



Environmental Assessment

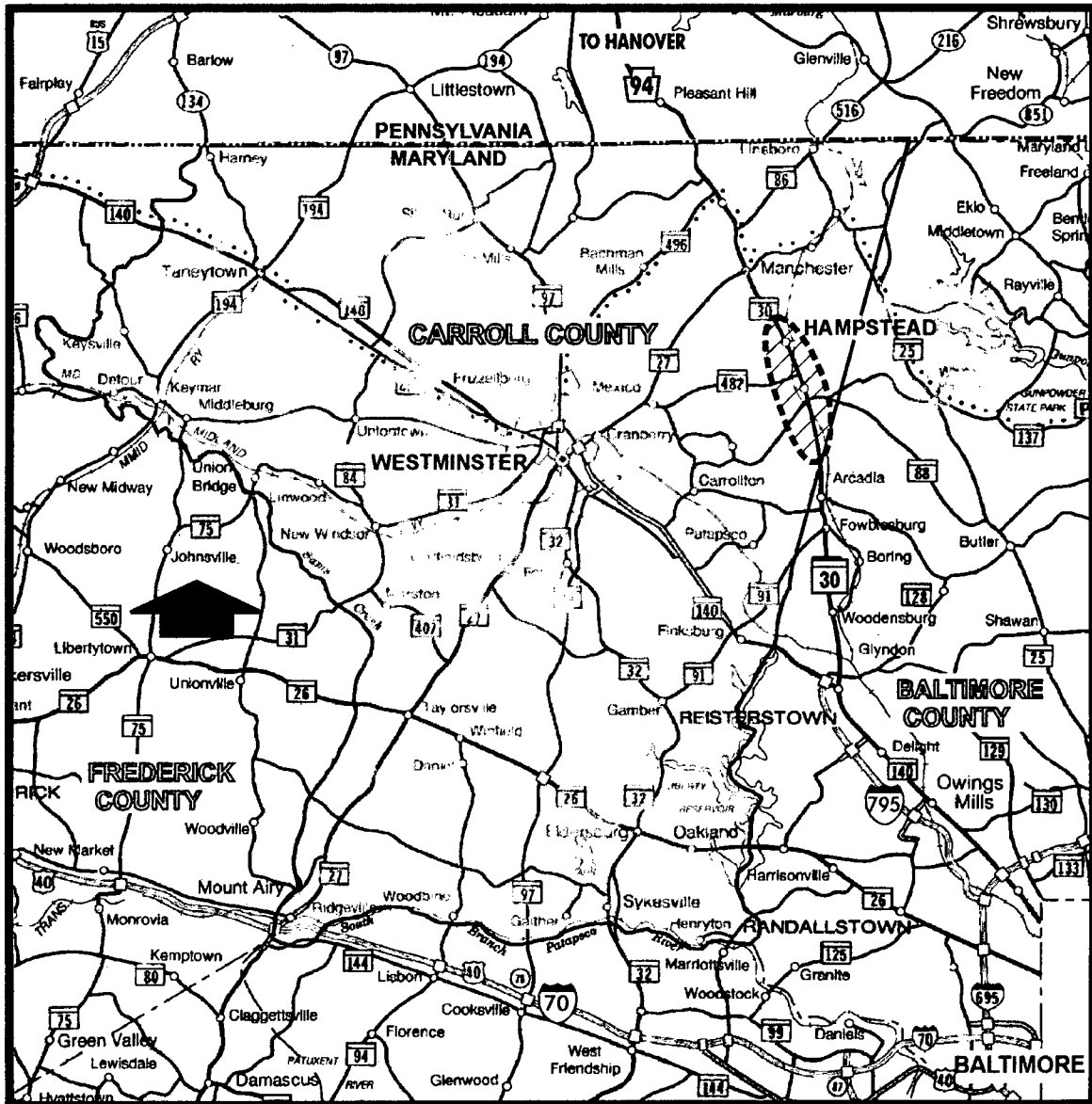


SHA Project Number CL41 6B23

MARYLAND 30 RELOCATED HAMPSTEAD BYPASS

WOLF HILL DRIVE TO NORTH OF MD 482

Carroll County, Maryland



prepared by:

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

FEDERAL HIGHWAY ADMINISTRATION
MARYLAND DIVISION

MARYLAND ROUTE 30 RELOCATED
HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

ADMINISTRATIVE ACTION

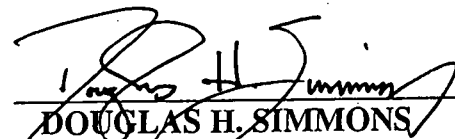
ENVIRONMENTAL ASSESSMENT

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

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

PARKER F. WILLIAMS
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7/25/02
Date


DOUGLAS H. SIMMONS
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PRELIMINARY ENGINEERING

7/25/02
Date

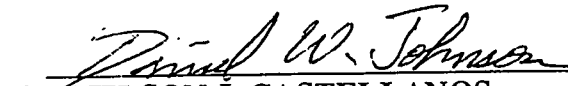

NELSON J. CASTELLANOS
DIVISION ADMINISTRATOR
FEDERAL HIGHWAY
ADMINISTRATION

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SUMMARY

1. Administrative Action

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

2. Additional Information Concerning This Project May Be Obtained By Contacting:

Ms. Cynthia Simpson
 Deputy Director
 Office of Planning and
 Preliminary Engineering
 State Highway Administration
 707 North Calvert Street
 Baltimore, Maryland 21202
 Hours: 7:30 a.m. to 4:30 p.m.
 Phone: (410) 545-8500

Mr. Daniel Johnson
 Environmental Program Manager
 Maryland Division
 Federal Highway Administration
 The Rotunda - Suite 220
 711 West 40th Street
 Baltimore, Maryland 21211
 Hours: 7:30 a.m. to 4:30 p.m.
 Phone: (410) 962-4342 ext. 145

3. Introduction

Planning for a bypass around Hampstead began in the 1960s. A National Environmental Policy Act (NEPA) study was begun in the mid-1970s, but suspended in the late-1970s due to project priorities and severe funding limitations. Study was resumed in the mid-1980s, culminating in the signing of the Finding of No Significant Impact (FONSI) and receipt of Location/Design Approval in 1986.

As final design of the Hampstead Bypass has progressed since 1986, extensive coordination has been conducted with the environmental resource and regulatory agencies, additional environmental studies have been conducted, and several design and alignment changes have been made, resulting in what is termed the Current Design Alternative (CDA). The purpose of this Environmental Assessment is to document the coordination, studies, and changes, and to present current information on the Hampstead Bypass and its impacts.

4. **Description of Action**

The proposed project consists of the relocation of Maryland 30 from the vicinity of Wolf Hill Drive to approximately 400 feet south of Brodbeck Road. (See Figures I-1 and I-2.) This relocated two-lane roadway would relieve existing and projected peak hour congestion in Hampstead. Although this study proposes the construction of a two-lane roadway, a 250-foot wide right-of-way corridor will be investigated for protection of an ultimate long-term future four lane divided facility. Future widening to four lanes would require additional environmental analyses and would be subject to approval of the Federal Highway Administration, should federal funds be utilized.

The proposed action (Current Design Alternative) has been evaluated in comparison with the No-Build Alternative and the FONSI Selected Alternative. These alternatives are further described below.

5. **Description of Alternatives Considered**

a. **Alternatives Evaluated in Detail**

- No-Build Alternative

The No-Build Alternative would include routine maintenance to MD 30 through Hampstead, but no major improvements. Thus, there would be no improvement in traffic operations and the congestion and safety problems along MD 30 would continue to worsen.

- FONSI Selected Alternative

The 1986 FONSI summarized the MD 30 relocation options presented at the Public Hearing held on January 30, 1985, and presented Alternate 2 with Southern Option C and Northern Option B Modified as the Selected Alternative (termed the FONSI Selected Alternative [FSA] herein).

The FSA consists of a 5.5-mile long ultimate four-lane divided western bypass of Hampstead within a 250-foot wide right of way, with only two lanes to be built initially.

The FSA begins at Wolf Hill Drive, south of Hampstead, and diverges to the northwest of existing MD 30. The FSA runs on the western side of MD 30, diverging as much as 4,500 feet from the existing roadway, until it rejoins

existing MD 30 approximately 2,100 feet south of Charmil Drive, north of Hampstead.

There would be six at-grade intersections along the FSA: Connection to MD 30 opposite Trenton Mill Road, Houcksville Road, Shiloh Road, MD 482, Brodbeck Road, and Cape Horn Road/MD 30.

- Current Design Alternative - Proposed Action

The Current Design Alternative (CDA) generally follows the alignment of the FSA, but includes several modifications made either to:

- avoid/minimize impacts to environmental resources identified subsequent to approval of the FONSI (1986)
- accommodate development that has occurred since approval of the FONSI
- modify the northern connection to MD 30, due to the termination of the Manchester Bypass Study

The CDA is similar to the FSA in that it proposes initial construction of a two-lane roadway on new location west of Hampstead, with auxiliary lanes at intersecting roadways. Unlike the FSA, which proposes at-grade intersections at Houcksville Road and Shiloh Road, the CDA proposes grade separations with no access at these crossings. The proposed right of way, which is approximately 250 feet wide, can accommodate conversion of the Bypass to a 4-lane divided roadway with a 30-foot wide median, should such a facility ever be needed. The design speed is 60 mph, except at the connections to MD 30, which have a 40 mph design speed.

The CDA begins approximately 800 feet south of Wolf Hill Drive, south of Hampstead, and diverges to the northwest of MD 30. The CDA runs on the western side of MD 30, diverging as much as 4,500 feet from the existing roadway, until it rejoins existing MD 30 approximately 400 feet south of Brodbeck Road, north of Hampstead.

In addition to the two grade separations at Houcksville Road and Shiloh Road, the CDA will have three roundabouts: one near the southern terminus to provide a connection to existing MD 30 to the north; one at MD 482; and one near the northern terminus to provide a connection to existing MD 30 to the south.

b. Alternatives Dropped From Further Consideration

• In-Town Improvement Alternative

The 4.2 mile long section of existing MD 30 between Wolf Hill Drive and Brodbeck Road (the approximate limits of the CDA) is a two-lane roadway fronted by 237 residences, 91 businesses, seven shopping centers, six churches, one police station, one volunteer fire company and one park. The residences and businesses are generally set back approximately fifteen feet behind the curbline.

The morning and evening periods of congestion are currently approximately three hours and two hours long, respectively; by 2020, these periods are expected to double to six and four hours, respectively, under the No-Build Alternative.

Existing MD 30 has an accident rate of 204.7 accidents per 100 Million Vehicle Miles (MVM), significantly higher than the statewide average rate of 115.0 per 100 MVM for similar roadways, and more than twice the rate of 87.4 accidents per 100 MVM that would be expected on the Bypass.

To address capacity and safety issues along MD 30, if a bypass were not constructed, a five-lane roadway would be needed. Impacts of such an alternate would include:

- Displacement of approximately 90 residences, 45 businesses, one church, and one police station
- Change in the character of Hampstead by discouraging pedestrian activities, eliminating parking spaces, and precluding the Town of Hampstead's plan to re-develop the downtown area along MD 30 as a "small town".
- Increased noise levels at the remaining residences, many of which would be within six feet of the curbline

For these reasons, the In-Town Alternative is not considered to be a feasible and prudent alternative, and thus is not being considered further in this study.

• Eastern Bypass

Since first shown on Carroll County's Master Plan in 1962, the Hampstead Bypass has been envisioned to be located west of existing MD 30 for a number of reasons: compatibility with existing and planned land use; difficulty in crossing the CSX Tracks on the east side of MD 30; the larger number of road crossings east of MD 30; and more rugged topography east of MD 30. As development has

occurred, Carroll County has reserved a corridor for the Bypass on the west side of MD 30, which has resulted in the FSA and the CDA having few displacements. However, with no such reservation east of MD 30, any alignment would have substantial displacements or, if displacements are to be avoided, substantial wetland impacts.

To avoid the dense residential development between existing MD 30 and the Baltimore County/Carroll County line on the south side of Hampstead, an Eastern Bypass Alternative would need to curve into Baltimore County from north of Trenton Mill Road to north of Lower Beckleysville Road, an area Baltimore County has zoned for Agricultural Protection.

To avoid the dense residential development, golf course, and George's Run located on the eastern side of MD 30 opposite Brodbeck Road, an Eastern bypass connection to existing MD 30 on the north side of Hampstead would have to occur well north of the CDA tie-in. An Eastern Bypass would therefore be approximately seven miles long, compared to 5.0 miles for the CDA. Compared to the CDA, an Eastern Bypass would have a larger number of existing road crossings (7 vs. 3), and railroad crossings (2 vs. 0) and the same number of stream crossings (11). Its longer length and larger number of crossings (and thus structures) would result in an Eastern Bypass being substantially more expensive than the FSA or CDA.

In light of these issues, an Eastern Bypass Alternative is not being studied in detail.

6. Summary of Environmental Impacts

A summary comparison of impacts associated with the No-Build, FONSI Selected, and Current Design alternatives is presented in Table S-1. The impacts of the CDA are summarized below.

Socioeconomic

The social and economic environments would generally be improved with the CDA, as approximately two-thirds of the traffic on existing MD 30 in Hampstead would divert to the new route, enabling the Town of Hampstead to redevelop the downtown area in accordance with its "Main Street Revitalization Plan". The CDA would also improve accessibility to the existing and planned commercial and industrial areas on the west side of Hampstead.

Existing land use along the CDA consists of residential, commercial, industrial, agricultural, and forest while planned land use consists of a mixture of residential, commercial and industrial.

The CDA is consistent with both Carroll County's "Major Street Plan" and the "Hampstead and Environs Comprehensive Plan".

Approximately 199 acres of right of way will be needed for the CDA, displacing eight residences and two businesses. (Six of the residences and one of the businesses have already been purchased and removed by SHA.) SHA has purchased or is considering the purchase of an additional 297 acres, due to access issues to landlocked parcels and for use as environmental mitigation/protection. The CDA will also impact three active farms.

No publicly owned public parks or recreation areas will be impacted by the CDA. The CDA will also not require the acquisition of property from any National Register Eligible historic sites nor impact any known archeological sites. No known low income or minority populations will be affected by the CDA and it will not displace any known handicapped or elderly individuals.

Natural Resources

The CDA will cross eleven streams (ten perennial; one intermittent), three designated by the Maryland Department of the Environment as Use I-P (suitable for recreation, habitat for warm and cold water fish and other wildlife, and public water supply) and eight as Use III-P (naturally reproducing trout streams). The CDA would impact eight wetlands, resulting in fill in approximately 4.71 acres and bridging over an additional 0.11 acre.

The CDA will impact approximately 12.1 acres of forest and 158 acres of active agricultural land.

The only known state or federally listed threatened or endangered species to possibly be impacted by the CDA is the bog turtle. Coordination regarding the bog turtle has been ongoing with the natural resource agencies, including the U.S. Fish and Wildlife (USFWS). A Biological Assessment has been prepared and is currently being reviewed by USFWS. The endangered species coordination will be concluded prior to any environmental approvals.

Noise

The projected noise levels for the design year (2020) indicate that the Federal Highway Administration (FHWA) Noise Abatement Criteria (67 dBA) is approached or exceeded at three of the Noise Sensitive Areas (NSAs) along the CDA. These NSAs are along existing MD 30, and are also projected to approach or exceed 67 dBA under the No-Build Alternative. Mitigation is not feasible due to the need for driveway openings along existing MD 30. One additional NSA along the CDA is expected to experience an increase of more than 10 dBA. Mitigation appears to be feasible and reasonable at this location, and will be investigated further during final design.

Air Quality

The State and National Ambient Air Quality Standards will not be exceeded under the CDA.

**TABLE S-1
MD 30 RELOCATED: HAMPSTEAD BYPASS
SUMMARY OF IMPACTS**

FEATURE	UNIT	ALTERNATIVE		
		NO-BUILD	FONSI SELECTED ALT.	CURRENT DESIGN ALT.
Socioeconomic Environment				
1. Displacements				
a. Residential	No.	0	8 ¹	8 ¹
b. Business/Commercial	No.	0	2 ²	2 ²
2. Right of Way Required				
a. Parcels Affected	No.	0	50	42
b. Area	Acre	0	190	199 ³
3. Consistent with Area Land Use Plans		No	Yes	Yes
4. Resources Affected				
a. Church/School	No.	0	0	0
b. Parkland/Recreation Area	No.	0	0	0
c. NRE Historic Sites	No.	0	1	1
d. Archeological Sites	No.	0	0	0
e. Agricultural Land	Acre	0	125	158
f. Active Farms	No.	0	4	3
Natural Environment				
1. Streams				
a. Streams Crossed	No.	0	12	11 ⁵
b. Stream Impacts	LF	0	3,800	2,160
2. 100-Year Floodplain	Acre	0	1.5	0.9
3. Wetlands	Acre	0	13.82	4.71
4. Woodland	Acre	0	Not Available	12.1
5. Rare/Threatened/Endangered Species	No. of Sites	0	1	0
6. Prime Farmland Soils	Acre	0	90	137
Noise				
1. Number NSAs Exceeding Abatement Criteria or Increasing 10 dBA or More Over Ambient	No.	4	8	4
Air Quality				
1. CO Violations of 1-Hour or 8-Hour Standards	No.	0	0	0
Engineering Features				
1. Length	Mile	N.A.	5.5	5.0
2. Cost ⁴	Million \$	0	14.2	42.3

¹Includes six residences purchased and removed by SHA from 1989 through 1998.

²Includes one business purchased and removed by SHA in 1989.

³SHA has purchased or is considering purchasing an additional 297 acres, due to access issues to severed parcels and for use as environmental mitigation/protection.

⁴Cost estimates are from the Finding of No Significant Impact for the FSA (in 1985 dollars) and from current cost estimates (in 2001 dollars) for the CDA.

⁵Includes one intermittent stream

**MARYLAND ROUTE 30 RELOCATED
HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482**

The following Environmental Assessment Form is a requirement of the Maryland Environmental Policy Act and Maryland Department of Transportation Order 11.01.06.02. Its use is in keeping with the provisions of 1500.2 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 sections of the document, as indicated in the "Comment" column of the form, for a description of specific characteristics of the natural or social-economic 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.

MARYLAND ROUTE 30 RELOCATED
HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

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>See Section V-C4.</u>
2. Will the action require a permit for construction or alteration within the 50 year floodplain?	<u> </u>	<u>X</u>	
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	<u>X</u>	<u> </u>	<u>See Section V-C2c.</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>	
5. Will the action occur on slopes exceeding 15%?	<u>X</u>	<u> </u>	<u>See Section V-C1a and Figure III-9.</u>
6. Will the action require a grading plan or a sediment control permit?	<u>X</u>	<u> </u>	<u>See Section V-C1b.</u>
7. Will the action require a mining permit for deep or surface mining?	<u> </u>	<u>X</u>	

ENVIRONMENTAL ASSESSMENT FORM (Continued)

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
8. Will the action require a permit for drilling a gas or oil well?	_____	<u>X</u>	
9. Will the action require a permit for airport construction?	_____	<u>X</u>	
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	_____	<u>X</u>	
11. Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wildland?	_____	<u>X</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 archaeological or historical site or structure?	_____	<u>X</u>	<u>See Section V-B</u>

B. Water Use Considerations

14. Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	<u>X</u>	_____	<u>See Section V-C2a</u>
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ENVIRONMENTAL ASSESSMENT FORM (Continued)

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
15. Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	<u> </u>	<u> X </u>	
16. Will the action change the overland flow of storm water or reduce the absorption capacity of the ground?	<u> X </u>	<u> </u>	<u>See Section V-C2.</u>
17. Will the action require a permit for the drilling of a well?	<u> </u>	<u> X </u>	
18. Will the action require a permit for water appropriation?	<u> </u>	<u> X </u>	
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	<u> </u>	<u> X </u>	
20. Will the project require a permit for the construction and operation of facilities for treatment and/or land disposal of liquid waste derivatives?	<u> </u>	<u> X </u>	
21. Will the action result in any discharge into surface or sub-surface water?	<u> X </u>	<u> </u>	<u>See Section V-C2.</u>

ENVIRONMENTAL ASSESSMENT FORM (Continued)

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	<u>X</u>	<u> </u>	<u>See Section V-C2.</u>

C. Air Use Considerations

23. Will the action result in any discharge into the air?	<u>X</u>	<u> </u>	<u>See Section V-E.</u>
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24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	<u> </u>	<u>X</u>	<u> </u>
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25. Will the action generate additional noise which differs in character or level from present conditions?	<u>X</u>	<u> </u>	<u>See Section V-D.</u>
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26. Will the action preclude future use of related air space?	<u> </u>	<u>X</u>	<u> </u>
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27. Will the action generate any radiological, electrical, magnetic, or light influences?	<u> </u>	<u>X</u>	<u> </u>
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D. Plants and Animals

28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?	<u> </u>	<u>X</u>	<u>See Section V-C5, 6.</u>
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ENVIRONMENTAL ASSESSMENT FORM (Continued)

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?	_____	<u>X</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. Socioeconomic

31. Will the action result in a pre-emption or division of properties or impair their economic use?	<u>X</u>	_____	<u>See Section V-A1.</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>See Section V-A1.</u>
33. Will the action alter land values?	<u>X</u>	_____	<u>See Section V-A8.</u>
34. Will the action affect traffic flow and volume?	<u>X</u>	_____	<u>See Section IV-A3</u>
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	_____	<u>X</u>	

ENVIRONMENTAL ASSESSMENT FORM (Continued)

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	<u> </u>	<u> X </u>	
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans--including zoning?	<u> X </u>	<u> </u>	<u>See Sections I-C and V-A9.</u>
38. Will the action affect the employment opportunities for persons in the area?	<u> X </u>	<u> </u>	<u>See Section V-A8.</u>
39. Will the action affect the ability of the area to attract new sources of tax revenue	<u> X </u>	<u> </u>	<u>See Section V-A8.</u>
40. Will the action discourage present sources of tax revenue from remaining in the area to attract new sources of tax revenue?	<u> </u>	<u> X </u>	<u>See Section V-A8.</u>
41. Will the action affect the ability of the area to attract tourism?	<u> X </u>	<u> </u>	<u>See Section V-A8.</u>

D. Other Considerations

42. Could the action endanger the public health, safety or welfare?	<u> </u>	<u> X </u>	
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ENVIRONMENTAL ASSESSMENT FORM (Continued)

	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
43. Could the action be eliminated without deleterious effects to the public health, safety, welfare or the natural environment?	_____	<u>X</u>	See Section II-D and IV-A4.
44. Will the action be of statewide significance?	_____	<u>X</u>	
45. Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action, could result in a cumulative or synergistic impact on the public health, safety, welfare, or environment?	_____	<u>X</u>	See Section V-F.
46. Will the action require additional power generation or transmission capacity?	_____	<u>X</u>	
47. This agency will develop a complete environmental effects report on the proposed action.	_____	<u>X*</u>	

*In accordance with the Natural Environmental Policy Act, and 23 CFR 771, this Environmental Assessment has been prepared. This document satisfies the requirements of the Maryland Environmental Policy Act and the National Environmental Policy Act.

I. DESCRIPTION OF PROPOSED ACTION

I. DESCRIPTION OF PROPOSED ACTION

A. **Project Location**

The Maryland 30 Relocated (Hampstead Bypass) project is located in eastern Carroll County, Maryland (see Figure I-1). The study area encompasses the Town of Hampstead, and extends along MD 30 from the Baltimore County/Carroll County line to north of Brodbeck Road (see Figure I-2).

B. **Project Description**

The proposed project consists of the relocation of MD 30 west of Hampstead, from the vicinity of Wolf Hill Drive to approximately 400 feet south of Brodbeck Road, a distance of approximately 4.2 miles. Improvements to existing MD 30 in the vicinity of the relocated MD 30 termini are also included.

Relocated MD 30 is proposed as a two-lane roadway, with auxiliary lanes at intersections. It is proposed that sufficient right of way be purchased to permit conversion to a four-lane divided roadway if such a need develops at some future date, with the understanding that any increase in through roadway capacity would be subject to additional environmental analyses and separate NEPA approval and permitting requirements.

The project includes three at-grade intersections in the form of roundabouts (southern terminus at MD 30; MD 482; and northern terminus at MD 30) and two grade separations with no access (Houcksville Road, Shiloh Road).

C. **Project Background**

Preliminary planning for relocated MD 30 began in 1961 with the study of two separate bypasses around Hampstead and Manchester. However, elected officials requested that studies include one continuous bypass around both towns. Numerous meetings with Carroll County Officials and the Maryland State Highway Administration (SHA) resulted in a planned western bypass alignment of both towns, the southern portion of which was similar to the bypass around Hampstead presented in this document. A similar alignment was adopted in 1968 as part of the major street plans of Manchester and Hampstead. Carroll County's Master Plan, adopted by its Planning and Zoning Commission on May 13, 1974, designated this project a Primary Highway.

Following adoption of these plans, the SHA, in cooperation with the County government, began a policy of right-of-way protection for the future highway. In some cases, right-of-way was purchased and it was agreed not to plan any construction in the path of the proposed road (then designated Alternate A).

The Hampstead/Manchester Bypass project was publicly discussed at a March, 1973 meeting for planned improvements to MD 482. At the Interim Alternates Meeting held on June 26, 1975, people living along existing MD 30 supported the proposed facility because of safety deficiencies and the constant traffic noise.

At the Alternates Public Meeting on April 13, 1978, the Mayor of Manchester stated that he and the Town Council were opposed to the then proposed Alternates A (western bypass), and C (western bypass of Hampstead and eastern bypass of Manchester). As a result of project priorities and severe funding limitations, the project studies were suspended.

In 1983, Hampstead and Carroll County elected officials indicated the need for a bypass of Hampstead, and project planning was begun. An Environmental Assessment was prepared and signed in December 1984, a Public Hearing was held on January 30, 1985, and a Finding of No Significant Impact (FONSI) was signed and Location/Design Approval was granted by the Federal Highway Administration (FHWA) on August 12, 1986.

The FONSI Selected Alternative (Alternate 2 - Southern Option "C"/Northern Option "B"), was a 5.5-mile long western bypass of Hampstead consisting of a two lane roadway with at-grade crossings at all county and state crossroads. A minimum right of way width of 250 feet was proposed to accommodate a possible future four-lane divided roadway, if needed. The southern terminus was just north of the Wolf Hill Drive intersection with existing MD 30, while the northern terminus tied back to existing MD 30 approximately 600 feet north of Cape Horn Road.

As final design of the Hampstead Bypass has progressed since 1986, extensive coordination has been conducted with the environmental resource and regulatory agencies, additional environmental studies have been conducted, and several design and alignment changes have been made, resulting in what is termed the Current Design Alternative (CDA). The purpose of this Environmental Assessment is to document the coordination, studies, and changes, and to present current information on the Hampstead Bypass and its impacts.

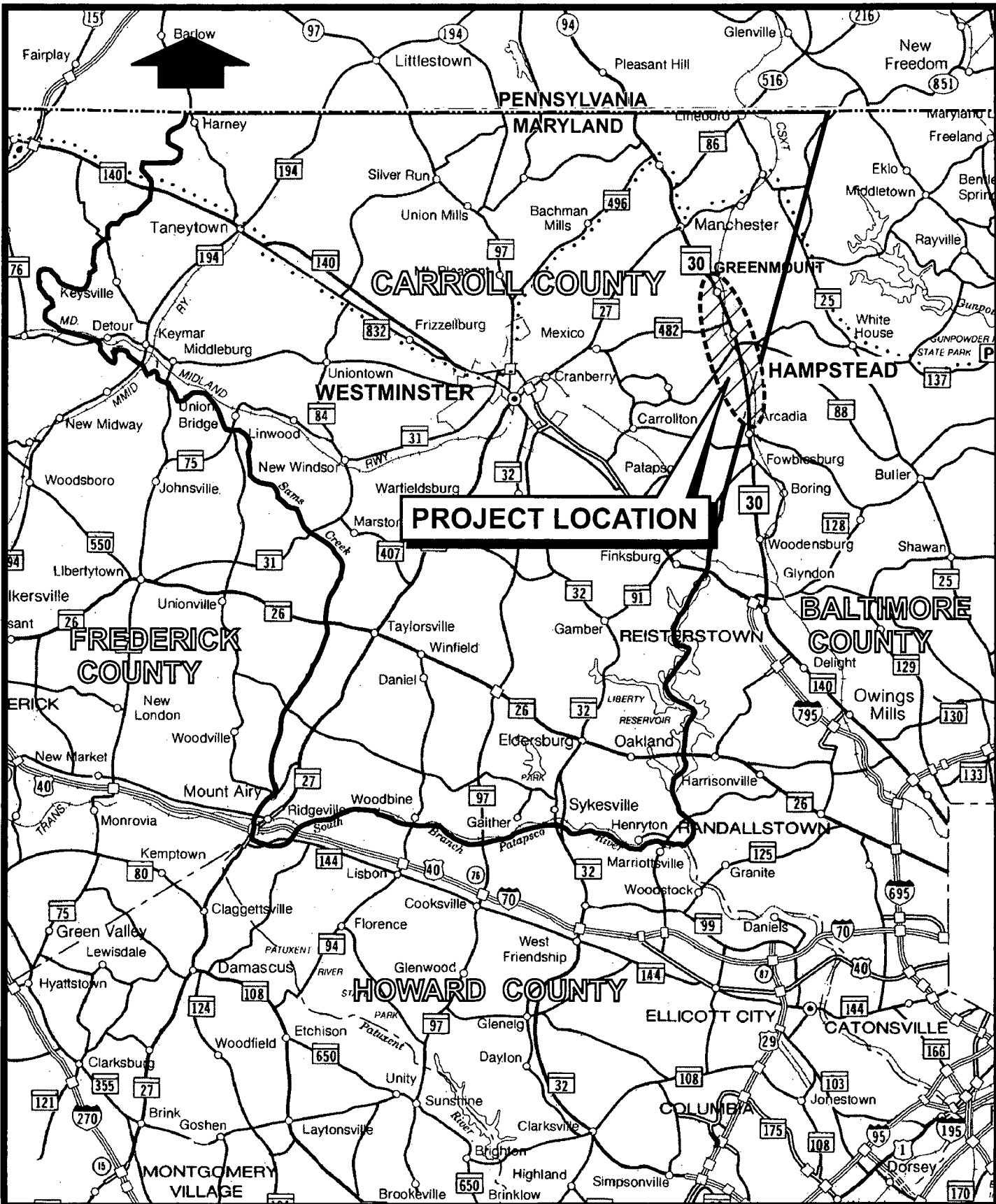
The Maryland Department of Transportation has listed this project in the 2001 - 2006 Consolidated Transportation Program Primary Development and Evaluation Program for Planning, Design and Right-of-Way Acquisition (partially funded). No funding is provided for construction in the current program.

The *Carroll County Master Plan* and the *Hampstead and Environs Comprehensive Plan* incorporate the concept of a western bypass of Hampstead. A draft update of the Hampstead Plan (*Hampstead Community Comprehensive Plan*), published in December 2001, also incorporates a western bypass of Hampstead. This project has appeared on Carroll County's Master Plan since 1962. The Hampstead Bypass is considered, by Carroll County elected officials, as their highest transportation priority.

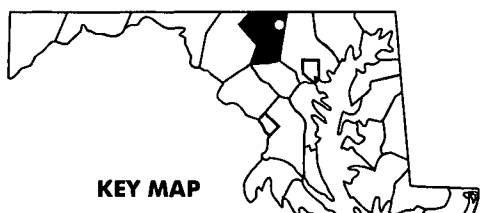
In 1998, the Maryland Department of Transportation published the "Maryland Congestion Management System Corridor No. 25 Report", which included evaluation of MD 30 in the study area. Among its conclusions were:

- The Transportation System Management (TSM)/Travel Demand Management (TDM)/Enhanced Bus Service Package would not decrease traffic volumes on MD 30, and in fact, would result in slight increases in the Hampstead area.
- Express bus routes from Manchester/Hampstead to Owings Mills and from Manchester/Hampstead to downtown Baltimore would carry, in 2020, 78 and 73 daily riders, respectively, which is not sufficient to be viable.
- TSM/TDM improvements along MD 30 would not, in and of themselves, solve the capacity and congestion problems.
- The Hampstead Bypass has a positive effect on traffic volumes and level of service on existing MD 30, and should be constructed when funds are available.

COREL/HAMPSTEAD/FIG. 1



PROJECT LOCATION



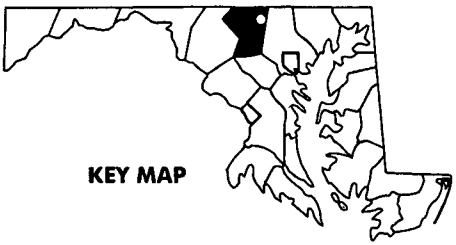
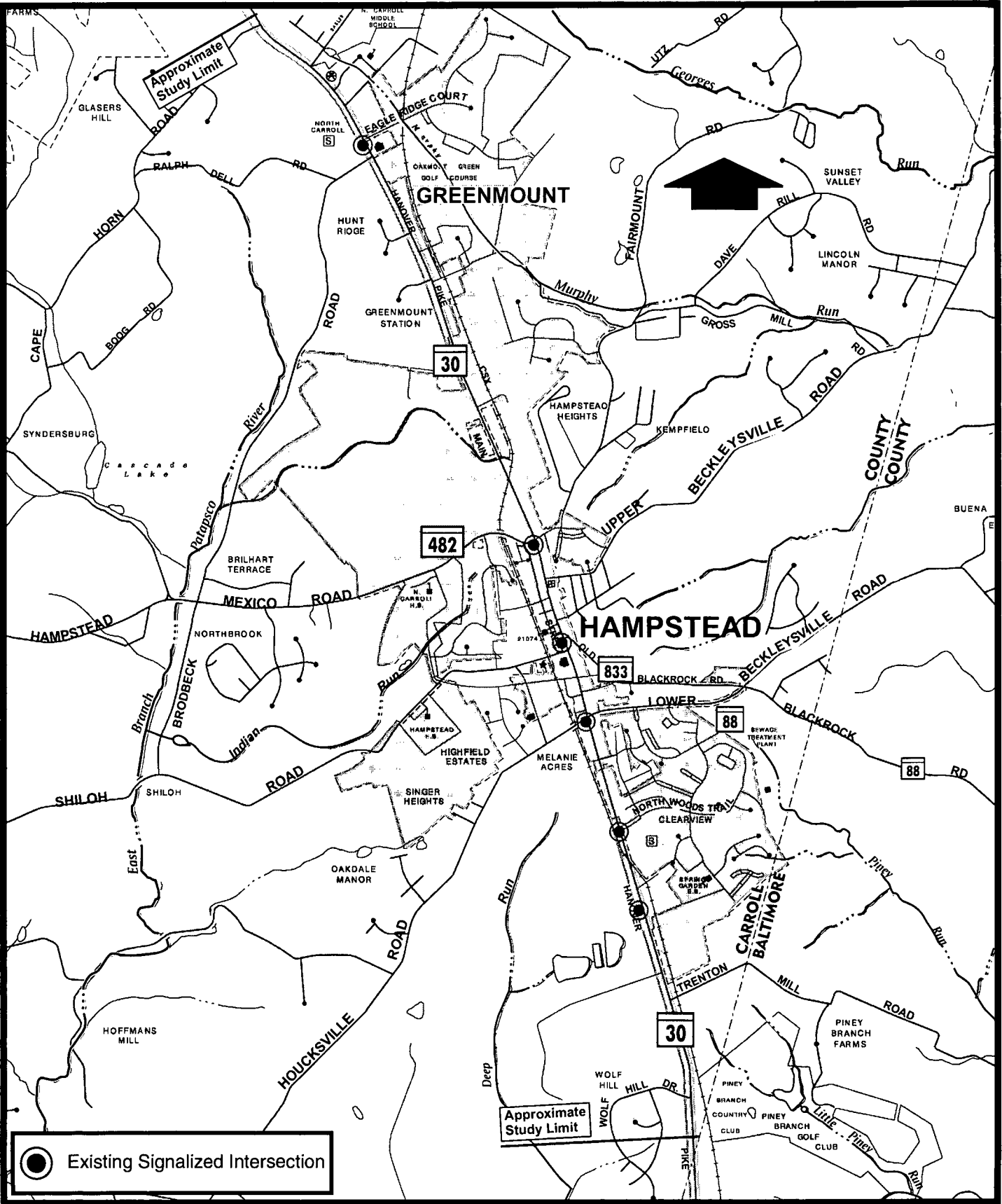
KEY MAP

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

LOCATION MAP

DATE	3000	0	3000	FIGURE
July, 2002	SCALE IN FEET			1-1

CORE/HAMPSTEAD/FIG 12



MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

STUDY AREA

DATE July, 2002	3000 0 3000 SCALE IN FEET	FIGURE 1-2
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II. PURPOSE AND NEED

II. PURPOSE AND NEED

A. Growth and Land Use Patterns

Carroll County is one of six jurisdictions (Baltimore City and Anne Arundel, Baltimore, Carroll, Harford and Howard counties) that comprise the Baltimore Region, as defined by the Maryland Department of Planning (MDP). The population of the Baltimore Region increased by 13.5% between 1980 and 2000. During that period the population of Carroll County increased by 61%, the second largest percentage increase of any jurisdiction in the Baltimore region. The MDP projects that the Region's population will increase by 9.1% between 2000 and 2020, while the population of Carroll County will increase by 33%, the largest percentage increase of any jurisdiction in the Baltimore region.

The Town of Hampstead is one of eight municipalities in Carroll County, which in total comprise about four percent of the County's land area but are home to about 24 percent of the County's population. In keeping with the "Maryland Economic Growth, Resource Protection and Planning Act of 1992" as well as Maryland's "Smart Growth" Areas Act of 1997, Carroll County plans to continue to concentrate development in and around the eight municipalities. This is evidenced by the fact that 84% of the County's land area is zoned for agricultural or conservation purposes.

The population of Carroll County Election District 8, which encompasses the Town of Hampstead, increased by 69% between 1980 and 2000, and is expected to increase by 31% between 2000 and 2020.

B. Existing and Planned Transportation Network

1. Roadways (See Figures I-1 and I-2)

MD 30 is the principal north-south roadway in the study area, extending approximately 18 miles from Reisterstown to the Pennsylvania State Line, where it connects to PA 94 six miles south of Hanover. It is a two-lane roadway with little or no access control, and speed limits range from 30 mph in the towns (e.g., Hampstead, Manchester) to 50 mph in rural areas. MD 30 is classified a principal arterial and serves to connect northeastern Carroll County to Reisterstown, Owings Mills and the entire central portion of the Baltimore Region.

In the 4.2 mile section between Wolf Hill Drive and Brodbeck Road, MD 30 is a two-lane roadway with five signalized intersections, two at-grade railroad crossings, and on-street parking through much of its length. Parking is generally prohibited near the intersections, so the shoulder area can be used as an auxiliary right-turn lane. Between 9 AM and 9 PM, most on-street parking is limited to two hours. The only designated left-turn lanes on MD 30 are at MD 482, where the shoulder areas are used as combined thru/right-turn lanes. The horizontal and vertical alignment of the existing road is compatible with the posted speed limits.

Most of the roadway is a closed section, approximately 39 feet wide. For the most part, residences and businesses are set back approximately 15 feet behind the curblines, though in some areas this is reduced to as little as 8 feet. At the southern and northern ends of the project, the setbacks are generally somewhat greater than 15 feet. The existing right of way width is generally 40 feet or less.

Along the section of MD 30 between Wolf Hill Drive and Brodbeck Road are the following:

- 5 signalized intersections
- 18 unsignalized intersections
- 237 residences
- 91 businesses
- 7 shopping centers
- 6 churches
- 1 volunteer fire company
- 1 police station
- 1 park

MD 30 is the only continuous north-south roadway in the study area. The major east-west roads within the project area are MD 482, Shiloh Road, Houcksville Road, Lower Beckleysville Road, Upper Beckleysville Road, and Black Rock Road, all of which are two-lane roadways.

The project falls completely within the area covered by the *Comprehensive Plan: Hampstead and Environs* (1986) which shows Relocated MD 30 on the west side of Hampstead, generally along the alignment of the FONSI Selected Alternative (see Section IV).

The other planned roads included in the Comprehensive Plan are a north-south collector on the east side of Hampstead between Trenton Mill Road and Upper Beckleysville Road (since partially built as Boxwood Drive); an east-west road connecting MD 30 and Black Rock Road (since partially built as North Woods Trail); an eastward extension of MD 482 to connect to Upper Beckleysville Road; and Farm Woods Lane (since built). All of these roads are on the east side of MD 30 and are to be built in conjunction with planned residential development.

The Town of Hampstead published the *Main Street Revitalization Plan* in 1998, which discusses the Hampstead Bypass and calls for redevelopment of the downtown area along MD 30 as a "small town," including "traffic calming" islands which would reduce the width of MD 30 and provide a more pedestrian-friendly environment. An underlying assumption of this plan is that the Hampstead Bypass will be constructed, thereby reducing traffic volumes on existing MD 30 through downtown Hampstead.

2. Transit Service

There is no existing or planned regularly scheduled transit service within the study area, and although the Comprehensive Plan proposes no transit or Park and Ride facilities, it does state that the Town and County would "...support the implementation of a [Park and Ride facility] which might be sponsored by the State, County, Town, or through a shared effort by these jurisdictions."

On-call (i.e., door-to-door) transit service within the study area is provided by Carroll Transit. Regularly scheduled peak hour transit service connecting Manchester, Hampstead, Westminster and Reisterstown to the Owings Mills Metro Station and central Baltimore was previously provided by a private company, which terminated service in 1989, when ridership dropped to 6 - 12 daily riders.

A Park and Ride Lot located north of the study area, in Manchester, has 28 spaces, with about 18 spaces used on an average day. The municipal parking lot in Hampstead and local shopping centers also serve, to some degree, as Park and Ride facilities. The municipal parking lot has 46 spaces, and a 1998 survey indicated that a maximum of 29 spaces were used on weekdays.

3. Pedestrian/Bicycle Facilities

There are existing sidewalks along portions of MD 30 in Hampstead. The *Comprehensive Plan: Hampstead and Environs* does not address pedestrian or bicycle facilities. The Town of Hampstead's *Main Street Revitalization Plan*, which addresses the 1.5 mile long section of MD 30 from North Woods Trail on the south to the CSX Railroad crossing on the north, calls for improved sidewalks along MD 30 as part of streetscape improvements. Carroll County's *1999 Land Preservation and Recreation Plan* shows several planned trails in the study area, only one of which would be crossed or directly impacted by any of the build alternatives under consideration: a planned Class 4 Medium Use Recreation Trail along Indian Run north of Shiloh Road.

C. Existing and Projected Traffic Conditions

1. Traffic Trends

Figure II-1 shows the Average Daily Traffic (ADT) volumes along MD 30 in 1984 and 2000, as well as the projected ADTs in 2020 assuming the Hampstead Bypass is not constructed. The increase in ADT during the 16-year period between 1984 and 2000 ranged from 78% to 173%, while the increases in ADT during the 20-year period between 2000 and 2020 are expected to be about 20%. As can be seen, the ADTs on MD 30 in the project area currently range from 21,750 to 25,950, and are expected to range from 26,100 to 31,575 in 2020.

Traffic studies conducted in 1994 indicated that approximately 65% of the vehicles on southbound MD 30 in the vicinity of North Woods Trail during the AM peak period were registered north of Hampstead, and thus would be likely to use the Bypass.

The truck percentages on MD 30 are relatively high, being 9.4% for the ADT and 8.4% during the peak periods.

2. Traffic Operations

Level of Service

Level of Service (LOS) is a measure of the congestion experienced by drivers, and ranges from A (free flow with little or no congestion) to F (failure with stop-and-go conditions). LOS is normally computed for the peak periods of a typical day, with LOS D (approaching unstable flow) or better generally considered acceptable for highways in urban and suburban areas. At LOS E, volumes are near or at the capacity of the highway. LOS F represents conditions in which demand exceeds capacity and in which there are operational breakdowns with stop-and-go traffic and extremely long delays at signalized intersections.

In recent years, traffic studies have shown that congestion levels within LOS F vary widely, so that some LOS F conditions actually are far worse than others. To understand the differences among LOS F conditions, it is necessary to consider volume-to-capacity (V/C) ratios. By definition, when the volume of traffic is less than the capacity, the V/C ratio is less than 1.0. Similarly, when traffic volume exceeds capacity, the V/C ratio is greater than 1.0. It should be noted that, in this context, the term "capacity" refers to the maximum amount of traffic that the roadway was intended to carry at any one time, with acceptable levels of delay; it is not the actual physical limit of the amount of traffic the roadway can handle. The LOS F rating is used for all traffic conditions where volume exceeds capacity - i.e., where the V/C ratio is greater than 1.0. Thus, a roadway with a V/C ratio of 1.1 would have exactly the same LOS ranking (LOS F) as a roadway with a V/C ratio of 1.5 - even though the two roadways have far different levels of

congestion. Because there are such large differences among LOS F conditions, it is helpful to consider V/C ratios in evaluating relative levels of traffic congestion. The following table describes four levels of congestion in terms of V/C ratios, including three levels within LOS F.

INTERSECTION OPERATIONAL CHARACTERISTICS

<u>LOS and V/C Ratio</u>	<u>Operating Conditions</u>
<p><u>LOS A-D</u> $v/c \leq 0.9$</p>	<ul style="list-style-type: none"> • Many vehicles pass through intersection without stopping • Less than two minutes of delay per vehicle in peak direction • Congested for 1 hour or less each day
<p><u>LOS E/F</u> $0.9 < v/c \leq 1.2$</p>	<ul style="list-style-type: none"> • Most vehicles stop and wait through one signal cycle • 2 - 5 minutes of delay per vehicle in peak direction • Congested for 2 - 4 hours each day
<u>LOS and V/C Ratio</u>	<u>Operating Conditions</u>
<p><u>LOS F</u> $1.2 < v/c \leq 1.5$</p>	<ul style="list-style-type: none"> • Most vehicles wait through multiple signal cycles • 5 - 10 minutes of delay per vehicle in peak direction • Congested for 4 - 6 hours each day • Queues often block upstream intersections
<p><u>LOS F</u> $v/c > 1.5$</p>	<ul style="list-style-type: none"> • Most vehicles wait through multiple signal cycles • More than 10 minutes of delay per vehicle in peak direction • Congested for 6 - 10 hours each day • Queues extend several miles • Traffic diverts thru neighborhoods

On most arterials with signalized intersections, such as MD 30 through Hampstead, LOS is governed by the intersections (nodes), whereas, on highways with access control and arterials with long distances between signals, LOS is governed by the characteristics of the roadway (link) itself.

Level of service has been computed for the morning and evening peak periods at three of the five signalized intersections on MD 30 in the study area for existing and projected 2020 traffic volumes, and the results are as follows (also shown on Figure II-1):

	AM Peak Period		PM Peak Period	
	<u>2000</u>	<u>2020</u>	<u>2000</u>	<u>2020</u>
MD 30/MD 482	F (1.25)	F (1.44)	E (0.95)	F (1.11)
MD 30/Gill Avenue	F (1.33)	F (1.58)	F (1.06)	F (1.19)
MD 30/Houcksville Road	F (1.21)	F (1.35)	F (1.01)	F (1.01)

Notes:

1. () indicates volume/capacity ratio
2. 2020 LOS at MD 30/Houcksville Road assumes construction of auxiliary right-turn lane on eastbound Houcksville Road, per Carroll County Plans.

As can be seen above, these three intersections are currently operating at LOS E or F, with v/c ratios as high as 1.33. By 2020, they will be operating at LOS F, with v/c ratios as high as 1.58. This is indicative of not only greater congestion in future years, but also longer duration of the congestion. For example, MD 30 in Hampstead currently operates at LOS E or F for approximately three hours during the morning and two hours during the evening, and it is projected that this will increase to six and four hours, respectively, by 2020.

Additional delays beyond those caused by operations at the intersections are attributable to mid-block conditions, as motorists make left-turns from MD 30 or enter/leave parking spaces along MD 30.

Travel Time

Another measure of congestion and delay is travel time. During March 2000, 21 travel time trial runs were made on the 4.2-mile long section of MD 30 between Wolf Hill Drive and Brodbeck Road during the morning (6:30 AM - 7:30 AM) and evening (5:00 PM - 6:00 PM) peak periods. Twelve runs were made in the southbound direction and nine in the northbound direction. The posted speed limit on this section of MD 30 ranges from 30 to 50 mph.

The results of the travel time runs and a comparison of them with travel at the posted speed limits are shown in Table II-1. As can be seen, the average travel speeds were considerably less than travel at the posted speed limits, and in a few cases speeds were less than half of the posted speed limit (16 mph vs. 35 mph).

It is expected that travel time will increase and speeds decrease as traffic volumes on MD 30 increase over time.

**TABLE II-1
TRAVEL TIME AND SPEED ON MD 30**

	<u>Southbound (AM Peak)</u>	<u>Northbound (PM Peak)</u>
Travel at Posted Speed Limit Time (minutes) Speed (mph)	7.2 35	7.2 35
Travel Time Runs Time (minutes) Range Average	6.5 - 16 9.6	7.5 - 16 11.5
Speed (mph) Range Average	16 - 39 26	16 - 33 22

D. Safety

MD 30, from Wolf Hill Drive to Brodbeck Road, experienced an accident rate of 205 accidents/100 million-vehicle miles of travel (100 MVM) during the three-year period 1996 - 1998. This rate significantly exceeds the statewide average rate of 115 accident/100 MVM for all similar type highways under State maintenance.

Although there were no fatal accidents during the three-year period, the rate of injury accidents on MD 30 (94.7 accidents/100 MVM) also significantly exceeded the statewide average (59.3 accidents/100 MVM).

A summary of the reported accidents follows:

<u>Severity</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>Total</u>
Injury Accidents	20	31	29	80
Persons Injured	25	45	41	111
Property Damage Only Accidents	29	32	32	93
Total Accidents	49	63	61	173

One location qualified as a High Accident Intersection or High Accident Section, based upon criteria established by the SHA Traffic Safety Analysis Division. The location is the 0.5-mile long section of MD 30 from 0.06 mile south of Ralph Avenue to 0.03 mile south of Gill Avenue, which experienced nine reported accidents during the 3-year period.

The following collision types occurred at rates significantly higher than the statewide rates on similar type highways:

	MD 30 Rate (accidents/100 MVM)	Statewide Average Rate (accidents/100 MVM)
Rear End	87.6	21.8
Sideswipe	8.3	3.8
Left Turn	15.4	6.3
Angle	36.7	17.6
Pedestrian	4.7	1.8
Parked Vehicle	15.4	2.1

The types of accidents with the high rates listed above are mainly associated with congestion, attributable to the high traffic volumes, limited provisions for left-turn movements, and parking adjacent to the travel lanes.

Traffic forecasts indicate that volumes on MD 30 will increase by approximately 20% by 2020. Considering this, and that the existing roadway is currently operating at an accident rate significantly higher than the statewide average, the potential for increased accidents, especially of the types listed above, is greatly increased with the expected expansion of the hours of congestion.

It is relevant to compare the accident rate on MD 30 not only to the statewide average for similar type highways, but also to the statewide average for highways similar to that proposed for the Hampstead Bypass, namely a 2-lane road with partial access control. Whereas the total accident rate on existing MD 30 is 205 accidents/100 MVM, the statewide average rate for 2-lane roadways with partial access control is 87.4 accidents/100 MVM. The anticipated injury accident rate on the Hampstead Bypass (46.4 accidents/MVM) would also be lower than the existing injury accident rate on MD 30 (94.7 accidents/100 MVM). Considering these rates, it is expected that motorists traveling the Hampstead Bypass would have less than half the number of accidents (both total and injury) than they would were they traveling on existing MD 30.

E. Summary

MD 30 is the principal north-south roadway in the study area. As population has increased, so have traffic volumes and congestion on MD 30, to the point that the roadway is currently operating at LOS E or F (mostly F) during both the AM and PM peak traffic periods. Accident rates are significantly higher than the statewide average rates for similar type highways, and are more than twice the rate expected on a two-lane roadway with partial access control, as is proposed for the Hampstead Bypass. With an expected 20% increase in traffic volumes over the next 20 years, both congestion and the number of accidents are expected to increase.

Improvements to MD 30, which accommodates north-south traffic through Hampstead, are necessary to:

- accommodate safely and efficiently, and in an environmentally responsible manner, existing and projected traffic volumes in the Hampstead area
- reduce traffic volumes on existing MD 30 through Hampstead to enable the Town to pursue its *Main Street Revitalization Plan*



Brodbeck Road

MD 482

Shiloh Road / Gill Avenue

Houcksville Road

Wolf Hill Drive

MD 30

11,700
21,750
26,100

11,400
21,750
26,100

F (1.25)	E
F (1.44)	F (1.11)

14,600
25,950
31,575

F (1.33)	F (1.06)
F (1.58)	F (1.19)

11,300
22,825
27,650

F (1.21)	F (1.01)
F (1.35)*	F (1.01)*

9,400
25,700
30,925

8,900
25,700
30,925

AVERAGE DAILY TRAFFIC	
11,400	1984
21,750	2000
26,100	2020 No-Build

LEVEL OF SERVICE		
AM Peak	PM Peak	
F (1.25)	E	2000
F (1.44)	F (1.11)	2020
() = Volume / Capacity Ratio		

* Includes provision of right turn lane on eastbound Houcksville Road per Carroll County Plan.

MD 30 RELOCATED - HAMPSTEAD BYPASS WOLF HILL DRIVE TO NORTH OF MD 482		
NO-BUILD AVERAGE DAILY TRAFFIC LEVELS OF SERVICE		
DATE July, 2002	NO SCALE	FIGURE 11 - 1

III. DESCRIPTION OF EXISTING ENVIRONMENT

III. DESCRIPTION OF EXISTING ENVIRONMENT

A. Socioeconomic Environment

1. Social

a. Demographics

Both Carroll County and the Hampstead area have, since at least 1950, experienced growth rates in population and housing that exceed the statewide rates, as can be derived from the population and housing data in Table III-1. During the 20-year period 1980 - 2000, the population of Maryland increased by 23.8%, while that of Carroll County increased by 56.9% and that of Election District 8 (see Figure III-1) by 69.0%. The Maryland Office of Planning anticipates this trend will continue, with the state's population increasing 15.2% by 2020, while Carroll County's is projected to increase 27.7% and that of Election District 8 by 31.4%. The household data closely reflect the population trends, with the housing increases being slightly larger (from a percentage viewpoint) due to decreasing average household size.

Approximately 8.2% of the County's population lived in Election District 8 in 1980, increasing slightly to 8.8% in 2000, while the percentage projected for 2020 is 9.0%.

Election District 6, located around Manchester north of the study area, has similar historic and projected population trends, with a 43% increase between 1980 and 2000, and an anticipated 37% increase by 2020. This is relevant to this study because many of the residents of Election District 6 utilize MD 30 through Hampstead to travel to the Baltimore area.

Semi-rural living conditions, reasonable housing prices, and reasonable commutes to jobs in and around Baltimore and Washington, D.C., have made Carroll County an attractive place to live, with growth being concentrated in the MD 30, MD 26 and MD 140 corridors. This has resulted in the continuing radial distribution of suburbanization outward from Baltimore City and Baltimore County's planned growth area of Owings Mills, extending not only into Carroll County, but even beyond into southern York County, Pennsylvania.

The study area is located in northeastern Carroll County, which is connected to Owings Mills and the central Baltimore region by the 2-lane MD 30 and, further south in Baltimore County, I-795, a multi-lane expressway. Development along the MD 30 corridor has been driven by quality of life issues and affordable housing. Residents are attracted by the excellent schools, low crime rate and small town atmosphere of communities like Hampstead and Manchester.

The corridor has also been impacted by the increasing development of southern Pennsylvania, where comparatively lower housing prices have resulted in strong population growth.

Election district data have been used to evaluate population and housing trends, since the election district boundaries have not changed since at least 1950. However, data regarding employment, income, race and age can best be obtained from census tract information. Figure III-1 shows the 1990 census tracts in and around the study area. As can be seen, Tracts 5081 and 5082 encompass nearly all of the study area, and indeed both the FONSI Selected and Current Design alternatives fall completely within these tracts. Therefore, these two tracts have been used to develop an analysis of racial, age, income and employment data.

As shown in Table III-2, the elderly (defined as those age 65 and over) constituted 8.8% of the study area population in 1990, which was less than both the percentages for Carroll County (9.6%) and Maryland (10.8%).

b. Environmental Justice

Executive Order 12898: *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations* issued on February 11, 1994, requires federal agencies "to identify and address as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations..." Minority is defined as "individual(s) who are members of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic." Also, low income populations should be identified as the median income below the Department of Health and Human Services poverty guidelines. These populations are to be provided access to public information and an opportunity to participate in matters relating to the environment.

The purpose of the executive order addressing Environmental Justice (EJ) is to identify and address "disproportionately high and adverse impacts" on minority populations and low income populations resulting from alternatives under consideration and to provide the opportunity for these populations to be involved in the public participation process.

To identify minority and low income populations, a census tract analysis was first conducted. Data related to racial population and poverty status of the study area census tracts are summarized in Tables III-3 and III-4. The data in Table III-3 indicate the study area has an extremely low minority population, being only 1.2% of the total, compared to 2.8% for Carroll County and 29.0% for Maryland. Based on the 1990 census data, at that time there were 53 African-Americans, eight American Indians/Eskimos/Aleuts, 52 Asian/Pacific Islanders, and ten other minorities living in the study area.

Table III-4 shows that the percentages of individuals and families below poverty level in the study area in 1989 were similar to the respective percentages for Carroll County, but substantially lower than those for Maryland.

Based upon field investigations conducted by the SHA District 4 Right of Way Office and coordination with the Carroll County Office of Planning, there are no known minority or low income communities in the study area, although as discussed above, there are minority and low income individuals and families within the study area.

**TABLE III-1
POPULATION AND HOUSEHOLDS**

AREA	1950	1960	1970	1980	1990	2000	2010	2020	PERCENTAGE INCREASES		
									1950-1980	1980-2000	2000-2020
POPULATION											
Maryland	2,343,001	3,100,689	3,922,399	4,216,975	4,780,753	5,219,130	5,651,530	6,014,540	80%	24%	15%
Carroll County	44,907	52,785	69,006	96,356	123,322	151,161	172,641	192,998	115%	57%	28%
Election District 8	2,627	3,410	5,290	7,857	10,623	13,278	14,959	17,450	199%	69%	31%
Election District 6	3,742	4,238	5,253	8,260	10,997	11,782	13,816	16,122	121%	43%	37%
HOUSEHOLDS											
Maryland	640,526		1,174,933	1,460,865	1,891,917	1,963,350	2,189,150	2,392,675	128%	34%	22%
Carroll County	11,902	15,002	19,623	30,631	42,213	53,041	62,740	72,240	157%	73%	36%
Election District 8		1,100			3,797	4,759	5,561	6,686			40%
Election District 6		1,279			3,682	4,223	5,136	6,177			46%

Sources: Maryland State Data Center, U.S. Census, 1982

Carroll County Demographic and Socioeconomic Outlook, Maryland Office of Planning, 9/99

Household Population Forecast by Election District, Carroll County Dept. of Planning, 11/99

Cooperative Forecasting Group Round 5-B Summary for Carroll County, 11/99

1990 - 91 Maryland Statistical Abstract, Maryland Dept. of Economic & Employment Development

Population and Housing, Carroll County, Maryland: Master Plan Report No. 2, Carroll County Planning and Zoning Commission, 1963

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**TABLE III-2
1990 POPULATION AGE CHARACTERISTICS**

Location	Total	Age 65 & Over	
		Number	Percentage
Maryland	4,781,468	517,482	10.8
Carroll County	123,372	11,784	9.6
Study Area:			
Census Tract 5081	5,101	497	9.7
Census Tract 5082	5,281	415	7.9
Total	10,382	912	8.8

**TABLE III-3
1990 POPULATION RACIAL CHARACTERISTICS**

Location	Total	Caucasian		African American		Amer. Indian, Eskimo or Aleut		Asian or Pacific Islander		Other Minorities	
		Population	Percentage	Population	Percentage	Population	Percentage	Population	Percentage	Population	Percentage
Maryland	4,781,468	3,393,964	71.0	1,189,899	24.9	12,972	0.3	139,719	2.9	44,914	0.9
Carroll County	123,372	119,918	97.2	2,714	2.2	247	0.2	370	0.3	123	0.1
Study Area:											
Census Tract 5081	5,101	5,054	99.1	25	0.5	2	0.0	16	0.3	4	0.1
Census Tract 5082	5,281	5,205	98.6	28	0.5	6	0.1	36	0.7	6	0.1
Total	10,382	10,259	98.8	53	0.5	8	0.1	52	0.5	10	0.1

**TABLE III-4
1989 INCOME AND POVERTY STATUS CHARACTERISTICS**

Location	Per Capita Income	Persons for Whom Poverty Status was Determined	Persons Below Poverty Level		Families for Whom Poverty Status was Determined	Families Below Poverty Level	
			Number	Percentage		Number	Percentage
Maryland	\$17,730	4,660,591	385,296	8.3	1,256,327	75,313	6.0
Carroll County	\$16,320	120,053	4,528	3.8	34,069	851	2.5
Study Area:							
Census Tract 5081	\$15,799	5,085	164	3.2	1,459	31	2.1
Census Tract 5082	\$16,224	5,278	189	3.6	1,545	58	3.8
Total	\$16,015	10,363	353	3.4	3,004	89	3.0

Source: 1990 U.S. Census (C90 STF 3A)

c. Community Facilities and Services

Community facilities in the study area are shown on Figure III-2.

Schools in the study area are Spring Garden Elementary School, Hampstead Elementary School, Shiloh Middle School, North Carroll Middle School and North Carroll High School.

Churches in the study area are Hampstead Baptist Church, Pentecostal Church of Hampstead, St. John's United Methodist Church, First Baptist Church, St. Mark's Evangelical Lutheran Church and Greenmount United Methodist Church.

Publicly-owned public parks in the study area are as follows:

- North Carroll Community Pond, a Carroll County neighborhood park encompassing 5.2 acres, with a 0.5 acre fishing pond
- Hampstead Municipal Pool, a 7.8 acre community park with a swimming pool
- Oden Kemp Town Center Park, a 0.5 acre neighborhood park with a basketball court and two multi-purpose fields
- Kimberly Village Park, a 2.8 acre neighborhood park with a multi-purpose field and a tot lot
- Melvin G. Miller Memorial Park (also known as Hampstead Memorial Park), a 1.7 acre neighborhood park with a basketball court, two tennis courts, a multi-purpose field and a tot lot
- Chief Sites Memorial Park, a 1.6 acre community park with a multi-purpose field and two tot lots
- Main Street Memorial Park, a 0.4 acre cultural area with a multi-purpose field and a 50 seat outdoor theater
- North Carroll Farms Park, a 3.1 acre community park with a tot lot
- North Carroll Farms Park II, a 6.4 acre parcel that is currently undeveloped

There are two golf courses in the study area, both privately owned and open to the public: Oakmont Green Golf Course located on the east side of MD 30 south of Brodbeck Road and Piney Branch Golf and Country Club located on the east side of MD 30 south of Trenton Mill Road.

The Hampstead Post Office is located one block west of MD 30 south of MD 482.

There is one library in the study area, the North Carroll Branch of the Carroll County Public Library, located on the east side of MD 30 opposite Brodbeck Road.

The closest hospitals are Carroll County General Hospital in Westminster, Maryland, located approximately eight miles west of Hampstead and Hanover Hospital in Hanover, Pennsylvania, located approximately fifteen miles northwest of Hampstead.

The North Carroll Senior Center is located on the east side of MD 30 opposite Brodbeck Road.

Fire protection and ambulance services are provided by the Hampstead Volunteer Fire Company, located along MD 30 in downtown Hampstead. Police protection is provided by the Hampstead Police Department, stationed on MD 30 in downtown Hampstead, and the Carroll County Sheriff's Department and the Maryland State Police (Barracks "G"), both of which are stationed in Westminster.

The Hampstead Municipal Parking Lot, which has approximately 46 spaces, provides parking for downtown Hampstead as well as an informal Park and Ride lot for commuters.

Public water and sewer services, provided by The Town of Hampstead and Carroll County, respectively, are described in Section III-A3c.

d. Communities/Neighborhoods

The two incorporated areas within the study area are Hampstead and Manchester. (See Figure III-1.)

The neighborhoods in the vicinity of the build alternatives are shown on Figure III-3 and consist of the following:

- Wolf Hill, encompassing approximately 60 single family residences on the west side of MD 30 near the Baltimore County/Carroll County Line
- Singer Heights, with 20 single family residences on the north side of Houcksville Road
- Westwood Park, located between Houcksville Road and Shiloh Road . Approximately 60 residences (single family and condominium) have been constructed east of the build alternatives and an additional 230 are planned to be built, on both the east and west sides.
- Shiloh Run, with approximately 185 residences (single family and condominium) on the north side of Shiloh Road
- Northbrook, encompassing approximately 80 single family residences on the south side of MD 482
- Brillhart Terrace, with approximately 35 single family residences on the north side of MD 482
- Greenmount Station, with 10 single family residences on the west side of MD 30 approximately 0.6 mile south of Brodbeck Road
- Hunt Ridge, with 15 single family residences on the west side of MD 30 approximately 0.3 mile south of Brodbeck Road

There are additional individual residences in the vicinity of the build alternatives along MD 30 at their southern and northern termini as well as along their crossings of Houcksville Road, Shiloh Road, and MD 482.

2. Economic Environment

Carroll County has moved from a rural, agricultural setting toward being more urban and suburban in character, with a greater emphasis on business, light industrial and manufacturing uses. In recent years, commercial and light industrial activities have gained in economic importance, with manufacturing accounting for nearly one-quarter of total employment. A large portion of the county's growth in recent years is a direct result of growth in the commercial and industrial components of the economy.

This marked shift toward urban-suburbanization has been concentrated in and around the towns in the County, including Hampstead and its vicinity, as residential growth has expanded in former agricultural areas, concurrent with a greater emphasis on commercial and manufacturing uses.

Commercial areas are concentrated along MD 30, with small businesses (primarily service-related) intermixed with residences in the downtown portion of Hampstead. In addition, there are seven shopping centers along MD 30 within the study area.

Light industrial, manufacturing and warehouse uses are located west of MD 30, generally in the southern portion of the study area, and include Joseph A. Banks Clothing Company which employs about 300 people. The Black and Decker Company manufacturing plant was until recently a major employer with as many as 1,600 employees. The site is now being redeveloped, as the Hampstead Industrial Center, and current employment at the plant is approximately 440. The Sweetheart Cup Company recently constructed a 1.03 million square foot Mid-Atlantic Distribution Center immediately northwest of the Black and Decker Company site.

The Town of Hampstead has long-term plans to revitalize MD 30, also known as Main Street. An outline for this plan was set forth in the *Main Street Revitalization Plan*, adopted by the Town in 2000. Among its proposed goals and actions are:

- Develop policies to enhance the business environment and create a high quality living environment for all residents on Main Street
- Preserve the small-town character of Hampstead
- Encourage retail and services in the downtown as the principal means of expanding the Town's local retail base
- Encourage tourist-friendly (retail) uses and specialty-type uses within the downtown that do not compete directly with shopping malls
- Ensure that Hampstead's Main Street is more pedestrian friendly

A critical element of the *Main Street Revitalization Plan* is the Hampstead Bypass. At present, high traffic volumes and a high percentage of heavy trucks on MD 30 through the Town present major obstacles to revitalization.

According to the 1990 census, the three industries employing the most persons in the study area were manufacturing, wholesale and retail trade, and services (see Table III-5). The 1989 median household income in the study area was \$43,282, compared to \$42,378 for Carroll County and \$39,386 for Maryland. However, as can be seen on Table III-4, the average 1989 per capita income in the study area was \$16,015, compared to \$16,320 for Carroll County and \$17,730 for Maryland.

Approximately 40% of the study area working population (Census Tracts 5081 and 5082) worked in Carroll County in 1990, 58% worked outside the County in Maryland, and 2% worked outside Maryland. The percentage of study area workers working within their home county is lower than the comparable rate both for Carroll County workers (46%) and all Maryland workers (55%).

The 1990 Census also indicated that approximately 83% of the labor force living in the study area census tracts commuted to work driving alone, 12% carpooled, 1% used public transportation, less than 1% commuted using other means, and 4% walked or worked at home. The average travel time to work was approximately 30 minutes.

**TABLE III-5
EMPLOYED PERSONS BY INDUSTRY IN STUDY AREA
1990**

Industry	Study Area						Carroll County		Maryland
	Census Tract 5081		Census Tract 5082		Total		No.	%	%
	No.	%	No.	%	No.	%			
Agriculture, Fishing, Mining, Forestry	57	2.0	83	2.9	140	2.4	2,130	3.2	1.7
Construction	339	11.8	381	13.1	720	12.5	7,812	11.9	7.9
Manufacturing	551	19.2	504	17.4	1,055	18.3	10,022	15.2	10.3
Transportation	84	2.9	101	3.5	185	3.2	2,167	3.3	4.3
Communication & Other Public Utilities	37	1.3	93	3.2	130	2.3	1,913	2.9	2.8
Wholesale & Retail Trade	535	18.7	541	18.6	1,076	18.6	12,736	19.3	18.8
Finance, Insurance & Real Estate	229	8.0	184	6.3	413	7.2	4,510	6.8	7.3
Services (incl. Business, Repair, Entertainment, Health, Education)	586	20.4	606	20.9	1,192	20.7	15,191	23.0	26.0
Other Professional & Related	184	6.4	220	7.6	404	7.0	4,109	6.2	9.2
Public Administration	266	9.3	191	6.6	457	7.9	5,334	8.1	11.7
TOTAL	2,868	100.0	2,904	100.0	5,772	100.0	65,924	100.0	100.0

Source: 1990 Census of Population and Housing

3. Land Use

a. Existing Land Use in the Study Area (See Figure III-3)

The most dense development in the study area exists along MD 30, with a mixture of residential (mostly single-family) and commercial uses.

Residential development is prevalent within a 0.7± mile wide band on the east side of MD 30, from just north of Trenton Mill Road to the northern study area limit. Within this band there is also some agricultural land, a small amount of commercial uses, two schools and some open space, including two golf courses. East of this band there is a mixture of agricultural and low density residential uses.

Within an approximate one mile wide strip on the west side of MD 30 the dominant uses are:

- residential development (Wolf Hill) near the southern end of the study area
- industrial parcels between Wolf Hill and Houcksville Road, with the major sites being the World Fastener Corporation, Joseph A. Banks Clothing Company, the Black & Decker Company plant, and the Sweetheart Cup Company Mid-Atlantic Distribution Center.
- residential development between Houcksville Road and MD 482, with three school sites (Hampstead Elementary, Shiloh Middle and North Carroll High schools)
- mostly agricultural north of MD 482, with scattered pockets of residential, commercial and industrial, mostly within 0.25 mile of MD 30

To the west of this strip the land is in primarily agricultural and low density residential use.

b. Priority Funding Areas (See Figure III-4)

The Maryland Smart Growth Areas Act went into effect in October 1997. The intent of this legislation is to direct state funding for growth-related projects to areas designated by local jurisdictions as Priority Funding Areas (PFAs). PFAs are existing communities and other locally designated areas as determined by local jurisdictions in accordance with "smart growth" guidelines. The Smart Growth Areas Act is intended to direct development to existing towns, neighborhoods, and business areas by directing State infrastructure improvements to those places. Figure III-4 shows the Priority Funding Areas within the study area. However, the Act does not apply to this project because the project received Location Approval in 1986, prior to the Act becoming effective.

c. Planned Land Use in the Study Area

Principal factors in establishing planned land use are the planned public water and sewer service areas.

The Town of Hampstead operates the public water system while Carroll County operates the public sewage system in and around the Town. Figure III-5 shows existing and planned public water service areas, which encompass approximately 2,313 acres, while Figure III-6 shows existing and planned public sewer service areas, which encompass approximately 1,684 acres. With the exception of the Black & Decker Company site, which is served by a private sewage system (the only major such system within the study area), development within the study area will be limited to low density residential development outside of the planned public water and sewer service areas. The Hampstead Sewage Treatment Plant has a capacity of 0.9 million gallons per day, which is adequate to serve the planned development within the existing and planned sewer service areas.

The *Comprehensive Plan: Hampstead and Environs*, adopted by Carroll County and the Town of Hampstead in 1986, and amended in 1992, outlines planned land use in and around the Town of Hampstead, as shown on Figure III-7. The Plan recommends that new development be limited primarily

to areas within and adjacent to the Hampstead municipal limits. Along MD 30 in Hampstead, a combination of commercial and medium density residential land use is recommended. Immediately east and west of the town limits, medium-to-low density residential use is proposed. Industrial use is proposed for the area south of the town limits (generally west of MD 30 between Wolf Hill and Houcksville Road), for a small parcel in northern Hampstead along the CSX Railroad within the town limits, and for a large parcel west of MD 30 north of MD 482. New commercial development will be confined mostly to the MD 30 corridor within the municipal limits. Some areas within the town, that are now residential, are expected to become commercial in order to expand the central business district. Outside the municipal limits, commercial development will be restricted to prevent further strip development.

As part of the process of developing a comprehensive Main Street revitalization plan in recent years, the Town of Hampstead also implemented several "Smart Growth" measures to moderate local development. These include development impact fees, an Adequate Public Facilities Ordinance, and modification of land use regulations.

With the planned and ongoing expansion of the industrial community, as well as the suitability and zoning of much of the nearby farmland for development, it is probable that the recent increase in population and, thus, new housing units, will continue in the Hampstead area.

The Town of Hampstead and Carroll County are currently updating the *Hampstead and Environs Comprehensive Plan* (amended in 1992), and anticipate completing it in 2002. The new plan will conform to the Smart Growth Standards and may implement a formal "growth area boundary." The draft plan, distributed for comment in December 2001, includes some substantial changes in planned land use, especially a reduction in the amount of land planned for industrial use in the vicinity of the Bypass north of Wolf Hill and north of MD 482.

Surrounding the area covered by the *Comprehensive Plan: Hampstead and Environs*, the *Carroll County Master Plan* (June 1998) shows primarily agricultural land, with some conservation and low density residential, as shown on Figure III-7. There are also some Agricultural Preservation Districts and Agricultural Preservation Easements in this area, also shown on Figure III-7. These are mechanisms established by the Maryland Agricultural Land Preservation Program, and administered jointly by Carroll County and the State of Maryland. The districts require that the land stay in agricultural use for at least five years, while the easements require that the land stay in agricultural use in perpetuity, unless the Maryland Agricultural Land Preservation Foundation and Carroll County agree to sell back the development easement.

B. Cultural Resources

1. Historic Standing Structures

The National Historic Preservation Act (NHPA) of 1966, as amended, the National Environmental Policy Act (NEPA) of 1969, and other applicable federal, state and local legislation

govern the identification, analysis and treatment of cultural (historic) resources. The lead federal agency (in this case FHWA) is required to take into account, during the planning process, the effect of its proposed project on historic properties which are listed on, or eligible for, the National Register of Historic Places (NRHP) prior to the issuance of a permit or license, or before the approval of any funds.

All historic resources identified during cultural resource studies for MD 30 were evaluated and submitted to the State Historic Preservation Officer (SHPO) for his opinion on NRHP eligibility determinations. These properties were evaluated using the criteria of the NRHP.

A comprehensive review for cultural resources architectural survey of the MD 30 - Hampstead project study area was performed in 1995. The goal of the survey was to identify and evaluate historic standing resources, and provide descriptions and evaluations of the significance of historic structures. Background information on the history and resources was collected from a variety of sources, including local and county histories, atlases and county maps, deeds and tax resources. These sources are located at the Carroll County Historical Society, the Maryland Historical Trust (MHT), the Maryland Archives, and the Maryland Historical Society. In the historic resource survey, building materials, construction techniques, architectural details and individual integrity were addressed for each property. Where applicable, resources were evaluated for their potential contributions to historic districts or farm complexes.

In the study area, one historic structure, the Houck/Leister Farm (CARR-596), meets the NRHP criteria. (See Figure III-8.) Another structure, the Bank House (CARR-11), met the NRHP criteria, but was completely destroyed by the property owner in early 2002.

The Houck/Leister Farm (CARR-596) was determined eligible for the National Register of Historic Places in 1979 under Criterion C for the architecture of the main dwelling and the barn. The 1917 dwelling is significant as a distinctive example of the form commonly used in Maryland rural domestic vernacular architecture from the mid-nineteenth to early twentieth centuries. Its massive brick construction and pronounced verticality set it apart from others of its type. The dwelling anchors a cluster of buildings, of which about half pre-date the mid-twentieth century. The buildings that contribute to the significance of the site span the late nineteenth through the middle of the twentieth century and have considerable architectural merit. The farm has integrity and conveys a strong association with the agrarian history of Carroll County.

2. Archeological Sites

The project area was investigated for potential effects to archeological resources. A Phase I identification survey (Curry 1977) was conducted within the corridor of the FSA by the SHA in 1977. The Aspen Run Site (18BA166) was identified. The site was determined potentially eligible for inclusion in the NRHP. Due to the site's proximity to the APE for the FSA, no direct construction impacts were anticipated. However, the SHA committed to protect the site from indirect impacts by providing fencing during all stages of construction.

Based upon the results of previous cultural resources surveys within the general region, the results of the identification survey conducted for the FSA, and review of historic maps and other documentation, the APE for the CDA was determined to have low potential for historic and prehistoric archeological resources. The area occupies a marginal ecological setting where significant prehistoric archeological resources are not expected. All areas where historic period archeological resources would be expected have been disturbed. The Aspen Run Site (18BA166) is located 1.40 miles south of the project's southern tie-in and will be avoided by all aspects of construction for the CDA. Consequently, no further archeological investigations were recommended for the CDA.

The State Historic Preservation Officer (SHPO) concurs with this determination. See Section VI which contains the letter from the SHA dated May 31, 2001 and March 11, 2002, and concurred upon by MHT on August 2, 2001 and April 1, 2002.

C. Natural Environment

1. Topography/Geology/Soils

The study area is located within the Piedmont Province, characterized by a broad undulating surface with low knobs and ridges and numerous deep, narrow stream valleys.

