the amount of stormwater runoff flowing towards B&L thus improving the current condition.

HSWMA stated that the water table at MD 45 was located approximately 35' below the roadway surface at the interface of the saprolyte layer and bedrock. Since the proposed roadway cut will not affect the water table, HSWMA did not believe that any impact on subsurface flow would occur with the MD 45 project.

A figure was provided by HSWMA mapping the horizontal boundary of the shallow groundwater trichloroethylene plume from the site for inclusion in the Environmental Assessment (see attachment). A sampling plan by Diecraft's consultant is currently being reviewed by HSWMA to determine the extent of vertical contamination.

HSWMA has agreed to provide a letter for inclusion in the Environmental Assessment discussing the following points:

- Reiterate the engineering parameters of project (extent of cut, distance from existing roadway edge to proposed slope line plus construction area, closed drainage, and stormwater management practices) as discussed at this meeting.
- Provide information on the extent of the contamination boundary, rationale why testing for contamination is not required for the area between the building and MD 45, depth to water table, topographical/geological considerations between roadway and site and their influence on water surface/subsurface flow as it relates to the proposed project.
- Statement that given the previously discussed physical parameters, the closed drainage system and stormwater management diversion measures proposed, that no involvement with the B&L hazardous waste site is expected to occur. HSWMA did state that their management and possibly Attorney General would need to review their letter for content and the legal concerns may eliminate some of the technical conclusions requested by SHA.

289

Mr. Louis H. Ege, Jr.  
Page Three

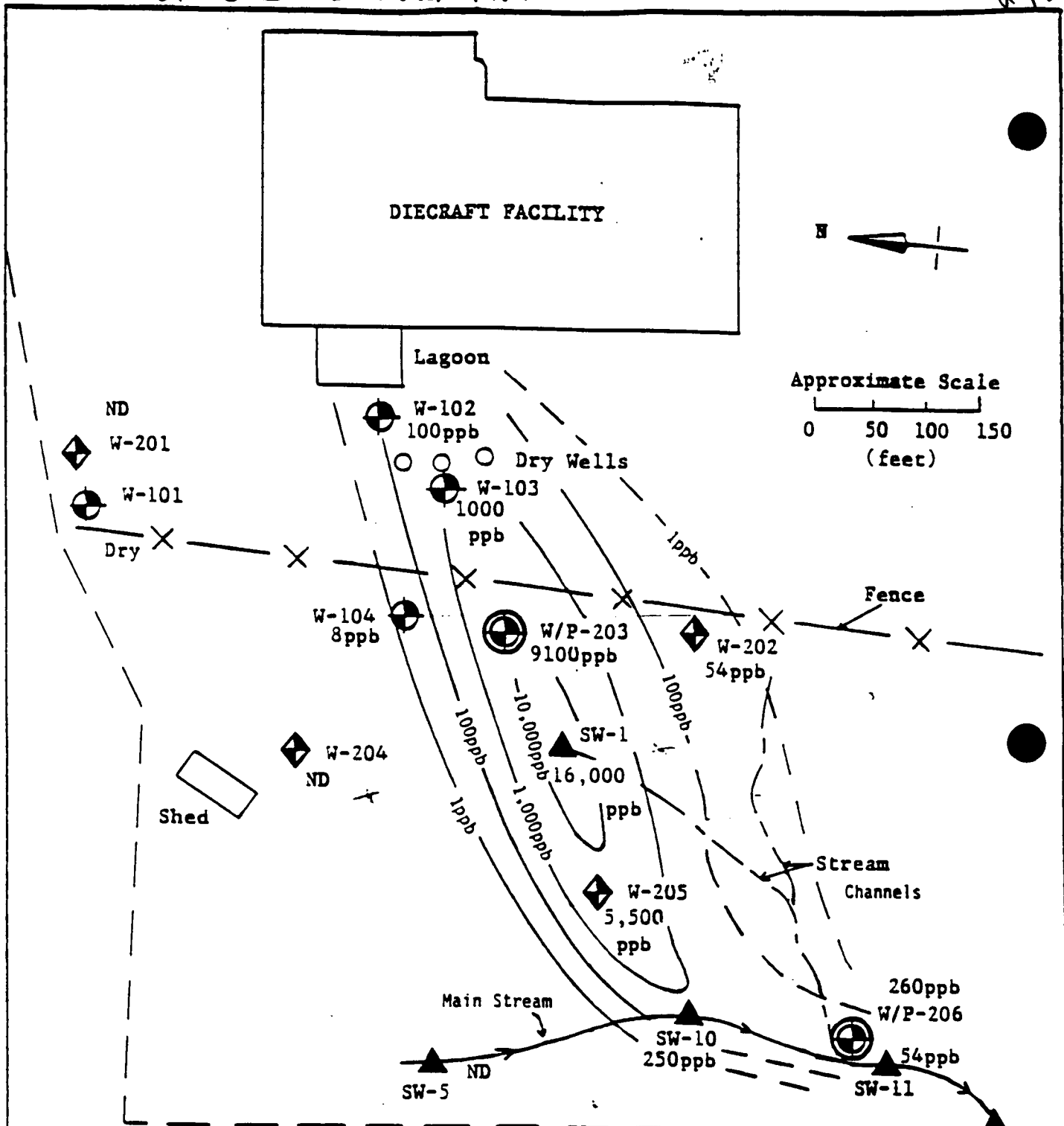
SHA will provide a copy of the roadway plan sheet, profiles, and typical sections adjacent to B&L to aid HSWMA in preparing the letter. SHA is also committed to submitting the design plans to HSWMA for review and comment to ensure that the stormwater management and drainage system proposed eliminates any hazardous waste involvement.

HWSMA agreed to provide technical advice to SHA regarding the extent of services needed if SHA decides to utilize consultant services for hazardous waste testing. HWSMA stated that at most SHA would only need to possibly take soil borings at the bedrock level upgradient from the site (i.e. between the proposed right-of-way and roadway). HWSMA did not feel that soil borings are really required. In addition, HSWMA indicated they would be willing to meet with the consultant to discuss the project and reviews their files.

This memorandum summarizes the topics discussed at the meeting. Please advise if there are any errors or omissions.

CDS:BG:kw  
Attachments  
cc: Attendees



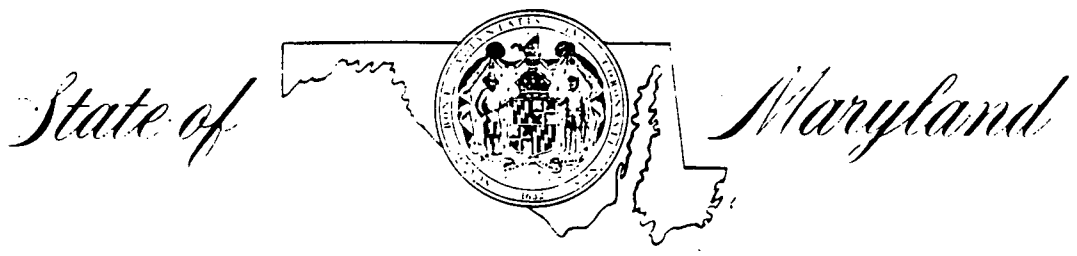


**LEGEND**

- 1ppb TCE Concentration Contour
- ◆ Phase B Monitor Well
- ⊕ Phase B Monitor Well/  
Piezometer Nest
- ▲ Surface Water Sampling  
Location
- ⊙ Existing Monitor Well

**FIGURE 6-10**  
**GENERALIZED MAP OF THE**  
**SHALLOW GROUNDWATER TCE PLUME**  
**SEPTEMBER 12, 1989**  
**DIECRAFT - SPARKS, MARYLAND**  
**FRED C. HART ASSOCIATES, INC.**

291



**DEPARTMENT OF THE ENVIRONMENT**

2500 Broening Highway, Baltimore, Maryland 21224  
Area Code 301 • 631-3438

**William Donald Schaefer**  
Governor

**Martin W. Walsh, Jr.**  
Secretary

August 17, 1989

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

Dear Ms. Simpson:

This is in response to your letter to the Maryland Department of the Environment, Hazardous and Solid Waste Management Administration (HSWMA), regarding proposed State Highway Administration (SHA) projects in the area of Route 45 in Baltimore County. Your letter requested information on known or potential hazardous waste sites within the project corridor.

We appreciate having the opportunity to meet with you on July 19, 1989 and discuss these issues. As discussed in the meeting, HSWMA has reviewed the Administration files and has found one site in the project corridor. The site is Bausch and Lomb; Diecraft in Sparks, Maryland. I believe the discussions held during the meeting adequately address your questions concerning the current status of the site.

