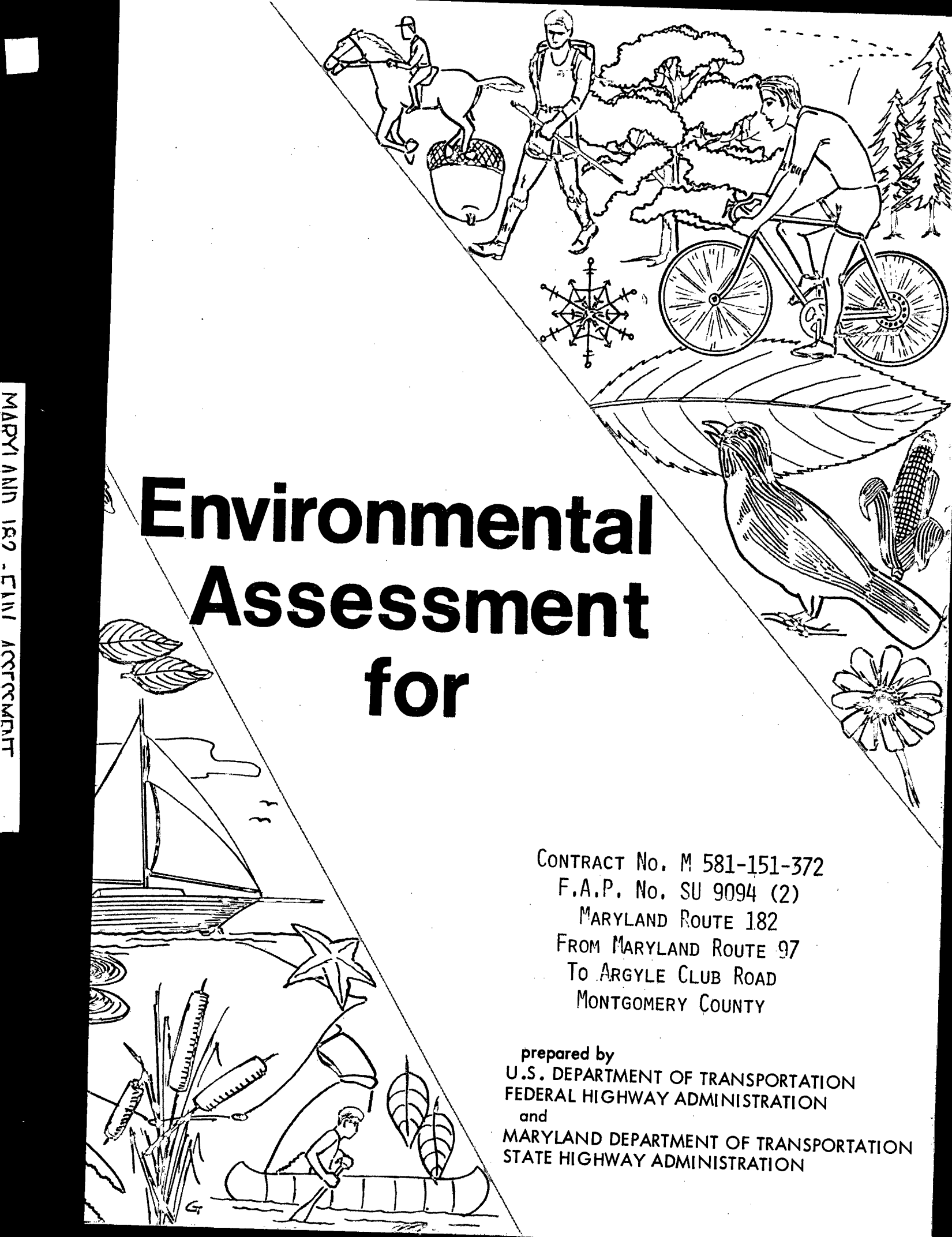


Environmental Assessment for

CONTRACT No. M 581-151-372
F.A.P. No. SU 9094 (2)
MARYLAND ROUTE 182
FROM MARYLAND ROUTE 97
TO ARGYLE CLUB ROAD
MONTGOMERY COUNTY

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

2

REPORT NUMBER: FHWA-MD-EA-80-06-(D)

FEDERAL HIGHWAY ADMINISTRATION
REGION III

Maryland Route 182
From Maryland Route 97
To Argyle Club Road
Montgomery County, Maryland

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.(2) (C) and 23 U.S.C. 128(a),
CEQ Regulations (40 CFR 1500 et seq)

M. S. Caltrider
State Highway Administrator

9/9/80
Date

by: Hal Kassoff
Hal Kassoff, Director
Office of Planning and
Preliminary Engineering

9/23/80
Date

by: Emil Elinsky
Federal Highway Administration
Division Federal Highway
Administrator

- SUMMARY -

1. ADMINISTRATIVE ACTION:

(x) Environmental Assessment
( ) Environmental Impact Statement
( ) Section 4 (f) Evaluation

2. ADDITIONAL INFORMATION:

Additional information concerning this action may be obtained by contacting:

Mr. William F. Schneider, Jr., Chief
Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201
Telephone: (301) 383-4327
Hours: 8:15 a.m. - 4:15 -.m.

Mr. Roy D. Gingrich
District Engineer
Federal Highway Administration
The Rotunda - Suite 220
711 East 40th Street
Baltimore, Maryland 21211
Hours: 7:45 a.m. - 4:15 p.m.

3. DESCRIPTION OF PROPOSED ACTION:

The Maryland State Highway Administration and the Federal Highway Administration propose to improve Maryland Route 182 (Layhill Road) between Maryland Route 97 (Georgia Avenue) and Argyle Club Road, a distance of approximately 2.5 miles. The proposed improvements generally follow the existing roadway location. The purpose of the improvement is to provide increased roadway capacity and safety, to provide improved access to proposed mass transit facilities and alternative transportation modes, to correct serious substandard geometric deficiencies, and to correct roadway flooding at an existing stream crossing.

Summary of Environmental Impacts

Environmental impacts resulting from the proposed action are minimal due to the action's conformance to existing local Master Plan(s) objectives. Natural environmental impacts are negligible as air quality and noise studies indicate similar results regardless of the alternate finally implemented. Floodplain studies indicate that the proposed action will cause no significant impact to beneficial floodplain values at the point of an existing stream crossing immediately north of Hathaway Drive. There are no wetlands within the study area. The project area does not contain threatened or endangered species or habitat. The Maryland Historic Trust has identified several historic sites of local inventory; none of these are eligible for the National Register of Historic Places. The Build Alternates would require the acquisition of one (1) residence of historic inventory, and the acquisition of land at four (4) historic sites. An archeological reconnaissance has been conducted for the study area. None of the alternates impact identified sites.

Social-economic impacts are limited to the taking of right-of-way, residential and business relocations and temporary impairment of business activity during construction phases. No adverse neighborhood impacts have been identified and no known minority or handicapped individuals would be affected by the project. No community services would be affected by either Build Alternate.

4. ALTERNATES CONSIDERED:

Three alternates are under consideration. These alternates are abstracted as follows, and are illustrated and described in detail in Section III-B of this document.

Alternate No. 1 (No-Build) -

The No-Build Alternate would continue the inadequacies with regard to geometrics, traffic capacity, safety, and access. Except for normal highway maintenance, including resurfacing, no improvements would be made to measurably affect the ability of the highway to meet the stated objectives.

Alternate No. 2 (Four-Lane Divided Urban Highway) -

This Build-Alternate is a refinement of study recommendations accomplished in 1974 which were accepted, at that time, by local elected officials and community groups. The alignment which is largely dictated by the existing roadway and a number of dedications, has been further refined to minimize impacts to local historic inventory and to the floodplain of an existing stream crossing. This alternate proposes a short length of six-lane divided highway south of Glenallan Road and a four-lane divided section north of Glenallan Road. Marked bicycle lanes are proposed along the outer curb lanes. A one way frontage road is proposed to provide access to homes fronting Layhill Road between Saddlebrook Elementary School and Briggs Road. Sidewalks are proposed throughout.

Alternate No. 3 (Six-Lane Divided Urban Highway) -

This Build-Alternate is similar to Alternate 2 with the exception that the six-lane divided facility continues the entire length of the project and that minor variations in the alignment are proposed due to the greater width of improvement.

The Build-Alternates are planned to provide safe and efficient access to the proposed Glenmont Metro Station by public transit, motorists, bicyclists, and pedestrian commuters. Two alternative fringe parking lot sites are being evaluated; however, only one of these sites could be implemented independent of the selection of a Build-Alternate.

5. PROJECT CONSISTENCY WITH NATIONAL URBAN POLICY:

The Build-Alternates being considered for improvements to Maryland Route 182 are consistent with the President's National Urban Policy and energy conservation goals. The consistency of this project with U.S. Department of Transportation policy objectives, developed in response to the President's goals and MDOT/SHA implementation requirements is discussed as follows:

A. Urban Impact

Transportation improvements are consistent with state and local land use and development plans. The proposed Build-Alternates do not impact the Washington, D.C. Central Business District (CBD) and in no discernable way would they adversely affect the economic or social viability of Central City areas. The implementation of this project has been actively pursued by State and local agencies and officials and as discussed in Section I-C-2 of this document, is consistent with SHA plans as well as existing local land use plans. Land use in the area continguous to the proposed action is characteristically urban with medium to high density residential development predominating and medium density commercial uses at the termini of the corridor. Current land use plans and zoning implementation favor increasing densification of the corridor with the remaining vacant parcels cited for medium to high density residential and commercial development. Local market consumption patterns indicate that no significant patronage orcommercial activity would be diverted from the Washington, D.C. CBD as a consequence of this action.

Benefits accruing to the area by virtue of the implementation of this project include the increased accessibility it will afford the existing and proposed local develoment as well as the Washington, D.C. CBD by way of the proposed Metro rapid rail line and station at Glenmont. Relief would thereby be provided to a roadway corridor characterized by congestion, operational problems and structural deficiencies. The expected increase in levels of service will reduce gasoline consumption, reduce air and noise pollution, preserve property values and, in general, make the area more attractive and convenient.

B. Energy Conservation

Transportation improvements resultant from either Build-Alternate would facilitate long-term energy conservation. As examined in Section IV-B-7, predicted traffic volumes for the design year (2006) are independent of the alternate selected; therefore, energy usage is dependent upon geometric aspects, capacity and intermodal transportation provissions of each alternate. Implementation of either

Alternate 2 or Alternate 3 would result in a decreased operational energy expenditure in comparison with the No-Build Alternate. The Build-Alternates propose an increased Typical-section width which would provide a comparatively greater Level of Service at designed traffic volumes. The combination of decreased travel times, reduced total vehicle miles (resulting from alternative transportation options) and alternative transportation provisions should result in a net decrease in energy consumption.

C. TSM

The Build-Alternates incorporate provisions for pedestrian and bicycle transportation modes, bus transit, and alternative fringe "park-n-ride" lot for both mass transit and pool commuter usage. These lots are proposed near the northern terminus of the corridor and could provide an interface to the proposed Glenmont Metro Station at the southern terminus. Buth Build-alternates provide improved access to the Glenmont Facility as an integral planning consideration for all referenced transportation modes.

These TSM strategies are being considered in concert with the Build Alternates. As a separate and distinct strategy they would help to alleviate the need for additional capacity on the highway, but would still not accomplish the increased levels of service that would be attainable with additional lanes. Also, another basic problem with the existing highway-structural deficiency-would remain unsolved.

D. Minority and Neighborhood Effects

No known minority residential housing, minority businesses or businesses employing concentrations of minority workers would be directly affected. No services, amenities, or commercial centers utilized by minorities or lower income residents would be displaced or impaired in the long term; however, access to these facilities would be impaired for all users in the short term.

Either Build-Alternate would facilitate improved transportation by public transit for minorities and lower income residents living outside the immediate corridor thus providing the potential for employment opportuntiies within the corridor which, heretofore, were not readily accessible by frequently scheduled local public transportation. Additionally, the increase in safety and efficiency resulting from a Build-Alternate implementation would accrue to all users, including minorities and low-income individuals. There is no known disruption to neighborhood integrity anticipated as a result of the selection of a Build Alternate. These alternates have been incorporated into the planning process of all recent or proposed development.

D. Improvements to Existing Systems

Transportation improvements fully consider the use of existing systems, including the No-Build option, supported by appropriate Transportation Systems Management (TSM) Proposals. This practice is in conformance with MDOT policy which states that, where practical, transportation needs should be met by improving existing facilities rather than constructing new ones. Alternate 1 - (No-Build) is being fully considered. However, due to the extreme continuous deficiencies in geometry with consequent safety and capacity aspects, remedial TSM applications are not cost effective without major construction.

The Build Alternates have alignments that approximate that of Alternate 1 (No-Build) and the implementation of either would incorporate comprehensive elements of the TSM programs on a corridor basis.