Existing MD 30 through the study area generally follows a ridge, the land west of which drains to the Patapsco River and east of which drains to the Gunpowder Falls. According to the U.S.G.S. topographic maps, the study area ranges from approximately 600 feet to 920 feet above sea level.

Figure III-9 show generalized slope of the land surface, categorized as less than 8%, 8 - 15%, 15 - 20%, 20 - 25% and greater than 25%. As can be seen, the area along and west of MD 30 is generally at a 0 - 8% slope, with somewhat steeper slopes along the streams. Steeper slopes are much more prevalent east of MD 30.

The "Geologic Map of Maryland"¹ indicates the study area is underlain by the Wissahickon Formation, with a small area of Wakefield Marble in the vicinity of the East Branch Patapsco River near MD 482.

The "Geologic Map of the Hampstead Quadrangle"² refines the geologic mapping and shows the study area is underlain almost completely by the Gillis Group and Prettyboy Schist. These two units are divided by a line running generally through Shiloh Road approximately 6,000 feet west of MD 30, and MD 30 approximately 1,200 feet north of MD 482, with the area to the northwest being the Gillis Group and the area to the southeast being the Prettyboy Schist. In addition, there are a few areas classified as Alluvium along the streams. The following descriptions of those formations are provided by the Geologic Map:

Gillis Group:

Fine-grained, gray-green mica schist and silver-gray phyllite composed of variable amounts of muscovite, chlorite, quartz, epidote, and albite. Pyrite, altered to limonite in most exposures, and magnetite occur as accessories. Minor intercalated centimeter to meter-thick quartzites, commonly with relict blue-gray detrital quartz granules and pebbles, are present locally. Top of unit not present in area mapped.

Prettyboy Schist:

Fine-to medium-grained, green-gray magnetite-epidote-albite-chlorite-muscovite-quartz schist ± garnet ± biotite with accessory tourmaline, pyrite, apatite, and zircon. Albite commonly occurs as millimeter-sized porphyroblasts containing curved inclusion trails of opaques and epidote ± garnet. Minor intercalated greenish-gray to pale-tan epidote-chlorite-muscovite quartzite locally containing centimeter-sized quartz pebbles. Stringers, pods, and locally well-developed rods of milky quartz, representing the limbs and hinges of sheared-out isoclinal folds, are abundant. Schists weather to shades of brown and green. Quartzites weather tan to buff.

Alluvium:

Interbedded, variably sorted, light-gray to brown gravel, sand, silt, and gray-blue to gray-brown clay. Confined to floodplains of perennial streams and discontinuous areas along ephemeral upland streams. Gravel composition is dominantly vein quartz with lesser amounts of quartzite, gneiss, schist, amphibolite, and ultramafic rock. Sands and silts are quartz-mica with variable amounts of metamorphic alumino-silicates (garnet, staurolite, kyanite, feldspar, tourmaline) and iron-titanium oxides (magnetite, ilmenite). Clays are predominantly kaolinitic. Sediment size and mineralogy reflect adjacent country rock and geomorphic setting.

As can be seen on Figure III-10, the dominant soil association within the study area is Glenelg-Chester-Manor, which is characterized by well-drained deep micaceous soils and primarily rolling and hilly terrain. The three other associations that occur within the Carroll County portion of the study area are:

¹ "Geologic Map of Maryland", Maryland Geological Survey, 1968.
² "Geological Map of the Hampstead Quadrangle," Maryland Geological Survey, 1991.

Mt. Airy - Linganore, characterized by somewhat excessively drained moderately deep and deep channery soils and nearly level to steep terrain.

Glenelg - Manor - Mt. Airy, characterized by well-drained and somewhat excessively drained deep and moderately deep soils, and mainly hilly terrain.

Mt. Airy - Glenelg, characterized by somewhat excessively drained, moderately deep and deep channery soils and rolling to very steep terrain.

The Baltimore County portion of the study area is entirely within the Manor-Glenelg association, characterized by well-drained and somewhat excessively well-drained deep soils and gently sloping to very steep terrain.

The 15 soil series belonging to the four associations found within the Carroll County portion of the study area are listed on Table III-6.

As defined by the U.S. Department of Agriculture, there are 11 Prime Farmland Soils and 13 Additional Farmland Soils of Statewide Importance within the Carroll County portion of the study area, as indicated in Table III-7. These are soil classification groups, established by the U.S. Natural Resources Conservation Service, with the potential for high agricultural productivity. As shown on Figure III-11, they are located throughout the study area. These classifications were last made in the 1970s, and a considerable amount of the study area has since developed and thus is not available for agricultural use.

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**TABLE III-6
STUDY AREA SOILS SERIES**

SYMBOL - SERIES NAME	MAPPING UNIT	HYDRIC CHARACTERISTICS	DEPTH TO BEDROCK (FEET)
Ba - Baile silt loam	Poorly drained soils that occur in upland depressions, around the heads of drains, and on foot slopes adjacent to minor drainage ways	Listed as a hydric soil	5-8+
Ce - Chester silt loam	Deep, well-drained, nearly level to sloping soils on uplands. Soils mainly on or near the crests of slopes	None	5-10
Ch - Codorus silt loam	Deep, nearly level and gently sloping soils that occur on the floodplains of streams	Contains hydric inclusions of Hatboro soils	6-20+
Cn - Comus silt loam	Deep, nearly level and gently sloping soils on floodplains, at the foot of slopes, and in upland depressions	None	6-20+
El - Elioak silt loam	Deep, nearly level to strongly sloping, and well drained soils on crests and upper side slopes	None	6-10
Gc - Glenelg channery loam	Well-drained, nearly level to moderately steep soils on uplands	None	4-8
Gl - Glenelg loam	Well-drained, nearly level to moderately steep soils that occur on uplands	None	4-10
Gv - Glenville silt loam	Nearly level and gently sloping, moderately well drained soils that have a fragipan. These soils lie in upland depressions as well as around the heads and along the upper courses of drainageways	Contains hydric inclusions of Baile soils	5-10
Ht - Hatboro silt loam	Deep, poorly drained, nearly level and gently sloping soils on floodplains	Listed as a hydric soil	6-20+
Ln - Linganore channery silt loam	Moderately deep, gently sloping to steep, somewhat excessively drained soils that occupy uplands	None	2-3
Md - Made land	Areas that have been so disturbed or modified by grading and filling that the soils cannot be classified		Varies
Mg - Manor gravelly loam	Deep, nearly level to very steep, somewhat excessively drained soils on uplands	None	6-20+
Ml - Manor loam	Deep, nearly level to very steep, somewhat excessively drained soils on uplands	None	6-20+
Mn - Manor very stony loam	Deep, nearly level to very steep, somewhat excessively drained soils on uplands	None	6-20+
Mt. - Mt. Airy channery loam	Nearly level to steep, moderately deep, somewhat excessively drained soils	None	1.5-3.5

Notes:

1. Source: *Soil Survey of Carroll County, Maryland*, USDA, 1969
2. Soil Series within the Baltimore County portion of the study area are not listed.

**TABLE III-7
AGRICULTURAL SOILS**

Map Symbol	Mapping Unit	Prime Farm-land Soils	Soils of Statewide Importance
CeA	Chester silt loam, 0 to 3 percent slopes	X	
CeB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	X	
CeC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded		X
Ch	Codorus silt loam	X	
CnA	Comus silt loam, local alluvium, 0 to 3 percent slopes	X	
CnB	Comus silt loam, local alluvium, 0 to 8 percent slopes	X	
EIB2	Eli oak silt loam, 3 to 8 percent slopes, moderately eroded	X	
EIC2	Eli oak silt loam, 8 to 15 percent slopes, moderately eroded		X
GcB2	Glenelg channery loam, 3 to 8 percent slopes, moderately eroded	X	
GcC2	Glenelg channery loam, 8 to 15 percent slopes, moderately eroded		X
GIA	Glenelg loam, 0 to 3 percent slopes	X	
GIB2	Glenelg loam, 3 to 8 percent slopes	X	
GIB3	Glenelg loam, 3 to 8 percent slopes, severely eroded		X
GIC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded		X
Ht	Hatboro silt loam		X
LnB2	Linganore channery silt loam, 3 to 8 percent slopes, moderately eroded		X
LnC2	Linganore channery silt loam, 8 to 15 percent slopes, moderately eroded		X
MgB2	Manor gravelly loam, 3 to 8 percent slopes, moderately eroded	X	
MgC2	Manor gravelly loam, 8 to 15 percent slopes, moderately eroded		X
MIB2	Manor loam, 0 to 8 percent slopes, moderately eroded	X	
MIB3	Manor loam, 3 to 8 percent slopes, severely eroded		X
MIC2	Manor loam, 8 to 15 percent slopes, moderately eroded		X
MtB2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded		X
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded		X

2. Aquatic Resources/Wetlands

a. Surface Water

General

MD 30 generally follows a north-south ridge in the study area. The area west of the ridge drains to the Patapsco River, primarily via East Branch, Indian Run, and Deep Run, while the area east of the ridge drains to the Gunpowder Falls, primarily via Georges Run, Murphy Run, and Piney Run. (See Figure III-12) All study area streams are similar in size and gradient. All of the study area drains to the three reservoirs which provide the vast majority of the public water supply in the Baltimore Metropolitan area: Liberty Reservoir to the west and Prettyboy and Loch Raven reservoirs to the east.

The Code of Maryland Regulations 26.08.01 Water Quality establishes surface water quality standards by assigning designated uses for surface waters of the State and water quality criteria to protect designated uses. All waters of the State are protected for the basic uses of water contact recreation, fish, other aquatic life, and wildlife, and compose Use I. More restrictive criteria have been established to protect natural trout waters (Use III), recreational trout waters (Use IV) and public water supply (suffix "P" designation). All streams in the study area are classified Use I-P or Use III-P as follows:

- Gunpowder Falls tributaries Use III-P
- East Branch Patapsco River and all its tributaries Use III-P
- Deep Run and all its tributaries Use I-P

Water quality criteria for the above Use classifications are shown in Table III-8.

Seven perennial streams crossed by or potentially impacted by the project were surveyed for benthic macro-invertebrates and analyzed with respect to chemical/biological water quality: two unnamed tributaries to Deep Run (Wetlands B and D), Deep Run (Wetland E), Indian Run (Wetland G), and three unnamed tributaries of the East Branch Patapsco River (Wetlands 4, 5 and 6) (see Figures III-13 and IV-4). Samples generally were taken just downstream of the CDA crossing. Due to an eastern shift of the CDA following the stream sampling, sample stations at Wetlands 5 and 6 are located approximately 900 feet and 1,100 feet, respectively, downstream of the CDA. A discussion of methods and results of the analyses follows. Detailed results are presented in the Hampstead Bypass Natural Environmental Technical Report.

Benthic Macro-invertebrates

The benthic macro-invertebrate survey was performed in accordance with the *Maryland Biological Stream Survey Sampling Manual*. Due to scheduling problems, benthic macro-invertebrate samples were collected slightly outside of the normal sampling period, which ends on June 1 of any given year. Samples were collected from June 11, 2001 through June 15, 2001.

**TABLE III-8
SPECIFIC WATER QUALITY CRITERIA**

CRITERIA	USE I-P	USE III-P
Fecal Coliform	Log mean of <200/100 ml, based on a minimum of 5 samples over any 30-day period or <10% of total number of samples taken during any 30-day period may exceed 400/100 ml	Same as Use I-P
DO	>5.0/mg/l	>5.0 mg/l with a minimum daily average of 6.0 mg/l
Temperature	<32° C or <ambient temperature of receiving water, whichever is greater	<20° C or <ambient temperature of receiving water, whichever is greater
pH	>6.5 and <8.5	Same as Use I-P
Turbidity	≤150 NTU or ≤50 NTU as a monthly average	Same as Use I-P
Total Residue Chlorine	Not Applicable	No chlorine or chlorine-containing compounds in the treatment of wastewater discharging to Use III-P waters
Toxic Materials	All toxic substance criteria to protect: <ul style="list-style-type: none"> • Fresh water organisms in freshwaters, • Estuarine or saltwater organisms in designated salt or estuarine waters, and • Wholesomeness of fish for human consumption. 	Same as Use I-P

Benthic macro-invertebrate samples were collected from riffle and run habitats in each stream and supplemented with separate samples from coarse particulate organic matter (such as leaf packs and woody debris) that collect in depositional areas. Samples from riffle/run habitats were taken using kick seines, sampling approximately one square meter.

Sample collections were analyzed following the U.S. Environmental Protection Agency (EPA) *Rapid Bio-assessment Protocol II* (Plafkin, et al 1989). All organisms were classified according to functional feeding groups (Cummins and Wilzbach, 1985) and tolerance values (Hilsenhoff, 1987).

Results of the macro-invertebrate survey are as follows:

Unnamed Tributary to Deep Run (Wetland B): This site is located approximately 1,600 feet south of Dos Garland Road west of MD 30. This is a first and second order headwater section of the stream. Low flow with a silt, clay, cobble, and rubble substrate and a general lack of habitat diversity characterize the stream section sampled. This part of the stream is deeply entrenched and has predominately riffle and run habitats. This stream receives relatively large amounts of stormwater runoff from the surrounding agricultural fields, resulting in streambed scouring and embedding of the substrate. No fish are present in the sampled section. Periphyton is not apparent, filamentous algae is not common, and benthic macro-invertebrates occur in relatively poor densities. Too few benthic macro-invertebrates were collected to analyze. While this stream section has a poor rating based on benthic biodiversity and community composition, it is noted that it is a low flow headwater first order stream with little ability to hold a large benthic macro-invertebrate population.

Unnamed Tributary to Deep Run (Wetland D): This site is located approximately 900 feet north of Dos Garland Road west of MD 30. The sampled stream section is downstream from the water treatment ponds on the Black & Decker property. The sampled stream section is characterized by silt, sand, gravel and cobble substrate. Pools and riffles occur in this section. Fish are abundant, predominantly blacknose dace, common shiner, sculpin, creek chubs and bluegill. Periphyton is abundant and filamentous algae are common. Benthic macro-invertebrate diversity is poor. Relatively pollution intolerant caddis flies Hydropsychidae dominate the benthic macro-invertebrate community. Only two EPT¹ taxa occur: the caddisfly Hydropsychidae and Psychomyiidae. Stoneflies, mayflies and the other pollution sensitive taxa are absent. Of the functional feeding groups, scrapers are well represented with 9% of the sample. Shredders are absent.

Deep Run (Wetland E): This site is located approximately 1,900 feet south of Houcksville Road west of MD 30. The sampled stream section is immediately downstream from the stormwater treatment pond on the Sweetheart Cup property. Deep Run is a second order stream with a silt, sand, gravel and cobble substrate in this section. The sampled section of stream contains a variety of habitats including riffles, runs and pools. Fishes are abundant, predominantly blacknose dace, rosyside dace, longnose dace, sculpin, creek chubs and white suckers. Periphyton and filamentous algae are not abundant. Benthic macro-invertebrates occur in low diversity and numbers. Relatively pollution intolerant Potomanthidae mayflies dominate the benthic macro-invertebrate community. Four EPT taxon occur: the caddisfly Hydropsychidae and Polycentropodidae and the mayfly Potomanthidae and Ephemerellidae. Stoneflies and the other pollution sensitive taxa are absent. Of the functional feeding groups, scrapers are not present and shredders occur in 2% of the sample.

¹ Orders Ephemeroptera, Plecoptera and Trichoptera

Indian Run (Wetland G): This site is located approximately 400 feet north of Shiloh Road and west of MD 30. This is a second order stream with a silt, gravel, cobble and bedrock substrate located downstream of a large farm pond. The sampled section contains a variety of habitats including riffles, runs and pools. Fishes are abundant, predominately rosyside dace and creek chub. Periphyton and filamentous algae are common. Benthic macro-invertebrates occur in fair diversity and numbers. Pollution tolerant crayfish Cambaridae and beetles Elmidae dominate the benthic macro-invertebrate community. Three EPT taxon occur: the caddisfly Hydropsychidae and Polycentropodidae and the mayfly Ephemeridae. Stoneflies and other pollution sensitive taxa are absent. Of the functional feeding groups, scrapers are absent, but shredders are fairly well represented with 4% of the sample.

Unnamed Tributary to East Branch Patapsco River (Wetland 6): This site is located approximately 2,400 feet north of MD 482 and west of MD 30. This is an unnamed tributary to East Branch Patapsco River and is a second order stream with a silt, sand and gravel substrate. The sampled section contains a variety of habitats including riffles, runs and pools with large areas of braided channel. Periphyton and filamentous algae are rare. Fishes are not common but blacknose dace, longnose dace, and sculpin occur. Benthic macro-invertebrates occur in good diversity and numbers. The benthic macro-invertebrate community is dominated by the caddisfly Hydropsychidae. Six EPT taxa occur: the caddisflies Hydropsychidae, Polycentropodidae, Leptoceridae, and Lepidostomatidae, the mayflies Potomanthidae, and the stonefly Perlodidae. Of the functional feeding groups, only shredders are well represented with 8% of the sample. Scrapers are absent.

Unnamed Tributary to East Branch Patapsco River (Wetland 5): The site is located approximately 3,000 feet north of MD 482 and west of MD 30. This is an unnamed tributary to East Branch Patapsco River and is a second order stream with a silt, sand and gravel substrate. The sampled section contains a variety of habitats including riffles, runs and pools. Fishes are common, predominantly blacknose dace, longnose dace, rosyside dace, sculpin and creek chubs. Benthic macro-invertebrates occur in good diversity and numbers. The benthic macro-invertebrate community is dominated by the relatively pollution intolerant mayfly Potomanthidae. Four EPT taxa occur: the caddisfly Hydropsychidae and the mayflies Potomanthidae, Heptageniidae and Ephemerellidae. Of the functional feeding groups, scrapers are represented with 5% of the sample and shredders are well represented with 9% of the sample.

Unnamed Tributary to East Branch Patapsco River (Wetland 4): The site is located approximately 600 feet southeast of Brodbeck Road and west of MD 30. This is an unnamed tributary to East Branch Patapsco River and is a second order stream with a silt, sand and gravel substrate. The sampled section is within a pasture and contains a variety of habitats including riffles, runs and pools. Fishes are common, predominantly blacknose dace, longnose dace, rosyside dace, sculpin and creek chubs. Benthic macro-invertebrates occur in good diversity and

numbers. The benthic macro-invertebrate community is dominated by the relatively pollution intolerant Amphipoda. Four EPT taxa occur: the caddisfly Hydropsychidae and the mayflies Potomanthidae, Heptageniidae and Ephemerellidae. Of the functional feeding groups, scrappers are represented with 5% of the sample and shredders are well represented with 9% of the sample.

Of the seven benthic macro-invertebrate sampling sites, three are rated in the "good" category (Wetlands 4, 5 and 6), two are in the "fair" category (Wetlands E and G), and two are in the "poor" category (Wetlands B and D). The four relatively low scores are attributable to a general lack of diversity, EPT taxa, and scrappers or shredders in the benthic macro-invertebrate community (see Table III-9). The three streams rated good for benthic macro-invertebrates are the streams with the least amount of urbanization and other development in their watersheds.

The unnamed tributary to East Branch Patapsco River (Wetland 5) had the highest water quality rating of the streams in the project area, based on benthic biodiversity and community composition. Both of the other unnamed tributaries to East Branch Patapsco River (Wetlands 4 and 6) are also rated "good" based on benthic biodiversity and community composition.

**TABLE III-9
BENTHIC MACRO-INVERTEBRATE METRIC SCORES**

STREAM	METRIC						TOTAL
	1	2	3	4	5	6	
Wetland B	0	0	0	0	0	0	0
Wetland D	0	0	3	0	3	0	6
Wetland E	3	3	0	3	0	3	12
Wetland G	3	0	0	3	0	3	9
Wetland 6	6	6	0	3	0	3	18
Wetland 5	6	6	0	3	3	6	24
Wetland 4	6	6	0	6	0	3	21

Metric 1: Number of Taxa. This is the total number of genera and/or species in the sample. The number of taxa, or species richness, usually increases with increasing water quality, habitat diversity, and/or habitat suitability.

Metric 2: Number of EPT Taxa. This is the total number of taxa within the orders Ephemeroptera, Plecoptera and Trichoptera (mayflies, stoneflies and caddisflies). These orders are generally considered pollution sensitive. High EPT taxa richness is an indicator of high water quality.

Metric 3: Percent Dominance. This is the percent contribution of the numerically dominant taxon to the total number of organisms in the sample. A benthic community dominated by relatively few species indicates environmental stress.

Metric 4: Sensitive Taxa Index. This is the Modified Hilsenhoff Biotic Index (Hilsenhoff, 1987). It is determined by classifying organisms with respect to pollution tolerance (values range from 0 to 10, increasing as water quality decreases). The formula for calculating the index is: $HBI = \sum(x_i t_i) / n$ where: x_i = number of individuals within a species; t_i = tolerance value of a species; n = total number of organisms in the sample.

Metric 5: Percent Abundance of Scrapers. The percent abundance of scrapers within the sample is an indicator of Periphyton community composition. Scrapers increase with increased abundance of diatoms and decrease as filamentous algae and aquatic mosses increase. Filamentous algae and aquatic moss abundance often increases as waters become organically enriched. A high percentage (>18%) of scrapers is an indicator of high water quality.

Metric 6: Percent Abundance of Shredders. This is a measure of the percent of the sample gathered from coarse particulate organic matter that is within the shredder functional feeding group. Shredders are sensitive to riparian zone impacts and are indicators of the presence of toxicants that are readily absorbed to coarse particulate organic matter. A high percentage of shredders (>9%) is an indicator of high water quality.

COMPARISON BASIS FOR TOTAL METRIC SCORES

TOTAL METRIC SCORE	STREAM QUALITY	ANALYSIS
18-24	Good	Comparable to the best situation to be expected within an ecoregion. Balance trophic structure. Optimum community structure for stream size and habitat quality.
9-15	Fair	Community structure is less than expected. Composition and diversity lower than expected due to loss of some pollution intolerant forms. The percent contribution of tolerant forms is higher than found in streams of "Good" quality. EPT index is lower than in streams of "Good" quality.
0-6	Poor	Few species present. If high densities or organisms, then dominated by one taxa or pollution tolerant taxa.

Chemical and Bacteriological Analyses

Water samples were collected from each of the seven streams, fixed with nitric acid, and transported to a laboratory for analyses. Dissolved oxygen was measured on site using a dissolved oxygen titration test kit. Conductivity, temperature, and pH were measured on site using a test meter. Sampling, assay, and quality control/quality assurance procedures followed EPA accepted protocols for water quality data reporting.

Results of the chemical and bacteriological testing are shown in Table III-10. All of the measured water quality parameters are within the applicable Use criteria (See Table III-8) except as follows:

Deep Run (Wetland E): The measured pH of 6.4 is lower than the Use I-P minimum of 6.5.

Indian Run (Wetland G): The measured pH of 8.7 is greater than the Use III-P maximum of 8.5. Likewise, the measured temperature of 23.7° C exceeds the Use III-P maximum of 20° C.

TABLE III-10 RESULTS OF CHEMICAL AND BACTERIOLOGICAL TESTING

Chemical Biological Component	Deep Run Trib. (W-B)	Deep Run Trib. (W-D)	Deep-Run (W-E)	Indian Run (W-G)	East Branch Trib. (W-6)	East Branch Trib. (W-5)	East Branch Trib. (W-4)
Dissolved O ₂	8.6 ppm	7.2 ppm	9.0 ppm	7.2 ppm	8.1 ppm	12.1 ppm	9.4 ppm
BOD	10.8mg/l	2.0 mg/l	10.4 mg/l	10.3 mg/l	9.3 mg/l	9.2 mg/l	10.4 mg/l
Ammonia	<0.5 mg/l	<0.5 mg/l	<0.5 mg/l	<0.5 mg/l	<0.5 mg/l	<0.5 mg/l	<0.5 mg/l
Nitrite	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Nitrate	7.01 mg/l	1.43 mg/l	6.88 mg/l	2.83 mg/l	11.37 mg/l	9.63 mg/l	7.03 mg/l
Phosphorus	<0.1mg/l	<0.1mg/l	<0.1mg/l	<0.1mg/l	<0.1mg/l	<0.1mg/l	<0.1mg/l
Conductivity	250 µ/s	320 µ/s	110 µ/s	160 µ/s	150 µ/s	140 µ/s	320 µ/s
TDS	2320 mg/l	2740 mg/l	1660 mg/l	1700 mg/l	1580 mg/l	1300 mg/l	2660 mg/l
pH	6.91	7.12	6.4	8.7	6.63	7.35	7.39
Temp. °C	26.8	24.7	25.1	23.7	17.9	14.8	17.5
Turbidity NTU	0.9	2.2	1.5	0.7	0.8	0.8	1.3
Total Coliform	>23 mpn /100ml	>23 mpn /100ml	>23 mpn /100ml	>23 mpn /100ml	>23 mpn /100ml	>23 mpn /100ml	>23 mpn /100ml
Fecal Coliform	>23 mpn /100ml	23 mpn /100ml	>23 mpn /100ml	>23 mpn /100ml	12 mpn /100ml	>23 mpn /100ml	>23 mpn /100ml

b. Wetlands and Waters of the U.S.

Waters of the U.S., including wetlands, potentially affected by the proposed project have been identified. Waters of the U.S. include resources such as streams, lakes, tidal waters, and wetlands, which are a transitional area between water and land. Wetlands are defined by the federal government as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (EPA, 40 CFR 230.3 and COE, 33 CFR 328.3).

These resources, which provide many valuable functions in both the natural and cultural environment, are regulated primarily by Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers (COE). The U.S. Environmental Protection Agency, (EPA), U.S. Fish & Wildlife Service (FWS), National Marine Fisheries Service, and Natural Resources Conservation Service are also involved with the protection of these resources at the federal level. Waters and wetlands are also regulated at the state level by the Maryland Department of the Environment (MDE).

A total of 18 palustrine wetlands have been identified, classified and delineated in the vicinity of the two alternatives being studied in detail, through a cooperative effort involving the COE, EPA, FWS, and MDE. The wetlands are shown conceptually on Figure III-13 and in detail on the Alternatives Mapping in Section IV. Figure III-13 also shows wetlands, based upon National Wetland Inventory Maps and Carroll County Environmental Resource Areas Guidance Maps, that are in the study area but not in the immediate vicinity of the FONSI Selected Alternative or the Current Design Alternative. Table III-11 lists the wetlands in close proximity to the Current Design Alternative (CDA) or FONSI Selected Alternative (FSA) along with their dominant vegetation, classification, location and functions.

c. Groundwater

Groundwater in the study area is drawn from a highly weathered schist and phyllite aquifer. Except for a few isolated areas, water quality is excellent. Well yields range from less than 1 to 320 gallons per minute (GPM). There is about a 6 percent chance of a well yield greater than 50 GPM (Maryland State Planning Department, 1969). Approximately 60% of the water-yielding fractures in Carroll County are between 50 and 125 feet below the ground surface.

The Town of Hampstead operates a public water system supplied by 12 existing wells, ranging in depth from 65 feet to 185 feet. An additional three wells are planned for construction as development continues. The Town has an allocation permit from the Maryland Department of Natural Resources for 503,000 gallons per day (gpd) for average usage and 717,500 gpd for maximum usage. In 1999, the average daily use was approximately 367,000 gpd.

TABLE III-11
WETLAND SUMMARY

NO.	LOCATION	DESCR.	FUNCTIONS	QUAL.	COWARDIN CLASS.	OBSERVED VEGETATION		IMPACTED BY:	
						COMMON NAME	SCIENTIFIC NAME	CDA	FSA
A	Vicinity of Phillips Drive	Channel of drainageway and depressional area with high water table	wildlife habitat sediment trapping nutrient retention/removal food chain support flood desynchronization	High	R4SB5 PSS1B/PEM1B	black willow silver maple arrowwood smooth alder common cattail halberd-leaved tearthumb seedbox skunk cabbage brambles sensitive fern sedge umbrella sedge	<i>Salix nigra</i> <i>Acer saccharinum</i> <i>Viburnum dentatum</i> <i>Alnus serrulata</i> <i>Typha latifolia</i> <i>Polygonum arifolium</i> <i>Ludwigia alternifolia</i> <i>Symplocarpus foetidus</i> <i>Rubus sp.</i> <i>Onoclea sensibilis</i> <i>Cyperus sp.</i> <i>Cyperus strigosus</i>	No	Yes
A1	Vicinity of Phillips Drive	Channel and floodplain of tributary to Deep Run; including depressional area with high water table south of Phillips Drive	passive recreation habitat sediment trapping nutrient retention/removal food chain support flood desynchronization	High	R4SB5 PEM1B PSS1B	black willow red maple common cattail halberd-leaved tearthumb rush	<i>Salix nigra</i> <i>Acer rubrum</i> <i>Typha latifolia</i> <i>Polygonum arifolium</i> <i>Juncus sp.</i>	No	No
B	West of World Fastener Corp. and Hampstead Baptist Church	Topographic depression area and floodplain of tributary to Deep Run; high water table and spring seeps	habitat sediment trapping nutrient retention food chain support flood desynchronization	High	PSS1B/PEM1B	red maple common cattail halberd-leaved tearthumb brambles sensitive fern	<i>Acer rubrum</i> <i>Typha latifolia</i> <i>Polygonum arifolium</i> <i>Rubus sp.</i> <i>Onoclea sensibilis</i>	Yes	Yes
D	West of former Black & Decker Plant ponds	Pond outlet drains west to Deep Run, and is associated with a topographic depression, which has a high water table and receives surface runoff from surrounding farm fields	groundwater discharge flood desynchronization	Low	PSS1B PEM1B R2UB3	black walnut red maple arrowwood goldenrod brambles sedge soft rush	<i>Juglans nigra</i> <i>Acer rubrum</i> <i>Viburnum dentatum</i> <i>Solidago sp.</i> <i>Rubus sp.</i> <i>Carex sp.</i> <i>Juncus effusus</i>	Yes	Yes

TABLE III-11
WETLAND SUMMARY
(continued)

NO.	LOCATION	DESCR.	FUNCTIONS	QUAL.	COWARDIN CLASS.	OBSERVED VEGETATION		IMPACTED BY:	
						COMMON NAME	SCIENTIFIC NAME	CD A	FSA
D1	West of former Black & Decker Plant	Deep Run, its floodplain and associated unnamed tributaries, together with adjacent topographic depressional areas	groundwater discharge nutrient retention	Low	R2UB3 R4SB5 PEM1B	black gum black cherry red maple halberd-leaved tearthumb tickseed sunflower goldenrod brambles multiflora rose sedge soft rush umbrella sedge	<i>Nyssa sylvatica</i> <i>Prunus serotina</i> <i>Acer rubrum</i> <i>Polygonum arifolium</i> <i>Bidens coronata</i> <i>Solidago sp.</i> <i>Rubus sp.</i> <i>Rosa multiflora</i> <i>Cyperus sp.</i> <i>Juncus effusus</i> <i>Cyperus strigosus</i>	Yes	Yes
E	West of former Black & Decker Plant	Deep Run, its floodplain and associated topographic depressional areas	passive recreation groundwater discharge nutrient retention food chain support flood desynchronization nutrient retention/removal	High	PEM1B PFO1A	black gum black cherry red maple white oak arrowwood elderberry halberd-leaved tearthumb tickseed sunflower brambles multiflora rose sedge soft rush umbrella sedge	<i>Nyssa sylvatica</i> <i>Prunus serotina</i> <i>Acer rubrum</i> <i>Quercus alba</i> <i>Viburnum dentatum</i> <i>Sambucus canadensis</i> <i>Polygonum arifolium</i> <i>Bidens coronata</i> <i>Rubus sp.</i> <i>Rosa multiflora</i> <i>Cyperus sp.</i> <i>Juncus effusus</i> <i>Cyperus strigosus</i>	Yes	Yes
E1	West of Singer Street north of Houcksville Road	Topographic depressions and drainage swales draining to East Branch	passive recreation habitat sediment trapping groundwater discharge nutrient retention/removal food chain support	High	PEM1A PF01B R4SB3	black willow red maple arrowwood spicebush common cattail halberd-leaved tearthumb New York ironweed seedbox tickseed sunflower goldenrod sensitive fern foxtail grass umbrella sedge	<i>Salix nigra</i> <i>Acer rubrum</i> <i>Viburnum dentatum</i> <i>Lindera benzoin</i> <i>Typha latifolia</i> <i>Polygonum arifolium</i> <i>Vernonia noveboracensis</i> <i>Ludwigia alternifolia</i> <i>Bidens coronata</i> <i>Solidago sp.</i> <i>Onoclea sensibilis</i> <i>Setaria glauca</i> <i>Cyperus strigosus</i>	Yes	Yes

TABLE III-11
WETLAND SUMMARY
(continued)

NO.	LOCATION	DESCR.	FUNCTIONS	QUAL.	COWARDIN CLASS.	OBSERVED VEGETATION		IMPACTED BY:	
						COMMON NAME	SCIENTIFIC NAME	CD A	FSA
F	Vicinity of Shiloh Road	Unnamed tributary of Indian Run and portions of its floodplain	passive recreation sediment trapping groundwater discharge nutrient retention	Medium	PEM1B R4SB3	red maple peppermint pokeweed seedbox tickseed sunflower brambles multiflora rose umbrella sedge	<i>Acer rubrum</i> <i>Mentha piperita</i> <i>Phytolacca americana</i> <i>Ludwigia alternifolia</i> <i>Bidens coronata</i> <i>Rubus sp.</i> <i>Rosa multiflora</i> <i>Cyperus strigosus</i>	Yes	Yes
G	North of Shiloh Road	Indian Run and portions of its floodplain between the farm pond and pumping station	passive recreation habitat groundwater discharge nutrient retention/removal food chain support flood desynchronization	High	PFO1A R2UB1	musclewood red maple tulip-poplar arrowwood cinnamon fern	<i>Carpinus caroliniana</i> <i>Acer rubrum</i> <i>Liriodendron tulipifera</i> <i>Viburnum dentatum</i> <i>Osmunda cinnamomea</i>	Yes	Yes
6	Approximately 2,200 feet north of MD 482 and 2,500 feet west of MD 30	Two parallel streams (unnamed tributaries to East Branch Patapsco River) merging upstream of the CDA and FSA, their associated flood-plains, and springs	passive recreation habitat groundwater discharge nutrient retention/removal food chain support flood desynchronization	High	PFO1B R4SB3	red maple black gum tulip poplar spice bush arrowwood jack-in-the-pulpit jewelweed poison ivy sensitive fern skunk cabbage sedges arrowhead New York Fern	<i>Acer rubrum</i> <i>Nyssa sylvatica</i> <i>Liriodendron tulipifera</i> <i>Lindera benzoin</i> <i>Viburnum dentatum</i> <i>Arisaema triphyllum</i> <i>Impatiens capensis</i> <i>Toxicodendron radicans</i> <i>Onoclea sensibilis</i> <i>Symplocarpus foetidus</i> <i>Carex spp.</i> <i>Sagittaria latifolia</i> <i>Thelypteris noveboracensis</i>	Yes	Yes
6A	Approximately 1,200 feet north of MD 482 and 1,700 feet west of MD 30	Topographic depression area and headwaters of tributary to East Branch Patapsco River; high water table and spring	Not assessed	Low	PEM1B	jewelweed poison ivy sensitive fern skunk cabbage sedges arrowhead marsh fern	<i>Impatiens capensis</i> <i>Toxicodendron radicans</i> <i>Onoclea sensibilis</i> <i>Symplocarpus foetidus</i> <i>Carex sp.</i> <i>Sagittaria latifolia</i> <i>Thelypteris palustris</i>	No	No

TABLE III-11
WETLAND SUMMARY
(continued)

NO.	LOCATION	DESCR.	FUNCTIONS	QUAL.	COWARDIN CLASS.	OBSERVED VEGETATION		IMPACTED BY:	
						COMMON NAME	SCIENTIFIC NAME	CD A	FSA
6A1	Approximately 1,200 feet north of MD 482 and 2,100 feet west of MD 30	Topographic depression within an abandoned oxbow of a tributary to East Branch Patapsco River; high water table and seeps	Not assessed	Low	PFO1B	red maple spicebush southern-arrowwood fox sedge skunk cabbage multiflora rose fowl manna grass	<i>Acer rubrum</i> <i>Lindera benzoin</i> <i>Viburnum dentatum</i> <i>Carex crinita</i> <i>Symolocarpus foetidus</i> <i>Rosa multiflora</i> <i>Glyceria striata</i>	Yes	No
5	Approximately 3,000 feet north of MD 482 and 2,300 feet west of MD 30	Low-lying forested area and its associated springs and streams	passive recreation habitat groundwater discharge nutrient retention/removal food chain support sediment trapping	High	PFO1B R4SB3	arrowhead royal fern golden rods poison ivy black cherry red maple tulip poplar eastern cottonwood green ash multiflora rose arrowwood spicebush elderberry musclewood highbush blueberry jewelweed sensitive fern soft rush sedges boneset skunk cabbage	<i>Sagittaria latifolia</i> <i>Osmunda regalis</i> <i>Solidago sp.</i> <i>Toxicodendron radicans</i> <i>Prunus serotina</i> <i>Acer rubrum</i> <i>Liriodendron tulipifera</i> <i>Populus deltoides</i> <i>Fraxinus pennsylvanica</i> <i>Rosa multiflora</i> <i>Viburnum dentatum</i> <i>Lindera benzoin</i> <i>Sambucus canadensis</i> <i>Carpinus caroliniana</i> <i>Vaccinium corymbosum</i> <i>Impatiens capensis</i> <i>Onoclea sensibilis</i> <i>Juncus effusus</i> <i>Carex sp.</i> <i>Eupatorium perfoliatum</i> <i>Symplocarpus foetidus</i>	Yes	Yes
5B	Approximately 3,900 feet north of MD 482 and 1,300 feet west of MD 30	Low lying area with high water table and springs	Not assessed	Low	PEM1B	red canary grass spearmint jewelweed golden rod	<i>Phalaris arundinacea</i> <i>Martha spicata</i> <i>Impatiens capensis</i> <i>Solidago sp.</i>	No	No

TABLE III-11
WETLAND SUMMARY
(continued)

NO.	LOCATION	DESCR.	FUNCTIONS	QUAL.	COWARDIN CLASS.	OBSERVED VEGETATION		IMPACTED BY:	
						COMMON NAME	SCIENTIFIC NAME	CD A	FSA
4	West of Zakira Court and Sterling Court	Stream in agricultural field with forested flood-plain on the east	passive recreation habitat sediment trapping groundwater discharge nutrient retention/removal food chain support flood desynchronization	Low	PFO1A PSS1B PEM1B R2UB3	black willow silver maple pin oak elderberry common buttonbush common alder spice bush spotted joe-pye-weed sensitive fern skunk cabbage common cattail swamp milkweed softrush red osier dogwood seedbox	<i>Salix nigra</i> <i>Acer saccharinum</i> <i>Quercus palustris</i> <i>Sambucus canadensis</i> <i>Cephalanthus occidentalis</i> <i>Alnus serrulata</i> <i>Lindera benzoin</i> <i>Eupatorium maculatum</i> <i>Onoclea sensibilis</i> <i>Symplocarpus foetidus</i> <i>Typha latifolia</i> <i>Asclepias incarnata</i> <i>Juncus effusus</i> <i>Cornus stolonifera</i> <i>Ludwigia alternifolia</i>	Yes	Yes
3	Northeast side of Ralph Dell Road west of Wal-Mart	Topographic depression associated with a stormwater management pond	sediment trapping flood desynchronization	Low	PEM1B	elderberry sensitive fern soft rush jewelweed	<i>Sambucus canadensis</i> <i>Onoclea sensibilis</i> <i>Juncus effusus</i> <i>Impatiens capensis</i>	No	No
2	Approximately 1,100 feet north of Brodbeck Road and 800 feet west of MD 30	Swale with spring at the upper end within a wooded area surrounded by cropland	passive recreation groundwater discharge	Low	R4SB5	red maple black walnut black cherry arrowwood multiflora rose wild raspberry elderberry poison ivy Virginia creeper pokeweed	<i>Acer rubrum</i> <i>Juglans nigra</i> <i>Prunus serotina</i> <i>Viburnum dentatum</i> <i>Rosa multiflora</i> <i>Rubus sp.</i> <i>Sambucus canadensis</i> <i>Toxicodendron radicans</i> <i>Campsis radicans</i> <i>Phytolacca Americana</i>	No	Yes

TABLE III-11
WETLAND SUMMARY
(continued)

NO.	LOCATION	DESCR.	FUNCTIONS	QUAL.	COWARDIN CLASS.	OBSERVED VEGETATION		IMPACTED BY:	
						COMMON NAME	SCIENTIFIC NAME	CD A	FSA
1	Vicinity of MD 30/Cape Horn Road intersection	Farm swale with a low area next to Cape Horn Road and its associated drainage way	habitat groundwater discharge food chain support	High	PEM1B R2UB3	soft rush sensitive fern Virginia creeper poison ivy black willow black locust tree of heaven black cherry staghorn sumac multiflora rose Japanese honeysuckle	<i>Juncus effusus</i> <i>Onoclea sensibilis</i> <i>Campsis radicans</i> <i>Toxicodendron radicans</i> <i>Salix nigra</i> <i>Robinia pseudoacacia</i> <i>Ailanthus altissima</i> <i>Prunus serotina</i> <i>Rhus typhina</i> <i>Rosa multiflora</i> <i>Lonicera japonica</i>	No	Yes

d. Aquatic Fauna

The Maryland Biological Stream Survey (MBSS) has compiled data concerning the overall health of most watersheds in Maryland. Of the area streams, only Aspen Run, Deep Run and East Branch of the Patapsco River were sampled by the MBSS. Table III-12 lists the species that have been identified by Maryland Department of Natural Resources (DNR) personnel, including the results of the 1998 MBSS, as occurring within the given stream systems.

TABLE III-12
FISH SPECIES REPORTED IN HAMPSTEAD AREA STREAMS

STREAM	COMMON NAME	SPECIES
Aspen Run	blacknose dace bluntnose minnow central stoneroller creek chub green sunfish mottled sculpin rosyside dace white sucker	<i>Rhinichthys atratulus</i> <i>Pimephales notatus</i> <i>Campostoma anomalum</i> <i>Semotilus atromaculatus</i> <i>Lepomis cyanellus</i> <i>Cottus bairdi</i> <i>Clinostomus funduloides</i> <i>Catostomus commersoni</i>
Deep Run	American eel blacknose dace* bluegill* bluntnose minnow central stoneroller common shiner* creek chub* cutlips minnow eastern mudminnow fallfish green sunfish largemouth bass longnose dace* mottled sculpin* northern hogsucker pumpkinseed redbreast sunfish rock bass rosyside dace*	<i>Anguilla rostrata</i> <i>Rhinichthys atratulus</i> <i>Lepomis macrochirus</i> <i>Pimephales notatus</i> <i>Campostoma anomalum</i> <i>Notropis cornutus</i> <i>Semotilus atromaculatus</i> <i>Exoglossum maxillingua</i> <i>Umbra pygmaea</i> <i>Semotilus corporalis</i> <i>Lepomis cyanellus</i> <i>Micropterus salmoides</i> <i>Rhinichthys cataractae</i> <i>Cottus bairdi</i> <i>Hypentelium nigricans</i> <i>Lepomis gibbosus</i> <i>Lepomis auritus</i> <i>Ambloplites rupestris</i> <i>Clinostomus funduloides</i>

TABLE III-12
FISH SPECIES REPORTED IN HAMPSTEAD AREA STREAMS
 (continued)

STREAM	COMMON NAME	SPECIES
Deep Run (continued)	satinfin shiner swallowtail shiner tessellated darter white sucker* yellow bullhead	<i>Notropis analostanus</i> <i>Notropis procne</i> <i>Etheostoma olmstedii</i> <i>Catostomus commersoni</i> <i>Ictalurus natalis</i>
East Branch of the Patapsco River	blacknose dace* bluegill bluntnose minnow brown trout central stoneroller common shiner creek chub* cutlips minnow fallfish largemouth bass longnose dace* mottled sculpin* northern hogsucker pumpkinseed river chub rosyface shiner rosyside dace* tessellated darter white sucker	<i>Rhinichthys atratulus</i> <i>Lepomis macrochirus</i> <i>Pimephales notatus</i> <i>Salmo trutta</i> <i>Campostoma anomalum</i> <i>Notropis cornutus</i> <i>Semotilus atromaculatus</i> <i>Exoglossum maxillingua</i> <i>Semotilus corporalis</i> <i>Micropterus salmoides</i> <i>Rhinichthys cataractae</i> <i>Cottus bairdi</i> <i>Hypentelium nigricans</i> <i>Lepomis gibbosus</i> <i>Noomis micropogon</i> <i>Notropis rubellus</i> <i>Clinostomus funduloides</i> <i>Etheostoma olmstedii</i> <i>Catostomus commersoni</i>

*Fishes found during the current Hampstead Bypass stream studies, either in the stream or its tributaries.

These species are common in streams throughout the region, including more degraded surface water bodies near highly urbanized areas. Only the brown trout, largemouth bass, and bluegill are species that are considered of recreational importance.

The sections of Aspen Run, Indian Run, and East Branch flowing through the study area are heavily grazed and show little potential for holding trout.

3. Floodplains

The potential for 100-year floodplains has been evaluated using the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) and in accordance with the requirements of Executive Order No. 11988. The FIRM shows 100-year floodplains along Deep Run, East Branch, Indian Run, Murphy Run and Georges Run (see Figure III-12).

4. Terrestrial Resources

a. Plant Communities

Due to agricultural activities and other development, less than fifteen percent of Carroll County retains its natural vegetation. Forested areas generally occur along stream valleys, areas where soils are poor, or on slopes that limit agricultural use and development. Detailed plant community studies have not been conducted; however, there are five general vegetative habitats or plant communities that exist within the study area. These habitats are:

Suburban - manicured lawns and ornamental plantings. The small natural areas that occur are often pruned and altered for aesthetic or recreational purposes.

Agricultural - composed of active farm lands and plantation style forest plantings. The more traditional farm lands include grain and hay fields. Forested agricultural land includes white and Virginia pine (*Pinus stroba* and *P. virginianus*) stands.

Old Field - fallow land that has a large proportion of shrubs, a few trees (0 - 10% area coverage), and a large herbaceous layer. The common trees are yellow poplar (*Liriodendron tulipifera*), red maple, Virginia pine, big-toothed aspen (*Populus grandidentata*), eastern cedar (*Juniperus virginiana*), and black locust. The most common shrubs are multiflora rose, brambles (*Rubus spp.*), arrowwood, and browsed/stunted trees. The herbaceous layer is comprised of grasses, sedges, goldenrods, and various other species.

Scrub/Shrub - transitional community between old field and a pioneer forest, and is characterized by greater tree coverage (10 - 40%) and less herbaceous coverage than old field-meadow. The tree species are older but are similar to those listed for old field. The shrub and herbaceous layers continue to resemble the species of the old field type.

Forest - natural vegetation in these wooded areas is generally chestnut oak association. Species in this group include chestnut oak, northern red oak, white oak, black oak, red maple, black cherry, black gum, and sassafras. Understory species include flowering dogwood (*Cornus florida*), serviceberry (*Amelanchier sp.*), mountain laurel (*Kalmia latifolia*), and blueberry (*Vaccinium spp.*). The most common herbaceous species range from mesic species such as may apple (*Podophyllum peltatum*), spring beauty (*Claytonia virginica*), and ferns to more xeric adapted species like spotted wintergreen (*Chimiphila maculata*), partridge berry (*Mitchella repens*), and Indian pipe (*Monotropis uniflora*).

b. Specimen Trees

Specimen or large trees are reported because they are important factors in regenerating forest stands. They provide viable seed sources for pioneer forest stands, they provide shaded mesic growing conditions under their canopies, and where plentiful, they are an indication of age, health, and equilibrium of a given forest stand. Specimen trees within and near the proposed right of way of the CDA were identified and located using a global positioning system. Specimen trees for this study were defined as any tree over 24" Diameter at Breast Height (dbh) or any tree within 75% dbh of the state champion for that species. A total of 303 specimen trees, representing 17 species, were identified and mapped. The largest specimen tree is a 63.4" black oak, located north of MD 482. This tree has a slightly larger diameter than the current State champion and appears to be in good condition. This is a potential state or county champion tree, and DNR and the property owner have been so notified. Locations of specimen trees are shown on Figure IV-4A through IV-4G. The numbers of specimen trees identified are summarized in Table III-13.

TABLE III-13

SUMMARY OF SPECIMEN TREES WITHIN OR NEAR CDA RIGHT-OF-WAY

COMMON NAME	SPECIES	NUMBER OF SPECIMEN TREES	LARGEST FOUND (dbh - inches)	STATE CHAMPION (dbh - inches)
white oak	<i>Quercus alba</i>	50	47.3	121.6
red oak	<i>Quercus rubra</i>	80	48.7	85.9
tulip poplar	<i>Liriodendron tulipifera</i>	57	38.1	109.5
chestnut oak	<i>Quercus prinus</i>	38	61.2	79.3
red maple	<i>Acer rubrum</i>	35	52.6	68.8
hickory	<i>Carya glabra</i>	11	30.0	43.9
black gum	<i>Nyssa sylvatica</i>	4	34.4	57.0
scarlet oak	<i>Quercus coccinea</i>	4	43.5	57.9
pin cherry	<i>Prunus pennsylvanica</i>	3	25.8	--
pin oak	<i>Quercus palustris</i>	3	26.5	63.0
black cherry	<i>Prunus serotina</i>	4	31.7	85.9
green ash	<i>Fraxinus pennsylvanica</i>	2	25.1	61.4
white ash	<i>Fraxinus americana</i>	1	24.8	75.1
swamp white oak	<i>Quercus bicolor</i>	2	25.6	72.6
black oak	<i>Quercus velutina</i>	3	63.4	62.4
mulberry	<i>Morus rubra</i>	1	18.8	50.3
sassafras	<i>Sassafras albidum</i>	1	24.5	50.3
slippery elm	<i>Ulmus rubra</i>	1	24.0	38.2
sycamore	<i>Platanus occidentalis</i>	3	46.2	100.3

c. Terrestrial Fauna

Habitats within the study corridors support a variety of wildlife, which utilize these habitats for feeding, cover, and travel ways.

Some wildlife species that use all of the habitat types available are eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), and white-tail deer (*Odocoileus virginianus*).

The old field and scrub/shrub types of habitat typically support populations of woodchuck (*Marmota monmax*), eastern cottontail, meadow vole (*Microtus pennsylvanicus*), and the meadow jumping mouse (*Zapus hudsonius*). These species also occur, but at reduced densities, in areas that are primarily agricultural. Upland forested habitats typically support gray squirrel (*Sciurus carolinensis*), white-footed mouse (*Peromyscus leucopus*), gray fox (*Urocyon cinereoargenteus*), and eastern chipmunk (*Tamias striatus*). In addition, the house mouse (*Mus Musculus*) and Norway rat (*Rattus norvegicus*) can be found in suburban areas, relying on human activity for their existence and survival.

5. Rare, Threatened and Endangered Species

The U.S. Fish and Wildlife Service (FWS) and Maryland Department of Natural Resources (DNR) were consulted to identify any rare, threatened or endangered species that may occur in the study area. The only state or federally listed rare, threatened or endangered plant or animal species known to occur in the study area is the bog turtle (*Clemmys muhlenbergii*; See letters from DNR and FWS in the Correspondence Section.)

In 1997, the bog turtle (*Clemmys muhlenbergii*) was listed as a federally threatened species in accordance with the Endangered Species Act of 1973, and the wetlands in which they occur are now considered wetlands of special state concern by MDE. The bog turtle was listed due to declining numbers caused by habitat loss, fragmentation from urban development, habitat succession, and illegal trade and collection. The bog turtle is known to occur in wetlands within and adjacent to the study area.

The overall bog turtle population in and adjacent to the project area is referred to as a metapopulation because it is comprised of a number of small populations that are connected by travel corridors. The travel corridors are important in allowing the physically separated populations the ability to cross breed, thus reducing the likelihood of inbreeding and protecting genetic diversity.

Currently, wetlands that support bog turtles are palustrine emergent or early scrub/shrub in nature. They have a mud or muck substrate that allows the turtles to burrow under the frost line for winter hibernation. Springs and seeps where the water temperature varies little throughout the course of the year usually provide hydrology to bog turtle wetlands. These types of wetlands have historically been maintained by the actions of grazing livestock. Prior to European colonization, bog turtle habitat was created and maintained by the actions of fire, beaver (*Castor canadensis*), and other large herbivores.

The SHA has conducted a bog turtle biological assessment consistent with Section 7 of the Endangered Species Act of 1973. The biological assessment addresses their populations, habitat status, and hydrologic requirements. This biological assessment also addresses direct and secondary impacts resulting from construction of the Hampstead Bypass within the bog turtle study area. Mitigation of any impacts due to this project is also discussed (See Section V-C5).

6. Hazardous Materials/Waste Sites

An Initial Site Assessment (ISA) was made of the project area in June 2000, to identify any hazardous substance or petroleum product under conditions that indicate an existing release, past release or a material threat of a release. This ISA consisted of site reconnaissance and review of the following reports that have been conducted in recent years to identify hazardous material/waste sites in the project area:

- *MD Route 30 Hampstead Bypass*, Tidewater Environmental Engineering, Inc., July 1998.
- *Phase II Site Assessment, MD Route 30 Bypass*, Engineering Technologies Associates, Inc., October 1995.
- *Final Screening Site Inspection, Lang's Junkyard*, Halliburton NUS, July 1992.

In addition, the U.S. Environmental Protection Agency's (EPA) EnvironMapper Service was used to identify known hazardous materials/waste sites in the project area.

Potential hazardous material/waste sites identified by the ISA along or near the CDA or FSA are listed in Table III-14 and shown on Figure III-14. In addition to these sites, five promiscuous dumps (rubble or trash) near the CDA or FSA were identified, and are shown on Figure III-14.

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**TABLE III-14
POTENTIAL HAZARDOUS MATERIALS/WASTE SITES**

FIG. III-11 I.D. NO.	FACILITY NAME	LOCATION	POTENTIAL CONTAMINANT	OBSERVATIONS/ COMMENTS	RISK
1	Machine Shop	East side of MD 30 200'± south of Wolf Hill Drive	Oil & Solvents	No visual indications of any surface release or spill	Low
2	Residence	Wolf Hill Drive	Solvents & Pesticides	No visual indications of any surface release or spill	Low
3	Kitchen Center	East side of MD 30 opposite Wolf Hill Drive	Unknown	No visual indications of any surface release or spill	Low
4	Mini-Market	East side of MD 30 200' north of Wolf Hill Drive	Oil & PCBs	No visual indications of any surface release or spill	Low
5	Former Lang's Junkyard	West side of MD 30 1,200'± north of Wolf Hill Drive	Heavy Metals	No USTs or any other indications of any suspect activity	Low
6	Shed @ Residence	West side of MD 30 1,000'± north of Wolf Hill Drive	Oil & Pesticides	No visual indications of any surface release or spill	Low
7	World Fastener Corporation	West side of MD 30 1,500'± north of Wolf Hill Drive	Solvents & Heavy Metals	No visual indications of any surface release or spill	Medium
8	Lang's Junkyard	East side of MD 30 1,500'± north of Wolf Hill Drive	PCBs	No visual indications of any surface release or spill	Medium
9	Auto Repair Shop	West side of MD 30 1,900'± north of Wolf Hill Drive	Oil & Solvents	Some oil stains on pavement; no other indications of release	Medium
10	Former Black & Decker Co. Plant	West side of MD 30, 1,300'± north of Trenton Mill Road	TCE & PCE	No visual indications of any surface release or spill	Medium High
11	Residence	Houcksville Road	Solvents & Pesticides	No visual indications of any surface release or spill	Low
12	Residence	MD 482	Solvents & Pesticides	No visual indications of any surface release or spill	Low
13	Shed @ Residence	West side of MD 30 2,400'± south of Zakira Court	Oil, Solvents & Pesticides	No visual indications of any surface release or spill	Low
14	Brodbeck's Garage	Southwest quadrant of MD 30/Brodbeck Road intersection	Oil, PCBs & Lead	Minor soil staining	Medium High
15	North Carroll Shopping Plaza	West side of MD 30 1,000'± north of Brodbeck Road	TCE	Former Superfund site. Remedial action completed.	Medium
16	Sludge Disposal Area	West side of MD 30, 200' to 2,800'± north of Brodbeck Road	Metals	No visual indications of any soil staining or impacts	Medium

PCBs - poly chlorinated biphenyls
PCE - tetrachloroethene

TCE - trichloroethene
USTs - underground storage tanks

NOTE: This table shows only the potential hazardous materials/waste sites near the CDA and/or FSA. A more comprehensive list of sites is included in the *Hampstead Bypass Maryland 30 Relocated Initial Site Assessment*.

D. Existing Noise Conditions

The Federal Highway Administration (FHWA) has established procedures and criteria to determine and evaluate impacts associated with vehicular use of roadways. The primary problems associated with highway noise are activity interference and general annoyances. Therefore, it is the goal of abatement programs to minimize these impacts to exterior land uses.

The decibel is the basic unit of sound measurement. Decibels (dBAs) are units that represent relative acoustic energy intensities. Because the range of hearing is so wide, the numbers necessary to define these levels must represent huge variations in energy. To compensate for this wide range of numbers, a base 10 logarithmic scale is used to make the numbers more "normal".

Traffic noise is the sound generated by automobiles and trucks on streets and highways. The sound generated is composed of tire, engine, and exhaust noise. People respond differently to energy in varying acoustic frequency ranges. Sounds heard in the environment usually consist of a range of frequencies, each at a different level. The method of correlating human response to equivalent sound pressure levels at different frequencies is called "weighting". The weighting system used to correlate human hearing to frequency response is the "A-weighting scale" and the resultant sound pressure is called the "A-weighted sound pressure level". This is generally used in assessing community noise exposure because this scale closely approximates the frequency response of the human ear. In order to give a sense of perspective to the noise levels discussed, a quiet rural night would register about 40 dBA, a quiet suburban night about 60 dBA, a noisy day about 80 dBA, a gas lawnmower at 100 feet about 70 dBA, and a diesel truck at 50 feet about 85 dBA. Under typical field conditions, noise changes of 2 to 3 dBA are barely perceptible, while a change of 5 dBA is readily noticeable. A 10-dBA increase in noise level is judged by most people as a doubling of sound loudness.

The A-weighted equivalent sound level (L_{eq}) is the descriptor used most frequently in highway noise analyses. The L_{eq} is the equivalent steady state sound level which represents the mean energy or sound intensity level for a given time period.

Noise abatement criteria for various land uses have been established by the Federal Highway Administration (FHWA) in *23 CFR, Part 772*. The noise abatement criterion for land uses occurring in this project study area, (Category B), is 67 dBA L_{eq} . Future year (2020) noise levels for the project area were predicted using the Federal Highway Administration Traffic Noise Prediction Model.

According to the procedures described in *23 CFR, Part 772, Table I*, noise impacts occur when predicted traffic noise levels for the design year approach or exceed the noise abatement criterion prescribed for a particular land use category, or when the predicted noise levels are

substantially higher than the existing ambient noise levels. The SHA and FHWA define approach as 66 dBA and use a 10-dBA increase to define a substantial increase. This analysis was completed in accordance with federal procedures and evaluated in accordance with SHA's *Sound Barrier Policy*.

Field measurements were performed in accordance with the procedures outlined in the Federal Highway Administration document *Measurement of Highway-Related Noise (FHWA-PD-96-046)* using ANSI Type 2 integrating sound level meters (Metrosonics Model db-3100) in June 2000. In accordance with a FHWA memorandum dated April 23, 1986, "When making measurements of existing noise, we recommend traffic counts also be made (autos, medium truck, heavy trucks). The existing measured and calculated noise levels at the site should be compared to verify the accuracy of the FHWA model." Therefore, where appropriate, classified traffic counts were taken at receptor sites to provide the data for this calibration.

As shown in Table III-15 and indicated on Figure III-15 and the Alternatives Mapping, there are 19 receptor sites located within 11 Noise Study Areas (NSAs) characterized by noise levels at specific locations within each NSA. The NSAs are generally residential areas, although schools are also included as receptor sites. These sites were selected to represent the existing noise environment in areas where the MD 30 alignments may create noise impacts (See Section V-D3 for a detailed explanation of approved SHA noise criteria).

The ambient noise levels shown in Table III-15, as recorded over 15-minute periods, represent a generalized view of current noise levels. Measurements were taken between 7:00 AM and 9:00 PM on weekdays to determine what a typical daytime noise level is at these sites. The monitored data were normalized for peak hour traffic and background events where appropriate.

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

A list of the NSAs along with the receptor sites and the results of the ambient noise-monitoring program are presented in Table III-15. Monitored ambient levels ranged from 46 to 75 dBA.

**TABLE III-15
EXISTING NOISE LEVELS**

NSA	SITE	ADDRESS	DESCRIPTION	AMBIENT MEASUREMENT		MONITORED L_{eq} (dBA)*
				DATE	TIME	
A	1	2514 Hanover Pike	Single Family Residence	6/28/00	9:40 AM	69
B	2	3400 Ralph Dell Road	Farmstead	6/7/00	6:40 PM	48
C	3	2119 Sterling Court	Single Family Residence	6/28/00	10:18 AM	52
C/D**	4	2116 Sterling Court	Single Family Residence	6/28/00	10:47 AM	49
D	5	2101 Brodbeck Road	Single Family Residence	6/7/00	8:50 PM	50
F	7	3616 Hampstead-Mexico Road	Single Family Residence	6/8/00	8:05 AM	56
G	8	North Carroll High School	School	6/8/00	7:04AM	52
	9	North Carroll High School	School	6/8/00	4:15 PM	49
H	10	3633 Shiloh Road	Single Family Residence	6/7/00	8:25 PM	47
I	11	Shiloh Middle School	School	6/8/00	8:40 AM	46
	12	3705 Singer Street	Single Family Residence	6/8/00	1:50 PM	48
K	14	4306 Wolf Hill Drive	Single Family Residence	6/8/00	12:28 PM	54
L	15	851 S Main Street	Residences	6/8/00	2:45 PM	75
	16	4206 Ralph Avenue		6/8/00	2:20 PM	61
M	17	1389 N Main Street	Residences	6/8/00	3:15 PM	75
	18	1408 Fairmont Road		6/8/00	3:40 PM	66
	19	1348 N Main Street		6/28/00	11:50 AM	73
	20	1334 West Street		6/28/00	12:55 PM	56
C	21	Hanover Pike	Single Family Residence	6/7/00	4:30 PM	70

* See Section III-D for an explanation of L_{eq} and dBA.

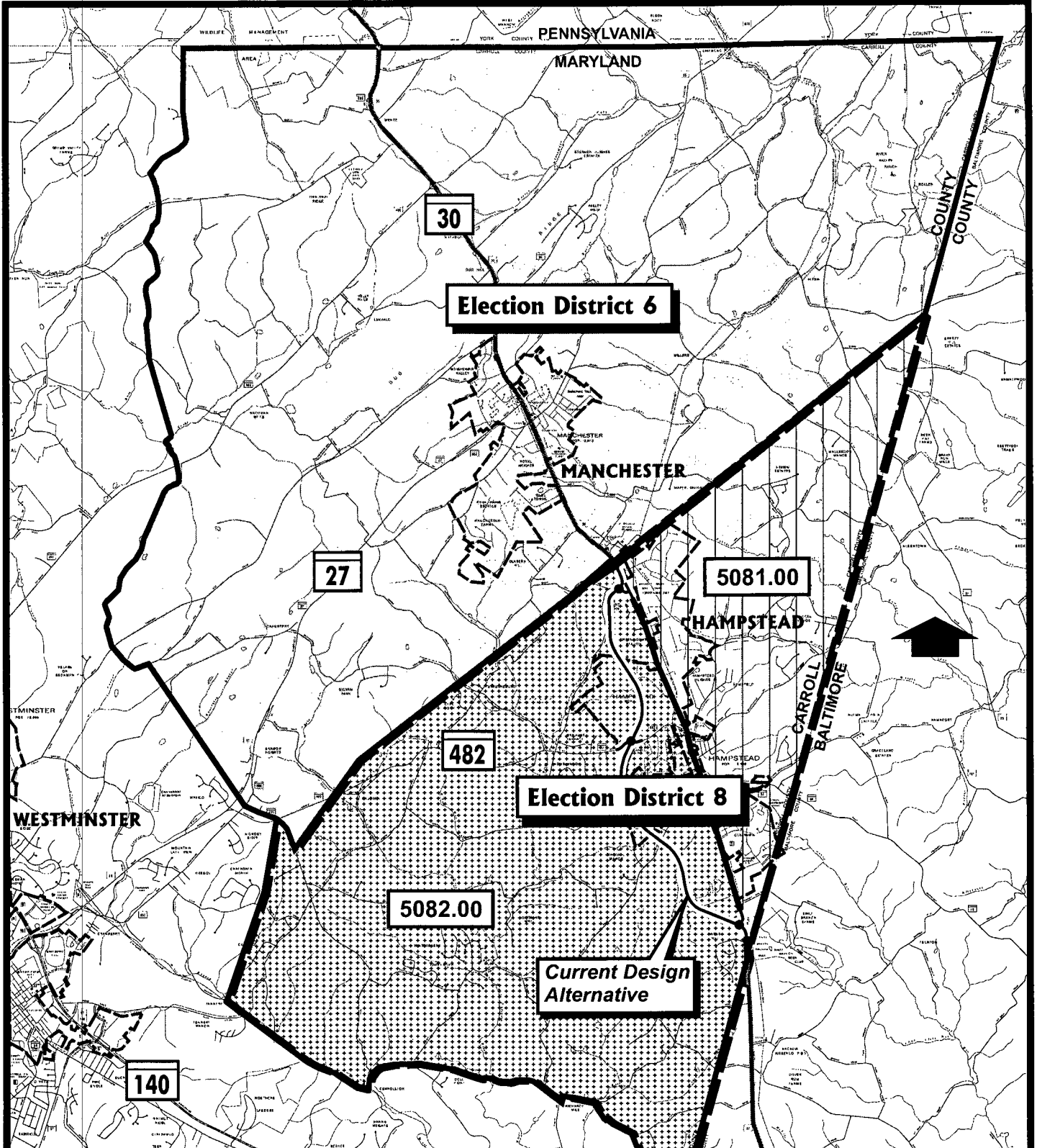
** Receptor 4 falls in NSA-C for the Current Design Alternative (CDA) and NSA-D for the FONSI Selected Alternative (FSA).

Note: Receptor 13 (NSA-J) is not included because it will be displaced by both the CDA and FSA. Receptor 6 (NSA-E) is not included because the single farmstead it represented was demolished in early 2002.

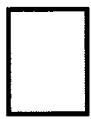
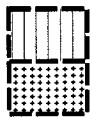


E. Existing Air Quality

The project area is located in Carroll County, Maryland. This county is not designated as nonattainment for carbon monoxide (CO) or particulate matter (PM₁₀), but is designated as a severe nonattainment area for ozone (O₃). Because the project area is designated nonattainment for ozone, the region is subject to transportation control measures such as the Vehicle Emissions Inspections Program.

A detailed microscale air quality analysis has been performed to determine the local CO impact of the proposed project. The results are summarized in Section V-E. A copy of the technical analysis report is available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.