When needed, HSWMA will make the Bausch and Lomb files available to your personnel for review. As agreed in our meeting, communication will continue between SHA and HSWMA regarding this matter.

If you have any further questions regarding this matter, please contact me at (301) 631-3438.

Sincerely,

*D. Healy for*  
Frank Henderson, Chief  
Remedial Response Division

MAK/vlm  
CC: Mr. Ronald Nelson  
Mr. Michael A. Kilpatrick  
Mr. Chuck Lewis  
Mr. David Healy  
Ms. Ronie Larmore



**Maryland Department of Transportation  
State Highway Administration**

July 21, 1989

Richard H. Train  
Secretary  
Hal Kassoff  
Administrator

B.4.

zhr

MEMORANDUM

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

FROM: Cynthia D. Simpson *CD*  
Assistant Division Chief  
Project Planning Division

SUBJECT: Contract No. B 881-101-471  
MD 45, MD 145 to Belfast Road  
PDMS No. 033309

The following serves as minutes for a meeting held on July 19, 1989 with the Maryland Department of Environment, Hazardous and Solid Waste Management Administration (HSWMA) in reference to a super fund site associated with Bausch and Lomb. Those in attendance were:

- Ms. Ronie Larmore - Hazardous & Solid Waste Management Administration (HSWMA)
- Mr. David Healy - " " "
- Mr. Tom DeReames - " " "
- Ms. Cynthia D. Simpson - Maryland State Highway Administration
- Mr. Doug Simmons - " " "
- Mr. Bruce M. Grey - " " "

The purpose of the meeting was to obtain information regarding the location of known hazardous waste (HW) sites such as Bausch and Lomb and any potential sites located with the study area.

A description of project and its limits, the project schedule and environmental documentation process was explained to HSWMA personnel.

Mr. Healy indicated that the only known HW site in the project area is at Bausch and Lomb. The HW's at this site are associated with electroplating operations at the plant and were deposited in the lagoon or three (3) dry wells located behind the building. The wastes consists of heavy metals and trichloroethylene (TCE). A number of old production dry wells from the 1960's surround the plant in the front and rear. A sampling of these wells to date indicate no contamination.

293

Mr. Louis H. Ege, Jr.  
July 21, 1989  
Page 2

A number of shallow monitoring wells have been located on the Highlands development. Evidence of contamination exists but it is not known whether the aquifer has been contaminated. In addition, Bausch and Lomb has installed two (2) deep monitoring wells (125 ft.) but no sampling data is available yet. A third deep monitoring well is proposed at the junction of the Bausch and Lomb and Highlands property line to monitor the area flow from the older dry wells to test for further contamination.

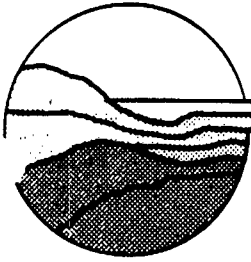
A brief discussion of the geomorphology, water depth, soil gas surveys and stream sampling followed. Further testing will occur to determine the extent of vertical contamination.

HSWMA personnel indicated that all waste disposal took place behind the building and since MD 45 improvements occur in front, HW's are not expected to be encountered with construction activities. One of the older production dry wells located in the front of the building will be tested. If HW's are found, then further testing will be needed but at present HSWMA does not expect to find HW's in this well.

HSWMA did state that the manner in which stormwater management runoff will be handled and groundwater flow towards the contaminated site is an area of concern due to the potential for flushing of toxins from the subsurface.

The meeting concluded with HSWMA stating that a written response to our initial request for information on the site will be provided and that continued coordination will keep each administration aware of each others project.

CDS:BG:cd  
cc: Attendees  
Mr. Doug Simmons  
Mr. Martin Cohn



3.2

274

Maryland Department Of Natural Resources

Forest, Park and Wildlife Service

Tawes State Office Building  
Annapolis, Maryland 21401

JUN 20 2 29 PM '91

William Donald Schaefer  
*Governor*

Torrey C. Brown, M.D.  
*Secretary*

June 20, 1991

Donald E. MacLauchlan  
*Assistant Secretary*

Mr. Louis H. Ege, Jr.  
STATE HIGHWAY ADMINISTRATION  
707 North Calvert Street  
Baltimore, Maryland 21203-0717

Attn: Cynthia D. Simpson

RE: MD 45 from MD 145 to Belfast Road

Dear Mr. Louis H. Ege, Jr.:

This is in response to your request for information regarding the above referenced project. There are no known Federal or State threatened or endangered plant or wildlife species present at this project site.

Sincerely,

*Janet McKegg/dec*  
Janet McKegg, Director  
Natural Heritage Program

JM:dec

cc: Lynn Davidson  
Robert Miller  
ER# 91.05.338

Telephone: (301) 974-5551

DNR TTY for Deaf: 301-974-3683



245

William Donald Schaefer  
Governor

**Maryland Department of Natural Resources**

**Forest, Park and Wildlife Service**

Tawes State Office Building  
Annapolis, Maryland 21401

Torrey C. Brown, M.D.  
Secretary

Donald E. MacLauchlan  
Assistant Secretary

**Freshwater Fisheries**

June 18, 1991

Mr. Louis H. Ege, Jr.  
Deputy Director  
Maryland State Highway Administration  
707 North Calvert St.  
Baltimore, Maryland 21203

Re: Contract No. B 881-101-471 Md 45 from Md 145 to Belfast Road  
PDMS No. 033309

Dear Mr. Ege:

Your letter of May 20, 1991 to Mr. W. R. Jensen has been forwarded to me for reply as a matter under my responsibility. I have reviewed the SHA project referenced above and have discussed the project with my Regional Fisheries Manager, Mr. Charles R. Gougeon.

Our comments regarding the trout fisheries within the Piney Creek, Western Run, and Phoenix Road Tributary (also known as Quail Creek) are as follows:

**Western Run** - The most recent fish survey data was collected on September 7, 1990 by Md. Freshwater Fisheries staff at 1317 Western Run Road. The survey revealed an excellent self-sustaining brown trout population. The study location is approximately two miles upstream of the Md. Route 45 project site. Habitat and stream conditions for trout exist downstream to the mouth of Western Run.

**Piney Creek** - The most recent fish survey data was collected on June 5, 1991 by Md. Freshwater Fisheries staff at Md. Route 45. The survey revealed the presence of a self-sustaining brown trout population. Young-of-year brown trout collected indicated a successful year of natural reproduction in 1991. The upstream section of Piney Creek at Piney Hill Road contains an excellent brook trout population. In addition, the Piney Hill Road study site contains a self-sustaining population of brown trout. Fish sampling was last conducted at the Piney Hill Road location on October 5, 1990.

Telephone: 301-974-3061  
DNR TTY for the Deaf: 301-974-3683

JTB

**Quail Creek or "Phoenix Road Tributary"** - The most recent fish survey data was collected on November 16, 1990 by Md. Freshwater Fisheries staff between the mouth of Quail Creek and Phoenix Road. The survey found both brook and brown trout existing in the stream. Young-of-year brook trout indicated successful reproduction in 1991. Only adult brown trout were found.

Although construction of the Loveton Farms development has generated environmental impacts to Quail Creek, it continues to support brook and brown trout.

The most serious environmental impact to the stream occurred on May 5, 1989 when a stormwater management pond serving the Loveton Farms development failed following a major storm event. The episode introduced an enormous amount of sediment into the stream channel and subsequently promoted significant stream bank damage from erosion.

Stream rehabilitation followed under the direction of Dave Rosgen of Wildland Hydrology Consultants, Fort Collins, CO. and Jim Gracie of Brightwater Consulting. The contract was awarded by Henderson-Webb, Inc.. Work took place between 07/26 to 07/31/90. According to Mr. Gracie, the cost of providing 2200 feet of stream rehabilitation and sediment removal was \$180,000.00.

We believe the stream warrants high protection from any additional environment stresses. Rehabilitation of the stream is evident and is expected to improve with time. All activities that will put the stream at risk should be considered very carefully.

Please contact Mr. Charles R. Gougeon directly if you should require additional information.

Sincerely,



Robert A. Bachman, Ph.D  
Director, Freshwater Fisheries

RAB/CRG/sg

pc: Mr. Charles R. Gougeon  
Mr. Alan Straus  
Mr. Mark Duvall

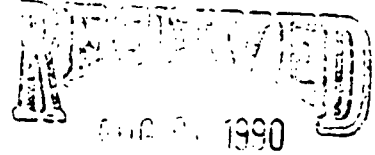


United States Department of the Interior

297

FISH AND WILDLIFE SERVICE  
DIVISION OF ECOLOGICAL SERVICES  
1825 VIRGINIA STREET  
ANNAPOLIS, MARYLAND 21401

August 1, 1990



MCCORMICK TAYLOR  
AND ASSOCIATES, INC.