E. Consideration of Alternates

Transportation improvements have been fully analyzed on a cost-effectiveness basis for all alternates considered. A Cost-Effectiveness Analysis of the alternates remaining under consideration is presented in Table S-1 of this Section. Detailed discussion of these impacts is given in the sections of this document referenced in the Table.

6. ENVIRONMENTAL ASSESSMENT FORM:

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

The checklist identifies specific areas of the natural and social-economic 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.

ENVIRONMENTAL ASSESSMENT FORM

	YES	NO	COMMENTS
A. Land Use Considerations			
1. Will the action be within the 100 year floodplain?	X		IV-B-5
2. Will the action require a permit for construction or alteration within the 50-year floodplain?	X		IV-B-5
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?		X	
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?		X	
5. Will the action occur on slopes exceeding 15 ?	X		
6. Will the action require a grading plan or a sediment control permit?	X		IV-B-5

		YES	NO	COMMENTS
7.	Will the action require a mining permit for deep or surface mining?	___	X	_____
8.	Will the action require a permit for drilling a gas or oil well?	___	X	_____
9.	Will the action require a permit for airport construction?	___	X	_____
10.	Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	___	X	_____
11.	Will the action affect the use of a public recreation area, park, forest, wildlife, management area, scenic river or wildland?	___	X	_____
12.	Will the action affect the use of natural or man-made features that are unique to the county, state or nation?	___	X	_____
13	Will the action affect the use of an archeological or historical site or structure?	X	___	_____
B.	Water Use Considerations			
14.	Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	X	___	IV-B-5
15.	Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	___	X	_____
16.	Will the action change the overland flow of stormwater or reduce the absorption capacity of the ground?	X	___	IV-B-5
17.	Will the action require a permit for the drilling of a water well?	___	X	_____

		YES	NO	COMMENTS
18.	Will the action require a permit for water appropriation.	___	X	_____
19.	Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	___	X	_____
20.	Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?	___	X	_____
21	Will the action result in any discharge into surface or subsurface water?	X	___	IV-B-5
22.	If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	___	X	N/A
C.	Air Use Considerations			
23.	Will the action result in any discharge into the air?	X	___	IV-B-7
24.	If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	X	___	IV-B-7
25.	Will the action generate additional noise which differs in character or level from present conditions?	X	___	IV-B-6
26.	Will the action preclude future use of related air space?	___	X	_____
27.	Will the action generate any radiological, electrical, magnetic, or light influences?	___	X	_____

		YES	NO	COMMENTS
D.	Plants and Animals			
28.	Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?	___	X	___
29.	Will the action result in the significant reduction or loss of any fish or wildlife habitats?	___	X	___
30.	Will the action require a permit for the use of pesticides, herbicides or other biological, chemical agents?	___	X	___
E.	Socio-Economic			
31.	Will the action result in a preemption or division of properties or impair their economic use?	X	___	I-C-1 IV-B-1 IV-B-2
32.	Will the action cause relocation of activities, structures, or result in a change in the population density or distribution?	X	___	IV-B-2
33.	Will the action alter land values?	X	___	IV-B-2
34.	Will the action affect traffic flow and volume?	X	___	IV-B-8
35.	Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	___	X	___
36.	Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	___	X	___
37.	Is the action in accord with federal, state, regional and local comprehensive or functional plans - including zoning?	X	___	III-A-2

	YES	NO	COMMENTS
38. Will the action affect the employment opportunities for persons in the area?	X		III-A-2
39. Will the action affect the ability of the area to attract new sources of tax revenue?		X	
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?		X	
41. Will the action affect the ability of the area to attract tourism?		X	
F. Other Considerations			
42. Could the action endanger the public health, safety or welfare?		X	
43. Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?		X	
44. Will the action be of statewide significance?		X	
45. Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action could result in a cumulative or synergistic impact on the public health, safety, welfare or environment?	X		III-A-2
46. Will the action require additional power generation or transmission capacity?		X	
47. This agency will develop a complete environmental effects report on the proposed action.			*

*In order to avoid duplication of the Maryland Environmental Policy Act and the National Environmental Policy Act (NEPA), an Environmental Assessment has been prepared in accordance with NEPA.

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
SOCIAL IMPACTS (See Section IV-B-1)			
1. Residences Displaced	0	6	6
2. Residents Relocated	0	17	17
3. Minority Families Relocated	0	0	0
4. Handicapped Persons Relocated	0	0	0
5. Sufficient Replacement Housing Is Available for All Relocated Residents, However, Last Resort Housing Could Be Required.			
6. Residential Properties Affected	0	54	54
7. Effect On Residential Access	Impaired	Safer	Safer
8. Effect On Neighborhood Integrity	None	None	None
9. Effect On Minority Neighborhoods	None	None	None
10. Effect on Community Facilities	None	Improved	Improved
11. Effect On Necessary Services	Impaired	None	None
ECONOMIC IMPACTS (See Section IV-B-2)			
1. Businesses Displaced	0	2	2
2. Persons Employed By Displaced Businesses	0	5	5
3. Both Build Alternatives Would Displace The Same Business Activities			
4. Relocated Businesses Are Likely To Suffer Economic Injury Due to Higher Rent Costs And Expenses Which Are Non-Compensable Under State Relocation Law.			

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)

GEORGIA AVENUE TO
ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1
SHEET 1 OF 6

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
5. Major Commercial Service Facilities And Businesses Are Likely To Suffer Economic Injury Due To Short-Term Impairment Of Access During Construction. These Economic Losses Are Non-Compensable Under Relocation Law.			
6. Effect On Access To Remaining Businessess	None	Improved Safety	Improved Safety
7. Business Properties Afffected	None	12	12
CONSISTANCY WITH NATIONAL URBAN POLICY			
1. Urban Impact	None	Beneficial	Beneficial
2. Energy Conservation	No Improvement	Improved	Improved
ALTERNATES 2 And 3 Include 75 Space Fringe Parking Lot Proposal			
3. Neighborhood Effects	None	Residences Acquired	Residences Acquired
4. Minority Effects	None	None	None
5. Improvements To Existing Systems	None	Existing & New Location	Existing & New Location
CONSISTENT WITH STATE AND LOCAL LAND USE PLANS (See Section I-C-2)			
1. Adopted And Approved Glenmont Sector Plan, Upper Northwest Branch Watershed Master Plan and amendments, And The Aspen Hill and Vicinity Plan.	No	Yes	Yes
2. Applicable Maryland - National Capital Parks And Planning Commission Regional Plan And Amendments.	No	Yes	Yes

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182

(LAYHILL ROAD)

GEORGIA AVENUE TO ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
NATURAL ENVIRONMENTAL IMPACTS (See Section IV-B-4			
1. Due To The Present Urbanized Condition Of The Study Area, Implementation Of The Proposed Action Would Result In No Significant Impacts To The Natural Environment.			
2. Stream Relocations	None	None	None
3. Loss Of Natural Habitat	None	Negligible	Negligible
4. Effect On Water Quality	None	Negligible	Negligible
5. Effect On Wildlife Populations	None	Negligible	Negligible
6. Effect On Threatened Or Endangered Species	None	None	None
7. Effect on Prime Or Unique Farmland	None	None	None
8. Effect on 100 Year Floodplain	None	Negligible	Negligible
9. No Wetlands Exist Within The Study Area			
NOISE IMPACTS (See Section IV-B-5)			
Ambient L_{10} Noise Levels At Selected Receptors			
1. Number of Receptors	38	-	-
2. Range (dBA)	46-72	-	-
3. Number Exceeding Design Noise Levels	2	-	-
		-	-
Design Year (2006) Levels At Selected Receptors			
5. Number of Receptors	36	32	32
6. Range Predicted (dBA)	62-77	61-74	61-75
7. Number With "Severe" Noise Impact	1	5	5
8. Number Exceeding Design Noise Levels	12	10	10

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182

(LAYHILL ROAD)

GEORGIA AVENUE TO ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1

SHEET 3 OF 6

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
9. Number of Significant Noise Level Increases	10	12	12
10. Attenuation Of Noise Levels Is Being Considered At Five Sites.			
AIR QUALITY IMPACTS (See Section IV-B-6)			
1. Violations of 1 Hour Standard	Yes	No	No
2. Violations of 8 Hour Standard	No	No	No
3. The Maryland Department Of Health And Mental Hygene Has Found This Project To Be Consistant With Its Plans, Programs And Objectives.			
SAFETY OPERATIONS (See Section III-B)			
1. Degree of Improvements To Unsafe Intersections	None	Full	Full
2. Improvements For Safer Access To Businesses	None	Yes	Yes
3. Improvements In Roadway Capacity.	None	Yes	Yes
4. Reduction In Accident Rate	None	Yes	Yes
5. Improvements to Roadway Flooding At Existing Stream Crossing (Currently Floods Up to 3 Feet Over Roadway.)	None	Yes	Yes
6. Improvements For Bicycle and Pedestrian Use.	None	Yes	Yes
7. Improvemens for Transit Bus Stops	None	Yes	Yes

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182

(LAYHILL ROAD)

GEORGIA AVENUE TO ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
TRAFFIC OPERATIONS (See Section IV-B-SP)			
1. Level of Services (LOS) "D" Criteria Satisfied			
1986 ADT	No	Yes	Yes
2006 ADT	No	Yes	Yes
2. Improved Traffic Control At Major Intersections	No	Yes	Yes
3. Improved Level Of Service At Major Intersection	No	Yes	Yes
4. Provision For Efficient Transit Vehicle Operations	No	Yes	Yes
5. Separate Provision For Bicycle Commuters and Pedestrians	No	Yes	Yes
CONSTRUCTION IMPACTS (See Section IV-B-12)			
1. Utilities Relocation Required	No	Yes	Yes
2. Utilities Relocation May Result In Minor Disruption Of Service During Construction			
3. Maintenance Of Traffic Would Be Accomplished During The Construction Phase Of Either Build-Alternate. Reconstruction Of An Existing Stream Crossing Structure Has Been Considered In the Alignment Location to Utilize The Existing Structure For Maintenance Of Traffic.			

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182

(LAYHILL ROAD)

GEORGIA AVENUE TO ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
SECTION 4(f) IMPACTS (See Section IV-B-3)			
No Alternative Under Consideration As Part Of This Study Would Adversely Impact Any Publicly Owned Park, Recreation Area, Wildlife Or Waterfowl Refuge, Historic Or Archeological Site Of National, State Or Local Significance.	None	None	None
COST (1980 Dollars)			
1. Construction	None*	10,550,000	12,677,000
2. Right-Of-Way Acquisition	None*	1,453,000	1,666,000
3. Relocation	None*	90,000	90,000
4. Total Cost	None*	12,093,000	14,433,000
Additional Detail Is Given In Table IV-4			
* Alternate 1: No-Build Would Incur Annual Maintenance Costs, Major Maintenance Costs (Bridge Deck Repair, etc.), Annual User Costs, and Annual Accident Costs. The Comparison Above Is On A Capital Improvements Cost Basis Only.			