LEGEND

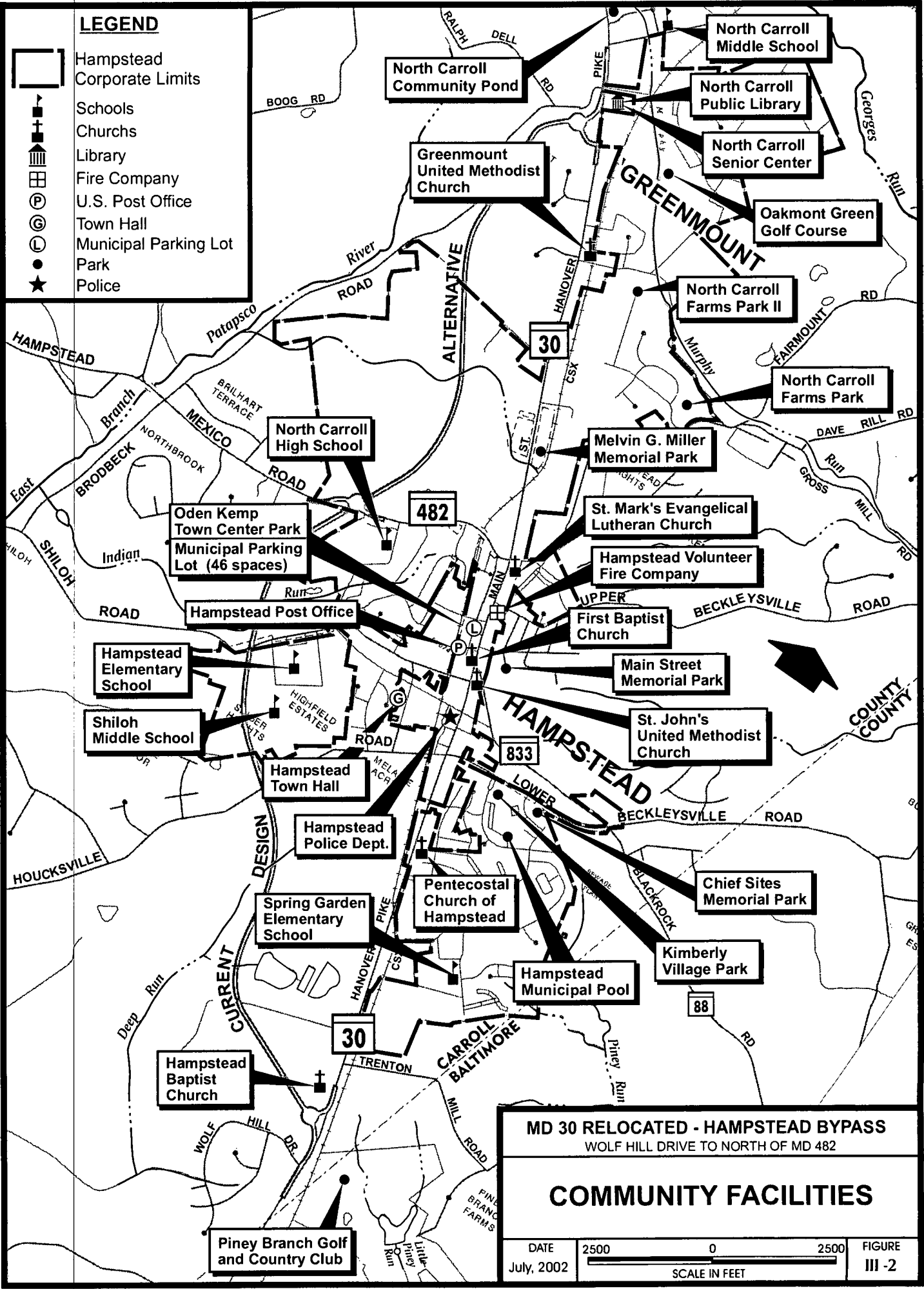
- Election District 6 
- Election District 8 
- Census Tract 5081 
- Census Tract 5082 

<p>MD 30 RELOCATED - HAMPSTEAD BYPASS WOLF HILL DRIVE TO NORTH OF MD 482</p>		
<p>ELECTION DISTRICTS AND CENSUS TRACTS</p>		
<p>DATE July, 2002</p>	<p>8000 0 8000 SCALE IN FEET</p>	<p>FIGURE III - 1</p>

COREL\HAMPSTEAD\Fig_III2ComFac.CDR

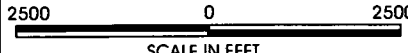
LEGEND

-  Hampstead Corporate Limits
-  Schools
-  Churches
-  Library
-  Fire Company
-  U.S. Post Office
-  Town Hall
-  Municipal Parking Lot
-  Park
-  Police

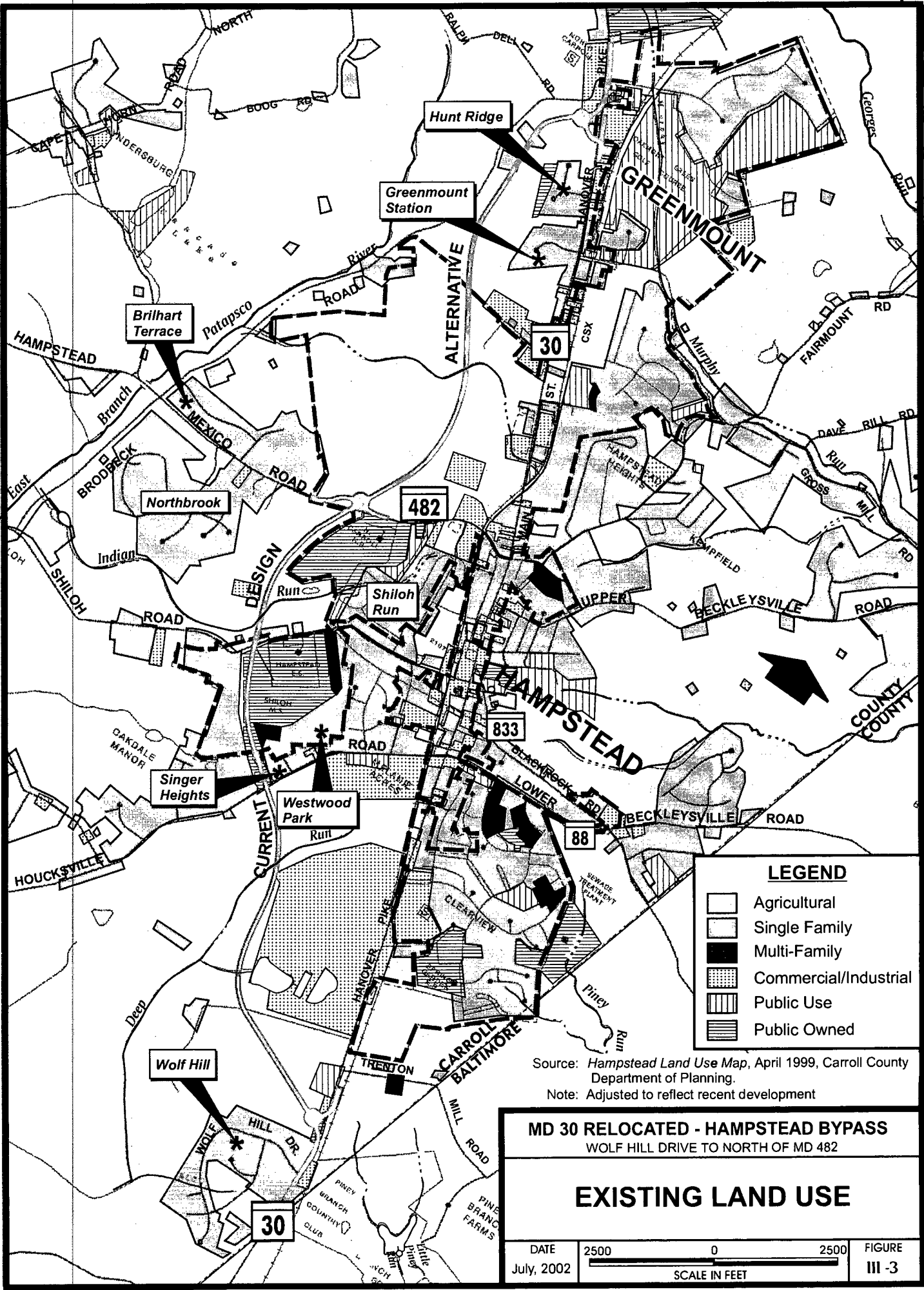


MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

COMMUNITY FACILITIES

DATE	2500	0	2500	FIGURE
July, 2002				III - 2
				SCALE IN FEET

CORELHAMPSTEAD\Fig_III3ExLnd.CDR



Source: Hampstead Land Use Map, April 1999, Carroll County Department of Planning.
 Note: Adjusted to reflect recent development




MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

EXISTING LAND USE

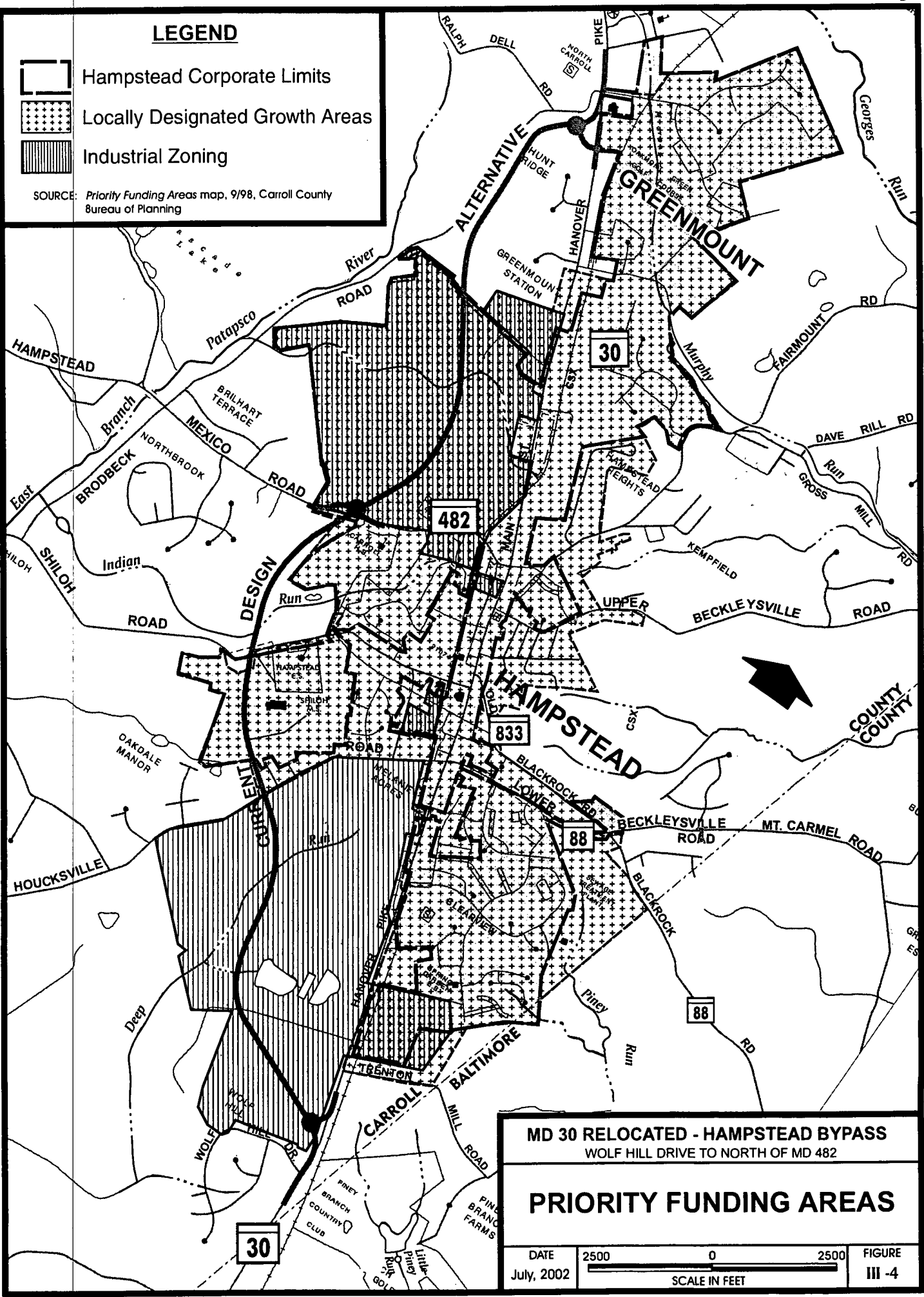
DATE	2500 0 2500	FIGURE	III - 3
July, 2002	SCALE IN FEET		

CORE\HAMPSTEAD\Fig_III4PFA.CDR

LEGEND

-  Hampstead Corporate Limits
-  Locally Designated Growth Areas
-  Industrial Zoning

SOURCE: Priority Funding Areas map, 9/98, Carroll County Bureau of Planning








MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

PRIORITY FUNDING AREAS

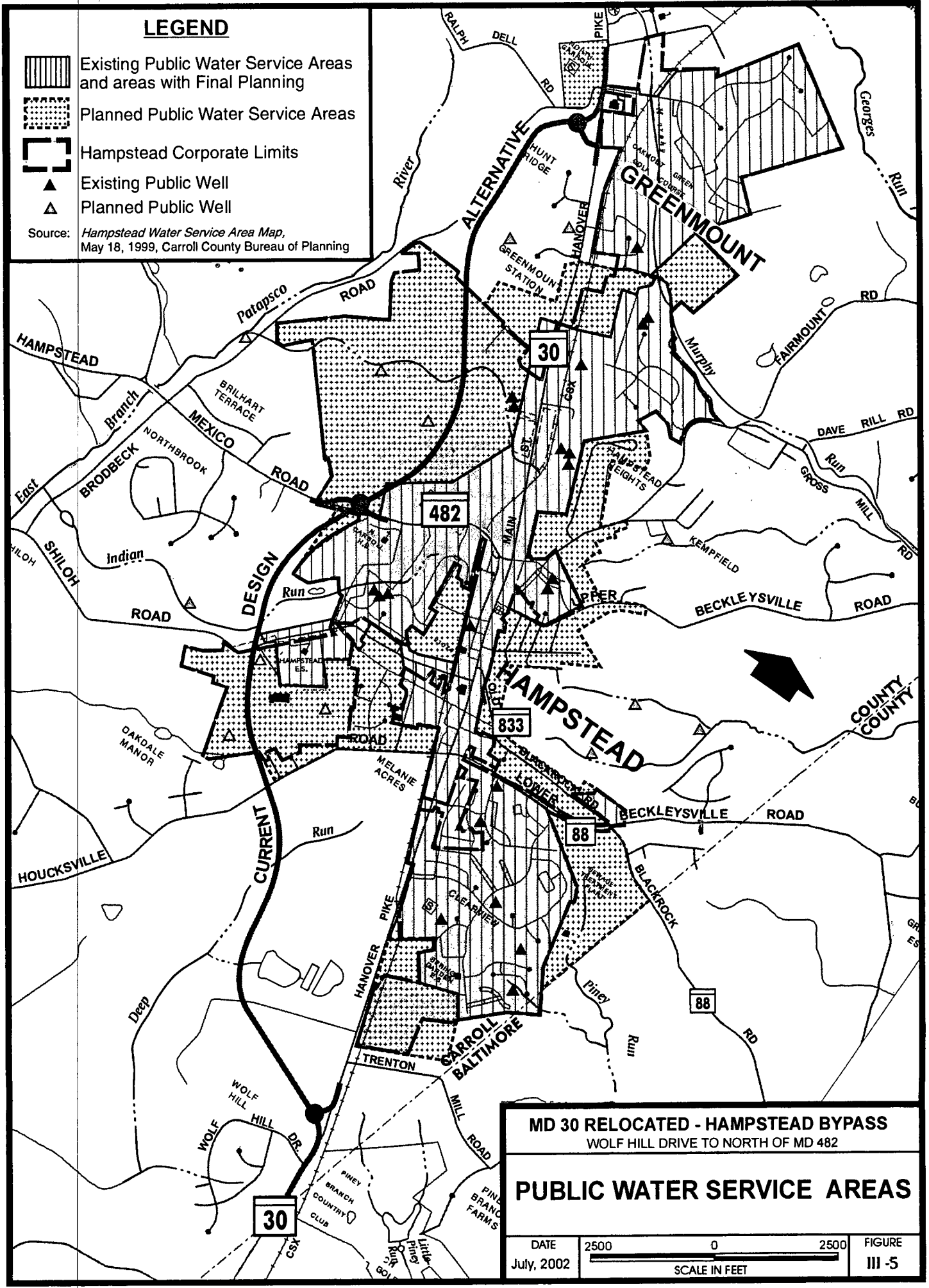
DATE	2500	0	2500	FIGURE
July, 2002	SCALE IN FEET			III -4

COREL\HAMPSTEAD\Fig_III.swt:CDR

LEGEND


-  Existing Public Water Service Areas and areas with Final Planning
-  Planned Public Water Service Areas
-  Hampstead Corporate Limits
-  Existing Public Well
-  Planned Public Well

Source: Hampstead Water Service Area Map, May 18, 1999, Carroll County Bureau of Planning






MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

PUBLIC WATER SERVICE AREAS

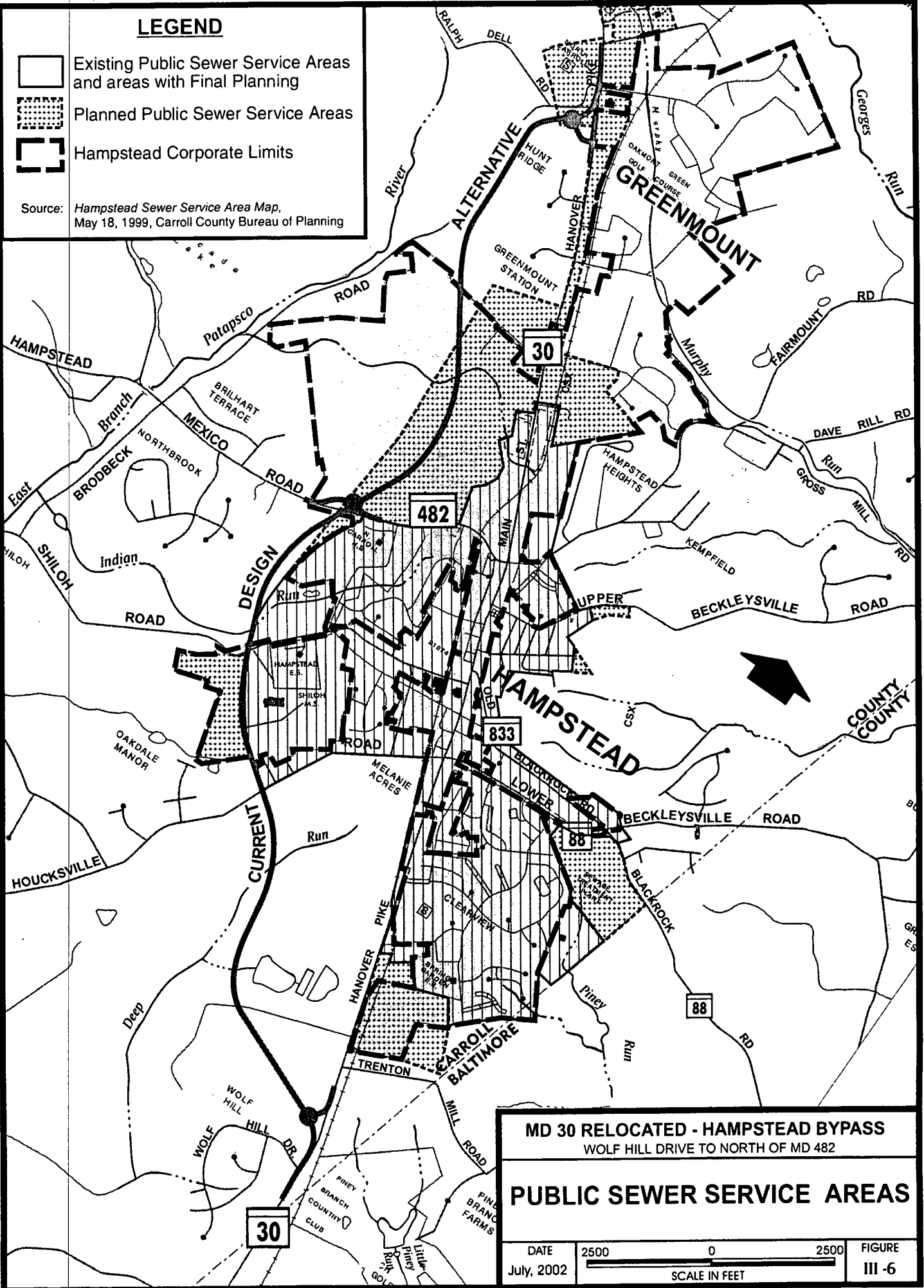
DATE	2500	0	2500	FIGURE
July, 2002				III -5
SCALE IN FEET				

COREL\HAMPSTEAD\Fig_III6swr.CDR

LEGEND

-  Existing Public Sewer Service Areas and areas with Final Planning
-  Planned Public Sewer Service Areas
-  Hampstead Corporate Limits

Source: Hampstead Sewer Service Area Map, May 18, 1999, Carroll County Bureau of Planning



MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

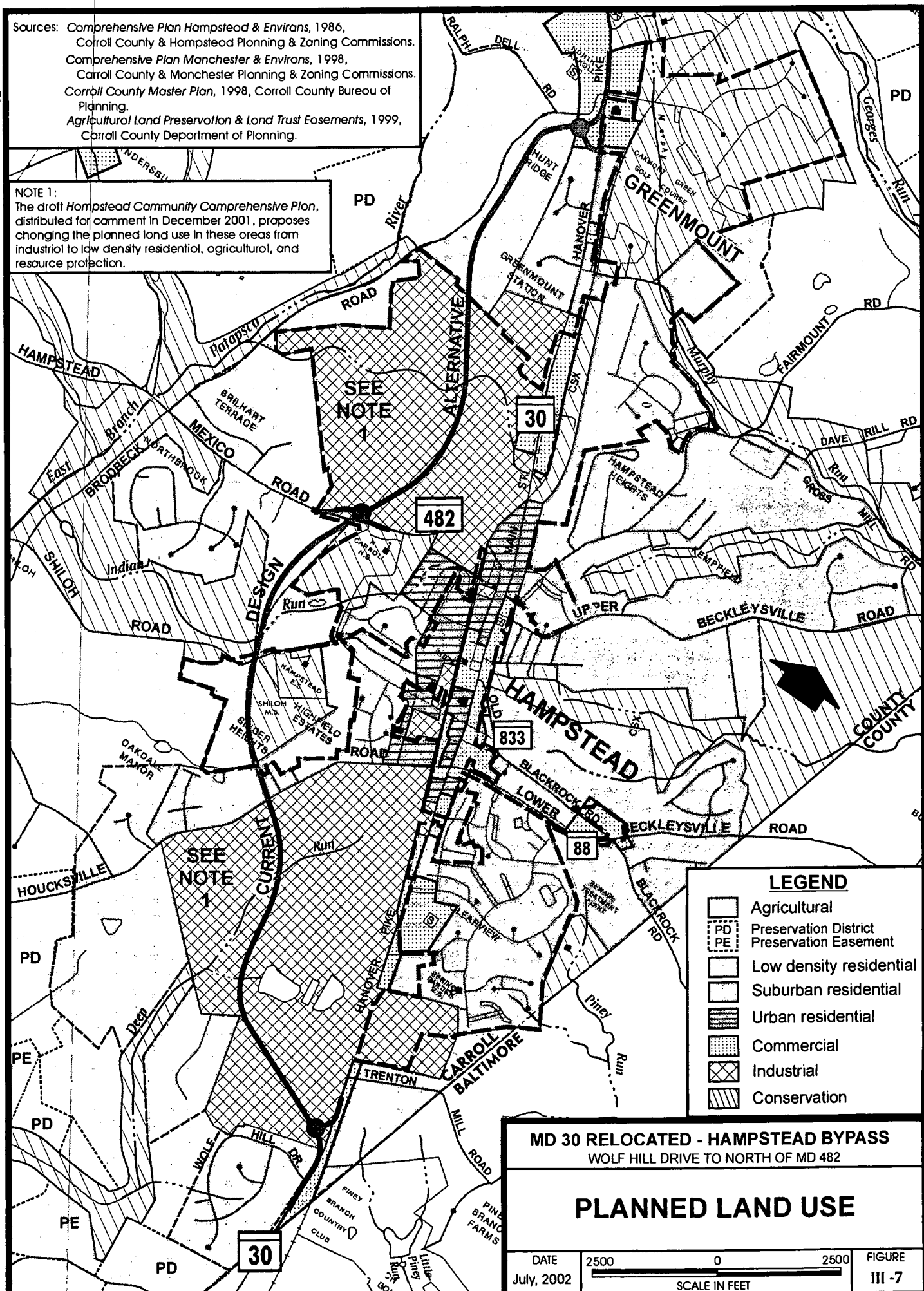
PUBLIC SEWER SERVICE AREAS

DATE	2500	0	2500	FIGURE
July, 2002	SCALE IN FEET			III - 6

COREL\HAMPSTEAD\Fig_III7PnLnd.cdr

Sources: *Comprehensive Plan Hampstead & Envirans*, 1986,
 Corroll County & Hampstead Planning & Zoning Commissions.
Comprehensive Plan Manchester & Envirans, 1998,
 Corroll County & Manchester Planning & Zoning Commissions.
Corroll County Master Plan, 1998, Corroll County Bureau of
 Planning.
Agricultural Land Preservation & Land Trust Eosements, 1999,
 Corroll County Department of Planning.

NOTE 1:
 The draft *Hampstead Community Comprehensive Plan*,
 distributed for comment in December 2001, proposes
 changing the planned land use in these areas from
 industrial to low density residential, agricultural, and
 resource protection.



LEGEND

- Agricultural
- PD Preservation District
- PE Preservation Easement
- Low density residential
- Suburban residential
- Urban residential
- Commercial
- Industrial
- Conservation

MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

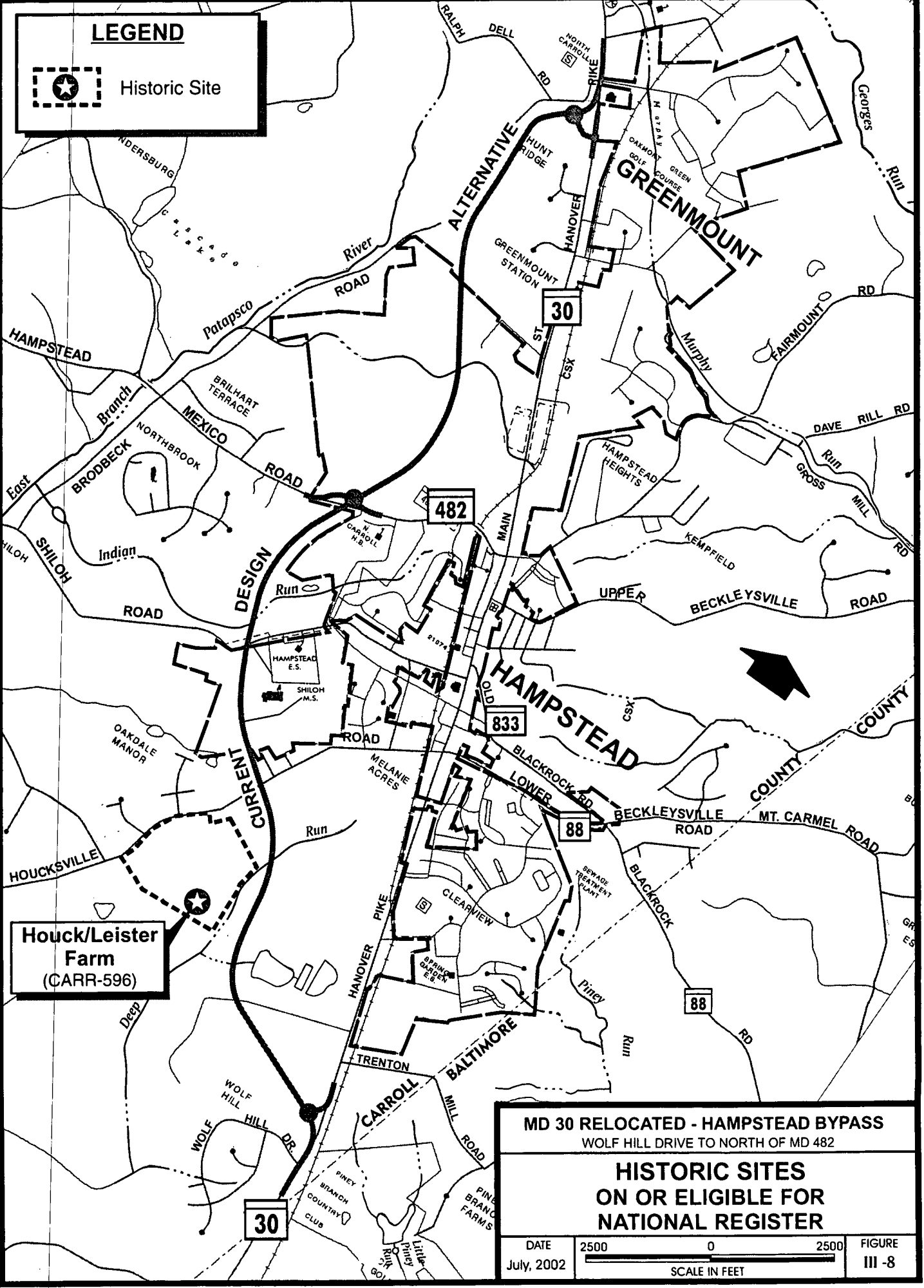
PLANNED LAND USE

DATE July, 2002 2500 0 2500 FIGURE III -7

SCALE IN FEET

LEGEND

 Historic Site



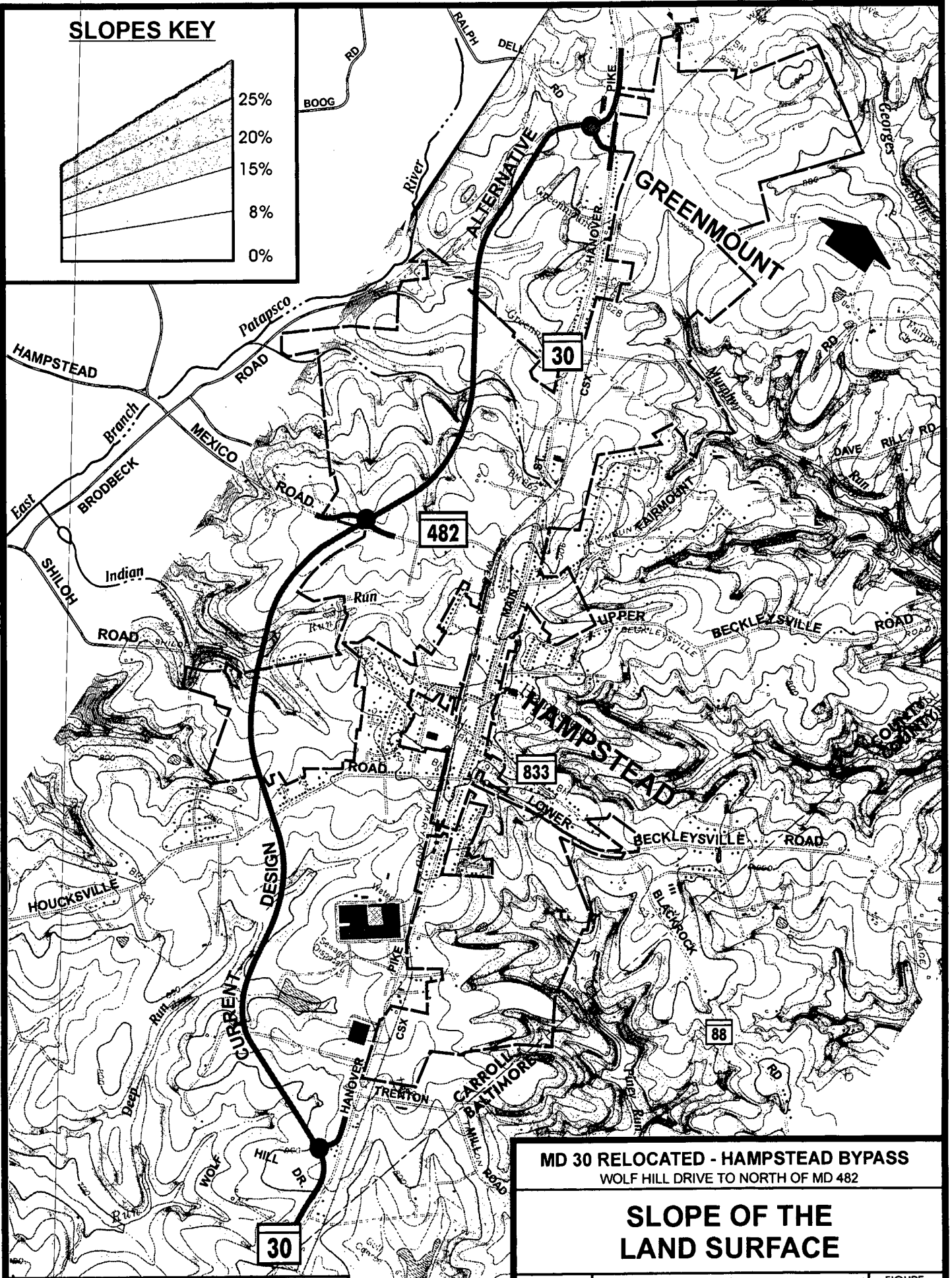
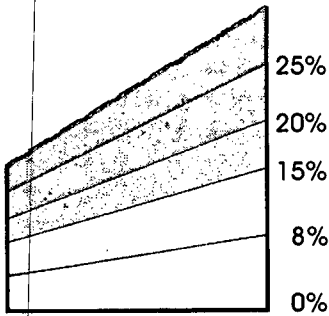
Houck/Leister Farm
(CARR-596)

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

HISTORIC SITES ON OR ELIGIBLE FOR NATIONAL REGISTER

DATE	2500	0	2500	FIGURE
July, 2002	SCALE IN FEET			III - 8

SLOPES KEY

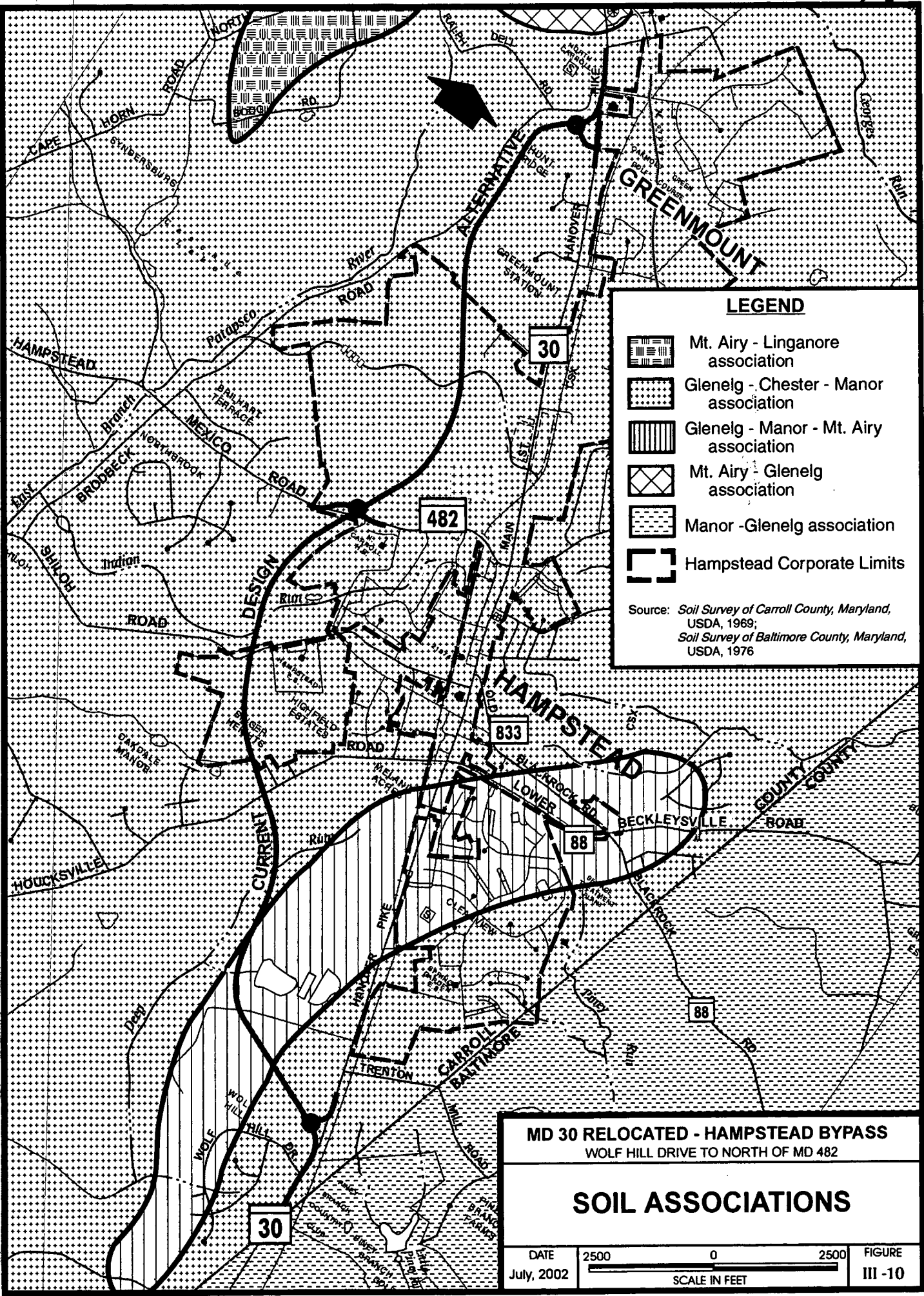


MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482







SLOPE OF THE LAND SURFACE

DATE	2500	0	2500	FIGURE
July, 2002	SCALE IN FEET			III - 9

Source: Slope of the Land Surface, Hydrogeologic, Atlas, Maryland Geological Survey



LEGEND

-  Mt. Airy - Linganore association
-  Glenelg - Chester - Manor association
-  Glenelg - Manor - Mt. Airy association
-  Mt. Airy - Glenelg association
-  Manor - Glenelg association
-  Hampstead Corporate Limits

Source: Soil Survey of Carroll County, Maryland, USDA, 1969;
Soil Survey of Baltimore County, Maryland, USDA, 1976

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

SOIL ASSOCIATIONS

DATE	2500	0	2500	FIGURE
July, 2002	SCALE IN FEET			III - 10



Source: US Dept. of Agriculture Soil Survey Geographic (SSURGO) Data Base and *Important Farmlands* map of Carroll County

LEGEND





- Prime Farmland Soils
- Farmland Soils of Statewide Importance

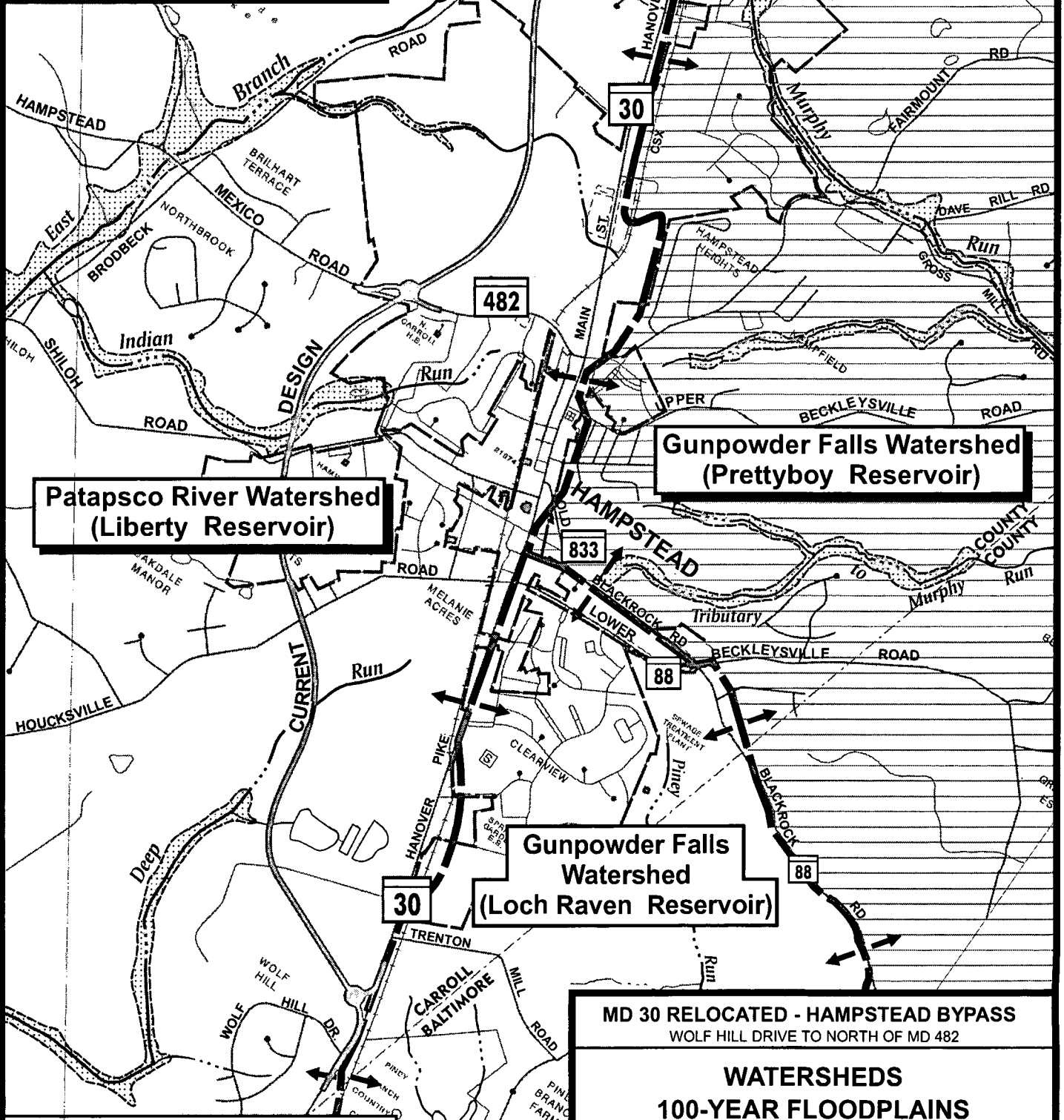
MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

**PRIME FARMLAND SOILS
AND
SOILS OF STATEWIDE IMPORTANCE**

DATE	2500 0 2500	FIGURE	III - 11
July, 2002	SCALE IN FEET		

LEGEND

-  100-Year Floodplain
-  Patapsco River Watershed (Liberty Reservoir)
-  Gunpowder Falls Watershed (Prettyboy Reservoir)
-  Gunpowder Falls Watershed (Loch Raven Reservoir)



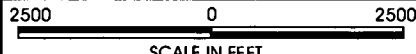
Patapsco River Watershed (Liberty Reservoir)

Gunpowder Falls Watershed (Prettyboy Reservoir)

Gunpowder Falls Watershed (Loch Raven Reservoir)

MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

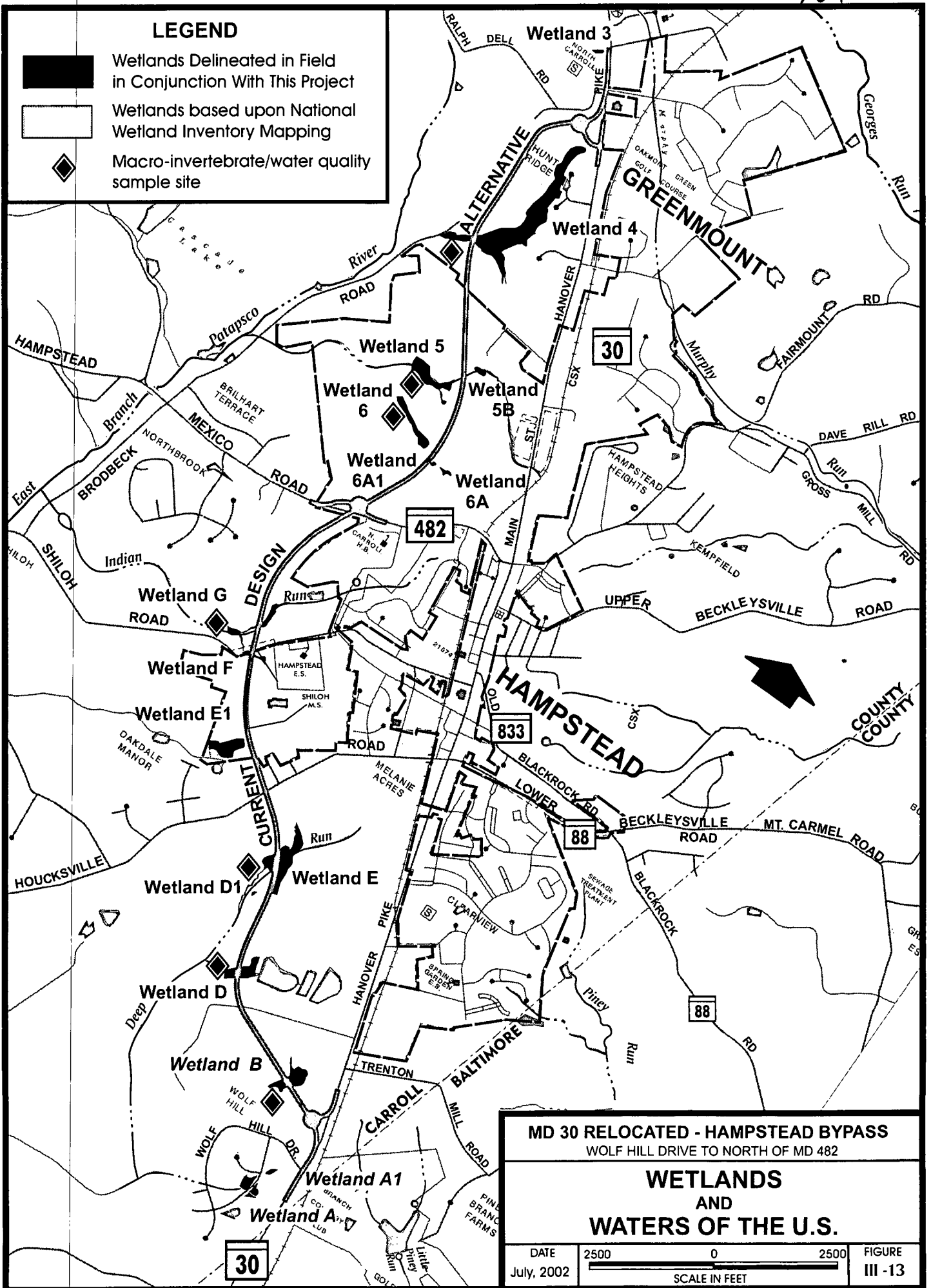
WATERSHEDS
100-YEAR FLOODPLAINS

DATE	2500	0	2500	FIGURE
July, 2002				III - 12




Note:
 100-year floodplains based upon *Flood Insurance Rate Map* produced by FEMA.

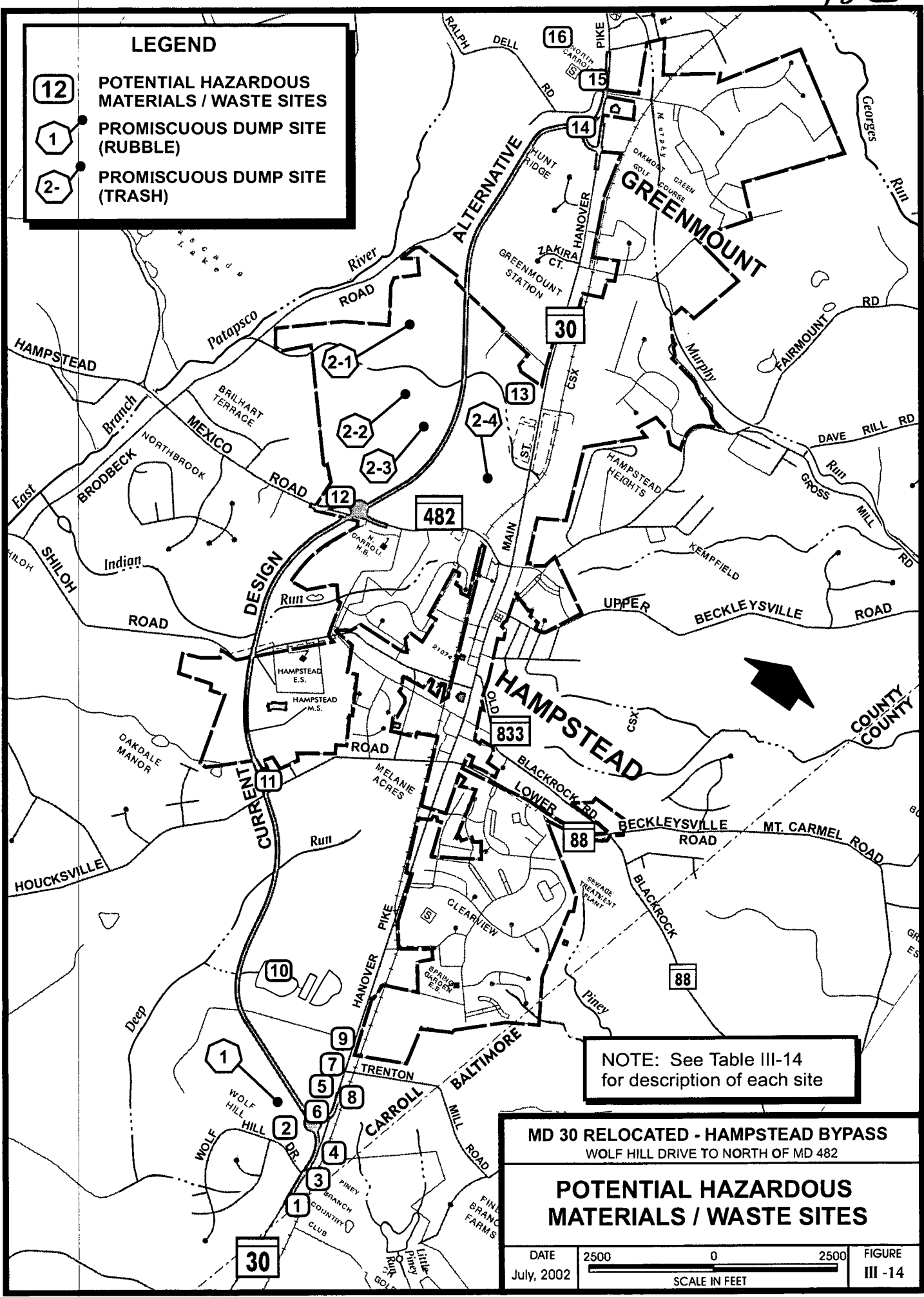
LEGEND

-  Wetlands Delineated in Field in Conjunction With This Project
-  Wetlands based upon National Wetland Inventory Mapping
-  Macro-invertebrate/water quality sample site



LEGEND


-  POTENTIAL HAZARDOUS MATERIALS / WASTE SITES
-  PROMISCUOUS DUMP SITE (RUBBLE)
-  PROMISCUOUS DUMP SITE (TRASH)



NOTE: See Table III-14 for description of each site

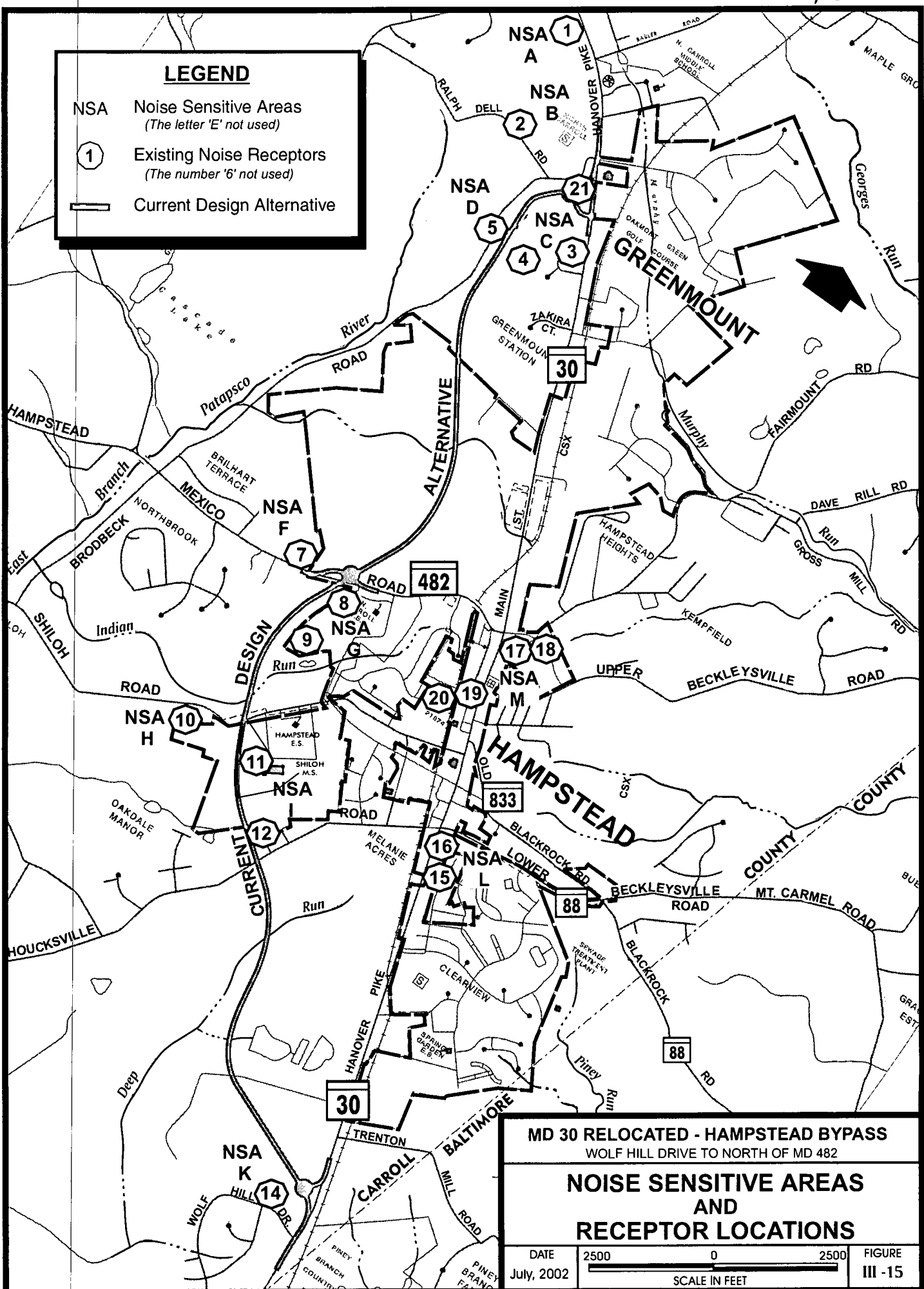
MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

POTENTIAL HAZARDOUS MATERIALS / WASTE SITES

DATE	2500	0	2500	FIGURE
July, 2002				III - 14

LEGEND

- NSA Noise Sensitive Areas
(The letter 'E' not used)
- ① Existing Noise Receptors
(The number '6' not used)
- Current Design Alternative



MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

NOISE SENSITIVE AREAS AND RECEPTOR LOCATIONS

DATE	2500	0	2500	FIGURE
July, 2002	SCALE IN FEET			III - 15

IV. ALTERNATIVES CONSIDERED

IV. ALTERNATIVES CONSIDERED

A. Alternatives Evaluated in Detail

1. No-Build Alternative

The No-Build Alternative would include routine maintenance to MD 30 through Hampstead, but no major improvements. Thus, there would be no improvement in traffic operations. The congestion and safety problems along MD 30, presented in detail in Sections II-A3 and II-A4, would continue to worsen.

It should be noted that Transportation System Management improvements have been investigated and, where appropriate, implemented along MD 30 in the project area. For example, an interconnected signal system along MD 30 in Hampstead was installed in 1999. The existing Park and Ride Lot located in Manchester north of the study area is typically 64% utilized on weekdays, while the municipal parking lot in Hampstead which serves as an unofficial park and ride facility is typically 63% utilized on weekdays. Furthermore, as discussed in Section I-C, the 1998 *Maryland Congestion Management System Corridor No. 25 Report* indicated that TSM/TDM improvements would not solve the capacity and congestion problems along MD 30.

2. Build Alternatives

The alignments of the two build alternatives evaluated in detail, the FONSI Selected Alternative and the Current Design Alternative, are shown conceptually in Figure IV-1. Their typical section is shown in Figure IV-2.

a. FONSI Selected Alternative

The 1986 Finding of No Significant Impact (FONSI) summarized the MD 30 relocation options presented at the Public Hearing held on January 30, 1985, and presented Alternate 2 with Southern Option C and Northern Option B Modified as the Selected Alternative (termed the FONSI Selected Alternative [FSA] herein). The alternatives presented at the Public Hearing included the No-Build and one basic build alternative, Alternate 2, with three options (Southern Options A, B and C) for the south terminus and two options (Northern Options A and B) for the north terminus. The selected combination of Southern Option C and Northern Option B Modified was chosen considering traffic service and minimization of impacts.

The FSA consists of an ultimate four-lane divided western bypass of Hampstead within a 250-foot wide right of way, with only two lanes to be built initially. (See Figure IV-2).

The FSA (see Figure IV-3) begins at Wolf Hill Road, approximately 1,500 feet north of the Baltimore County/Carroll County Line, and diverges to the northwest of MD 30. New roadways were proposed between MD 30 opposite Trenton Mill Road and the FSA (to serve as a connection between existing MD 30 and the FSA), as well as between MD 30 and Phillips Drive. The latter would serve as access to the Wolf Hill subdivision, with a cul-de-sac constructed on Wolf Hill Road just west of MD 30. After crossing a private driveway southwest of the Black & Decker Plant, the alignment curves to the northwest and intersects Houcksville Road. It then curves to the north and intersects Shiloh Road. The FSA then intersects MD 482 approximately 3,500 feet west of MD 30 and proceeds in a more northerly direction. It then curves to the northwest and intersects Brodbeck Road, approximately 1,100 feet west of MD 30.

The FSA finally curves to the north and intersects Cape Horn Road, merging into existing MD 30 approximately 2,100 feet south of Charmil Drive. An intersection with the FSA would be formed by Cape Horn Road and existing MD 30.

The FSA, which is 5.5 miles long, would have six at-grade intersections:

- Connection to MD 30 opposite Trenton Mill Road
- Houcksville Road
- Shiloh Road
- MD 482
- Brodbeck Road
- Cape Horn Road/MD 30

It is anticipated that all of the intersections would be signalized.

b. Current Design Alternative

The Current Design Alternative (CDA - See Figures IV-1, 2 and 4) generally follows the alignment of the FSA, but includes several modifications made either to:

- avoid/minimize impacts to environmental resources identified subsequent to approval of the FONSI (1986)
- accommodate development that has occurred since approval of the FONSI

- modify the northern connection to MD 30, due to the termination of the Manchester Bypass Study

The CDA is similar to the FSA in that it proposes initial construction of a two-lane roadway on new location west of Hampstead, with auxiliary lanes at intersecting roadways. Unlike the FSA, which proposes at-grade intersections at Houcksville Road and Shiloh Road, the Current Design Alternative proposes grade separations with no access at these crossings. The proposed right of way, which is approximately 250 feet wide, can accommodate conversion of the Bypass to a four-lane divided roadway with a 30-foot wide median, should such a facility ever be needed. The design speed is 55 mph, except in the vicinity of the connections to MD 30 and MD 482, which have a 30 mph design speed.

The CDA begins approximately 800 feet south of Wolf Hill Drive, with the widening of MD 30 to provide two through northbound lanes, a center two-way left-turn lane, and two southbound lanes, one of which will terminate as a right-turn lane to Wolf Hill Drive. Approximately 300 feet north of Wolf Hill Drive, the CDA diverges from MD 30 in a northwest direction, as a four-lane divided roadway with a raised median. Approximately 1,000 feet north of Wolf Hill Drive, a roundabout is proposed with a connection to existing MD 30 to the north and Relocated Dos Garland Road (a gravel road) to the west. The CDA continues in a northwesterly direction, transitioning to a two-lane roadway beyond the roundabout.

The alignment then curves to the north, west of the containment ponds associated with the Black & Decker Plant, and crosses Houcksville Road approximately 400 feet west of Singer Street.

From approximately 1,500 feet south to 1,200 feet north of Houcksville Road, the CDA alignment is nearly identical to that of the FSA. South of this area, the CDA is as much as 340 feet west of the FSA, to reduce wetland impacts and to avoid the Black & Decker Plant ponds.

The CDA passes beneath Houcksville Road, where a bridge will be constructed to carry Houcksville Road over Relocated MD 30 without providing direct access to the Bypass. Continuing to the north, the alignment passes on the west side of the Shiloh Middle School and bridges over Shiloh Road, approximately 1,000 feet west of the Hampstead Elementary School. No access between the Bypass and Shiloh Road is proposed. From approximately 1,600 feet south to 1,200 feet north of Shiloh Road, the alignment of the CDA is as much as 120 feet east of the FSA, in order to reduce impact to the wetland on the north side of Shiloh Road.

North of Shiloh Road, the CDA curves to the northeast, passing west of the North Carroll High School, and crossing MD 482 with a roundabout approximately 1,100 feet west of Panther Drive, the main entrance to the High School. The Bypass will be widened in the vicinity of MD 482 to provide a 4-lane divided roadway. MD 482 will also be widened, tapering from the 2-lane section approximately 500 feet west of the Bypass to a 4-lane section on the west side of the Bypass, and realigned to be as much as 240 feet north of the existing road. On the east side of the Bypass, MD 482 will be widened to a 4-lane divided section between the Bypass and Panther Drive.

North of MD 482, the CDA curves slightly toward the northeast, passing east (upstream) of the major wetlands associated with two unnamed tributaries to East Branch Patapsco River and then to the northwest, passing west of the Greenmount Station and Hunt Ridge subdivisions. In the vicinity of the two unnamed tributaries, the CDA is as much as 550 feet east of the FSA, while near the subdivision, the CDA is as much as 950 feet west of the FSA, in order to avoid direct impact to the bog turtle habitat.

Just north of Hunt Ridge, the alignment curves to the east, and rejoins existing MD 30 approximately 500 feet south of Brodbeck Road. A roundabout will be provided on the Bypass just west of where it rejoins existing MD 30, with the south leg connecting to existing MD 30 to the south. Existing MD 30 will be reconstructed from approximately 500 feet south to 800 feet north of Brodbeck Road and from the Weis Market to approximately 1,200 feet south thereof

3. Traffic Operations and Safety

Figure IV-5 summarizes the traffic volumes and levels of service associated with the No-Build Alternative and the Current Design Alternative (CDA). Traffic volumes associated with the FONSI Selected Alternative (FSA) are not presented in detail in this document. They would be similar to the volumes presented for the CDA. However, since the FSA proposes at-grade intersections at Houcksville Road and Shiloh Road, whereas the CDA proposes grade separations with no connections, traffic volumes on these roads in the vicinity of the Bypass would be higher with the FSA than with the CDA.

Approximately two-thirds of the traffic on existing MD 30 would be diverted to the Bypass.

Under the No-Build Alternative, existing MD 30 would operate at LOS F during peak periods in 2020, with volume exceeding capacity by as much as 58%.

Under the CDA, existing MD 30 would generally operate at LOS D or better in 2020, although the MD 30/Shiloh Road intersection would operate at LOS F ($V/c = 1.08$) during the AM peak period.

The Average Daily Traffic on the Bypass under the CDA is expected to range from 16,775 in 2000 to 20,050 in 2020. With an average of 18,400 vehicles per day during this 20-year analysis period, and using statewide average accident rates for this type of roadway, it is expected that there would be 27 accidents per year on the Bypass. However, if these same motorists were traveling on existing MD 30, as they would under the No-Build Alternative, they would experience, on average, 57 accidents per year.

B. Alternatives Dropped From Further Consideration

1. In-Town Improvement Alternative

The study portion of existing MD 30, between Wolf Hill Drive and Brodbeck Road, is a 2-lane roadway with five signalized intersections, two at-grade railroad crossings, and on-street parking through much of its length. Parking is generally prohibited near the intersections, so the shoulder area can be used as an auxiliary right-turn lane or through/right-turn lane where left-turn lanes are provided. Between 9 A.M. and 9 P.M., most on-street parking is limited to two hours. The only designated left-turn lanes on MD 30 are at MD 482, where the shoulder areas are used as combined thru/right-turn lanes.

Most of the roadway is a closed section, approximately 39 feet wide. Generally, residences and businesses are set back approximately 15 feet behind the curbline, though in some areas this is reduced to as little as 8 feet. At the southern and northern ends of the project, the set backs are generally greater than 15 feet.

The 4.2 mile long section of existing MD 30 between Wolf Hill Drive and Brodbeck Road includes:

- 5 signalized intersections
- 18 unsignalized intersections
- 237 residences
- 91 businesses
- 7 shopping centers
- 6 churches
- 1 volunteer fire company
- 1 police station
- 1 park

The existing Average Daily Traffic (ADT) volumes between Wolf Hill Drive and Brodbeck Road range from 21,750 to 25,950 vehicles, which, as is evident from the nearly daily backups through Hampstead during the morning and evening rush hours, is near the capacity of such a 2-lane road with signalized intersections and on-street parking. By 2020, the ADT is expected to range from 26,100 to 31,575, resulting in longer periods of delay. Whereas the morning period of congestion is currently approximately three hours long, by 2020 it is expected to be about six hours long. Likewise, the evening period of congestion is expected to increase from the current two hours to approximately four hours by 2020.

The 1996 - 1998 accident rate on MD 30 was 204.7 accidents per 100 Million Vehicle Miles (MVM), significantly higher than the statewide average rate of 115.0 per 100 MVM for such roadways. Several categories of accidents also occurred at rates significantly higher than the statewide average: rear-end, sideswipe, left-turn, angle, pedestrian, parked vehicle, and truck related. The high accident rate is reflective of a roadway with uncontrolled access serving numerous roadside activities operating at or near its capacity during peak traffic periods.

To address the projected traffic volumes on MD 30 through Hampstead if a bypass were not constructed and the safety and capacity issues associated with numerous entrances and intersections, a five-lane roadway (i.e., 4 through lanes plus center left-turn lane) would be needed. Although a 62-foot wide roadway (5 - 12' lanes plus 2 - 1' curb offsets) would be desirable from a traffic viewpoint in such a case, especially considering the fairly large number of heavy trucks on MD 30, a 57-foot wide roadway would provide an acceptable level of improvement (5 - 11' lanes plus 2 - 1' curb offsets).

A five-lane roadway through Hampstead would generally operate at LOS D/E in 2020, although the MD 30/MD 482 intersection would still operate at LOS F ($v/c = 1.12$) during the AM peak period. By comparison, if the Bypass is built, existing MD 30 in Hampstead is expected to operate generally at LOS D, although the MD 30/Gill Avenue intersection would operate at LOS F ($v/c = 1.08$) during the AM peak period.

The accident rate on a five-lane roadway, based upon statewide average rates, would be 181 accidents per 100 Million Vehicle Miles, somewhat below the existing rate of 205 accidents/100 MVM on MD 30, but well above the rate of 87.4 expected on the Bypass.

A 57-foot wide roadway would require widening the existing road by approximately 18 feet. If all widening occurred to one side, nearly all the buildings on that side would be displaced. If widening were to occur symmetrically (from both sides), the curblines would be within approximately six feet of many of the remaining buildings and approximately 90 residences, 45 businesses, one church and one police station would be displaced.

Other impacts of providing a five-lane roadway through Hampstead, which would be inconsistent with the *Hampstead and Environs Comprehensive Plan* and the *Carroll County Major Street Plan*, include:

- Change the character of the Town by discouraging pedestrian activities and precluding the Town of Hampstead's plans to re-develop the downtown area along MD 30 as a "small town", as set forth in the *Main Street Revitalization Plan* prepared by the Town of Hampstead in 1998. Part of this Plan calls for "traffic calming" islands which would reduce the existing width of roadway and provide pedestrian refuges.
- Increased noise levels associated with higher traffic volumes and speeds and locating the edge of roadway within six feet of many of the remaining homes, thereby adversely affecting the quality of life for residents.
- Elimination of parking spaces, at least during peak traffic periods, which would adversely affect businesses within the Town and inconvenience residents. Although most residences and businesses have at least some off-street parking spaces, there are a few with none. For example, in the 1.25 mile long downtown section from 500'± north of North Woods Trail to 500'± north of MD 482, there are approximately 225 on-street parking spaces, all of which would be lost under the In-Town Alternative. To put this in perspective, the Hampstead Municipal Parking Lot located just west of MD 30 in this area has only 46 parking spaces. Studies performed in conjunction with preparation of the "Main Street Revitalization Plan" in 1998 showed utilization of the on-street parking to vary by location, ranging from 10% to 39% on weekdays and 11% to 54% on Saturdays.

For these reasons, the In-Town Alternative is not considered to be a practicable alternative, and thus is not being considered further in this study.

2. Eastern Bypass Alternative

Since first shown on Carroll County's Master Plan in 1962, the Hampstead Bypass has been envisioned to be located west of existing MD 30 for a number of reasons: compatibility with existing and planned land use; difficulty in crossing the CSX Tracks on the east side of MD 30; the larger number of road crossings east of MD 30; and the more rugged topography east of MD 30. As development has occurred, Carroll County has reserved a corridor for the Bypass on the west side of MD 30, which has resulted in the FONSI Selected Alternative and the Current Design alternatives having few displacements. However, with no such reservation east of MD 30, any alignment would have substantial displacements or, if displacements are to be avoided, substantial wetland impacts.

An Eastern Bypass Alternative would require two crossings of the CSX railroad. Considering that the railroad and existing MD 30 are less than 200 feet apart in the vicinity of any southern crossing (near Wolf Hill Drive), there would need to be a sharply skewed crossing of the railroad, with retaining walls in addition to a bridge needed to carry the Bypass over the railroad.

As can be seen on Figure III-3, there is dense residential development between existing MD 30 and the Baltimore County/Carroll County line north of Trenton Mill Road, and thus in order to avoid this development, an Eastern Bypass Alternative would need to swing into Baltimore County from north of Trenton Mill Road to north of Lower Beckleystown Road.

A connection to existing MD 30 on the north side of Hampstead would have to occur approximately 1.6 miles north of the northern tie-in of the Current Design Alternative, as it is not practicable to connect an Eastern Bypass Alternative to existing MD 30 in the vicinity of Brodbeck Road (as does the Current Design Alternative), because of the dense residential development, golf course, and location of Georges Run east of MD 30 in this area. Therefore, an Eastern Bypass would be approximately 7.0 miles long, compared to 5.0 miles for the Current Design Alternative.

An Eastern Bypass Alternative is not thought to be a practicable alternative, considering its impact in comparison to those of the Current Design Alternative. Among these are:

	Eastern Bypass Alternative	Current Design Alternative
residential displacements	7	8***
remaining residences within 300' of centerline	6	9
number of road crossings	7*	3**
number of railroad crossings	2	0
number of stream crossings	11	11
wetland impact (acres)	3.0	4.71

* Trenton Mill Road
 Black Rock Road
 Mount Carmel Road
 Upper Beckleystown Road
 Gross Mill Road
 Fairmount Road
 Maple Grove Road

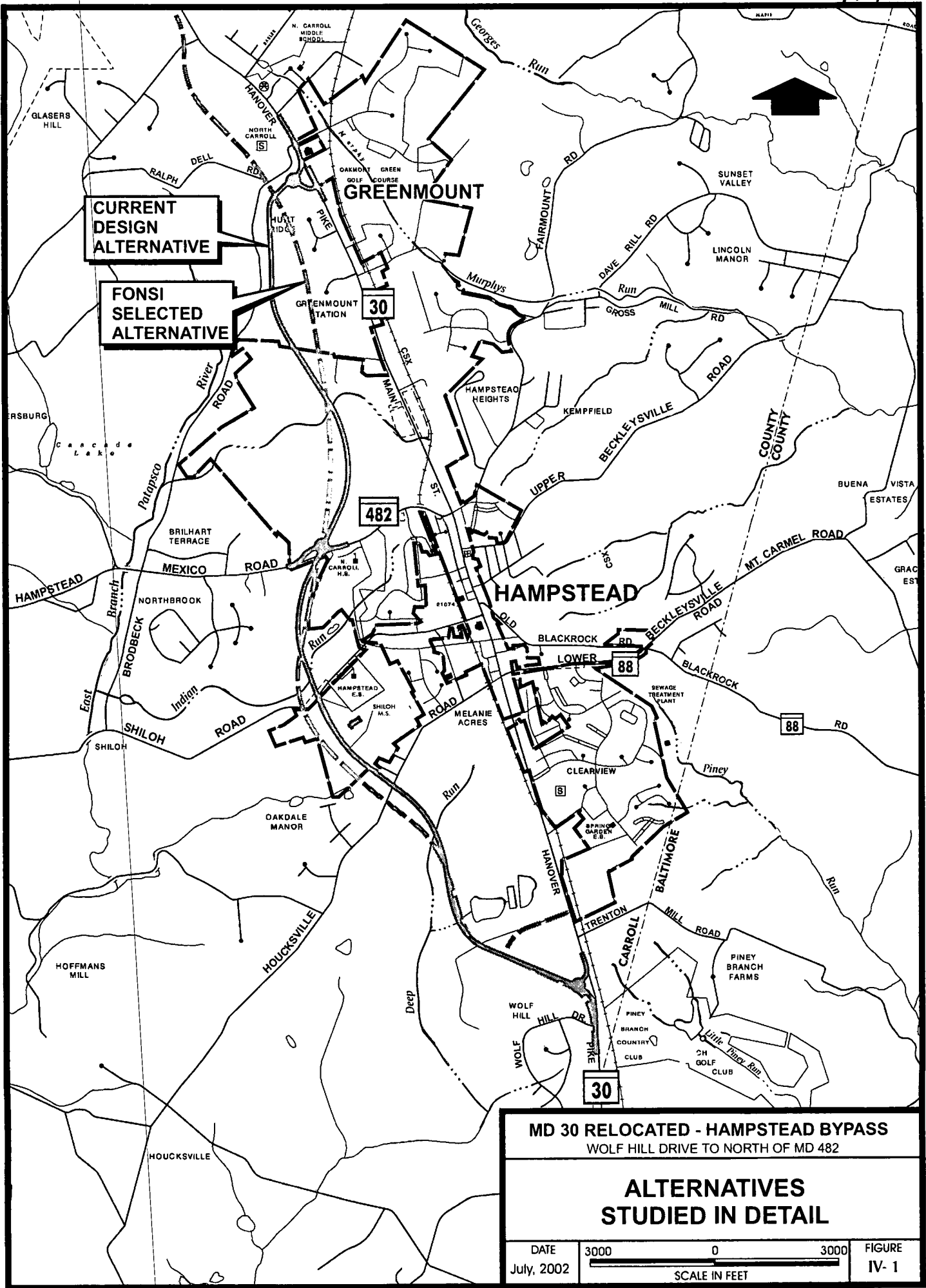
** Houcksville Road
 Shiloh Road
 MD 482

*** Includes six residences purchased and removed by SHA from 1989 through 1998.

Although a cost estimate has not been prepared for an Eastern Bypass Alternative, it would be substantially higher than that of the Current Design Alternative because of its greater length, more rugged topography along its route (resulting in more earthwork, see Figure III-9), and more structures due to larger number of road, railroad and stream crossings.

In addition to the above factors, an Eastern Bypass Alternative would pass through areas planned for low density residential development and conservation throughout its entire length (including 1.8 miles within Baltimore County), whereas much of the Current Design Alternative passes through areas planned for (or with existing) industrial and suburban residential development.

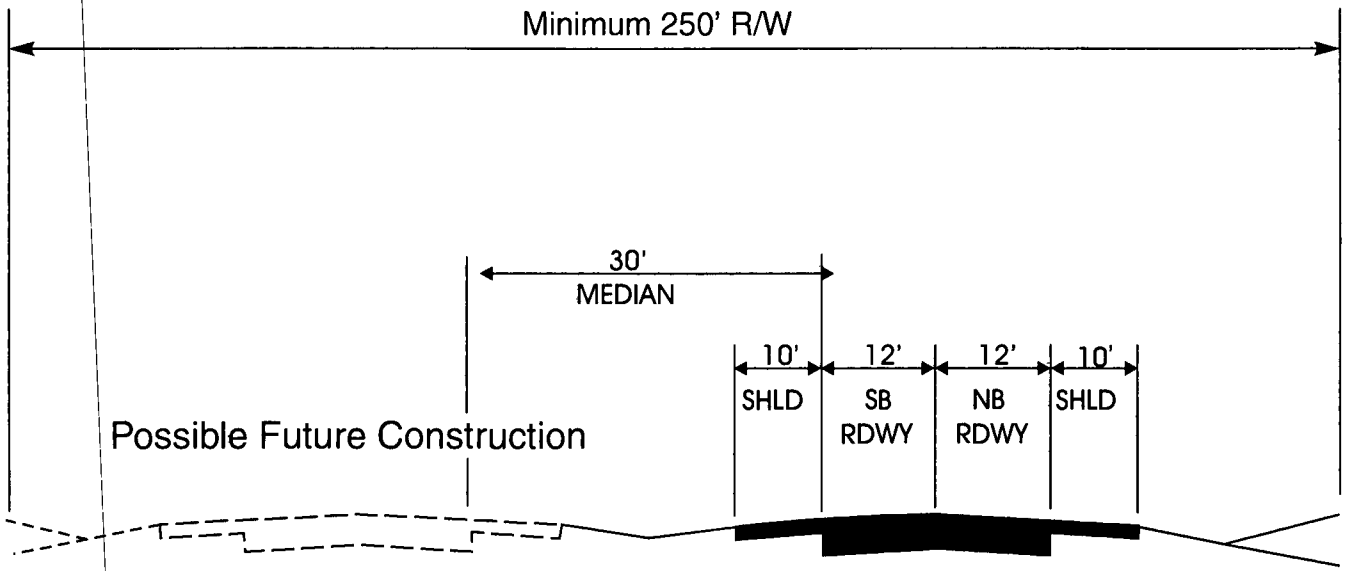
In light of the above reasons, the Eastern Bypass Alternative is not being studied in detail and has been dropped from consideration.



MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

**ALTERNATIVES
 STUDIED IN DETAIL**

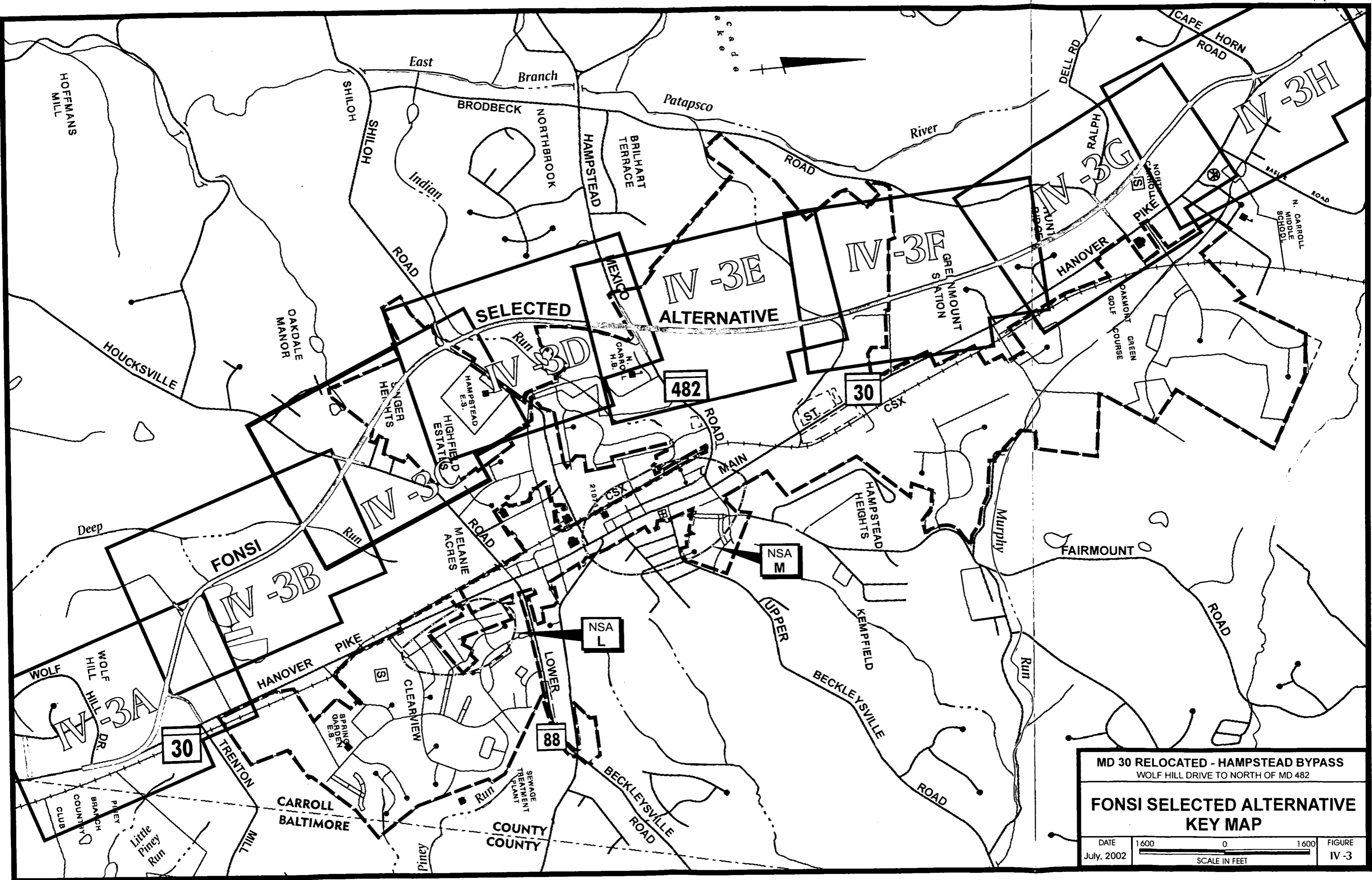
DATE	3000	0	3000	FIGURE
July, 2002	SCALE IN FEET			IV- 1



MAINLINE
**FONSI SELECTED ALTERNATIVE
 AND
 CURRENT DESIGN ALTERNATIVE**

MD 30 RELOCATED - HAMPSTEAD BYPASS WOLF HILL DRIVE TO NORTH OF MD 482		
TYPICAL SECTION		
DATE July, 2002	NO SCALE	Figure IV - 2

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



MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

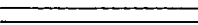
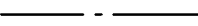






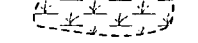
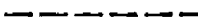


FONSI SELECTED ALTERNATIVE
KEY MAP

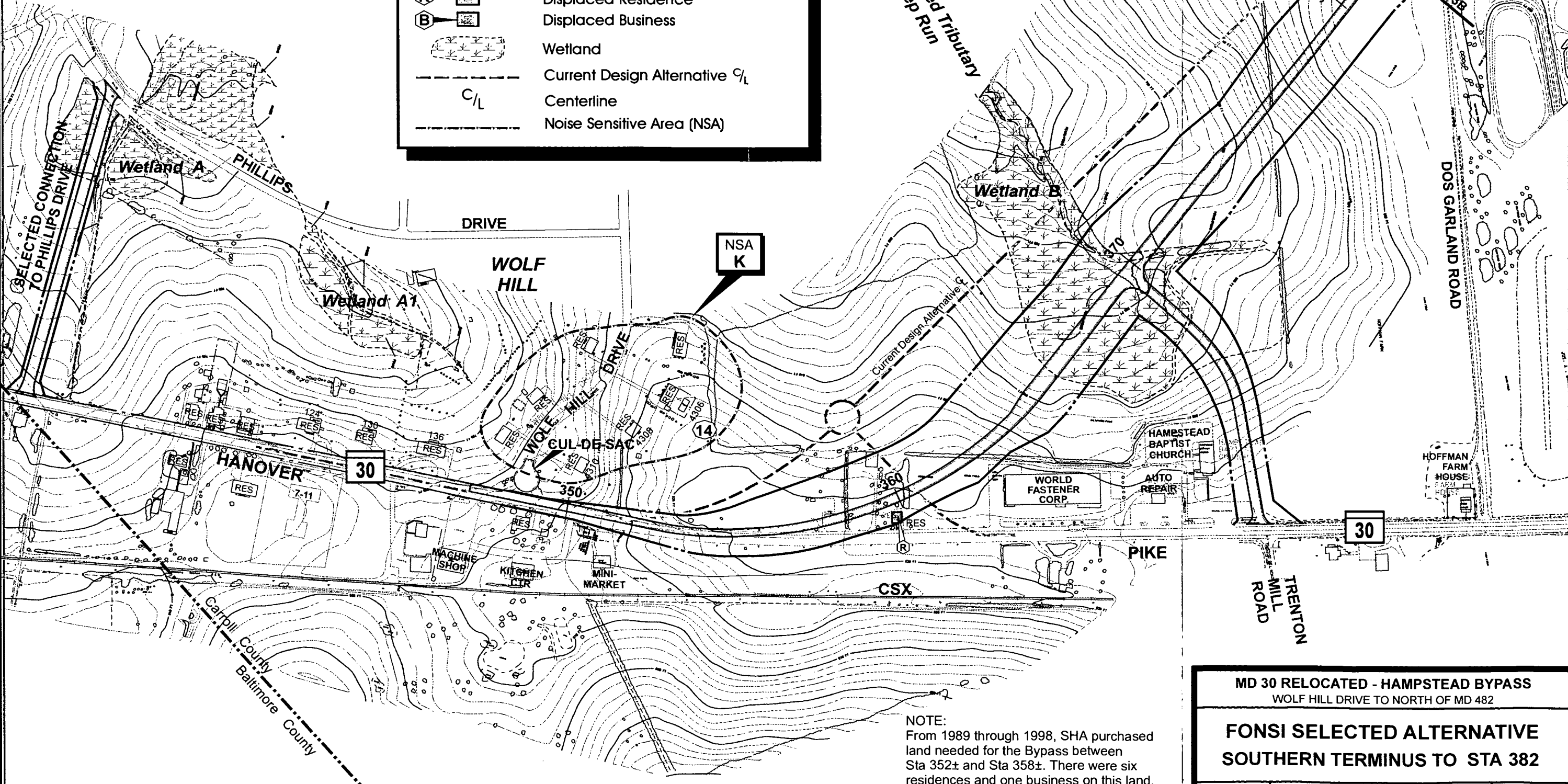
DATE: July, 2002

SCALE IN FEET: 1600 0 1600

FIGURE: IV-3

LEGEND

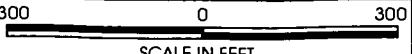
-  Existing Roadway/Driveway/Parking
-  Existing Right-of-Way Line
-  FONSI Selected Alternative Right-of-Way Line
-  FONSI Selected Alternative Roadway
-  Historic Site
-  Noise Receptor Location
-  Displaced Residence
-  Displaced Business
-  Wetland
-  Current Design Alternative C/L
-  Centerline
-  Noise Sensitive Area (NSA)

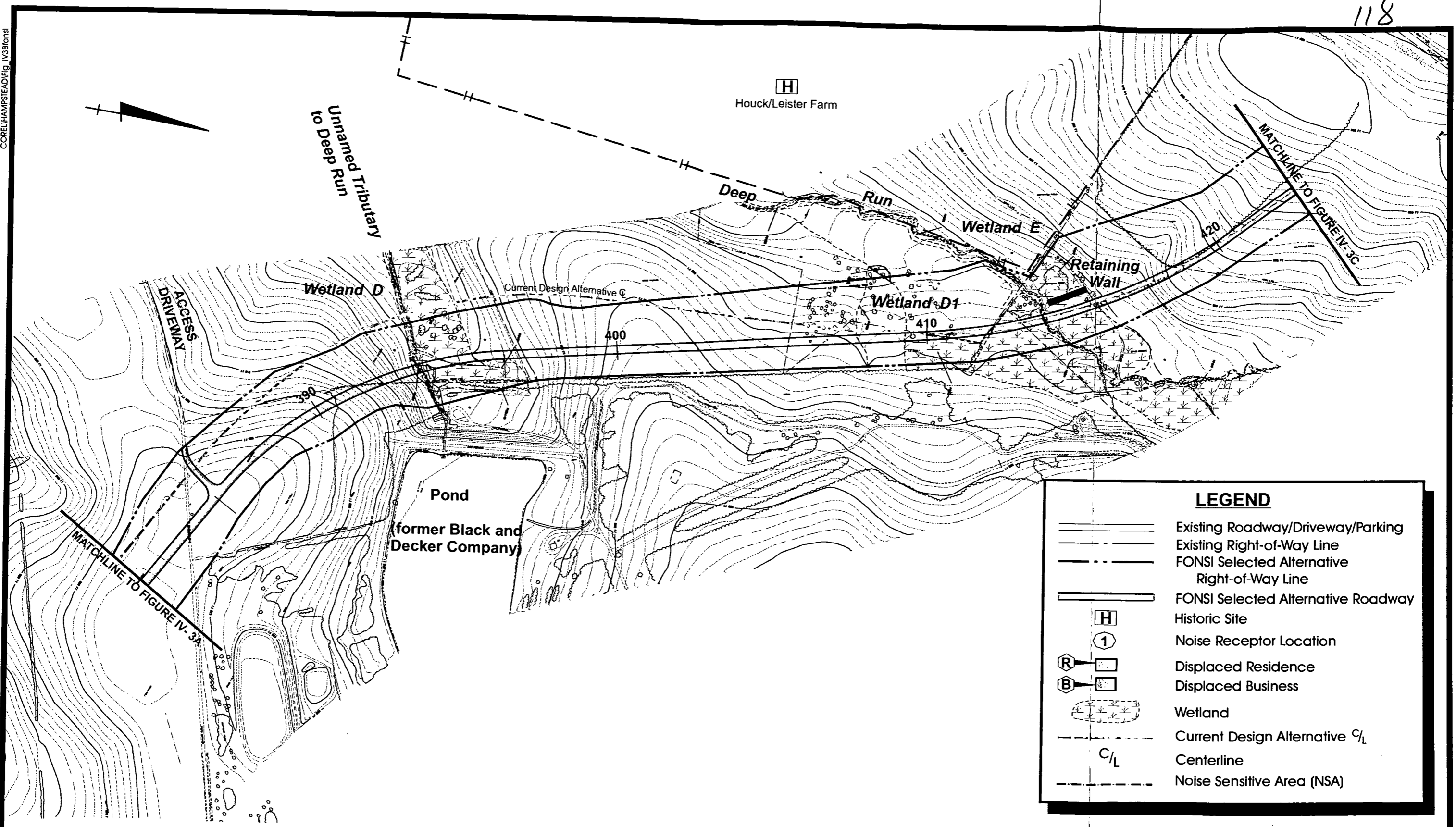


NOTE:
 From 1989 through 1998, SHA purchased land needed for the Bypass between Sta 352± and Sta 358±. There were six residences and one business on this land, which have been removed.

MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

FONSI SELECTED ALTERNATIVE
SOUTHERN TERMINUS TO STA 382

DATE July, 2002	 <p>SCALE IN FEET</p>	FIGURE IV- 3A
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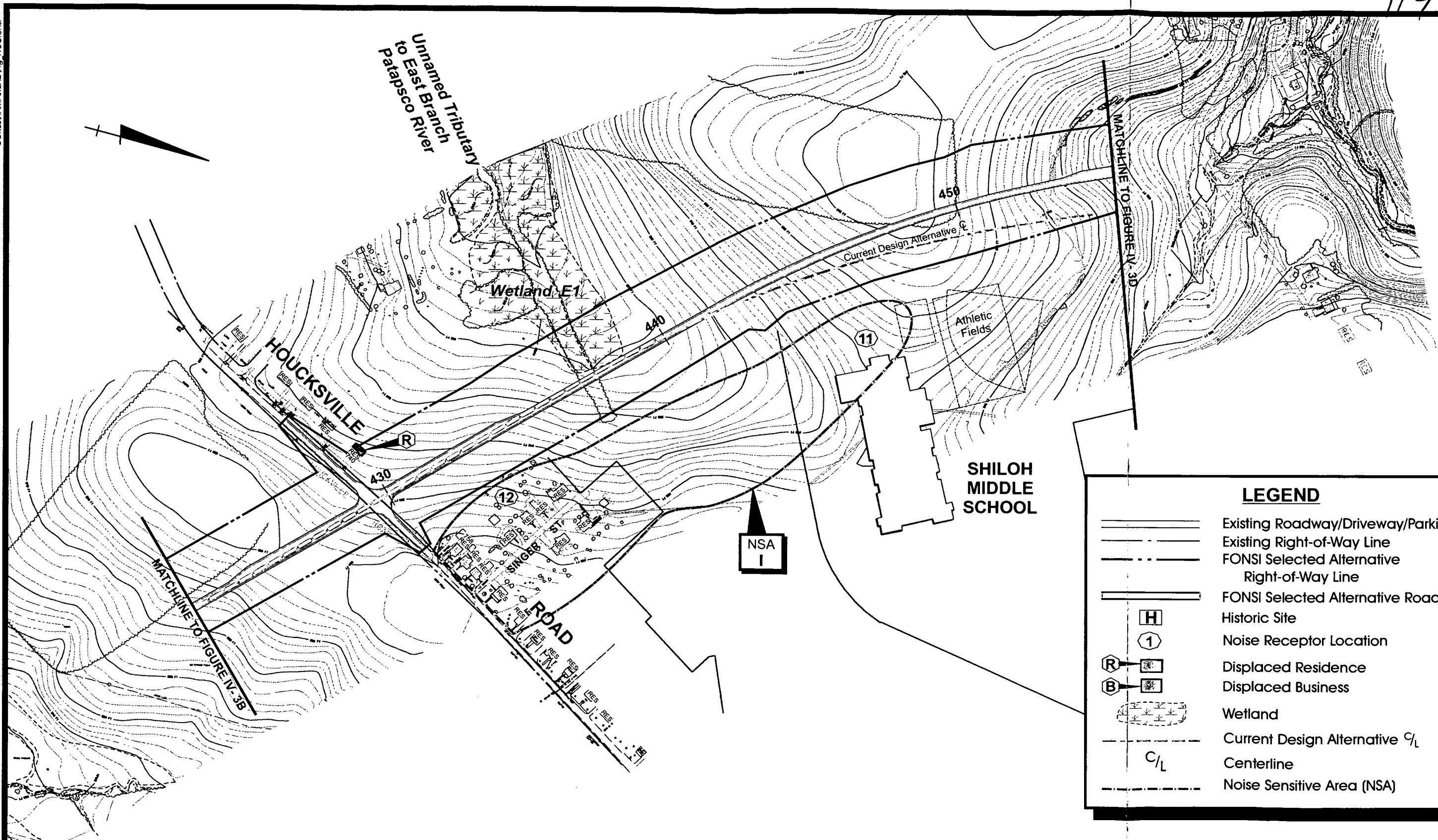
LEGEND

	Existing Roadway/Driveway/Parking
	Existing Right-of-Way Line
	FONSI Selected Alternative Right-of-Way Line
	FONSI Selected Alternative Roadway
	Historic Site
	Noise Receptor Location
	Displaced Residence
	Displaced Business
	Wetland
	Current Design Alternative C/L
	Centerline
	Noise Sensitive Area (NSA)

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

FONSI SELECTED ALTERNATIVE
STA 382 TO STA 423

DATE July, 2002	<p>SCALE IN FEET</p>	FIGURE IV- 3B
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EXISTING
STORM
WATER
MGMT.
POND

SWEETHEART CUP

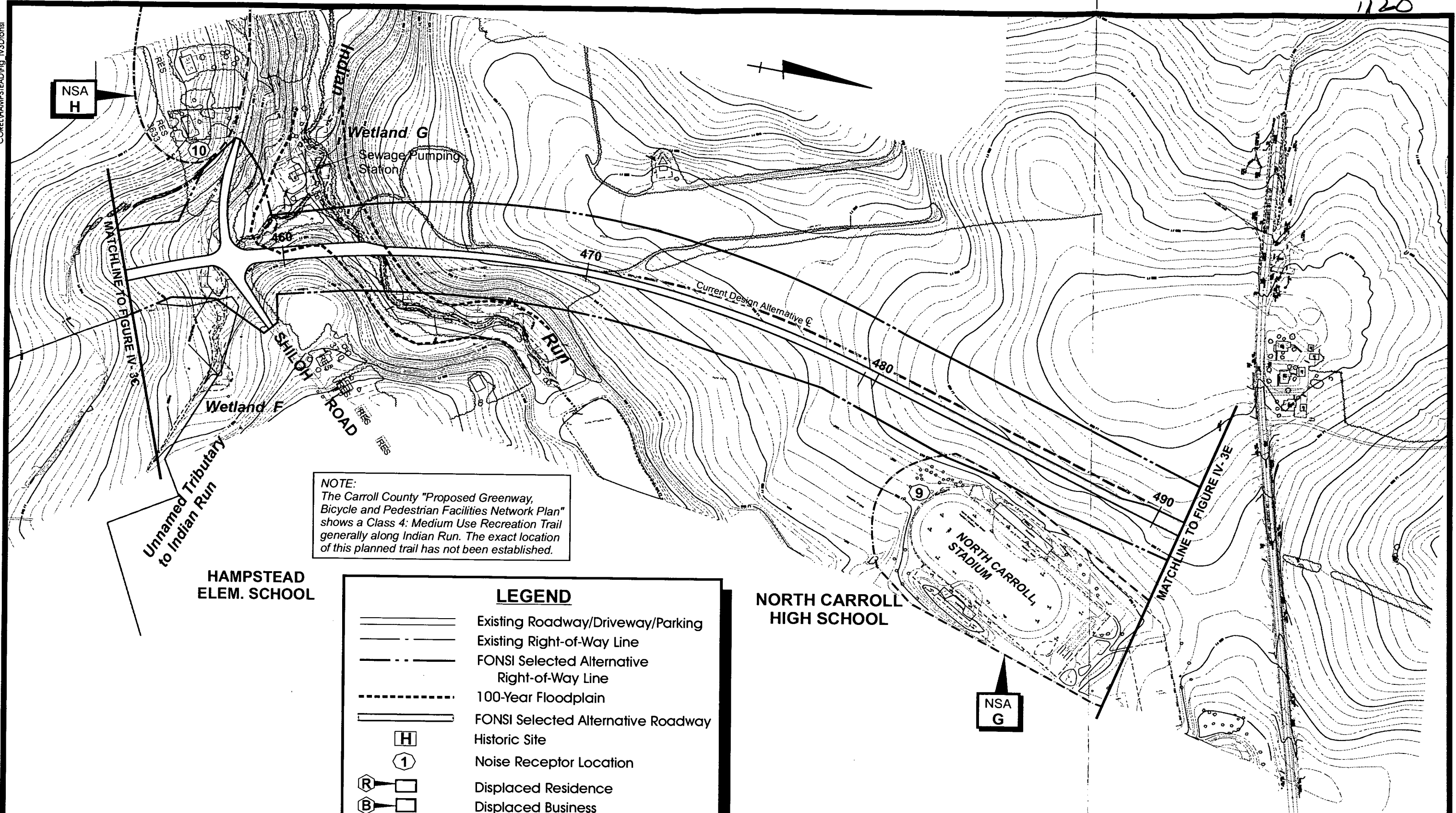
LEGEND

- Existing Roadway/Driveway/Parking
- Existing Right-of-Way Line
- FONSI Selected Alternative Right-of-Way Line
- FONSI Selected Alternative Roadway
- Historic Site
- Noise Receptor Location
- Displaced Residence
- Displaced Business
- Wetland
- Current Design Alternative C/L
- Centerline
- Noise Sensitive Area (NSA)

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

FONSI SELECTED ALTERNATIVE
STA 423 TO STA 455

DATE: July, 2002 300 0 300 FIGURE IV-3C
SCALE IN FEET



NOTE:
 The Carroll County "Proposed Greenway, Bicycle and Pedestrian Facilities Network Plan" shows a Class 4: Medium Use Recreation Trail generally along Indian Run. The exact location of this planned trail has not been established.

**HAMPSTEAD
 ELEM. SCHOOL**

**NORTH CARROLL
 HIGH SCHOOL**

LEGEND

	Existing Roadway/Driveway/Parking
	Existing Right-of-Way Line
	FONSI Selected Alternative Right-of-Way Line
	100-Year Floodplain
	FONSI Selected Alternative Roadway
	Historic Site
	Noise Receptor Location
	Displaced Residence
	Displaced Business
	Wetland
	Current Design Alternative C/L
	Centerline
	Noise Sensitive Area (NSA)

MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

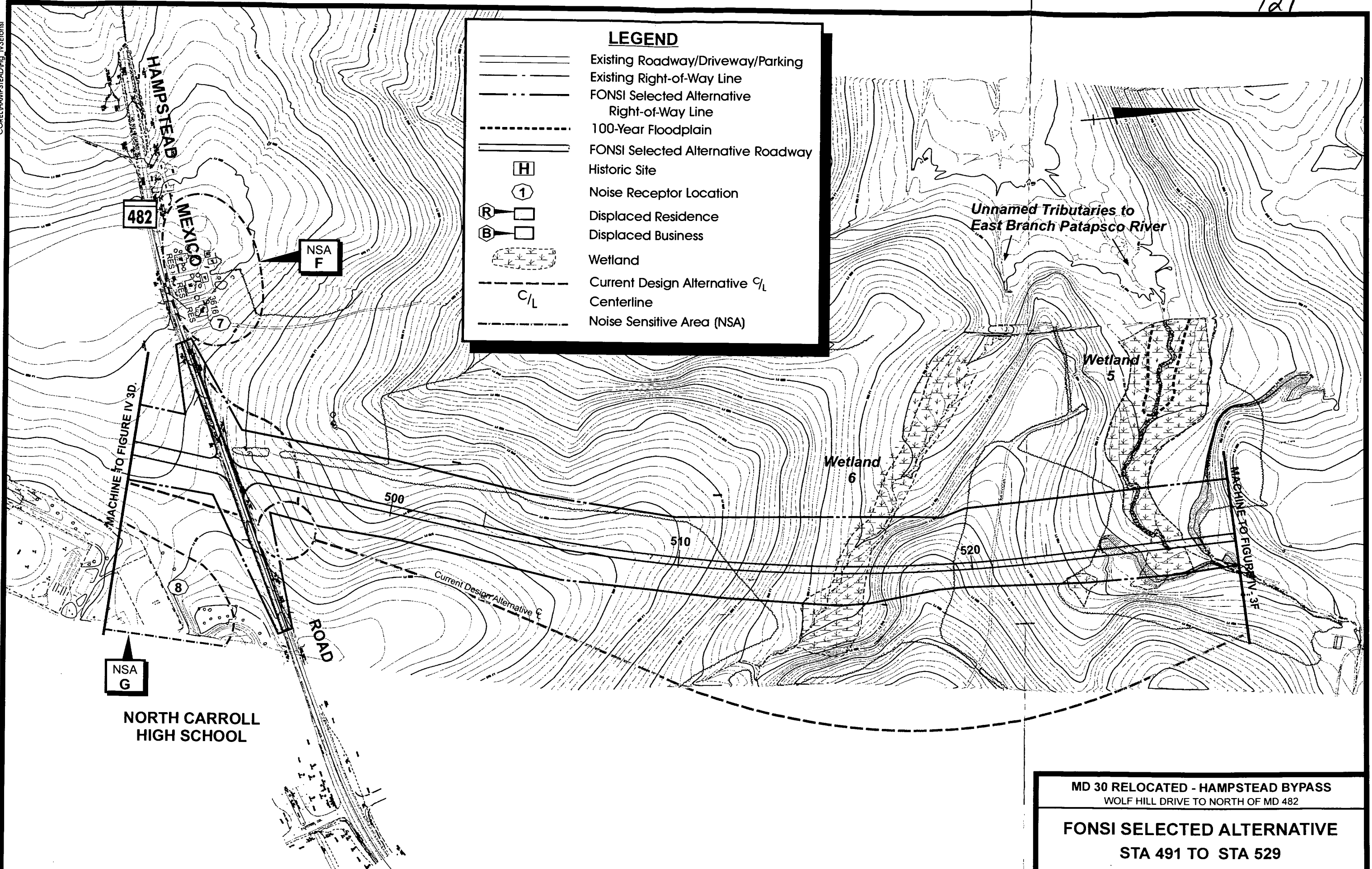
FONSI SELECTED ALTERNATIVE
STA 455 TO STA 491

DATE July, 2002	<p>SCALE IN FEET</p>	FIGURE IV- 3D
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CORELHAMPSTEADFig. IV3E(FONSI)

LEGEND

- Existing Roadway/Driveway/Parking
- Existing Right-of-Way Line
- FONSI Selected Alternative Right-of-Way Line
- 100-Year Floodplain
- FONSI Selected Alternative Roadway
- Historic Site
- Noise Receptor Location
- Displaced Residence
- Displaced Business
- Wetland
- Current Design Alternative C/L
- Centerline
- Noise Sensitive Area (NSA)



MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

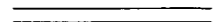







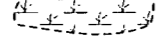
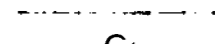


FONSI SELECTED ALTERNATIVE
 STA 491 TO STA 529

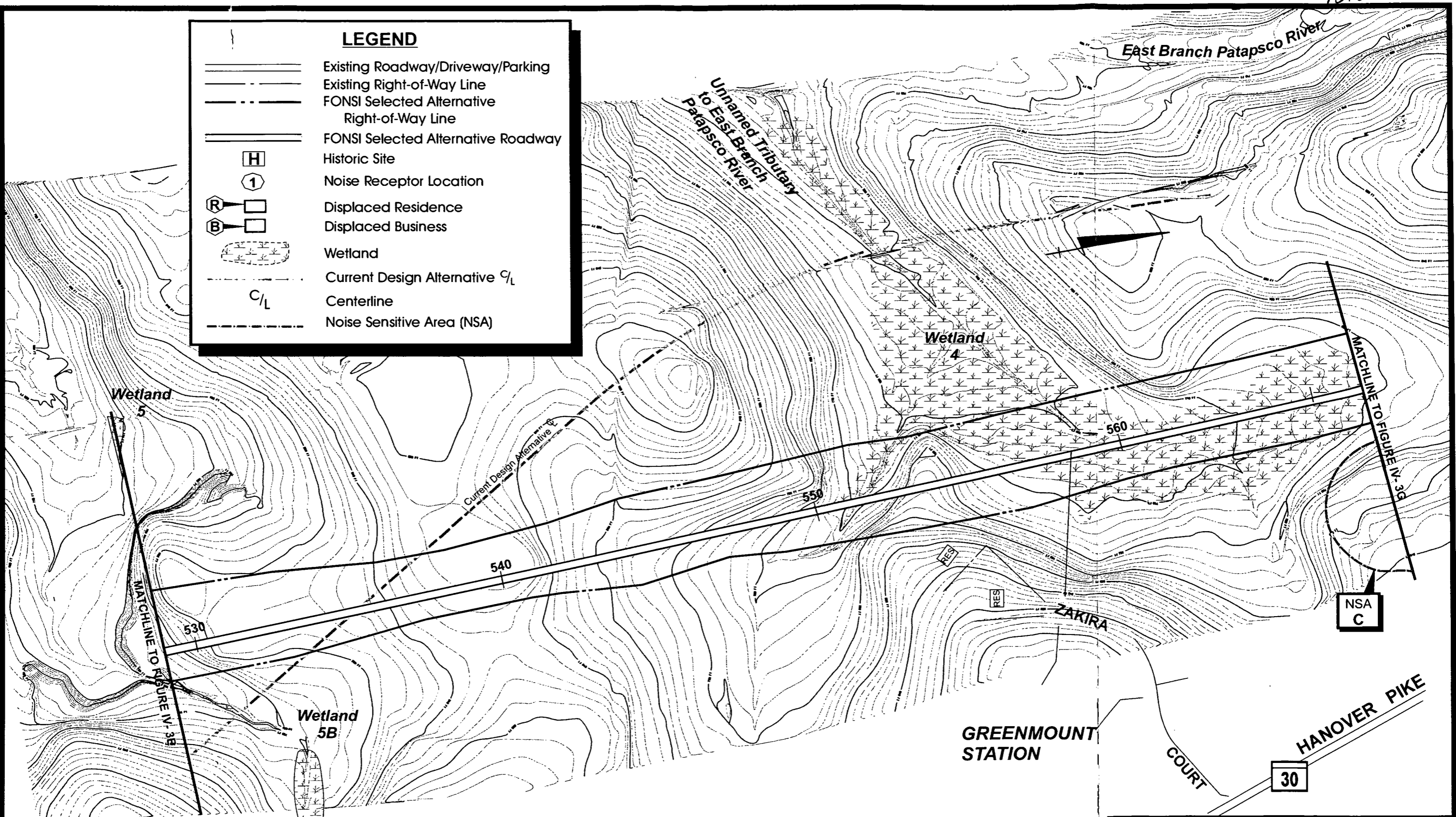
DATE: July, 2002

SCALE IN FEET: 0 to 300

FIGURE IV- 3E

LEGEND

-  Existing Roadway/Driveway/Parking
-  Existing Right-of-Way Line
-  FONSI Selected Alternative Right-of-Way Line
-  FONSI Selected Alternative Roadway
-  Historic Site
-  Noise Receptor Location
-  Displaced Residence
-  Displaced Business
-  Wetland
-  Current Design Alternative C/L
-  Centerline
-  Noise Sensitive Area (NSA)

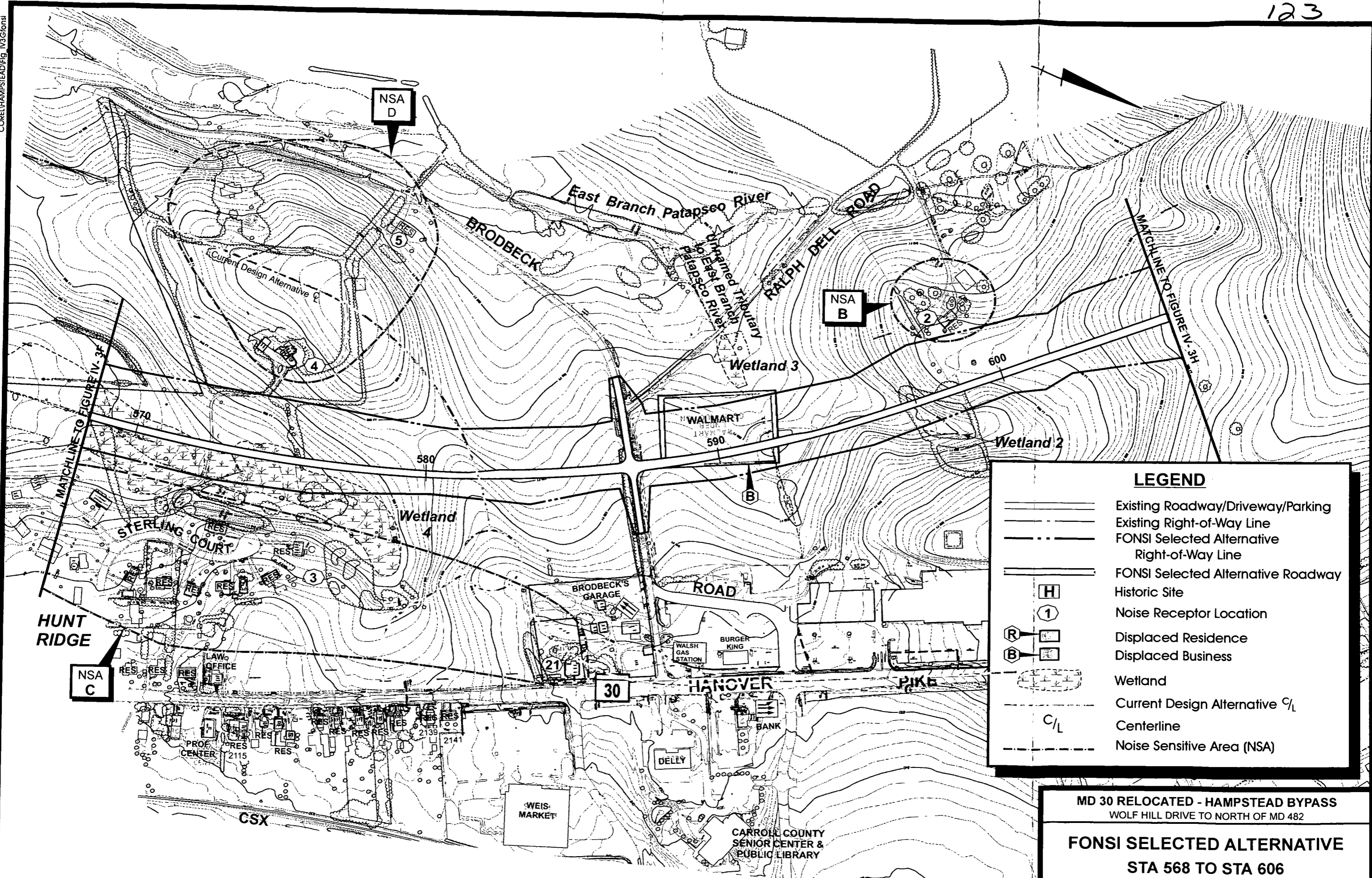


MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

FONSI SELECTED ALTERNATIVE
 STA 529 TO STA 568

DATE: July, 2002 SCALE IN FEET: 0 to 300 FIGURE: IV-3F

CORELHAMPSTEADFig. IV3Gonsi



LEGEND

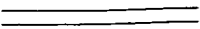
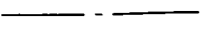






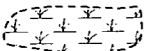



- Existing Roadway/Driveway/Parking
- Existing Right-of-Way Line
- FONSI Selected Alternative Right-of-Way Line
- FONSI Selected Alternative Roadway
- Historic Site
- Noise Receptor Location
- Displaced Residence
- Displaced Business
- Wetland
- Current Design Alternative C/L
- Centerline
- Noise Sensitive Area (NSA)

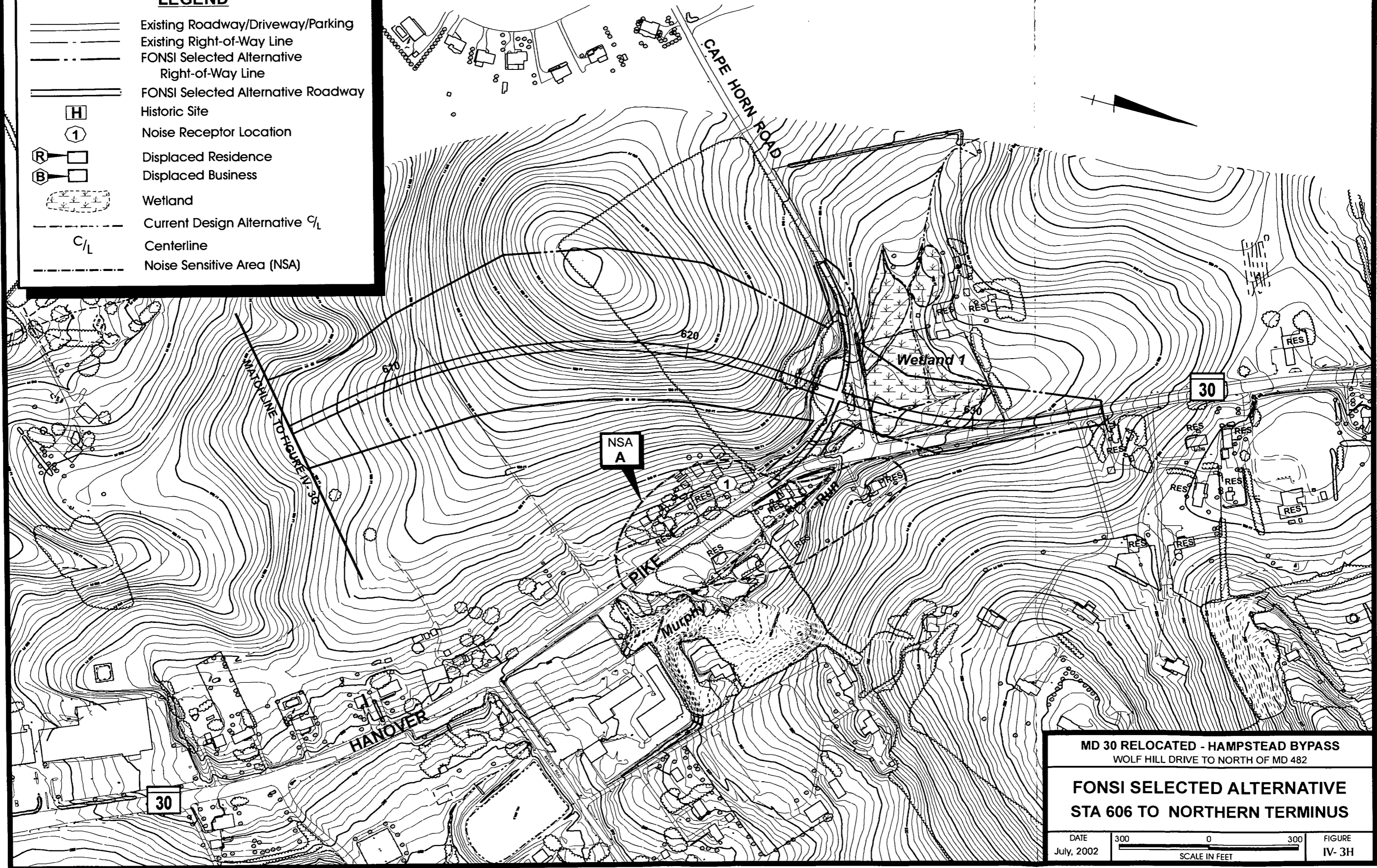
MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

FONSI SELECTED ALTERNATIVE
 STA 568 TO STA 606

DATE: July, 2002 SCALE IN FEET: 300 0 300 FIGURE: IV- 3G

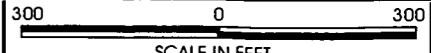
LEGEND

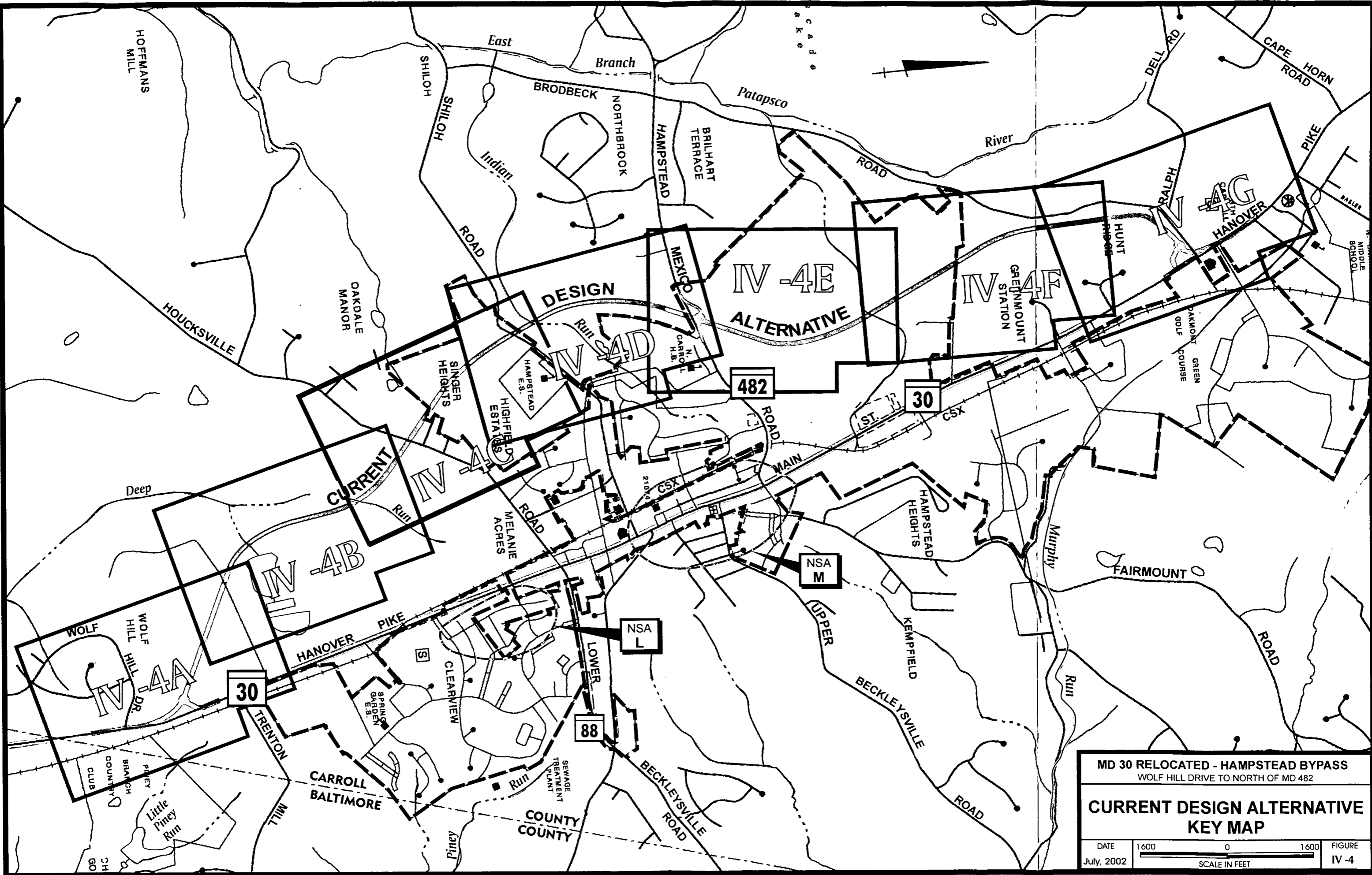
-  Existing Roadway/Driveway/Parking
-  Existing Right-of-Way Line
-  FONSI Selected Alternative Right-of-Way Line
-  FONSI Selected Alternative Roadway
-  Historic Site
-  Noise Receptor Location
-  Displaced Residence
-  Displaced Business
-  Wetland
-  Current Design Alternative *C/L*
-  Centerline
-  Noise Sensitive Area (NSA)



MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

FONSI SELECTED ALTERNATIVE
 STA 606 TO NORTHERN TERMINUS

DATE July, 2002  SCALE IN FEET FIGURE IV- 3H

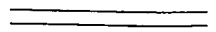
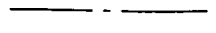

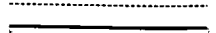






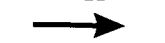
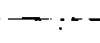







MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

**CURRENT DESIGN ALTERNATIVE
 KEY MAP**

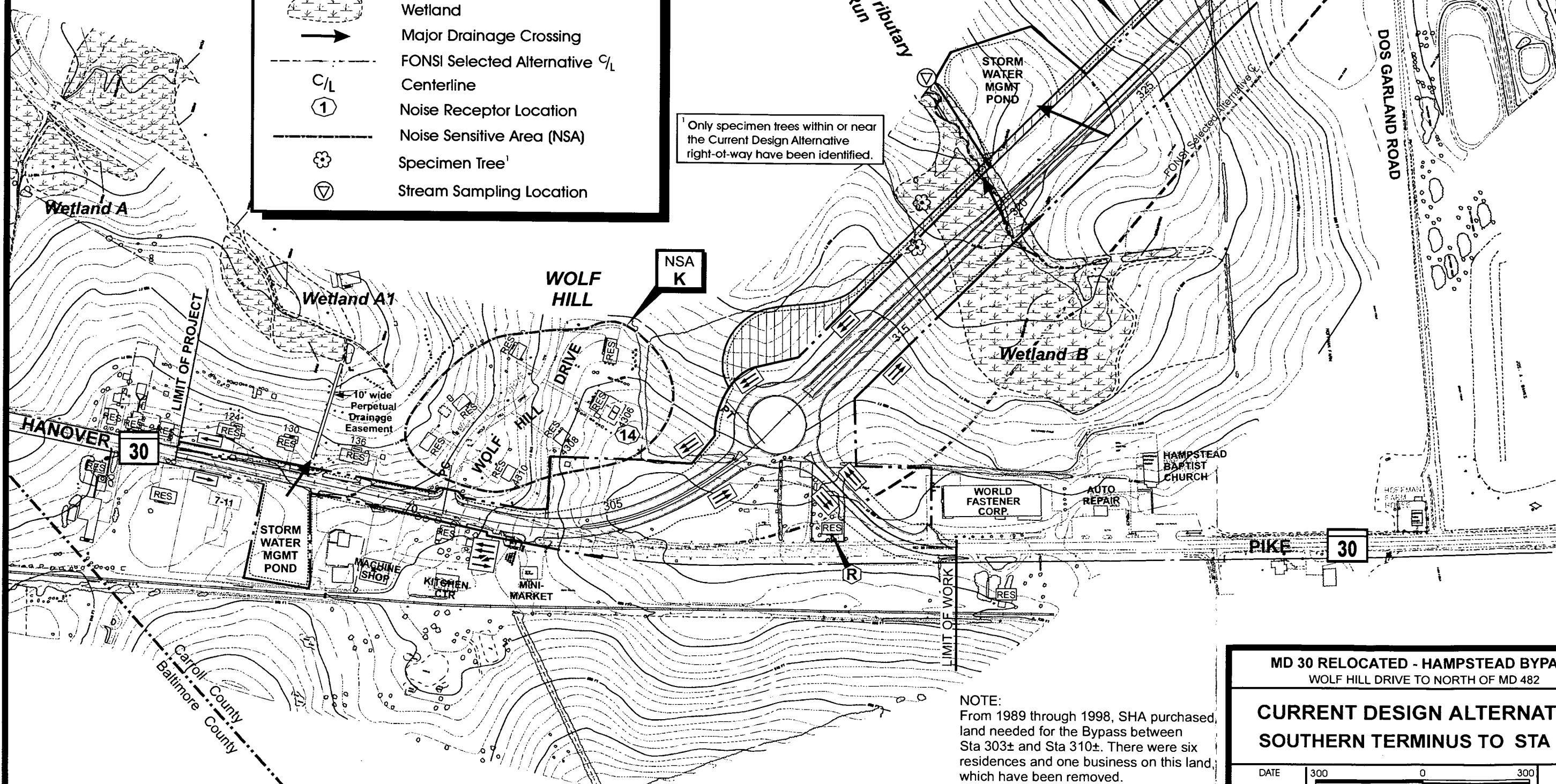
DATE: July, 2002 SCALE IN FEET: 1600 0 1600 FIGURE: IV-4

LEGEND

-  Existing Roadway/Driveway/Parking
-  Existing Right-of-Way Line
-  Proposed Right-of-Way Line
-  Proposed Grading Limits
-  Proposed Roadway
-  100-Year Floodplain
-  Historic Site
-  Displaced Residence
-  Displaced Business
-  Proposed Lane Configuration
-  Wetland
-  Major Drainage Crossing
-  FONSI Selected Alternative C/L
-  Noise Receptor Location
-  Noise Sensitive Area (NSA)
-  Specimen Tree¹
-  Stream Sampling Location

Note:
SHA has, through right-of-way negotiations, purchased 35.7 acres of the Hoffman Farm west of the Current Design Alternative. This land is not needed for construction of the Current Design Alternative and is not included in the right-of-way totals in this document.

¹ Only specimen trees within or near the Current Design Alternative right-of-way have been identified.

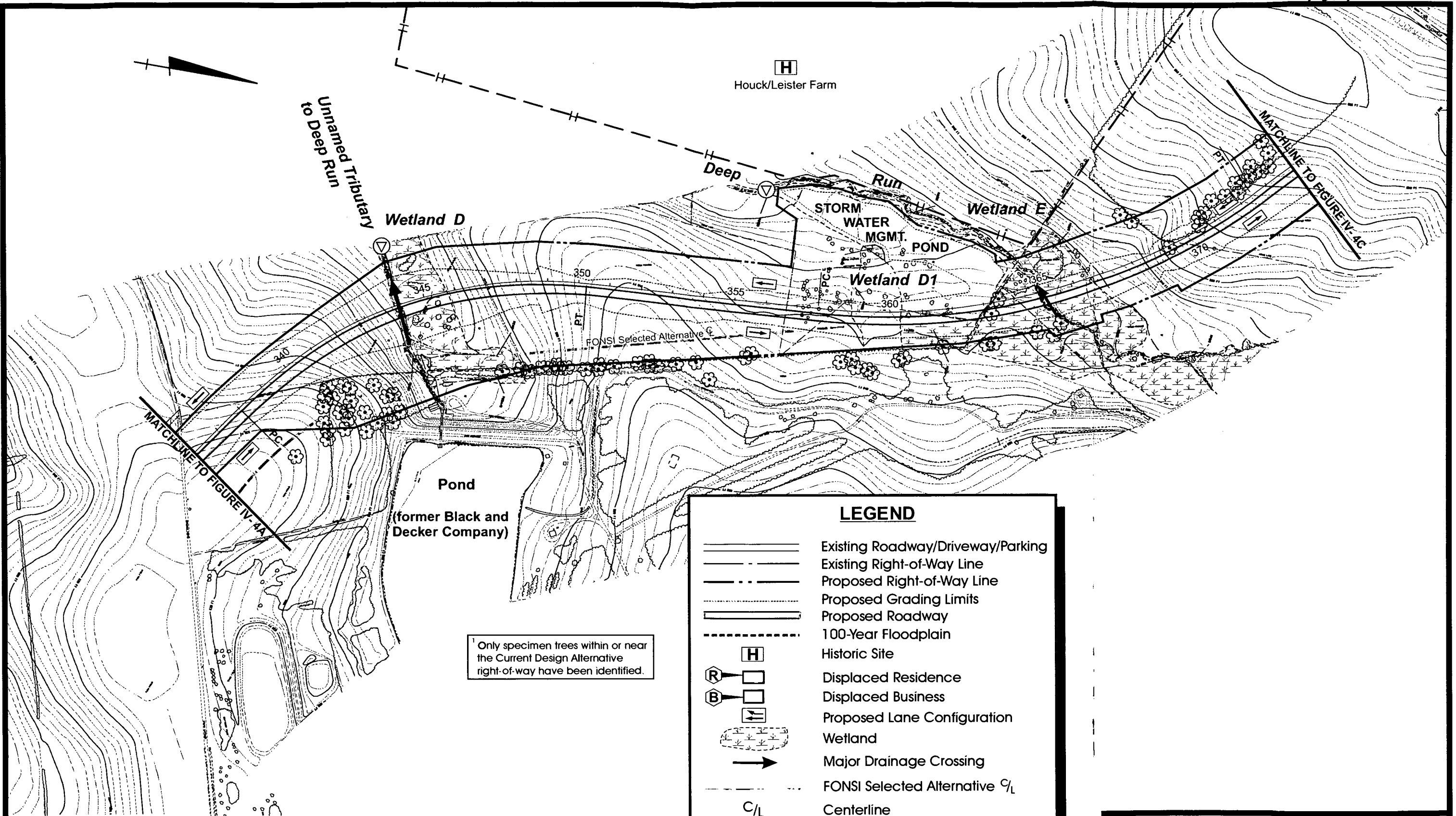


MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

CURRENT DESIGN ALTERNATIVE
SOUTHERN TERMINUS TO STA 336

DATE	300 0 300	FIGURE
July, 2002	SCALE IN FEET	IV- 4A

NOTE:
From 1989 through 1998, SHA purchased land needed for the Bypass between Sta 303± and Sta 310±. There were six residences and one business on this land, which have been removed.



¹ Only specimen trees within or near the Current Design Alternative right-of-way have been identified.

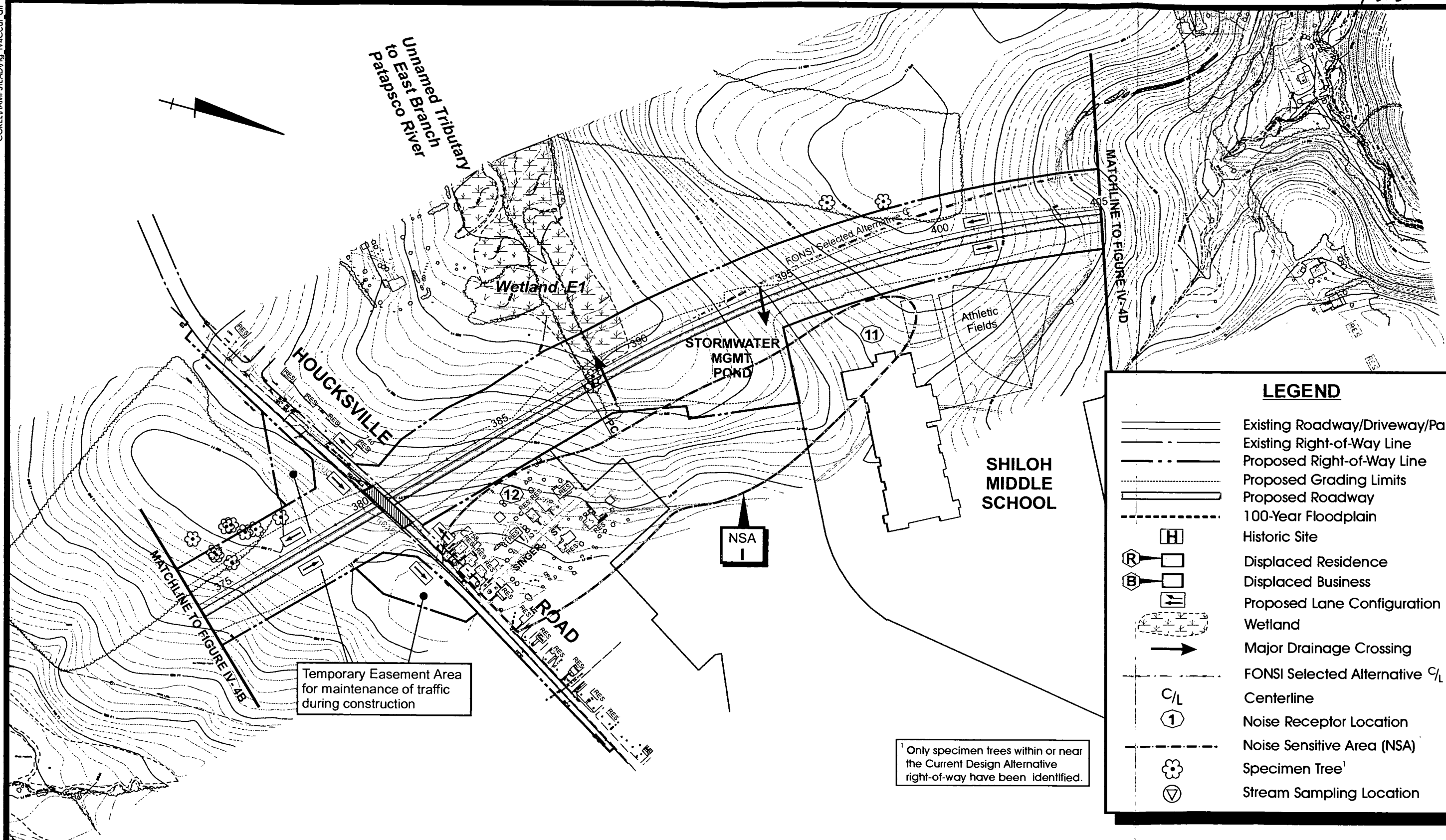
LEGEND

- Existing Roadway/Driveway/Parking
- Existing Right-of-Way Line
- Proposed Right-of-Way Line
- Proposed Grading Limits
- Proposed Roadway
- 100-Year Floodplain
- Historic Site
- Displaced Residence
- Displaced Business
- Proposed Lane Configuration
- Wetland
- Major Drainage Crossing
- FONSI Selected Alternative C/L
- Centerline
- Noise Receptor Location
- Noise Sensitive Area (NSA)
- Specimen Tree¹
- Stream Sampling Location

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

CURRENT DESIGN ALTERNATIVE
STA 336 TO STA 374

DATE July, 2002 300 0 300 FIGURE IV-4B
SCALE IN FEET



Temporary Easement Area for maintenance of traffic during construction

Only specimen trees within or near the Current Design Alternative right-of-way have been identified.

LEGEND

	Existing Roadway/Driveway/Parking
	Existing Right-of-Way Line
	Proposed Right-of-Way Line
	Proposed Grading Limits
	Proposed Roadway
	100-Year Floodplain
	Historic Site
	Displaced Residence
	Displaced Business
	Proposed Lane Configuration
	Wetland
	Major Drainage Crossing
	FONSI Selected Alternative C/L
	Centerline
	Noise Receptor Location
	Noise Sensitive Area (NSA)
	Specimen Tree ¹
	Stream Sampling Location

EXISTING STORM WATER MGMT. POND

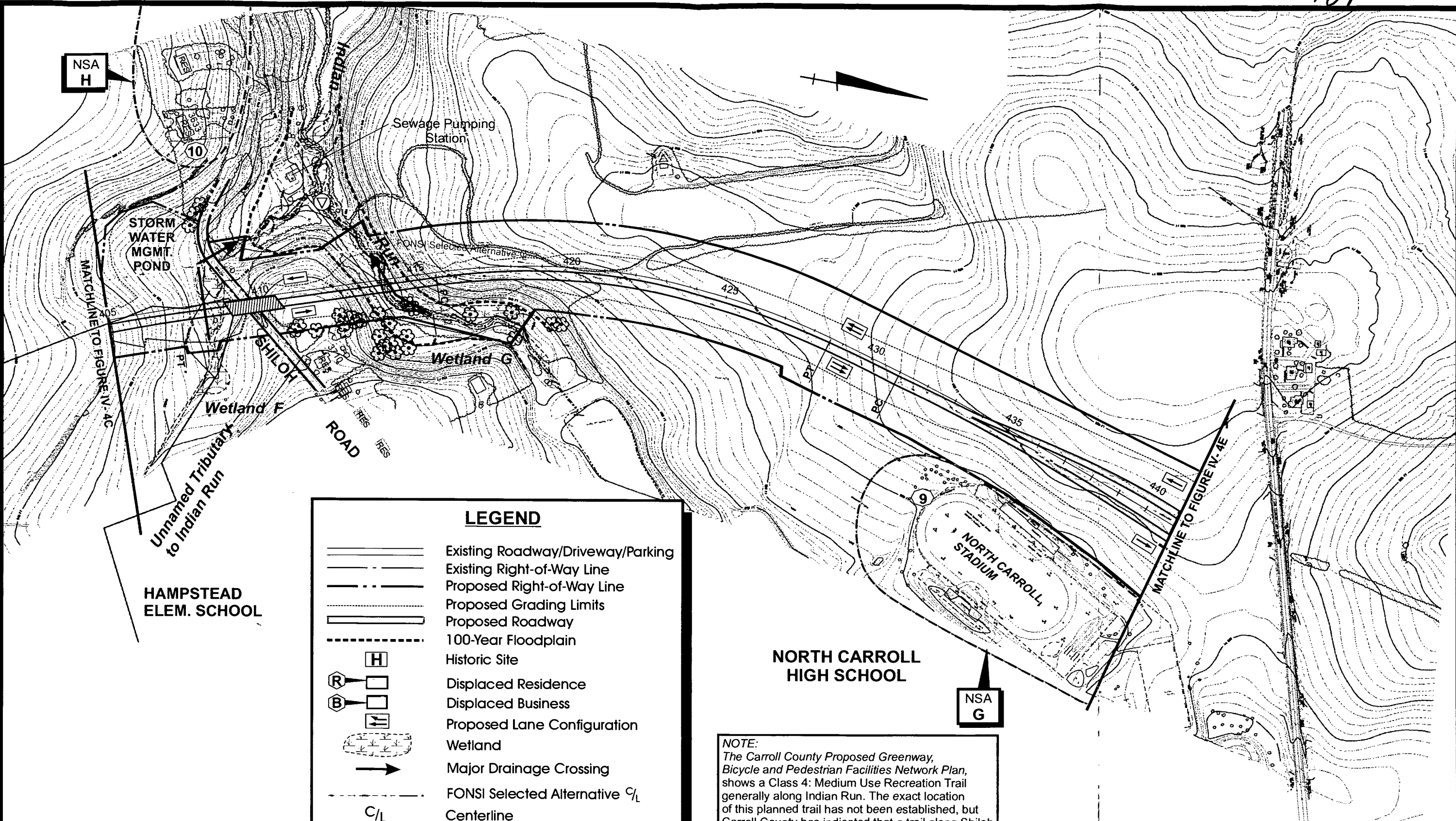
SWEETHEART CUP

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

CURRENT DESIGN ALTERNATIVE
STA 374 TO STA 405

DATE July, 2002	<p>SCALE IN FEET</p>	FIGURE IV- 4C
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CORE\HAMPSTEAD\Fig IV4Dcur.dwg



NSA
H

STORM
WATER
MGMT.
POND

MATCHLINE TO FIGURE IV-4C

Unnamed Tributary
to Indian Run

HAMPSTEAD
ELEM. SCHOOL

Wetland F

SHILOH
ROAD

Wetland G

FONSI Selected Alternative C/L

NORTH CARROLL
HIGH SCHOOL

NSA
G

NORTH CARROLL
STADIUM

MATCHLINE TO FIGURE IV-4E

LEGEND

- Existing Roadway/Driveway/Parking
- Existing Right-of-Way Line
- Proposed Right-of-Way Line
- Proposed Grading Limits
- Proposed Roadway
- 100-Year Floodplain
- Historic Site
- Displaced Residence
- Displaced Business
- Proposed Lane Configuration
- Wetland
- Major Drainage Crossing
- FONSI Selected Alternative C/L
- Centerline
- Noise Receptor Location
- Noise Sensitive Area (NSA)
- Specimen Tree¹
- Stream Sampling Location

NOTE:
 The Carroll County Proposed Greenway, Bicycle and Pedestrian Facilities Network Plan, shows a Class 4: Medium Use Recreation Trail generally along Indian Run. The exact location of this planned trail has not been established, but Carroll County has indicated that a trail along Shiloh Road under the Current Design Alternative bridge would be acceptable. (See correspondence in Section VI of EA)

¹ Only specimen trees within or near the Current Design Alternative right-of-way have been identified.

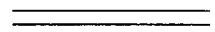
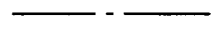
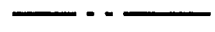
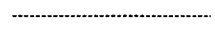
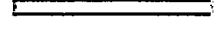





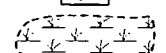








MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

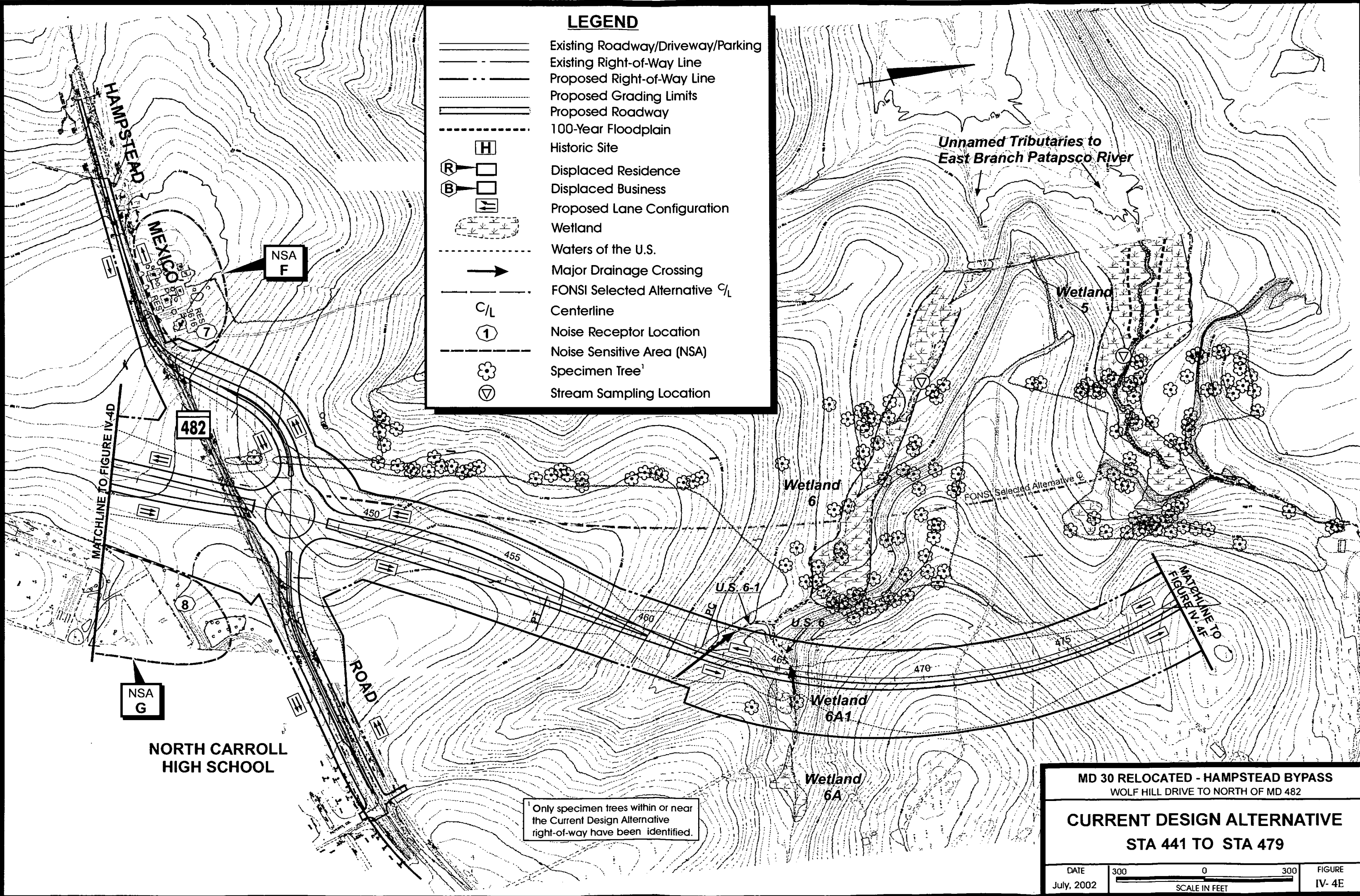
CURRENT DESIGN ALTERNATIVE
 STA 405 TO STA 441

DATE July, 2002	<p>SCALE IN FEET</p>	FIGURE IV- 4D
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CORE\HAMPSTEAD\Fig_IV4Ecur.dwg

LEGEND

-  Existing Roadway/Driveway/Parking
-  Existing Right-of-Way Line
-  Proposed Right-of-Way Line
-  Proposed Grading Limits
-  Proposed Roadway
-  100-Year Floodplain
-  Historic Site
-  Displaced Residence
-  Displaced Business
-  Proposed Lane Configuration
-  Wetland
-  Waters of the U.S.
-  Major Drainage Crossing
-  FONSI Selected Alternative C/L
-  Centerline
-  Noise Receptor Location
-  Noise Sensitive Area (NSA)
-  Specimen Tree¹
-  Stream Sampling Location

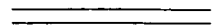
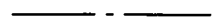


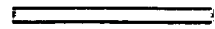





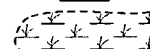










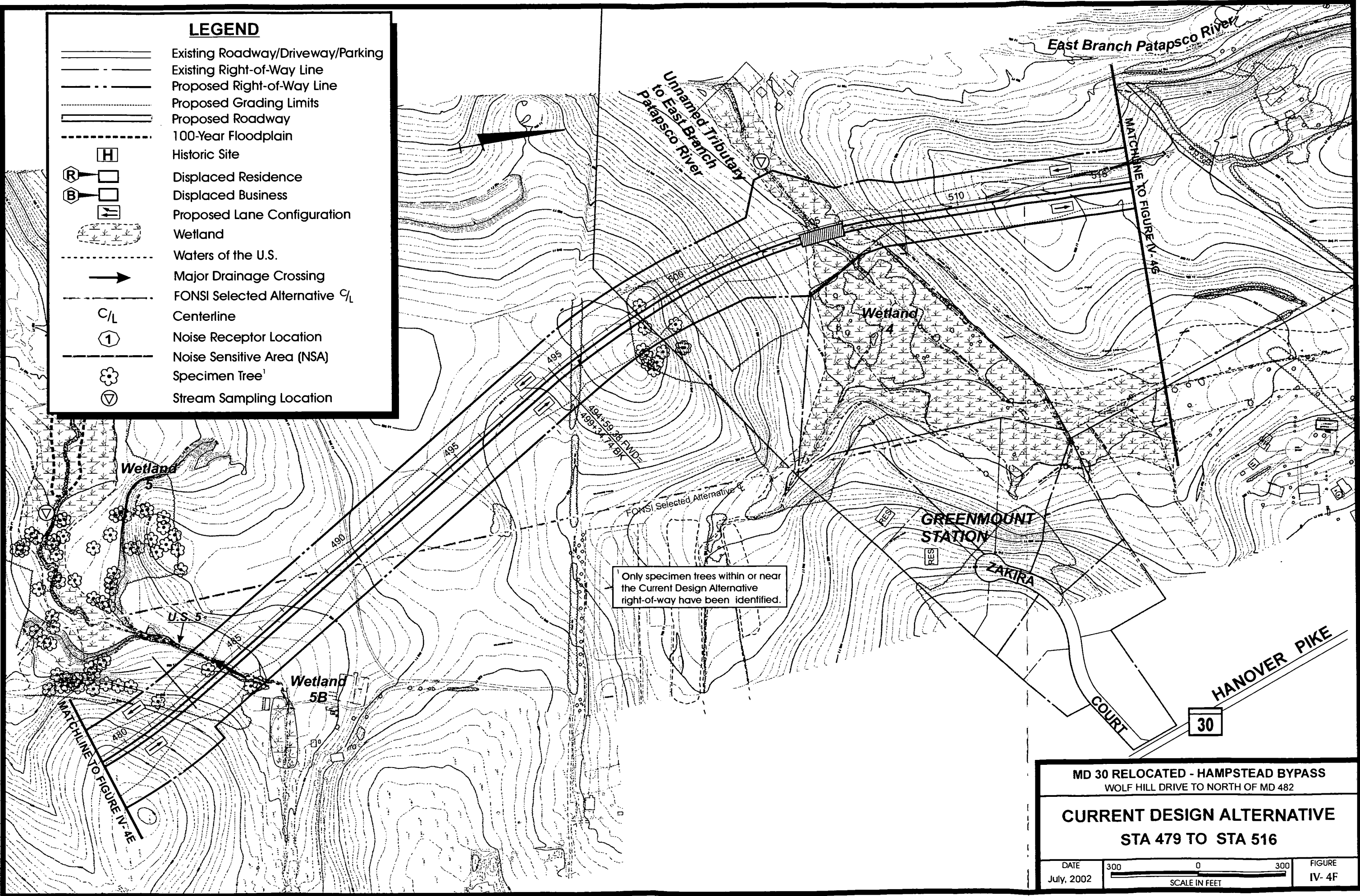
¹ Only specimen trees within or near the Current Design Alternative right-of-way have been identified.


MD 30 RELOCATED - HAMPSTEAD BYPASS			
WOLF HILL DRIVE TO NORTH OF MD 482			
CURRENT DESIGN ALTERNATIVE			
STA 441 TO STA 479			
DATE	300 0 300	FIGURE	
July, 2002	SCALE IN FEET	IV- 4E	

COREL\HAMPSTEAD\Fig IV4Fcur.dwg

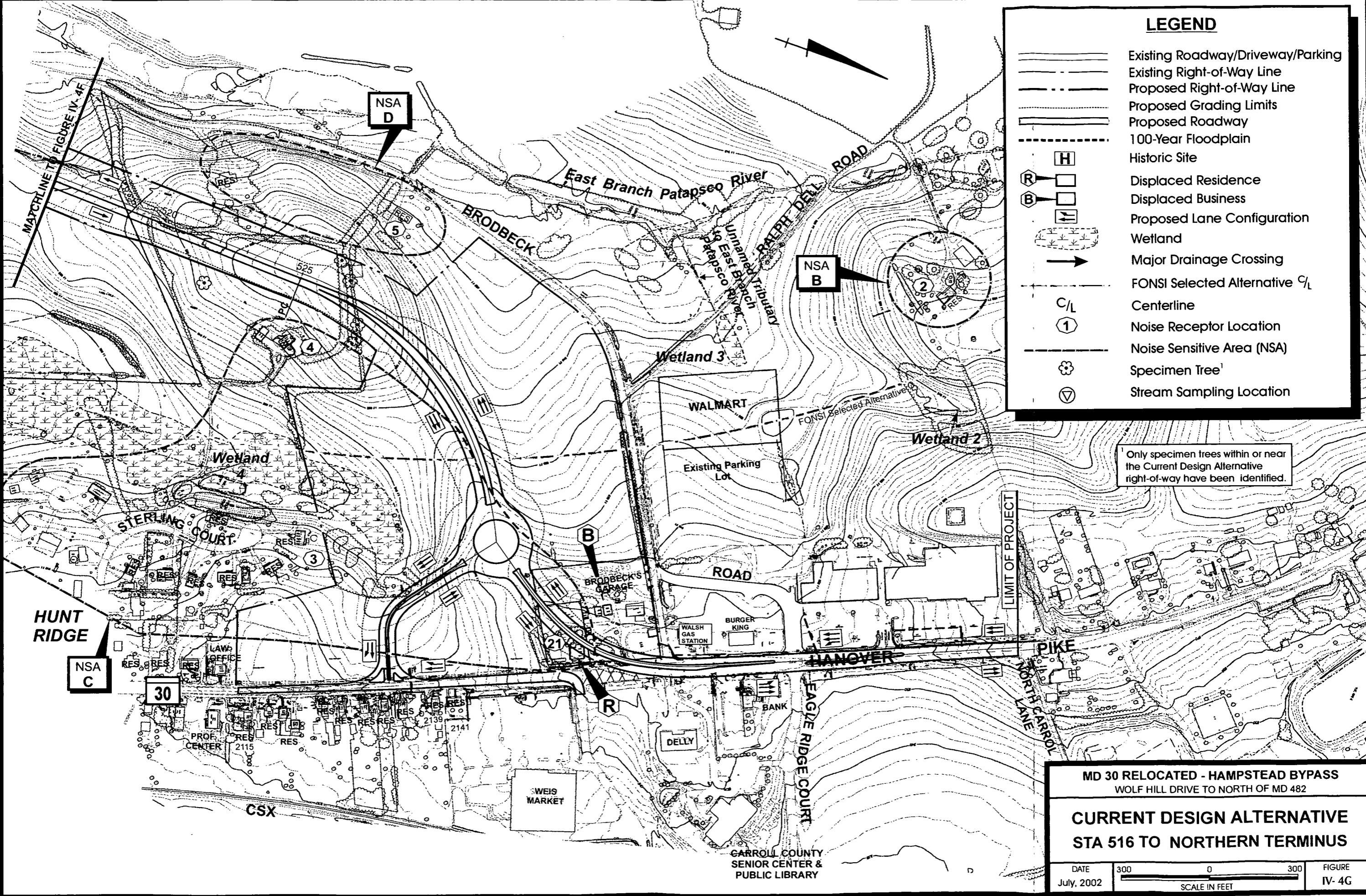
LEGEND

-  Existing Roadway/Driveway/Parking
-  Existing Right-of-Way Line
-  Proposed Right-of-Way Line
-  Proposed Grading Limits
-  Proposed Roadway
-  100-Year Floodplain
-  Historic Site
-  Displaced Residence
-  Displaced Business
-  Proposed Lane Configuration
-  Wetland
-  Waters of the U.S.
-  Major Drainage Crossing
-  FONSI Selected Alternative C/L
-  Centerline
-  Noise Receptor Location
-  Noise Sensitive Area (NSA)
-  Specimen Tree¹
-  Stream Sampling Location



MD 30 RELOCATED - HAMPSTEAD BYPASS		
WOLF HILL DRIVE TO NORTH OF MD 482		
CURRENT DESIGN ALTERNATIVE		
STA 479 TO STA 516		
DATE July, 2002	 SCALE IN FEET	FIGURE IV- 4F

CORELHAMPSTEADFig IV4Gcor all



LEGEND

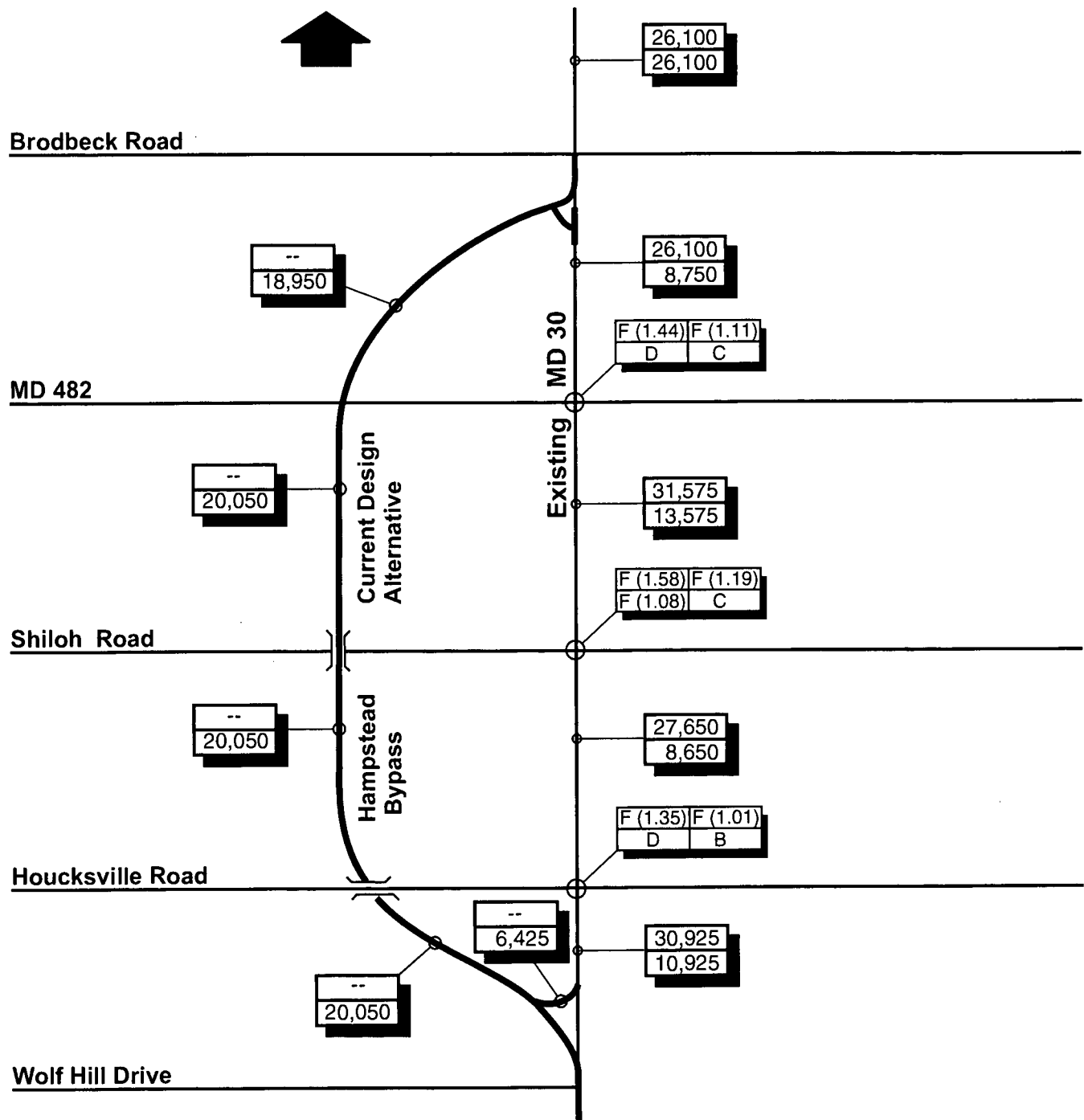
- Existing Roadway/Driveway/Parking
- Existing Right-of-Way Line
- Proposed Right-of-Way Line
- Proposed Grading Limits
- Proposed Roadway
- 100-Year Floodplain
- Historic Site
- Displaced Residence
- Displaced Business
- Proposed Lane Configuration
- Wetland
- Major Drainage Crossing
- FONSI Selected Alternative C/L
- Centerline
- Noise Receptor Location
- Noise Sensitive Area (NSA)
- Specimen Tree¹
- Stream Sampling Location

¹ Only specimen trees within or near the Current Design Alternative right-of-way have been identified.

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

CURRENT DESIGN ALTERNATIVE
STA 516 TO NORTHERN TERMINUS

DATE	300 0 300	FIGURE
July, 2002	SCALE IN FEET	IV- 4G



AVERAGE DAILY TRAFFIC

26,100	No-Build
8,750	Current Design Alt.

LEVEL OF SERVICE

AM	PM	
F (1.35)	F (1.01)	No-Build
D	B	Current Design Alt.

() = Volume / Capacity Ratio

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

2020
AVERAGE DAILY TRAFFIC
LEVELS OF SERVICE

DATE July, 2002	NO SCALE	FIGURE IV - 5
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V. ENVIRONMENTAL CONSEQUENCES

V. ENVIRONMENTAL CONSEQUENCES

This chapter of the EA describes the environmental consequences of the alternatives under consideration, as well as a discussion of the consequences of avoidance and minimization of these impacts. Mitigation measures are also discussed where appropriate. The extent of impacts discussed in this chapter, as well as further opportunities to avoid and minimize impacts, will be refined during the design phase, should a build alternative be selected.

As discussed in Section I-B, sufficient right of way is shown in this document to permit conversion of the Hampstead Bypass to a four-lane divided roadway if such a need develops at some future date, with the understanding that such a conversion would require additional environmental analyses and separate NEPA approval and permitting requirements. The environmental consequences presented in this Section are for the roadway shown in Section IV, that is, a basic 2-lane roadway with auxiliary lanes at intersections.

A. **Social**

1. **Displacements**

Relocation Process

Relocation of any individuals, families, or businesses displaced by this project would be accomplished in accordance with the Uniform Relocation Assistance and Land Acquisition Policies of 1970 as amended by the Surface Transportation and Uniform Relocation Assistance Act of 1987, and would be executed in a timely and humane fashion. In the event comparable replacement housing is not available for displaced persons or available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. A *Summary of the Relocation Assistance Program of the State of Maryland* is included in the Appendix of this document.

Description of Displacements and Relocations

An analysis of the probable displacements that would result from the alternatives under consideration has been made by SHA. Pertinent information from this study is presented below. The preliminary right-of-way and relocation report is available for review at SHA's District 4 Right-of-Way office in Brooklandville.

The No-Build Alternative would not require any residential or business displacements, or acquisition of right-of-way. It also would not impact any farms.

The SHA has, over the past few years, purchased some of the land required for the Hampstead Bypass. To date, the SHA has purchased approximately 4 of the 190 acres needed for the FSA and 26 of the 199 acres needed for the CDA. Part of the land purchased is on the west side of MD 30 near the southern terminus of the project, where six residences (two single-family homes and four apartments) and one business (Lang's Junkyard) were located. Although these residences and business have been removed, they are counted as displacements in this Environmental Assessment in order to present the total impact of the build alternatives, regardless of when the displacements occur.

The FSA, which would require the acquisition of approximately 190 acres of right of way, would displace eight residences (seven near the southern terminus, including six already purchased and removed by SHA; one near Houcksville Road) and two businesses (Wal-Mart near Brodbeck Road as well as Lang's Junkyard near the southern terminus, which has already been purchased and removed by SHA).

The CDA, which would require the acquisition of approximately 199 acres of right of way, would displace eight residences (including seven located near the southern terminus of which six have already been purchased and removed by SHA) and two businesses (Brodbeck's Garage, located at the MD 30/Brodbeck Road intersection as well as Lang's Junkyard near the southern terminus, which has already been purchased and removed by SHA).

It is anticipated that sufficient housing exists on the open market for relocation housing and that the relocations can be completed with minimal impact to the economic well-being of those directly affected, as well as those located in the project area.

It is anticipated that Wal-Mart and Brodbeck's Garage may have problems finding an adequate and suitable replacement site considering the amount of land needed for Wal-Mart and zoning restrictions applicable to operations of a garage.

Farms impacted by the FSA or CDA are depicted on Figure V-1. Grain crops are the major product of all the impacted farms. The FSA would require property from four active farms, as follows:

- The FSA right of way would require approximately 14 acres from the 173 acre Leister Farm, all along the eastern edge of the farm. The Leister Farm is zoned for a combination of industrial and low density residential use, with the portion needed for the FSA being zoned industrial.

- The FSA right of way would require approximately 16 acres from the 100 acre Michael Farm, leaving 55 acres to the west and 29 acres to the east of the roadway. This farm is zoned for light and medium residential use as well as some private conservation.
- The FSA right of way would require approximately 6 acres from the Walsh Farm. The Walsh Family owns a total of approximately 116 acres along Brodbeck Road west of MD 30. The impacted farm consists of approximately 30 acres. The FSA would leave 9 acres to the west and 15 acres to the east of the roadway. The impacted farm is zoned for a combination of business and light and medium residential uses.
- The FSA right of way would require approximately 17 acres from the 86 acre Garrett Farm, leaving 40 acres to the west and 29 acres to the east of the roadway. This farm is zoned for business and low density residential use.

The CDA will require property from three active farms, as follows:

- The CDA right of way will require approximately 20 acres from the 173 acre Leister Farm, all along the eastern edge of the farm. This is a greater impact than with the FSA (20 acres vs. 14 acres) for two reasons: 1) the CDA is shifted slightly further into the Leister Farm to reduce wetland impacts and 2) the CDA right of way requirements for stormwater management are better defined. The Leister Farm is zoned for a combination of industrial and low density residential use, with the portion needed for the CDA being zoned industrial.
- The CDA right of way will require approximately 26 acres from the 100 acre Michael Farm, leaving 40 acres to the west and 34 acres to the east of the roadway. This is a greater impact than with the FSA (26 acres vs. 16 acres) for two reasons: 1) the CDA proposes an at-grade roundabout at MD 482, with a four-lane section through the roundabout, rather than the two-lane section proposed under the FSA and 2) the CDA is shifted slightly to the west (into the Michael Farm) to reduce impact on the North Carroll High School. This farm is zoned for light and medium residential use, as well as some private conservation.
- The CDA right of way will require approximately 42 acres from the Walsh Farm. The Walsh Family owns a total of approximately 116 acres along Brodbeck Road west of MD 30. The CDA would impact two of the farm parcels, which are zoned for a combination of business and light and medium residential uses:

- 12 acres from the 86 acre parcel west of Sterling Court, leaving 54 acres to the west and 20 acres to the east of the roadway. During negotiations with the owner of the portion of the Walsh Farm west of Sterling Court, the SHA agreed to purchase an additional 26 acres of the farm due to access problems and for use as environmental mitigation measures.
- acquisition of the entire 30 acre parcel in the southwest quadrant of the MD 30/Brodbeck Road intersection.

The impact to the Walsh Farm is greater with the CDA than with the FSA (42 acres vs. 6 acres) for the following reasons:

- The CDA is shifted westward into the Walsh Farm to minimize wetland impact
- The CDA, with its roundabout south of Brodbeck Road, and connections to existing MD 30, has greater impacts within the Walsh Farm than does the FSA.