Ms. Jill O. Kulig  
McCormick, Taylor and Associates, Inc.  
Mellon Independence Center, Suite 6000  
701 Market Street  
Philadelphia, PA 19106

RE: Endangered Species  
MD Route 45 from Route 145  
to Belfast Road  
Baltimore County, MD

Dear Ms. Kulig,

This responds to your July 17, 1990, request for an update on the status of endangered, threatened, and candidate species, which may occur in the impact area of the referenced project. Our response of June 21, 1988, remains accurate. The three candidate species identified in that letter (bogturtle, pygmy shrew, wolf's milk spurge) remain category two candidates.

We appreciate your efforts to keep this project in compliance with the Endangered Species Act. If you need further assistance, please contact Andy Moser of my Endangered Species staff at (301) 269-5448.

Sincerely,

For John P. Wolflin  
Supervisor  
Annapolis Field Office





United States Department of the Interior

PROJECT DEVELOPMENT DIVISION

FISH AND WILDLIFE SERVICE  
DIVISION OF ECOLOGICAL SERVICES  
1825 VIRGINIA STREET  
ANNAPOLIS, MARYLAND 21401

June 21, 1988

Louis H. Ege, Jr.  
Project Development Division  
Maryland Department of Transportation  
State Highway Administration  
707 North Calvert St.  
Baltimore, MD 21203-0717

Dear Mr. Ege:

This responds to your May 25 request for information on the presence of species which are Federally listed or proposed for listing as endangered or threatened within the area affected by the proposed highway construction along MD Route 45 between MD Route 145 and Belfast Road in Baltimore County. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

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

The following "Candidate" species (those placed under review in the Federal Register to determine suitability for listing) may be present in the project impact area:

Bog Turtle, Clemmys mhlenbergii  
Pygmy shrew, Microsorex hoyi winnemana  
Wolf's milk spurge, Euphorbia purpurea

Candidate species are not legally protected under the Endangered Species Act and biological assessment and consultation requirements pursuant to that legislation do not apply to them. They are included here for the purpose of notifying you of possible future proposals and listings in advance, for consideration in your NEPA review process, and to encourage efforts to avoid adverse impacts to them. Additional information on these candidate species may be obtained by contacting the Maryland Natural Heritage Program at 301-974-2870.

299

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

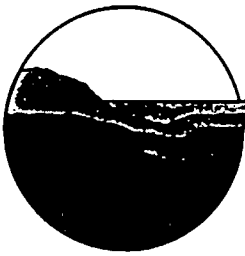
Thank you for your interest in endangered species. If you have any questions or need further assistance, please contact Andy Moser of our Endangered Species staff at (301) 269-5448.

Sincerely yours,

*G.A. Moser*

← Glenn Kinser  
Supervisor  
Annapolis Field Office

300



Maryland Department of Natural Resources

Forest, Park and Wildlife Service  
Tawes State Office Building  
Annapolis, Maryland 21401

RECEIVED

AUG 23 1990

MCCORMICK, TAYLOR & ASSOCIATES, INC.

William Donald Schaefer  
Governor

Torrey C. Brown, M.D.  
Secretary

August 14, 1990

Donald E. MacLauchlan  
Assistant Secretary

Ms. Jill O. Kluig  
MCCORMICK, TAYLOR & ASSOCIATES, INC.  
Mellon iNdependence Center  
Suite 6000  
701 Market Street  
Philadelphia, PA 19106

Re: Contract No. B881-101-471  
MD 45 from MD 145 to Belfont Road  
PDMS No. 03309

Dear Ms. Kluig:

This is in response to your request for information regarding the above referenced project. There are no known Federal or State threatened or endangered plant or wildlife species present at this project site.

If you have any questions regarding this please contact me at (301) 974-3195.

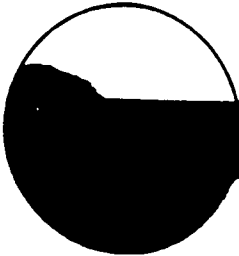
Sincerely,

*James Burtis*  
James Burtis, Jr.  
Director, Planning and Program Development

JB:dec

cc: Peter Bendel  
Lynn Davidson  
ER# 90.07.506

301



Maryland Department of Natural Resources

Forest, Park and Wildlife Service  
Tawes State Office Building  
Annapolis, Maryland 21401

William Donald Schaefer  
Governor

Torrey C. Brown, M.D.  
Secretary

Donald E. MacLauchlan  
Director

98-6-532

June 21, 1988

Mr. Louis H. Ege, Jr.  
Deputy Director  
MD Dept. of Transportation  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21203-0717

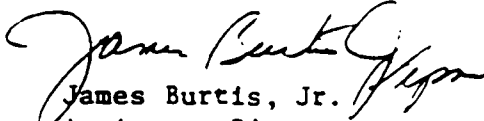
RE: Contract No. B881-101-471  
MD 45 from MD 145 to Belfast Rd  
PDMS No. 033309

Dear Mr. Ege:

This is in response to your request of June 1, 1988 for information regarding the above referenced project. There are no known Federal or State threatened or endangered plant or wildlife species present at this project site.

If you have any questions regarding this matter please feel free to call me.

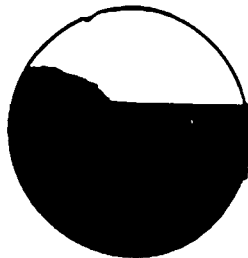
Sincerely,

  
James Burtis, Jr.  
Assistant Director

JB:epm

cc: Therres..  
McKnight

not



**Maryland Department of Natural Resources**

PROJECT

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

AUG 11 1988

William Donald Schaefer  
Governor

Torrey C. Brown, M.D.  
Secretary

August 8, 1988

Memorandum

To: Cynthia Simpson, Environmental Coordinator  
State Highway Administration  
707 North Calvert Street  
Baltimore, Md. 21203

From: *W. Jensen* Jensen, Director, Fisheries Division

Subject: Fisheries Division comments on Maryland Route 45 improvements from Md. Route 145 to Belfast Road. (SHA Contract No. B 88-101-4715; Request for finfish information within the proposed study limits).  
Gunpowder River drainage, Baltimore County.

Fisheries Division has reviewed the subject permit application and has the following comments that have been prepared by Charles R. Gougeon.

The State Highway Administration (SHA) has been conducting project planning studies for the referenced project. Fisheries Division has been requested by SHA to provide them with any information available that identifies the presence of any anadromous finfish and or other fish within this project area.

Fisheries Division has reviewed the enclosed map that identifies the limits of the proposed road alignment and has determined that the road will cross three tributary streams to the Gunpowder Falls. All of the tributaries are identified as Class III, Natural Trout Waters, by the Water Resources Administration (WRA) of the State of Maryland.

Road crossing will impact the following streams at the designated locations; a). Piney Creek mainstem at Route 45 and an unnamed tributary to it that is crossed by Belfast Road immediately West of Route 45 b). Western Run mainstem at Route 145 (relocation of Md. 145) and an unnamed tributary to it that originates immediately North of the Loveton Center Business Community and immediately West of Route 45. The aforementioned unnamed tributary will be crossed by a proposed road spur connecting Route 45 with I-83, and c). an unnamed tributary to the Gunpowder Falls at Route 45 that is located between Phoenix Road and the Loveton Center Business Community.

Telephone: (301) 974-3558

DNR TTY for Deaf: 301-974-3683

VI-35

303

Cynthia Simpson  
August 8, 1988  
Page 2

According to our fish survey files, Brook and Brown trout populations are known to exist in the Western Run and Piney Creek mainstems and tributaries. The unnamed tributary identified in item c). above will be referred to as the "Phoenix Road Trib.". The Phoenix Rd. trib. is known to support a naturally reproducing brook trout population. Our records indicate that the Phoenix Rd. trib. was last surveyed on May 22, 1986. The results showed that brook trout were present, but Fisheries personnel noted at that time that significant environmental damage was being sustained as a result of construction activities ongoing at the Loveton Farms development. Most of the environmental damage was identified as sediment introduction being generated by the construction activities. Phoenix Rd. trib. is a very small stream and as a result cannot sustain repeated environmental strains. To complicate the issue, brook trout are short-lived fish (typically living 3-4 years) and are very sensitive to sediment inputs (interferes with reproduction) and high water temperatures that are elevated from such things as roadway runoff and discharges from stormwater management ponds (SWMP), both of which are currently stressing this fragile resources.