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182

(LAYHILL ROAD)

GEORGIA AVENUE TO ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1

SHEET 6 OF 6

- T A B L E O F C O N T E N T S -

- T A B L E O F C O N T E N T S -

(Continued)

LIST OF FIGURES

LIST OF TABLES

I. DESCRIPTION OF PROPOSED ACTION

I. DESCRIPTION OF PROPOSED ACTION

A. PROJECT LOCATION:

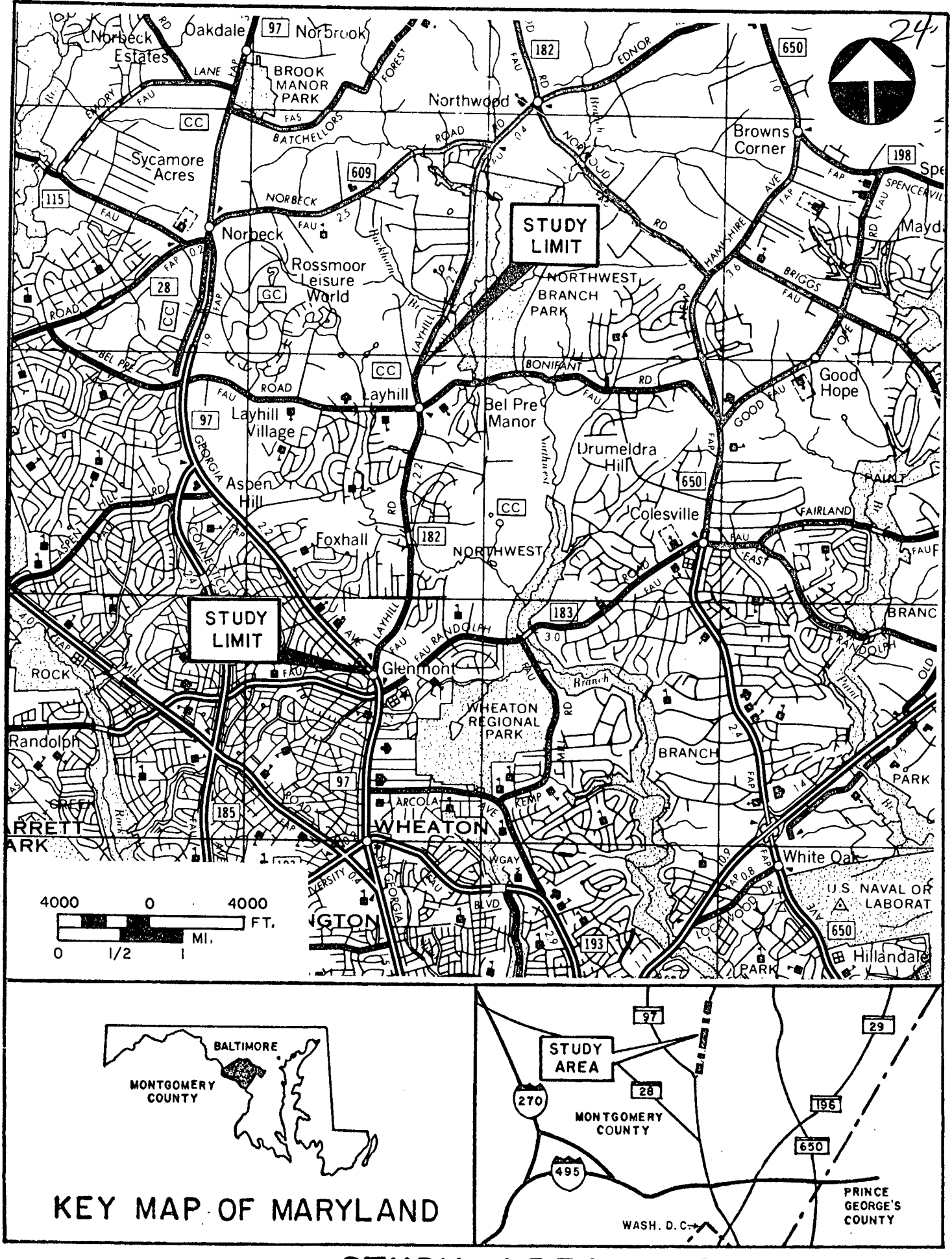
The project is located as shown in Figure I-1, northwest of Washington, D.C. in southeastern Montgomery County, Maryland between Glenmont on the southern extreme and Layhill at the northern terminus. The limits of the project extend northward from the intersection of Maryland Route 97 (Georgia Avenue), which is an important intermediate arterial from the District to central Maryland, to approximately the intersection of Maryland Route 182 and Argyle Club Road. The length of the improvement corridor is 2.5 miles. The Maryland Route 182 project corridor traverses the Glenmont Planning District at the southern extreme and the Aspen Hill Planning District on the northern extreme. The project additionally intersects other existing and proposed transportation corridors and is therefore an important urban collector serving an area of Montgomery County which has significant existing urban development and has been zoned for increasing residential and commercial development.

B. PROJECT DESCRIPTION:

The proposed Build-Alternate improvements to Maryland Route 182 require the reconstruction of the existing roadway on approximately the existing alignment with an urban divided highway consisting of four or six lanes. The proposed alignments were constrained by approximately twenty (20) residential subdivisions with existing dedication lines. The mosaic of these dedications comprises the existing highway corridor right-of-way width of forty (40) feet and thus largely determines the least cost location alternate on an economic and environmental basis. Significant deviation from the existing alignment would result in extensive relocation of existing residences and businesses, severe environmental impacts, and would be inconsistent with local plans. The reconstruction includes the improvement, channelization and signalization of major intersections. Additionally, the proposal includes the reconstruction of a substandard and floodprone bridge structure immediately north of Hathaway Drive.

The Build-Alternates also feature proposed alternative sites for a fringe parking lot with a capacity of approximately 75 vehicles. Each Build-Alternate includes marked bicycle lanes and sidewalks for the entire length of the improvement. Special consideration has been given to interfacing the proposed transportation improvements to the extension of bus transit within the corridor and to access requirements of the proposed Glenmont Metro Station and Parking Facility.

The No-Build Alternate, Alternate 2 and Alternate 3 are described in detail in Section III of this document.



STUDY AREA LOCATION MAP

FIGURE I-1

C. DESCRIPTION OF EXISTING ENVIRONMENT:

1. Socio-Economic and Natural Environment

The Maryland Route 182 study corridor is urbanized and characterized by high to medium density residential development throughout with moderate commercial development at the extremities of the corridor. The highest density of residential urbanization occurs near the southern terminus and south of Briggs Road with numerous multi-family units interspersed with small lot single family units. Between Briggs Road and Bel Pre/Bonifant Roads medium density residential development is characteristic and consists of numerous suburban development tracts. The representative demographics for the corridor indicate a weighted median income of approximately $26,100 and a weighted median age of approximately 30.2 years. The weighted average family size is approximately 3.2 persons per household.

Parklands and public recreational facilities are located contiguous to the improvement corridor and are integral to the study process. These facilities are the proposed Glenfield Local Park, to be located west of Layhill Road between Saddlebrook Lane and Briggs Road, and the existing Middlevale Local Park located east of Layhill Road between Indian Spring Road and Middlevale Lane. Both of these park sites are currently undeveloped parcels. Coordination has been initiated with the Maryland-National Capital Park and Planning Commission (M-NCPPC) and correspondence with that agency indicates that the proposed Build Alternates are not in conflict with their proposed plans for future development of either facility. Fire stations and other community services or facilities are not contiguous to the immediate project corridor, but are located nearby and they are not impacted by the Build Alternates.

The original natural environment of the study corridor has been largely urbanized. Undeveloped parcels of land are currently undergoing subdivision in accordance with local Master Plans and Maps. These proposals incorporate open spaces, as required by local subdivision regulation, which will provide vestiges of meadow and woodland habitat. It is not indicated that significant wildlife populations can be supported in these habitats. No known threatened or endangered species inhabit the study area, based on coordination initiated with the U.S. Fish and Wildlife Service.

No wetlands exist within the study corridor, however, an existing floodplain crossing of an unnamed tributary of the Northwest Branch occurs on the improvement alignment. Drainage to this tributary is conveyed largely by natural surface features although minor conduits, culverts and improved channels exist within the watershed.

Topography is generally rolling with natural and excavated slopes approaching 20 percent within the improvement corridor. The existing natural landforms are characteristic of the Piedmont physiographic Province.

2. Land Use

The study area for this project is typically urban, containing a variety of development levels ranging from residual agriculture and recreational areas to dense residential and commercial development.

The improvement corridor traverses two major local planning districts which promulgate the basis for orderly development. The plans, amendments and zoning ordinances issued for the Glenmont and Aspen Hill districts are embodied in the Glenmont Sector Plan, Upper Northwest Branch Watershed Master Plan and the Aspen Hill and Vicinity Master Plan. These local plans were promulgated by the Maryland - National Capital Park and Planning Commission which is the regional planning authority. The Plans have been approxed by the Montgomery County Council and subsequent development has been implemented in accordance with objectives therein. The development patterns and pressures of the area are maintained under the composite regional plan and development density is increased throughout the corridor. The recent subdivisions, to the extent feasible, have been planned with individual access to local residential streets, rather than to Maryland Route 182. In certain instances (Layhill South, Ellenberger, and Wilson subdivisions), the M-NCPPC was not able to achieve these objectives, thereby permitting direct access to Maryland Route 182. Residual agricultural parcels are wholly zoned for moderate to high density development of both residential and commercial character. Included in all of the referenced plans are improvements to Maryland Route 182 which incorporate features of the proposed Build-Alternates.

3. Existing Roadway System

Maryland Route 182, in combination with intersecting transportation corridors, is a major urban collector serving an area of Montgomery County which has significant existing development and the potential for increasing density of residential and commercial development. As the intersecting transportation corridors such as Briggs Road and Bel Pre/Bonifant Roads densify, Maryland Route 182 will become increasingly impacted. Planned extensions of local subdivision street networks at Hathaway Drive and Middlevale Lane will contribute additional traffic to Maryland Route 182 exacerbating problems of congestion. Additional proposed transportation projects in the study corridor, such as the Glenmont Metro Station, and expanded bus service (scheduled for operation in 1986) will functionally rely on the efficiency of the Maryland Route 182 transportation corridor to provide improved access.

4. Public Transit System

The existing public transit within the study corridor (via Maryland 182) consists of limited express bus service, provided by the Washington Metropolitan Area Transit Authority (WMATA), which provides transportation between central Washington and areas contiguous to Maryland Route 182 and north of the project area. Additional local and express public transit is provided by WMATA along Maryland Route 97 which is a heavily traveled intermediate arterial from central Washington to central Maryland. Public transit along this arterial is important because it is the Southern termini of Maryland Route 182 and serves as a juncture for transfers to other transit routes and changes in transportation mode. Public transportation is also provided in the corridor and environs by regionally licensed private taxi service. No private bus lines operate in the corridor or immediate vicinity.

Proposed improvements to the public transit system include the proposed Glenmont Metro Station located in the triangle formed by Maryland Route 97, Maryland Route 182 and Glenallan Road. This facility is part of a 101 mile regional rapid rail transit system consisting of five distinct interconnected lines linking central Washington with the extensive suburban development surrounding the central city. The Glenmont Station is the terminal station of the Metro "Red Line" which is currently operational to the Silver Spring Station. The Glenmont Station is an integral part of the overall transportation plan due to the significant area which it is intended to serve. Demand studies indicate that the service area for the facility will extend as far as Olney in the northern area of Montgomery County. Significant volumes of traffic to the station will be served by Maryland Route 97 and Maryland Route 182. Extensive evaluations of traffic volumes and movements to and around the Glenmount Station have been undertaken by M-NCPPC and MDOT to form the basis of planning for proposed access improvements from Maryland Route 97 and Maryland Route 182. These access proposals have been integrated in the Build Alternates for this project. It is projected that the Glenmont Station and Storage Yard will be operational in late 1986 and at that time the Glenmont facility will be the terminal station on the WMATA Metro "Red Line" linking the Glenmont, Wheaton, Forest Glen and Silver Spring stations with central Washington, D.C. The Glenmont Station will be served by an associated feeder bus system operating along Maryland Route 182 and other nearby areas to be designated. The facility will provide parking for 1850 vehicles and storage for approximately 100 bicycles. Appropriate traffic channelization and access will be provided for feeder busses, "Kiss-and-Ride" patrons and daily commuter parking.

II. NEED FOR THE PROJECT

II. NEED FOR THE PROJECT

A. DESCRIPTION OF THE HIGHWAY TRANSPORTATION PROBLEM

The existing Maryland Route 182 is, for most of the corridor, a narrow (20-foot wide) two lane rural type highway accommodating traffic of northbound and southbound direction. The existing facility has extreme continuous geometric and other functional deficiencies which combine to greatly reduce the capacity and level of service and necessitate low posted speed limits. The paving sections are heaved and patched in many areas; shoulders, where present, are of substandard width and often unpaved; numerous roadside hazards exist such as utility poles, trees, open drainage ditches with culverts which cause frequent ponding on the roadway; many hidden entrances intersect the roadway; street intersections are substandard in geometric transition; and, sight distances are substandard due to many sharp short vertical curve crests and erratic changes in horizontal curve geometry. The horizontal geometry, throughout the corridor, is characterized by curves which are short in radius and in length, sharply changing in direction, and are often reversed. Additionally, horizontal and vertical geometry generally do not coincide resulting in many areas of roadway with adverse cross section superelevation and awkward superelevation transitions. Several short segments of roadway have steep grades of nearly 12 percent. There are no provisions for bicycles or pedestrians. The deficiencies in and sometimes absence of shoulders along Maryland Route 182 present acute operational problems during peak hour traffic conditions. Due to these deficiencies, there are few locations for transit vehicles and school busses to pull off the travelled lane to load and discharge passengers. In some instances, there is no room off the roadway for bus passengers to wait in safety. Additionally, disabled motorists are not afforded the opportunity to pull safely clear of the traffic stream in emergencies. These occurrences create interruptions in the traffic flows for both directions and critically degrade the level of service during peak hour periods. Passing zones are very limited comprising approximately 20 percent of the project length.