In summary, the FSA would require approximately 53 acres from four active farms, whereas the CDA would require approximately 88 acres from three active farms. All of the farmland to be acquired under either alternative is zoned for residential, business or industrial use, and therefore preparation of a Farmland Conversion Rating Form is not required.

It should be noted that the SHA has recently purchased the majority of the former Hoffman Farm at the south end of the project. The owner of the farm planned to develop it and approached the SHA, which purchased approximately 53 acres of the farm, 17 acres for the CDA right of way and an additional 36 acres west of the CDA due to access concerns and for use as environmental mitigation.

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 original, age, religion, physical or mental handicap, or sexual orientation 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 Office of Equal Opportunity of the Maryland State Highway Administration for investigation.

2. Environmental Justice

As stated in Section III - Alb, the purpose of environmental justice is to identify and address "disproportionately high and adverse impacts" on minority populations and low income populations resulting from alternatives under consideration and to provide the opportunity for these populations to be involved in the public participation process; however, there are no known minority or low income communities in the study area.

Based upon coordination with SHA District 4 ROW staff, none of the displacements under the FSA or CDA is thought to be minority or of low income.

3. Disruption of Neighborhoods and Communities

Although the No-Build Alternative would not directly impact any neighborhoods or communities via construction, it would result in failing levels of services along existing MD 30 in Hampstead, with congested conditions prevailing approximately ten hours per day by 2020.

Both the FONSI Selected Alternative (FSA) and Current Design Alternative (CDA) pass through areas that are currently mostly vacant and undeveloped. Thus they would not disrupt a community's or neighborhood's integrity or cohesion, nor affect a community's social fabric or patterns of interaction. Both the FSA and CDA pass near several neighborhoods (e.g., Singer Heights, Greenmount Station, Hunt Ridge; See Figure III-3), but neither displaces nor requires property from any residences in those neighborhoods. No portions of neighborhoods or communities would be isolated or physically cutoff from the rest of its group. Although the Westwood Park subdivision (currently under construction), would have residences on both sides of the FSA or CDA, it has been designed with the assumption that the Bypass will be built, and thus its street, sidewalk and lot layout reflect the Bypass.

Both the FSA and CDA would divert approximately two-thirds of the traffic on existing MD 30 through Hampstead, vastly improving traffic operations and improving the quality of life for those who live and work along the existing road (e.g., 237 residences, 91 businesses). This diversion of traffic would enable the Town to redevelop the downtown area in accordance with its *Main Street Revitalization Plan*.

4. Effects on Parks and Recreation

None of the three alternatives under consideration would require any impact to any publicly owned public parks or recreational areas.

5. Effects on Access to Community Services and Facilities

Under the No-Build Alternative, increasing volumes of traffic, both through and local, would contribute to an increasing frequency and duration of congestion, which in turn would have a negative bearing on the accessibility to facilities and services.

Neither build alternative would displace or require acquisition of property from any community facility. The build alternatives would neither separate residents from any community facility nor adversely impede access to those facilities. The diversion of through traffic from existing MD 30 to either the FSA or CDA would reduce congestion on existing MD 30, thereby improving accessibility and reducing travel time to facilities and services, many of which are located in Hampstead along or near MD 30. Both the FSA and CDA would facilitate the movement of through travelers and commuters through the Hampstead area, reducing their travel time. They would also provide a connection to MD 482, thereby improving access to the nearby North Carroll High School.

6. Effects on Access for Emergency Vehicles

Under the No-Build Alternative, increasing volumes of traffic would contribute to an increasing frequency and duration of congestion, which would increase response times of emergency vehicles.

It is anticipated that a bypass would improve response times for fire, police and emergency vehicles which are destined for points to the north and south of Hampstead, and enable these vehicles to avoid the use of more heavily traveled MD 30, particularly if traffic is backed up or blocked by an accident. Also, lower traffic volumes on MD 30 as a result of a diversion would improve response times within Hampstead. In Section VI: Comments and Coordination, the Carroll County Sheriff's Office has provided comments regarding this project. (They expect no adverse impact for response times by emergency providers.)

7. Elderly and Handicapped People

Specific displacements of elderly or handicapped individuals have not been identified. According to the 1990 Census, 8.8% of the population in the study area were elderly (defined as age 65 or older).

No concentrations of elderly or handicapped individuals have been identified in the vicinity of the FSA or CDA.

Appropriate relocation advisory services would be offered to displaced elderly or handicapped persons, if required.

8. Economic

a. Effect on Regional and Local Business Community

MD 30 is the principal north-south route through Hampstead and Manchester, two of the eight municipalities in Carroll County. As discussed in Section II-A, these eight municipalities comprise, in total, about four percent of the County's land area but are home to about 24% of its population. Carroll County intends to continue to concentrate development in and around the eight municipalities. In addition to serving the residents and businesses in Hampstead and Manchester, MD 30 is also an important route for trucking firms located to the north, in Hanover, Pennsylvania.

In addition to the numerous service businesses and commercial establishments along the MD 30 corridor, there is substantial area either currently in or zoned for industrial use on the west side of Hampstead.

Under the No-Build Alternative, existing MD 30, with its large traffic volumes and congestion, would remain as the only continuous north-south roadway through the study area. This alternative would not provide the efficient and adequate transportation system needed to facilitate economic activity along either MD 30 (Main Street) in Hampstead or the existing and planned commercial/industrial area on the west side of Hampstead. The No-Build Alternative would not provide an adequate facility to accommodate the timely delivery of service and goods by trucks within the study area or passing through it in a north-south direction. The No-Build Alternative would not require the relocation or displacement of any business.

Construction of the FSA or CDA would divert approximately two-thirds of the traffic on Main Street in Hampstead to the Bypass, thus relieving traffic congestion within Hampstead, allowing improved access to businesses along Main Street and elsewhere in Hampstead. Studies of bypasses around small towns show that when through traffic is diverted away from the central business districts (CBD), businesses within the CBD frequently experience gains in retail sales¹ due to increased accessibility and the increased shopping convenience to the general community. Since few of the businesses along Main Street are geared to serve through traffic, only a small

¹ *Social and Economic Effects of Highways*, Federal Highway Administration, Washington, D.C., 1976

percentage of potential customers would be directed away from the Town. Furthermore, improved traffic circulation and safety would allow local customers better access to the CBD. Both the FSA and CDA would accommodate traffic generated by the existing and planned commercial/industrial development on the west side of Hampstead.

Because the proposed project would have access controls, there would be no opportunity for strip development to spring up along the new roadway. Thus, the businesses in Hampstead would not be subject to either competition from new businesses spurred by the Bypass, or to pressure to move out of the central business district.

Both the FSA and CDA would displace businesses and impact farms, as presented in Section V-A1.

b. Effects on the Tax Base

The No-Build Alternative would not improve accessibility in the project area, which could have a detrimental affect on land value and thereby the tax base.

Both the FSA and CDA would require the acquisition of private property, thereby removing it from the tax base; however, the impact would be minor considering the overall tax base of both the Town of Hampstead and Carroll County. It is likely that the small decrease in tax base associated with acquisition of property by either build alternative would be more than offset by an increase in the value of land in the project area attributable to increased accessibility.

9. Land Use

The No-Build Alternative is not consistent with the goals or plans of Carroll County and the Town of Hampstead for providing an adequate transportation network to accommodate existing and planned development.

Both Carroll County's *Major Street Plan*, adopted in 1962, and the 1986 (Amended 1992) *Hampstead and Environs Comprehensive Plan* include a bypass on the west side of Hampstead, similar to the FSA and CDA. Current and planned land use patterns and densities were established with the assumption that such a roadway would be provided. Therefore, the build alternatives would not alter the ultimate pattern or intensity of land use development envisioned in the County's and Town's master plans. Furthermore, it is anticipated that due to their access controls, neither build alternative would have any significant impact on ultimate land use in areas adjacent to or in close proximity to them. These areas either currently have or are planned for a mixture of residential, commercial and industrial development.

Discussion of the timing of development and how that timing may be influenced by the No-Build and build alternatives is included in Section V-F: Secondary and Cumulative Effects Analysis.

The proposed ROW impacts¹ on each current land use are as follows:

CURRENT LAND USE IMPACTS¹
(Acreage)

	<u>No-Build</u>	<u>FSA ROW</u>	<u>CDA</u>		<u>Total</u>
			<u>ROW</u>	<u>Supplemental</u>	
Agricultural	0	125	158	178	343
Wetland	0	22	10	22	33
Forest ²	0	31	20	97	117
Residential	0	5	8	0	8
Commercial/Industrial	<u>0</u>	<u>7</u>	<u>3</u>	<u>0</u>	<u>3</u>
TOTAL	0	190³	199⁴	297⁵	504

¹The above chart shows the area of each land use within the proposed ROW of the FSA and CDA. The actual impacts to resources such as forest and wetlands will less, since some of these resources will remain undisturbed within the ROW. See Section V-C for actual impacts to these resources. The Supplemental column for the CDA shows the amount of land outside the CDA ROW that SHA has either purchased or is considering purchasing. This land is being purchased for two reasons: 1) it is landlocked or has limited access after purchase of the CDA ROW and/or 2) it will be used for environmental mitigation/protection.

²Forest acreage does not include wooded wetland, the acreage of which is included in the wetland figures.

³Includes 3.7 acres purchased in recent years by SHA for the Hampstead Bypass.

⁴Includes 26 acres purchased in recent years by SHA for the Hampstead Bypass.

⁵Includes 63 acres purchased in recent years by SHA for the Hampstead Bypass.

It should be noted that the FSA has not been developed in as much detail as the CDA, and thus its ROW requirements may be somewhat understated. For example, stormwater management areas have been identified for the CDA, but not for the FSA.

10. Smart Growth Assessment

Approximately 53% of the 5.5 mile long FSA and approximately 64% of the 4.6 mile long CDA are within Priority Funding Areas. (See Figure III-4)

B. Cultural Resources

1. Historic Standing Structures

Project effects on all cultural resources were assessed in accordance with Section 106 of the National Historic Preservation Act and the implementing regulations developed by the Advisory Council on Historic Preservation (36CFR800.5). The regulations stipulate that a project will have an effect on a resource when “the undertaking may alter characteristics of the property that may qualify the property for inclusion in the NRHP. For the purpose of determining effect, alteration to features of property’s location, setting, or use may be relevant depending on a property’s significant characteristics and should be considered” [36CFR800.9(a)]. An undertaking may diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association” [36CFR800.9(b)].

The focus of the Section 106 assessment is to (1) determine whether an action has an effect, and subsequently (2) if that effect is adverse. Using the Criteria of Effect and Adverse Effect specified in 36 CFR Part 800.9, three basic findings can be made:

- No Effect: there is no effect, either harmful or beneficial, on the historic property.
- No Adverse Effect: there could be an effect, but the effect would not be harmful to those characteristics that qualify the property for inclusion in the NRHP.
- Adverse Effect: there could be an effect, and that effect could diminish the integrity of such characteristics.

The Criteria of Adverse Effect state that “an undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.” Three conditions are specified in Part 800.9(b) that are considered adverse effects and relevant to this project:

- Physical destruction, damage, or alteration of all or part of the property;
- Isolation or alteration of the property from the property’s setting if that setting contributes to the property’s qualifications for the National Register;
- Introduction of visual, audible or atmospheric elements that are out of character with the property or alter its setting.

Effects that otherwise would be adverse, may be considered to be “not adverse” if the property is of value only for its potential contribution to archeological, historical, or architectural research, and when such value can be substantially preserved through appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines.

FONSI Selected Alternative (FSA)

On June 9, 1986, the SHPO concurred that the FSA would result in a no adverse effect on four sites eligible for the National Register of Historic Places. These sites were the Houck/Leister Farm (CARR-596), Garrett Farm (CARR-609), Mrs. Price House (CARR-603), and Bank House (CARR-611).

Since that time the Mrs. Price House and Bank House have been destroyed. The project was shortened and thus the Garrett House, at the far northern end of the original Area of Potential Effect (APE), is no longer in the project. Thus, there is only one property within the APE of the current FSA: the Houck/Leister Farm.

The FSA would be approximately 1,000 feet from the cluster of buildings on the Houck/Leister Farm (CARR-596) at its closest point. (See Figure IV-3B.) The SHPO determined that the site would not be adversely affected, provided the western edge of the right-of-way is landscaped to reduce visual impacts.

Current Design Alternative (CDA)

There is one historic standing structure within the Area of Potential Effect of the CDA: The Houck/Leister Farm (CARR-596).

The CDA is approximately 1,000 feet, at its closest point, from the cluster of buildings on the Houck/Leister Farm (CARR-596). (See Figure IV-4B.) The SHPO determined that the site would not be adversely affected, provided the western edge of the right-of-way is landscaped to reduce visual impacts.

Assessment of Effects

In accordance with 36 CFR 800.9, SHA applied the Criteria of Effect and Adverse Effect and determined that the CDA would have no adverse effect on cultural resources, given that no property would be required from any site by the CDA and that the proposed roadway would be sufficiently removed from the Houck/Leister Farm. The SHPO agreed with SHA's November 26, 2001 effect determination for the CDA on February 7, 2002 and SHA's March 11, 2002 effect determination for the revised CDA on April 1, 2002 (See Correspondence section.)

2. Archeological Site

One archeological site (18BA166) was identified 400 feet west of the proposed right-of-way of the FSA. The Maryland Historical Trust (MHT) concurred in a letter of January 11, 1985 that the FSA would have no effect upon 18BA166 (Aspen Run Site) provided that the site area is not utilized for borrow or storage and that the site is avoided by all construction activities.

The MHT concurred on August 2, 2001, that fencing around 18BA166 would not be required during construction of the CDA. The MHT also concurred that no further archeological investigations for the CDA are warranted.

C. Natural Environment

1. Topography/Geology/Soils

a. Geology and Topography

The No-Build Alternative would have no effect on geology and topography.

The build alternatives under consideration would change the overall existing topographic conditions in their immediate area. The FSA would have a maximum grade of approximately 4%, with cuts ranging up to 67 feet in depth and fills up to 59 feet in height. The CDA would also have a maximum grade of approximately 4%, with cuts ranging up to 38 feet in depth and fills up to 51 feet in height. Since the depth to bedrock within the project area is generally between five and ten feet, deep cutting and grading may impact the underlying geology of the project area. This impact would be more pronounced under the FSA, with its deeper cuts.

b. Soils

The No-Build Alternative would have no effect on soils.

The build alternatives would result in disturbance of soils, including erosion and increased runoff, due to construction activities and loss of vegetation in the area. Areas with steep slopes would be modified by cut and fill activities, and soil profiles would change within the construction zones. Urban land soils (disturbed) would become more common throughout the study area, due to an increase in pavement and impervious surfaces.

The following table presents the mapped soil series for that portion of the study area that would be affected by the construction of either the FSA or CDA and the reported erosion hazard, as indicated by the K-Value, associated with each of these soils. K-Value is a measure of the soil's erodibility based on a scale of 0.05 to 0.69. A K-Value greater than 0.35 indicates that a severe potential for erosion exists for the corresponding soil series.

SOIL EROSION HAZARDS

<u>Soil Series</u>	<u>K-Value</u>
Baile Silt Loam	0.43
Chester Silt Loam	0.49
Glenelg Loam	0.49
Glenelg Channery Loam	0.49
Glenville Silt Loam	0.32
Hatboro Silt Loam	0.49
Manor Gravelly Loam	0.49
Manor Loam	0.49
Mt. Airy Channery Loam	0.28

Source: *USDA Soil Survey for Carroll County, Maryland, 1969*
K Factors and Hydrologic Soil Groups, 1974

Nearly all of the impacted soils have a severe erosion hazard classification. Measures to protect soils from erosion would be implemented in accordance with an approved Erosion and Sediment Control Plan prepared in accordance with the *Maryland Standards and Specifications for Soil Erosion and Sediment Control*. Control measures would include: utilizing vegetation to stabilize sediment, minimizing the amount of time and the area of a surface exposed to erosion; and utilizing appropriately sized sediment traps and sediment basins. Additional protection of surface water quality from impacts due to soil erosion on highway construction projects in Maryland results from the designation of construction contractors as co-permittees on the NPDES Permit that is issued under Maryland's General Permit for construction activities, and implementation of a regular inspection program for construction site sediment control devices that includes penalties for inadequate maintenance.

c. Prime Farmland Soils and Soils of Statewide Importance

The No-Build Alternative will impact neither Prime Farmland Soils nor Soils of Statewide Importance.

Both Prime Farmland Soils and Soils of Statewide Importance occur in the project area (See Section III-C1) and will be impacted by both the FSA and CDA. The FSA would impact five Prime Farmland Soils types, requiring 90 acres, and ten Statewide Importance Soils types, requiring 44 acres. The CDA will impact ten Prime Farmland Soils types, requiring 137 acres, and six Statewide Importance Soils types, requiring 38 acres. As discussed elsewhere in this EA, the CDA ROW has been developed in more detail than has the FSA ROW, and thus the soils impacts of the FSA may be understated. Since all the land through which these build alternatives pass is zoned for residential, commercial or industrial development, a Farmland Conversion Impact Rating Form AD 1006 has not been prepared for this project.

2. Aquatic Resources/Wetlands

Following publication of the FONSI in 1988, preliminary design work began on the Hampstead Bypass. Through the late 1980s and the 1990s, coordination was conducted with the U.S. Army Corps of Engineers (COE), the U.S. Fish and Wildlife Service (FWS), Maryland Department of Natural Resources (DNR) and Maryland Department of the Environment (MDE). Through this coordination, several alignment shifts were made to reduce impacts to aquatic resources and wetlands, resulting in the CDA. Therefore, the CDA is itself an impact avoidance and minimization measure to the FSA. Therefore, in this section, impacts of both the FSA and CDA are presented to show how the CDA has reduced the impacts compared to the FSA; however, further impact avoidance and minimization discussion is limited to the CDA.

a. Surface Water

The No-Build Alternative would not impact surface waters.

Both build alternatives would impact Deep Run and two of its unnamed tributaries, and several unnamed tributaries of East Branch Patapsco River. In addition, the FSA would cross Murphy Run. In total, the FSA would cross twelve streams while the CDA would cross eleven.

Table V-1 summarizes the stream crossings, giving length of impact and anticipated type and size of stream crossings based upon preliminary engineering studies. The crossings are listed from south to north. The CDA crossing of the unnamed tributary of the East Branch Patapsco River at Wetland 4 is to be a bridge and the CDA crossings of the streams at Wetland 6A1 and Waters of the U.S. 5 area anticipated to be either bridges or box culverts. All other stream crossings are currently proposed to be pipes. The type and size of the stream crossings may be refined during the final design phase. Additional discussion of the crossing types is contained in Section V-C2c: Wetlands.

**TABLE V-1
SUMMARY OF STREAM IMPACTS**

Stream Name & Associated Wetland	MDE Use Classification	FONSI Selected Alternative (FSA)			Current Design Alternative (CDA)			
		FSA Station	Anticipated Crossing ¹ Type	Length of Impact ¹ (Feet)	CDA Station	Anticipated Crossing Type & Size	Length of Impact ² (Feet)	Drainage Area (Acres)
Unnamed Tributary to Deep Run (Wetland A)	I-P	Phillips Dr. Connection	Pipe	80	N/A	N/A	N/A	N/A
Unnamed Tributary to Deep Run (Wetland B)	I-P	370	Pipe	260	320	72" Pipe	210	61
Unnamed Tributary to Deep Run (Wetland D)	I-P	394	Pipe	250	344	60" Pipe	250	193
Unnamed Tributary to Deep Run (Wetland D1)	I-P	409	Pipe	310	360	24" Pipe	310	
Deep Run (Wetland E)	I-P	414	Pipe	140	365	Triple 72" Pipes	140	176
Unnamed Tributary to East Branch Patapsco River (Wetland E1)	III-P	438	Pipe	60	388	42" Pipe	40	36
Unnamed Tributary to Indian Run (Wetland F)	III-P	458	Pipe	100	408	60" Pipe	250	98
Indian Run (Wetland G)	III-P	463	Pipe	380	414	128" Pipe	380	360
Unnamed Tributary to East Branch Patapsco River (Wetland 6)	III-P	516	Pipe	310	466	Bridge or Culvert with 20' Opening	140	30
Unnamed Tributary to East Branch Patapsco River (Waters of the U.S. 6-1) ³	III-P	N/A	N/A	N/A	462	Pipe	290	23
Unnamed Tributary to East Branch Patapsco River (Wetland 5)	III-P	526	Pipe	280	484	Bridge or Culvert with 20' Opening	150	84
Unnamed Tributary to East Branch Patapsco River (Wetland 4)	III-P	560	Pipe	1,250	505	Bridge with 100' Bottom Opening	0	210
Murphy Run (Wetland 1)	III-P	627	Pipe	230	N/A	N/A	N/A	N/A
Unnamed Drainage Swale to East Branch Patapsco River (Wetland 2)	III-P	598	Pipe	150	N/A	N/A	N/A	N/A
TOTAL				3,800		---	2,160	

¹Type and length of FSA crossings were not specified in the FONSI. Information shown is based upon data contained in the MD 30, Hampstead Bypass: Avoidance, Minimization and Mitigation Report, March 1998.

²Length of CDA Impact based upon preliminary length of structure plus an allowance at each end for channel adjustment/protection.

³This is an intermittent stream; all others are perennial.

Note: See Section V-C2c for a discussion of alternative crossing types considered.

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The long-term effects on water quality resulting from the build alternates would be related to the increase in impervious area; changes to stream channel dimensions, pattern and profile that would accompany culvert and bridge construction (thereby changing natural sediment and biological function); loss of stream bottom habitat due to culvert construction; and pollutant runoff from the roadway (see Table V-2). An additional concern especially for Use III or III-P streams (naturally reproducing trout streams), is an increase in temperature caused by runoff from the roadway.

**TABLE V-2
HIGHWAY RUNOFF CONSTITUENTS**

Suspended Solids (SS)	Particulates in suspension affecting turbidity
Volatile Suspended Solids (VSS)	Estimate of the inert and organic fraction of the suspended solid component
Total Kjeldahl Nitrogen (TKN)	Reduced forms of nitrogen including ammonia nitrogen and organic nitrogen; provides a measure of eutrophication potential of receiving water
Total Organic Carbon (TOC)	Organic carbon in runoff which may be correlated with BOD and COD
Chemical Oxygen Demand (COD)	Portion of organic matter that is susceptible to complete oxidation by a chemical oxidant
Total Nitrogen (TN)	Measure of the eutrophication potential of runoff; includes nitrite nitrogen, nitrate nitrogen, organic/ammonia nitrogen
Total Phosphorous (TP)	Measures the total nutrient load in runoff and eutrophication potential from orthophosphates and polyphosphates
Lead (Pb)	Toxic heavy metal derived from tire wear and combustion of leaded fuels
Zinc (Zn)	Toxic heavy metal derived from tire wear
Copper (Cu)	Toxic heavy metal derived from automobile and brake wear

Deep Run and its tributaries are designated Use I-P by MDE, and in-stream construction would be prohibited from March 1 through June 15. All other streams crossed by the FSA or CDA are designated Use III-P, and in-stream construction would be prohibited from October 1 through April 30. A Waterway Construction Permit would be required from MDE for each stream crossing.

Stormwater management quality and quantity control measures will be provided in accordance with MDE's *Stormwater Management Guidelines for State and Federal Projects*. These regulations require stormwater management practices in the following order of preference:

- On-site infiltration
- Flow attenuation by open vegetated swales and natural depressions
- Stormwater retention structures
- Stormwater detention structures

Special attention will be given to areas draining to use III-P waters. All runoff from paved acres will be directed to stormwater management facilities and SHA will attempt to maximize use of infiltration and avoid use of wet ponds, thereby avoiding thermal impacts.

It has been demonstrated that these measures can substantially reduce pollutant loads and control runoff. The increase in runoff to the streams due to increased impervious area will be addressed with quantity control stormwater management. The increase in runoff of pollutants will be addressed by quality control stormwater management.

To minimize water quality impacts, final design for the proposed improvements will include plans for grading, erosion and sediment control, and stormwater management, in accordance with State and Federal laws and regulations. Final plans require review and approval by MDE. Erosion and sediment control measures will be designed and implemented in accordance with the 1994 *Maryland Standards and Specifications for Soil Erosion and Sediment Control*. Typical temporary sediment control measures which are installed in a project of this type include straw bale structures, slope silt fence, sediment traps, rip-rap linings, fiberglass erosion stops, dikes and swales, soil stabilization matting and stabilized construction entrances. The area disturbed by the construction will be held to a minimum and revegetated promptly after grading to minimize the potential for erosion and sedimentation.

Potential changes to stream channel dimensions, pattern and profile caused by culverts and bridges would be addressed in the design process to minimize the potential for long-term channel instability.

In order to protect the hydrology of downstream bog turtle wetlands, during the final design phase SHA will investigate the practicability of providing greater infiltration than is required by current regulations.

It is anticipated that with implementation of the measures described above, water quality indices (e.g., parameters that quantify sediment, nutrients, bacteria, oxygen demand, etc.) for all streams affected will remain in the permissible range as established by MDE. The use of Best Management Practices (BMPs) to provide sound stormwater management would be implemented where any disturbance could affect water quality in the corridor.

b. Groundwater

The No-Build Alternative would not affect groundwater.

Highway construction can impact groundwater in three ways:

- Reduction in permeable surface, resulting in reduced infiltration and aquifer recharge
- Lowering of water table by road cuts
- Increased pollutants from highway related stormwater contaminants, both during and after construction

The additional impervious area of either build alternative is small compared to the aquifer recharge area, and thus, with proper stormwater management techniques, neither build alternative would substantially modify the overall watershed groundwater recharge rates.

Figure V-2 shows the wells in the vicinity (i.e., within 2,000'±) of the Current Design Alternative. As can be seen, there are twelve wells, as shown on Carroll County GIS Coverages, within 2,000 feet of the CDA centerline. Three of these wells are within 1,000 feet of the CDA centerline, all in areas of fill or less than 10 feet of cut. Only two wells (OW-5, PW-A3) are in areas of moderate cut (20' - 30'), and these wells are located approximately 1,400 feet from the CDA centerline. Detailed geotechnical testing and analysis would be conducted during the final design phase to quantify the impact of the selected build alternative on wells.

Implementation of stormwater management quantity and quality controls will minimize the adverse effect of highway pollutants on groundwater.

c. Wetlands

General

The No-Build Alternative would have no effect on wetlands.

On-going coordination with the COE, FWS, DNR and MDE has resulted in the identification of eighteen wetlands in the immediate vicinity of the FSA and/or CDA. (See Correspondence section for memorandums of meetings and field reviews.) This coordination also resulted in the development of the CDA, as a refinement of the FSA to avoid and minimize impacts to aquatic resources and wetlands, in accordance with Executive Order 11990. The alignment shifts that were made in developing the CDA to minimize wetland impacts area as follows:

- CDA shifted westward at Wetlands B (300'±) and D (170'±) to cross these wetlands in narrower areas.
- CDA shifted eastward at Wetlands F (120'±) and G (90'±) to reduce floodplain impacts.
- CDA shifted eastward at Wetlands 6 (530'±) and 5 (450'±) to avoid these wetlands. Wetland 5 is known to be inhabited by bog turtles.
- CDA shifted 800'± westward at Wetland 4 to reduce wetland acreage impact and avoid an area of the wetland known to be inhabited by bog turtles.

A joint federal/state permit would be required for any disturbance of wetlands. Federal and state regulations require the mitigation and/or compensation for the unavoidable loss of wetlands. Wetland mitigation would be coordinated with the COE, FWS, DNR and MDE. Replacement wetlands required as mitigation would closely resemble the wetlands disturbed by the construction activities.

Table V-3 presents a summary of the wetland impacts associated with each build alternative. The impacts are the areas within the proposed grading limits plus a 10 foot wide strip around the grading limits. Grading limits at this stage of design are based upon 2:1 side slopes.

**TABLE V-3
SUMMARY OF WETLAND IMPACTS (ACRES)**

Wetland I.D.	Cowardin Classification ¹	FONSI Selected Alternative					Current Design Alternative				
		PEM	PSS	PFO	Total	Fig. No.	PEM	PSS	PFO	Total	Fig No.
A	PEM/PSS	0.37	---	---	0.37	IV-3A	N/A	N/A	N/A	N/A	N/A
B	PEM/PSS*	0.93	0.94	---	1.87	IV-3A	0.66	0.66	---	1.32	IV-4A
D	PEM/PSS	1.03	0.17	---	1.20	IV-3B	0.88	---	---	0.88	IV-4B
D1	PEM	---	---	---	--- ³	IV-3B	---	---	---	--- ³	IV-4B
E	PEM/PSS/PFO	1.13	---	0.51	1.64	IV-3B	1.13	---	0.51	1.64	IV-4B
E1	PEM/PFO/POW	0.17	---	0.06	0.23	IV-3C	0.12	---	0.04	0.16	IV-4C
F	PEM/PSS ²	0.10	0.10	---	0.20	IV-3D	0.10	0.10	---	0.20	IV-4D
G	PFO	---	---	0.10	0.10	IV-3D	---	---	0.18	0.18	IV-4D
6	PFO	---	---	0.52	0.52	IV-3E	---	---	---	--- ³	IV-4E
6A1	PFO	---	---	---	---	N/A	---	---	0.16	0.16	IV-4E
5	PFO	---	---	0.66	0.66	IV-3E	---	---	---	--- ³	IV-4E
4	PEM/PSS/PFO	1.83	4.17	0.10	6.10	IV-3F	0.17 ⁴	---	---	0.17 ⁴	IV-4F
2	---	---	---	---	--- ³	IV-3G	N/A	N/A	N/A	N/A	N/A
1	PEM	0.93	---	---	0.93	IV-3H	N/A	N/A	N/A	N/A	N/A
Total		6.49	5.38	1.95	13.82		3.06	0.76	0.89	4.71	

¹ PEM: Palustrine Emergent
PSS: Palustrine Scrub-Shrub

PFO: Palustrine Forested
POW: Open-Water

³ Stream impacts only

² PEM and PSS are intermixed. Assumption is made that half of impacted areas is PEM and half is PSS.

⁴ In addition to the impact of fill shown, a bridge will be over (15± above) and thus shade an additional 0.11 acre of the wetland.

The individual wetland impact discussion below describes the impacts of the FSA and CDA on each wetland and avoidance/minimization measures for the CDA. Additional impact minimization measures, such as steeper side slopes and retaining walls, will be developed and evaluated during the final design phase.

Individual Wetlands Discussion

Wetland A (See Figure IV-4A):

Wetland A is a high quality palustrine emergent/palustrine scrub-shrub wetland (PEM/PSS) located along a drainageway and depressional area with a high water table in the vicinity of Phillips Drive in the Wolf Hill subdivision. Dominant vegetation includes *Salix nigra*, *Acer saccharinum*, *Alnus serrulata*, *Typha latifolia*, *Polygonum arifolium*, *Ludwigia alternifolia*, *Symplocarpus foetidus*, *Onoclea sensibilis*, and *Cyperus strigosus*. Functions include habitat for wildlife, sediment trapping, nutrient retention/removal, food chain support and flood desynchronization.

The Selected Connection to Phillips Drive, part of the FSA, crosses Wetland A, impacting approximately 0.37 acre (PEM) and 80 LF of stream.

Wetland A is not impacted by the CDA.

Wetland B (See Figure IV-3A and IV-4A):

Wetland B is a high quality palustrine emergent/palustrine scrub-shrub wetland (PEM/PSS) located along an unnamed tributary to Deep Run west of the World Fastener Corporation and the Hampstead Baptist Church. Dominant vegetation includes *Acer rubrum*, *Typha latifolia*, *Polygonum arifolium*, *Onoclea sensibilis*, and *Rubus sp.* Functions include habitat, sediment trapping, nutrient retention, food chain support, and flood desynchronization.

The FSA crosses Wetland B at a relatively wide (450'±) area, impacting approximately 1.87 acres (mixed PEM and PSS) and 260 LF of stream. The CDA is shifted approximately 300 feet west of the FSA, crossing Wetland B at a narrower (250'±) area. The CDA is proposed to cross Wetland B via 160 LF of 72" pipe, impacting approximately 1.32 acres (mixed PEM and PSS) and 210 LF of stream.

Wetland B extends westerly to Deep Run and easterly beyond the FSA, and thus it is not practicable to avoid Wetland B by the CDA with an alignment shift. Impact could be minimized by providing a bridge over Wetland B. A bridge 290' long at an additional cost of approximately \$2,000,000 would avoid placement of any fill in the wetland; however, the clearance between the ground and bridge would be about ten feet, which would limit vegetation.

Wetland D (See Figures IV-3B and IV-4B):

Wetland D is a low quality palustrine emergent/palustrine scrub-shrub wetland (PEM/PSS) along an unnamed tributary to Deep Run which serves as an outfall of a pond at the former Black & Decker Company plant. Dominant vegetation includes *Juncus effusus*. Functions include groundwater discharge and flood desynchronization.

The FSA crosses Wetland D at a relatively wide (180'± to 310'±) area, impacting approximately 1.20 acres (1.03 PEM; 0.17 PSS) and 250 LF of stream. The CDA is shifted approximately 170 feet west of the FSA, crossing Wetland D at a narrower (170'±) area. The CDA is proposed to cross Wetland D on 60" pipe, impacting approximately 0.88 acre (all PEM) and 250 LF of stream.

Wetland D extends westerly to Deep Run and easterly beyond the FSA, and thus it is not practicable to avoid Wetland D by the CDA with an alignment shift. Impacts could be

minimized by providing a bridge over Wetland D. A bridge 350' long at an additional cost of approximately \$2,400,000 would avoid placement of any fill in the wetland. The bridge would be approximately 30 feet above the ground at the wetland.

Wetland D1 (See Figures IV-3B and IV-4B):

Wetland D1 is a low quality palustrine emergent wetland (PEM) located at the confluence of two unnamed tributaries to Deep Run. Dominant vegetation includes *Polygonum arifolium*, *Bidens coronata*, *Juncus effusus* and *Cyperus strigosus*. Functions include groundwater discharge and nutrient retention.

Both the FSA and CDA cross the two unnamed tributaries upstream (east) of the palustrine emergent wetland; thus the only impact is to the streams. One drainage crossing (24" pipe), combining the flow in the two existing streams, is proposed. Both alternates impact approximately 310 LF of stream.

Wetland E (See Figures IV-3B and IV-4B):

Wetland E is a high quality palustrine emergent/palustrine scrub-shrub/palustrine forested wetland (PEM/PSS/PFO) along Deep Run. Dominant vegetation includes *Sambucus canadensis*, *Polygonum arifolium*, *Bidens coronata*, *Juncus effusus* and *Cyperus strigosus*. Functions include passive recreation, groundwater discharge, nutrient retention, food chain support, flood desynchronization and nutrient retention/removal.

It is not possible to intersect MD 30 in the vicinity of Wolf Hill Drive with a western bypass of Hampstead without crossing Deep Run. Both the FSA and CDA cross Deep Run at the same location, west of the former Black and Decker Company Plant. Shifting the alignments to the west would result in a longitudinal encroachment on the Deep Run floodplain, while shifting them to the east would impact the industrial properties in that area, and still require a crossing of Deep Run.

Each alternative would impact approximately 1.64 acres (1.13 acres PEM; 0.51 acre PFO) and impact 140 LF of stream. Both alternatives propose pipe crossings, with triple 72" pipes proposed under the CDA.

Impacts could be minimized by providing a bridge over Wetland E. For the CDA, a bridge 625' long at an additional cost of approximately \$4,300,000 would avoid placement of any fill in the wetland. The bridge would vary from approximately two to ten feet above the ground at the wetland. Consideration was also given to 20-foot and 40-foot long bridges at this location, which would increase the cost of the project by approximately \$500,000 to \$580,000.

The grade would need to be raised approximately three feet to accommodate the structure. Although wetland impact at the stream itself would be reduced 0.06 acre for a 20-foot bridge and 0.12 acre for a 40-foot bridge, the raised grade would increase wetland impact by approximately 0.12 acre along the approach roadway; thus the 20-foot bridge would actually increase the wetland impact while the 40-foot bridge would result in the same wetland impact as the proposed triple 72" pipes. Encouraging wildlife passage at Deep Run would not be desirable considering that the area upstream of the CDA along Deep Run is heavily developed with the former Black and Decker complex to the south, Sweetheart Cup complex to the north and MD 30 to the east. .

Wetland E1 (See Figures IV-3C and IV-4C):

Wetland E1 is a high quality palustrine emergent/palustrine forested/excavated pond wetland (PEM/PFO/POW) along an unnamed tributary to East Branch Patapsco River. Dominant vegetation includes *Salex nigra*, *Lindera benzoin*, *Typha latifolia*, *Polygonum arifolium*, *Vernonia noveboracensis*, *Ludwigia alternifolia*, *Bidens coronata*, *Onoclea sensibilis* and *Cyperus strigosus*. Functions include passive recreation, habitat, sediment trapping, groundwater discharge, nutrient retention/removal and food chain support.

The FSA would impact 0.23 acre of Wetland E1 (0.17 acre PEM; 0.06 acre PFO) and 60 LF of stream at the headwaters of the stream. The CDA is shifted approximately 20 feet east (upstream) of the FSA at Wetland E1, thus reducing impact to 0.16 acre (0.12 acre PEM; 0.04 acre PFO) and 40 LF of stream.

Shifting the CDA to the west would increase the wetland impact. Although shifting it to the east would reduce impact to Wetland E1, such a shift would impact five residences along Singer Road and Houcksville Road and/or the Hampstead Middle School. Impacts of the CDA could be minimized by providing a 170' long bridge over Wetland E1 at an additional cost of approximately \$1,200,000. The bridge would vary from approximately six to eleven feet above the ground at the wetland.

Wetlands F and G (See Figures IV-3D and IV-4D):

Wetlands F and G are addressed jointly in this section because of their close proximity and shifts in the FSA or CDA alignments at either wetland have implications at the other.

Wetland F is a medium quality palustrine emergent/palustrine scrub-shrub wetland (PEM/PSS) along an unnamed tributary to Indian Run on the upstream (south) side of Shiloh Road. Dominant vegetation includes *Mentha piperita*, *Ludwigia alternifolia*, *Bidens coronata*

and *Cyperus strigosus*. Assessed functions include passive recreation, sediment trapping, groundwater discharge and nutrient retention.

Wetland G is a high quality palustrine forested wetland (PFO) along Indian Run and an unnamed tributary to Indian Run on the downstream (north) side of Shiloh Road. Dominant vegetation includes *Osmunda cinnamomea*. Assessed functions include passive recreation, habitat, groundwater discharge, nutrient retention/removal, food chain support and flood desynchronization.

The FSA and CDA would have the following impacts:

	FSA		CDA	
	Wetland (Acre)	Stream (LF)	Wetland (Acre)	Stream (LF)
Wetland F	0.20 (PEM/PSS)	100	0.20 (PEM/PSS)	250
Wetland G	0.10 (PFO)	380	0.18 (PFO)	380
TOTAL	0.30	480	0.38	630

Wetland G is along Indian Run, generally perpendicular to the FSA and CDA, and thus cannot be avoided by an alignment shift. Wetland F could be avoided by a western shift of the alignments; however, this would impact the sewage pumping station located on the north side of Shiloh Road and increase forest impacts both north and south of Shiloh Road. The impacts of the CDA on Wetlands F and G are greater than those of the FSA because the CDA is to pass over Shiloh Road rather than intersect it at-grade as would the FSA, resulting in higher and wider fills at these wetlands.

Both alternatives propose pipe crossings, with the CDA having 60" pipe at Wetland F and 128" pipe at Wetland G. Impacts could be minimized by providing bridges. For the CDA, extending the proposed bridge over Shiloh Road by 120 feet to the south would avoid placement of any fill in Wetland F, at an additional cost of approximately \$750,000. The bridge would be approximately 35 feet above the ground at Wetland F. Also for the CDA, a 275' long bridge at an additional cost of approximately \$1,700,000, would avoid placement of any fill in Wetland G. The bridge would be approximately 40 feet above the ground at the wetland. Another option, that would provide some stream protection, is a bridge with a 45' bottom opening that would be approximately 168 feet long, at an additional cost of \$890,000 (compared to the 128" pipe). Based on coordination with the resource agencies, during final design SHA will evaluate the

practicability of both a bridge option and a bottomless arch culvert option at Wetland G, considering impacts, geotechnical conditions, cost and constructibility.

Wetlands 6 and 5 (See Figures IV-3E and IV-4E):

Wetlands 6 and 5 are addressed jointly in this section because of their close proximity and shifts in the FSA or CDA alignments at either wetland has implications at the other.

Wetlands 6 and 5 are high quality palustrine forested wetlands (PFO) along unnamed tributaries to the East Branch Patapsco River. The two tributaries join approximately 1,900 feet downstream (west) of the CDA to form a single tributary.

Dominant vegetation in Wetland 6 includes *Lindera benzoin*, *Arisaema triphyllum*, *Impatiens capensis*, *Onoclea sensibilis*, *Symplocarpus foetidus*, and *Sagittaria latifolia*. Functions of Wetland 6 include passive recreation, habitat, groundwater discharge, food chain support, flood desynchronization, and nutrient retention/removal.

Dominant vegetation in Wetland 5 includes *Sagittaria latifolia*, *Smilacina racemosa*, *Osmunda regalis*, *Phlox maculata*, *Fraxinus pennsylvanica*, *Lindera benzoin*, *Sambucus canadensis*, *Carpinus caroliniana*, *Vaccinium corymbosum*, *Impatiens capensis*, *Onoclea sensibilis*, *Juncus effusus*, *Eupatorium perfolitatum*, *Symplocarpus foetidus* and *Arisaema triphyllum*. Functions of Wetland 5 include passive recreation, habitat, sediment trapping, groundwater discharge, food chain support and nutrient retention/removal.

The FSA and CDA would have the following impacts:

	<u>FSA</u>		<u>CDA</u>	
	<u>Wetland (Acre)</u>	<u>Stream (LF)</u>	<u>Wetland (Acre)</u>	<u>Stream (LF)</u>
Wetland 6	0.52 (PFO)	310	0.00	430*
Wetland 5	0.66 (PFO)	280	0.00	150**
TOTAL	1.18	590	0.00	580

*140 LF along Waters of the U.S. 6 and 290 LF along Waters of the U.S. 6-1.
**150 LF along Waters of the U.S. 5 associated with Wetland 5.

The CDA was moved approximately 500 feet east of the FSA in this area to pass upstream of both wetlands. Wetland 5 is known to be inhabited by bog turtles.

The FSA proposes pipe crossings at Wetlands 5 and 6, whereas bridges or box culverts with 20-foot horizontal and 8-foot vertical openings are proposed at crossings of Waters of the US 5 and 6 with the CDA. These openings would accommodate wildlife passage and are proposed to connect the relatively large underdeveloped areas east and west of the CDA, where several resource agencies have proposed conservation measures. If box culverts are used, the bottom would be placed two feet below the stream inverts.

Wetland 6A1 (See Figure IV-4E):

Wetland 6A1 is a low quality palustrine forested wetland (PFO) along an unnamed tributary to East Branch Patapsco River. Dominant vegetation includes *Acer rubrum*, *Lindera benzoin*, *Viburnum dentatum*, *Carex crinita*, *Symplocarpus foetidus*, *Rosa multiflora*, and *Glyceria striata*. Functions of Wetland 6A1 were not assessed.

The FSA would not impact Wetland 6A1. The CDA is proposed to cross Waters of the U.S. 6, adjacent to Wetland 6A1 with a bridge or box culvert with a 20' horizontal opening, thereby providing wildlife passage and resulting in an impact to Wetland 6A1 of 0.16 acre (PFO). This impact could be avoided by providing a bridge approximately 120 feet long at an additional cost of approximately \$700,000.

Wetland 4 (See Figures IV-3F and IV-4F, G):

Wetland 4 is a high quality palustrine emergent/palustrine scrub-shrub/palustrine forested wetland (PEM/PSS/PFO) along an unnamed tributary to East Branch Patapsco River west of Zakira Court and Sterling Court. Dominant vegetation includes *Salix nigra*, *Acer saccharinum*, *Quercus palustris*, *Sambucus canadensis*, *Cephalanthus occidentalis*, *Alnus serrulata*, *Lindera benzoin*, *Eupatorium maculatum*, *Onoclea sensibilis*, *Symplocarpus foetidus*, *Typha latifolia*, *Asclepias incarnata*, *Juncus effusus*, *Cornus stolonifera*, and *Ludwigia alternifolia*.

Functions include passive recreation, habitat, sediment trapping, groundwater discharge, nutrient retention/removal, food chain support and flood desynchronization.

Wetland 4 extends from the vicinity of Sterling Court westerly to the East Branch Patapsco River, a distance of 0.9 mile. Bog turtles have been found in Wetland 4 in the vicinity of Sterling Court (at the FSA crossing) as well as downstream toward the CDA crossing. The bog turtles were discovered after publication of the FONSI, and thus the CDA alignment was shifted approximately 600 feet west of the FSA, both to reduce wetland impact acreage as well as avoid an area of Wetland 4 inhabited by the turtles. The turtles are thought to use Wetland 4 at the CDA crossing as a migratory route, but no turtles have been found at the crossing site.

The FSA would impact approximately 6.10 acres of Wetland 4 (PEM: 1.83 acres; PSS: 4.17 acres; PFO: 0.10 acre) and 1,250 LF of stream.

The CDA is proposed to cross Wetland 4 on a bridge with a minimum opening of 100' along the existing ground. The bridge will be approximately 15 feet above the ground at the wetland. This will result in 0.17 acre of direct impact to Wetland 4 (classified PEM) with an additional 0.11 acre (also classified PEM) shaded beneath the bridge. Without the bridge, a pipe crossing would be provided (which would be satisfactory for hydraulic purposes), and the wetland impact would be 0.55 acre. Thus the bridge, at an additional cost of approximately \$600,000, will avoid 0.38 acre of wetland impact.

Wetland 3 (See Figure IV-4G):

Wetland 3 is a low quality palustrine emergent wetland (PEM) in the vicinity of the Wal-Mart at the Brodbeck Road/Ralph Dell Road intersection. Since the FSA was adopted in 1986, the portion of Wetland 3 impacted by the FSA has been converted to the Wal-Mart, and thus FSA would currently have no direct impact on Wetland 3.

The CDA would not impact Wetland 3.

Wetland 2 (See Figure IV-4G):

Wetland 2 is a low quality riverine wetland (R4SB5) along an unnamed tributary to the East Branch Patapsco River, located along the FSA approximately 1,100 feet north of Brodbeck Road. Dominant vegetation includes *Sambucus canadensis* and functions include passive recreation and groundwater discharge.

The FSA would impact approximately 150 LF of stream.

The CDA would not impact Wetland 2.

Wetland 1 (See Figure IV-4H):

Wetland 1 is a high quality palustrine emergent wetland (PEM) along Murphy Run in the northwest quadrant of the MD 30/Cape Horn Road intersection. Dominant vegetation includes *Juncus effusus*, *Onoclea sensibilis*, and *Salix nigra*. Functions include habitat, groundwater discharge and food chain support.

The FSA would impact 0.93 acre and 230 LF of stream.

The CDA would not impact Wetland 1.

Proposed Mitigation Measures

When avoidance of impacts to wetlands and streams has been attempted and found to be neither feasible nor reasonable, then minimization of those impacts is investigated. When minimization of wetland impacts is neither feasible nor reasonable, plans to mitigate for the loss of wetlands must be developed. Wetland mitigation, by the way of replacement, enhancement, or preservation of wetlands, is the compensation for such loss.

To accomplish mitigation for potential wetland impacts resulting from this project (Table V-3), SHA plans to pursue, in coordination with the resource/permitting agencies, acquisition and preservation of wetlands at a ratio of 10:1, rather than replacement according to wetland type (2:1 replacement for PFO and PSS wetlands and 1:1 replacement for PEM wetlands). This approach has received support from the resource agencies because there are many opportunities near the proposed bypass to acquire and protect wetlands inhabited by bog turtles, wetlands contiguous with bog turtle habitat, and wetlands along corridors which connect bog turtle sites. This approach will not only compensate for wetland impacts, but will also help protect the federally threatened bog turtle from continued population decline.

To mitigate for wetland impacts, SHA is investigating the purchase, and development of a protective covenant for, approximately 122 acres of wetlands and buffer on properties purchased for damages. SHA will also investigate the purchase of approximately four acres of property encompassing spring heads feeding Wetlands 5 and 6 on both the Carroll County Hospital and the Carroll County Industrial Development Authority (IDA) properties. Of the 126 acres, a portion could be used as mitigation for wetland impacts and the remaining wetlands and buffer could be used as compensation for indirect impacts to bog turtle habitat.

If a satisfactory partnering relationship can be established with outside public and/or private entities who would contribute the after value, SHA will also investigate acquisition of, and a protective covenant for, approximately 124 acres of uplands on the Hospital/IDA property. These uplands include and exceed the Area of Primary Hydrologic Influence for the bog turtle wetlands.

SHA will continue coordination with the U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service to ensure that mitigation strategies will compensate for both unavoidable wetland impacts and indirect impacts to bog turtle habitat. Detailed description of proposed mitigation for the bog turtle is found in the Biological Assessment prepared for the project.

3. Terrestrial Resources

The No-Build Alternative would have no effect on terrestrial resources.

Land cover in the project area is primarily agricultural with isolated wooded areas. The loss of agricultural land would not be a significant loss of wildlife habitat. The loss of forest habitat would reduce the area available for wildlife populations, including deer, rabbits, fox, various species of birds and other native wildlife. New road construction, clearing of forests and increased noise would reduce the quality of these habitats. Based on coordination with the resource agencies, during the final design phase SHA will investigate means to accommodate wildlife passage near several of the major drainage crossings (e.g., Wetland 4, Waters of the U.S. 5 and 6).

The amounts of open land habitat impacted by the two build alternatives are as follows:

	<u>FONSI Selected Alternative</u>	<u>Current Design Alternative</u>
Agricultural (within ROW)*	125 acres	158 acres
Forest:**		
Within ROW	31.0 acres	20.0 acres
To be Cleared	Not Available	12.1 acres

*Acreages shown here are more than shown in Section V-A1, because Section V-A1 addresses only the major farms, whereas the acreages shown above include all impacted farmland

**Does not include forested wetlands

The loss of any wildlife habitat would result in a proportional loss in population. A minor shift in species composition may occur as the size of individual habitats are reduced below threshold levels for a particular species. Species which use the agricultural fields would not be as affected because that habitat would remain abundant.

A concern beyond direct impacts is fragmentation of habitat, especially large contiguous forests. Figure V-3 shows the eleven forests near and/or impacted by the CDA. As can be seen, the impacted forests are relatively small, with only four larger than 20 acres, and two exceeding 100 acres. The CDA passes near the edge of the four largest forests, impacting three of them. The total forest impact within these three forests is 7.92 acres.

The potential for animal/vehicle conflicts would be introduced along the new roadway, particularly where animal home ranges are divided by the right-of-way. This conflict is likely to decline as adjustments are made by wildlife to their territories and foraging patterns. Wildlife crossing structures and fencing at selective locations will be considered during the final design phase to further reduce this potential. This will be coordinated with the resource agencies to determine appropriate wildlife passages. As set forth under the wetland discussions in Section

V-C2c, structures that would accommodate wildlife passage are proposed under the CDA at Wetland 4 and Waters of the U.S. 5 and 6.

There are 37 specimen trees (defined as having a dbh of at least 24" or 75% of the state champion - See Section III-C4b) within the grading limits of the CDA, as follows:

<u>SPECIES</u>	<u>NO. WITHIN CDA GRADING LIMITS</u>
red oak	12
white oak	6
tulip poplar	3
scarlet oak	3
hickory	3
red maple	2
chestnut oak	2
black gum	2
swamp white oak	2
mulberry	1
slippery elm	1

Specimen trees within or near the FSA right-of-way have not been identified, thus the number of specimen trees within the FSA grading limits is not known.

4. Floodplains

The No-Build Alternative would have no impact on floodplains.

The 100-year floodplains shown on the Federal Emergency Management Administration (FEMA) floodplain mapping in the vicinity of the two build alternatives have been plotted on the Alternatives Mapping (Figures IV-3, 4). Only one such floodplain, Indian Run, would be directly impacted by either build alternative, with 1.5 acres of impact under the FSA and 0.9 acre under the CDA. (See Figures IV-3D and IV-4D) The areas of impact are based upon the grading limits plus a ten-foot wide strip beyond the grading limits. The area of impact for the FSA is an approximation, since actual grading limits are not available for it.

The floodplain encroachments of both the FSA and CDA involve transverse crossings, though the FSA also encroaches longitudinally upon the unnamed tributary to Indian Run. Both alternatives propose to cross Indian Run on pipe, with a preliminary size of 128". Final determination of crossing type and size will be made during the final design phase of the project.

Long-term impacts to the 100-year floodplain are not expected to occur, because the final design of the Selected Alternative will be based on detailed hydrologic/hydraulic studies to verify FEMA's 100-year floodplain elevations and determine appropriate culvert sizes. Stormwater management will be provided and the hydraulic structure will be designed to accommodate the 100-year flood without causing substantial impacts. 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. By incorporating these results into the final design plans, SHA should be able to avoid long-term floodplain impacts and maintain existing floodplain functions.

Use of state-of-the-art erosion and sediment 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 6-7-2, 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. Rare, Threatened and Endangered (R/T/E) Species

The only known state or federally listed rare, threatened or endangered species in the vicinity of the proposed Hampstead Bypass is the bog turtle (*Clemmys muhlenbergii*). Information regarding the project's potential impact on bog turtles and their habitat, as well as proposed mitigation measures, is summarized below; however, due to the sensitive nature of this information, the details are reserved for the Biological Assessment (BA) prepared for the U.S. Fish and Wildlife Service (FWS).

Section 7(a)(2) of The Endangered Species Act requires that federal agencies, in this case the Federal Highway Administration (FHWA), consult with the FWS to ensure that actions they fund, authorize, permit or otherwise carry out will not jeopardize the continued existence of any listed species or adversely modify designated critical habitats. In accordance with Section 7 (a)(2), SHA has prepared a BA to document the potential effects of the project on the bog turtle. The BA incorporates suggested goals of the Bog Turtle Recovery Plan, which was finalized by FWS in May 2001.

To ensure that the project does no "harm" as defined in Section 7(a)(2), research on the location, movements and habitat requirements of nearby bog turtle populations has been conducted. In addition, hydrologic research is being conducted to ensure that surface and subsurface components will not be altered in such a way as to affect adversely wetland hydrology or hydroperiod. A final component of the Biological Assessment is a Conservation Measures section that makes recommendations for future protection and management of the bog turtle habitat. Using project monies dedicated to environmental mitigation and other funding sources available to SHA, FHWA and SHA are proposing the acquisition and protection of land that will protect this species and its habitat. Other federal, state, and county agencies have expressed an interest in partnering with SHA in the establishment and/or management of such a protection area. The protection area will include individual, occupied wetlands as well as corridors to provide connectivity. Details of the research conducted on bog turtles, design modifications to reduce/eliminate impacts, and potential mitigation strategies have been examined and recommendations made in the Biological Assessment and will be finalized in the subsequent Biological Opinion rendered by FWS.

The FSA would impact approximately 6.0 acres of wetland occupied by bog turtles. Additionally, the FSA would impact 0.76 acre of PFO wetland, which is downstream and outside of the occupied area, but within an area designated as "Zone 1" according to the Bog Turtle Recovery Plan. Zone 1 includes the entire delineated wetland within which turtles are found, not just those portions that have been identified as, or appear to be, optimal for nesting, basking, or hibernating.

Since the FSA, methods to reduce impacts resulted in development of the CDA, which has undergone additional modifications to further reduce/eliminate impacts. Currently, the CDA will have no direct impact to bog turtles or occupied bog turtle habitat; however, there would be 0.17 acre of "Zone 1" impact. SHA continues to seek additional methods to reduce potential impacts to bog turtles.

6. Hazardous Materials/Waste Sites

The FSA would pass close to the World Fastener Corporation and the site of the former Lang's Junkyard. This would require the services of an Industrial Hygienist during construction to collect samples from Station 355 through Station 365 and analyze them for priority pollutant metals, volatile organics and PCBs. In addition, the FSA would pass through a sludge disposal area from approximately Station 590 through Station 620 (north of Brodbeck Road). This would require the services of an Industrial Hygienist during construction to collect samples and analyze them for fecal coliform and priority pollutant metals.

The CDA will be on fill as it passes near the former Black and Decker Company plant. Special provisions will be included in the contract documents requiring the contractor to avoid excavation in this area. In addition, the CDA will pass through Brodbeck's Garage on the west side of MD 30 south of Brodbeck Road, part of which is used as a junkyard. The contract documents will require the services of an Industrial Hygienist during construction to collect samples at this site and analyze them for total petroleum hydrocarbons, volatile organics and priority pollutant metals.

Depending upon the type and extent of contaminants found, if any, appropriate measures will be taken. These may include removal, encapsulation, and remediation. Special protective measures for construction workers may also be required.

There will be no impacts to the promiscuous dump sites (rubble or trash) identified on Figure III-14.

D. Noise Impacts

1. Introduction

Nineteen receptor sites are located within the Study Area as indicated in Table III-15 and shown on Figure III-15 and the Alternatives Mapping in Section IV. The sites are located in 11 Noise Study Areas (NSAs). Receptors were selected to represent the overall noise environment and to determine locations where residences could be impacted by traffic noise. A summary of impacts and mitigation measures is presented in this section.

This evaluation was completed in accordance with SHA's *Sound Barrier Policy*, dated May 11, 1998. This is a Type I noise project as defined in *23 CFR, Part 772*. A Type I project provides evaluation of noise mitigation for projects that propose construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

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

2. Predicted Noise Levels

The Federal Highway Administration (FHWA) under the US Department of Transportation developed the method used to model and to predict noise levels in this study. The computer model, called the FHWA Traffic Noise Model (TNM), computes highway traffic noise levels at user-defined receivers, and aids in the design of highway noise barriers. TNM includes a database of speed-related noise emission levels for five vehicle types (automobiles, medium trucks, heavy trucks, buses, and motorcycles) under cruise (constant speed) conditions. An adjustment is first applied to account for the number of each vehicle type and its speed as defined by the user. In addition, TNM contains a database of emission levels that accounts for the effects of accelerating vehicles such as those affected by traffic control devices (stop signs, signals), tollbooths or on-ramps, and the effects of roadway upgrades. Sound propagation is computed taking into account the effects of atmospheric absorption, divergence (i.e., geometric spreading of sound energy over distance), intervening ground types and their acoustical characteristics, topography, man-made barriers, vegetation, and rows of buildings. To improve accuracy, all TNM databases and calculations are based on 1/3-octave band data, and then the results are recombined to give noise levels in the A-weighted broadband.

The noise levels given in this section are for the noisiest hour(s) of the day. This hour usually coincides with the peak traffic hour. The combination of 2020 peak hour traffic and associated travel speed resulted in the "worst- case" noise levels for this analysis.

3. Impact Assessment and Abatement Consideration

a. Impact Assessment and Feasibility of Noise Control

The determination of traffic noise impacts is based on the relationship between the ambient noise levels, the predicted peak hour traffic noise levels, and the established noise abatement criteria in the project area. For this study, the applicable criteria are defined in *23 CFR, Part 772* and subsequent memoranda (see Table V-4). Mitigation measures were investigated where the peak hour noise levels approached or exceeded the 67 dBA Federal Noise Abatement Criterion for residential areas. Based on SHA's *Sound Barrier Policy* dated May 1998, 66 dBA is considered as approaching the criteria. Additionally, SHA policy calls for mitigation measures to be considered where build levels are at least 57 dBA and exceed the present ambient levels by 10 dBA or more.

When mitigation is investigated, certain feasibility and reasonableness criteria established by federal guidelines and SHA policy must be met in order for a barrier to be considered eligible for construction. These criteria are summarized below.

Feasibility

Sound barrier feasibility is defined as the engineering and acoustical ability to provide effective noise reduction. Sound barrier feasibility will be based upon the following:

- If noise levels cannot be reduced by at least 3 decibels at impacted receptors, a noise barrier will not be considered feasible. The noise reduction goal for receptors with the highest noise levels (first row receivers) is 7-10 decibels. If a noise reduction of 7-10 decibels cannot be achieved, the barrier will be considered not to be feasible. Noise sensitive receptors include residences, schools, churches, historical areas, cultural resources, and other places which people use that can be adversely affected by highway noise.
- If the placement of a sound barrier will restrict pedestrian or vehicular access or would cause a safety problem, such as limiting sight distance or reduction of a vehicle recovery area, the barrier will not be considered feasible.

- If the construction of a sound barrier will result in significant utility impacts, the barrier will not be considered feasible. Significant utility adjustments can have a major impact on barrier design options and construction costs.
- If construction of a sound barrier will have an impact upon existing drainage, it could be considered not to be feasible. Drainage is an important element in the location and design of a sound barrier. The potential for impact to drainage patterns and systems and flooding will be considered in the overall decision on whether construction is feasible and reasonable.

Only barriers that are determined to be feasible will be approved.

Reasonableness

Each individual impact area will also be evaluated to determine if construction of a sound barrier is reasonable. Reasonableness will be based upon the following:

- If 75% of the impacted residents do not approve the proposed sound barrier, the barrier could be considered not to be reasonable.
- For Type I projects, if existing noise levels are expected to increase by 10 decibels or more, but will be less than 57 decibels, a sound barrier will be considered not to be reasonable.
- For Type I projects, if a change over no-build levels of less than 3 decibels would result from a build condition, a sound barrier could be considered not to be reasonable. In the assessment of the no-build to build noise level change, consideration will be given to the cumulative effects of highway improvements made after the original highway construction. If the cumulative increase in design year build noise levels at noise sensitive receivers that existed when prior improvements were made is equal to or greater than 3 decibels, noise abatement could be considered reasonable.
- If noise levels equal or exceed 72 decibels at impacted noise sensitive receivers, SHA will consider a sound barrier reasonable for any proposed highway expansion that will increase noise levels provided that other feasibility and reasonableness criteria are met.
- If the cost of a sound barrier will exceed \$50,000 per benefited residence, the barrier will be considered not to be reasonable. The cost/residence is determined by the

dividing the cost of a sound barrier by the total number of benefited residences. The total number of benefited residences will be the sum of the following:

- The number of impacted residences that would receive a 3-decibel or greater noise reduction.
- The number of non-impacted residences (noise levels below 66 dBA Leq) that would receive a 5-decibel or greater noise reduction.
- The number of impacted and non-impacted non-residential noise sensitive receivers (schools, churches, etc.) that would benefit from a sound barrier.

All benefited receptors will be included in the cost/residence calculation. Non-residential receptors such as schools, churches, historic areas, etc. will be considered as equivalent residences for cost/residence calculations, based upon 10 equivalent residences for each use.

Sound barrier cost is based upon the estimated cost of the barrier system, i.e. posts, panels, foundations and retaining walls required solely to support the sound barrier. The most recent five years of bidding experience will be used to calculate the square foot factor used to estimate barrier cost. If the cost of a barrier exceeds the \$50,000 maximum, SHA will fund up to the maximum, if the balance is available from another source or sources. SHA will work with the local jurisdiction on options for alternative funding.

- For Type I projects, SHA will look at both the cost/residence for individual noise sensitive areas and the average cost/residence for the entire project in determining reasonableness. Noise sensitive areas with a cost/residence of less than \$100,000 would be included in the project cost averaging. If the average cost/residence for the project is less than \$50,000, sound barriers will be considered reasonable.
- If a very tall sound barrier would have to be located close to the impacted receptors, and would have a negative visual impact, construction of the barrier could be considered not to be feasible. The relationship of the location of a sound barrier to the receptors to be protected will be considered in making a reasonableness determination.
- If the construction of a sound barrier will result in an impact to a Section 4(f) resource, it could be determined not to be reasonable. Section 4(f) resources include publicly owned recreation areas and parks, wildlife areas, conservation areas and

historic sites that are either on or considered eligible for the National Register of Historic Places.

Reasonableness will consider the significance of impact and the feasibility of avoidance. A 4(f) document will be prepared as required by federal regulations, and consultation and coordination with those responsible for the resource will be carried out and documented.

- The control of new development adjacent to state highways in high noise zones at the local level is critical to the overall abatement of highway noise. Sound barrier reasonableness will consider the local priority on approving new development adjacent to state highways in the determination of providing noise abatement for highway construction or reconstruction projects.

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

b. Noise Abatement Criteria

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

Economic assessment is based on the following assumptions:

- An effective barrier should, in general, extend in both directions for four times the distance between the receptor and the roadway (source) and provide a 7 to 10 dBA reduction in the noise level at first row receptors.
- An effective barrier height is considered to be the height at which this reduction is achieved.
- A second consideration is that the barrier blocks the line of sight to all vehicles from every direction.
- The cost per residence is determined by dividing an assumed barrier cost by the number of benefited residences.
- A unit cost of \$ 16.54 per square foot is used to determine the cost of the barrier when evaluating economic feasibility.

- An impacted residence is considered benefited when the peak noise level equals or exceeds the criteria, and it experiences a minimum 3-dBA reduction in noise with mitigation.
- A residence that is not impacted is also considered benefited if it receives a 5-dBA reduction with mitigation.
- When determining the cost per residence, a church and a school are considered equal to 10 residences.

The effects of noise from each alternative are judged in accordance with FHWA's activity/criteria relationship published in *23 CFR, Part 772* and subsequent memoranda. The FHWA criteria, shown in Table V-4, are based on specific land uses and are used in determining the need for studying noise attenuation measures. All locations within this Study Area are of land use Category B, which has a design noise level of 67 dBA (L_{eq}).

**TABLE V-4
FHWA NOISE ABATEMENT CRITERIA [HOURLY A-WEIGHTED SOUND LEVEL -
DECIBELS (DBA)]**

ACTIVITY CATEGORY	L_{eq}	DESCRIPTION OF ACTIVITY CATEGORY
A	57 dBA (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue its intended purpose.
B	67 dBA (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 dBA (exterior)	Developed lands, properties, or activities not include in Categories A or B above.
D	None	Undeveloped lands.
E	52 dBA (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: *23 CFR, Part 772*

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

Several types of noise barriers, including reflective walls, absorptive walls, and berms, can be used to reduce noise levels at sensitive receptors. Because right-of-way constraints precluded the use of berms, only walls were analyzed in this study. When barriers are constructed, reflective walls are generally used. Absorptive walls are used in areas where reflective barriers would exacerbate noise

levels on the opposite side of the road. Reflective barriers were deemed acceptable and absorptive barriers were not analyzed. While NSAs were selected where impacts may occur, the proposed alternates do not impact some NSAs above criteria noise levels. Mitigation was not investigated at these locations because 2020 build noise levels do not equal or exceed current SHA criteria. Mitigation was also not analyzed in those residential neighborhood areas where required access for driveways and sidewalks would make construction of barriers impracticable. At these locations or other locations where mitigation is not feasible or reasonable, investigations will be made during final design to determine if berms, landscaping buffer schemes, or other options that would diminish the effects of the proposed improvements and minimize noise impacts could be utilized in a cost-effective way.

Following is a discussion of noise mitigation for each NSA. A complete list of noise levels for all receptors is presented in Table V-5, found at the end of this section. A final decision on abatement measures will be made upon completion of the project design and the public involvement process.

Noise Sensitive Area A (See Figure IV-3H)

NSA-A consists of six single-family residences adjacent to existing MD 30 at the northern limit of the study and is represented by Receptor 1. The peak ambient noise level at this site was 69 dBA. The 2020 No-Build noise level is expected to remain the same.

With the FSA, traffic would be diverted from the existing roadway, and the 2020 build noise level is expected to decrease 3 dBA to 66 dBA, which is still considered a noise impact and investigation of mitigation is required. However, even with the decrease at Receptor 1, the noise impact is predominately associated with existing MD 30. Although an impact exists, due to openings required for driveways and sidewalks, construction of an effective barrier is not feasible at this location.

Under the CDA, the new alignment will end south of this area. Therefore, traffic will continue to use the existing roadway in this area, and the predicted 2020 build noise levels will be the same as the No-Build Alternative levels, which exceed the noise impact criteria. However, due to openings required for driveways and sidewalks, construction of an effective barrier is not feasible at this location.

Noise Sensitive Area B (See Figure IV-3G)

NSA-B is a single farmstead located off Ralph Dell Road at the northern limits of the project and is represented by Receptor 2. The peak ambient noise level is 48 dBA. The 2020 No-Build noise level is expected to increase 2 dBA to 50 dBA.

With the FSA, the 2020 build noise level would rise by 15 dBA to 63 dBA, which is considered to be a noise impact due to the substantial increase. A 12-foot noise barrier, approximately 1,200 feet long, along the FSA would reduce noise levels by 7 dBA at a cost of over \$ 235,000 for the one benefited residence. Due to the high cost per residence, mitigation is not considered reasonable for this site.

Under the CDA, the predicted 2020 build noise levels will be the same as the No-Build condition. The proposed roadway would not impact this area with regard to increased noise levels. Because there will be no noise impact, mitigation is not proposed.

Noise Sensitive Area C (See Figure IV-3G and IV-4G)

NSA-C includes a residential subdivision at Sterling Court (containing 15 homes) and nearby isolated residences and is represented by Receptors 3 and 4 for the CDA and Receptors 3 and 21 for the FSA. Peak ambient noise levels vary from 49 dBA at Receptor 4, to 52 dBA at Receptor 3, to 70 dBA at Receptor 21. With the No-Build Alternative, 2020 noise levels will increase by 2 dBA at Receptor 3, by 1 dBA at Receptor 4 and will remain the same at Receptor 21.

Under the FSA, the 2020 build noise level would increase 10 dBA above existing levels at Receptor 3 and would decrease by 3 dBA at Receptor 21. Even with the decrease at Receptor 21, the resulting level would be 67 dBA, which still represents a noise impact primarily associated with existing MD 30. Although an impact exists, the openings required for driveways and sidewalks prohibit construction of an effective barrier and a barrier is therefore not feasible at this location. The 10-dBA increase above existing noise levels represents a substantial increase, therefore consideration of noise mitigation is warranted at Receptor 3. A 12-foot high noise barrier, approximately 2,200 feet long, along the FSA would reduce noise levels by 7 dBA at a cost of nearly \$ 450,000 for the six residences benefited (\$ 75,000 per residence). Due to the high cost per residence, mitigation is not considered reasonable for this site.

With the CDA, levels will increase by 3 dBA at Receptor 3 and by 8 dBA at Receptor 4, but will remain below 66 dBA. Because this is not a noise impact, abatement consideration is not required under this alternative.

Noise Sensitive Area D (See Figure IV-3G and IV-4G)

NSA-D includes isolated residences east of Brodbeck Road southwest of MD 30. It includes Receptors 4 and 5 for the FSA and Receptor 5 for the CDA. Peak ambient noise levels are 49 dBA at Receptor 4 and 50 dBA at Receptor 5. With the No-Build Alternative, 2020 noise levels will increase by 1 dBA at Receptor 4 and decrease by 1 dBA to 49 dBA at Receptor 5.

Under the FSA, the 2020 build noise level would increase 11 dBA above existing levels at Receptor 4 and by 3 dBA at Receptor 5. This represents a substantial increase at Receptor 4, therefore mitigation investigation is warranted. Under this analysis, a 1,200-foot long 20-foot high barrier would reduce noise levels by 7 dBA at a cost of nearly \$ 400,000 per residence benefited. Due to the high cost per residence, mitigation is not considered reasonable for this site.

With the CDA, the level will increase 7 dBA to 57 dBA at Receptor 5. Because this is not a noise impact, abatement consideration is not required under this alternative.

Noise Sensitive Area F (See Figure IV-3E and IV-4E)

NSA-F includes a small group of five homes along Hampstead-Mexico Road (MD 482) and is represented by Receptor 7. The peak ambient noise level at Receptor 7 is 56 dBA. Under the No-Build Alternative, 2020 noise levels will increase by 2 dBA to 58 dBA.

The FSA would increase the noise level 3 dBA above existing to 59 dBA and the CDA will also increase the noise level 3 dBA to 59 dBA. These are not substantial increases above existing noise levels and therefore mitigation investigation is not required at this location under the FSA or CDA.

Noise Sensitive Area G (See Figure IV-3D, E and IV-4D, E)

NSA-G includes two Receptors (8 and 9) on the campus of the North Carroll High School. The peak ambient noise levels range from 49 dBA at Receptor 9 to 52 dBA at Receptor 8. With the No-Build Alternative, 2020 noise levels will decrease by 2 dBA at Receptor 9 and remain the same at Receptor 8.

Under the FSA, the level would increase 9 dBA above existing levels at Receptor 8 and Receptor 9. These are not substantial increases above existing noise levels and therefore mitigation investigation is not required at these locations under the FSA.

With the CDA, noise is predicted to increase by 9 dBA at Receptor 8 and by 8 dBA at Receptor 9. These are not substantial increases above existing noise levels and therefore mitigation investigation is not required at these locations under the CDA.

Noise Sensitive Area H (See Figure IV-3D and IV-4D)

NSA-H includes a small group of homes south of Shiloh Road and is represented by Receptor 10. The peak ambient noise level is 47 dBA. Under the No-Build Alternative, levels will increase 5 dBA to 52 dBA.

With the FSA, the level would increase 12 dBA above existing to 59 dBA. This represents a substantial increase at this site, therefore mitigation consideration is warranted. Although an impact exists, the openings required for driveways and sidewalks prohibit construction of an effective barrier, and a barrier is therefore not feasible at this location.

With the CDA, the level will increase by 9 dBA to 56 dBA. This is not a substantial increase above existing noise levels and therefore mitigation investigation is not required at this location under the CDA.

Noise Sensitive Area I (See Figure IV-3C and IV-4C)

NSA-I includes the Shiloh Middle School, which is represented by Receptor 11 and a small residential development (Singer Heights) with 12 homes, which is represented by Receptor 12. Peak ambient noise levels are 46 dBA at Receptor 11 and 48 dBA at Receptor 12. With the No-Build Alternative, 2020 noise levels will increase by 1 dBA, to 47 dBA and 49 dBA, respectively.

Under the FSA, the level would increase 14 dBA above existing to 60 dBA at Receptor 11 and by 19 dBA to 67 dBA at Receptor 12. Although this represents a substantial increase at both receptors and mitigation consideration is warranted, coordination with school officials (Receptor 11) revealed that there are no outdoor noise sensitive uses in the vicinity of the impact (See Section VI: Comments and Coordination). Because the outdoor use of the school was determined not to be noise sensitive, mitigation for the school was not considered and a barrier to provide noise reduction at the residential community only (Receptor 12) was investigated. Under this analysis, a barrier 1,200 feet long with heights varying from 12 to 16 feet provides reductions of 7 dBA at Receptor 12 at an estimated cost of \$269,000. Six residences would receive benefits from this barrier, consequently the cost per benefited site would be \$44,800. Therefore, noise mitigation for this southern portion of the NSA meets current SHA feasibility and reasonableness criteria for further consideration.

With the CDA, the level is predicted to increase by 15 dBA to 61 dBA at Receptor 11 and by 14 dBA to 62 dBA at Receptor 12. Although mitigation consideration is warranted due to the substantial increases, coordination with school officials (Receptor 11) revealed that there are no outdoor noise sensitive uses in the vicinity of the impact (See Section VI: Comments and Coordination). Because the outdoor use of the school was determined not to be noise sensitive, mitigation for the school was not considered and a barrier to provide noise reduction at the residential community only (Receptor 12) was investigated. Under this analysis, a barrier nearly 1,200 feet long with heights varying from 12 to 16 feet provides reductions of 9 dBA at Receptor 12 at an estimated cost of \$269,000. Six residences would receive benefits from this barrier, consequently the cost per benefited site would be \$44,800. Therefore, noise mitigation for this southern portion of the NSA meets current SHA feasibility and reasonableness criteria for further consideration.

Noise Sensitive Area K (See Figure IV-3A and IV-4A)

NSA-K is a small residential development, Wolf Hill, with 15 homes on the west side of MD 30 at the south end of Hampstead and is represented by Receptor 14. The peak ambient noise level at this location is 54 dBA. With the No-Build Alternative, the noise level is expected to increase to 57 dBA.

With the FSA, the 2020 build noise level is expected to increase 6 dBA to 60 dBA. The 2020 build noise levels are predicted to rise 8 dBA to 62 dBA with the CDA. This is not a substantial increase above the existing noise level and therefore mitigation investigation is not required at this location under the FSA or CDA.

Noise Sensitive Area L (See Figure III-15)

NSA-L represents residential areas, including about 25 homes in the vicinity of Receptors 15 and 16, at the southern end of Hampstead. The existing peak ambient levels are 75 dBA at the first-row location (Receptor 15) and 61 dBA at the second-row location (Receptor 16). With the No-Build Alternative, 2020 noise levels are expected to remain the same at Receptor 15 and decrease 1 dBA at Receptor 16.

With the FSA, traffic would be diverted from the existing roadway to the new FSA alignment, and the 2020 noise level is expected to decrease 3 dBA to 72 dBA at Receptor 15, which is still considered a noise impact, and to decrease 5 dBA to 56 dBA at Receptor 16. Although an impact exists at Receptor 15, construction of an effective barrier is not feasible at this location due to openings required for driveways and sidewalks.

Similarly, with the CDA, traffic will be diverted from existing MD 30 away from this NSA, although not as much as with the FSA. Therefore, the resulting levels at Receptor 15 and Receptor 16 are predicted to be one decibel higher (73 dBA and 57 dBA, respectively), which represents a continuing noise impact at Receptor 15. However, due to openings required for driveways and sidewalks, construction of an effective barrier is not feasible at this location.

Noise Sensitive Area M (See Figure III-15)

NSA-M represents residential areas, including about 20 homes each in the vicinity of Receptors 17 and 18 and Receptors 19 and 20, in the central portion of Hampstead. The existing peak hour levels are 75 and 73 dBA at the first-row locations (Receptors 17 and 19, respectively) and 66 and 56 dBA at the second-row sites (Receptors 18 and 20, respectively). With the No-Build Alternative, the levels are expected to increase by 1 dBA at Receptor 17 and remain the same at

Receptor 18, while the level at Receptor 19 is expected to remain the same and the level at Receptor 20 is expected to increase by 4 dBA.