In addition to the trout species listed above, we have included a list of other fish species (attached) that have been found inhabiting streams within the Gunpowder Falls watershed. No anadromous finfish species are currently known to inhabit the waters within the limits of this proposed study.

Fisheries Division stands prepared to provide additional comments to SHA regarding this project as the project progresses.

WPJ:CG:swp

304

Table IX-2. Fish Species Collected in the Gunpowder River Basin, 1974-1984.

Salmonidae	
Brook trout	<u>Salvelinus fontinalis</u> (Mitchill)
Brown trout	<u>Salmo trutta</u> Linnaeus
Rainbow trout	<u>Salmo gairdneri</u> Richardson
Cyprinidae	
Stoneroller	<u>Campostoma aromalum</u> (Rafinesque)
Blacknose dace	<u>Rhinichthys atratulus</u> (Hermann)
Longnose dace	<u>Rhinichthys cataractae</u> (Valenciennes)
* Silverjaw minnow	<u>Ericymba buccata</u> Cope
Cutlips minnow	<u>Exoglossum maxillingua</u> (Lesueur)
Creek chub	<u>Semotilus stromaculatus</u> (Mitchill)
River chub	<u>Nocomis microporosus</u> (Cope)
<del>Rosyside dace</del>	<del><u>Semotilus atromaculatus</u> (Mitchill)</del>
Rosyside dace	<u>Clinostomus funduloides</u> Girard
Common shiner	<u>Notropis cornutus</u> (Mitchill)
Bluntnose minnow	<u>Pimephales notatus</u> (Rafinesque)
Carp	<u>Cyprinus carpio</u> Linnaeus
Spotfin shiner	<u>Notropis spilopterus</u> (Cope)
Satinfin shiner	<u>Notropis analostanus</u> (Girard)
Spottail shiner	<u>Notropis hudsonius</u> (Clinton)
Catostomidae	
Northern hogsucker	<u>Hypentelium nigricans</u> (Lesueur)
White sucker	<u>Catostomus commersoni</u> (Lacepede)
Ictaluridae	
Margined madtom	<u>Noturus insignis</u> (Richardson)
Brown bullhead	<u>Ictalurus nebulosus</u> (Lesueur)
* Yellow bullhead	<u>Ictalurus natalis</u> (Lesueur)
* Channel catfish	<u>Ictalurus punctatus</u> (Rafinesque)
Cottidae	
Mottled sculpin	<u>Cottus bairdi</u> Girard
Percidae	
Tessellated darter	<u>Etheostoma olmstedii</u> Storer
Greenside darter	<u>Etheostoma blennioides</u> Rafinesque
* Fantail darter	<u>Etheostoma flabellare</u> Rafinesque
Centrarchidae	
Bluegill sunfish	<u>Lepomis macrochirus</u> (Rafinesque)
Smallmouth bass	<u>Micropterus dolomieu</u> Lacepede
Largemouth bass	<u>Micropterus salmoides</u> (Lacepede)
Green sunfish	<u>Lepomis cyanellus</u> Rafinesque
Redbreast sunfish	<u>Lepomis auritus</u> (Linnaeus)
Pumpkinseed sunfish	<u>Lepomis gibbosus</u> (Linnaeus)
Anguillidae	
American eel	<u>Anguilla rostrata</u> (Lesueur)
Petromyzonidae	
* Sea lamprey	<u>Petromyzon marinus</u> Linnaeus

\* Additional fish species collected, 1960-1984.

305



JOHN C. NORTH, II  
CHAIRMAN

STATE OF MARYLAND  
**CHESAPEAKE BAY CRITICAL AREAS COMMISSION**  
WEST GARRETT PLACE, SUITE 320  
275 WEST STREET  
ANNAPOLIS, MARYLAND 21401  
974-2418 or 974-2426

SARAH J. TAYLOR, PhD  
EXECUTIVE DIRECTOR

COMMISSIONERS

August 31, 1989

- Thomas Osborne  
Anne Arundel Co.
- James E. Gutman  
Anne Arundel Co.
- Ronald Karasic  
Baltimore City
- Ronald Hickernell  
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- Russell Blake  
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Mr. Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21203

Dear Mr. Ege:

Thank you for sending us notification of the State Highway Administration projects listed below. We concur with the determination of the Environmental Evaluation Section that these projects are not in the Critical Area, and are therefore not subject to Critical Area Commission review. The above-referenced projects are:

PROCESSED  
BY  
SEP 5 9 51 AM '89

Contract No.	AA 936-151-570	MD 3 Reconstruction
"	" B 813-101-471	US 1 Silver Spring Road
"	" B 881-101-471	MD 45, MD 145
"	" CH 566-151-571	MD 5 Relocated
"	" H 888-101-471	US 1 Business
"	" H 899-101-471	MD 152, US 1
"	" H 873-101-470	US 1 Hickory/MD 23
"	" H 896-101-471	MD 161 Bridge Replacement
"	" H 887-101-471	MD 7, Stepney Road
"	" SM 752-251-271	MD 471, Bridge No.18028
"	" S 365-101-171	MD 362 Extended

Again, we appreciate your consideration.

CABINET MEMBERS

- Wayne A. Cawley, Jr.  
Agriculture
- Robert Schoepfle  
Employment and Economic Development
- Robert Perciasepe  
Environment
- Ardath Cade  
Housing and Community Development
- Torrey C. Brown, M.D. CC:  
Natural Resources
- Ronald Kreitner  
Planning

Sincerely,  
*Abi Rome*  
Abi Rome  
Natural Resources Planner

AR:msl

- Cynthia Simpson
- Thomas Osborne
- Eugene Lauer
- William Carroll
- David Flowers
- Jackie Magness
- Jon Grimm
- Ron Adkins

VI-38



Baltimore County  
Office of Planning & Zoning  
County Courts Building, Suite 406  
401 Bosley Avenue  
Towson, Maryland 21204  
(301) 887-3211

P. David Fields  
Director

August 25, 1989



Dennis F. Rasmussen  
County Executive

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

Dear Mr. Ege:

Baltimore County concurs that the US 1, Silver Spring Road to MD 152, and MD 45, MD 145 to Belfast Road, projects are not within the Chesapeake Bay Critical Areas.

Please address all future inquiries on Chesapeake Bay Critical Areas to Mr. David C. Flowers, Department of Environmental Protection and Resource Management, 401 Bosley Avenue, Towson, MD 21204.

Mr. Flowers can be reached at 887-3980.

Sincerely,

A handwritten signature in cursive script that reads "David Fields".

P. David Fields, Director  
Office of Planning and Zoning

PDF:slb

307



DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MARYLAND 21203-1715

REPLY TO ATTENTION OF:

April 6, 1990

Planning Division

Mr. Neil J. Pedersen  
Director  
Office of Planning and Preliminary  
Engineering  
Maryland Department of Transportation  
707 North Calvert Street  
Baltimore, Maryland 21203-0717

Dear Mr. Pedersen:

Reference your letter dated March 16, 1990, requesting the Baltimore District, Corps of Engineers (Corps), to participate as a cooperating agency in the preparation of the environmental document for improving MD 45 from MD 145 to Belfast Road.

The District will be pleased to serve as a cooperating agency in the development of the document. The only limiting factors for Corps involvement are manpower and funding constraints.

If you have any questions on this matter, please contact me or my action officer, Mr. John Brzezinski at (301) 962-4997.

Sincerely,

James F. Johnson  
Chief, Planning Division



DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MARYLAND 21203-1715

PROJECT DEVELOPMENT  
DIVISION

FEB 25 12 14 24 '92  
FEB 22 1992

706

REPLY TO ATTENTION OF:  
Operations Division

CENAB-OP-RX(MD SHA - MD 45; #B 881-102-471)91-01233

Maryland State Highway Administration  
Attn: Ms. Cynthia Simpson  
707 North Calvert Street  
Baltimore, MD 21203-0717

Dear Ms. Simpson:

We have reviewed the draft Environmental Assessment for the widening of MD Route 45 north of Ashland Road, for the relocation of MD 145 from MD 45 to Paper Mill Road in Ashland, and for the construction of a new interchange with I-83 in the vicinity of Thornton Mill Road, in Baltimore County, Maryland. We offer the following comments for modifying the document to make it acceptable for joint NEPA/404 processing.

a. We concur with the comments expressed by EPA at the February 19 interagency meeting in regard to the need to inventory the potential socio-economic and environmental impacts of the connection between MD 45 and the proposed interchange with I-83. Although the connection is not part of the SHA proposal, the selection of an interchange location will, to a large degree, dictate the alignment of the connection, and greatly reduce the availability of alternative alignments for avoiding the impacts.

b. We object to the designation of the stormwater management pond located 20 feet north of Loveton Drive as a "wetland" since we decided at the site visit not to claim jurisdiction over this pond. We also object to the inference on page V-6 and V-8 of the Section 4(f) Evaluation that avoidance of the Loveton historic site would negatively impact a "wetland", or that this "wetland" has sufficient value to be used to help justify impacts to a historic site. "Wetland" 1 is also not considered to be a wetland by the Corps.

c. Also at the March 12, 1991 site visit, Mr. Schultz of the Fish and Wildlife Service requested that the cost and wetland impact of alternative bridges of 100 and 125 feet be estimated for the relocation of MD 145, for the purpose of providing structures which would be passable beneath the structure by deer and other wildlife. Since the stream is 40 feet wide, the intent here is to provide a wildlife corridor of 60 and 85 feet, respectively. Therefore, if stub abutments are to be used, please estimate a structure of sufficient length to provide these wildlife corridor widths at the base of any embankments which might be constructed.