In addition to the general deficiencies described above, other specific locations along the corridor present special hazards due to characteristics of the deficiency or to proximity to popular community facilities. The Glenallan Road intersection occurs at the top of a sharp vertical crest which severely limits sight distance from all approaches and limits the motorists' detection of pedestrians and standing or turning vehicles. The roadway segment from north of Briggs Road to immediately north of Indian Spring Road (the entrance to the Indian Spring Country Club) contains many specific hazards. Among these are a sharp break in alignment at Briggs Road, a sharp vertical crest South of Marigold Lane, and an erratic reverse curve coinciding with two short steep vertical curve crests occurring immediately south of Hathaway Drive. The above roadway segment is also the downgrade approach to an existing concrete bridge structure (Bridge No.) crossing an unnamed tributary of the Northwest Branch.

The bridge (built in 1931) is in need of extensive structural renovation within five years due to stream bank erosion, chloride damage to the deck, undercut wingwalls and spalling concrete. Also, the horizontal approach geometrics have been kinked to accommodate the bridge location. The bridge is also subject to severe flooding during periods of intense rainfall. The flooding has reportedly required temporary closing of the road on several occassions and the degree of flooding has been verified by field surveys of identified high water marks. These surveys correlate well with computer modeling (TR-20, HEC-2) of the floodplain which indicates a floodcrest water surface elevation approximately three (3) feet above the existing roadway during 100 year design storm periods. The floodplain drainage area at the point of crossing is approximately 1975 acres. (Refer to IV-B-5). Another deficient geometric condition exists immediately north of Indian Spring Road and Fargrove Lane where an isolated sharp vertical crest occurs in a generally even downgrade approach to the stream crossing. The discontinuity of grade at this point is sufficient to obscure southbound vehicles from the view of motorists at the above intersections. Fargrove Lane is the primary entrance to the Barrie School and Indian Spring Road is the entrance to the Indian Spring Country Club. Both of these facilities are heavily used and the potential for serious collisions is high.

Other geometric deficiencies are the combination of horizontal and vertical alignment just south of Middlevale Lane; a sharp vertical curve near Queensguard Road; a short vertical curve 200 feet worth of Bel Pre/Bonifant Road; and the combination of horizontal and vertical alignment at Argyle Club Road.

Many of these singular deficiencies are being considered for remedial construction projects. However, the continuous nature of the numerous deficiencies requiring remedial construction would entail major reconstruction for most of the study corridor.

Intersections generally do not have provisions for controlled turning movements, "free" right turns, or auxilliary lanes for vehicle storage and merging. The available right of way to incorporate these features generally is limited to the existing 30 feet. The geometry at existing intersections is generally deficient in several aspects including alignment of intersecting streets, approach widths, approach grades and sight distances. The State Highway Administration is evaluating these substandard conditions and is considering a remedial vertical crest reduction at the Glenallan Road intersection. Cumulatively these deficiencies result in long queues at major intersections particularly at Glenallan Road and at Georgia Avenue.

The 1977 average daily traffic volumes (ADT) range from 13,300 near Maryland Route 97 to 6,250 north of Bel Pre/Bonifant Roads. During peak hours, the highway operates at full capacity, with unstable traffic flows and low running speeds. Moderate to severe congestion during peak hour periods results in backups and long standing times at major intersections. Recent statistics for 1979 ADT are comparable to the 1977 study basis ADT.

The accident rate for the study corridor approximates the statewide average of 428 per 100 million vehicle miles for similar facilities. However, High Accident Intersections (HAI) and High Accident Locations (HAL) have been identified. These are listed below, indicating the total number of accidents and the year in which they qualified for such designation.

HAI - High Accident Intersections

- MD 182 @ MD 97 - 24 accidents - 1976
- MD 182 @ Glenallan Road - 16 accidents - 1976

HAL - High Accident Locations

- MD 182, from MD 97 northerly for a distance of .04 miles (6 accidents) 1976
- MD 182, from just south of Glenallan Avenue northerly for a distance of .15 miles (15 accidents) - 1976
- MD 182, from just south of Argyle Club Road northerly for a distance of .58 miles (10 accidents) - 1976

A total of 258 accidents was reported for the project area during the four year period, 1975 through 1978. The monetary loss to the motoring and general public resulting from these accidents is estimated at approximately 1.8 million dollars per 100 million vehicle miles or approximately $7,000 per accident. In the period, two fatal accidents and 106 personal injury accidents were reported. The remainder, 150 accidents, involved property damage. It should be noted that, while the project area does not significantly differ from the statewide statistics for similar facilities, the motoring public perceives the existing facility as very dangerous. This perception is evidenced by written correspondence from elected officials and community groups. From an overview of the previously discussed deficiencies, in combination with the public perception, it is possible that the facility is potentially less safe than is indicated by statistics; becuase this route is largely used for repetetive (commuter) trips, motorists probably anticipate the more dangerous areas of the highway and adjust their driving styles accordingly.

The cumulative effect of these deficiencies along the existing Maryland Route 182 corridor is to ensure increasingly lower levels of service (with higher levels of congestion) and risks of collision in the future. By the design year 2006, traffic volumes are expected to increase between 115 percent and 370 percent for various segments within the corridor. These increases, which are independent of alternate selection, are expected to result in intolerable operating conditions for the existing facility. Additionally, the continuation of these conditions will seriously compromise access to the proposed Glenmont Metro Station which is an important element in the regional transportation plan as discussed in Section I-C-4. Impacts on air quality for the design year resulting from continuation of the existing facility are generally adverse, refer to Section IV-B-7.

Local adopted Master Plans and amendments (Glenmont Sector Plan, Upper Northwest Branch Watershed Master Plan, and the Aspen Hill and Vicinity Plan) all recommend and incorporate the reconstruction of the existing facility. The Build-Alternates, herein, are in accordance with the above Master Plan recommendations.

As discussed above, the safety and capacity aspects of the existing Maryland Route 182 constitute basic constraints on the implementation of the referenced local development plans and transportation improvement plans. The land use and zoning for the corridor, as expressed in the local plans, have been promulgated in part on the basic presumption of adequate transportation services. Additionally, the proposed Glenmont Metro Station relies upon efficient access from both Maryland Route 97 (Georgia Avenue) and Maryland Route 182. Neither of these presumptions would be satisfied by continuation of the existing facility. The attendant congestion and diminished levels of service concommitant to traffic flows from planned development can only be ameliorated by substantial capacity and safety improvements which would provide for efficient access to the facility from contiguous development, provide for alternative transportation modes (such as busses, pedestrians and bicycles), and provide efficient access to the Glenmont Metro Station. These requirements are not consistent with the constraints imposed by the existing facility.

III. ALTERNATES CONSIDERED

III. ALTERNATES CONSIDERED

A. PROJECT HISTORY

1. Introduction

The Maryland Route 182 project is an outgrowth of previous study efforts, by both the Maryland State Highway Administration and the Maryland - National Capital Park and Planning Commission (M-NCPPC), and Montgomery County government, to provide improved transportation systems and facilities for the citizens and commercial enterprises of the Layhill Road transportation corridor. Antecendent to current planning efforts were studies conducted between 1962 and 1974 which were more limited in scope and which were accomplished under less stringent planning requirements. These previous studies, though now outdated, did provide valuable perspectives on the historic transportation problems of the corridor and, therefore, formed a basis for current efforts. The previous location studies were presented at a Combined Location/Design Public Hearing on May 25, 1971. Following the Public Hearing, deliberation occurred with the Montgomery County Council and government agencies on various aspects of the project including the re-evaluation of environmental impacts with particular emphasis on historic sites. Due to the duration of these deliberations, the environmental document became obsolete as more comprehensive environmental regulations evolved.

The project first appeared in the State Highway Improvement Program - Secondary Construction and Reconstruction Program 1970 - 1974 and has been included continually thereafter. These present studies are necessitated by and responsive to the more stringent planning requirements of the Federal and State environmental guidelines and also the changed characteristics of the transportation problems within the study corridor.

2. Development of Study Alternates

Current engineering and environmental studies commenced in March, 1979. During preliminary study phases for this project, available information was analyzed to develop alternates which would be consistent with applicable Master Plans, Sector Plans, M-NCPPC local policy, MDOT transportation improvement proposals, WMATA transportation improvement proposals, FHWA regulations and SHA regulations and criteria. Additionally, the alternate proposals were developed to reflect applicable Federal and State environmental regulations and policy.

First consideration was given to the development of the No-Build Alternate and the evaluation of its consistency with the objectives of local plans and other proposed transportation improvements. Transportation Systems Management (TSM) alternates were then evaluated with respect to the satisfaction of capacity, safety, access, and other objectives. (Refer to Section III-B-2 for further discussion of TSM alternates) Full consideration was also given to previously developed

proposals. These consisted of material presented at the Location/Design Public Hearing in 1971. The Build Alternate proposal presented consisted of an alignment approximating the existing roadway with a frontage road between the Saddlebrook Elementary School and Briggs Road along the east side of the main roadway. The Typical Section for this proposal featured dual thirty (30) foot roadways separated by a thirty (30) foot depressed (rural) grass median. In March, 1974 the Montgomery County Council concurred with a typical section featuring dual twenty-five (25) foot roadways separated by a thirty (30) foot median. This section and alignment became a basis for present investigations.

During the period from 1962 to the present, three Master Plans were developed and approved under the administration of the Maryland - National Capital Park and Planning Commission (M-NCPPC) which incorporated the improvement of Maryland Route 182 as a principle transportation feature. These plans (which now form the basis for orderly development within the corridor) and subsequent amendments were: the Upper Northwest Branch Watershed Master Plan (adopted and approved 1961); the Aspen Hill and Vicinity Master Plan (adopted and approved 1970); and the Glenmont Sector Plan (adopted and approved 1978). Land use, zoning and subdivision regulation established by these plans reflected the eventual improvement to Maryland Route 182 along an alignment approximating the existing roadway. Under the administration of the M-NCPPC, all recent subdivision and development has incorporated dedication areas reflecting the alignment proposed at the 1971 Public Hearing.

The proposed alignment for the Build Alternates is consistent with the referenced local plans. The proposed alignment alternates development was constrained by various existing physical features such as: residential subdivisions and contiguous dedications; commercial development; local existing and proposed street patterns; historic sites; existing and proposed public parklands; floodplain and stream crossings; and, the existing restricted right-of-way. Although much of the physical development pre-dates the referenced Master Plans, recent development (circa 1965 to the present) reflects the intent of these plans.

Additional considerations in the alignment development were: the location of the proposed Glenmont Metro Station and its specific access requirements as recommended in Access Recommendations for the Forest Glen, Wheaton and Glenmont Metro Stations (MDOT 1979); the proposed widening and improvement to Maryland Route 97 at the southern terminus of Maryland Route 182; and the proposed alignment for the Rockville Facility.

The alignment development at the Glenmont Metro Station was predicated on the WMATA design drawings for location, line and grade. Additionally, the alignment was situated to facilitate ramp grade and location requirements for the WMATA parking garage access ramp from Maryland Route 182. The location of the parking garage physically constrained the alignment and the proposed horizontal geometry was developed to minimize road construction impacts to the facility. Provisions for alternative transportation were integral to the details of typical section development and specific provisions were incorporated for safe access by pedestrians and bicyclists consistent with WMATA proposals. The location of turning and storage lanes and signalization at the intersections with Glenallan Road and Maryland Route 97 incorporate the access requirements of both the Glenmont Station design drawings and requirements of preliminary schematic drawings for the widening of Maryland Route 97. The alignment development at the proposed Rockville Facility recognizes the possibility of tentative interchange requirements and the locations of lands reserved for that purpose. It additionally incorporates median crossover locations which are consistent with proposed changes to local traffic circulation as would be necessitated by the Rockville Facility alignment.

These Master Plans, Access studies, proposed transportation improvements, physical constraints, and right-of-way constraints largely determined the feasible Build Alternate alignments. An alignment proposal which did not approximate the existing would incur severe adverse environmental and social-economic impacts and would not satisfy the objectives of the referenced plans and studies.

The development of the Typical Sections largely reflects the basic considerations embodied in the 1974 Typical Section accepted by the Montgomery County Council. These considerations were to develop a Typical Section which satisfied safety and capacity requirements in the design year (2006), provided for alternative transportation modes, and had a minimum impact on contiguous properties. Several alternative typical sections were investigated. These included the previously developed (1974) typical section which was acceptable to local elected officials and community groups. Others considered included three, four, and five lane undivided sections which are normally remedial measures for facilities with restricted right-of-ways and numerous mid-block left turning movements. These sections all offered varying degrees of cost effectiveness and environmental impact, however, none met the study criteria for safety, capacity, access control, and alternative transportation provisions. (See Section III-B)

The Typical Sections now under consideration reflect the requirements discussed above and as defined in the previous studies. The sections also satisfy the access considerations for the Glenmont Metro Station. The Typical Section included under Alternate 2 - Four Lane Divided Urban Highway is equivalent to the typical section accepted by local elected officials and community groups in 1974.