With the FSA, traffic would be diverted from the existing roadway to the new FSA alignment, and the levels are expected to generally drop by two decibels. The resulting levels at Receptors 17 and 19 (73 and 71 dBA, respectively) are considered to be noise impacts. However, due to openings required for driveways and sidewalks, construction of an effective barrier is not feasible at this location.

As with NSA-L, the CDA will divert less traffic from the existing MD 30 than the FSA. Therefore, the resulting noise levels at Receptors 17 and 19 will be 74 and 73 dBA, respectively, and at Receptors 18 and 20 will be 63 and 58 dBA, respectively. This results in noise impacts at Receptors 17 and 19. However, due to openings required for driveways and sidewalks, construction of an effective barrier is not feasible at this location.

4. Construction Noise

Land uses that would be sensitive to vehicular noise would also be sensitive to construction noise. Although highway construction is a short-term phenomenon, it can cause significant noise impacts. Additionally, it is likely that some construction may occur at night to avoid severe traffic impacts. The extent and severity of the noise impact would depend upon the phase of construction and the noise characteristics of the construction equipment in use. Construction would have direct impact on receptors located close to the construction site and would have an indirect impact on receptors located near roadways whose traffic flow characteristics are altered due to rerouting from the construction site.

As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of noise impact. This type of project would probably employ the following pieces of construction equipment that would likely be sources of construction noise:

- Bulldozers and earthmovers
- Graders
- Front End Loaders
- Dumps and other diesel trucks
- Compressors

Maintenance of construction equipment will be regular and thorough to minimize noise emissions because of inefficiently tuned engines, poorly lubricated moving parts, poor to ineffective muffling/exhaust systems, etc.

**TABLE V-5
NOISE ANALYSIS SUMMARY [HOURLY A-WEIGHTED SOUND LEVEL - DECIBELS (DBA)]¹**

NSA	Receptor	Existing Noise Levels	2020 Noise Levels			Change over Existing Noise Levels		2020 FONSI with Barrier		2020 CDA with Barrier		Barrier Analysis
			No-Build	Build FSA	Build CDA	Build FSA	Build CDA	Mitigated Noise Level	Insertion Loss	Mitigated Noise Level	Insertion Loss	
A	1	69	69	66	69	-3	0					Effective mitigation not feasible
B	2	48	50	63	50	+15	+2	56	7			Mitigation not reasonable
C	3	52	54	62	55	+10	+3					Mitigation not reasonable
C/D ¹	4	49	50	60	57	+11	+8	53	7			Mitigation not reasonable
D	5	50	49	53	57	+3	+7					No noise mitigation required
F	7	56	58	59	59	+3	+3					No noise mitigation required
G	8	52	52	61	61	+9	+9					No noise mitigation required
	9	49	47	58	57	+9	+8					No noise mitigation required
H	10	47	52	59	56	+12	+9					Effective mitigation not feasible
I	11	46	47	60	61	+14	+15					Mitigation not required ²
	12	48	49	67	62	+19	+14	59	7	53	9	Effective mitigation appears reasonable
K	14	54	57	60	62	+6	+8					No noise mitigation required
L	15	75	75	72	73	-3	-2					Effective mitigation not feasible
	16	61	60	56	57	-5	-4					No noise mitigation required
M	17	75	76	73	74	-2	-1					Effective mitigation not feasible
	18	66	66	64	63	-2	-3					No noise mitigation required
	19	73	73	71	73	-2	0					Effective mitigation not feasible
	20	56	60	57	58	+1	+2					No noise mitigation required
C	21	70	70	67	N/A ³	-3	N/A ³					Effective mitigation not feasible

¹Receptor 4 will fall in NSA-C for the CDA and NSA-D for the FSA.

²Coordination with school official indicated there are no outdoor noise sensitive uses in the vicinity of the impact.

³Receptor 21 is displaced by the CDA.

NOTE: Shaded values represent levels that approach or exceed SHA noise impact criteria.

E. Air Quality

1. Objectives and Type of Analysis

This analysis will serve as support documentation for the project and has been prepared in accordance with the US Environmental Protection Agency (EPA), Federal Highway Administration (FHWA), and Maryland State Highway Administration (SHA) guidelines. Carbon monoxide (CO) impacts are analyzed as the accepted indicator of vehicle-generated air pollution.

The EPA CAL3QHC dispersion model is used to predict carbon monoxide (CO) concentrations for air quality sensitive receptors for both the build year (2000) and design year (2020). The detailed analyses predict air quality impacts from CO vehicular emissions for the No-Build and CDA at each receptor location. Modeled 1-hour and 8-hour average CO concentrations are added to background CO concentrations for comparison to the State and National Ambient Air Quality Standards (S/NAAQS).

2. Construction Impacts

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

3. Receptor Site Locations

The sites for the CO dispersion modeling were selected to characterize the "worst case" conditions in proximity to the most congested intersection in the study area, which occurs at MD 30 and Gill Avenue (which connects to Shiloh Road) in the morning peak hour. Twelve sites were evaluated, three in each quadrant of the intersection. In each quadrant, the first site is along MD 30, about 60 feet from Gill Avenue. The second site is at the intersection, about 10 feet from each street. The third site is along Gill Avenue, about 60 feet from MD 30. The sites are as follows:

<u>SITE</u>	<u>DESCRIPTION</u>
SHNW1	Northwest Quadrant, along MD 30
SHNW2	Northwest Quadrant, at the intersection
SHNW3	Northwest Quadrant, along Gill Avenue
SHSW1	Southwest Quadrant, along MD 30
SHSW2	Southwest Quadrant, at the intersection
SHSW3	Southwest Quadrant, along Gill Avenue
SHSE1	Southeast Quadrant, along MD 30
SHSE2	Southeast Quadrant, at the intersection
SHSE3	Southeast Quadrant, along Gill Avenue
SHNE1	Northeast Quadrant, along MD 30
SHNE2	Northeast Quadrant, at the intersection
SHNE3	Northeast Quadrant, along Gill Avenue

4. Results of Microscale Analysis

A summary of the CO concentrations is shown in Table V-6. The receptors' concentrations predicted with each alternative are below the State and National Ambient Air Quality Standards of 35 ppm in a one-hour period and 9 ppm in an eight-hour period.

The analysis assumed a one-hour background concentration of 5.0 ppm CO and an eight-hour background concentration of 2.4 ppm CO. These values were drawn from monitoring data for a site in nearby York County, Pennsylvania. As can be seen in the summary table, the maximum one-hour level is 11.1 ppm, which is well below the one-hour standard. It is also clear that the maximum eight-hour concentration would be less than that standard of 9 ppm. Using the maximum one-hour level of 11.1 ppm, subtracting the 5.0 ppm one-hour background and then adding the 2.4 ppm eight-hour background concentration, results in a maximum possible level of 8.5 ppm. The actual level would be lower, because traffic volumes would be lower in most of the period. However, the actual concentrations need not be calculated because it is clear that no impacts would result from the project. Furthermore, improvements are predicted to occur from 2000 to 2020 regardless of the selected alternative. There is one exception at Site SHSE3, where an increase of 0.1 ppm is predicted with the No-Build Alternative. But on average, reductions of about 8% will occur over this period.

The project is predicted to result in lower concentrations at all sites in proximity to the MD 30 intersection with Gill Avenue. On average, concentrations are over 15% lower with the CDA. Since the FSA would divert more traffic than the CDA from MD 30, it would have even further benefits.

TABLE V-6
"WORST CASE" 1 HOUR CARBON MONOXIDE CONCENTRATIONS (PARTS PER MILLION, PPM)

RECEPTOR	2000		2020	
	No-Build 1-HR	CDA 1-HR	No-Build 1-HR	CDA 1-HR
SHNW1	9.8	7.6	9.2	7.0
SHNW2	10.5	8.2	9.5	7.4
SHNW3	8.5	7.4	7.8	6.8
SHSW1	9.5	7.3	8.8	6.7
SHSW2	10.5	8.1	9.4	7.4
SHSW3	8.5	7.8	7.7	7.0
SHSE1	9.3	7.4	8.6	6.7
SHSE2	10.0	9.0	9.3	8.4
SHSE3	8.0	7.5	8.1	7.1
SHNE1	10.1	8.2	9.2	7.4
SHNE2	11.1	9.2	9.9	8.2
SHNE3	8.7	8.2	8.0	7.5

NOTES: 1-hour average CO concentrations include a 5.0-ppm background concentration.
 The S/NAAQS for the 1-hour average is 35 ppm.
 The S/NAAQS for the 8-hour average is 9 ppm.

Therefore, this analysis indicates that no local air quality impacts will occur as a result of this project. Indeed, the project will improve operations at highly congested intersections.

5. Conformity with Regional Air Quality Planning

This project is located in Carroll County, which is not designated as nonattainment for carbon monoxide (CO) or particulate matter (PM₁₀), but is designated as a severe nonattainment area for ozone (O₃). This project is included in the FY2001-2005 Transportation Improvement Plan (TIP) and the 2001-2020 Baltimore Region Transportation Plan (BRTP). The TIP and BRTP are undergoing a conformity analysis and public process for adoption concurrent with the publication of this document. Approval of the conformity analysis on the TIP and BRTP is needed before this project can proceed. Regional emission reduction strategies to offset the emissions generated from this project may be required to achieve a conforming TIP and BRTP.

F. Secondary and Cumulative Effects Analysis

In Compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.25(c)), the following analysis examines the secondary and cumulative effects on the environment which may result from this project. The CEQ regulations and guidelines entitled *Considering Cumulative Effects Under the National Environmental Policy Act* define secondary and cumulative effects as follows:

Secondary (Indirect) Effects: "Effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR 1508.8(b))

Cumulative Impacts: "Impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." (40 CFR 1508.7)

This secondary and cumulative effects analysis (SCEA) addresses the Current Design Alternative.

1. Scoping for the SCEA

a. Description of the Resources Addressed by the SCEA

An initial step in the SCEA process is to identify the resources for which secondary and cumulative effects are to be assessed. The list of resources considered in this SCEA is primarily based on those resources which would be directly impacted by the build alternatives under consideration and includes surface waters, 100-year floodplains, wetlands, woodlands, agricultural land and bog turtles (*Clemmys muhlenbergii*), the only threatened or endangered species known to be located in the project area.

b. SCEA Boundary

The geographic boundary for secondary and cumulative effects analyses, referred to as the SCEA Boundary, is based upon a number of geographic boundaries, including: extent of the alternatives under consideration, the area of traffic influence; census tracts and block groups; planning areas; and watersheds and subwatersheds.

The overall SCEA Boundary (see Figure V-4) is a synthesis of the aforementioned geographic areas and encompasses both the extent of the alternatives under consideration as well as the area of traffic influence, which is the geographic extent to which the project would affect traffic volumes. SHA's Travel Forecasting Section projects that the area of traffic influence will extend along MD 30 from the Baltimore County/Carroll County line to just north of Cape Horn Road and on the east-west roads from existing MD 30 on the east to Relocated MD 30 on the west.

The two planning areas and municipalities within the SCEA Boundary, Hampstead and Manchester, are shown on Figure V-4. The areas surrounding the SCEA Boundary are planned for agricultural and low-density residential use by both Baltimore and Carroll counties, and there are no designated planning areas immediately outside the SCEA Boundary. The census tract and census block groups within and around the SCEA Boundary are shown on Figure V-5.

The watershed and subwatershed boundaries used in establishing the SCEA Boundary are those established by the Baltimore County Department of Environmental Protection and Resource Management and the Carroll County Bureau of Water Resource Management. They are shown on Figure V-6.

The SCEA Boundary, shown on Figure V-4, is as follows:

- Beginning on the south at the Baltimore County/Carroll County line, just north of MD 91, the SCEA Boundary runs northwesterly along the 1990 census tract boundary between tracts 5041.00 and 5082.00 to the boundary between subwatersheds PR (Prettyboy Reservoir) 6 and PR8.
- It then runs in generally a north or northwest direction, following the boundary between subwatersheds PR6/PR4 to the west and subwatersheds PR8/PR5 to the east, to the Big Pipe Creek Watershed.
- The SCEA Boundary then turns to the northeast, following the divide between the Big Pipe Creek and Liberty Reservoir watersheds to the western edge of the Manchester and Environs Planning Area.
- It then follows the boundary of the Manchester and Environs Planning Area to subwatershed GF (Gunpowder Falls) 4 on the east side of Manchester.
- The SCEA Boundary then follows the divide between subwatersheds GF3 and GF4 to the Baltimore County/Carroll County line.

- It then follows the divide between subwatershed 22 to the south and west, and subwatersheds, 23, 47, and 27 to the north and east, to the Loch Raven Reservoir watershed.
- The SCEA Boundary then follows, in a southwesterly direction, the divide between the Prettyboy Reservoir and Loch Raven Reservoir watersheds to subwatershed 32.
- It then turns to the southeast, following the divide between subwatersheds 32 and 33 to Census Block Group 4050.04.
- The SCEA Boundary then turns to the northwest, following the boundary between Block Groups 4050.02 and 4050.04 to subwatershed 36.
- It then runs southeasterly and westerly, following the divide between subwatersheds 32, and 36, to the Liberty Reservoir watershed.
- The SCEA Boundary then runs in a generally southerly direction, following the divide between the Liberty Reservoir and Loch Raven Reservoir watersheds to subwatershed 49.
- It then turns to the southwest, following the divide between subwatersheds 44 and 49 to the point of beginning at the Baltimore County/Carroll County line.

The SCEA Boundary encompasses approximately 26,214 acres, 17,819 in Carroll County and 8,395 in Baltimore County.

c. SCEA Time Frame

As part of the SCEA scoping process, a time frame is defined for the analysis of secondary and cumulative effects. There are few large developments within the SCEA Boundary and there have been no major transportation improvements of regional significance within or near the SCEA area for many years. Therefore, an analysis of population from 1930 through 2000 has been made of Carroll County, Carroll County Election Districts 6 and 8 (which encompass Hampstead and Manchester), and Baltimore County Election District 5 (which includes part of the SCEA area), to determine trends in population, which is an indicator of development.

The population trends are shown on Figure V-7, and as can be seen the population showed slight increases from 1930 through 1960, when marked increases began. In fact, in both Carroll County and Election Districts 6 and 8, the increase in population between 1960 and 2000 is slightly more than twice the population that existed in 1960 (i.e., the population in these areas increased more than 200% from 1960 to 2000). The increase is less in Baltimore County

Election District 5, as that area has been designated for primarily agricultural use by the County. The population of Carroll County remained relatively constant during the several decades prior to 1930, in fact, increasing by only 6% between 1900 and 1930.

In light of these trends and considering that the analysis of secondary and cumulative effects is to be performed using existing readily available data, the past time frame for the project's SCEA is 1960. The future time frame for the SCEA is 2020, the design year for the Hampstead Bypass project.

2. Analysis Methodology

A combination of methodologies is used to assess secondary and cumulative effects to each SCEA resource considered. Quantified data are used if readily available but for the most part, the SCEA is presented qualitatively.

A brief description of each resource considered in the analysis is provided for background information. This is followed by information on past impacts to the resource and trends, if available. Various data sources were used to gather this information, including published literature and mapping from local, state and federal government offices, as well as interviews with key personnel in these offices. Past land uses are compared to present land uses and related to impacts to a particular resource over time. Secondary effects are discussed based on information provided by Carroll County and Baltimore County planning staffs regarding potential development that may be, at least in part, contingent upon construction of the Hampstead Bypass. For cumulative effects from future actions, a qualitative discussion of impacts to resources based on the future land use scenario within the SCEA Boundary is provided in the context of the current regulatory framework.

3. Past, Present and Future Land Use

a. Specific Projects

Recent, Current, and Near Future Projects

As part of the assessment of cumulative effects, other projects which have recently been completed, are currently underway, or are planned in the reasonably foreseeable future are identified within the SCEA Boundary. This information is largely based on coordination with local and state agencies and a review of SHA's Consolidated Transportation Program (CTP), the Baltimore Region's Constrained Long Range Plan (CLRP), and Baltimore and Carroll counties' Capital Improvement Programs. Direct impacts from these projects, in combination with the impacts from the Hampstead Bypass project, add to the cumulative effects within the SCEA Boundary.

The projects identified are not all-inclusive, but are the major projects identified through this coordination and review. They are described below and shown on Figure V-8:

- Baltimore County Government

- In recent years, the only Baltimore County Government projects within the SCEA Boundary have been roadway maintenance projects (e.g., resurfacing, ditch trimming) and several bridge rehabilitation/replacement projects.
- Baltimore County has three projects within the SCEA Boundary in its Capital Improvement Program: bridge replacement/rehabilitation projects for Gunpowder Road over Georges Run, Dover Road over CSXT, and Trenton Mill Road over Little Piney Run.
- All of the recent and programmed bridge projects involve, at most, minor widening (e.g., from 16' to 24') and minor approach roadway adjustment.
- None of the recent or programmed projects has substantially increased roadway capacity.

- Carroll County Government

- In recent years, the only Carroll County Government non-school projects within the SCEA Boundary have been roadway maintenance projects (e.g., resurfacing)
- Carroll County recently constructed the Shiloh Middle School, on a 32-acre site. The school opened in August 2000.
- There are five projects in the Carroll County Capital Improvement Program within the SCEA Boundary:
 - 300'± long extension of Boxwood Drive from Dogwood Drive to MD 88 (probably as a 2-lane open section roadway)
 - Replacement of the Houcksville Road Bridge over CSXT (Bridge will remain at two lanes; however, an auxiliary right-turn lane will be provided on eastbound Houcksville Road at MD 30.)
 - Basler Road Resurfacing
 - Brodbeck Road Resurfacing
 - Shiloh Road Resurfacing

- Town of Hampstead

- In recent years, the Town of Hampstead projects have been:

- roadway maintenance projects
 - renovation of a Bank for use as the Town Police Station
 - new water tower west of MD 30 north of Brodbeck Road
 - The only non-maintenance type improvement included in the Town's Capital Improvement Program is construction of the new water tower discussed above (Construction started in early 2001 and the Town has a letter from MDE agreeing that the tower will have no environmental impact.)
- Town of Manchester
- In recent years, the Town of Manchester has undertaken maintenance type projects and the construction of a new water tank (with no environmental impacts).
 - The only projects in the Town's Capital Improvement Program are of the maintenance type.
- State Highway Administration
- In recent years, SHA has undertaken only maintenance type projects within the SCEA Boundary, except for the recently completed upgrade of the traffic signal system along MD 30 in Hampstead.
 - Projects in the CTP are Hampstead Streetscape, Manchester Streetscape, and Manchester Intersection Improvements (MD 30/MD 27; MD 30/York Street).
 - Another project being considered, but not yet in the CTP, is improvement of the MD 88/MD 833 intersection to address safety concerns.
- Private Development
- Private development within the SCEA Boundary has been and will continue to be concentrated within the Community Planning Areas (CPAs) of Hampstead and Manchester. Development outside of the CPAs has been and will continue to be small and of low intensity. Representatives of Baltimore County and Carroll County did not identify any substantial existing or planned developments outside the CPAs.

- Hampstead Community Planning Area

There are four major on-going developments in the Hampstead CPA:

- North Carroll Farms: a 138 acre development, in which 110 of the 304 planned houses have been built, with the remaining 194 houses to be built within the next few years.
- Oakmont Green: a 294 acre development, in which a golf course and 68 of the planned 90 houses have been built, with the remaining 22 houses to be built within the next few years.
- Roberts Field: a 243 acre development in which 640 houses and 48 condominium units have been built. An additional 66 condominium units are to be built within the next few years.
- Westwood Park: a 120-acre development in which approximately 60 of the planned 290 residences (houses and condominium units) have been built, with the remaining 230 residences to be built within the next few years.

There are two major developments that have been recently completed in the Hampstead CPA:

- Sweetheart Cup Mid-Atlantic Distribution Center: a 1.03 million square foot building on a 141 acre site
- North Carroll Plaza: a 31 acre site on which a 101,000 square foot Wal-Mart and a fast-food restaurant were added to two existing retail stores with a total of 81,000 square feet.

- Manchester Community Planning Area

There are two major on-going developments in the Manchester CPA:

- Cross Roads Overlook: a 42 acre site on which 100 of the planned 160 houses have been built over the past five years. The remaining 60 houses will be built over the next several years.
- Manchester Farms: a 196 acre site on which approximately 350 houses are to be built over the next several years.

Only limited information regarding the environmental impacts of the recent, current and near future projects is readily available. The Carroll County Office of Environmental Services maintains a computerized Forest Conservation Report that lists all development projects in Carroll County which impact forests. The Report indicates that from January 1, 1990 through April 25, 2001, there were 55 development projects in Election District 6 and 8 (See Figure III-1) that were processed for forest conservation plans. The projects encompassed 648 acres, with 173

acres of forest. Of the 173 acres, 42 were cleared for the developments. However, the developments provided 34 acres of reforestation and 31 acres of afforestation.

Major Historic Projects

In addition to the recent, current, and near future projects described above, there are a few projects of substantial size within the SCEA Boundary that were constructed between 1960 and 1995.

They are described below:

- Spring Garden Elementary School: built by Carroll County in the early 1990s on a 20 acre site on the east side of MD 30 approximately one mile north of the Baltimore County line
- Initial construction of the Manchester sewage system, by the Town of Manchester, in 1969
- Initial construction of the Hampstead sewage system, by Carroll County, in 1970

b. Land Use Trends

Carroll County

The entire Hampstead Bypass project as well as approximately 68% of the area within the SCEA Boundary are located in Carroll County. Table V-7 shows historic, current and projected land use in Carroll County.

The pattern of development can be seen in the following comparison derived from Table V-7:

PERCENTAGE OF TOTAL LAND AREA

	<u>1973</u>	<u>1997</u>	<u>2020</u>	<u>Zoning*</u>
Developed Land	7%	18%	26%	33%
Resources:				
Agriculture	68%	58%	53%	67%
Forest	<u>25%</u>	<u>24%</u>	<u>21%</u>	<u>N/A</u>
Total	93%	82%	74%	67%

*Derived from 1999 Land Preservation and Recreation Plan, Carroll County Bureau of Planning, pages 19-20. 67% of the County is zoned Agriculture and 19% is zoned Conservation (generally requires minimum residential lot size of 3 acres).

TABLE V-7
LAND USE IN CARROLL COUNTY

Land Use	Acreage					
	1960	1973	1981	1990	1997	2020
Low Density Residential	?	13,225	19,912	27,309	36,732	57,366
Medium/High Density Residential	?	3,103	3,314	4,677	7,888	10,126
Commercial/Industrial	?	2,184	2,632	3,024	4,056	5,053
Institutional/Open	?	1,679	1,813	1,973	3,082	3,082
Bare Ground	?	31	31	185	---	---
TOTAL DEVELOPMENT	23,403²	20,222	27,702	37,168	51,758	75,627
Agriculture	224,805	197,341	191,152	181,458	167,966	153,311
Forest	?	70,501	69,120	69,165	68,273	59,039
Extraction/Barren	?	69	159	188	?	?
Wetland	?	50	50	205	?	?
TOTAL RESOURCES	264,780	267,961	260,481	251,016	236,425	212,556
TOTAL LAND	288,183	288,183	288,183	288,184	288,183	288,183
WATER	2,332	2,332	2,332	2,332	2,332	2,332
TOTAL AREA	290,515	290,515	290,515	290,516	290,515	290,515

Sources: *Maryland's Land; 1973 - 1990: A Changing Resource*, Maryland Office of Planning, October 1991

Community Economic Inventory, Maryland Department of Economic Development and Economic Development Commission of Carroll County, April 1970

Carroll County Challenges & Choices: A Master Plan for the Future, July 21, 1998

Master Plan of Carroll County, May 1964 (1" = 1 mile map)

Maryland Department of Planning projections, October 2000

Notes:

1. The 1973 - 1990 data were obtained from *Maryland's Land, 1973 - 1990: A Changing Resource*. The land use categories are as set forth in that publication.
2. The 1960 Agriculture acreage is from the 1998 Carroll County Master Plan (p. 23), and the Total Development acreage was obtained by measuring the development as shown on the 1964 Master Plan. This development figure is probably somewhat overstated, since the 1964 Master Plan is a generalized depiction for large areas, within which may be smaller pockets of forest and agricultural land. The total Resources acreage for 1960 was derived by subtracting the Total Development from Total Land acreage.
3. 1997 figures and 2020 projections are from October 2000 data prepared by Maryland Department of Planning.
4. "?" Indicates data are not readily available.

Within SCEA Boundary

Table V-8 tabulates historic and current land use within the SCEA Boundary and Figure V-9 shows current (1997) land use within the SCEA Boundary.

As can be seen, agriculture and forest are the dominant, though decreasing, land uses within the SCEA Boundary. Land use as a percentage of total land area within the SCEA Boundary can be summarized as follows:

	<u>1960</u>	<u>1973</u>	<u>1981</u>	<u>1990</u>	<u>1997</u>
Developed	2%	10%	11%	14%	20%
Agriculture	80%	68%	69%	67%	59%
Forest	<u>18%</u>	<u>22%</u>	<u>20%</u>	<u>19%</u>	<u>21%</u>
TOTAL	100%	100%	100%	100%	100%

It should be noted that the 1960 data were derived from aerial photographs, whereas the 1973 - 1997 data were derived from Maryland Department of Planning land use maps. Thus, some of the difference between land uses in 1960 and 1973 is probably attributable to differences in methodology. However, there is a long-term trend within the SCEA Boundary of increasing development, consistent with Carroll County's designation of the Hampstead and Manchester areas as growth areas.

Although land use within the SCEA Boundary in the analysis year 2020 is difficult if not impossible to predict, some insight can be gained from a review of zoning within the SCEA Boundary (summarized in Table V-9 and shown on Figure V-10), population forecasts by Election district, and the overall Carroll County land uses predicted by the Maryland Department of Planning.

Table V-9 indicates that 96% of the Baltimore County area within the SCEA Boundary is zoned for agricultural use. From Table V-8, it can be seen that in 1997, 90% of the land in the Baltimore County portion of the SCEA Boundary was in agricultural or forest use. Furthermore, forecasts indicate that the population in Baltimore County Election District 5, in which nearly all of the Baltimore County portion of the SCEA area is located, is expected to remain virtually unchanged through 2020 (4,483 in 2000 vs. 4,486 in 2020; See Figure V-7). Consequently, little change in land use is expected in the Baltimore County portion of the SCEA area through 2020.

In the Carroll County portion of the SCEA area, 44% is zoned for agricultural use and 56% is zoned for development. This compares to 75% in agricultural or forest use in 1997 and 25% developed. It should be noted that a substantial amount (15%) of the land zoned for development is zoned Conservation, with minimum residential lot size of 3 acres. A substantial

amount of this land would be expected to be forested, even after development. The comparison of zoning and 1997 development, in combination with the expected 32% increase in population in Carroll County Election District 6 and 8 between 2000 and 2020, leads to the conclusion that the amount of developed land will increase in the Carroll County portion of the SCEA area, with a corresponding reduction in agricultural and forest uses. Considering the forest conservation regulations, it is expected that most of the gain in developed land will come from a reduction in agricultural rather than forest use.

TABLE V-8

LAND USE WITHIN THE SCEA BOUNDARY

Land Use	ACREAGE														
	1960			1973			1981			1990			1997		
	Balt. Co.	Car. Co.	Total	Balt. Co.	Car. Co.	Total	Balt. Co.	Car. Co.	Total	Balt. Co.	Car. Co.	Total	Balt. Co.	Car. Co.	Total
Residential	?	?	?	175	1,722	1,897	259	2,196	2,455	392	2,540	2,932	597	3,743	4,340
Commercial/Industrial	?	?	?	12	293	305	18	241	259	18	393	411	17	324	341
Open Urban	?	?	?	218	35	253	218	32	250	218	50	268	232	225	457
Institutional	?	?	?	---	20	20	---	56	56	---	77	77	10	187	197
Agriculture	5,170	15,659	20,829	5,828	12,079	17,907	5,875	12,119	17,994	5,735	11,694	17,429	5,602	9,686	15,288
Forest	2,893	1,748	4,641	2,162	3,625	5,787	2,025	3,130	5,155	2,032	3,020	5,052	1,937	3,628	5,565
Water	?	?	?	---	45	45	---	45	45	---	45	45	---	26	26
TOTAL	8,395	17,819	26,214	8,395	17,819	26,214	8,395	17,819	26,214	8,395	17,819	26,214	8,395	17,819	26,214

Notes:

1. 1960 data derived from aerial photographs dated 1958 - 1963
2. 1973, 1981 and 1990 data derived from land use maps (paper version) prepared by the Maryland Office of Planning. 1997 data from electronic land use maps prepared by Maryland Department of Planning.

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TABLE V-9

ZONING WITHIN THE SCEA BOUNDARY AS OF FEBRUARY 2001

Zoning	Baltimore Co.		Carroll Co.		Total	
	Acreage	%	Acreage	%	Acreage	%
Agriculture ¹	8,049	95.9%	7,843	44.0%	15,892	60.6%
Low Density Residential ²	331	3.9%	5,076*	28.5%	5,407	20.6%
Medium Density Residential ³	---	---	3,032	17.0%	3,032	11.6%
Commercial/Industrial ⁴	15	0.2%	1,868 ⁵	10.5%	1,883	7.2%
TOTAL	8,395	100%	17,819	100%	26,214	100%

*2,480 in private conservation, 234 in public conservation and 2,361 in R-40,000

- ¹ Consists of RC-2 zone in Baltimore County, which generally requires minimum residential lot size of 50 acres and Agricultural district in Carroll County, which generally requires minimum residential lot size of 20 acres.
- ² Consists of RC-4 zone in Baltimore County, which generally allows 0.2 lot/acre with 70% of gross tract designated for conservancy, and two zones in Carroll County: Conservation District which generally requires minimum residential lot size of 3 acres and R-40,000 which requires minimum residential lot size of 40,000 SF (0.92 acre).
- ³ In Carroll County consists of R-7,500, R-10,000, R-15,000 and R-20,000, which allow minimum lot sizes of 7,500 SF, 10,000 SF, 15,000 SF and 20,000 SF, respectively.
- ⁴ Consists of BL-CR, BM-CR and BR-CR zones in Baltimore County and BG, BL and IR zones in Carroll County.
- ⁵ The draft *Hampstead Community Comprehensive Plan*, distributed for comment in December 2001 proposes reducing the amount of land planned for industrial use by several hundred acres.

4. Secondary Effects

a. General

The future land use trends presented in the previous section are based upon the master plans of Baltimore and Carroll counties. Implicit in the land use numbers for full development in

accordance with current zoning is the assumption that the public facilities identified in the master plans will be provided. The two significant transportation elements in those master plans are the Hampstead Bypass, which is the subject of this document, and the Manchester Bypass, which although still on Carroll County's master plan, is not supported by the State of Maryland.

Representatives of Baltimore County, Carroll County, Hampstead and Manchester have all expressed the opinion that they do not foresee any significant zoning changes within the SCEA Boundary resulting from either the construction of the Hampstead Bypass or, should it occur, the dropping of the Manchester Bypass from the County's master plan. Neither bypass is located within Baltimore County, and with the County Council's 25-year commitment to primarily agricultural zoning within the SCEA Boundary, no changes are anticipated.

Carroll County's planned land use has been developed with the assumption that the bypasses would ultimately be constructed. However, several factors lead to the conclusion that not providing the bypasses would not change overall planned land use:

- The 2000 population in Election Districts 6 and 8, which encompass Hampstead and Manchester, is already 75% of the population expected with full development in accordance with current zoning.
- The planned land use within the Community Planning Areas of Hampstead and Manchester is limited by the available public sewerage system capacity.
- Carroll County's "Adequate Public Facilities and Concurrency Management Ordinance" does not permit the County to deny approval of a development plan based solely on the inadequacy of State highways, and it is a state route, MD 30, that would be most impacted should the bypasses not be built.
- The Carroll County Commissioners see zoning as, at least in part, a commitment to property owners, and have traditionally not changed planned land use considering just the provision or lack of one facility.

Carroll County representatives have stated that construction of the Hampstead Bypass may accelerate the pace of development within the SCEA Boundary, but not the ultimate development in accordance with current zoning.

Likewise, the FONSI Selected Alternative with its two at-grade intersections at Houcksville Road and Shiloh Road (compared to the grade separations without access proposed at these locations under the Current Design Alternative) may result in more development at an

earlier point than would occur with the Current Design Alternative. However, by 2020, no difference in development would be expected.

b. Proposed North Carroll Business Park

Based upon coordination with representatives of Baltimore and Carroll counties and the towns of Hampstead and Manchester, the proposed North Carroll Business Park, located on the north side of MD 482 west of MD 30 (See Figure V-11), is the only major site where development is proposed in the vicinity of the Hampstead Bypass. This is a 418 acre site, which is zoned for industrial use, but has the current land uses:

Residential	2 acres
Agriculture	303 acres
Forest	90 acres
Wetland	<u>23 acres</u>
Total	418 acres

*All figures presented herein pertaining to the proposed North Carroll Business Park do not include the 16± acres already developed in its southeast corner by Ridge Engineering and Shamrock Communications.

It should be noted that Carroll County and the Town of Hampstead are currently updating the Hampstead master plan, and in December 2001 distributed the draft *Hampstead Community Comprehensive Plan* for comment. The draft plan differs from the previous plan in two ways relative to the proposed Business Park.

- Whereas previous reports limited the area termed the "North Carroll Business Park" to the 418 acre site described above, the draft plan extends this term to encompass a total of 471 acres: the original 418 acres plus approximately 19 acres south of MD 482 and 38 acres to the north on the west side of MD 30.
- Reduces the amount of land planned for industrial use by approximately 370 acres, leaving approximately 101 acres of planned industrial land. (See Figure V-11.) As a result of coordination undertaken with local, state and federal agencies during the planning of the Hampstead Bypass, which identified sensitive environmental resources in this area, including bog turtle habitat, the draft plan proposes changing planned use in these 370 acres from Industrial to Resource Protection.

The 418-acre proposed Business Park is used as the basic assumption in this SCEA, with a qualitative description of probable development should the proposed land use set forth in the draft *Hampstead Community Comprehensive Plan* be adopted.

Current Design Alternative

The Carroll County Office of Economic Development has had a conceptual plan prepared showing the development potential of the proposed Business Park. The plan assumes the Hampstead Bypass will be constructed through the Business Park, generally along the CDA alignment. This plan, modified to reflect a shift in the CDA made in Fall 2001, is shown on Figure V-12. The CDA would split the proposed Business Park, requiring approximately 40 acres for right of way and leaving approximately 234 acres west of the CDA and 144 acres to the east. The conceptual plan also assumes that a bridge would be constructed to carry the Business Park's internal road system over the CDA, near the northern end of the Business Park. The plan was developed considering environmental features and current regulations, and avoids development in the most environmentally sensitive areas. Under this scenario, approximately 258 acres of the 418 total would have been developed, with 40 acres for the CDA, 30 acres for the internal road system, and 188 acres in 12 developable parcels. All of the residential and nearly all of the agricultural area would have been converted to industrial or buffer uses. Approximately 1.2 acres of wetland (0.2 acre within CDA, 1.0 acre in development) and up to 42 acres of forest (5 acres within CDA, 37 acres in development) would have been directly impacted.

In order to provide mitigation for environmental impacts, protect bog turtle habitat, and avoid the cost of the bridge on the proposed Business Park's internal road system over the CDA, the SHA is considering, as part of the CDA, purchase of the Business Park west of the CDA (approximately 234 acres). Thus, if the CDA were selected, only the portion of the proposed Business Park east of the CDA would be subject to development. The CDA in no way encourages or facilitates such development, since the access to potentially developable parcels has been and will remain along existing MD 30 and MD 482.

Current land use within the 184 acre portion of the proposed Business Park under consideration below (40 acres for CDA; 144 acres east of CDA) is as follows:

Residential	2 acres
Agriculture	173 acres
Forest	8 acres
Wetland	<u>1 acre</u>
Total	184 acres

The SHA is in the process of coordinating with regulatory agencies (e.g., COE, FWS, DNR, MDE) regarding measures that should be taken to protect the bog turtle (See Section V-

C6). Several "protection zones" are being considered, the largest of which is termed the Zone of Primary Hydrologic Influence which is shown on Figure V-12. Approximately 236 acres of the 418 acre proposed North Carroll Business Park are within the proposed Zone of Primary Hydrologic Influence. The CDA will encompass 24± acres within the Influence Zone. How the remaining 212 acres of the proposed Business Park within the Influence Zone are managed (e.g., agricultural use remain, enlargement/enhancement of PEM/PSS wetlands) would be determined through coordination with Carroll County, Town of Hampstead and the regulatory agencies.

With SHA contemplating purchase of a portion of the land in the proposed Business Park west of the CDA for environmental mitigation and bog turtle habitat protection if the CDA is selected, two development scenarios have been evaluated for the 188 acres of the Business Park east of the CDA: Full Development and Development Outside Zone of Primary Hydrologic Influence.

Under the Full Development Scenario, the eastern portion of the proposed Business Park would develop in accordance with the development plan shown on Figure V-12. Approximately 136 acres of the 184 total would be developed, with 40 acres for the CDA, 14 acres for the internal road system, and 82 acres in seven developable parcels. All of the residential and agricultural area would be converted to industrial or buffer uses. Approximately 0.2 acre of wetland (all within the CDA) and 4 acres of forest would be directly impacted.

Under the Zone of Primary Hydrologic Influence Scenario, approximately 86 acres of the 184 acre portion of the proposed Business Park under consideration would be outside the Influence Zone, with 16 acres needed for the CDA and approximately 70 acres available for development east of the CDA.

The probable impacts of development under this scenario are as follows:

	<u>Acreage</u>			<u>Acreage</u>		
	<u>Inside Zone of Primary Hydrologic Influence</u>			<u>Outside Zone of Primary Hydrologic Influence</u>		
	<u>CDA</u>	<u>East of CDA</u>	<u>Total</u>	<u>CDA</u>	<u>East of CDA</u>	<u>Total</u>
Residential	---	---	---	---	---	---
Agriculture	19	---*	19	15	70	85
Forest	4	---	4	1	0.1	1.1
Wetland	0.2	---	0.2	---	---	---

*Use of the approximately 69 acres of active agricultural land within the Zone of Primary Hydrologic Influence east of the CDA will be determined through coordination with the regulatory agencies.

Numerous protection buffers are being considered; the Current Design Alternative Full Development Scenario and the Current Design Alternative with Zone of Primary Hydrologic

Influence Scenario give the range of possible impacts within the proposed North Carroll Business Park should the CDA be constructed under land use plans currently in place. Should the land use proposed in the draft *Hampstead Community Comprehensive Plan* be adopted, the impacts would be similar to those described under the Current Design Alternative with Zone of Primary Hydrologic Influence Scenario.

No-Build Alternative Scenario (See Figure V-13)

Figure V-13 shows a possible development scenario adopted from the conceptual development plan prepared for the Carroll County Office of Economic Development. It is based on current land use plans and zoning, and differs from that described under the CDA in that SHA would not purchase the portion of the Business Park west of the CDA, thus the entire proposed Business Park would be available for development, including the CDA right of way. Under this scenario, approximately 235 acres in twelve buildable parcels would be available for development and approximate impacts would be one acre of wetland, 38 acres of forest and 303 acres of current agriculture use.

The above-described impacts are based on the modified development plan; however, recent recognition of the environmental resources in this area and their sensitivity would probably result in limits on development, thus reducing the impacts. Furthermore, if the planned land use set forth in the draft *Hampstead Community Comprehensive Plan* is adopted, the amount of planned industrial land in the proposed North Carroll Business Park would be reduced from 418 acres to 101 acres, with much of the proposed Business Park used for Resource Protection.

Secondary Effects with CDA

Following is a discussion of the possible range of secondary effects of the CDA within the proposed North Carroll Business Park based upon current land use plans. Should the land use proposed in the draft *Hampstead Community Comprehensive Plan* be adopted, the impacts would be at or near the lower end of this range.

Surface Waters and 100-Year Floodplains

The proposed North Carroll Business Park is located within the East Branch Patapsco River subwatershed and has one stream system, an unnamed tributary to East Branch Patapsco River, within its borders. The tributary is shown with a 100-year floodplain on the FEMA Flood Insurance Rate Maps for a distance of approximately 3,000 feet within the Business Park, from downstream (west) of the CDA to the northwest property line near Brodbeck Road, varying in

width from approximately 20 to 90 feet. The CDA would not cross the 100-year floodplain and since SHA is considering purchasing the portion of the Business Park west of the CDA, where the floodplain is located, there would be no direct secondary effect.

The secondary development associated with the CDA would result in replacing natural land cover with impervious areas, which would increase stormwater runoff that could cause erosion and sedimentation in waterways and impact stream habitat conditions and aquatic life. The loss of natural land cover would also reduce groundwater infiltration which is detrimental to natural stream and wetland hydrology. These secondary effects caused by the CDA would be mitigated through compliance with stormwater management and sediment and erosion control requirements administered by MDE and Carroll County. Sediment and erosion control measures in place during construction would limit the sediment reaching the waterways and long-term stormwater management would control the runoff from new development. Also, best management practices utilized in stormwater management facilities would improve the water quality of the stormwater runoff and provide for current infiltration rates and hydrologic flow patterns to be maintained.

Wetlands

Approximately 23 acres of wetlands are located within the proposed North Carroll Business Park, of which approximately one acre is within the CDA or the area to the east. The wetlands identified include palustrine emergent, palustrine scrub-shrub and palustrine forested.

Wetlands are regulated through the requirements of Section 404 of the Clean Water Act, the Maryland Nontidal Wetlands Protection Act and the "no net loss" wetlands policies. The anticipated footprint of the secondary development associated with the CDA (under either the Full Development or the Zone of Primary Hydrologic Influence Scenario) is not expected to directly impact wetlands, and given the current federal and state regulatory framework, it is likely that the secondary effects to wetlands from the CDA would be minimal.

Woodlands

The Maryland State Forest Conservation Technical Manual defines a forest stand as a forested area greater than 10,000 square feet and with a minimum width of 35 feet. Secondary development associated with the CDA would result in impact to the woodlands within the proposed North Carroll Business Park. The anticipated secondary impacts range from 0.1 acre of woodland under the CDA with Zone of Primary Hydrologic Influence Scenario to 0.3 acre under the CDA Full Development Scenario. However, impacts to woodlands would be regulated under

the Maryland Forest Conservation Act of 1991 and effects would be offset through reforestation requirements.

Parklands

There are no parklands within or near the proposed North Carroll Business Park. Therefore, secondary impacts to parklands are not anticipated.

Agricultural Land

There are approximately 303 acres of active agricultural land within the proposed North Carroll Business Park, of which approximately 173 are within the CDA or the area to the east. Under the CDA Full Development Scenario, all or nearly all of the 173 acres would be converted to other uses. Approximately 34 of the 173 acres are within the CDA, and 139 are in the development area. Under the CDA with Zone of Primary Hydrologic Influence Scenario, all or nearly all of the approximately 85 acres of active agricultural land outside the Influence Zone (15 acres within the CDA and 70 acres within the development area) would be converted to other uses. Approximately 19 of the 88 acres of active agricultural land within the Influence Zone are needed for the CDA, leaving 69 acres, the use of which would be determined through consultation with the regulatory agencies.

5. Cumulative Effects

a. Surface Waters

The Current Design Alternative and its likely secondary effects will directly impact Carroll County subwatersheds (see Figure V-6) PR5 (East Branch Patapsco River) and PR8 (Deep Run), which are in the Liberty Reservoir Watershed. The other subwatersheds in the Carroll County portion of the SCEA area are GF2 and GF4, which are in the Prettyboy Reservoir Watershed, and BP1, which is in the Big Pipe Creek Watershed.

Within Baltimore County, the SCEA area falls within subwatersheds 22, 24 and 26 within the Prettyboy Reservoir Watershed and subwatersheds 32 and 36 within the Loch Raven Reservoir Watershed.

All the streams within the SCEA Boundary are classified as follows (See Section III-C.2.a. for definition of classifications):

<u>Stream</u>	<u>Use</u>
Carroll County:	
PR5	III-P
PR8	I-P
GF2	III-P
GF4	III-P
BP1	IV-P
Baltimore County:	
22, 24, 26, 32, 36	III-P

Although Carroll County Government does not have any specific data on surface water quality within the SCEA Boundary, the "Environmental Resources Element of the Carroll County Master Plan" states that "Overall surface water quality in Carroll County is generally good; however, incidence of fecal coliform bacteria from animals and human sources occur quite frequently." Surface water sampling performed as part of the bog turtle study conducted in conjunction with the Hampstead Bypass environmental studies indicates the tributaries to the East Branch Patapsco River within the SCEA Boundary are of good quality, although there is generally a slightly elevated level of nitrogen.

Streams in Carroll County are protected by the Subdivision Regulations which, among other criteria, require a 100-foot buffer in a water resource protection easement along all streams.

The "Baltimore County Citizens for Stream Restoration Campaign Data Summary Report" (published by Save Our Streams in March 2000) shows water quality data at two sites within the Baltimore County portion of the SCEA area: Site 52 - Georges Run at Georges Creek Road (subwatershed 22) and Site 53 - Piney Run at Trenton and Trenton Mill roads (subwatershed 32). In addition, information is provided for Site 59 - Piney Run at Mt. Zion Road, which is approximately 0.25 mile downstream of the SCEA Boundary. The report rates the stream as poor, fair or good, based on evaluations made from 1990 through 1997. Results are:

- Site 52: Georges Run at Georges Creek Road - 11 evaluations were made from 1990 through 1996, with one poor rating (1991) and the remainder fair.
- Site 53: Piney Run at Trenton and Trenton Mill roads - 12 evaluations were made from 1990 through 1997, with four poor ratings (1990, 1990, 1991, 1995), seven fair ratings (1991, 1991, 1992, 1992, 1993, 1994, 1997) and one good rating (1992).

- Site 59: Piney Run at Mt. Zion Road - 14 evaluations were made from 1990 through 1997, with two good ratings (1996, 1997) and twelve fair ratings.

The report also provides an average stream condition by watershed, with the Loch Raven Reservoir Watershed receiving a fair rating and the Prettyboy Reservoir Watershed a Good/Fair rating.

Streams in the Baltimore County portion of the SCEA area are protected by the County's Protection of Water Quality, Streams, Wetlands, and Floodplains regulations, adopted in 1990, which, among other criteria, require forest buffers along streams. In the Loch Raven Reservoir and Prettyboy Reservoir watersheds, the forest buffer along all streams is required to be the greater of:

- 100 feet
- 25' from the outer wetland boundary
- 25' from the 100-year floodplain

In summary, the limited surface water quality information available indicates that the streams within the SCEA Boundary are in fair to good condition.

The CDA would cross eleven streams (ten perennial; one intermittent) and further impact the streams through the replacement of natural land cover with impervious areas. It is anticipated the secondary development associated with the CDA will impact an unnamed tributary to East Branch Patapsco River by a possible stream crossing and further loss of natural land cover. Cumulative impacts to streams within the SCEA Boundary result from the addition of the direct impacts and secondary effects resulting from the CDA to the impacts from other past, present and future actions. Future development anticipated within the SCEA Boundary, almost all of which is expected to occur in Carroll County (see Section V-F.3.b.) will add to past and present impacts to streams. However, effect to streams under the future land use scenario are expected to be minimal as a result of current regulations pertaining to stormwater management, erosion/sediment control, and stream buffers, and the fact that 61% of the land within the SCEA Boundary is zoned for agricultural use, thereby limiting development.

b. Floodplains

The Flood Insurance Rate Maps produced by the Federal Emergency Management Agency show 100-year floodplains along the following streams within the SCEA Boundary:

- East Branch Patapsco River and several tributaries, including Indian River
- Deep Run and one tributary (Aspen Run)
- Big Pipe Creek and several tributaries
- Georges Run
- Murphy Run
- Peggys Run
- Piney Run
- Little Piney Run

Past stresses to floodplains within the SCEA Boundary have occurred. Any unregulated encroachments on the 100-year floodplain would have occurred prior to passing of the Non-Tidal Wetlands Act in 1989 which affords protection to floodplains. As indicated in Section V-F.3.b., substantial increases in development within the SCEA Boundary occurred from 1960 through 1997. Past alterations to floodplains within the SCEA Boundary have eliminated or reduced some of the valuable functions associated with floodplains.

Current federal, state and local regulations discourage development in floodplains and a Waterways Construction Permit is required for any floodplain encroachment which includes grading, filling or placing structures in the 100-year floodplain.

The CDA would directly impact 0.9 acre of 100-year floodplain (see Section V-C.4.). No secondary effects associated with the CDA are expected (see Section V-F.4.b.). Cumulative impacts to 100-year floodplains within the SCEA Boundary result from the addition of the direct impacts and secondary effects resulting from the CDA to the impacts from other past, present and future actions. Future development anticipated within the SCEA Boundary, almost all of which is expected to occur in Carroll County (see Section V-F.3.b.), will add to past and present impacts to 100-year floodplains. However, effects to floodplains under the future land use scenario are expected to be minimal as a result of the current regulatory framework and that 61% of the land within the SCEA Boundary is zoned for agricultural use, thereby limiting development.

c. Wetlands

The National Wetland Inventory (NWI) maps show approximately 51 acres of wetlands within the SCEA Boundary, consisting of the following types: palustrine emergent, palustrine scrub-shrub and palustrine forested. Ecological functions provided by wetlands include habitat,

sediment trapping, nutrient retention/removal, food chain support, dissipation of erosive forces, and flood desynchronization.

The U.S. Fish and Wildlife Service estimates that within the Chesapeake Bay Watershed, Maryland experienced a net loss of 4,810 acres of wetlands during the period 1982 - 1989 (Tiner et. al., 1994). According to "Maryland's Land, 1973-1990: A Changing Resource" Baltimore County lost 52 acres of wetland (1.7%) between 1973 and 1990, while the wetland acreage in Carroll County increased from 50 acres to 205 acres. Wetland trends data for the area within the SCEA Boundary are not readily available.

As discussed in Section V-C.2.c., the CDA would directly impact 4.71 acres of wetlands. As discussed in Section V-F.4, no wetland impacts associated with secondary effects of the CDA are expected. Cumulative impacts to wetlands within the SCEA Boundary result from the addition of the direct impacts and secondary effects resulting from the CDA to the impacts from other past, present and future actions. Future development within the SCEA Boundary, almost all of which is expected to occur in Carroll County (see Section V-F.3.b.) will add to past and present impacts to wetlands. However, given the current federal and state regulatory framework contained in Section 404 of the Clean Water Act, the Maryland Nontidal Wetlands Protection Act and the "no net loss" wetlands policies, impacts to wetlands under the future land use scenario are expected to be minimal.

d. Woodlands

As presented in Section V-F.3.b., forests covered approximately 5,565 acres within the SCEA Boundary in 1997, 21% of the total land area. The percentage of land within the SCEA Boundary in forest use remained fairly consistent from 1960 through 1997, ranging from a low of 18% in 1960 to a high of 22% in 1973. This fairly constant forest acreage within the SCEA Boundary can be contributed primarily to two factors: the dominance of agricultural (61%) and low-density residential (21%) zoning (land uses which are conducive to forest retention); and state and local laws and regulations designed to conserve forests. A loss of forest area results in a loss of the valuable ecological functions associated with forests which include stabilizing soils, filtering nutrients and sediment, and regulating stormwater and stream flow.

The Maryland Forest Conservation Act of 1991 regulates forest resource impacts. Under the Act, for every one acre of forest cleared above a particular threshold for forest conservation, which is set depending on the zoning, two acres of forest must be replaced. Also, when non-forested land is developed, a percentage of the land must be planted with trees. These restrictions on forest clearing and the requirements for reforestation provide a strong incentive for forest conservation.

Direct impacts to woodlands that would result from the CDA, quantified in Section V-C3, are 12.1 acres. As discussed in Section V-F4, woodland impacts associated with secondary effects of the CDA are expected to range from 0.1 to 0.3 acre. Cumulative impacts to woodlands within the SCEA Boundary result from the addition of direct impacts and secondary effects resulting from the CDA to the impacts to woodlands from other past, present and future actions. Future development within the SCEA Boundary, nearly all of which is expected to occur in Carroll County (see Section V-F.3.b.), will add to past and present impacts to woodlands. Given the current regulations for forest conservation and reforestation, and the fact that 82% of the land within the SCEA Boundary is zoned for agricultural or low density residential use, no major impacts to woodlands under the future land use scenario are anticipated. This is supported by recent trends (see Table V-8), which show a 10% increase in wooded area between 1990 and 1997, and the fact that the forested area in 1997 was only 4% less than the peak amount of forest recorded between 1960 and 1997.

e. Agricultural Land

The amount of land used for farming in Maryland has been declining, a trend that has also occurred in both Baltimore and Carroll counties and within the SCEA Boundary, and is expected to continue. These trends can be seen from the following:

	Active Agricultural Land (acres)					
	<u>1960</u>	<u>1973</u>	<u>1981</u>	<u>1990</u>	<u>1997</u>	<u>2020</u>
Maryland	N.A.	2,496,216	2,458,869	2,366,344	2,237,409	2,101,047
Baltimore County	N.A.	124,048	121,124	114,495	107,149	102,437
Carroll County	224,805	197,341	191,152	181,458	167,277	152,882
Hampstead Bypass SCEA Area	20,829	17,907	17,994	17,429	15,288	N.A.

Sources: *Maryland's Land, A Changing Resource: 1973 - 1996*
 Land Use tabulations provided by Maryland Department of Planning (MDP) in October 2000.
 Aerial photographs and County Land Use maps prepared by MDP
Carroll County Master Plan - 1998

As can be seen above, in the 24-year period from 1973 through 1997, losses in agricultural land were 10% for Maryland, 14% for Baltimore County and 15% for Carroll County. The Maryland Department of Planning projects losses in the 23-year period from 1997 through 2020 to be 6% for Maryland, 4% for Baltimore County and 9% for Carroll County. This projected decline in the rate of loss of farmland is attributable to several factors, including agricultural preservation programs and recent zoning regulations that encourage cluster development.

The Maryland Agricultural Land Preservation Program was established in 1977 in an attempt to preserve the state's agricultural lands, and is one of the most successful such programs in the United States. Working jointly with the counties, the program provides funds to purchase development easements, thereby limiting the land to agricultural use. In addition to easements, the program encourages the establishment of agricultural preservation districts, which place the land in agricultural use for at least five years, and often serve as the first step in selling development easements.

Although the Maryland Agricultural Land Preservation Program is the largest such program in Maryland, preservation of agricultural land is also achieved through several other programs, including:

- Maryland Environmental Trust/Carroll County Land Trust/The Manor Conservancy/Land Preservation Trust: These are programs in which landowners donate development rights to non-profit groups.
- Baltimore County Agricultural Program: This program is administered by Baltimore County and purchases development easements.
- Rural Legacy Program: Established by the State of Maryland in 1997 as part of the Smart Growth and Neighborhood Conservation initiative, this program involves the establishment of Rural Legacy Areas and the purchase of land and development easements within these areas. Both Baltimore and Carroll counties participate in the program, with a portion of one area, the Piney Run Watershed, being within the southeastern portion of the SCEA area in Baltimore County.

At the end of 1999, Carroll County had a total of 31,488 acres of farmland protected by easements, the third largest total in the country. From 1997 through 1999, easements were obtained on an average of approximately 2,300 acres per year. An additional 18,312 acres were in Agricultural Preservation Districts at the end of 1999. The Carroll County Draft Master Plan (1998) sets a goal of preserving 100,000 acres of farmland.

As of late 1999, Baltimore County had a total of 25,840 acres of farmland protected by easements, including 2,857 acres preserved in fiscal year 1999. An additional 12,896 acres were in Agricultural Preservation Districts as of late 1999. Baltimore County has a goal of preserving 80,000 acres of farmland.

Figure V-14 shows the protected farmland (as of 1999) within the SCEA Boundary, totaling 2,331 acres in Baltimore County and 2,001 acres in Carroll County, for a total of 4,332 acres, 17% of the total area within the SCEA Boundary.

As discussed in Section V-A.9., the CDA would directly impact 158 acres of agricultural land. As discussed in Section V-F.4, impacts associated with secondary effects of the CDA are expected to range from 70 to 139 acres. Cumulative impacts to farmland within the SCEA Boundary result from the addition of direct impacts and secondary effects resulting from the CDA to the impacts to farmland from other past, present and future actions. Future development within the SCEA Boundary, nearly all of which is expected to occur in Carroll County (see Section V-F.3.b.), will add to past and present impacts to farmland. The vast majority of this impact will occur in areas zoned for residential/commercial/industrial development, generally within the Hampstead and Manchester planning areas.

6. Conclusions

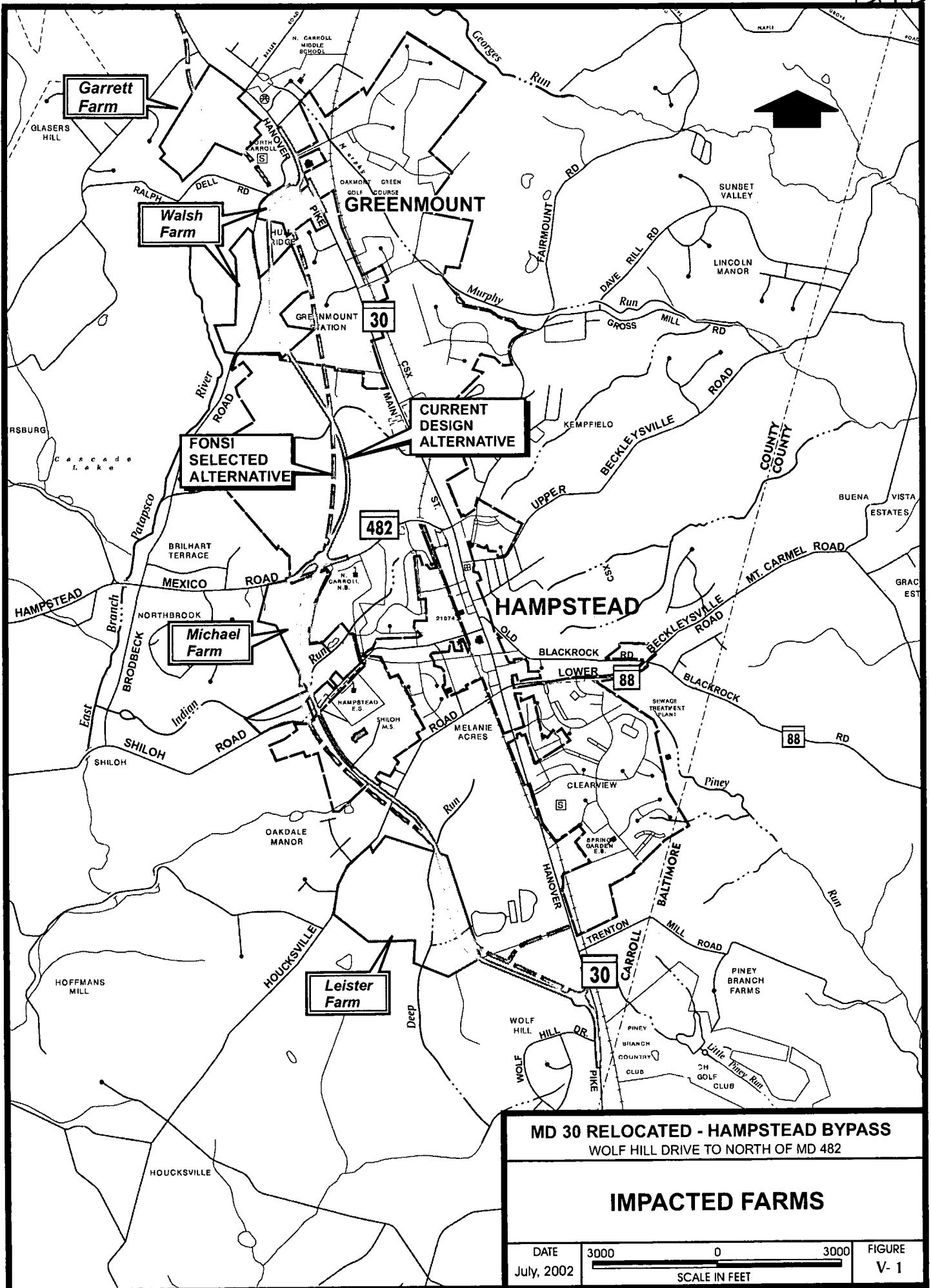
Direct impacts on the environment from the CDA are added to other past, present and future actions to arrive at cumulative effects. The CDA would directly impact surface waters, 100-year floodplains, wetlands, woodlands and agricultural land. A description of direct impacts to the SCEA resources has been include in Section V-F.5., with more detailed information presented in Section V-A.9. and V-C.

Secondary effects to natural resources are expected to result from the enhanced development potential of the North Carroll Business Park attributable to the CDA. Secondary effects to an unnamed tributary to the East Branch Patapsco River that flows through the Business Park could result from increased impervious area. Secondary effects to wetlands, floodplains and woodlands are expected to be minimal. Secondary effects to historic resources are not anticipated. Secondary effects to active agricultural land are estimated to range from 70 to 139 acres.

Cumulative effects to natural resources within the SCEA Boundary are the result of impacts to resources from other past, present and future actions in addition to the direct and secondary effects resulting from the CDA. Surface waters, floodplains, wetlands, woodlands and agricultural land have all historically been impacted by development within the SCEA Boundary and would be further impacted by the CDA. Impacts to these resources from other future actions within the SCEA Boundary would add to the overall cumulative effects. Impacts to surface waters from other future actions are expected to be minor, due to current regulations that require stream buffers as well as stormwater management and erosion/sediment control. Floodplain, wetland and woodland impacts from other future actions are expected to be minimal due to current regulations governing activities in 100-year floodplains and wetlands, reforestation requirements, and the fact that 61% of the land within the SCEA Boundary is zoned for agricultural use, thereby limiting development. Impacts to historic resources from other future

actions are expected to be minimal. Impacts to agricultural land from other future actions are expected to be substantial, occurring almost completely within areas zoned for residential/commercial/industrial development, mostly within the Hampstead and Manchester planning areas.

Overall, in the context of the current federal, state and local regulatory framework, future cumulative effects to resources within the SCEA Boundary are expected to be minor, except for impacts to agricultural land within the Hampstead and Manchester planning areas.



MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

IMPACTED FARMS

DATE	3000	0	3000	FIGURE
July, 2002	SCALE IN FEET			V-1

LEGEND

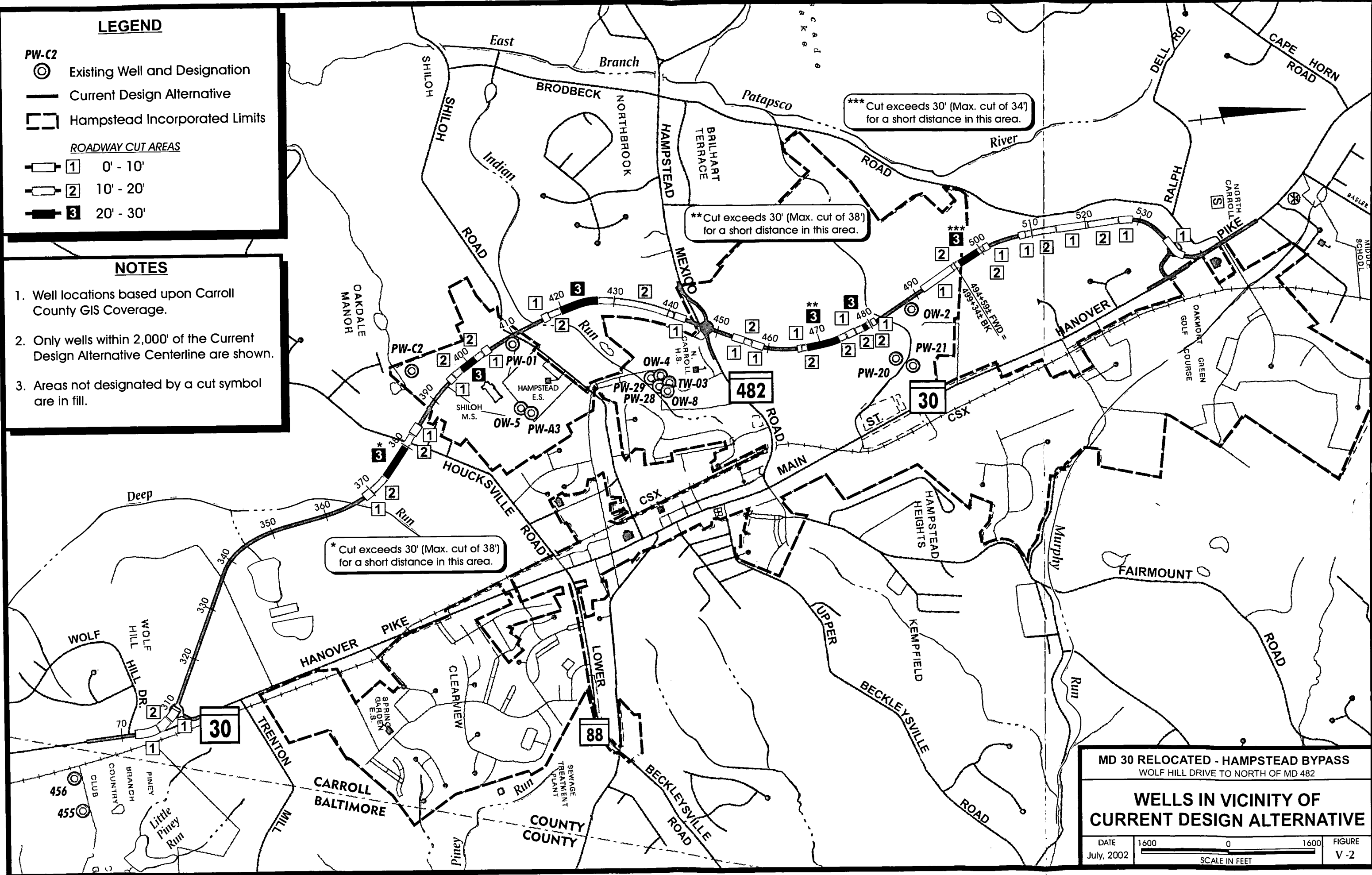
- PW-C2**
- ⊙ Existing Well and Designation
- Current Design Alternative
- ⎓ Hampstead Incorporated Limits

ROADWAY CUT AREAS

- 1 0' - 10'
- 2 10' - 20'
- 3 20' - 30'

NOTES

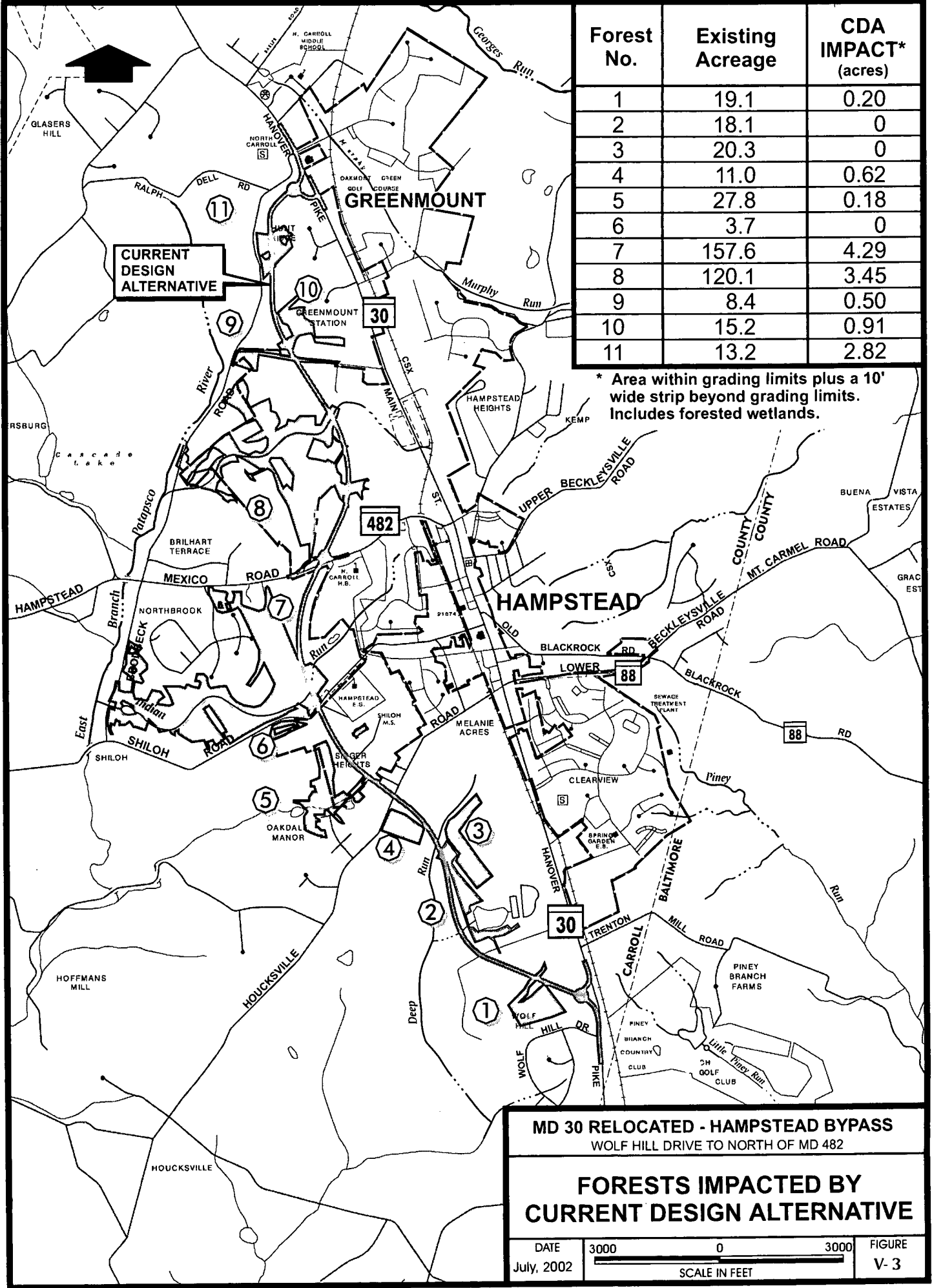
1. Well locations based upon Carroll County GIS Coverage.
2. Only wells within 2,000' of the Current Design Alternative Centerline are shown.
3. Areas not designated by a cut symbol are in fill.

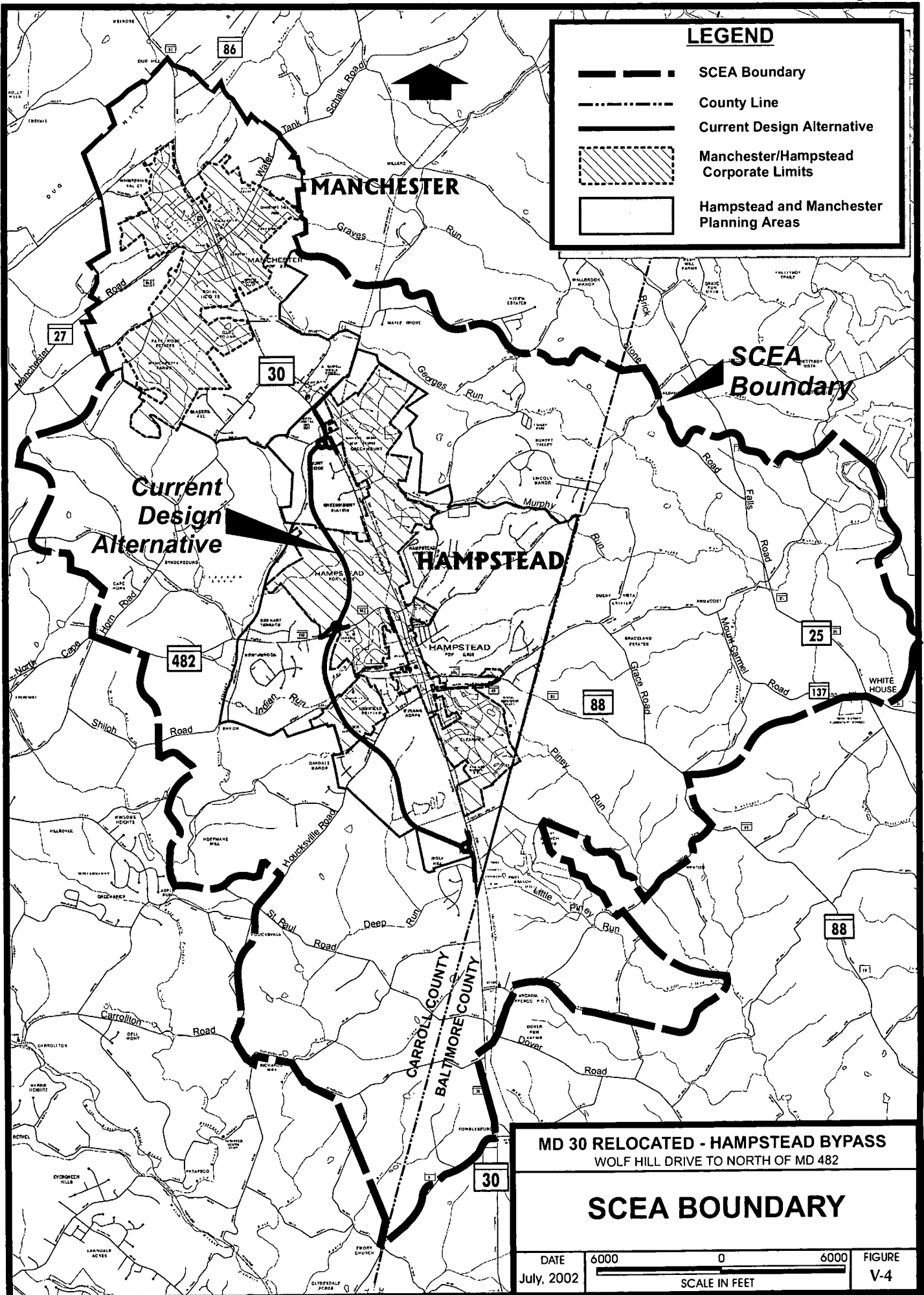


MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

WELLS IN VICINITY OF CURRENT DESIGN ALTERNATIVE

DATE July, 2002 1600 0 1600 FIGURE V-2
 SCALE IN FEET





MANCHESTER



SCEA Boundary

Current Design Alternative

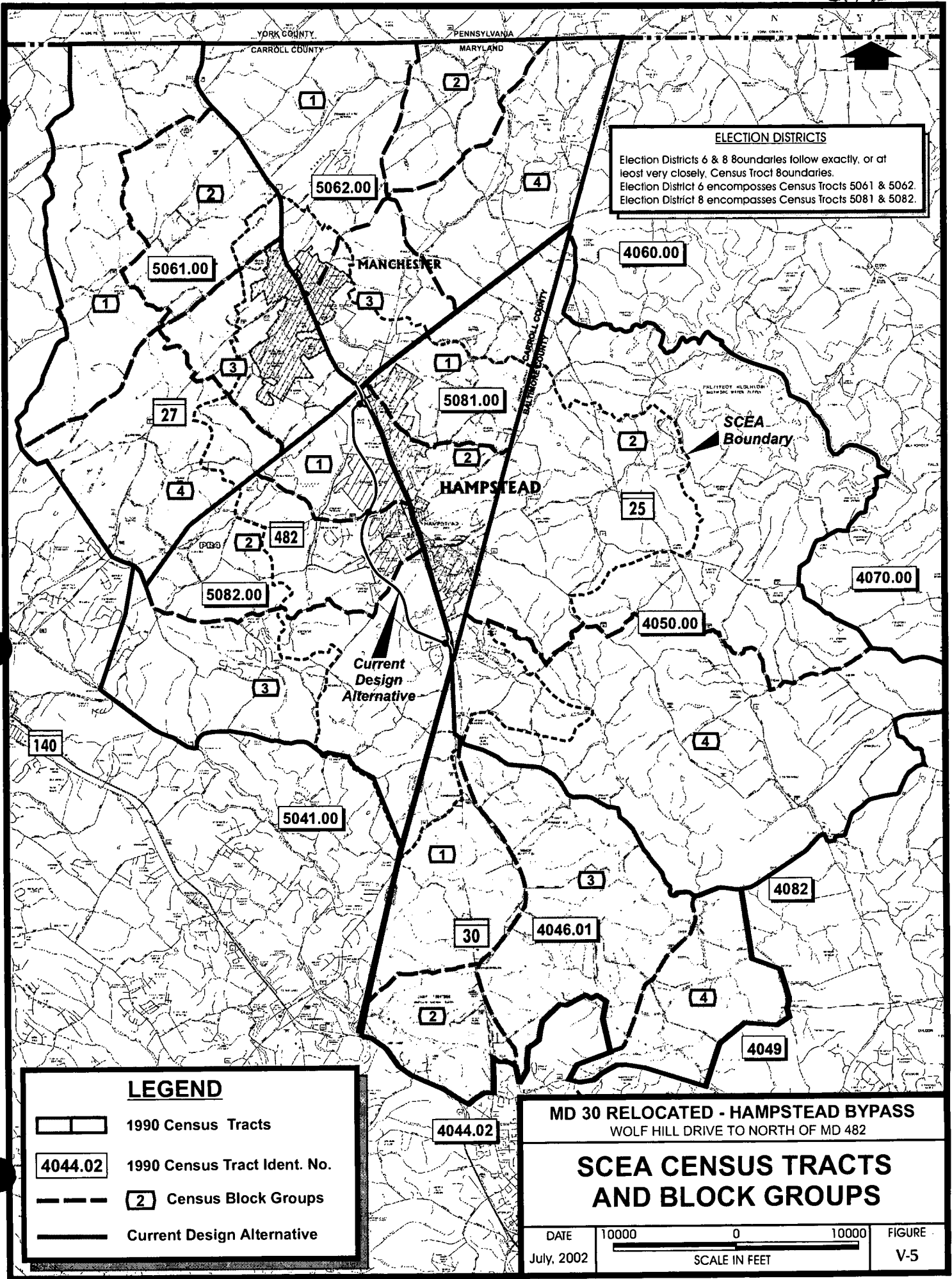
HAMPSTEAD

CARROLL COUNTY
BALTIMORE COUNTY

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

SCEA BOUNDARY

DATE: July, 2002 SCALE IN FEET: 0 to 6000 FIGURE: V-4



ELECTION DISTRICTS
 Election Districts 6 & 8 Boundaries follow exactly, or at least very closely, Census Tract Boundaries.
 Election District 6 encompasses Census Tracts 5061 & 5062.
 Election District 8 encompasses Census Tracts 5081 & 5082.