309

It should be noted, for purposes of merging NEPA and 404, that Mr. Schultz also requested consideration of alternative bridge lengths of 100 and 125 feet for the reconstruction of the bridge carrying MD 45 over Western Run. Although the Corps representative at the site visit stated that the Corps would not endorse the consideration of such alternatives, you may wish to verify with Mr. Schultz whether he would consider the alternatives analysis to be incomplete for purposes of FWS' evaluation of wildlife impacts.

d. In view of the 1987 Delineation Manual's emphasis on proving the existence of all three wetland parameters, the SHA may wish to re-examine the floodplain traversed by the relocation of MD 145. The parameter in doubt here is the hydrology parameter. Therefore, if SHA wishes to have the delineation reconsidered, the SHA should prior to any subsequent site visit conduct weekly monitoring of groundwater wells throughout the 1992 growing season, and should attempt to establish with Baltimore County whether the current management practices at the Loch Raven Reservoir have resulted in a lowering of the normal backwater elevation at the subject wetland.

e. We note that SHA is committing to a retaining wall from Station 189+40 to Station 191+15 which would avoid impacts to wetland 15 along Piney Creek. We encourage this early commitment to avoidance. However, if you believe that such a retaining wall might be determined during final design to be not practicable in terms of cost, please assess the probable worst-case impacts of the stream relocation at this time, and indicate whether SHA would consider the construction of a retaining wall to be practicable.

f. Please indicate in the discussion of wetland avoidance that an eastward shift of the alignment to avoid the relocation of the stream at wetland 13 would require impacts to Price's Store historic site.

g. We note that the 4(f) minimization alternative of 10-foot bypass lanes opposite intersecting roadways would eliminate the possibility of impacts to wetland 15 along Piney Creek and the stream relocation at wetland 13. However, we recognize that such intersection configurations permit through movements to occur which are sometimes unexpected by opposing left-turning vehicles. The Corps would be willing to consider the safety drawbacks of this alternative as one reason for SHA not being able to avoid wetland 13 and wetland 15. Additional justification would be needed, however, to dispose of the retaining wall option at wetland 15.

We suggest that your location hearing public notice include information specific to wetland issues, in order to flush out public concern for aquatic impacts. We offer the following text as a suggestion:

"The State Highway Administration, in cooperation with the U.S. Army Corps of Engineers, has identified jurisdictional wetlands and/or other waters of the United States which are regulated by Section 404 of the Clean Water Act and/or Section 10 of the River and Harbors Act of 1899. This hearing provides the opportunity to present views, opinions, and information which will be considered by the Corps in evaluating a Department of the Army permit."

In addition, we suggest the following statement at the end of the paragraph which gives the date for submission of comments:

"Copies of any written statements expressing concern for aquatic resources may be submitted to Mr. Paul Wettlaufer, Corps of Engineers, CENAB-OP-RX, P.O. Box 1715, Baltimore, MD 21203-1715."

In accordance with the draft procedure we previously developed, the Corps would ordinarily at this point in the process provide you with our mailing list for the impacted waterway. Our records indicate that we do not maintain a mailing list of interested persons for either the Western Branch, Loch Raven Reservoir, or the Gunpowder River. However, please ensure that the public notice is provided to any property owners whose property is adjacent to a wetland impacted by any of the alternatives.

If you have any questions, please call Mr. Paul Wettlaufer at 962-1843.

Sincerely,



Thomas J. Filip III  
Acting Chief, Special Projects  
Permits Section

211

CITY OF BALTIMORE

BERT L. SCHMOKE, Mayor



PROJECT

4 3

DEPARTMENT OF PUBLIC WORKS  
BUREAU OF WATER AND WASTE WATER  
900 Abel Wolman Municipal Building  
Baltimore, Maryland 21202

December 28, 1988

Maryland Department of  
Transportation  
State Highway Administration  
707 N. Calvert Street  
Baltimore, Md. 21203-0717

Attn: M's Cynthia D. Simpson, Chief  
Environmental Management

Re: Contract No. B-881-101-471

Dear M's Simpson:

In response to your inquiry of December 8, 1988, the proposed realignment of MD 145 (Ashland Road/Paper Mill Road) will have no impact on recreational activities on City watershed property. There are no recreational facilities in this area nor are any planned.

No "Program Open Space" or "Land and Water Conservation" funds were used to purchase the property.

Very truly yours,

Jay S. Thorpe  
Bureau Head

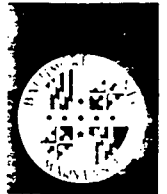
JST:BAH:avh

cc: Walter J. Koterwas  
Brent A. Hartley

Baltimore County  
Office of Planning & Zoning  
County Courts Building, Suite 406  
401 Eosley Avenue  
Covington, Maryland 21204  
(301) 887-3211

P. David Fields  
Director

January 13, 1989



Dennis F. Rasmussen  
County Executive

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

Dear Mr. Ege:

Thank you for your letter asking for information on the MD 45 (York Road) project from MD 145 to Belfast Road.

The County will be including the proposal for a new interchange on I-83 at or near Thornton Mill Road in the Draft Master Plan currently being developed. There appears to be significant support in the community for the new access to the Baltimore-Harrisburg Expressway and the County Administration places a high priority on its implementation.

We are also including the relocation of MD 145 (Paper Mill Road) in the Draft Master Plan. This extension will provide the very desirable direct connection to Shawan Road and I-83.

County policy regarding the widening of MD 45, however, has not yet been settled. There is substantial local opposition to the scope and length of the proposed improvement. Our position, at this time, is to await the results of the project planning study which will determine the impact on York Road of the proposed new I-83 interchange connection. Baltimore County will then be in a position to endorse the most appropriate alternative for MD 45.

Should you need additional information or classification please do not hesitate to contact me.

Sincerely,

Handwritten signature of P. David Fields in cursive script.  
P. David Fields, Director

PDF:slb

cc; Philip Earls, SHA  
Tim Dugan  
Bill Irgens  
Craig Forrest

VI-42

Baltimore County Government  
Department of Recreation and Parks



313

301 Washington Avenue  
Towson, MD 21204

887-3817  
Fax 825-3305  
Deaf/TDD 887-5319

July 1, 1991

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

Dear Ms. Simpson:

As indicated previously, we have purchased the subject parcels with P.O.S. funding. While we do not have any functionals for the park, we do anticipate using the facility for ball diamond(s), athletic field, picnic areas, parking, etc. We will plan to access the parcel from Lower Glencoe Road and should not have any need for access from York Road.

If you can provide us with the required right of way lines and any revertible slope easements you will require, we will be glad to assist you in mitigating or converting the park land required.

We are sorry for any delays in responding but we have been involved in an effort to save this project and others in these tight budget times.

If we can be of any further assistance, please contact myself or Bob Eckert at 887-3822.

Sincerely,

A handwritten signature in black ink, appearing to read "Albert R. Svehla, Jr.", written over a printed name and title.