The profile was developed to meet design criteria, to minimize environmental impact, to intersect the existing street patterns with minimal disruptions, to alleviate flooding conditions immediately north of Hathaway Drive, to minimize impacts to the hydraulics of existing sanitary sewer systems and to minimally impact other underground utility profiles. (See Section III-B)

3. Alternates Public Meeting

The Alternates Public Meeting was held on March 6, 1980 at the Saddlebrook Elementary School on Maryland Route 182 near Glenmont, Montgomery County, Maryland. Alternates 1, 2, and 3, as contained herein, were presented. No major issues or objections were offered. Citizens' comments pertained to general questions on access, service roads, right-of-way taking, remedial construction and specifics of construction schedule and funding. Montgomery County and Civic Association representatives overwhelmingly favored Alternate 2.

B. ALTERNATES NOW UNDER CONSIDERATION

The existing and proposed land use patterns and the tentative locations of proposed transportation improvements govern the consideration of the No-Build and only two basic Build Alternates. Both Build Alternates approximate the horizontal alignment of the existing Maryland Route 182.

Design criteria for the Build Alternates have been promulgated and serve as a desirable standard of planning. These criteria are:

- Design Year - 2006 A.D.
- Design Speed - 50 MPH
- Maximum Grade - 4.0%
- Minimum Grade - 0.5%
- Desirable Vertical Curve Length - 1000 foot crests
  800 foot sags
- Minimum Horizontal Curve Length - 1000 feet
- Maximum Degree of Curvature - 4 degrees
- Minimum Traffic Lane Width - 12 feet
- Access Control - As permited by police powers of the State Highway Administration to regulate by Entrance Permits. Channelization of Traffic.
- Minimum Median Crossover Spacing - 1500 feet

The Minimum Median Crossover Spacing Policy may be violated where deemed necessary to provide adequate circulation through the study area.

- Desirable Level of Service (2006 A.D.) - L.O.S. 'D' (Refer to Appendix A - Glossary)

1. Alternate 1: No-Build
(Refer to Fig. III-1A, 1B, 6A, 6B)

The No-Build Alternate would continue the inadequacies with regard to geometrics, traffic capacity, and safety. (Refer to Section II-A) Except for normal highway maintenance, including resurfacing, no improvements would be made to measurably affect the ability of the highway to handle the anticipated increase in traffic volumes. As the predicated traffic volume increases are realized, congestion will intensify and the duration of congestion periods will increase. Additionally, increasing congestion may result in increased accident rates. Access would continue unrestricted and uncontrolled midblock turning movements would increase.

2. Transportation Systems Management Alternate

Transportation Systems Management (TSM) actions are largely applicable to urban areas and include improvement of traffic operations, preferential or exclusive lanes for high occupancy vehicles, ride sharing, activities, provisions for parking, pedestrian and bicycle facilities and provision for public transportation. These actions are localized measures intended to reduce volumes on existing highways and streets in response to existing problems, rather than ultimate improvement requirements. TSM actions can be packaged to complement and reinforce each other as a complete strategy for more efficient movement of people and goods on existing facilities.

Improvement of traffic operations now under consideration - specifically, the grade improvement at Glenallan Avenue - are ineffective in reducing traffic volumes on Maryland Route 182. There is no opportunity to effect preferential or exclusive lanes on the existing two-lane roadway. Ride sharing activities have been initiated in the study area on a regional basis. Public transportation is already available along Maryland Route 182 during rush hours; additional service is anticipated upon opening of the Glenmont Metro Station.

TSM strategies under consideration for this project include sidewalks for pedestrians, marked bicycle lanes and fringe parking lots in the Layhill vicinity. The premised result from effective use of strategies such as this is the attainment of better levels of service on existing roadways as commuters forgo use of their automobiles in favor of these alternative modes of travel.

In the case of the Maryland 182 improvement, however, the combined effect of these strategies on reducing capacity needs would be minimal. Due to the relatively long distances from the Layhill area to employment centers, walking and bicycling are impractical to most persons as modes of commuting. Provisions of sidewalks and/or bicycle lanes as an independent improvement would entail significant property acquisition as the existing right of way is basically only 30 feet in width. The cost of such an improvement would not be an efficient expenditure in terms of benefits to be derived. Ride sharing, while fuel efficient and cost efficient, is not expected to effect a sufficient reduction in traffic volumes on this segment of highway to offset the need for additional lanes.

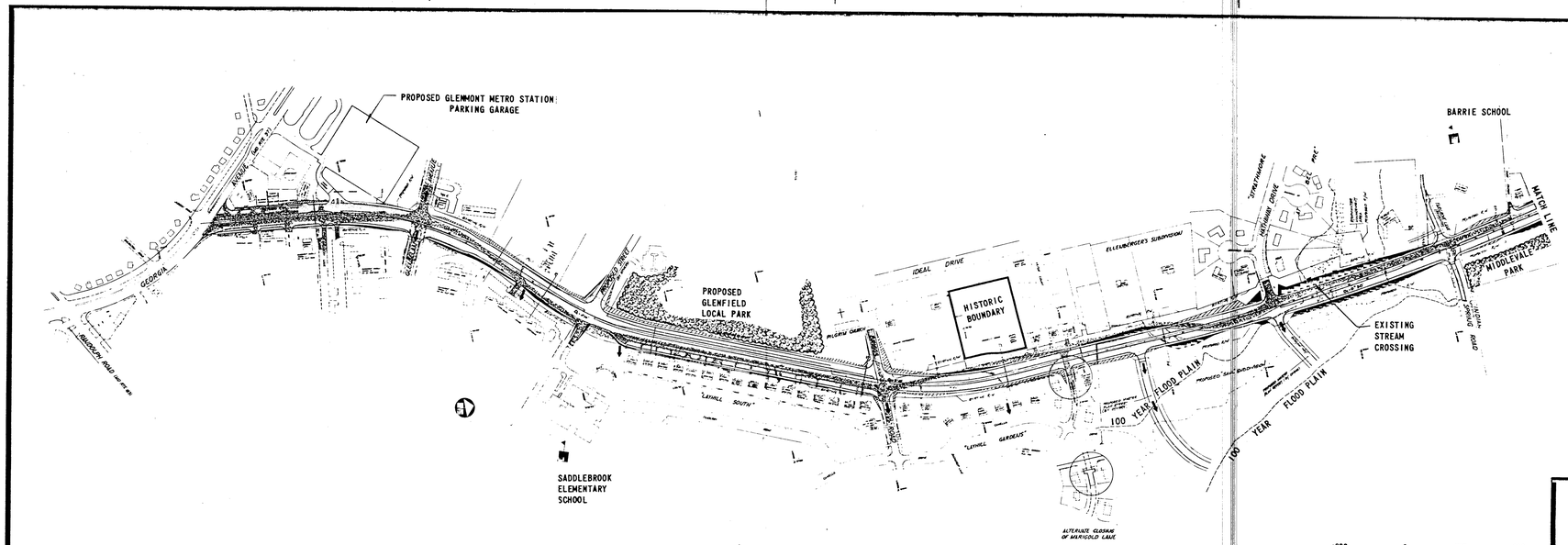
A TSM feature related to implementing the proposed widening of Maryland Route 182 would be enhanced access to the proposed Glenmont Metro Station. The Metro station will become the focal point of transfers to a high-occupancy mode and improving the access will make its operation even more efficient. While the availability of rapid rail service won't reduce traffic on this segment of Maryland Route 182, it will have an overall regional effect of removing a significant number of autos from commuter routes to downtown Washington.

Other than capacity related problems, additional issues compounding the inadequacy of Maryland Route 182 are structural deficiencies and safety problems. TSM strategies could not overcome these physical problems. Unless reconstruction of the roadway is undertaken, the poor horizontal and vertical alignments, the high accident locations and the bridge deficiencies will remain.

3. Alternate 2: Four-Lane Divided Urban Highway
(Refer to Fig. III-2A, 2B, 3 & 6A, 6B)

The roadway section for this alternate is equivalent to the section which was previously accepted by local elected officials and community groups. This alternate proposes a short length (approximately 1,000 feet) of six-lane divided highway south of Glenallan Road and a four-lane divided section north of Glenallan Road. Marked bicycle lanes are proposed along the outer curbs. A one-way frontage road provides access to homes fronting on Layhill Road from just north of Saddlebrook Elementary School to Briggs Road. An existing structure at a stream crossing immediately north of the Hathaway Drive would be reconstructed. The structure type and size shall be determined in the design phase of the project.

Refinements of the 1974 alignment are to minimize impacts to specific historic inventory sites or boundaries. These are the Maurice J. Murphy residence and property (13619 Layhill Road); houses at and opposite the corner of Atwood and Layhill Roads (13938 and 13939 Layhill Road); and, the Oak Chapel Church and Cemetery at Argyle Club



PROJECT PLANNING STUDIES

MARYLAND ROUTE 182 (LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

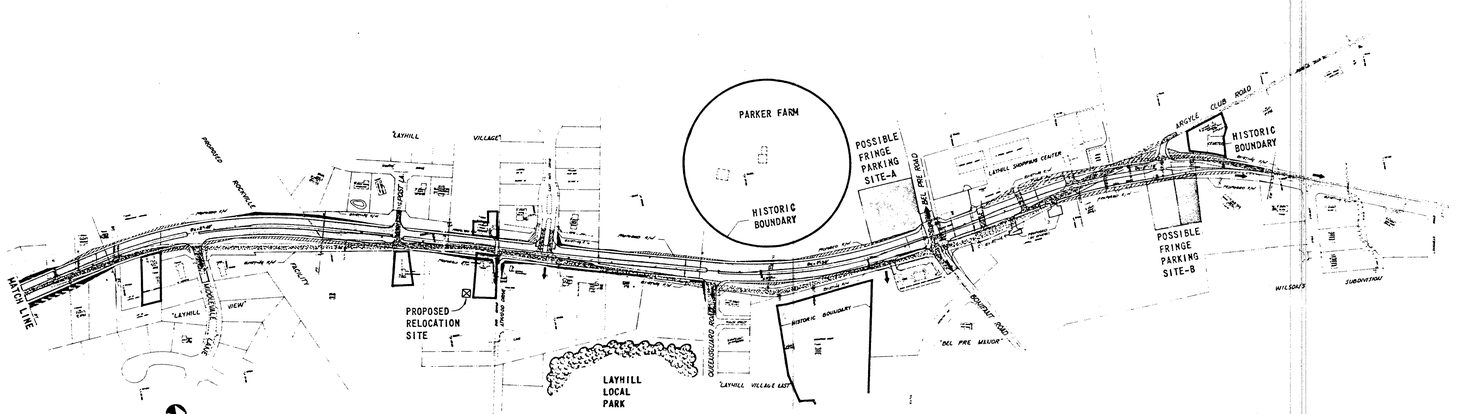
STATE PROJECT M581-151-371

PLAN

ALTERNATE 2

FOUR LANE DIVIDED URBAN HIGHWAY

Figure III-2A



LEGEND

- CUT SLOPE
- FILL SLOPE
- HISTORIC BOUNDARY
- FLOOD PLAIN (100 YEAR)
- EXISTING MD. RTE. 182 AND CONNECTIONS
- LOCAL PARKLAND
- SCHOOL
- CHURCH
- POSSIBLE DRAINAGE OUTFALL
- PROPOSED R/W = PROPOSED RIGHT-OF-WAY LINE
- EXISTING R/W = EXISTING RIGHT-OF-WAY LINE

300 0 300 600 FEET

.10 0 .05 .10 MILE

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

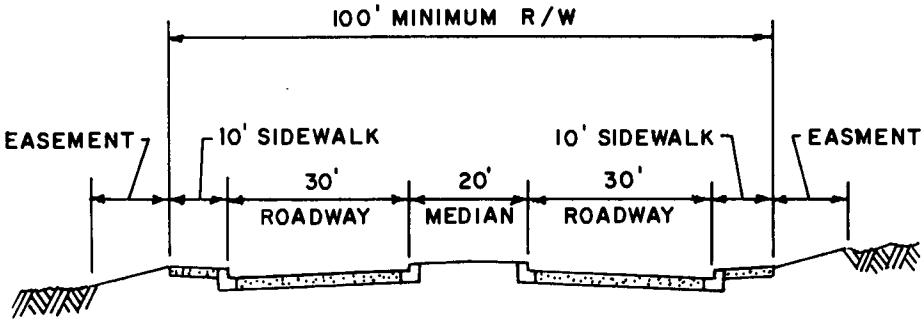
STATE PROJECT M581-151-371

PLAN

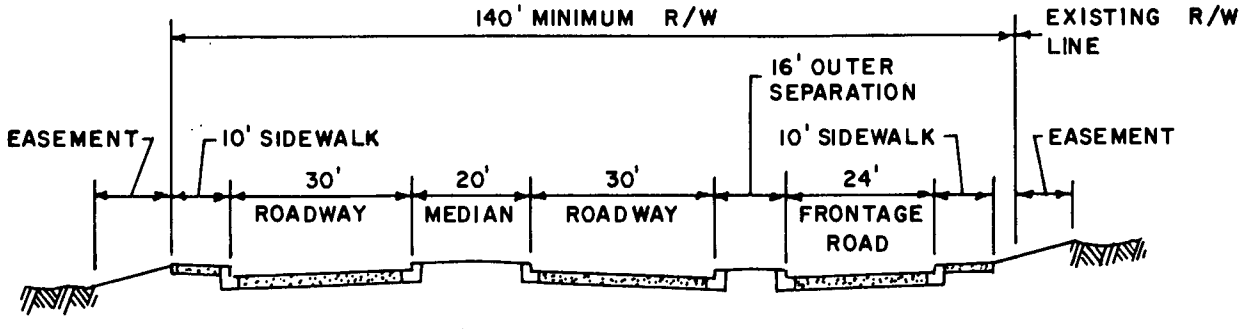
ALTERNATE 2

FOUR LANE DIVIDED URBAN HIGHWAY

Figure III-2B



FOUR LANE DIVIDED URBAN HIGHWAY — MARKED BICYCLE LANES



FOUR LANE DIVIDED URBAN HIGHWAY — MARKED BICYCLE LANES
(WITH FRONTAGE ROAD)