LEGEND

- 1990 Census Tracts
- 4044.02 1990 Census Tract Ident. No.
- 2 Census Block Groups
- Current Design Alternative

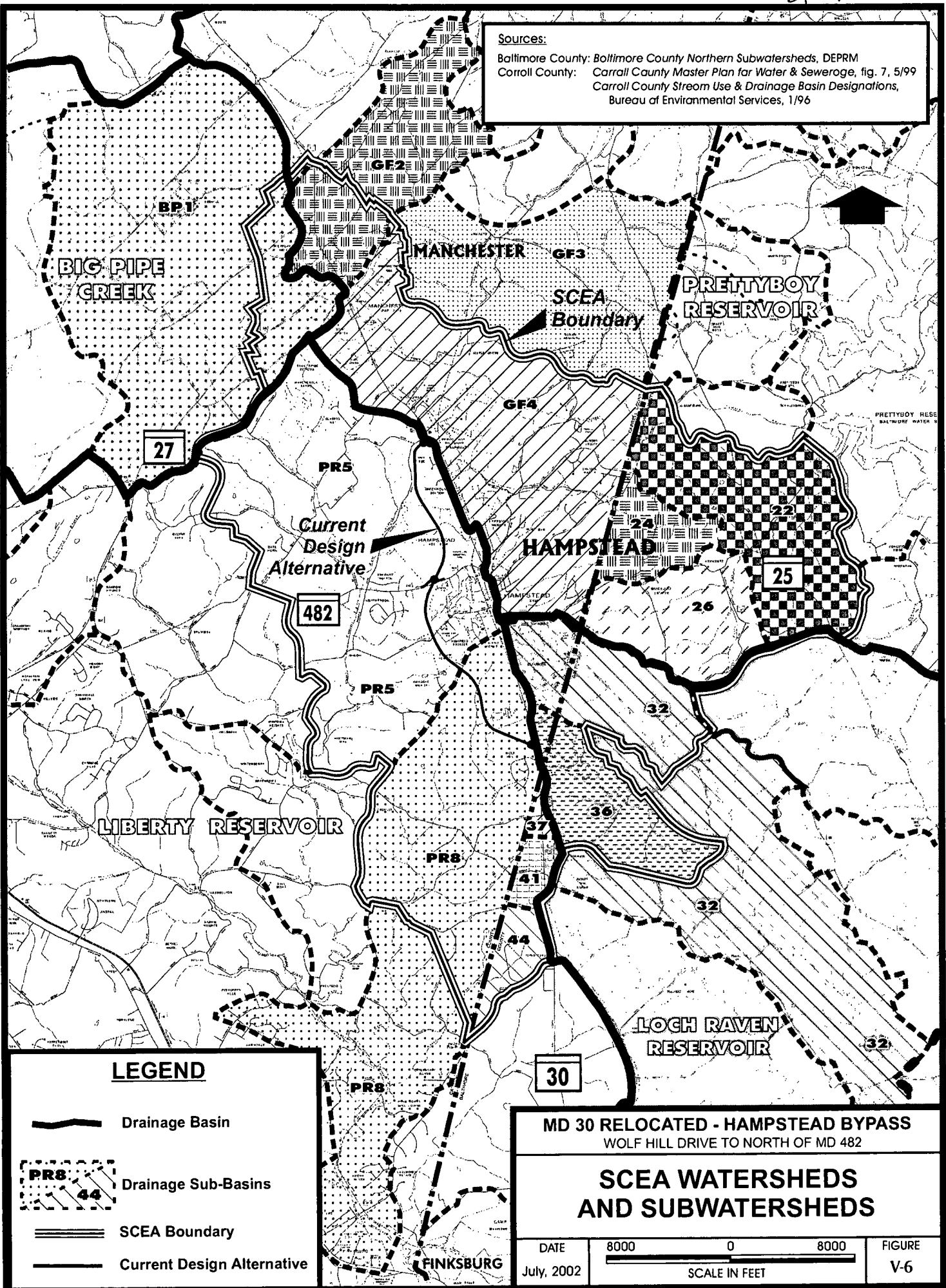
MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

SCEA CENSUS TRACTS AND BLOCK GROUPS


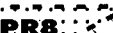


DATE July, 2002 10000 0 10000 FIGURE V-5
 SCALE IN FEET

Sources:

Baltimore County: Baltimore County Northern Subwatersheds, DEPRM
Carroll County: Carroll County Master Plan for Water & Sewerage, fig. 7, 5/99
Carroll County Stream Use & Drainage Basin Designations, Bureau of Environmental Services, 1/96



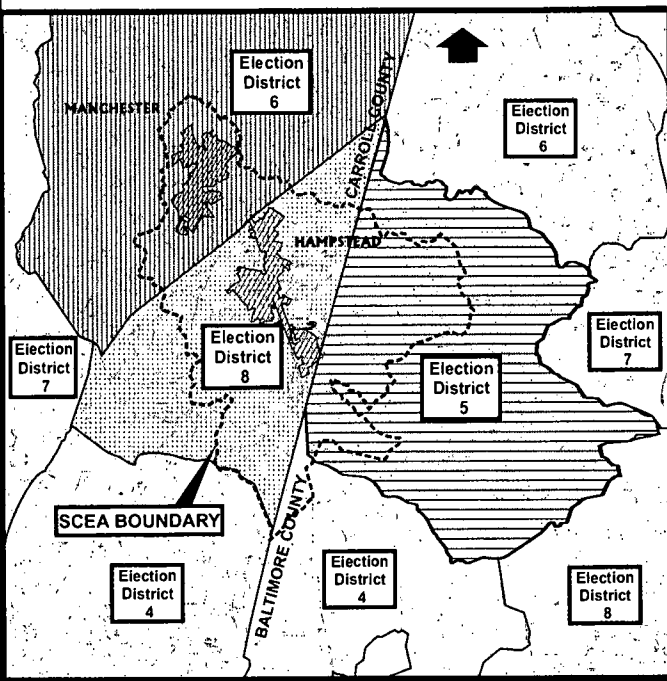
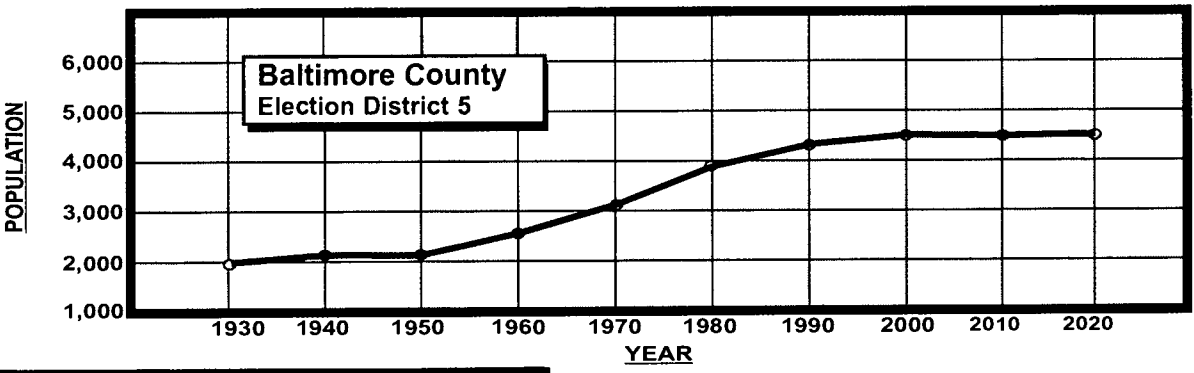
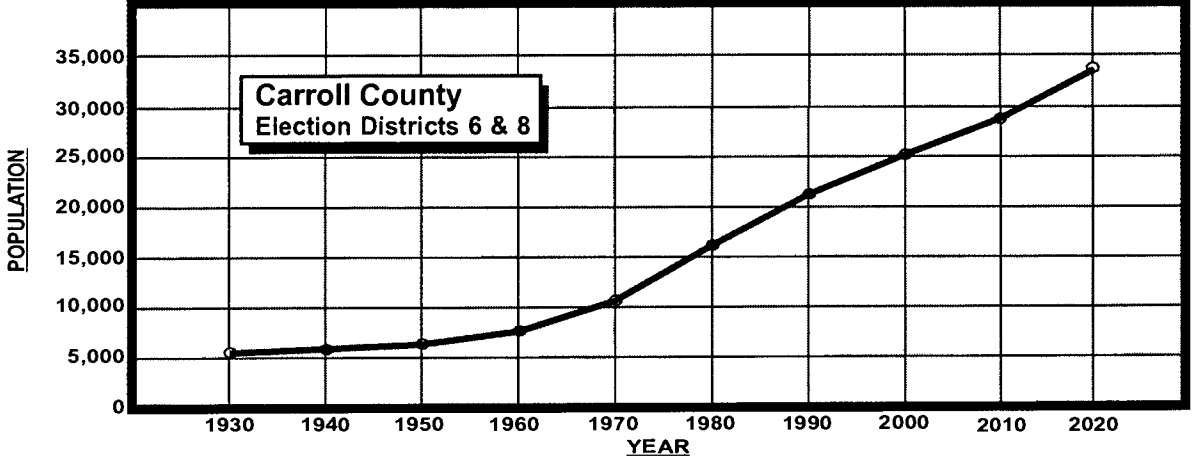
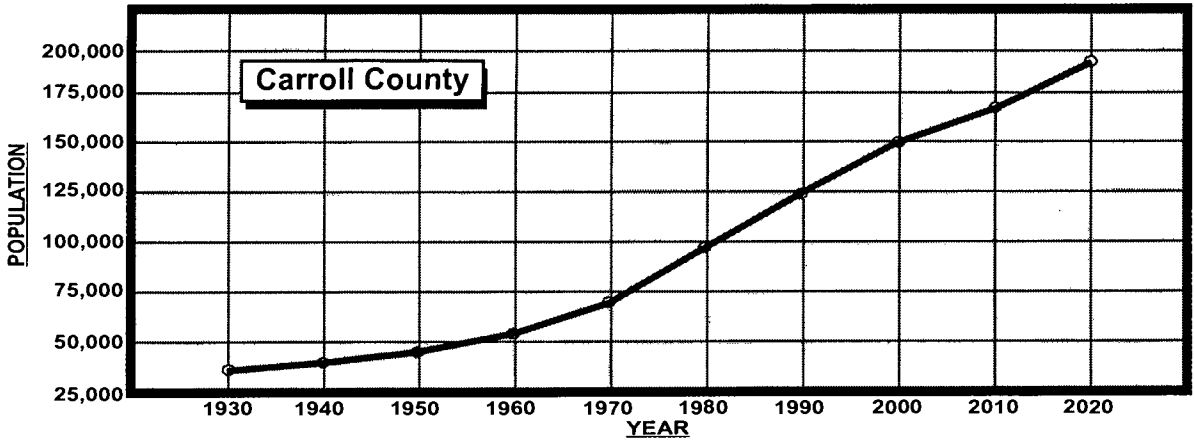
LEGEND

-  Drainage Basin
-  Drainage Sub-Basins
-  SCEA Boundary
-  Current Design Alternative

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

SCEA WATERSHEDS AND SUBWATERSHEDS

DATE	8000	0	8000	FIGURE
July, 2002	SCALE IN FEET			V-6



Sources:


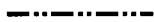



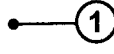

1. *Maryland Population: 1930-1970*, MDP
2. Population data and forecasts provided by Carroll County and Baltimore County planning departments.

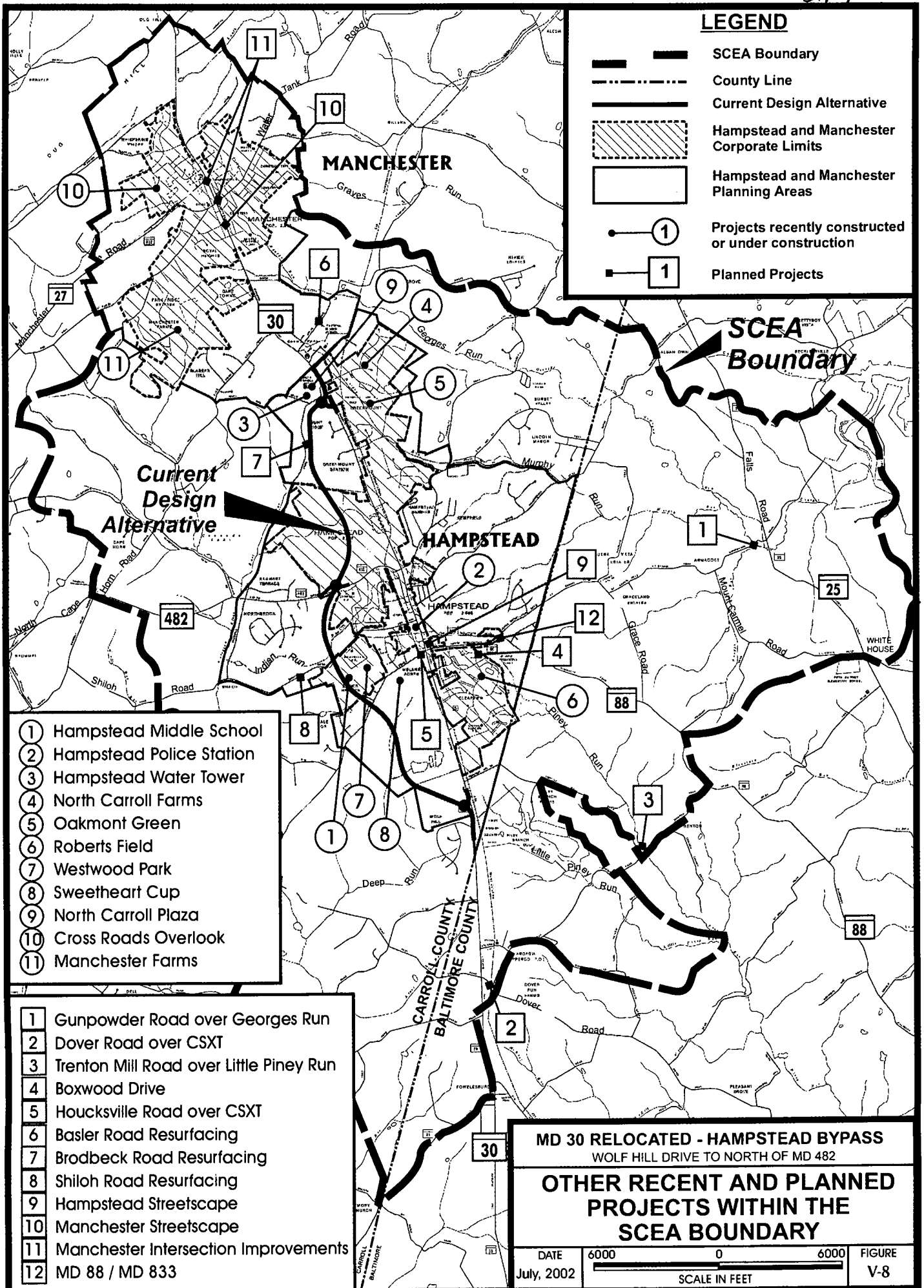
MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

POPULATION TRENDS

DATE July, 2002	NO SCALE	FIGURE V - 7
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LEGEND

-  SCEA Boundary
-  County Line
-  Current Design Alternative
-  Hampstead and Manchester Corporate Limits
-  Hampstead and Manchester Planning Areas
-  Projects recently constructed or under construction
-  Planned Projects



- ① Hampstead Middle School
- ② Hampstead Police Station
- ③ Hampstead Water Tower
- ④ North Carroll Farms
- ⑤ Oakmont Green
- ⑥ Roberts Field
- ⑦ Westwood Park
- ⑧ Sweetheart Cup
- ⑨ North Carroll Plaza
- ⑩ Cross Roads Overlook
- ⑪ Manchester Farms

- 1 Gunpowder Road over Georges Run
- 2 Dover Road over CSXT
- 3 Trenton Mill Road over Little Piney Run
- 4 Boxwood Drive
- 5 Houcksville Road over CSXT
- 6 Basler Road Resurfacing
- 7 Brodbeck Road Resurfacing
- 8 Shiloh Road Resurfacing
- 9 Hampstead Streetscape
- 10 Manchester Streetscape
- 11 Manchester Intersection Improvements
- 12 MD 88 / MD 833

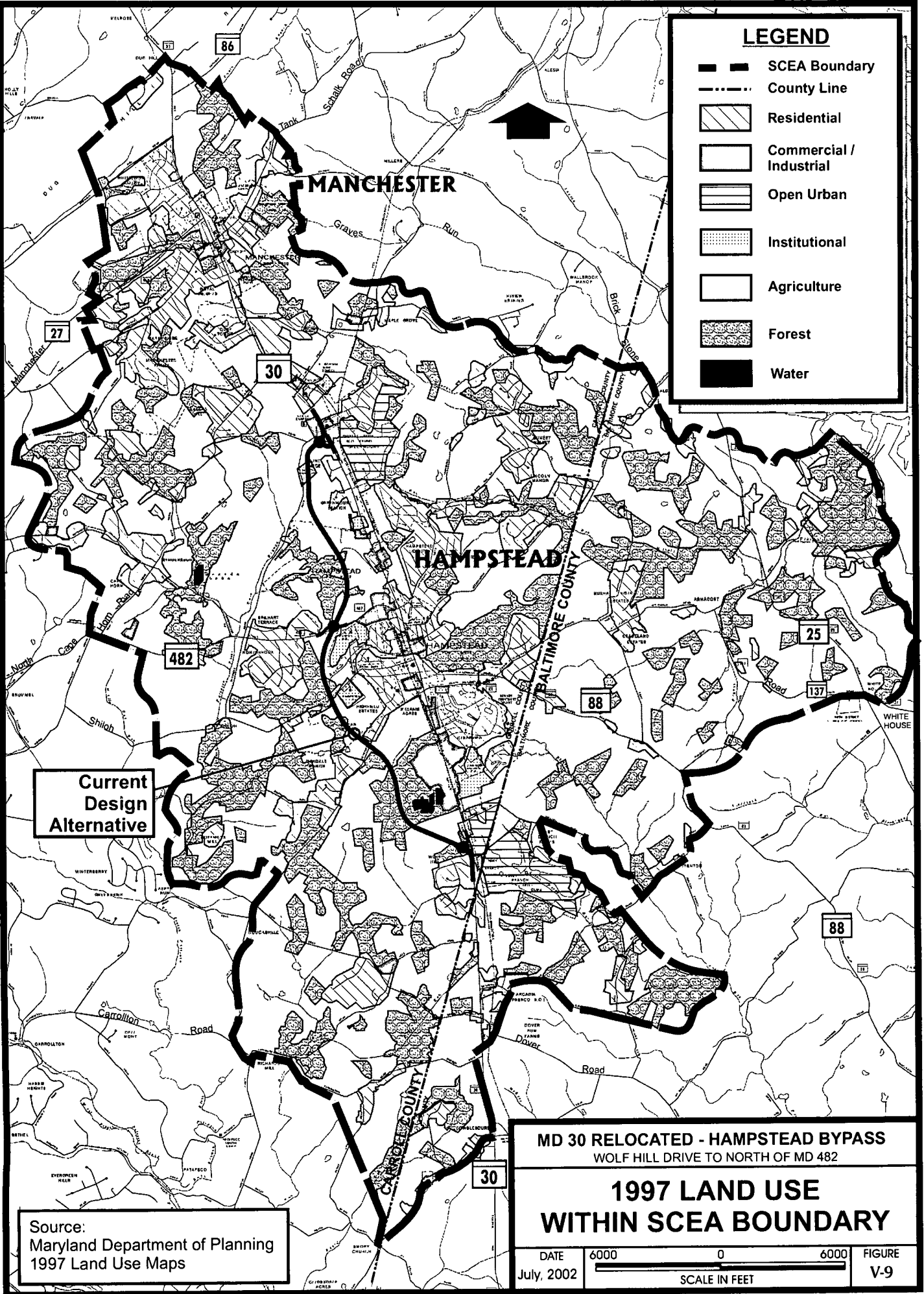
MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

OTHER RECENT AND PLANNED PROJECTS WITHIN THE SCEA BOUNDARY

DATE: July, 2002

SCALE IN FEET: 0 to 6000

FIGURE: V-8



MANCHESTER

HAMPSTEAD

Current Design Alternative

30

88

25

88

482

27

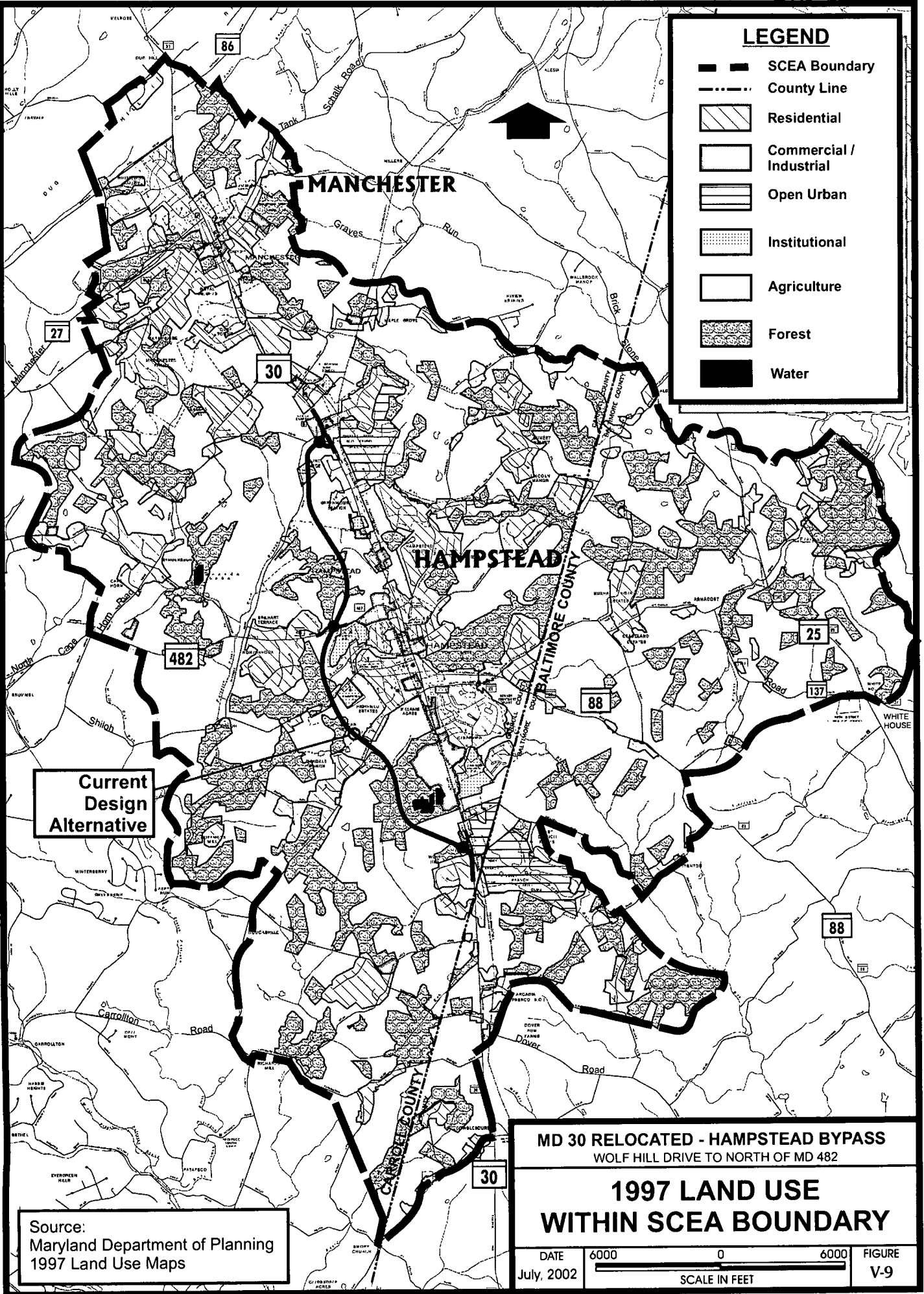
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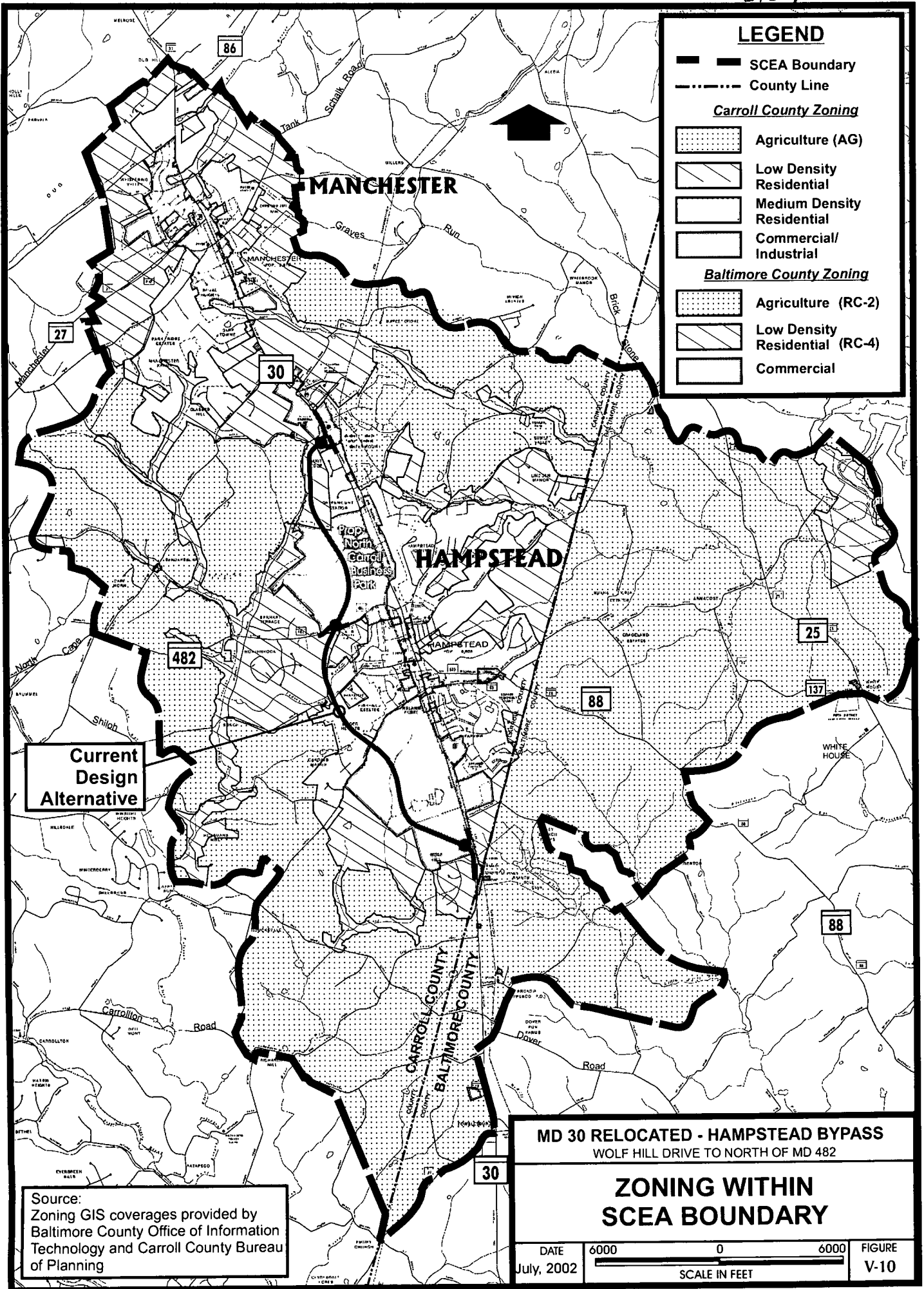
30

Carrollton

Carroll County

Baltimore County





LEGEND

— SCEA Boundary

- - - County Line

Carroll County Zoning

[Dotted pattern] Agriculture (AG)

[Diagonal lines /] Low Density Residential

[Horizontal lines] Medium Density Residential

[White box] Commercial/Industrial

Baltimore County Zoning

[Dotted pattern] Agriculture (RC-2)

[Diagonal lines /] Low Density Residential (RC-4)

[White box] Commercial

Current Design Alternative

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

ZONING WITHIN SCEA BOUNDARY

Source:
Zoning GIS coverages provided by
Baltimore County Office of Information
Technology and Carroll County Bureau
of Planning

DATE	6000	0	6000	FIGURE
July, 2002	SCALE IN FEET			V-10

HAMPSTEAD - MEXICO

MARYLAND
482

NORTH CARROLL
STADIUM

North
Carroll
High
School

Design

SHAMROCK
COMMUNICATIONS

INDUSTRIAL
DEVELOPMENT
AUTHORITY
OF
CARROLL
COUNTY

RIDGE
ENGINEERING

MARYLAND
30

HANOVER

BRODBECK
ROAD



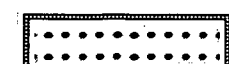
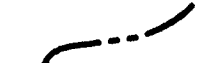




Alternative

GREENMOUNT
STATION

PIKE

ZONE OF PRIMARY
HYDROLOGIC
INFLUENCE

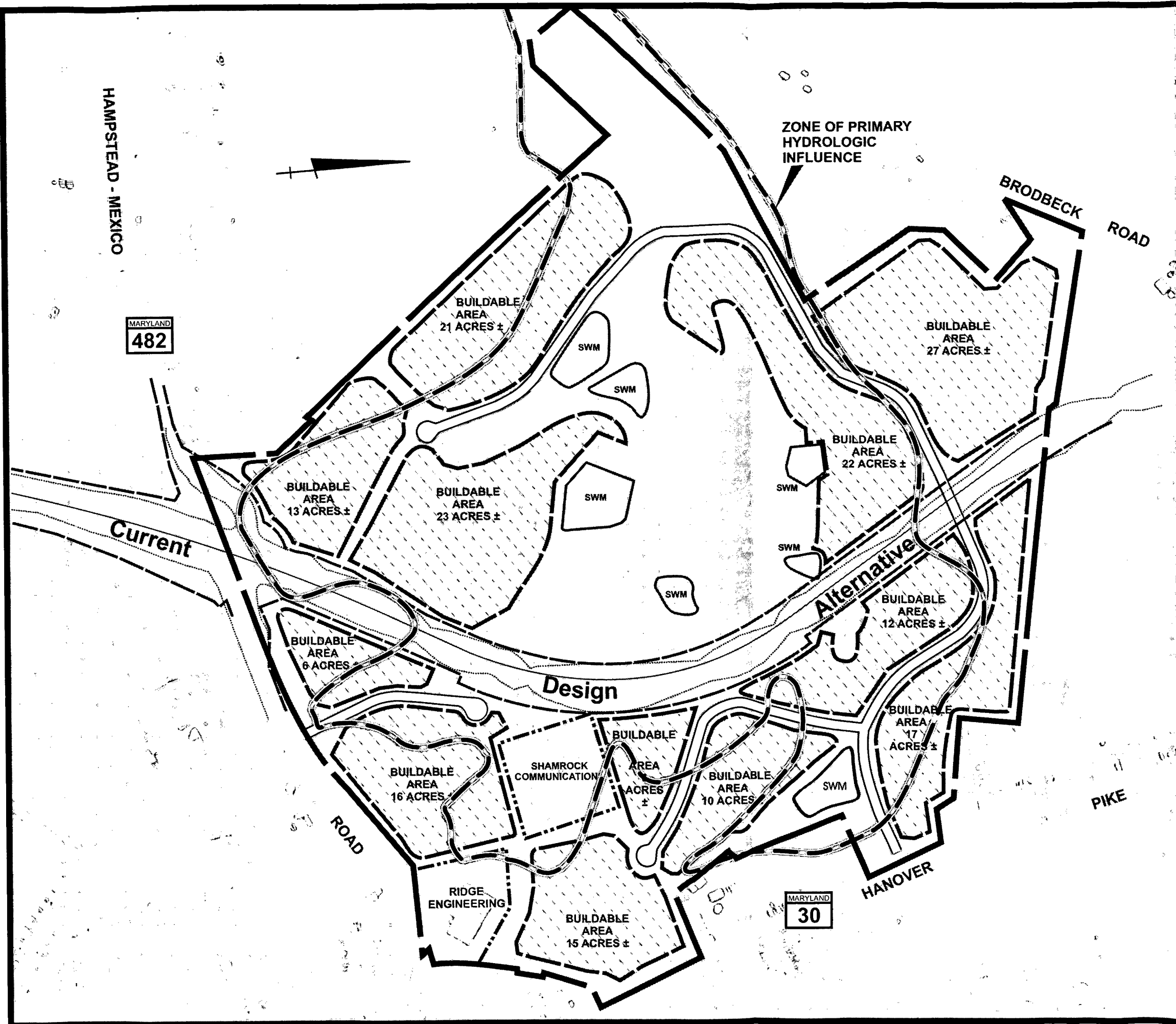
LEGEND

-  Proposed North Carroll Business Park Boundary (as defined prior to Dec. 2001)
-  Expansion of Proposed North Carroll Business Park Boundary (as shown in draft Hampstead Community Comprehensive Plan, Dec. 2001)
-  Planned Industrial Land (as shown in Draft Hampstead Community Comprehensive Plan, Dec. 2001)
-  Stream
-  Wetland
-  Forest
-  Residential
- All other land use within Proposed Business Park is Agricultural
-  Zone of Primary Hydrologic Influence

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

**PROPOSED
NORTH CARROLL BUSINESS PARK
CURRENT LAND USE**

DATE	600	0	600	FIGURE
July, 2002	SCALE IN FEET			V-11



LEGEND

- Proposed North Carroll Business Park Boundary
- Potential Stormwater Management Area
- Buildable Area
- Internal Roadway
- Current Design Alternative Right-of-Way
- Zone of Primary Hydrologic Influence

NOTE:
 Buildable Areas, Internal Roadways and Potential SWM areas are based upon a conceptual development plan prepared for the Carroll County Office of Economic Development. The plan has been modified by SHA to reflect a shift in the CDA adopted in Fall, 2001. See Section V-F4 for discussion of development scenarios. SHA is considering purchase of the portion of the proposed Business Park west of the CDA, if the CDA is selected. Thus, only the portion of the proposed Business Park east of the CDA would be developed.

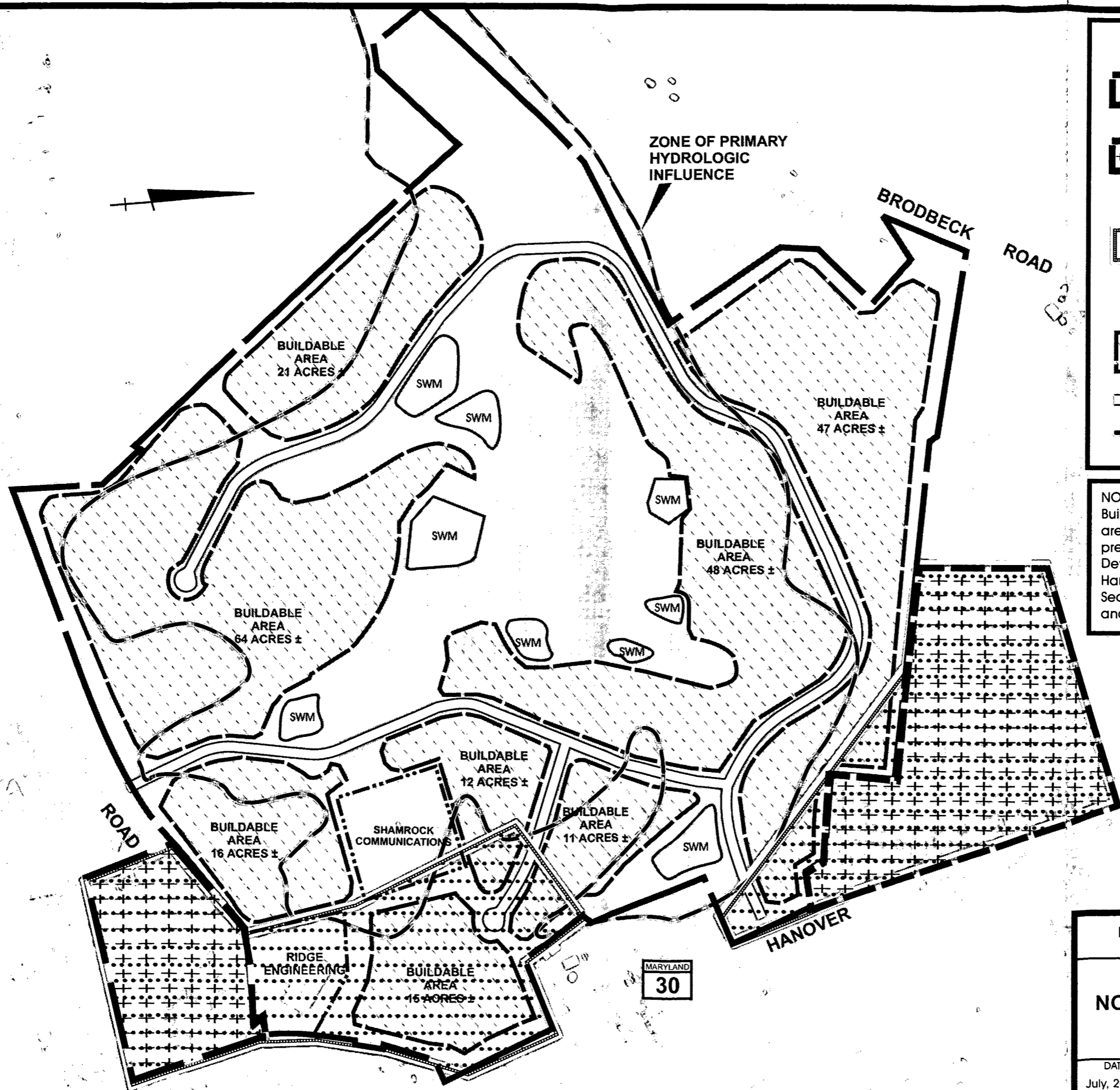
MD 30 RELOCATED - HAMPSTEAD BYPASS
 WOLF HILL DRIVE TO NORTH OF MD 482

PROPOSED NORTH CARROLL BUSINESS PARK DEVELOPMENT POTENTIAL WITH CURRENT DESIGN ALTERNATIVE

DATE: July, 2002 600 0 600 FIGURE V-12
 SCALE IN FEET

HAMPSTEAD - MEXICO

MARYLAND
482



LEGEND

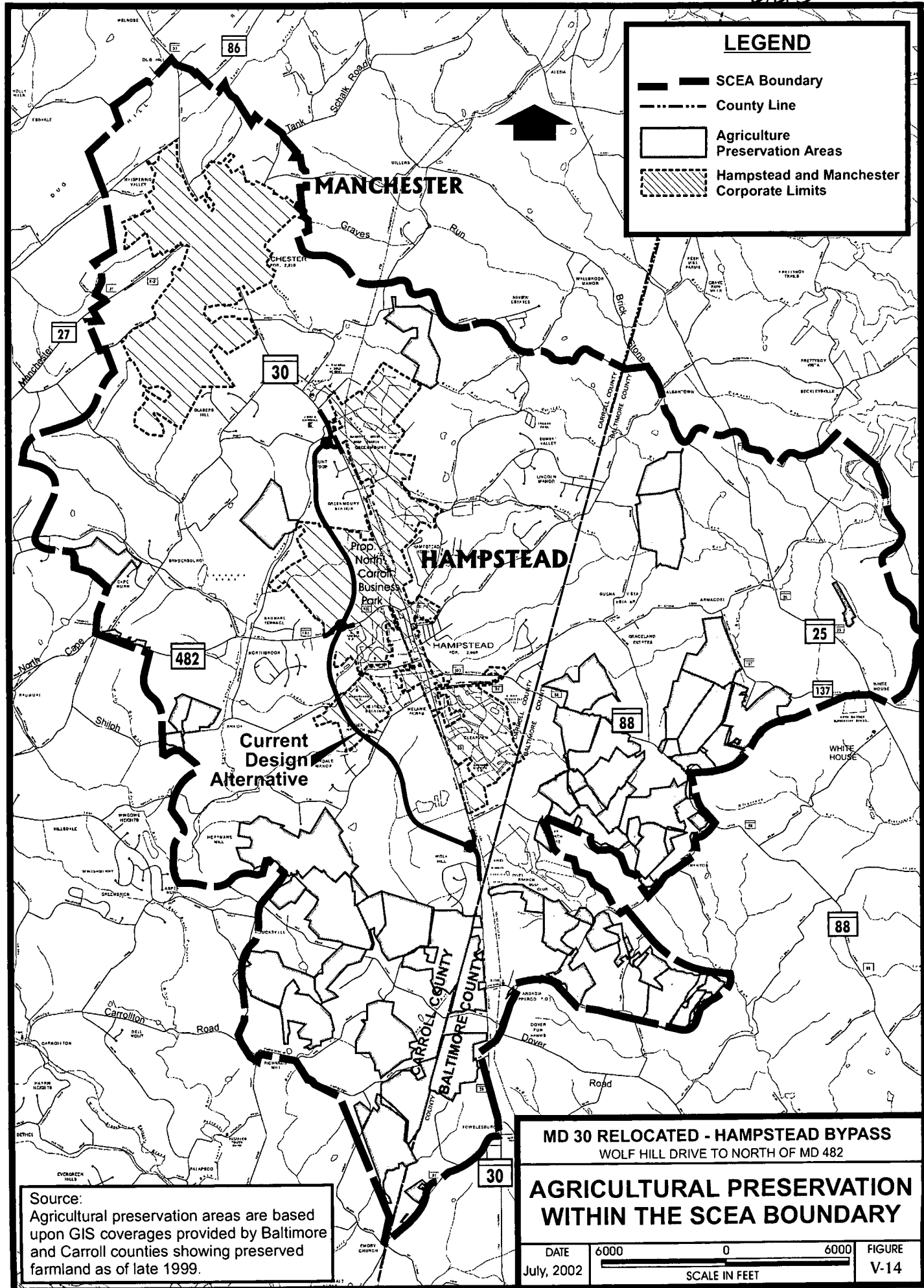
- Proposed North Carroll Business Park Boundary (as defined prior to Dec. 2001)
- Expansion of Proposed North Carroll Business Park Boundary (as shown in draft Hampstead Community Comprehensive Plan, Dec. 2001)
- Planned Industrial Land (as shown in draft Hampstead Community Comprehensive Plan, Dec. 2001)
- Potential Stormwater Management Area
- Buildable Area
- Internal Roadway
- Zone of Primary Hydrologic Influence

NOTE:
Buildable Areas, Internal Roadways and Potential SWM areas are based upon a conceptual development plan prepared for the Carroll County Office of Economic Development, adjusted for the deletion of the Hampstead Bypass under the No-Build Alternative. See Section V-4b for a discussion of development scenarios and probable impacts.

MD 30 RELOCATED - HAMPSTEAD BYPASS
WOLF HILL DRIVE TO NORTH OF MD 482

**PROPOSED
NORTH CARROLL BUSINESS PARK
DEVELOPMENT POTENTIAL WITH
NO-BUILD ALTERNATIVE**

DATE: July, 2002 SCALE IN FEET: 0 to 600 FIGURE: V-13



VI. COMMENTS AND COORDINATION

227



Maryland Department of Transportation
State Highway Administration

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

October 31, 2001

Ms. Jeanne S. Joiner
Acting Director
Carroll County Department of Planning & Zoning
225 N. Center Street
Westminster MD 21157-5194

Dear Ms. Joiner:

Thank you for your recent letter concerning the addition of the pedestrian/bicycle trail connection into the design of the Hampstead Bypass. The State Highway Administration (SHA) supports the effort Carroll County has made by incorporating bicycle and pedestrian trails within designated planned neighborhoods. We have recently agreed to make design modifications at the Shiloh Road Bridge that would accommodate a trail connection to the final Westwood Park subdivision plan.

In reference to the request to provide a separate hiker/biker path along the Bypass alignment, any separated path will require additional roadway grading, right-of-way, bridge structures and environmental impacts. All of these factors will result in increased project cost and production schedule delays.

The SHA is reviewing the possibility of a designated bike lane, as an alternative, on the proposed 10-foot outside shoulder of the Bypass. If the designated lane is feasible from a safety and operations standpoint, it will be incorporated into the final design of the project. In addition, if in the future the County or Town of Hampstead wished to pursue a trail system, SHA will cooperate in providing potential trail connections across our right-of-way. The Administration will have several areas of open space that could potentially be used as part of the trail system. Of course, access will not be allowed where Bog Turtle habitat may be affected.

My telephone number is 410-545-0412

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

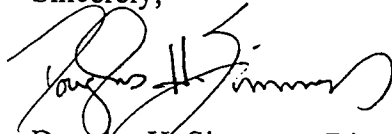
Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

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Ms. Jeanne S. Joiner
Page Two

Thank you again for your letter. If you have any questions, please feel free to contact me or Ms. Debra Raynor, Project Manager, Highway Design Division. Ms. Raynor can be reached at 410-545-2962, 1-888-228-5003 or draynor@sha.state.md.us.

Sincerely,



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

cc: Mr. Ken Decker, Town Manager, Town of Hampstead
Ms. Debra Raynor, Project Manager, Highway Design Division, State Highway
Administration

CARROLL COUNTY MARYLAND

225 N. Center Street

Westminster, Maryland 21157-5194

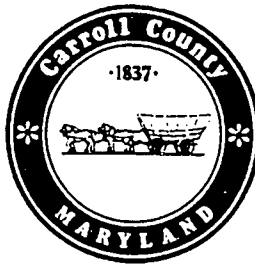
410-386-2145

1-888-302-8978

FAX 410-386-2120

E-mail: ccplanning@ccg.carr.org

TT 410-848-3017



229

Department of Planning

Jeanne S. Joiner
Acting Director

October 5, 2001

Mr. Neil Pedersen, Deputy Administrator
Office of Planning and Preliminary Engineering
Maryland State Highway Administration
707 North Calvert Street, Mail Stop C-411
Baltimore, Maryland 21202

Dear Mr. Pedersen:

As you may have gathered from our letter of September 19, 2001, requesting engineering consideration in the Hampstead Bypass design for a trail we would like to run along Shiloh Road under the Bypass, the Town of Hampstead and Carroll County are making a concerted effort to emphasize a multi-modal transportation network for the Hampstead community. Bicycle and pedestrian trails that connect destinations and neighborhoods are an important component of the Hampstead Community Comprehensive Plan that we are in the process of updating.

As the process of finalizing the alignment for the Bypass and the process of updating this plan wrap up, and with the Governor stressing the need for enhancing neighborhoods, it seems appropriate also to include a parallel but separated bicycle pedestrian path in the design and engineering of the Bypass. Four existing schools adjoin the Bypass alignment as well as the Town's major industrial center. Connection of these destinations would provide an alternative means of access to these sites, as well as providing further connection between neighborhoods.

If you could accommodate this request as you are planning and designing the Bypass, we would greatly appreciate this assistance and support. If this is not possible, we would like at the very least to see a designated bike lane along the shoulders, including striping and signage. Our highest priority, however, is to move along the process of design, engineering, and construction of the Bypass as quickly as possible. If accommodating this request would in any way delay the process, we will be more than willing to withdraw our request.

Thank you very much for your assistance in this matter. If you have any questions or comments, please feel free to contact me at 410-386-2145.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jeanne S. Joiner".

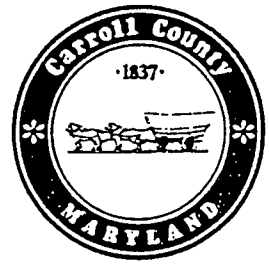
Jeanne S. Joiner
Acting Director

Davidson

CARROLL COUNTY MARYLAND

230

225 N. Center Street
Westminster, Maryland 21157-5194
410-386-2145
1-888-302-8978
FAX 410-386-2120
E-mail: ccplanning@ccg.carr.org
TT 410-848-3017



Department of Planning

Jeanne S. Joiner
Acting Director

Bell FYI

September 19, 2001

Mr. Neil Pedersen, Deputy Administrator
Office of Planning and Preliminary Engineering
Maryland State Highway Administration
707 North Calvert Street, Mail Stop C-411
Baltimore, Maryland 21202

Dear Mr. Pedersen:

Carroll County's first priority road project with SHA continues to be the Hampstead Bypass. We are happy to see the environmental studies coming to an end and progress resuming on this project. I encourage you to keep the momentum moving through final design, right-of-way acquisition, and construction, to the extent possible.

During the past few years, the Town of Hampstead and Carroll County have been working on a joint planning effort to update the comprehensive plan for the Hampstead community. We hope to have a draft plan ready to be sent out for the required 60-day review period this fall, with adoption expected early in 2002.

The bypass alignment will form the western limit of a growth area boundary that is proposed to be adopted with this plan. For the most part, all of the higher-density development falls on the eastern side of the bypass. However, a portion of Westwood Park, a residential development currently under construction in the Town of Hampstead, will be divided by the bypass. As part of the Transportation Improvements Map to accompany the plan, we are proposing a trail connecting the portion of Westwood Park located west of the bypass alignment on Shiloh Road to the schools and the portion of the development east of the bypass.

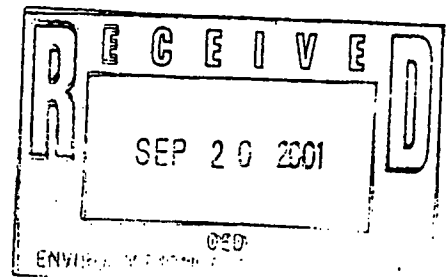
In addition to connecting Westwood Park to the Town, its other residential neighborhoods, and the schools, the proposed trail would connect the Hampstead Elementary School, Shiloh Middle School, and North Carroll High School to each other. This would provide the benefit of better access for children walking to the schools and the recreation facilities at the schools.

I am requesting that you make accommodations for this trail to be located under the bypass along Shiloh Road as you are planning and designing the bypass. This will help us to eventually implement the trail as proposed on the Plan Update.

If you have any questions or comments, please feel free to contact me at 410-386-2145.

Sincerely,

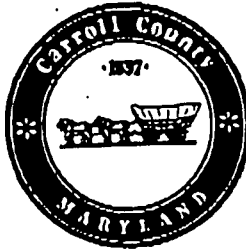
Jeanne S. Joiner
Jeanne S. Joiner
Acting Director



231

Department of
ECONOMIC DEVELOPMENT

225 N. Center Street
Westminster, Maryland 21157
Westminster 410-386-2070
Baltimore 410-876-2450
FAX 410-876-8471
TT 410-848-3017



John T. Lyburn, Jr.
Director

September 7, 2001

Mr. Neil Pedersen
Office of Planning and Preliminary Engineering
State Highway Administration
707 N. Calvert Street
Mail Stop C411
Baltimore, Maryland 21202

Dear Mr. Pedersen: *Neil*

I am writing to you on behalf of the Carroll County Board of Commissioners. As you know, Carroll County has been lobbying the State Highway Administration for many years to fund and build the Hampstead Bypass. The bypass is the top transportation priority of the County.

The northern end of the Hampstead Bypass is currently slated to go through a large piece of industrially zoned land known as the North Carroll Business Park. The Industrial Authority (IDA) of Carroll County owns approximately 100 acres of this land located just east of the newest bypass alignment. The IDA has the property listed on the balance sheet for \$2,250,000 or \$25,000 per acre.

Carroll County understands that the State is interested in preserving the North Carroll Business Park in its current undeveloped state. We are willing to work with State on this and would like to meet to discuss the protection of this critical piece of property.

Please call my office at your earliest convenience to set up a meeting to discuss this matter in detail.

Sincerely,

Jack Lyburn
Director

Cc: Dr. Arthur Peck, Chairman - Industrial Development Authority

MAYOR: CHRISTOPHER M. NEVIN
TOWN MANAGER: KEN DECKER
CLERK/TREASURER: PATRICIA L. WARNER
PLANNING COMMISSION: DENNIS E. WERTZ



Handwritten signature

232

TEL: (410) 374-2751
Ballo: (410) 239-7408
Fax: (410) 239-6143
E-mail: hampstead@carr.org
1034 S. CARROLL ST.
HAMPSTEAD, MD 21074

February 1, 2000

The Hampstead Planning & Zoning Commission
Town of Hampstead
1034 S. Carroll St
Hampstead, MD 21074

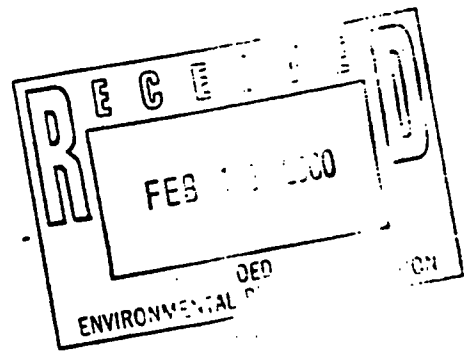
Dear Commission Members,

During recent Town Council meetings, we have discussed placing a temporary moratorium on the development of the North Carroll Business Park (NCBP). While we remain undecided on a formal moratorium, we feel consideration of site plans should wait until after the Bog Turtle biological assessment is completed. The hydrological data developed by the study will be invaluable in site planning including stormwater management. On behalf of the Town Council, I request you delay consideration of any site plan of the NCBP until after all environmental studies are concluded.

Sincerely,

Christopher M. Nevin
Christopher M. Nevin
Mayor

Copy to:
Town Council
Town Manager
Scott A. Smith, Maryland Department of Natural Resources



CARROLL COUNTY MARYLAND
225 N. Center Street
P.O. Box 100
Prestonsville, Maryland 21157-5194
Phone: 410-386-2044
Baltimore 1-888-302-8978
FAX 410-848-0003
TDD 410-848-3017



Board of Commissioners
Julia W. Gouge, President
Donald I. Dell, Vice President
Robin B. Frazier, Secretary

July 29, 1999

Mr. Parker F. Williams, Administrator
Maryland State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

RE: Hampstead Bypass
Carroll County, Maryland

Dear Mr. Williams:

During a recent meeting of the Hampstead Bypass Bio-assessment Workteam, it came to our attention that property acquisition efforts along the alignment had been halted. This revelation was a surprise to Carroll County's representatives on the Workteam.

While the Board of Commissioners recognizes that the State must adhere to regulations regarding endangered species, we submit that other elements of project finalization must continue to move forward on a parallel track. Delaying right-of-way acquisition on the project while the biological and hydrologic studies proceed wastes valuable time in seeing this project become a reality.

We, the undersigned, are writing to encourage you to resume the property acquisition phase of this project as soon as possible. It is reasonable to proceed with both the environmental and acquisition phases of this project concurrently.

Thank you for your positive consideration of this matter, and please do not hesitate to contact us if you would like to discuss this matter further.

Very truly yours,
Julia W. Gouge
Julia W. Gouge, President
Donald I. Dell
Donald I. Dell, Vice President
Robin B. Frazier
Robin B. Frazier, Secretary

JWG/DID/RBF/kf
cc: Neil Pedersen, MDSHA (Planning & Preliminary Engineering)
Bill Branch, MDSHA (Environmental Design)
Jack Lyburn, Director, Economic Development Department
C. H. ... Planning Department



TEL: (410) 374-2761
Balto: (410) 239-7408
Fax: (410) 239-6143
E-mail: hampstead@carr.org
1034 S. CARROLL ST.
HAMPSTEAD, MD 21074

MAYOR: CHRISTOPHER M. NEVIN
CLERK/TREASURER: PATRICIA L. WARNER
PLANNING COMMISSION: DENNIS E. WERTZ

February 16, 1999

Mr. Darrell Sacks
Maryland State Highway Administration
Project Planning
707 N. Calvert Street
Baltimore, Maryland 21202

Dear Mr. Sacks:

The Mayor and Council of the Town of Hampstead want to make their position on the Hampstead Bypass clearly known. First, we want to do everything humanly possible to protect the bog turtle and the habitat that allows the bog turtle to thrive in this area. We fully support the state's effort to perform the necessary studies to assure that the bog turtles thrive in concert with the bypass and economic development. We are prepared to do our part to work with state and federal agencies to protect our precious part of the web of life.

Second, we want the bypass to be a restricted access bypass. We do not want the bypass to encourage commercial growth in any other area, except our downtown. We have recently completed several studies regarding the revitalization of our downtown area. We are committed to these revitalization efforts. We have laws that prohibit commercial growth in our industrial zones. We believe the main purpose of the bypass is to relieve Route 30 (Main Street) of interstate traffic so that industrial and community growth can occur. This is truly "Smart Growth."

Finally, we wish the bypass design and construction efforts god speed. We have been patient for many decades. We are prepared to wait a little longer so that the bog turtle is not harmed, but everyday more and more trucks and cars choke our community. If you hear outrageous comments about the turtle, please understand these are words of frustration, not words of mal-intent. We thank you for all your efforts, and we look forward to working cooperatively with all of you. We truly believe the bypass project is an opportunity to show our country how Maryland and the Federal government work together to construct large public works, protect endangered species, and promote economic development.

Sincerely,

Christopher M. Nevin
Mayor Chris Nevin

Larry Hentz
Councilman Larry Hentz

Stephen G. Holland
Councilman Steve Holland

Wendy L. Martin
Councilwoman Wendy Martin

Haven N. Shoemaker, Jr.
Councilman Haven Shoemaker

Wayne N. Thomas
Councilman Wayne Thomas

cc: Governor Parris N. Glendening



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Maryland Department of Transportation
State Highway Administration

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

January 4, 2002

Re: Project No. CL 416B23
MD 30 Hampstead Bypass Project
Carroll County, MD

Mr. Tom Hill, Principal
Shiloh Middle School
3675 Willow Street
Hampstead, MD 21074

Dear Mr. Hill:

As part of our on-going noise analysis for the proposed MD 30 Hampstead Bypass project, we are writing to follow-up on and confirm an August 2, 2001 telephone conversation that you had with Andrew DeGregorio of A.D. Marble & Company, Inc. (one of our consultants for the above referenced project). This conversation was regarding potential noise effects from the proposed bypass on your school's property.

Based on your conversation with Mr. DeGregorio, it is our understanding that your school has central air conditioning. These central air units are designed to function best when all windows of the classrooms are closed and teachers are encouraged to leave windows closed. However, differential cooling throughout the building may require that certain classrooms need to open windows to stay cool. Also, occasionally, a teacher may wish to let some fresh air into the classroom. For the most part, keeping windows closed is encouraged.

We understand the curriculum at Shiloh Middle School is considered dynamic. You encourage your teaching staff to find creative ways to keep the students interested and that includes conducting some outdoor classes. We also understand that you do not envision that these outdoor classes or your gym classes would be adversely affected by the proposed increase in noise that would be generated by the proposed bypass, and feel that a noise barrier would not be warranted at the school.

In addition, we understand that you have safety concerns regarding the location of the proposed bypass along on the west side of the school building where the cafeteria and playground areas are located. You have requested that we consider including some sort of visual and structural barrier such as shadow box fencing with landscaping along the right-of-way adjacent to the school property. Although a right-of-way fence would probably be proposed, we are willing to work with the school during the final design phase of this project to identify the best option.

My telephone number is _____

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

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

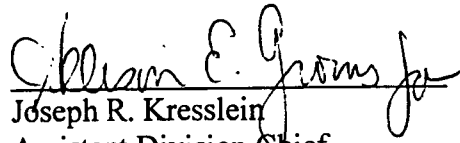
Mr. Tom Hill
MD 30 Hampstead Bypass Project
Page Two

To confirm that we have a clear understanding of the information you discussed with Andrew DeGregorio, please sign and date on the concurrence line provided below. If you have any additional comments, questions, or concerns, please feel free to contact the Environmental Manager, Jessica Morrow, at (410) 545-8471.

Very truly yours,

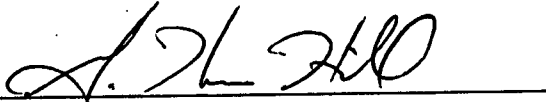
Cynthia Simpson
Deputy Director
Office of Planning and
Preliminary Engineering

by:



Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

I concur with the above-discussed context.



Mr. Thomas Hill, Principal
Shiloh Middle School

- cc: Mr. Charlie Adams
- Mr. Bill Branch
- Mr. Jim Hade
- Mr. Joseph Kresslein
- Ms. Jessica Morrow
- Mr. Ken Polcak

ADM Record of Telephone Conversation

Project Name: MD 30 HAMPSTEAD BYPASS	Project Number: P-487	RECEIVED JUN 26 2001
Recorded by: Andrew (Andy) DeGregorio <i>Andy DeGregorio</i>	Date: 8/2/01	
Conversation with: Tom Hill - Principal	Telephone: (410) 735-0832 ³⁸⁶⁻⁴⁵⁷⁰	THE WILSON T. BALLARD CO
Organization: Shiloh Mdl. Sc., Hampstead, MD	Fax:	

Summary of Conversation:

I TELEPHONED THE SCHOOL TO FIND-OUT CERTAIN INFORMATION TO HELP DETERMINE NOISE AFFECTS ON THE SCHOOL PROPERTY BY THE PROPOSED MD30 HAMPSTEAD BYPASS. THE SHILOH MIDDLE SCHOOL IS LOCATED IN THE VICINITY OF THE PROPOSED NOISE BARRIER FOR THE PROJECT (BETWEEN HOUCKSVILLE ROAD AND SHILOH ROAD IN HAMPSTEAD, MD). I ASKED TO SPEAK TO SOMEONE WHO COULD ANSWER SOME QUESTIONS ABOUT THE SCHOOL. I WAS FORWARDED TO MR. THOMAS (TOM) HILL - PRICIPAL OF SHILOH MIDDLE SCHOOL.

I ASKED TOM HILL THE FOLLOWING QUESTIONS ABOUT THE SCHOOL, AS THE SCHOOL IS FAIRLY NEW:

- Q: DOES THE SCHOOL HAVE CENTRAL AIR CONDITIONING?
- A: YES.

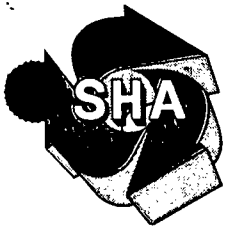
- Q: DO THE CLASSROOMS HAVE WINDOWS THAT CAN BE OPENED OR ARE THEY CLOSED YEAR-ROUND?

- A: THE CENTRAL AIR UNITS ARE DESIGNED TO FUNCTION BEST WHEN ALL WINDOWS OF THE CLASSROOMS ARE CLOSED. TEACHERS ARE ENCOURAGED TO LEAVE WINDOWS CLOSED, BUT DIFFERENTIAL COOLING THROUGHOUT THE BUILDING MAY REQUIRE THAT CERTAIN CLASSROOMS NEED TO OPEN WINDOWS TO STAY COOL. ALSO, OCCASSIONALLY, A TEACHER MAY WISH TO LET SOME FRESH AIR INTO THE CLASSROOM. FOR THE MOST PART KEEPING WINDOWS CLOSED IS ENCOURAGED.

- Q: ARE THERE MANY CLASSES CONDUCTED OUT OF DOORS?

A: TOM HILL SAID THE CURRICULUM AT SHILOH MIDDLE SCHOOL IS CONSIDERED DYNAMIC. THEY ENCOURAGE THEIR TEACHING STAFF TO FIND CREATIVE WAYS TO KEEP THE STUDENTS INTERESTED AND THAT INCLUDES CONDUCTING SOME CLASSES OUT OF DOORS. MR. HILL DOES NOT SEE THESE CLASSES OR THEIR GYM CLASSES BEING CONDUCTED OUT OF DOORS BEING AFFECTED BY THE PROPOSED INCREASES IN NOISE THAT WOULD BE GENERATED BY THE PROPOSED HIGHWAY. WHAT HE IS CONCERNED ABOUT IS SAFETY. HE SAID HE THOUGHT A NOISE BARRIER WOULDN'T BE WARRANTED BUT IS STILL CONCERNED THAT THERE BE SOME SORT OR VISUAL & STRUCTURAL BARRIER SO STUDENTS ARE SAFER, I.E., NOT RUNNING OUT TO THE HIGHWAY CHASING A BALL, ETC. HE THOUGHT SOME SORT OF SHADOW-BOX FENCING WITH LANDSCAPING WOULD HELP. HE'S CONCERNED BECAUSE THAT SIDE OF THE BUILDING IS WHERE THEIR CAFETERIA AND PLAYGROUND AREAS ARE. THE CAFETERIA WORKS AS SHIFTS AND THAT'S WHERE THE STUDENTS ARE. I TOLD TOM THAT RIGHT-OF-WAY FENCES WOULD PROBABLY BE PROPOSED BUT THAT THE MD SHA WOULD BE WILLING TO WORK WITH THE SCHOOL.

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**Maryland Department of Transportation
State Highway Administration**

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

April 6, 2001

Re: Project No. CL416B23
MD 30 – Hampstead Project
Carroll County, Maryland

Mr. Kenneth Tregoning, Sheriff
100 North Court Street
Westminster, MD 21157

Dear Sheriff Tregoning:

The Maryland State Highway Administration (SHA) is updating Project Planning studies for the MD 30 – Hampstead project. The purpose of the proposed improvement is to improve traffic operations and safety through the Town of Hampstead.

The alternatives being evaluated include a No-build alternative, a western bypass of Hampstead previously selected in the Finding of No Significant Impact, (FONSI) and the current design alternative (a modification of the FONSI-selected alternative).

The Environmental Assessment currently being prepared will evaluate existing emergency services available in the study area. It will also provide a discussion of the potential impacts that each alternative being considered may have on the delivery of these services, particularly with regard to access and response times.

The enclosed mapping and descriptions of the proposed alternatives/options are provided for your review. We are requesting your input in determining whether emergency services and response times would be affected by the proposed project. Please provide us with your comments by April 23.

If you have any questions or need additional information, please contact the Environmental Manager, Mr. Darrell Sacks at 410-545-8527 or toll free at 1-800-548-5026.

My telephone number is _____

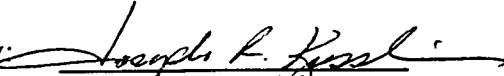
Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

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

Mr. Kenneth Tregoning
MD 30 – Hampstead Project
Page 2

Very truly yours,

Cynthia D. Simpson
Deputy Director
Office of Planning and
Preliminary Engineering

by: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

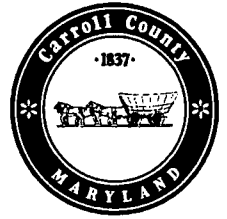
Attachments (2)

cc: Mr. Bruce Grey
Mr. Robert Riley
Mr. Darrell Sacks



CARROLL COUNTY SHERIFF'S OFFICE

KENNETH L. TREGONING
SHERIFF
100 N. COURT STREET
WESTMINSTER, MD 21157-5187



ROBERT L. KEEFER, CHIEF DEPUTY
SHERIFF SERVICES
PHONE NO. 410 386-2900
FAX NO. 410 876-1152
TOLL FREE NO. 1 888 302-8924

GEORGE R. HARDINGER, WARDEN
DETENTION CENTER
PHONE NO. 410 386-2629
FAX NO. 410 857-1509
TOLL FREE NO. 1 888 302-8826

April 11, 2001

Joseph R. Kresslein
Assistant Division Chief
Project Planning Division
State Highway Division
P. O. Box 717
Baltimore, MD 21203-0717

Dear Mr. Kresslein,

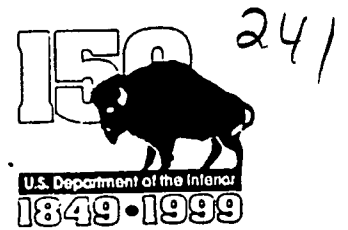
Review of the proposed alternatives/options for the Hampstead bypass project (FONSI) does not indicate an adverse impact for response times by emergency providers. Thank you for the opportunity to review and comment on the proposed plans. If I can be of further assistance please call me at 410-386-2900.

Sincerely,

Kenneth L. Tregoning, Sheriff
Carroll County, Maryland



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

January 20, 1999

Mr. Nelson J. Castellanos
Federal highway Administration
The Rotunda, Suite 220
711 West 40th Street
Baltimore, MD 21211-2187

Attention: Pamela S. Stephenson

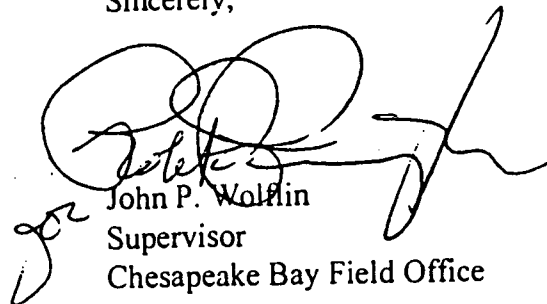
Re: MD 30 Hampstead Bypass / Section
7 Coordination for the bog turtle

Dear Mr. Castellanos:

Thank you for your letter of January 7, 1999, describing your approach to the preparation of the Biological Assessment for the Hampstead Bypass in Carroll County, Maryland. Your letter indicates that the Biological Assessment will incorporate three areas of analysis: 1) a determination of presence or absence of the bog turtle in all potential habitats within the project corridor and any areas dependent on the project; 2) hydrologic analysis within the area delineated above to determine potential effects on bog turtle habitat; and 3) a management strategy to ensure the continued viability of the species and its habitat when the highway project is complete.

We concur with this approach, provided the management strategy incorporates all areas affected by the project, including any affected areas outside the project corridor. We look forward to working with you on an interdisciplinary team to guide and track preparation of the Biological Assessment. If you have any questions regarding this letter, please contact Andy Moser of my Endangered Species Staff at (410) 573-4537.

Sincerely,


John P. Wolfen
Supervisor
Chesapeake Bay Field Office

cc: Scott Smith, MD DNR, Wye Mills
Bill Branch, MD SHA



Parris N. Glendening
Governor

Kathleen Kennedy Townsend
Lt. Governor

Maryland Department of Natural Resources

ENVIRONMENTAL REVIEW

Tawes State Office Building
Annapolis, Maryland 21401

August 16, 2000

Sarah J. Taylor-Rogers, Ph.D.
Secretary

Stanley K. Arthur
Deputy Secretary

Joseph R. Kresslein
Project Planning Division
Maryland Department of Transportation
State Highway Administration
P.O. Box 717
Baltimore, Maryland 21203-0717

Dear Mr. Kresslein:

This letter is in response to your letter of request, dated August 10, 2000, for information on the presence of finfish species in the vicinity of the Maryland Department of Transportation's Project No. CL416B23: MD 30 - Hampstead Project from south of Wolf Hill Drive to north of Brodbeck Road in Carroll County.

From a review of the MD 30 Hampstead Study Area map provided with your request, it appears that the proposed work could impact tributaries to the Gunpowder River, including Murphy Run and tributaries (Gunpowder River Area); and tributaries to the East Branch Patapsco River, including Indian Run, Deep Run and East Branch (Patapsco River Area). All of the above named streams located within the MD 30 Hampstead Project Area are classified as Use III-P waters (Natural Trout Waters and Public Water Supply). Generally, no instream work is permitted in Use III streams during the period of October 1 through April 30, inclusive, during any year.

Anadromous fish species do not spawn in any of the streams within the MD 30 Hampstead Study Area due to natural and man-made barriers located downstream. The Department's Fisheries Service has documented a natural brown trout population in East Branch and tributaries. Although specific resident fish species information for the subject project site is not available, Tables VIII-2 and IX-2 (attached) lists fish species documented in the Patapsco and Gunpowder River Basins by our Fisheries Service. Many of these species could potentially be found near your project site. These species should be protected by the instream work prohibition period and by sediment and erosion control methods and other Best Management Practices typically used for the protection of stream resources.

If you have any questions concerning these comments, you may contact me at 410-260-8331.

Sincerely,

A handwritten signature in black ink that reads "Ray C. Dintaman, Jr." with a stylized flourish at the end.

Ray C. Dintaman, Jr., Director
Environmental Review Unit

RCD
Attachments

Table VIII-2. -Fish Species Collected in the Katapsoo River Basin, 1974 through 1984. (New species collected in 1980 to 1984 study designated by *.)

Salmonidae

- Brook trout
- Brown trout
- Rainbow trout

- Salvelinus fontinalis (Mitchill)
- Salmo trutta Linnaeus
- Salmo gairdneri Richardson

Cyprinidae

- Stoneroller
- Blacknose dace
- Longnose dace
- Cutlips minnow
- Creek chub
- Rosyside dace
- Common shiner
- Bluntnose minnow
- Fallfish
- Golden shiner
- Silverjaw minnow
- Spottail shiner
- Spotfin shiner
- Carp

- Campostoma anomalum (Rafinesque)
- Rhinichthys atraculus (Hermann)
- Rhinichthys cataractae (Valenciennes)
- Exoellossum maxillingua (Lesueur)
- Semotilus atromaculatus (Mitchill)
- Clinostomus funduloides Girard
- Notropis cornutus (Mitchill)
- Pimephales notatus (Rafinesque)
- Semotilus corporalis (Mitchill) *
- Notemigonus crysoleucas (Mitchill) *
- Ericymba buccata Cope *
- Notropis hudsonius (Clinton) *
- Notropis spilopterus (Cope) *
- Cyprinus carpio Linnaeus *

Catostomidae

- Northern hogsucker
- White sucker

- Hypentelium nigricans (Lesueur)
- Catostomus commersoni (Lacepede)

Ictaluridae

- Margined madtom
- Yellow bullhead
- Channel catfish

- Noturus insignis (Richardson)
- Ictalurus natalis (Lesueur) *
- Ictalurus punctatus (Rafinesque) *

Cottidae

- Mottled sculpin

- Cottus bairdi Girard

Centrarchidae

- Smallmouth bass
- Rock bass
- Bluegill sunfish
- Largemouth bass
- Green sunfish
- Pumpkinseed
- Longear sunfish

- Micropterus dolomieu Lacepede
- Ambloplites rupestris (Rafinesque)
- Lepomis macrochirus (Rafinesque)
- Micropterus salmoides Lacepede *
- Lepomis cyanellus Rafinesque *
- Lepomis gibbosus (Linnaeus) *
- Lepomis megalotis (Rafinesque) *

Percidae

- Tessellated darter
- Fantail darter

- Etheostoma olmstedi Rafinesque
- Etheostoma flabellare Rafinesque

Anguillidae

- American eel

- Anguilla rostrata (Lesueur)

Table IX-2. Fish Species Collected in the Gimpowder River Basin, 1974-1984.

Salmonidae	<u>Salvelinus fontinalis</u> (Mitchill)
Brook trout	<u>Salmo trutta</u> Linnaeus
Brown trout	<u>Salmo gairdneri</u> Richardson
Rainbow trout	
Cyprinidae	<u>Campostoma anomalum</u> (Rafinesque)
Stoneroller	<u>Rhinichthys atratulus</u> (Hermann)
Blacknose dace	<u>Rhinichthys cataractae</u> (Valenciennes)
Longnose dace	<u>Ericymba buccata</u> Cope
* Silverjaw minnow	<u>Exoglossum maxillingua</u> (Lesueur)
Cutlips minnow	<u>Semotilus atromaculatus</u> (Mitchill)
Creek chub	<u>Nocomis micropogon</u> (Cope)
River chub	<u>Semotilus corporalis</u> (Mitchill)
Fallfish	<u>Clinostomus funduloides</u> Girard
Rosyside dace	<u>Notropis cornutus</u> (Mitchill)
Common shiner	<u>Pimephales notatus</u> (Rafinesque)
Bluntnose minnow	<u>Cyprinus carpio</u> Linnaeus
Carp	<u>Notropis soilopterus</u> (Cope)
Spotfin shiner	<u>Notropis analostanus</u> (Girard)
Satinfin shiner	<u>Notropis hudsonius</u> (Clinton)
Spottail shiner	
Catostomidae	<u>Hypentelium nigricans</u> (Lesueur)
Northern hogsucker	<u>Catostomus commersoni</u> (Lacepede)
White sucker	
Ictaluridae	<u>Noturus insignis</u> (Richardson)
Margined madtom	<u>Ictalurus nebulosus</u> (Lesueur)
Brown bullhead	<u>Ictalurus natalis</u> (Lesueur)
* Yellow bullhead	<u>Ictalurus punctatus</u> (Rafinesque)
* Channel catfish	
Cottidae	<u>Cottus bairdi</u> Girard
Mottled sculpin	
Percidae	<u>Etheostoma olmstedi</u> Storer
Tessellated darter	<u>Etheostoma blennioides</u> Rafinesque
Greenside darter	<u>Etheostoma flabellare</u> Rafinesque
* Fantail darter	
Centrarchidae	<u>Lepomis macrochirus</u> (Rafinesque)
Bluegill sunfish	<u>Micropterus dolomieu</u> Lacepede
Smallmouth bass	<u>Micropterus salmoides</u> (Lacepede)
Largemouth bass	<u>Lepomis cyanellus</u> Rafinesque
Green sunfish	<u>Lepomis auritus</u> (Linnaeus)
Redbreast sunfish	<u>Lepomis gibbosus</u> (Linnaeus)
Pumpkinseed sunfish	
Anguillidae	<u>Anguilla rostrata</u> (Lesueur)
American eel	
Petromyzonidae	<u>Petromyzon marinus</u> Linnaeus
* Sea lamprey	

* Additional fish species collected, 1980-1984.



Maryland Department of Natural Resources
Forest, Wildlife and Heritage Service
Taves State Office Building
Annapolis, Maryland 21401

Sarah J. Taylor-Rogers
Secretary

Stanley K. Arthur
Deputy Secretary

Parris N. Glendening
Governor

September 6, 2000

Ms. Cynthia D. Simpson
Maryland Department of Transportation
State Highway Administration
P.O. Box 717
Baltimore, MD 21203-0717

RE: Environmental Review for Project No. CL416B23, MD 30-
Hampstead from South of Wolf Hill Drive to North of Bordbeck
Road, Carroll County, Maryland.

Dear Ms. Simpson:

The Wildlife and Heritage Division's Natural Heritage database indicates that there are several known Bog Turtle sites (*Clemmys muhlenbergii*), a federally and state threatened species, known to occur within the study area on your map. There are no other records for rare, threatened or endangered plants or animals known to occur in the study area. Please coordinate with David Brinker, Central Regional Ecologist for the Wildlife and Heritage Division (410-744-8939 or write: 1200 Frederick Road, Catonsville, MD 21228), to ensure that this project does not adversely impact Bog Turtles.