Albert R. Svehla, Jr.  
Facilities Planner

ARS:ssm



**VII**  
**APPENDICES**

Surfacewater Quality Assessment  
Maryland Route 45  
Maryland Route 145 to Belfast Road  
Baltimore County, Maryland

## I. INTRODUCTION

This report addresses a water quality assessment of several surfacewaters within the Maryland Route 45 study area. The assessment includes two parts; a water quality evaluation and an assessment of aquatic habitat and macroinvertebrate communities. The water quality evaluation includes field measurements, sample collection and laboratory analyses for 23 water quality parameters. The assessment of habitat and macroinvertebrate communities includes evaluation of physical habitat and collection and analysis of benthic macroinvertebrate samples. The sampling locations were identified by the SHA Project Planning Division and are described as follows:

- Station 1 - Western Run, at proposed Maryland Route 145 relocation, about 3000 feet downstream of the Maryland Route 45 bridge.
- Station 2 - Western Run, downstream side of Maryland Route 45 bridge
- Station 3 - Unnamed tributary to Western Run, situated west of Maryland Route 45 and about 1400 feet upstream of Western Run.
- Station 4 - Unnamed tributary to Western Run, situated about 4000 feet upstream of same and just north of the Thornton Mill Road/Bonnie View Road intersection.
- Station 5 - Piney Creek upstream of the Maryland Route 45 bridge.

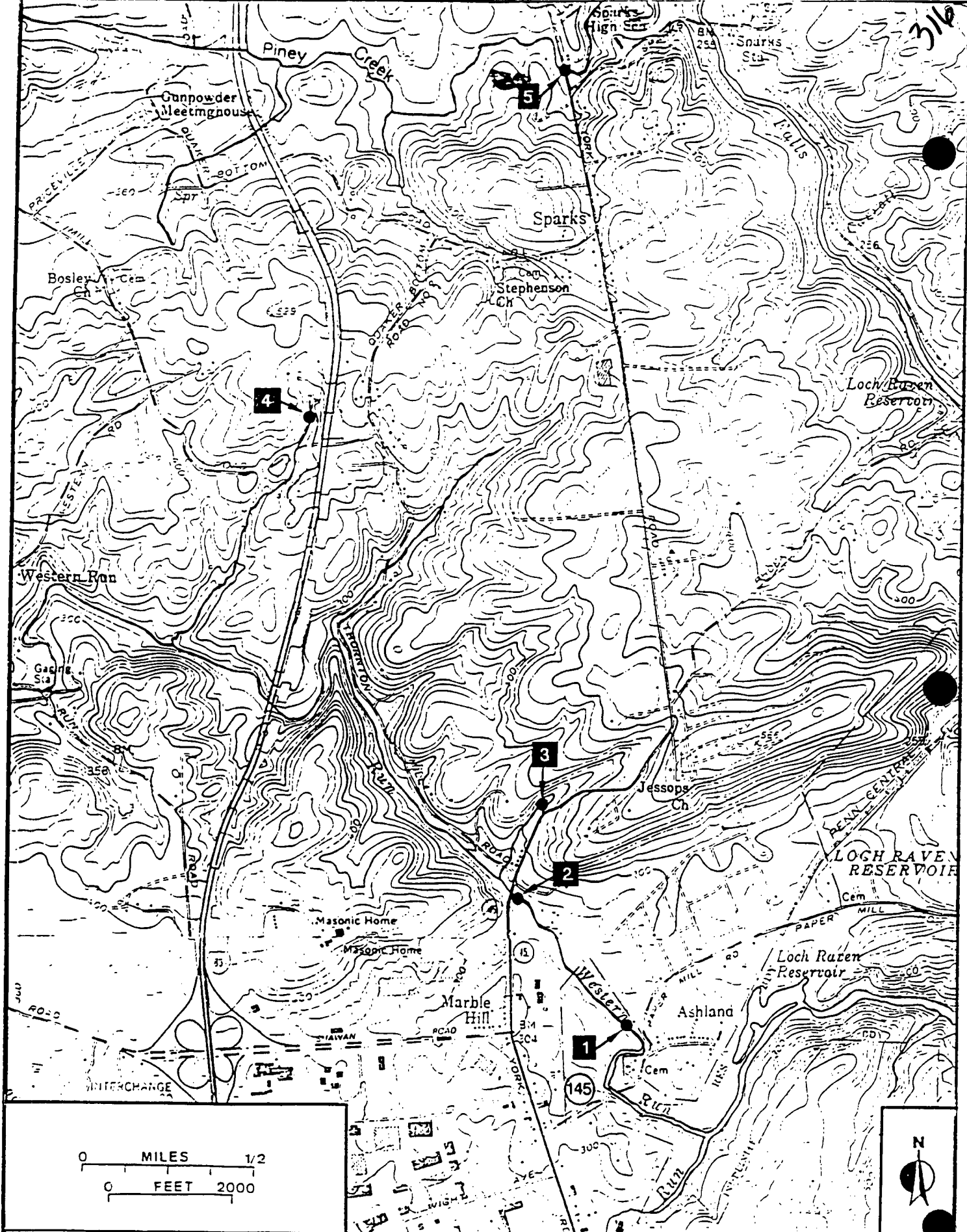
The locations of the sampling stations are shown on Figure 1.

## II. METHODS

Sample collection for both the water quality evaluation and the habitat/macroinvertebrate community assessment was performed on October 23, 1990. Field tests were done at each sampling station for dissolved oxygen, pH, conductivity and temperature. Water samples were taken at each station for analysis of the following parameters (units in parenthesis):

- o Nitrate nitrogen (mg/l)
- o Nitrite nitrogen (mg/l)
- o Fecal coliform (colonies/100 ml)

316



McCormick, Taylor & Associates, Inc.  
Philadelphia Pennsylvania.

FIGURE 1. LOCATION OF MACROINVERTEBRATE AND WATER QUALITY SAMPLING STATIONS.

- o Total coliform (colonies/100 ml)
- o Biochemical oxygen demand, 5 day (mg/l)
- o Turbidity (mg/l)
- o Total phosphate phosphorus (mg/l)
- o Total residue (total solids (mg/l)
- o Suspended sediment (total suspended solids, mg/l)
- o Heavy metals (all units mg/l)
  - Total Arsenic
  - Total Barium
  - Total Cadmium
  - Total Chromium
  - Total Copper
  - Total Lead
  - Total Mercury
  - Total Selenium
  - Total Silver
  - Total Zinc

These parameters entail those listed in the Specifications for Consulting Engineers' Services, Volume II; Section IV, Project Development; Stage II, Final Project Planning. Heavy metals parameters include RCRA metals, plus copper and zinc. Water quality sampling and analysis was conducted in accordance with USEPA standards and methods.

An evaluation of each sample station's habitat was conducted using the methodology developed by the U.S. Environmental Protection Agency (Rapid Bioassessment Protocols for Use in Streams and Rivers, EPA/444/4-89-001) which enables quantification of nine habitat parameters. This methodology facilitates comparisons between sampling stations and between studies.

The parameters are designated primary, secondary, or tertiary depending upon their relative contribution to habitat quality, and points are awarded accordingly. The more points awarded to a station, the better the habitat quality is within the station. The resulting values can be used to categorize habitat quality as excellent (106 to 135 points), good (74 to 105 points), fair (39 to 73 points), and poor (0 to 38 points).

Primary parameters characterize the various micro-habitats available within a station. These parameters are 1) bottom substrate and available cover, 2) substrate embeddedness, and 3) stream flow at representative low flow.

Secondary parameters describe stream channel morphology and evaluate the presence of channel alteration. The parameters are 1) channel alteration, 2) bottom scouring and deposition, and 3) pool/riffle or run/bend ratio.

Tertiary parameters describe riparian (stream side vegetation) and bank structure, and have the lowest potential for affecting the structure of the aquatic community. The parameters are 1) bank stability, 2) bank vegetative stability, and 3) stream side cover.

The benthic macroinvertebrate community present at each station was qualitatively evaluated through examination of kick samples collected at

3/14

each sample station. Each kick sample consisted of a composite of nine 20-second kicks collected in different micro-habitat types present within each sample station.

The results of the macroinvertebrate sample analyses were examined using a variety of statistical procedures designed to evaluate macroinvertebrate community structure and function. The procedures to be used for evaluation include total number of specimens and taxa, number of taxa sensitive to environmental stress (EPT, taxa), the ratio of sensitive to tolerant organisms (EPT/Chironomidae ratio), and Brillouin's diversity index and evenness values.

### III. RESULTS AND DISCUSSION

#### A. Water Quality Evaluation

Results of the water quality analyses are shown on Table 1. The data indicates generally good to excellent water quality of the streams in the study area. Levels of coliform bacteria, turbidity and suspended solids were, however slightly to highly elevated over the levels of these parameters typical of good quality inland surfacewaters.

Levels for total coliform and fecal coliform bacteria were high at all monitoring stations. Total coliform bacteria levels ranged from 3600 colonies/100 ml at Station 2 to 9000 colonies/100 ml at Station 4. Total coliform counts of 2400 or less are generally considered safe for bathing and drinking water sources are generally acceptable if total coliform levels are less than 100. Fecal coliform bacteria levels ranged from 500 colonies/100 ml at Station 3 to 3100 colonies/100 ml at Station 5. Fecal coliform bacteria are considered to be indicators of recent fecal pollution and levels of 200 or less are generally considered safe for bathing.