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

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
GEORGIA AVENUE TO ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

TYPICAL SECTIONS

ALTERNATE 2

FOUR LANE DIVIDED URBAN HIGHWAY

FIGURE III-3

and Layhill Roads. The refinement at the Murphy Residence consisted of shifting the alignment approximately 25 feet to the west to minimize slope damages to the structure and to minimize the taking of land from the property. The refinement at the corner of Atwood Road consisted of an alignment shift of approximately 20 feet to the east to avoid taking the house at 13938 Layhill Road. The earlier alignment had taken both 13938 and 13939 (the Anderson Residence) and subsequent field inspection (1979) indicated that taking both structures could be avoided by an alignment shift. The inspection revealed that the Anderson Residence (east of Layhill Road) could be feasibly relocated on the same property and that an alignment shift to the east could avoid structural damage to 13938 Layhill Road on the west. It was thereby determined that an alignment shift was warranted to avoid taking both structures. The refinement at Oak Chapel involved an alignment shift to the east to preclude slope damage to the adjacent cemetery.

The alignment approximates the location of the existing roadway to minimize environmental damages and right-of-way taking and also to maintain consistency with local plans as previously referenced. Beginning at Maryland Route 97 (Georgia Avenue) the alignment nearly replicates the existing roadway due to existing commercial development. Continuing northward a horizontal curve is incorporated shifting the alignment approximately twenty (20) feet east of the existing at Glenallan Road to facilitate access proposals to the Metro garage and also to minimize impacts to an existing bank on the northwest corner of the intersection. A horizontal curve is next incorporated at approximately Saddlebrook Elementary School to shift the alignment seventy-five (75) feet west of the existing roadway to facilitate the frontage road along the "Layhill South" subdivision. The alignment parallels the existing roadway to Briggs Road where a horizontal curve is incorporated to eliminate the sharp curve of the existing roadway. The alignment is then shifted to the east approximately sixty (60) feet from the existing roadway until immediately south of Hathaway Drive to utilize existing dedication areas. There the existing roadway has a reverse curve which brings the location of the existing roadway to approximately twenty (20) feet west of the proposed alignment. The proposed alignment at the existing stream crossing is situated approximately twenty-five (25) feet east of the existing structure to facilitate maintenance of traffic provisions. A long gradual horizontal curve is incorporated to shift the proposed alignment to the west of an historic inventory structure south of Middlevale Lane and west of the Middlevale Local Park as consistent with M-NCPPC park development proposals. Another horizontal curve at the location of the proposed Rockville Facility shifts the alignment to the east to generally coincide with an existing dedication

area and to minimize impacts to historic inventory sites as previously discussed. The alignment in this area is generally fifty (50) to seventy-five (75) feet west of the existing roadway except at Atwood Road where the alignment approximates the existing roadway centerline. Another horizontal curve is incorporated, beginning at Queensquard Road and ending at Bel Pre/ Bonifant Road, to eliminate the existing sharp horizontal curve just north of Queensquard Road. The alignment in this segment is generally shifted fifty (50) to seventy-five (75) feet west of the existing roadway. From Bel Pre/Bonifant Road to Argyle Club Road, the alignment is situated generally to coincide with an existing dedication area fronting the Layhill Shopping Center. The alignment then incorporates a horizontal curve shifting to the east of the existing roadway to eliminate impacts to the Oak Chapel Cemetery and to terminate just north of Argyle Club Road. The termination is by taper from the full typical section width to the existing roadway width. The construction centerline and southbound outer curb location were aligned to reflect the geometric requirements of possible future improvements north of the terminus. The horizontal alignment makes full use of existing right-of-way. Curve lengths have been provided in accordance with the stated criteria.

The alignment fully considers the access requirements recommended at the Glenmont Metro Station. Additionally, the alignment has considered the critical requirements for maintenance of traffic and minimal floodplain involvement at the stream crossing immediately north of Hathaway Drive. This is accomplished by locating the northbound roadway at a minimum sufficient distance from the existing bridge structure to allow simultaneous construction of the northbound roadway while maintaining traffic on the existing structure.

Access would be uncontrolled except at the frontage road between Saddlebrook Elementary School and Briggs Road. Control of entrances shall be accomplished by the permitting process and adequate spacing of intersecting local roads and will be achieved in the design phases. Traffic channelization shall be provided by raised medians with selected crossovers, left turn storage and turning lanes, "free" right turn storage and turning lanes, mandatory turn provisions and bus bays. The location of median crossovers was determined by the requirements of local traffic circulation as delineated on the referenced local plan maps. Coordination with M-NCPPC was initiated to reflect map amendments and future development requirements. Median crossovers are proposed at the WMATA Glenmont Station parking garage, Glenallan Road, Saddlebrook Lane, Briggs Road, Hathaway Drive, Fargrove Lane - Indian Spring Road, Middlevale Lane, Post Lane, Queensquard Road, Bel Pre/Bonifant Road, and Argyle Club Road. There is also a proposal to close Marigold Lane at Maryland Route 182 as incorporated in a local plan amendment. A "Tee" turnaround would be provided to terminate Marigold Lane if this alternate is recommended.

The profile has been developed primarily to reflect the geometric requirements of the intersecting local street network and existing development. The profile development incorporates the previously discussed design criteria wherever applicable. Violations of the criteria are required at the termini to accommodate existing structures and road grades. The profile has also been developed to eliminate the severe flooding condition at the stream crossing immediately north of Hathaway Drive. This has been accomplished by raising the grade in this area approximately ten (10) feet above the existing roadway. The profile also recognizes where feasible the desirability for economical relocation of underground utilities and the possible impacts on hydraulic gradients.

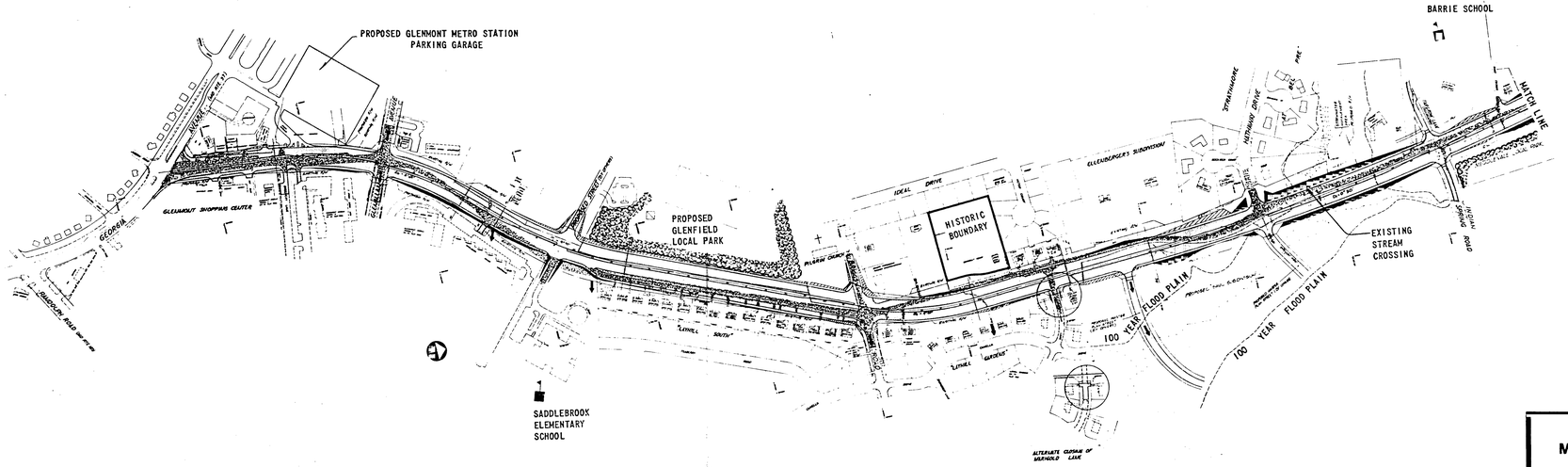
4. Alternate 3: Six-Lane Divided Urban Highway
(Refer to Fig. III-4A, 4B, 5, 6A, 6B)

This alternate is identical to Alternate 2 with the exception that the six-lane divided facility continues the entire length of the project from Georgia Avenue to Argyle Club Road. The alignment differs slightly between Glenallan Road and Briggs Road. This alternate could be a staged construction of the outer four lanes, curbs, and connections with a 44 foot depressed rural median. The additional two lanes and raised median could then be constructed as warranted by demand.

* * *

These Build Alternates also satisfy several specific study objectives. Both alternates provide a reasonable level of service for the majority of the corridor with some delays at intersections. (Refer to Fig. IV-2A, 2B) However, for either build alternate, continuous backups can be expected at Glenallan Road during peak hours. At the Georgia Avenue intersection, forced flow conditions are expected with extensive backups for southbound motorists, during morning peak flows. These conditions would be mitigated by utilization of the Glenmont Metro Station and the local widening of Georgia Avenue. This deterioration of service, however, reflects the influence of traffic volumes south on Georgia Avenue rather than capacity deficiencies in the build alternates.

The build alternates would provide safe and efficient access to the proposed Glenmont Metro Station for transit and motorists. Both Alternates would safely accommodate bicyclists and pedestrians. Additionally, motor vehicle safety will be qualitatively increased. The safety aspect is qualified because, although a slight increase is predicted in the number of accidents over the existing, the severity of these accidents is expected to be less than current incidents.



LEGEND

- CUT SLOPE
- FILL SLOPE
- HISTORIC BOUNDARY
- FLOOD PLAIN (100 YEAR)
- EXISTING MD. RTE. 182 AND CONNECTIONS
- LOCAL PARKLAND
- SCHOOL
- CHURCH
- POSSIBLE DRAINAGE OUTFALL
- PROPOSED R/W = PROPOSED RIGHT-OF-WAY LINE
- EXISTING R/W = EXISTING RIGHT-OF-WAY LINE

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

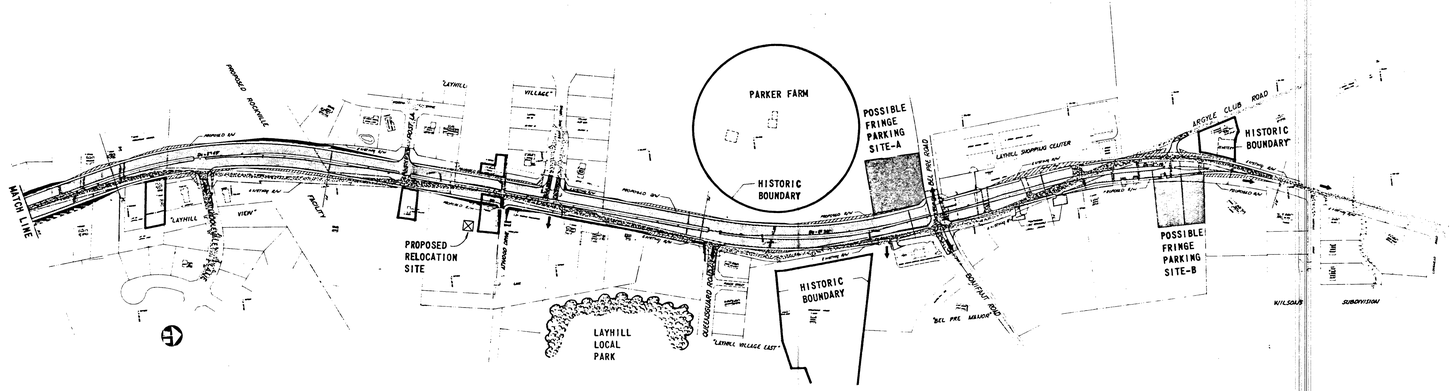
STATE PROJECT M581-151-371

PLAN

ALTERNATE 3

SIX LANE DIVIDED URBAN HIGHWAY

Figure III-4A



LEGEND

- CUT SLOPE
- FILL SLOPE
- HISTORIC BOUNDARY
- FLOOD PLAIN (100 YEAR)
- EXISTING MD. RTE. 182 AND CONNECTIONS
- LOCAL PARKLAND
- SCHOOL
- CHURCH
- POSSIBLE DRAINAGE OUTFALL
- PROPOSED R/W = PROPOSED RIGHT-OF-WAY LINE
- EXISTING R/W = EXISTING RIGHT-OF-WAY LINE