Sincerely,

Lori A. Byrne
Environmental Review Specialist,
Wildlife and Heritage Division

ER# 2000.1537.c1
cc: D. Brinker



**Maryland Department of Transportation
State Highway Administration**

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

MEMORANDUM

TO: Mr. Kirk McClelland
Chief, Highway Design Division

ATTN: Mr. Robert Riley
Project Manager

FROM: Cynthia D. Simpson
Deputy Director
Office of Planning and
Preliminary Engineering

DATE: October 26, 2000

SUBJECT: Project No: CL 416B23
MD 30-Hampstead Bypass

RE: Agency Field Review of Proposed Stream Crossings

RECEIVED
OCT 31 2000

HE WILSON T. BALLARD CC
BY *[Signature]*

An agency field review of proposed stream crossings for the MD 30-Hampstead Bypass was held on August 17. The purpose of this field meeting was to provide the environmental review agencies the opportunity to examine proposed stream crossings included in the current design of the Hampstead Bypass. The following people were in attendance.

ATTENDEES:	William Branch	SHA Environmental Programs Division (EPD)
	Steve Buckley	SHA Highway Hydraulics
	Robert Ball	Wilson T. Ballard, & Company
	Joe DaVia	US Army Corps of Engineers (COE)
	Larry Hughes	MD Department of Natural Resources (DNR)
	Tom Osborn	Frostburg State University
	Matt Radcliffe	Maryland Department of the Environment (MDE)
	Darrell Sacks	SHA Project Planning Division (PPD)
	Bill Seeger	MDE
	Mark Smith	SHA EPD
	Bob Riley	SHA OHD

The participants met in a local commercial parking lot and traveled to the stream crossing sites in order, from north to south. For the purpose of this memo, stream crossings are numbered 1-8, with Crossing 1 as the northernmost crossing and Crossing 8 as the southernmost crossing.

My telephone number is _____

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

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

Crossing 1 (Station 505)

The northernmost stream crossing is on the Walsh property and is currently the only bridged stream crossing proposed on the project. A 100-foot single-span bridge is proposed over an unnamed tributary to the East Patapsco River. Mr. Radcliffe inquired if enough room would exist for bog turtle movement along the banks of the stream. Mr. Branch replied that no bog turtles had been recorded migrating downstream of the proposed crossing site. One bog turtle was previously recorded migrating downstream to a point just upstream from the crossing. Mr. Riley asked if the proposed 20-foot height and 46-foot width of the bridge would provide sufficient light under the bridge. Mr. Radcliffe indicated that the dimensions should not be a problem.

Crossing 2 (Station 476)

The second stream crossing was also of an unnamed tributary to the East Patapsco River. Two 84-inch pipes, approximately 136 linear feet in length, are proposed here. General agreement was reached that the two pipes are not adequate for this location. Since SHA is investigating the use of conservation easements as potential wetland mitigation for this project, agency discussion focused on the land east and west of this crossing. In order to preserve a wildlife corridor, an increased size culvert was suggested at this crossing.

This site is also surrounded by Wetland 5. The limits of Wetland 5 have recently been questioned upon internal review. SHA provided the attendees an updated map of boundaries of Wetland 5. Several new flag placements were examined, but agreement on the accuracy of boundaries was not reached. Mr. DaVia and Mr. Branch agreed that the boundaries could be more appropriately evaluated at another time. Mr. Bull will coordinate another field visit with Mr. DaVia.

Crossing 3 (Station 468)

The third crossing is of another unnamed tributary to the East Patapsco River. The attendees encountered an area of open water impounded below a springhouse. Mr. Hughes reminded the attendees that streams in the East Patapsco River watershed are Class III streams. The proposed crossing is several hundred feet downstream of the impoundment. Two small tributaries flow in this area. Mr. Riley explained that SHA had shifted the alignment to cross only one stream below the confluence of the two tributaries. A 96-inch pipe, 245 linear feet in length is proposed at this crossing. SHA and the agencies agreed that a wildlife passage might be warranted at Crossing 3. This proposed crossing is in the vicinity of Wetland 6. The limits of Wetland 6 have also been questioned upon internal review. SHA provided the attendees an updated map of boundaries of Wetland 6. Mr. DaVia and Mr. Bull examined several new flag placements, and agreed to reevaluate the flag placements when another field visit is planned.

Crossing 4 (Station 415)

The fourth crossing is of Indian Run, a tributary to East Patapsco River. Mr. Riley indicated that the road would be well above the stream at this point. A single 264-foot long 128-inch pipe is proposed at this crossing. A storm drain system is also proposed near this stream crossing at Shiloh Road (Station 409). This system would include a 336-linear foot long, 60-inch pipe. Mr. Hughes noted indications that Indian Run is in good condition. Discussion included retaining natural bends in the stream channel and the possibility of a bridge structure.

Crossing 5 (Station 365)

The fifth crossing is of Deep Run, a tributary to the East Patapsco River. This stream would be crossed, just downstream of Sweetheart Cup on what is currently the Leister farm. SHA proposes three 72-inch pipes, approximately 110 linear feet in length, at this location. The agencies did not voice any major objections to this proposal.

Crossing 6 (Station 344)

The sixth crossing is of an unnamed tributary to Deep Run as it emerges from the Black & Decker property where it is impounded a treatment pond. A 216-linear foot long, 60-inch culvert is proposed at this crossing. The discussion did not include any opposition to the proposed crossing.

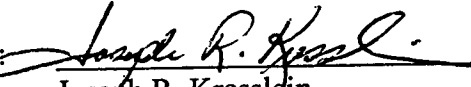
Crossing 7 (Station 319 + 50) and Crossing 8 (Station 319)

The seventh crossing is of the headwaters of an unnamed tributary to Deep Run. A 72-inch, 160-linear foot pipe is proposed for this tributary. This channel originates in an agricultural field and flows into yet another unnamed tributary to Deep Run. Several attendees followed the channel approximately 100 yards upstream and noted deep headwater erosion from the agricultural runoff. The eighth crossing is of this second unnamed tributary, upstream from the confluence of the two unnamed tributaries. A 72-inch, 144-linear foot pipe is proposed for this crossing. The attendees discussed no disagreement to either proposed crossing.

The field review adjourned as participants were reminded of the upcoming bioassessment meeting. The meeting is scheduled for October 26 at 10:00 in the Economic Development Conference room in the Carroll County Government building in Westminster.

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Mr. Kirk McClelland
MD 30-Hampstead Bypass
Page 4

By: 
Joseph R. Kresslein
Assistant Division Chief
Project Planning Division

cc: Attendees
Mr. Bruce M. Grey SHA-PPD
Mr. Peter Kleskovic FHWA
Mr. Andy Moser USFWS
Mr. Brian Smith SHA Bridge Design



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

REPLY TO
ATTENTION OF

MAR 14 2001

Operations Division

Subject: Project No. CL416B23 MD 30 (Hampstead Bypass)

Mr. William Branch
Maryland State Highway Administration
P.O. Box 717
Baltimore, Maryland 21203-0717

Dear Mr. Branch:

I am writing in follow-up to our joint interagency field meeting held on November 14, 2000 to review and discuss various stream crossing locations and proposed structures for the Maryland Route 30, Hampstead bypass. The purpose of this letter is to provide you with supplemental guidance concerning the analysis of specific road crossing structures that could avoid and minimize impacts to wetlands and other waters of the U.S. This information should be incorporated into the revised environmental assessment (EA) that is being prepared for the project. I was pleased that you were able to join the U.S. Army Corps of Engineers, Maryland Department of the Environment, and Maryland Department of Natural Resources for this important field meeting on such short notice.

The Clean Water Act Section 404(b)(1) Guidelines (Guidelines) contain the substantive environmental criteria used in evaluating discharges of dredged or fill material into wetlands and other waters of the U.S. A fundamental precept of the Guidelines is if impacts to wetlands and other waters of the U.S. can be practicably avoided, they should be avoided. Further, under Section 404 of the Clean Water Act, only the least environmentally damaging practicable alternative can receive Department of the Army authorization. Note that an alternative is practicable if it is available and capable of being done taking into consideration cost, existing technology, and logistics in light of overall project purposes. Finally, discharges may be permitted under the Guidelines only if all appropriate and practicable steps are taken to minimize the adverse impacts of the discharge on the aquatic ecosystem.

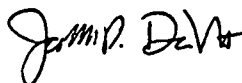
The MD 30 bypass will cross streams that are classified by the State of Maryland as Use III native trout waters. These streams are associated with high quality palustrine forested wetlands, scrub-shrub wetlands, floodplains, and mature hardwood forests. These wetland/forest ecosystems and streams also provide important riparian corridors for the movement of aquatic and terrestrial species. In addition, various streams and wetlands connect to potential downstream preservation areas for the bog turtle, a Federally listed threatened species. Furthermore, these wetland/forest ecosystems could be included as buffer areas for bog turtle preservation sites established for the MD 30 project. In consideration of these high quality aquatic ecosystems and downstream bog

turtle habitats, impacts to these areas should be avoided and minimized to the maximum extent practicable. (We are pleased that a bridge providing an opening of 130 linear feet is planned for the Wetland 4 stream crossing to minimize impacts.) Therefore, in order to be fully consistent with the avoidance and minimization requirements of the Clean Water Act, and in consideration of the factors for new road crossings (see enclosure), the applicant should evaluate the practicability of the following structural road crossing alternatives at the locations specified:

- (1) Wetland Area W-5. This is a proposed wetland impact area and stream crossing of an unnamed tributary to the East Branch Patapsco River between Stations 520 + 00 and 530 + 00. The applicant should evaluate the practicability of spanning the stream with bridges providing an opening of 50 – 100 linear feet and a minimum under clearance of 12 feet.
- (2) Wetland Area W-6. This is a proposed wetland impact area and stream crossing of an unnamed tributary to the East Branch Patapsco River between Stations 510 + 00 and 520 + 00. The applicant should evaluate the practicability of spanning the stream with bridges providing an opening of 50 – 100 linear feet and a minimum under clearance of 12 feet.
- (3) Shiloh Road - Indian Run crossing. The Corps understands that MD 30 will cross Shiloh Road using a bridge overpass. The applicant should address the practicability of extending this bridge structure over Indian Run or constructing a separate bridge structure over Indian Run. There is an existing sewer line adjacent to Indian Run that may require relocation. However, spanning the stream may obviate the need to relocate the sewer line. Further, a trail system may be proposed to access the school that is located upstream. A bridge will complement any proposed trail system.

We look forward to reviewing the requested information as part of the revised EA and coordinating with you as the development of the project proceeds. Should you have any questions, please feel free to give me a call at (410) 962-4527.

Sincerely,



Joseph P. DaVia
Maryland Section Northern

Enclosure

Copy Furnished:

Mr. Matthew Radcliffe, MDE, Frostburg, MD
Mr. Scott Smith, Maryland DNR, Wye Mills, MD
Mr. Larry Hughes, Maryland DNR, Annapolis, MD

i. For public linear transportation crossing projects that provide a new crossing or propose the replacement of an existing bridge with a culvert, or propose the dualization of an existing facility, the permittee shall include an alternatives analysis that considers the impact of various size and type structures (i.e. bridge, culvert, pipe) on the following:

- (1) Wetland functions, values, acreage
- (2) Wildlife corridor
- (3) Floodplain functions, including, but not limited to, flood storage and nutrient uptake
- (4) Existing or proposed hiker/biker trails and equestrian trails
- (5) Fish passage
- (6) Fisheries habitat and food chain support
- (7) Threatened and Endangered species
- (8) Stream morphology
- (9) Hydraulic analysis
- (10) Cost
- (11) Consistency with Master Plans
- (12) Movement of debris

100-22603

MEMORANDUM

RECEIVED

JUL 27 2001

THE WILSON T. BALLARD CO.
BY *[Signature]*

Date: July 24, 2001

To: Attendees

From: Bill Branch, Bioassessment Team Leader
Maryland State Highway Administration (MSHA)
Office of Environmental Design

Re: MD 30 Hampstead Bypass
Bog Turtle Mitigation Meeting Minutes

The mitigation meeting for the MD Route 30 Hampstead Bypass was held on July 24, 2001 at the USFWS in Annapolis, Maryland. The purpose of the meeting was to review the avoidance, minimization and mitigation efforts being provided by SHA for bog turtle preservation. The meeting commenced at 9:00 AM and the following persons attended:

- Bill Branch, SHA-Office of Environmental Design
- Bob Bull, The Wilson T. Ballard Company
- Kelly Brennan, Parsons Brinckerhoff
- Joseph DaVia, U.S. Army-Corps of Engineers
- Howard Erickson, The Wilson T. Ballard Company
- Larry Hughes, DNR-EVU
- Dan Johnson, Federal Highway Administration
- Jessica Morrow, A. D. Marble & Co.
- Andy Moser, U.S. Fish and Wildlife Service
- Matt Radcliffe, MDE Wetlands and Waterways
- Mary Ratnaswamy, U.S. Fish and Wildlife Service
- David R. Smith, Coastal Resources, Inc.

Biological Assessment (BA) Document

- The BA will include chapters on bog turtle research, hydrologic studies, water and soil quality, direct and indirect impacts associated with the project and mitigation plan. The full hydrologic report will be provided on CD.
- The Draft BA will be completed by August 1, 2001.
- FWS will try and review the document within 30 days.
- FWS will receive comments from their solicitors and from headquarters at Newton Corner, MA during preparation of the Biological Opinion.
- FWS was concerned about the different numbers for bog turtle wetlands.
- A table will be added with nomenclature equivalents for simplicity.

Compensation for Impacts

- Direct wetland impacts total 5.4 acres.

- Protection of bog turtle habitats will be in the form of acquisition and preservation. SHA will work with all entities to create a bioreserve.
- For compensation, SHA will buy and manage all Zone 1 wetlands at a 10:1 preservation ratio.
- For bog turtle impacts, SHA will preserve Zone 2 and some areas within the zone of hydrologic influence including the west side of the Current Design Alternative (CDA) at the Hospital site and up to the spring heads on the east side of the Hospital site.
- DNR has requested grant monies to purchase the remainder of the east side of the Hospital Property within the zone of hydrologic influence.
- The Nature Conservancy has \$250,000 to add towards the preservation of bog turtles. They are looking at land outside of the Hospital property on the west side and within the hospital property on the east side of the CDA.
- FWS does not think the wetland mitigation will work if the zone of hydrologic influence on the east side is disturbed. The mitigation area could dry out.
- The Town is trying to down-zone the east side.
- FWS stated that the Town must commit to protecting the zone of hydrologic influence on the east side before a no jeopardy decision can be made
- The Town is ultimately committed to protecting the east side, but SHA cannot get a commitment from them for the BA.
- SHA/Ballard will request a letter from Ken Decker regarding the Town's commitment to satisfy FWS.
- At the Sterling Court site, SHA will purchase Zone 1 and 2.
- SHA owns the property at B1 and will preserve Zone 1 and Zone 2.

Hydrology

- Kelly Brennan described the hydrologic effects from the road and development of a business park. She explained that this was the worst-case scenario without stormwater management. With stormwater BMPs, some development could occur within the zone of hydrologic influence.
- The hydrologic study found that turtle wetlands will not dry up but they may lose their artesian character and thus be less desirable as bog turtle wetlands.
- This would be a problem for FWS.
- Andy Moser wanted to know whether the compaction of the roadway would affect infiltration.
- The hydrologic study showed that compaction only in the upper few inches should not affect groundwater flow below.

Management

- Management of turtle habitat would include passive efforts including grazing, cutting stems, etc. Schedules need to be worked out for final management plan.
- Andy Moser stated that he does not want to get specific with a management plan. He thinks the term "passive" should not be used to describe managed activities.

- SHA has general maintenance contracts that can be allocated to perform maintenance tasks. SHA may need special guidance from FWS or others on maintenance for bog turtles.
- FWS wants a statement of commitment from SHA to maintain areas to be preserved.
- Andy Moser stated that at this time he needed a commitment from SHA to preserve land in perpetuity.

Roundabout at Route 482

- SHA is continuing to review a shift in alignment at Rt. 468 using a roundabout. The roundabout would push the alignment further east and would eliminate the impacts to wetlands 5 and 6, the impact to Zone 1 and \$2.5 million in bridges. SHA needs to revise traffic figures to confirm acceptability of the roundabout. The crossings of headwater streams/wetlands would be culverted.

Long term commitments

- SHA will commit to long-term maintenance and management but would hope that agencies would put requirement conditions in the permit.
- SHA will continue hydrologic studies.
- SHA will maintain and manage the bog turtle wetlands as discussed.
- SHA will provide fencing as needed.
- If plans continue to grow, the barn at the Hospital site could be converted to a research facility.

Conservation Recommendations

- Add language to suggest that land purchased by SHA will include third party easement holder to satisfy FWS.
- Need to pin down more precisely what areas are proposed for purchase and preservation.
- Travel corridors – need more information on this.

The meeting adjourned at 12:00 noon

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MEETING MINUTES

Date: September 20, 2001

To: Attendees

From: Bill Branch, Bioassessment Team Leader
Maryland State Highway Administration (MSHA)
Office of Environmental Design

Re: MD 30 Hampstead Bypass
Bog Turtle Mitigation Meeting Minutes

The mitigation meeting for the MD Route 30 Hampstead Bypass was held on September 19, 2001 at the USFWS in Annapolis, Maryland. The purpose of the meeting was to review the proposed bridges and wildlife passage culverts being planned by SHA and to receive guidance from the regulatory agencies on their design specifications. The meeting commenced at 10:00 AM and the following persons attended:

Bill Branch, SHA-Office of Environmental Design
Brian Wolfe, SHA-Bridge Design
Brian Martin, SHA-Bridge Design
Debra Raynor, SHA-Highway Design
Bob Bull, The Wilson T. Ballard Company
Ron Rye, The Wilson T. Ballard Company
Joseph DaVia, U.S. Army-Corps of Engineers
Larry Hughes, DNR-ERU
Scott Smith, DNR-Wildlife and Heritage
Andy Moser, U.S. Fish and Wildlife Service
Matt Radcliffe, MDE Wetlands and Waterways
David R. Smith, Coastal Resources, Inc.

Introduction

Bill Branch provided an introduction to the meeting by first stating that a meeting will be held at SHA on October 1, 2001 to make a final decision on whether to accept or reject the proposed alignment shift at MD 482. Bill indicated that the project is schedule to be advertised in the spring/summer of 2003, and that decisions on the MD 482 roundabout and the structures must be made soon to allow time for design and approval. Bill also passed out copies of letters written by Ken Decker, the Town Manager of Hampstead and Jack Lyburn, Director of the Carroll County Department of Economic Development. The letters indicate that the Town of Hampstead and Carroll County are willing to work toward the preservation of the Hospital property for bog turtles.

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Bridge and Culvert Design

Brian Martin of the SHA Bridge Design team began the discussion of the structures by explaining SHA's current understanding of the design constraints placed on this crossing by the regulatory agencies for protection of the bog turtle travel corridor. The present directive from the agencies was for a 130-foot long bridge span. Brian explained that there would be constraints on shipping such a large structure over land. He indicated that the maximum bridge span lengths typically shipped overland are 120 feet long. Using this length structure rather than the 130-foot structure would result in a crossing that provided approximately 11-12 feet of clearance from the ground to the bridge and 117 feet of ground across the stream and floodplain from abutment to abutment. SHA questioned the agencies as to the acceptability of this size bridge for bog turtle passage. There was a question as to whether this length of span completely avoids wetland impacts. Bill Branch was not exactly sure, but noted that it would restrict the impact to mostly the wetland buffer. There was also a question as to whether this size bridge crossing would work for either the proposed MD 482 roundabout alignment or the CDA. The bridge designers indicated that it would. The regulatory agencies represented by the USACE, MDNR, MDE and USFWS all agreed that the 120-foot long bridge span with an approximately 117-foot wide ground clearance would be acceptable.

The second set of structures discussed were the two wildlife crossings planned along the potential alignment shift at Wetlands 5 and 6. Under the CDA, SHA originally was looking at two bridges for these crossings priced at \$2 million. However, the shift in the alignment places the crossings at much narrower points in the watershed. The present design specifies the use of box culverts. This type of design has been used in other locations to allow passage of large mammals such as bear and panthers. SHA proposes 10' by 20' culverts for each crossing that would include the stream and portions of the floodplain. The effective height inside the culvert would be eight feet. This design would require the initial excavation of the channel and floodplain for installation of the culvert and the restoration of the area following its installation. The channel would have to be recreated through the box culvert and would likely need some riprap protection. The agencies were concerned about the disturbance of the streams and the amount and type of armoring that would be necessary. There was some discussion about a bottomless arch culvert. SHA indicated that upper management in the division was opposed to the use of bottomless arch culverts and that the plans would not get approved if they were included in the design. Also, the use of an arch reduces the effective clearance for wildlife use on the sides of the culvert. A box design would be better for this purpose. Joe DaVia of the USACE then questioned whether a short bridge structure would work. Bridge Design indicated that it might work, but that they would need to determine whether there would be enough height clearance given the anticipated height of the road. SHA will investigate the feasibility of crossing these two wetlands and floodplains with a short bridge. Bill Branch also noted that to ensure successful wildlife use of the passage, fencing would need to be placed to funnel wildlife through. SHA can also plant desirable wildlife food plants near the crossing and less desirable plants farther from the crossing to encourage wildlife to approach the crossings.

The potential placement of a retaining wall at the head of the Sterling Court wetland was discussed next. The retaining wall would reduce the fill slope, which would minimize wetland

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buffer impacts. The Bridge Design team explained that the construction of a retaining wall would involve the placement of footers, possibly on piles, and a cast-in-place wall at a given height. The width of the footing would depend on the height of the wall. The area on which the wall would be placed is presently part crop field and part forest. The agencies wanted to know if it would affect surface water flow. SHA explained that a culvert pipe would be maintained beneath the wall to pass surface water flows to Wetland 4. The agencies pointed out that the wall only slightly minimizes the impact. SHA will review the potential impact to determine whether a wall is justifiable. SHA is also looking at the potential to shift the roundabout near the terminus of the Bypass to the north. This would eliminate the need for a retaining wall. SHA will keep the agencies informed about a potential roundabout shift.

The Indian Run crossing was the final structure discussed. The existing plan calls for a bridge over Shiloh Road that could also span Indian Run. However, SHA would like to avoid crossing the entire area with one large bridge. A bottomless arch culvert could be used in this location because of the bedrock footing that occurs. The agencies were generally in agreement with this option. MDE wanted to ensure that the footers for the culvert were far enough from the edge of the stream to allow for natural stream meanders within the floodplain. The design of the culvert will be based on the hydraulic analysis, but with insurance that the LOD will be at least 15 feet from the top of bank of the stream and the edge of the footers. This particular design will not be described in the Biological Assessment (BA), however, will be included in the FONSI.

Biological Assessment Document Comments

After a short recess, the group met to discuss comments on the draft BA. Bob Bull first mentioned that there was an historic property just north of Wetland 5 that may restrict the realignment of the Bypass. This issue needs to be addressed.

The BA is being revised based on comments from the project team and comments received from the USFWS. No other agency comments have been received. A revised BA will be completed by October 15, 2001 for internal review before a final BA is submitted to FHWA. Scott Smith asked whether the appendices would be in the final BA. SHA indicated that they would be on two disks. One disk would contain the hydrologic study and model development and the other disk would contain the reports prepared by Frostburg State University/Jessica Morrow, Greenman Pedersen, Inc. (GPI), and The Wilson T. Ballard Company.

Andy Moser provided comments on the Water Quality section from Beth McGee of the Contaminants Division of the USFWS. CRI will distribute these comments to GPI and Bill Branch. SHA noted that the EA looked at the hazardous potential of the automobile junkyard above the Sterling Court wetland. These findings were negative. A brief discussion of this should be included in the BA. CRI should get these findings from Ballard.

Andy Moser brought up the issue of toxic spills along the Bypass and whether SHA was planning for such events. SHA indicated that the problem with doing this is that it is counter to the intent of the SWM effort to ensure as much infiltration as possible to supply the downstream bog turtle wetlands. To guard against the discharge of toxics into the water table, you would

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Memorandum

09/21/01

Page 4

have to create runoff swales to SWM facilities that would not allow infiltration back into the wetlands. The best way to deal with such spills is a quick response.

Joe DaVia explained that the BA does not provide a conclusion as to the potential effect of the project on the bog turtle. Bill Branch indicated that the revised draft will do a better job of explaining the impacts and reaching a conclusion of what, if any, effect the project will have on bog turtles. This will be reflected in the Executive Summary as well as in a separate section at the end of the BA. It was agreed that we should modify Section IX to include subsection C as Avoidance and Minimization Measures that will describe all that SHA has done to avoid and minimize impacts to the turtles. Section X will then be a conclusion of the effects and a determination based on the findings. Section XI will be Conservation Measures to further the protection of bog turtles above and beyond the minimum required. Andy Moser reiterated that the conservation measures must state that SHA will (not may) do the things it listed in this section.

Scott Smith indicated that the final bog turtle recovery plan has been issued. He received a copy in August. The plan states that zone 3 includes the zone of hydrologic influence. Scott would like the BA to reference zone 3 of the recovery plan when mentioning the zone of hydrologic influence. Scott provided Bill Branch his copy of the final plan so that SHA can make copies and distribute to the team.

The meeting adjourned at 1:00 pm.



**Maryland Department of Transportation
State Highway Administration**

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Parris N. Glendening
Governor

John D. Porcari
Secretary

Parker F. Williams
Administrator

March 11, 2002

RE: Project No. CL416B23
MD 30: Hampstead Bypass
Carroll County, Maryland

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Mr. Little:

Project Description: This letter serves to inform the Maryland Historical Trust of proposed changes to the Current Design Alternative (CDA) for the subject project. There will be a shift near the northern terminus of the project in order to avoid a bog turtle habitat, and the addition of an access road near the southern terminus. There are no historic standing structures in the APE of either of these alterations to the original CDA alignment. The Bank House (CARR-611) was in the APE of the former shift, but was recently entirely destroyed by the owner of the property. We request your concurrence in our determination that the previous no adverse determination for the Houck/Leister House (CARR-596) is appropriate (no changes will occur in the alignment as described in our May 31, 2001 letter). The location of the proposed shift and its relationship to the CDA is illustrated on **Attachment 1**, and **Attachment 2**.

Funding: Federal

Status Update: Area of Potential Effects. The expanded APE of the two shifts in the CDA alignment is depicted on the SHA-GIS cultural resources map included as **Attachment 3**. The two areas were included in the original APE for structures.

Status Update: Identification Methods and Results. Potentially significant architectural and archeological resources were both researched as part of the historic investigation instigated by the proposed eastward shift of the CDA alignment between Shiloh Road and Sterling Court and the addition of an access road paralleling the alignment near the southern end of the project.

Status Update: Effect Determination. We previously received your concurrence on August 2, 2001, that the CDA would have no adverse effects on historic properties. Since that time, we have developed a proposed shift in the alignment between approximately Shiloh Road and

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Two

Sterling Court to minimize impacts to bog turtle habitat. The proposed shift is located east of the CDA alignment, and would require a roundabout at MD 482 in order to eliminate two structures at crossings of sensitive wetland areas.

Architecture: As documented in prior consultation between our respective agencies, two National Register eligible historic properties had been identified within the larger APE for the CDA: the Bank House (CARR-611); and the Elias Houck/Leister House (CARR-596). The Bank House has been bulldozed and completely destroyed, presumably by its owner, the Carroll County General Hospital. No changes in the vicinity of the Houck/Leister House would occur with these shifts.

Archeology: SHA Archeologist Mary F. Barse assessed the archeological potential of the expanded APE through consultation of SHA GIS mapping, historic mapping, the results of prior archeological investigations, and consultation documentation. In addition, a field visit was conducted within the revised APE on September 18, 2001 to ascertain current land use and conditions. The APE for archeology is defined by the limits of disturbance related to direct construction impacts within proposed right of way and or easements. For the most part, the expanded APE is situated within undeveloped tracts of land in agricultural use.

The project area is located in the Eastern division of the Piedmont physiographic province, a region characterized by a broad undulating surface with low knobs and ridges rising above the general level, and with numerous deep and narrow valleys incised into it. It is situated on rolling terrain along the westward flanks of the physical divide between the Gunpowder and East Branch Patapsco drainages. The expanded APE traverses one intermittent, headwater tributary and a series of seasonal spring ravines that drain to the East Branch Patapsco River.

There are no perennial water sources within the APE. Surface soils within the project area consist of the well-drained Glenelg – Chester – Manor association found chiefly on rolling and hilly terrain. They are deep soils developed from weathered mica schist residuum.

There are no previously recorded archeological sites in or near the expanded APE. With the exception of areas where the shift ties into the CDA, no prior surveys have been conducted. Substantial portions of the CDA were included in the APE surveyed by Curry (1977) for the FONSI selected alternate (Attachment 1). Only one site was identified during that survey. Site 18BA166 was found on a cultivated upland flat overlooking first order Aspen Run, a perennial tributary of the Patapsco River. The site contained only one rhyolite biface fragment and several rhyolite flakes. Curry (1977) characterized the site as a temporary campsite without chronological diagnostics. Shovel testing of the site verified that deposits were confined to the

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Page Three

disturbed plowzone. Other surveys within the near region (Conrad 1975; Epperson 1979; Goodwin et al. 1991, Wesler et al 1981) have also resulted in the identification of a very sparse number of sites containing low densities of artifacts, low assemblage diversity, and lack of chronological diagnostics.

We provided detailed discussions of the results of previous archeological investigations within a regional context in prior consultation for the CDA in 1996 (SHA letter of January 5, 1996). These results indicate a strong preference for higher-order streams, and ready access to raw materials for technological production as primary factors in the selection of settlement locales by prehistoric occupants of the region. High order/low order stream junctions are most favored. Higher order streams are absent in the project area. Bedrock is composed of less resistant phyllites that negate the possibility of rockshelter sites. Vein quartz and steatite outcrops are not present suggesting little potential for quarry sites. Given these factors and the results obtained by Curry (1977), the potential for significant prehistoric archeological resources within the expanded APE is considered to be low.

Examination of available historic maps (Griffith 1795; Martenet 1862, 1865, 1885; Hopkins 1877; USGS 1905) indicates that settlement throughout the 19th and early 20th centuries was concentrated along MD 30, with sparsely distributed farms and homesteads in the interior areas removed from overland transportation networks. None of the examined historic maps depict a structure location within the expanded APE, including the areas at the southern tie-in needed to accommodate a service road between the roundabout and Doss Garland Road. Structures which correlate with the locations of the Bank House (CARR-611) and the Price Farm (CARR-603) are depicted between 1862 and 1905. However, these locations are clearly outside the area of direct construction impact and any associated archeological resources will be avoided. Consequently, the expanded APE is considered to have low potential for significant historic period archeological resources.

As there are no high potential areas within the expanded APE, no additional archeological investigations are recommended for the proposed shift in the CDA for the MD 30 Hampstead Bypass.

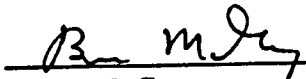
Review Request: We request your concurrence by April 12 that no further archeological investigations are warranted and that the identification and evaluation of historic properties within the revised APE for the eastward shift of the CDA is complete. Furthermore, we request your agreement that our determination that the Houck/Leister House would not be adversely affected, remains valid conditioned upon implementation of approved a landscape plans within the right-of-way along the edge of CDA alignment, as summarized in Attachment 4. By carbon copy we invite the Carroll County Historic District Commission to provide comments and participate in the consultation process. Pursuant to the requirements of the implementing regulations found at 36 CFR Part 800, SHA seeks their assistance in identifying historic

Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Four

preservation issues as they relate to this specific project (see 36 CFR 800.2 © (4) and (6), and 800.3 (f) for information regarding the identification and participation of consulting parties, and 800.4 and 800.5 regarding the identification of historic properties and assessment of effects). For additional information regarding the Section 106 regulations, see the Advisory Council on Historic Preservation's website, www.achp.gov, or contact the Maryland State Highway Administration or the Maryland Historical Trust. If no response is received by April 12, we will assume that this office declines to participate. Please call Ms. Rita M. Suffness at 410-545-8561 with questions regarding standing structures for this project. Ms. Mary F. Barse can be reached at 410-545-2883 with concerns regarding archeology.

Very truly yours,

Cynthia D. Simpson
Deputy Director
Office of Planning and
Preliminary Engineering

by: 
Bruce M. Grey
Deputy Division Chief
Project Planning Division

Attachments:

- 1) Map with proposed northern shift of CDA
- 2) Map with proposed access road/ CDA
- 3) GIS map depicting Proposed Modifications to the CDA
- 4) Effects Table

- cc: Ms. Mary F. Barse (w/Attachments)
- Mr. Dan Johnson, FHWA (w/Attachments)
- Mr. Joseph Kresslein
- Ms. Jessica Morrow w/Attachments)
- Ms. Barbara Ollis (w/Attachments)
- Mr. Bob Riley (w/Attachments)
- Mr. Donald H. Sparklin
- Ms. Cynthia D. Simpson
- Ms. Rita M. Suffness (w/Attachments)

Jessica

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MD 30: Hampstead Bypass
Page Five

Determination(s) of Eligibility and/or Effects

Project Number: CL416B23 **MHT Log No.** 200200885
Project Name: MD 30: Hampstead Bypass
County: Carroll County
Letter Date: March 11, 2002

The Maryland Historical Trust has reviewed the documentation attached to the referenced letter and concurs with the MD State Highway Administration's determinations as follows:

Eligibility (as noted in the Eligibility Table [N/A]):

- Concur
- Do Not Concur

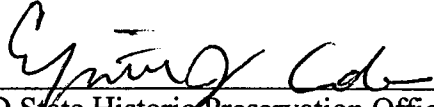
Effect (as noted in the Effect Table [Attachment 4]):

- No Properties Affected
- No Adverse Effect
- Conditioned upon the following action(s) (see comments below)
- Adverse Effect

Agreement with FHWA's Section 4(f) criteria of temporary use (as detailed in the referenced letter, if applicable):

- Agree

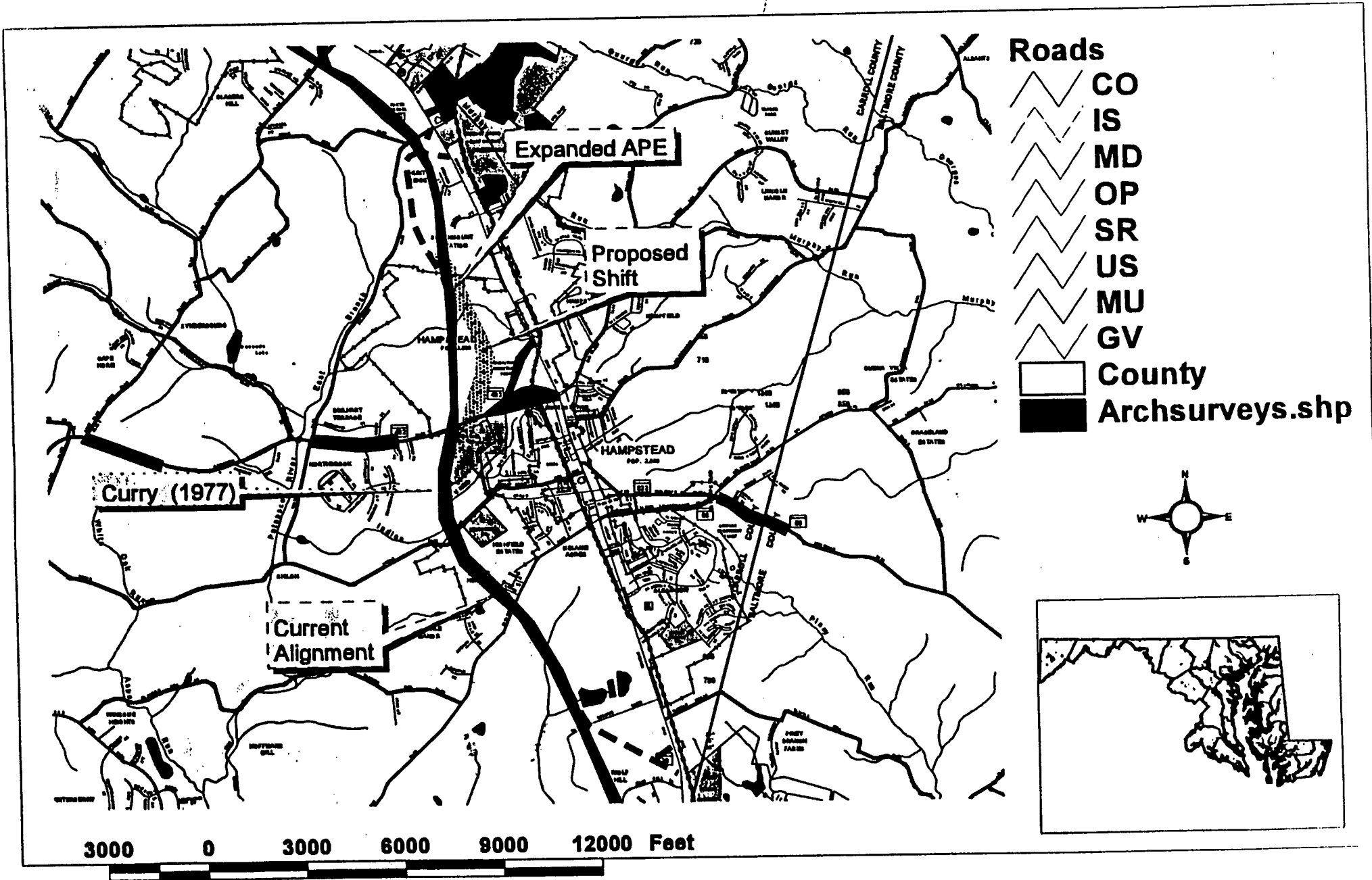
Comments:

By:  4/1/02
 MD State Historic Preservation Office/ Date
 Maryland Historical Trust

Return by U.S. Mail or Facsimile to:
 Mr. Bruce M. Grey, Deputy Division Chief, Project Planning Division,
 MD State Highway Administration, P.O. Box 717, Baltimore, MD 21203-0717
 Telephone: 410-545-8540 and Facsimile: 410-209-5004

MD 30: Hampstead Bypass

Location Map showing Proposed Alignment Shift

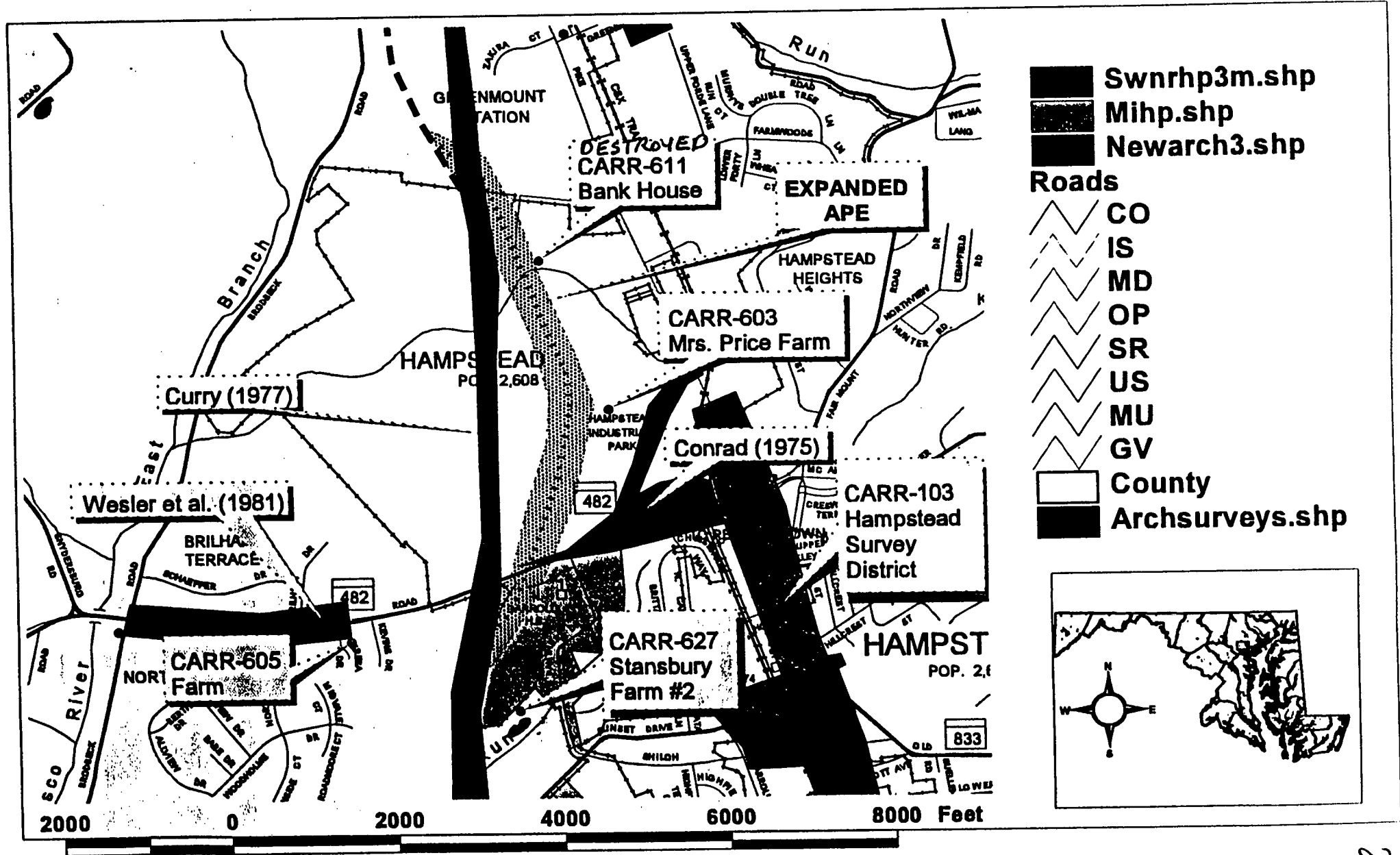


Attachment 1

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MD 30 Hampstead Bypass

Cultural Resources Map showing Expanded APE



Attachment 5

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Effect Table

Project Name Project No. CL416B23, MD 30: Hampstead Bypass, Carroll County, Maryland

Attachment 4
March 11, 2002

Resource	Type	SHPO		CDA		Attachment	Remarks
		Impact	Concur.	Impact	Concur.		
Bank House (CARR-611)	A						Building destroyed.
Houck/Leister House (CARR-596)		N/A	N/A	Not Adverse, Landscaping within right-of-way	2/7/2002		Landscaping will be developed during the design stage of the project and will be forwarded to the MHT
Effect		NAE		NAE	Requested 3/02		

Codes:

Resource Types: S (Structure), A (Archeological Site), HD (Historic District), NHL (National Historic Landmark)

Impact: None, No Adverse, Adverse

Effect: NE (No Effect), NAE (No Adverse Effect), AE (Adverse Effect)

Bold rows indicate review action requested

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jce

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Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Five

**Concurrence with the MD State Highway Administration's
Determination(s) of Eligibility and/or Effects**

Project Number: CL416B23
Project Name: MD 30: Hampstead Bypass
County: Carroll
Letter Date: November 26, 2001

MHT Log No. 200104252

RECEIVED

The Maryland Historical Trust has reviewed the documentation attached to the referenced letter and concurs with the MD State Highway Administration's determinations as follows:

Eligibility (as noted in the Eligibility Table [Attachment 6]):

- Concur
- Do Not Concur

Effect (as noted in the Effect Table [Attachment 6]):

- No Properties Affected
- No Adverse Effect
- Conditioned upon the following action(s) (see comments below)
- Adverse Effect

Agreement with FHWA's Section 4(f) criteria of temporary use (as detailed in the referenced letter, if applicable):

- Agree

Comments:

1.) LANDSCAPING WILL BE USED TO REDUCE VISUAL IMPACT ON HOUCK/LEISTER HOUSE (CARR-597) AND 2.) MHT WILL BE PROVIDED WITH LANDSCAPE PLAN FOR REVIEW. ALSO, MHT CONCURS WITH REVISED BOUNDARY FOR THE BANK HOUSE (CARR-611)

By: *Erin Cole*
MD State Historic Preservation Office/
Maryland Historical Trust

02/07/02
Date

Return by U.S. Mail or Facsimile to:
Mr. Bruce M. Grey, Deputy Division Chief, Project Planning Division,
MD State Highway Administration, P.O. Box 717, Baltimore, MD 21203-0717
Telephone: 410-545-8540 and Facsimile: 410-209-5004

Darrell

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**Maryland Department of Transportation
State Highway Administration**

Parris N. Glendening
Governor

John D. Porcari
Secretary

Parker F. Williams
Administrator

May 31, 2001

RE: Project No. CL416B23
MD 30: Hampstead Bypass
Carroll County, Maryland

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Mr. Little:

We are writing to inform you of additional changes to the FONSI Selected Alternative (FSA), now known as the Current Design Alternative (CDA), and to request your concurrence in our determination that three historic properties identified in the expanded Area of Potential Effects (APE) are not eligible for inclusion in the National Register of Historic Places. In addition, we request your concurrence that landscaping for the Bank House (CARR-611) and fencing of the Aspen Run archeological site are no longer necessary and that the Brodbeck House (CARR-587), in its current state, and the Ensor Robinson Residence (CARR-1645), would no longer meet the criteria for listing in the National Register of Historic Places. In conclusion, we request your concurrence that no further archeological investigations are needed and that there are no historic properties adversely affected by the CDA for Project No. CL416B23.

Project plans are included as **Attachment 1** for your review.

Status Update

The CDA generally follows the alignment of the FSA, but includes several modifications made to avoid/minimize impacts to environmental resources identified subsequent to the approval of the project's FONSI in 1987. The CDA also accommodates development that has occurred since that time, and includes modifications to the northern connection to MD 30 due to the termination of the Manchester Bypass Study.

A comprehensive review for cultural resources was conducted in 1995 for design changes to the project's northern and southern tie-ins (**Attachments 2 and 3**). These changes were subsequently coordinated with the Maryland Historical Trust (MHT) in letters of September 1, 1995 and January 5, 1996. Your office concurred in your letter of January 30, 1996 (**Attachment 4**) that previous cultural resources investigations for architecture and archeology

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Two

were adequate and determinations resulting from earlier Section 106 coordination were appropriate. However, reconsideration of the project is necessitated now by additional technical concept alterations to the northern and southern tie-ins (Attachments 2, 3). All other aspects of the project are consistent with the APE you reviewed in 1996.

We would also like to take this opportunity to revisit previous commitments to provide temporary fencing around the Aspen Run Site (18BA166) during construction, and permanent landscaping at the National Register eligible Bank House (CARR-611). As documented in your letter of January 11, 1985, Alternate 2 would have no effect upon 18BA166 provided that the site is avoided by all construction activities. As a result of design changes coordinated in 1995 and 1996, 18BA166 is now located 1.40 miles south of the project's southern tie-in and will be avoided during all aspects of construction. Given the site's remote proximity to the APE, we now believe that fencing is not necessary to ensure avoidance and could encourage undue attention and disturbance by vandals.

As regards landscaping for the Bank House, you reiterated your opinion that the property is eligible for the National Register and that the undertaking would have no adverse impact conditioned upon the provision of permanent screening in your letter of January 30, 1996 (Attachment 4). As seen in the photographs included with the Addendum Form for the property (Attachment 5), the CDA is well removed from the Bank House and would not be seen from the property. Since the Advisory Council's concurrence (letter dated July 24, 1985) in a no adverse effect determination conditioned upon permanent landscaping, a natural wall of vegetation has grown up around the property, alleviating the need for introduced and additional screening.

Project Description

The CDA is similar to the FSA in that it proposes initial construction of a two-lane roadway on new location west of Hampstead, with auxiliary lanes at intersecting roadways. Unlike the FSA, which proposes at-grade intersections at Houcksville Road and Shiloh Road, the CDA proposes grade separations with no access at these crossings. The proposed right of way, which is approximately 250 feet wide, can accommodate conversion to a Bypass with a four-lane divided roadway and a 30-foot wide median, should such a facility ever be needed. The design speed is 60 mph, except at the connections to MD 30, which have a 40 mph design speed.

The CDA begins approximately 800 feet south of Wolf Hill Drive, south of Hampstead, and diverges to the northwest of MD 30. The CDA runs on the western side of MD 30, diverging as much as 4,500 feet from the existing roadway, until it rejoins existing MD 30 approximately 400 feet south of Broadbeck Road, north of Hampstead (Attachment 1).

Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Three

In addition to the two grade separations at Houcksville Road and Shiloh Road, the CDA will have an at-grade intersection at MD 482 and two roundabouts: one near the southern terminus to provide a connection to existing MD 30 to the north and one near the northern terminus to provide a connection to existing MD 30 to the south.

Identification of the Area of Potential Effects

The expanded APE for archeology is confined to areas of direct construction impact within proposed and existing right of way as depicted on Attachments 2 and 3. The expanded APE accommodates additional right of way for construction of roundabouts in place of the connections proposed under the FSA, and minor changes to the approaches on existing MD 30. No expansion of the APE is necessary as a result of the proposed minor modifications at the Houcksville Road, Shiloh Road, MD 482 crossings.

Attachment 6 shows the APE considered for standing structures, inclusive of the area into which elements could be introduced which would have the potential to affect characteristics qualifying resources for inclusion in the National Register in those portions of the project which have not been previously subject to Section 106 review. The APE thus includes the areas added to the project with the appropriate area of impact identified. The project plans were studied and the area was visually inspected in light of the proposed improvements by Architectural Historian Ms. Rita M. Suffness. The nature of the work was considered in the context of the existing environment, and the immediate context, relating to the terrain, topography, extent of the viewsheds, etc.

Identification of Historic Properties

Historic Structures

Two historic properties have been newly identified within the APE for the southern tie-in -- the George Houck House (CARR-1647) and the James M. Bush House (CARR-1648). We do not believe that either one of these properties would meet the criteria for inclusion in the National Register of Historic Places, as documented in the Maryland Inventory of Historic Properties (MIHP) forms and Determination of Eligibility (DOE) Forms included as **Attachments 7 and 8**.

The Brodbeck House (CARR-587) is located at the northern tie-in for the project, which has also been greatly modified. We have documented these changes in the revised Addendum Form included as **Attachment 9**, which also includes a DOE Form. The house is surrounded by a junkyard, and the parcel on which the house is located is almost completely covered with junked automobiles, some immediately adjacent to the foundation of the house. We believe these changes have completely destroyed the integrity of setting, and have negated the ability of the property to convey a strong association with the past.

Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Four

Information concerning one additional site, the Bank House (CARR-611) is included in an Addendum Form included as Attachment 5, which also includes a DOE Form. Finally, a greatly modified dwelling, the Ensor-Robinson Residence (CARR-1645), is documented in a DOE Form included as **Attachment 10**. One other property is located within the APE for the Northern Tie-in—the Greenmount Historic District (CARR-1542), which our offices determined was ineligible for inclusion in the National Register of Historic Places.

Archeology

SHA Archeologist Mary F. Barse assessed the archeological potential of the expanded APE through consultation of SHA GIS mapping, historic mapping, the results of prior archeological investigations, and consultation documentation. In addition, field visits were conducted within the revised APE on September 15, 2000, and April 12, 2001.

The CDA includes a roundabout at the northern tie-in located directly south of the Brodbeck House (CARR-587). The APE for the roundabout is situated for the most part within the APE previously coordinated with MHT (SHA letter of January 5, 1996) (Attachment 2). SHA continues to believe as iterated during our previous consultation, that the APE has low archeological potential for significant historic and prehistoric resources. The APE occupies a marginal ecological setting where significant prehistoric archeological resources are not expected, as supported by the results of prior archeological survey (Curry 1977). Areas surrounding the Brodbeck House have been substantially disturbed by the operation of a commercial junkyard. As the primary structure is situated outside of the limits of direct construction impact, it is likely that any archeological deposits that may have survived prior disturbance will be avoided. CARR-1088 (the Broadbeck Road Bank Barn) has been destroyed by commercial development and the location of the former structure has no archeological potential. Examination of historic maps indicates that no other structures were recorded within or near the APE.

The CDA also includes minor widening on existing MD 30 north of the northern tie-in. All areas on the eastern and western sides of existing MD 30 have been disturbed by modern development and have no archeological potential. Given the results of our earlier identification survey efforts, prior consultation, and low archeological potential of the expanded APE, no additional archeological investigations are recommended for the CDA at the northern tie-in.

The proposed roundabout north of Wolf Hill Road at the southern tie-in is contained for the most part within the area previously assessed and coordinated with MHT in 1995 and 1996 (Attachment 3). The current APE occupies a marginal ecological setting where significant prehistoric archeological resources are not expected. However, several historic period structures are depicted on historic maps spanning the mid 19th to early 20th centuries. Martenet's *Map of Carroll County* depicts two structures immediately adjacent to the APE in 1862. Both of these structures are situated within an area now occupied by the Hampstead Baptist Church, an auto repair shop, and a large warehouse structure operated as the World Fastener Corporation. Later,

Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Five

a schoolhouse is depicted in the same area by Lake et al. (1877) on the *Atlas of Carroll County*, and again on the USGS (1905) *Westminster* quadrangle, in the area of the auto repair shop. It is certain that any archeological resources associated with these structures have been destroyed by 20th century development.

Two structures are depicted directly within the APE on the USGS (1905) *Westminster* quadrangle. One of these structures corresponds to the location of CARR-1645, the Ensor-Robinson Residence. The other, indicated immediately south of CARR-645, has been destroyed as discussed in our previous coordination letter of 1996. No other structures are indicated in the expanded APE for the southern tie-in on other historic maps predating the 20th century (Martenet 1862; Hopkins 1877). Several other structures are depicted to the north and to the south of the southern tie-in in the 19th and 20th centuries; however, their locations outside the expanded APE suggest that any associated archeological resources will be avoided by the undertaking.

The only area within the APE of the southern tie-in that has not been completely disturbed is associated with CARR-1645. The southern side yard area that includes the structure's cellar entrance has been impacted by construction of a driveway. None of the original outbuildings remain and the surrounding landscape does not retain elements that would indicate the functional lay out of the farm/household lot. Although the northern side yard and rear yard areas of the property do not appear to be substantially disturbed, the property is presumed to have been in constant use throughout the 20th century and the long occupation history may obscure pattern recognition in the distributions of artifacts. Substantial midden or privy deposits are unlikely owing to 20th century refuse disposal patterns influenced by modern conceptions of cleanliness and advances in plumbing technology. Under the CDA, this structure will be removed and any associated archeological resources will be impacted by the demolition. In light of the late construction and occupation history of the property, SHA does not believe any associated archeological deposits would be significant under National Register Criterion D, and we are recommending no further archeological investigation of the property.

As there are no high potential areas within the expanded APE that have not been subject to prior disturbance, or will not be avoided by direct construction impacts, no additional archeological investigations are recommended for the MD 30 Hampstead Bypass CDA.

Review Request

We request your concurrence by July 2 that the George Houck House (CARR-1647), the James M. Bush House (CARR-1648), the Ensor-Robinson Residence (CARR-1645), and the Brodbeck House (CARR-587), are not eligible for inclusion in the National Register of Historic Places. Furthermore, we request your concurrence that landscaping at the Bank House (CARR-611) and protective fencing at 18BA166 (Aspen Hill Site) are no longer necessary, and that no historic properties will be adversely affected by the CDA for the Hampstead Bypass.

Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Six

These determinations are summarized in the chart included as **Attachment 11**. By carbon copy, we invite the Carroll County Historic District Commission and Carroll County Historical Society to provide comments and participate in the consultation process. Pursuant to the requirements of the implementing regulations found at 36 CFR Part 800, SHA seeks their assistance in identifying historic preservation issues as they relate to this specific project (see 36 CFR 800.2 (c) (4) and (6), and 800.3 (f) for information regarding the identification and participation of consulting parties, and 800.4 and 800.5 regarding the identification of historic properties and assessment of effects). For additional information regarding the Section 106 regulations, see the Advisory Council on Historic Preservation's website, www.achp.gov, or contact the Maryland State Highway Administration or the Maryland Historical Trust. If no response is received by July 2, 2001, we will assume that these offices decline to participate. Please call Ms. Rita M. Suffness at 410-545-8561 with questions regarding standing structures for this project. Ms. Mary F. Barse can be reached at 410-545-2883 with concerns regarding archeology.

Very truly yours,

Cynthia D. Simpson
Deputy Director
Office of Planning and
Preliminary Engineering

by: B. M. Grey
Bruce M. Grey
Deputy Division Chief
Project Planning Division

Concurrence:

Andrew Lewis
State Historic Preservation Office

08/02/01
Date

BMG:RMS:MFB:lc

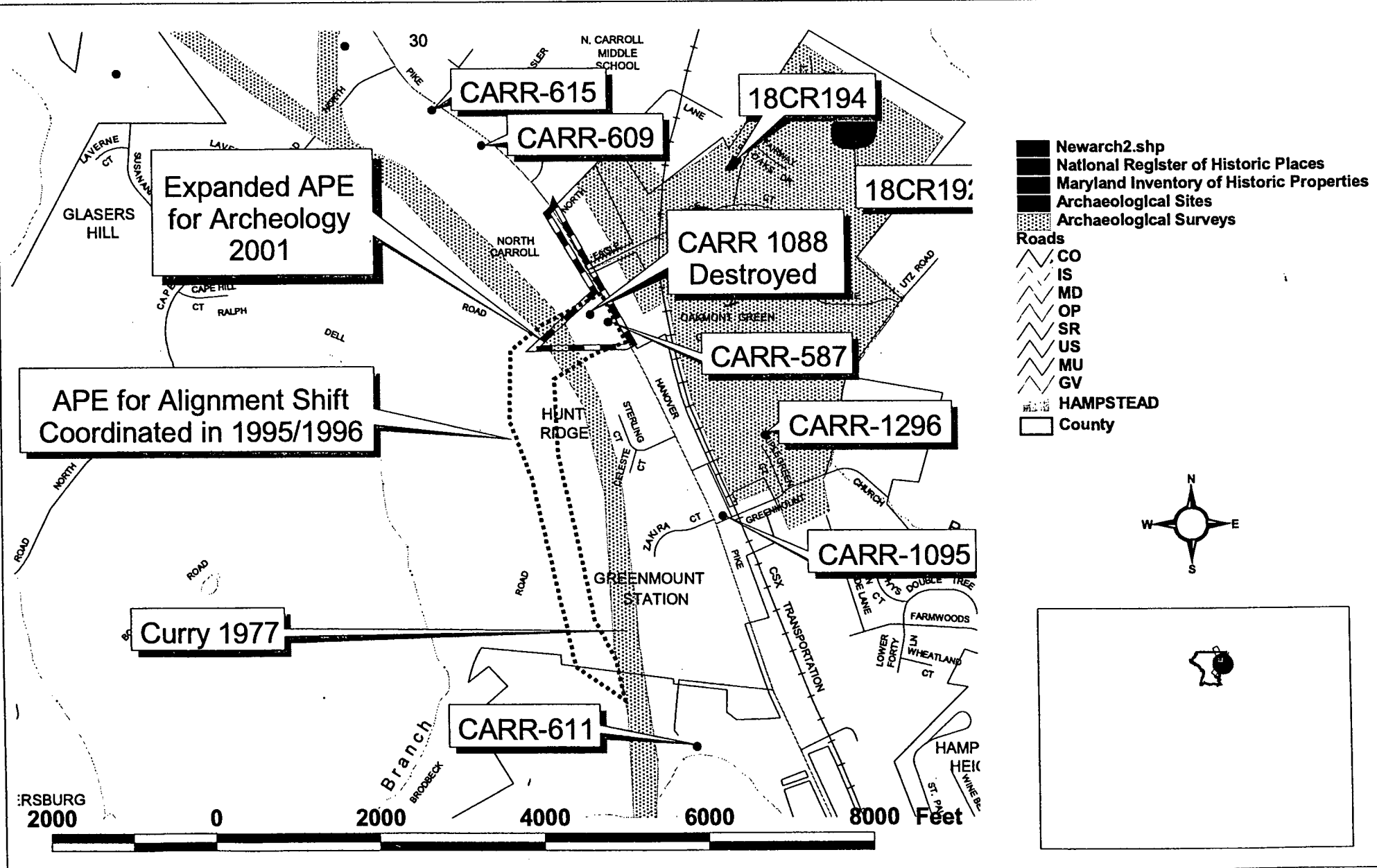
Mr. J. Rodney Little
MD 30: Hampstead Bypass
Page Seven

Attachments:

- 1) Project Plans
- 2) SHA-GIS Cultural Resources Map with APE for Archeology– Northern Tie-In
- 3) SHA-GIS Cultural Resources Map with APE for Archeology – Southern Tie-In
- 4) Previous Section 106 Coordination Documentation
- 5) Addendum Form (CARR-611)
- 6) USGS quadrangle with APE for Standing Structures
- 7) MIHP Form (CARR1648)
- 8) MIHP Form (CARR1647)
- 9) Addendum Form and Determination of Eligibility Form (CARR-587)
- 10) Determination of Eligibility Form (CARR-1645)
- 11) Project Eligibility and Effects Table

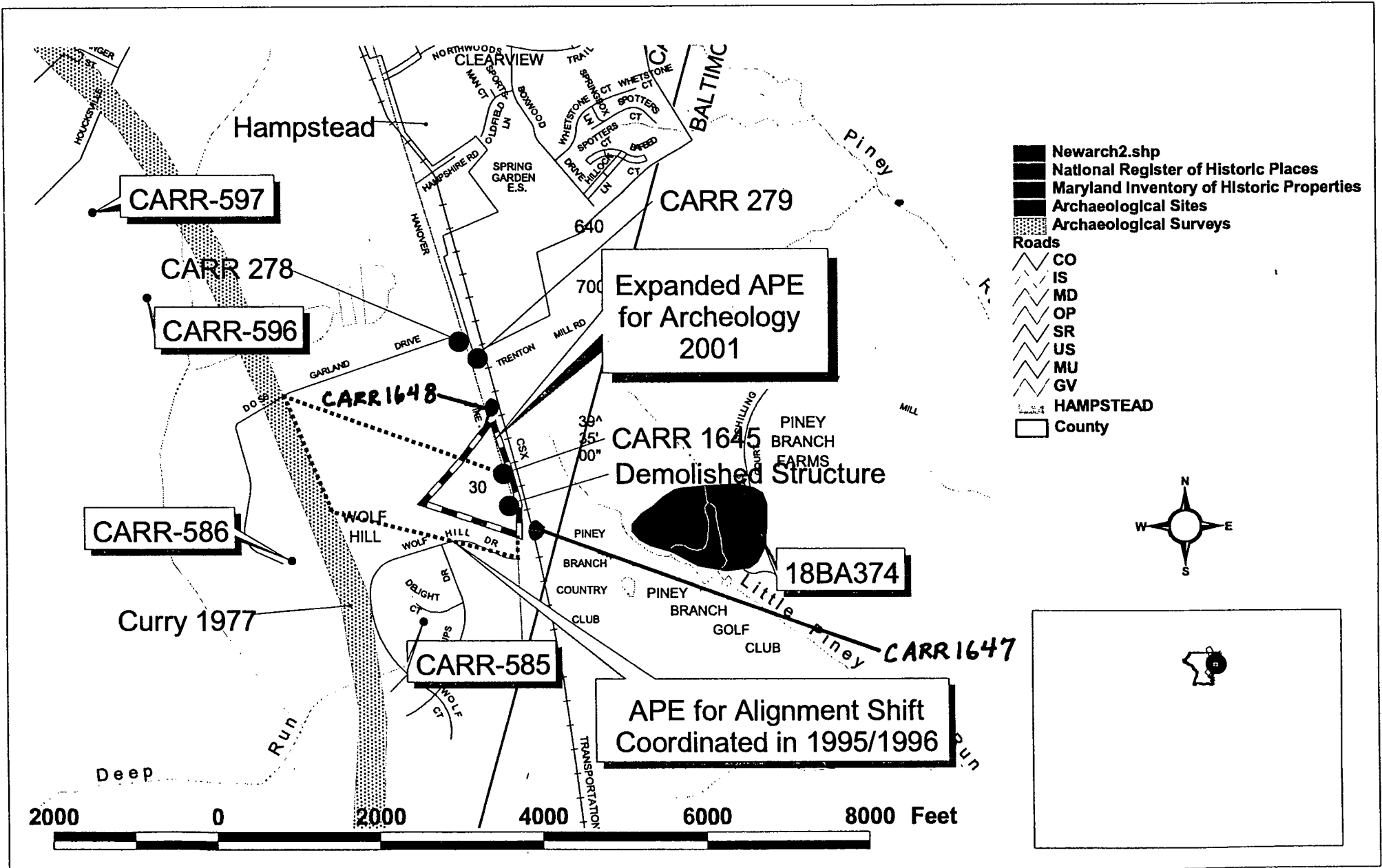
- cc: Ms. Mary F. Barse, SHA-PPD (w/Attachments 2 through 11)
 Mr. Jay Graybeal, Carroll County Historical Society (w/Attachments 1 through 11)
 Dr. Charles L. Hall, SHA-PPD
 Mr. Dan Johnson, FHWA (w/Attachments 1, 2, 3, 4, 6, 11)
 Ms. Barbara Ollis, Carroll County Historic District Commission
 (w/Attachments 1 through 11)
 Mr. Bob Riley, SHA-OHD (w/Attachments 2, 3, 4, 6, 11)
 Mr. Darrell Sacks, SHA-PPD (w/Attachments 2, 3, 4, 6, 11))
 Mr. Donald H. Sparklin, SHA-PPD
 Ms. Cynthia D. Simpson, SHA-PPD
 Ms. Rita M. Suffness, SHA-PPD (w/Attachments 2 through 11)

MD 30 Northern Tie-In Cultural Resources Map showing Expanded APE for Archeology



Attachment 2

MD 30 Southern Tie-In Cultural Resources Map showing Expanded APE for Archeology





Parris N. Glendening, Governor
 Patricia J. Payne, Secretary

1277
[Handwritten signature]

January 30, 1996

Office of Preservation Services

Ms. Cynthia D. Simpson
 Deputy Division Chief
 Project Planning Division
 State Highway Administration
 P.O. Box 717
 707 North Calvert Street
 Baltimore, Maryland 21203-0717

Re: Contract No. CL 415-102-770
 MD 30 - Hampstead Bypass
 Carroll County, Maryland

Dear Ms. Simpson:

Thank you for your recent letter, dated 5 January 1996, regarding the above referenced project and responding to the questions and concerns expressed in our 9 November 1995 letter.

Based on the information provided in your 5 January 1996 letter, we can now concur that the previous cultural resource investigations were adequate and the determinations resulting from the earlier Section 106 coordination were appropriate.

For historic standing structures, we reconfirm our original determinations of eligibility, including that for the Bank House (CARR 611). Contrary to the arguments advanced in your 5 January 1996 letter, we continue to believe the Bank House is of sufficient importance and retains sufficient integrity, even in its present condition, to meet the Criteria for listing in the National Register of Historic Places under Criterion C for architecture. The house is thought to date to the first quarter of the 19th century. It is a fairly early building for this area and is representative of federal period farmhouses of Northern Baltimore County and Carroll County. Thus, we continue to believe the Bank House is eligible for the National Register and have no reason to revise our earlier determination of "no adverse effect" for this property. Again, we note that the Advisory Council in their 24 July 1985 letter required landscaping as a condition to the "no adverse effect" finding for the Bank House.



Hybrid Eligibility/Effect Table

Project Name Project No. CL416B23, MD 30: Hampstead Bypass, Carroll County, Maryland

Attachment 11
May 31, 2001

Resource	Type	SHA NR Det.	Alternate CDA		SHPO Concur	Attachment	Remarks
			SHPO Opinion	Impact			
John M. Bush House (CARR-1848)	S	X	Requested May, 2001			7	Inventory form, DOE
George Houck House (CARR-1647)	S	X	Requested May, 2001			8	Inventory form, DOE
Bank House (CARR--611)	S	NRE	1/26/1996	Not Adverse Landscaping not needed.	Requested May, 2001	5	See Addendum and DOE
Brodbeck House (CARR-587)	S	X	Requested May, 2001			9	DOE
Greenmount Historic District (CARR-1542)	HD	X	January 2, 1997				
Ensor-Robinson Residence (CARR-1645)	S	X	Requested May, 2001			10	DOE
Effect				NAE	Requested May, 2001		Landscaping not needed.

Codes:

Resource Types: S (Structure), A (Archeological Site), HD (Historic District), NHL (National Historic Landmark)

NR Determination: ND (Not Determined), X (Not Eligible), NR (Eligible), NRL (Listed), NHL (Landmark)

SHPO Opinion: (B) designates opinion regarding boundary, Code following date signifies SHPO opinion

Impact: None, No Adverse, Adverse

Effect: NPA (No Properties Affected), NAE (No Adverse Effect), AE (Adverse Effect)

Bold rows indicate review action requested

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Maryland Historical Trust

9 June 1986

PROJECT
DEVELOPMENT
DIVISION
JUN 11 10 05 AM '86

Cynthia Simpson, Manager
Environmental Management
MDOT-SHA
707 N. Calvert Street
P. O. Box 717
Baltimore, Maryland 21203-0717

Re: CL 416-102-770
Maryland Route 30 Relocated
from south of Hampstead to
north of Hampstead
F.A.P. No. F 977-1(6)
P.D.M.S. No. 062001

Dear Ms. Simpson:

Our office has reviewed your letter and maps of January 31, 1986, and the maps received on May 13th which describe some alignment revisions for this project (Alternate 2 and Option C). We agree with SHA regarding the following determinations of effect:

1. Gate Keepers House - no effect
2. Fowblesburg Inn - no effect
3. J. Wolfrom House - no effect
4. Fringer House - no effect
5. Baumann House - no effect
6. Deal House - no effect
7. Bank House - no adverse effect
8. Farm - no adverse effect
9. Garrett Farm - no adverse effect conditioned on the stipulations given in your letter of January 31st.

We believe the new road will have no adverse effect on the Houck/Leister Farm provided that the area is landscaped to reduce the visual impact of the by-pass and the landscaping plans are coordinated with our office for review and comment.

Please call if you have any questions or comments.

Sincerely,

George J. Andreve
Environmental Review Administrator

GJA/pc
cc: Eleni Silverman

Mrs. Edwin Gramkow, Ms. Joanne Manwaring



Maryland Historical Trust

January 11, 1985

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

Re: Maryland Route 30
Contract No. CL 416-102-770
F 997-1(6)
P.D.M.S. No. 062001

Dear Ms. Simpson:

We have received your letter regarding the above-referenced project, and have reviewed the project for effects to archeological resources.

We concur that Alternate 2 will have no effect upon 18 BA 166 (Aspen Run Site), provided that the site area is not utilized for borrow or storage and that the site is avoided by all construction activities.

If you have any questions, please contact Ms. Beth Brown or myself at 269-2438.

Sincerely,

Richard B. Hughes
State Administrator
of Archeology

RBH/BCB/bjs

cc: Ms. Rita Suffness
Mr. Tyler Bastian
Mr. Charles L. Wagandt
Mr. Paul McKean

APPENDICES

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

All State Highway Administration projects must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601) as amended by Title IV of the Surface Transportation & Uniform Relocation Assistance Act of 1987 (P.L. 100-17), the Annotated Code of Maryland entitled "Real Property Article" Section 12-112 and Subtitle 2, Sections 12-201 to 12-212. The Maryland Department of Transportation, State Highway Administration, Office of Real Estate administers the Transportation Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State laws require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments include replacement housing payments and moving costs. The maximum limits of the replacement housing payments are \$22,500 for owner-occupants and \$5,250 for tenant-occupants. Certain payments may also be made for increased mortgage interest costs and other incidental expenses. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to these payments, there are also moving expense payments to persons, businesses, farms and non-profit organizations. Actual but reasonable moving expenses for residences are reimbursed for a move of up to 50 miles or a schedule moving payment of up to \$1,300 may be used.

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

The moving cost payments to businesses are broken down into several categories, which include actual moving expense payments, reestablishment expenses limited to \$10,000 or fixed payments "in lieu of" actual moving expenses of \$1,000 to \$20,000. Actual moving expenses may also include actual direct losses of tangible personal property and expenses for searching for a replacement site up to \$1,000.

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Payments for the actual reasonable expenses are limited to a 50-mile radius unless the State determines a longer distance is necessary. The expenses claimed for actual cost moves must be supported by firm bids and receipted bills. An inventory of the items to be moved must be prepared in all cases. In self-moves, the State will negotiate an amount for payment, usually lower than the lowest acceptable bid. The allowable expenses of a

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self-move may include amounts paid for equipment hired, the cost of using the business vehicles or equipment, wages paid to persons who participate in the move, the cost of actual supervision of the move, replacement insurance for the personal property moved, costs of licenses or permits required and other related expenses.

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

If the business elects not to move or to discontinue the use of an item, the payment shall consist of the lesser of: the fair market value of the item for continued use at the displacement site, less the proceeds from its sale; or the estimated cost of moving the item.

If an item of personal property which is used as part of a business or farm operation is not moved and is promptly replaced with a substitute item that performs a comparable function at the replacement site, payment shall be of the lesser of: the cost of the substitute item, including installation costs at the replacement site, minus any proceeds from the sale or trade-in of the replaced item; or the estimated cost of moving and reinstalling the replaced item.

In addition to the moving payments described above, a business may be eligible for a payment up to \$10,000 for the actual reasonable and necessary expenses of reestablishing at the replacement site. Generally, reestablishment expenses include certain repairs and improvements to the replacement site, increased operating costs, exterior signing, advertising the replacement location and other fees paid to reestablish. Receipted bills and other evidence of these expenses are required for payment. The total maximum reestablishment payment eligibility is \$10,000.

In lieu of all moving payments described above, a business may elect to receive a fixed payment equal to the average annual net earnings of the business. This payment shall not be less than \$1,000 nor more than \$20,000. In order to be entitled to this payment, the State must determine that the business cannot be relocated without a substantial loss of its existing patronage; the business is not part of a commercial enterprise having more than three other establishments in the same or similar business that are not being acquired; and the business contributes materially to the income of a displaced owner during the two taxable years prior to the year of the displacement. A business operated at the displacement site solely for the purpose of renting to others is not eligible. Considerations in the State's determination of loss of existing patronage are the type of business conducted by the displaced business and the nature of the clientele. The relative importance of the present and proposed locations to the displaced business and the availability of suitable replacement sites are also factors.

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

Displaced farms and non-profit organizations are also eligible for actual reasonable moving costs up to 50 miles, actual direct losses of tangible personal property, search costs up to \$1,000 and reestablishment expenses up to \$10,000 or a fixed payment "in lieu of actual moving expenses of \$1,000 to \$20,000. The State may determine that a displaced farm may be paid a minimum of \$1,000 to a maximum of \$20,000, based upon the net income of the farm, provided that the farm has been relocated or the partial acquisition caused a substantial change in the nature of the farm. In some cases, payments "in lieu of" actual moving costs may be made to farm operations that are affected by a partial acquisition. A non-profit organization is eligible to receive a fixed payment or an "in lieu of" actual moving cost payment, in the amount of \$1,000 to \$20,000 based on gross annual revenues less administrative expenses.

A more detailed explanation of the benefits and payments available to displaced persons, businesses, farms and non-profit organizations is available in the "Relocation Assistance" brochure that will be distributed at the public hearing for this project and be given to displaced persons.

Federal & State laws require that the State Highway Administration shall not proceed with any phase of a project which will cause the relocation of any persons, or proceed with any construction project, until it has furnished satisfactory assurances that the above payments will be provided, and that all displaced persons will be satisfactorily relocated to comparable decent, safe and sanitary housing within their financial means, or that such housing is in place and has been made available to the displaced person.

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United States
Department of
Agriculture

PROJECT
DEVELOPMENT
Soil Conservation
Service

1004 Littlestown Pike, Suite B-1
Westminster, Maryland 21157
Tele: 410-848-6426

APR 13 8 33 AM '94

April 13, 1994

Maryland Department of Transportation
Mr. Howard Johnson
P.O. Box 717
Baltimore, Maryland 21203-0717

Dear Mr. Johnsons:

Enclosed is the completed Farmland Conversion Impact Rating form for the Maryland 140 Westminster Bypass. As I looked through our records I found a copy of the one that was previously done and included it with the new information. The sites were the same on the other form except the numbers on the alternatives were different.

1994		1988
Site 4	was	Site 4
Site 6	was	Site 10
Site 10A	was	Site 6A

Sincerely,



Maggie Rhodes
District Conservationist

MAYOR: CHRISTOPHER M. NEVIN
MANAGER: KEN DECKER
CLERK/TREASURER: PATRICIA L. WARNER
PLANNING COMMISSION: DENNIS E. WERTZ



TEL: (410) 374-2761
Balto: (410) 239-7408
Fax: (410) 239-6143
E-mail: hampstead@carr.org
1034 S. CARROLL ST.
HAMPSTEAD, MD 21074

September 6, 2001

Mr. G. Andrew Moser
Biologist
U.S. Fish and Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

Dear Mr. Moser,

Bill Branch of the Maryland State Highway Administration (SHA) mentioned your agency's interest in the Town's position on the parcel of land commonly called the "Hospital property."

The Town is currently working on an update of its Comprehensive Plan. The next draft will contain a recommendation to rezone the "area of hydrological influence" from Restricted Industrial (IR) to a planned "resource protection" district. The resource protection district is still in the concept stages but generally would allow agricultural uses consistent with any adopted resource management plan. The draft Comprehensive Plan also will recommend a "growth area boundary" (GAB). West of Hampstead, the proposed GAB generally follows the planned Bypass alignment. From a planning perspective, the GAB does not preclude development, but the Town will not extend its infrastructure (annexation, water, etc.) outside the GAB.

The Town has consistently supported the idea of restricting growth outside the Bypass and protecting environmentally sensitive areas. We see the planned Bypass and preservation of land for habitat as complementary. We also see the planning process as iterative and will continue to work cooperatively with the participating agencies. If you have any additional questions, please feel free to call.

Sincerely,

Ken Decker
Town Manager

Copy to:
Dennis Wertz, Chairman, Planning & Zoning Commission
Bill Branch, SHA
File