The high total coliform and fecal coliform bacteria levels noted are likely a result of the sudden increase in stream discharge following heavy rains which occurred in the 24 hour period prior to the sampling. Erosion and stormwater runoff from developed areas are common sources of coliform bacteria. Animal wastes from feedlots, pets and wildlife, are a likely source of the high fecal coliform counts.

Recent high streamflows are also likely the cause of elevated turbidity and suspended solids levels. Turbidity levels ranged from 16 NTU's at Station 3 to 48 NTU's at Station 5, with Stations 1, 2 and 4 having levels in the mid to high 30's. High quality surfacewaters generally have turbidity levels less than 25 NTU's. Total suspended solid (TSS) levels ranged from 6 mg/l to 88 mg/l. Suspended solids levels of 30 or less are an indicator of high water quality in inland surfacewaters.

319

Table 1  
Results by Sampling Location 1)

Parameter	Station 1	Station 2	Station 3	Station 4	Station 5
Nitrate Nitrogen	2.01	2.3	0.68	2.19	2.27
Nitrite Nitrogen	0.013	0.013	< 0.010	0.016	0.019
Fecal Coliform (Colonies/100 ml)	2700	2300	500	1900	3100
Total Coliform (Colonies/100 ml)	6500	3600	5900	9000	6000
BOD <sub>5</sub>	2.2	2.3	2.6	3.9	3.1
Turbidity (NTU)	36	38	16	36	48
Total Phosphate Phosphorous	0.09	0.09	0.21	0.10	0.12
Total Solids	228	216	196	262	262
Total Suspended Solids	62	70	68	68	88
Dissolved Oxygen <sup>2)</sup>	9.5	10.0	9.2	9.2	9.3
pH (units) <sup>2)</sup>	7.2	7.5	7.2	7.2	7.5
Conductivity (micro-mhos/cm) <sup>2)</sup>	189	191	161	197	220
Temperature (°C) <sup>2)</sup>	13.5	13.5	14.0	13.5	15.0
Arsenic, total	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Barium, total	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cadmium, total	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Chromium, total	< 0.003	0.003	< 0.003	0.004	0.002
Copper, total	0.003	0.003	0.003	0.003	0.003
Lead, total	0.004	0.002	0.002	0.002	0.002
Mercury, total	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Selenium, total	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Silver, total	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Zinc, total	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

1) Results are expressed as milligrams per liter (mg/l) unless otherwise noted  
2) Field tests

300

Results obtained for nutrients ( $\text{NO}_3\text{-N}$ ,  $\text{NO}_2\text{-N}$ , and  $\text{PO}_4\text{-P}$ ), BOD and heavy metals were all well within the limits considered acceptable for domestic water supplies and tolerance by fish and invertebrates.

## B. Habitat Evaluation and Macroinvertebrate Community Assessment

### 1. Habitat Evaluation

The results of the habitat assessment are presented in Table 2. All sample stations received scores which could be considered good to excellent. The total assessment scores ranged from a low of 76 at Station 1 to a high of 108 at Station 5. Stations 1 and 2 received much lower scores than the other stations primarily due to poorer primary and secondary habitat characteristics.

### 2. Macroinvertebrate Community Assessment

The results of the benthic macroinvertebrate community sampling are presented in Table 3. The five samples contained a total of 4,879 specimens representing 85 taxa.

The number of specimens observed in the samples ranged from 157 at Station 1 to 2,263 at Station 4. The low number of individuals observed in the sample from Station 1 is considerably different from that observed in the samples from the other stations despite identical sampling efforts expended. The total number of specimens gives an estimation of the density of the macroinvertebrate community present at the sample station. The total number of taxa observed in a sample provides an estimation of the species richness or breadth of the macroinvertebrate community being examined. The species richness (number of total taxa) was moderate at all stations ranging from 28 at Station 3 to 45 at Station 2. Taxa sensitive to environmental stress (EPT) comprised a significant portion of the taxa observed in all samples, from 25 to 34 percent of the total taxa.

The number of pollution sensitive taxa (EPT) observed in a sample, when compared to the total number of taxa, allows the investigator to evaluate whether a substantial portion of the community is comprised of organisms sensitive to environmental stress or whether the community is comprised predominantly of organisms tolerant of environmental stress. The number of EPT taxa is determined by totaling taxa within the mayfly (Ephemeroptera), stonefly (Plecoptera), and caddisfly (Trichoptera) insect orders. Taxa within these groups are considered intolerant of most forms of pollution and are often poorly represented in samples from stressed environments. Conversely, the dipteran family Chironomidae is considered tolerant of environmental stress. Comparing the relative abundance of sensitive taxa with the relative abundance of tolerant (Chironomidae) taxa provides an estimate of the balance between a sample's sensitive and tolerant organisms. This estimate is referred to as the EPT/Chironomidae ratio. The ratio of sensitive to tolerant organisms (EPT/Chironomidae) calculated from the samples were high, ranging from 2.01 to 10.78;

321

Table 2  
Results of Habitat Evaluation

Station	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Primary Parameters					
Bottom substrate/available cover	6	11	19	18	20
Embeddedness	18	14	18	18	18
Macro-habitat availability	11	11	12	10	12
Secondary Parameters					
Channel alteration	7	10	13	12	12
Bottom scouring and deposition	8	10	10	11	11
Macro-habitat quality	8	9	11	8	10
Tertiary Parameters					
Bank stability	4	5	7	6	8
Bank vegetative stability	7	9	9	10	10
Streamside cover	7	4	8	8	7
TOTAL ASSESSMENT SCORE	76	83	107	101	108



322

Table 3  
Macroinvertebrates Observed in Kick Samples

Station	-1-	-2-	-3-	-4-	-5-
Turbellaria					
<i>Dugesia</i>	-	-	-	-	2
Nemertea					
<i>Frostoma</i>	-	3	2	-	-
Annelida					
Oligochaeta					
Lumbricidae	5	2	3	4	6
Lumbriculidae		1	34	2	2
Tubificidae	1	4	-	2	3
Mollusca					
Gastropoda					
<i>Ferrissia</i>	1	49	-	-	8
<i>Fossaria</i>	-	5	-	-	1
<i>Physella</i>	3	10	-	2	1
<i>Menetus</i>	-	2	-	-	-
Bivalvia					
<i>Pisidium</i>	2	3	10	27	6
Arthropoda					
Crustacea					
Isopoda					
<i>Caecidotea</i>	-	3	-	-	1
Amphipoda					
<i>Crangonyx</i>	1	21	-	-	-
<i>Stygonectes</i>	-	-	-	1	-
Decapoda					
<i>Cambarus</i>	-	-	3	-	-
Insecta					
Odonata					
Aeshnidae					
<i>Boyeria</i>	-	-	-	-	1
Macromiidae					
<i>Macromia</i>	-	1	-	-	-
Calopterygidae					
<i>Calopteryx</i>	1	1	-	-	12
Coenagrionidae					
<i>Argia</i>	-	4	-	-	2
Cordulegastridae					
<i>Cordulegaster</i>	-	-	10	1	-

323

Table 3 (Cont'd)

## Macroinvertebrates Observed in Kick Samples

Station	-1-	-2-	-3-	-4-	-5-
Ephemeroptera					
Baetidae					
<i>Diphetor</i>	1	5	-	-	-
<i>Acerpenna</i>	-	-	-	21	-
<i>Centroptilum</i>	-	-	-	-	4
Caenidae					
<i>Caenis</i>	-	-	-	-	8
Ephemerellidae					
<i>Ephemerella</i>	-	-	16	19	-
<i>Serratella</i>	-	4	-	-	4
Ephemeridae					
<i>Ephemer</i>	1	1	-	-	1
Heptageniidae					
<i>Stenacron</i>	-	-	2	-	-
<i>Stenonema</i>	10	62	4	81	43
Oligoneuridae					
<i>Isonychia</i>	1	3	-	-	5
Tricorythidae					
<i>Tricorythodes</i>	1	5	-	-	-
Plecoptera					
Capniidae					
	1	-	1	-	-
Leuctridae					
<i>Leuctra</i>	-	-	-	1	1
Perlidae					
<i>Acroneuria</i>	-	-	-	1	-
Perlodidae					
<i>Isoperla</i>	-	-	-	27	-
Taeniopterygidae					
<i>Taeniopteryx</i>	14	25	-	-	6
Trichoptera					
Glossosomatidae					
<i>Glossosoma</i>	-	-	-	1	-
Hydropsychidae					
<i>Cheumatopsyche</i>	35	104	-	-	27
<i>Diplectrona</i>	-	-	282	219	-
<i>Hydropsyche</i>	27	162	30	-	179
Hydroptilidae					
<i>Hydroptila</i>	1	1	-	-	1
Limnephilidae					
<i>Hyatophylax</i>	-	-	-	32	-
Molannidae					
<i>Molanna</i>	-	-	-	6	-