300 0 300 600 FEET

.10 0 .05 .10 MILE

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182 (LAYHILL ROAD)

Georgia Avenue to Argyle Club Road

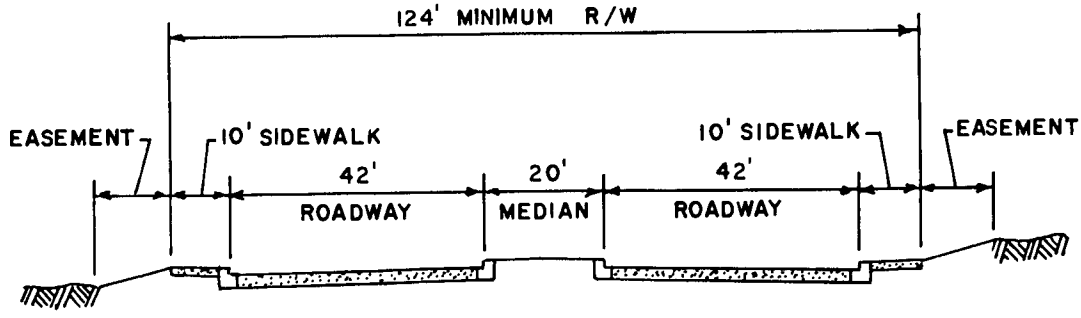
STATE PROJECT M581-151-371

PLAN

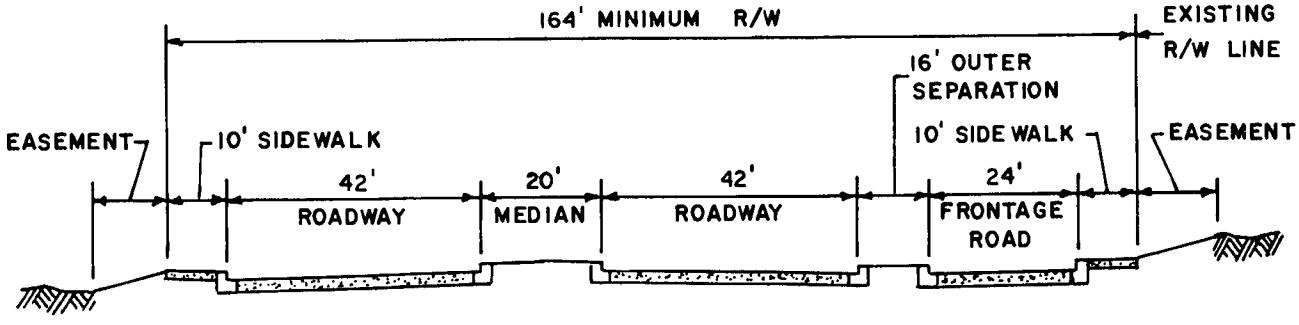
ALTERNATE 3

SIX LANE DIVIDED URBAN HIGHWAY

Figure III-4B



SIX LANE DIVIDED URBAN HIGHWAY - MARKED BICYCLE LANES



SIX LANE DIVIDED URBAN HIGHWAY — MARKED BICYCLE LANES
(WITH FRONTAGE ROAD)

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

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)

GEORGIA AVENUE TO
ARGYLE CLUB ROAD

STATE PROJECT M581-151-371

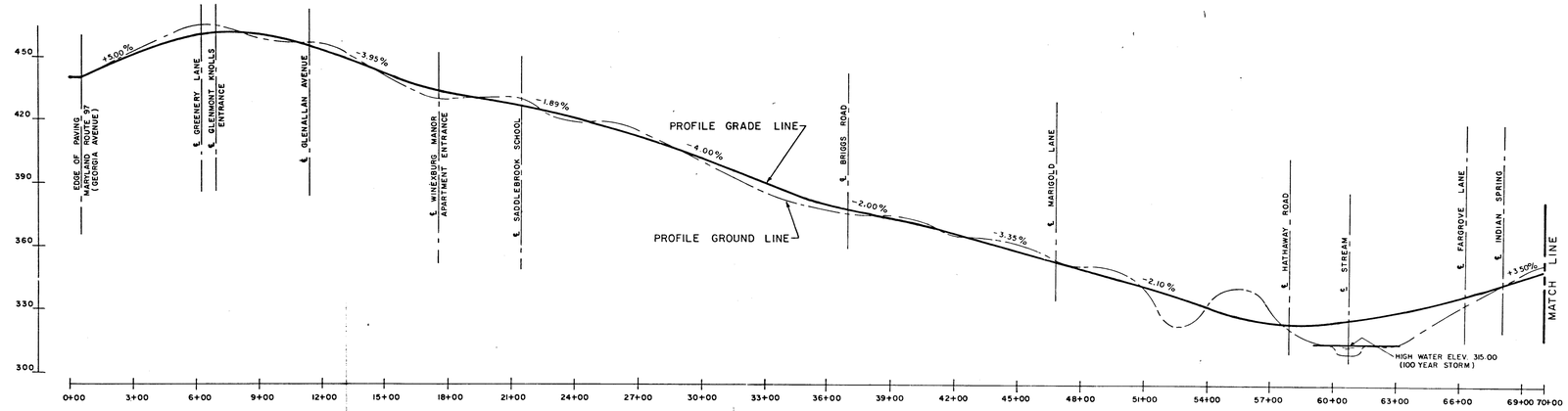
TYPICAL SECTIONS

ALTERNATE 3

SIX LANE DIVIDED URBAN HIGHWAY

FIGURE III-5

Two alternative fringe parking lot sites are being considered in the Layhill vicinity. These are incorporated consistent with the State Implementation Plan for attainment of Air Quality Standards, Federal energy policies, Montgomery County's "Ride-On" program, and other car or van pool programs. The sites are located on the southwest corner of the Bel Pre/Bonifant Road intersection (Site 'A') and on the east side of Maryland Route 182 opposite Argyle Club Road (Site 'B'). The fringe parking lot Site 'A' could be implemented independent of the Build Alternate because it involves only the acquisition of right-of-way. Site 'B' can be implemented only under the selection of a Build-Alternate as these alternates require the taking of residences at that location for right-of-way purposes. The lots would accommodate approximately seventy-five (75) vehicles and would require approximately one (1) acre of land.



PROJECT PLANNING STUDIES

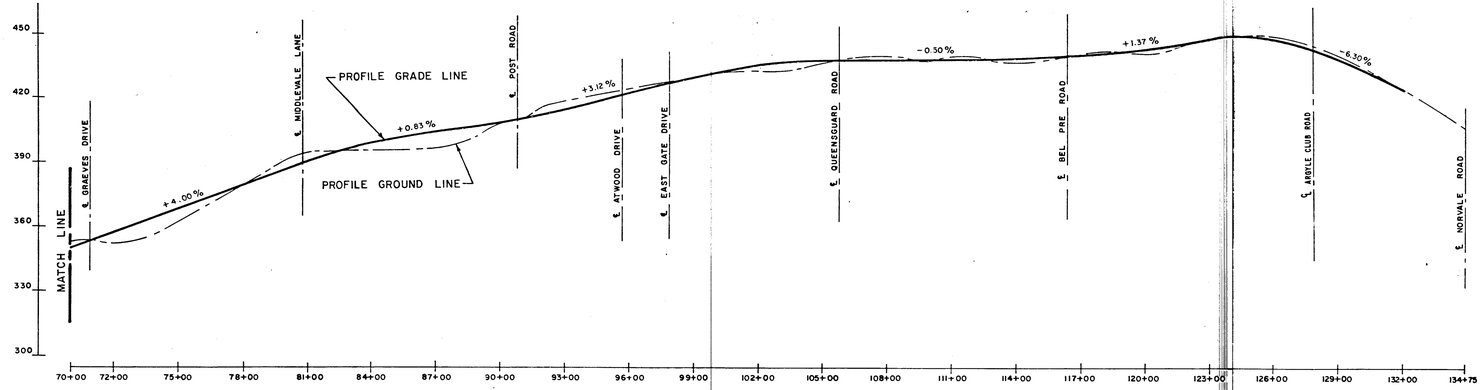
MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

PROFILE

ALTERNATE 2+3

Figure III-6A



PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to
Argyle Club Road

STATE PROJECT M581-151-371

PROFILE

ALTERNATE 2 + 3

Figure III-6B

IV. COMPARISON OF ALTERNATES

IV. COMPARISON OF ALTERNATES

A. SUMMARY

Alternate 1, the No-Build, would incur no impacts from active construction. There would be, however, impacts to safety, air quality, noise levels, local economic stability, and social welfare. These adverse impacts would result from severe congestion and deteriorated levels of service in the design year 2006. The projected congestion will significantly increase travel times, user costs and energy consumption. Additionally, congestion would seriously constrain the efficiency of and access to proposed transportation improvements, such as the Glenmont Metro Station, which are being implemented specifically to alleviate regional transportation deficiencies.

Alternate 2 and Alternate 3, the Build Alternates, have similar alignments and typical section features. The impacts associated with them are, therefore, similar. Impacts which are a consequence of width, however, are of a greater magnitude under Alternate 3, the six-lane facility, than under Alternate 2, the four-lane facility. These are specifically related to construction costs, adverse environmental impacts due to slope construction, right-of-way taking and minor noise level increases.

Generally, environmental impacts resulting from the proposed action(s) are minimal due to the action's conformance to existing local Master Plan(s) objectives. Natural environmental impacts are negligible as air quality and noise studies indicate similar results regardless of the alternate finally implemented. Floodplain studies indicate that the proposed action will cause no significant impact to beneficial floodplain values at the point of an existing stream crossing immediately north of Hathaway Drive. There are no wetlands within the study area. The project area does not contain threatened or endangered species or habitat. The Maryland Historic Trust has identified several historic sites of local inventory; none of these are eligible for the National Register of Historic Places. Both Build Alternates would require the acquisition of one (1) residence of historic inventory, and the acquisition of land at four (4) historic sites. An archeological reconnaissance has been conducted for the study area. Neither of the Build Alternates impact identified sites. The M-NCPPC has indicated that both improvements are consistent with plans for the proposed Glenfield Local Park and the existing Middlevale Local Park which are both continguous to the improvement.

Access to proposed transportation improvements at the Glenmont Metro Station are consistent with proposal objectives for the facility. Access within the corridor is improved through increased intersection capacity and traffic control devices. Traffic capacity and levels of service are consistent with design year (2006) criteria. Congestion is thereby decreased improving access throughout the study corridor and improving safety. Both Alternates 2 and 3 provide for alternative modes of transportation such as pedestrians, bicyclists and expanded transit service.

Social-economic impacts are limited to the taking of right-of-way, residential and business relocations and temporary impairment of business activity during construction phases. No adverse neighborhood impacts have been identified and no known minority or handicapped individuals would be affected by the project. No community services would be affected by either Build Alternate.

Both Build Alternates are consistent with the objectives of referenced local plans and regional transportation improvement proposals.

Table S-1, Cost Effectiveness Analysis, (in the summary at the front of this document) presents a comparison of the benefits and impacts associated with Alternates 1, 2, and 3.

B. IMPACTS

1. Social Impacts

The primary social impact associated with this project is the acquisition of occupied dwellings and the relocation of resident families. Alternate 1, the No-Build Alternate, would displace no dwellings. Both build alternates, however, require the acquisition of homes.

Alternate 2 would acquire five residences occupied by 17 persons. Two of these dwellings are owner-occupied and three are tenant-occupied. No known minority families are affected. Alternate 3, would acquire the same dwellings.

A survey of decent safe and sanitary comparable replacement housing has been conducted by the Bureau of Relocation Assistance, Maryland SHA for the Glenmont-Layhill area. The housing market in the study area is a fairly active one with numerous new and used homes for sale. Several new developments are under construction or have recently opened.