304

Table 3 (Cont'd)

Macroinvertebrates Observed in Kick Samples

Station	-1-	-2-	-3-	-4-	-5-
Trichoptera (continued)					
Philopotamidae					
<i>Dolophuridae</i>	-	-	40	4	-
Polycentropodidae					
<i>Polycentropus</i>	-	10	-	-	-
Rhyacophilidae					
<i>Rhyacophila</i>	-	-	-	20	-
Megaloptera					
Corydalidae					
<i>Nigronia</i>	-	1	20	-	-
Sialidae					
<i>Sialis</i>	-	-	-	1	-
Hemiptera					
Corixidae					
<i>Corixa</i>	1	72	-	-	-
Mesoveliidae					
<i>Mesovelia</i>	1	-	-	-	-
Velidae					
<i>Microvelia</i>	3	-	-	2	1
<i>Rhagovelia</i>	-	-	-	-	2
Coleoptera					
Dryopidae					
<i>Helichus</i>	2	-	3	-	1
Dytiscidae					
<i>Dytiscus</i>	1	-	-	-	-
Elmidae					
<i>Ancyronyx</i>	1	2	-	3	1
<i>Dubiraphia</i>	6	17	-	-	2
<i>Macronychus</i>	3	1	-	-	-
<i>Microcyllene</i>	-	5	-	-	-
<i>Optioservus</i>	-	90	148	22	176
<i>Promoresia</i>	1	1	-	-	-
<i>Stenelmis</i>	-	3	-	-	4
Gyrinidae					
<i>Dineutus</i>	-	2	-	-	1
Hydrophilidae					
<i>Berosus</i>	-	1	-	-	-
Psephenidae					
<i>Ectopria</i>	-	-	6	-	-
<i>Psephenus</i>	-	-	-	-	4
Ptilodactylidae					
<i>Anchytersus</i>	-	-	5	334	-

725

Table 3 (Cont'd)

Macroinvertebrates Observed in Kick Samples

Station	-1-	-2-	-3-	-4-	-5-
Diptera					
Ceratopogonidae	2	10	11	14	8
Chironomidae	9	201	53	463	128
Culicidae	-	-	-	-	1
Dixidae					
<i>Dixa</i>	-	-	2	1	-
Empidoidea					
<i>Clinocera</i>	-	-	-	1	-
<i>Hemerodromia</i>	-	1	2	-	-
Ptychopteridae					
<i>Ptychoptera</i>	-	-	-	1	-
Simuliidae					
<i>Simulium</i>	5	2	-	-	2
Tabanidae					
<i>Chrysops</i>	3	2	2	1	-
Tipulidae					
<i>Antocha</i>	-	6	-	-	93
<i>Dicranota</i>	-	-	-	18	-
<i>reilus</i>	-	-	-	1	-
<i>Hexatoma</i>	-	2	2	17	-
<i>Limnephila</i>	-	-	-	7	-
<i>Ormosia</i>	-	-	3	5	-
<i>Filaria</i>	-	-	1	1	-
<i>Tipula</i>	8	3	41	44	2
Total Specimens	157	938	765	2263	756
Total Taxa	32	45	28	39	38
EPT Taxa	11	12	7	12	11
EPT/Chironomidae Ratio	10.78	2.01	7.11	2.52	2.21
Brillouin's Diversity Index	2.46	2.50	2.16	2.08	2.18
Brillouin's Evenness	0.72	0.66	0.60	0.58	0.60

326

indicating a predominance of sensitive individuals in the macroinvertebrate communities. Brillouin's diversity index and evenness values were also high. Diversity indices ranged from 2.08 at Station 4 to 2.5 at Station 2, and evenness values ranged from 0.58 to 0.72. This implies the presence at the sample stations of diverse macroinvertebrate communities in which the number of individuals were evenly distributed between the various taxa present.

Although the low number of specimens observed in the sample from Station 1 varied considerably from numbers observed in the samples from the other stations, the remaining ecological parameters indicate that the macroinvertebrate community at this station is similar to that implied by the samples from the remaining four sample stations. The low number of specimens may be related to the high flows evidenced by the matted vegetation surrounding the sample station. Stream bottom substrate at Station 1 was predominantly sand and gravel, a fairly unstable material susceptible to considerable movement during high flows. During high flow events, macroinvertebrate communities colonizing this type of substrate have a tendency to respond to the shifting, unstable substrate by joining the water column, and "drifting" to areas where more stable habitat is available. This behavior by aquatic macroinvertebrates is referred to as catastrophic drift.

The samples implied the presence of diverse, stable macroinvertebrate communities containing substantial numbers of pollution sensitive taxa.

327

## FISH SPECIES COLLECTED IN THE GUNPOWDER RIVER BASIN, 1974-1984

<b>Salmonidae</b>	
Brook trout	<u>Salvelinus fontinalis</u> (Mitchill)
Brown trout	<u>Salmo trutta</u> (Linnaeus)
Rainbow trout	<u>Salmo gairdneri</u> (Richardson)
<b>Cyprinidae</b>	
Stoneroller	<u>Campostoma anomalum</u> (Rafinesque)
Blacknose dace	<u>Rhinichthys atratulus</u> (Hermann)
Longnose dace	<u>Rhinichthys cataractae</u> (Valenciennes)
*Silverjaw minnow	<u>Ericymba buccata</u> (Cope) —
Cutlips minnow	<u>Exoglossum maxillingua</u> (Lesueur)
Creek chub	<u>Semotilus atromaculatus</u> (Mitchill)
River chub	<u>Nocomis micropogon</u> (Cope)
Fallfish	<u>Semotilus corporalis</u> (Mitchill)
Rosyside dace	<u>Clinostomus funduloides</u> (Girard)
Common shiner	<u>Notropis cornutus</u> (Mitchill)
Bluntnose minnow	<u>Pimephales notatus</u> (Rafinesque)
Carp	<u>Cyprinus carpio</u> (Linnaeus)
Spotfin shiner	<u>Notropis spilopterus</u> (Cope)
Satinfin shiner	<u>Notropis analostanus</u> (Girard)
Spottail shiner	<u>Notropis hudsonius</u> (Clinton)
<b>Catostomidae</b>	
Northern hogsucker	<u>Hypentelium nigricans</u> (Lesueur)
White sucker	<u>Catostomus commersoni</u> (Lacepede)
<b>Ictaluridae</b>	
Margined madtom	<u>Noturus insignis</u> (Richardson)
Brown bullhead	<u>Ictalurus nebulosus</u> (Lesueur)
*Yellow bullhead	<u>Ictalurus natalis</u> (Lesueur)
*Channel catfish	<u>Ictalurus punctatus</u> (Rafinesque)
<b>Cottidae</b>	
Mottled sculpin	<u>Cottus bairdi</u> (Girard)
<b>Percidae</b>	
Tessellated darter	<u>Etheostoma olmstedti</u> (Storer)
Greenside darter	<u>Etheostoma blennioides</u> (Rafinesque)
*Fantail darter	<u>Etheostoma flabellare</u> (Rafinesque)
<b>Centrarchidae</b>	
Bluegill sunfish	<u>Lepomis macrochirus</u> (Rafinesque)
Smallmouth bass	<u>Micropterus dolomieu</u> (Lacepede)
Largemouth bass	<u>Micropterus salmoides</u> (Lacepede)
Green sunfish	<u>Lepomis cyanellus</u> (Rafinesque)
Redbreast sunfish	<u>Lepomis auritus</u> (Linnaeus)
Pumpkinseed sunfish	<u>Lepomis gibbosus</u> (Linnaeus)
<b>Anguillidae</b>	
American eel	<u>Anguilla rostrata</u> (Lesueur)
<b>Petromyzonidae</b>	
*Sea lamprey	<u>Petromyzon marinus</u> (Linnaeus)

\* Additional fish species collected, 1980-1984

Source: Maryland Department of Natural Resources, Tidewater Administration.

328  
Attachment for Environmental  
Impact Documents  
Revised: July 28, 1989  
Relocation Assistance Division

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

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

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

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

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

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

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

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

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

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

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

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



320

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

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

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

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

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

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

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