The rental housing market in the Washington Metro area is more restricted. The majority of rentals available are in limited supply at the present time. This trend is expected to continue during the life of the project. It is not known whether the tenants affected are paying economic rentals for their properties. Last resort housing could be required in the event that the tenants are paying below market rents. In any case, all persons affected will be relocated into comparable decent, safe and sanitary housing within their financial means. It is estimated that the relocation will take approximately 18 months. (Refer to p. I-2 for age and income distribution.)

Summarized below is the Equal Employment Opportunity Program of Maryland SHA:

> "It is the policy of the Maryland State Highway Administration to insure 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, religion, national origin, physical or mental handicap in all State Highway 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 be given to the social, economic, and environmental effects of all highway projects. Alleged discrimination actions should be addressed to the State Highway Administration for investigation."

2. Economic Impacts

Alternate 1, No-Build, does not require the displacement of any business activities.

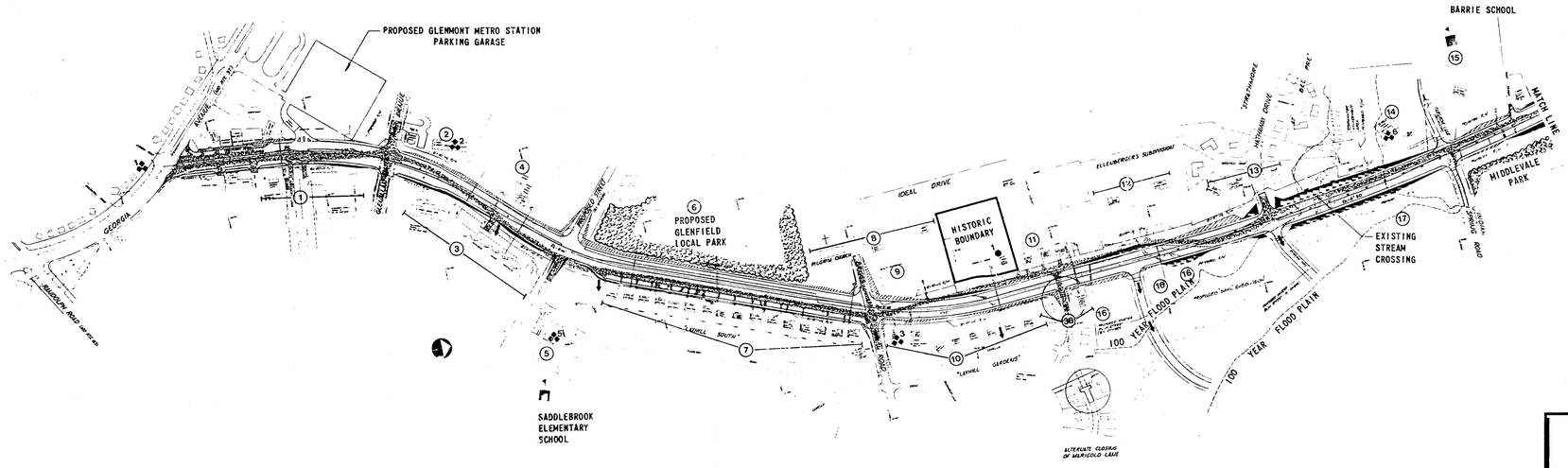
Both build alternates would require the displacement of two active businesses. These businesses employ a total of approximately five people. Neither of these businesses is believed to be owned by or employ members of a minority group. Significant tax losses are not indicated due to the small number of businesses affected and their limited scope of business activity.

These businesses are likely to suffer economic injury due to higher rent costs and expenses which are noncompensable under State Relocation Law. Relocation facilities are available in the immediate area.

3. Impacts to Parklands and Historic Inventory Sites F (Refer to Figures IV-1a and IV-1B for location)

Parklands

Alternate 1, No-Build, has no physical impact to the proposed Glenfield Local Park site or the existing Middlevale Local Park. Adverse impacts at both sites may occur in the far term (Design Year 2006) due to projected increases in local vehicular congestion. The impacts would be primarily social in that all users of the facilities would have access impaired by increasing congestion.



LEGEND

- CUT SLOPE
- FILL SLOPE
- HISTORIC BOUNDARY
- FLOOD PLAIN (100 YEAR)
- EXISTING MD. RTE. 182 AND CONNECTIONS
- LOCAL PARKLAND
- SCHOOL
- CHURCH
- POSSIBLE DRAINAGE OUTFALL
- PROPOSED R/W = PROPOSED RIGHT-OF-WAY LINE
- EXISTING R/W = EXISTING RIGHT-OF-WAY LINE

- AIR QUALITY SENSITIVE RECEPTOR
- (6) NOISE MONITORING SITE
- HISTORIC SITE
  1. CONNELLY HOUSE

300 0 300 600 FEET

.10 0 .05 .10 MILE

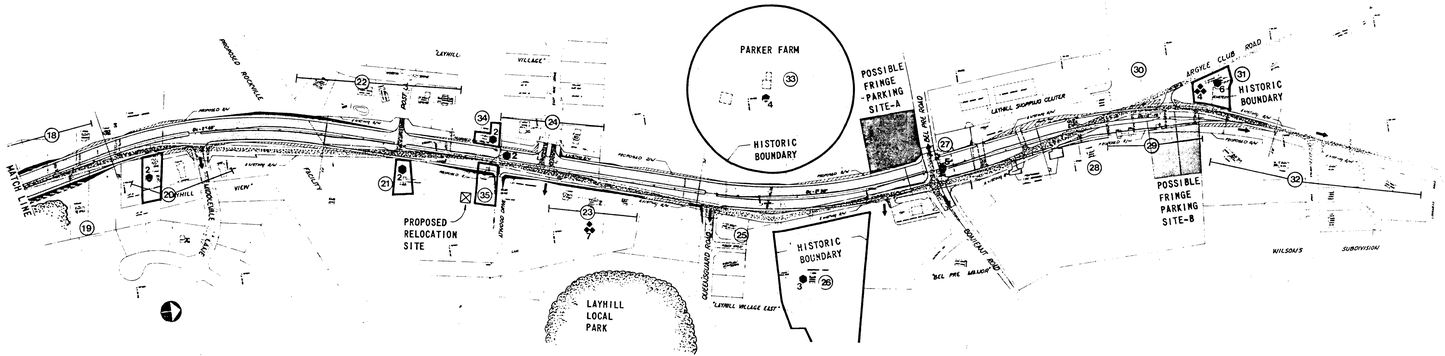
PROJECT PLANNING STUDIES

MARYLAND ROUTE 182 (LAYHILL ROAD) Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

LOCATION OF HISTORIC SITES, HISTORIC DISTRICTS, NOISE MONITORING SITES, AIR QUALITY SENSITIVE RECEPTORS, PARKS, RECREATION FACILITIES, AND FLOOD PLAINS

Figure IV-1A



LEGEND

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- PROPOSED R/W = PROPOSED RIGHT-OF-WAY LINE
- EXISTING R/W = EXISTING RIGHT-OF-WAY LINE

AIR QUALITY SENSITIVE RECEPTOR

NOISE MONITORING SITE

HISTORIC SITE

6. OAK CHAPEL
5. LAYHILL STORE & POST OFFICE (TAKEN BY OTHERS)
4. PARKER FARM
3. CHAMPAYNE HOUSE
2. HOUSES AT LAYHILL AND ATWOOD, POST, AND MIDDLEVALE

300 0 300 600 FEET

.10 0 .05 .10 MILE

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182 (LAYHILL ROAD) Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

LOCATION OF HISTORIC SITES, HISTORIC DISTRICTS, NOISE MONITORING SITES, AIR QUALITY SENSITIVE RECEPTORS, PARKS, RECREATION FACILITIES, AND FLOOD PLAINS

Figure IV-1B

Alternates 2 and 3, the Build-Alternates, would have no adverse impact to the referenced parklands. Coordination was initiated with M-NCPPC to assess the possibility of any adverse impact to the proposed Glenfield Local Park or the existing Middlevale Local Park. Neither facility has been developed nor have any final development plans been formulated. Both facilities have been schematically planned anticipating improvement to Maryland Route 182. M-NCPPC review of the refined plans of Alternate 2 and Alternate 3, the Build Alternates, indicates that both Alternates are consistent with their development requirements. Construction of facilities on these sites is not anticipated prior to improvements to Maryland Route 182. (Refer to Section V-D for document)

Historic Inventory Sites

The Maryland Historical Trust identified historic sites within the study area. These sites are:

1. Connelly House and Land

2. Two houses at Layhill and Atwood, One House at Layhill, South of Middlevale Lane and One House Opposite Post Lane

3. Champayne House and Land

4. Parker Farm and Land

5. Layhill Store and Post Office (To Be Removed By Others)

6. Oak Chapel, Cemetery and Land

The Layhill Store and Post Office is scheduled for acquisition and subsequent removal by Montgomery County in conjunction with highway improvements to Bel Pre/Bonifant Roads. Work is scheduled to commence in 1981.

None of these sites are eligible for the National Register of Historic Places. They are of local inventory interest only. The approximate boundaries of lands associated with the inventory are delineated on the referenced Figues and documented in Section V-B.

An archeological survey of the study area has also been completed by the Division of Archeology, Maryland Geological Survey. After review of this survey, the State Historic Preservation Officer has determined that no known site would be impacted by the proposed action.

Alternate 1, the No-Build Alternate, has no physical impact on any historic inventory site or lands.

Alternate 2 and Alternate 3 both require the acquisition of one (1) residence and the acquisition of land at four (4) historic inventory sites, Parker Farm, Oak Chapel, and the two houses at Layhill and Atwood. The house (Anderson Residence, 13939 Layhill Road) requiring acquisition has sufficient property and is of appropriate size and type that relocation on the same property may be a feasible alternate to acquisition. The impacts to these sites, with the exception of the Anderson residence, are minor-consisting of slope construction, right-of-way acquisition and increases in noise levels. None of these impacts preclude the use of these sites.

4. Natural Environment

As discussed in Section I-C, the original natural environment of the study area has been almost completely superseded by urban development. Some undeveloped land consisting of field habitat or scrubby, immature woodland and mature woodland, does remain but even these tracts have been much compromised or subjected to development pressure and no longer support significant populations of wildlife. No known treatened or endangered species inhabit the study area, as indicated by coordination with the Maryland Department of Natural Resources and local office of the U.S. Fish and Wildlife Service.

Alternate 1, the No-Build alternate, has no impact on the natural environment.

Alternates 2 and 3, the Build alternates, would have neglible impacts on the natural environment consisting primarily of tree removal at the margins of construction, excavation of surface soils and landforms along the entire improvement and excavation of borrow at suitable sites along the alignment. Alternate 3 would have a slightly greater impact than Alternate 2 due to additional section width.

5. Floodplain Impact
(Refer to Figures IV-1A and IV-1B)

A floodplain crossing exists under Alternate 1 and is also required under Alternates 2 and 3. There is no involvement with the floodplain under Alternate 1, the No-Build. The involvement with the floodplain under the build alternates is limited to the reconstruction of an existing structural crossing immediately north of Hathaway Drive. The exact configuration of the replacement structure has not been determined.. The hydraulic elements would be selected so as to maintain the existing 100 year storm water surface profile. Preliminary investigations have been accomplished in accordance with the Federal-Aid Highway Program Manual Volume 6, Chapter 7, Section 3, Subsection 2: Location and Hydraulic Design of Encroachments on Flood Plains.

These investigations determined the approximate outline of the 100-year floodplain and the flood crest elevation at the existing crossing resulting from the stormwater discharge from an upstream watershed of approximately 1975 acres. The discharge was based on the ultimate development of the watershed as incorporated in the previously referenced local plans and inclusive zoning regulations. The stormwater discharge is contingent upon the ultimate development density established by these plans. Therefore, if the local plans are amended to significantly increase the development density, the discharge would increase along with the extent of the floodplain outline and flood-crest elevation at the existing crossing. This action could compromise the hydraulic design of any proposed crossing structure.

The proposed B. F. Saul Subdivision, adjacent on the east of Maryland Route 182, was also examined during preliminary hydraulic investigations. It was determined that construction of the access streets to this development could have backwater impacts at the Maryland Route 182 stream crossing. Coordination with M-NCPPC indicated also that the stormwater management provisions required for development of the tract could also alter the floodplain outline and floodcrest elevation. Subsequent coordination with the Maryland Department of National Resources - Water Resources Administration (WRA) was initiated to develop compatible hydraulic profiles between the downstream B. F. Saul development proposal and the upstream reconstruction of the Maryland Route 182 stream crossing.

The findings resulting from the above referenced WRA coordination with respect to Build Alternates 2 and 3 were as follows: (Refer to document in Section V-B)

- Under WRA regulations the Build Alternates will require stormwater management provisions on a 100-year design storm basis. The WRA will evaluate proposals for the adjacent B. F. Saul subdivision to coordinate compatible development.

- Build Alternate 2, the four-lane facility, is preferred because it involves less channel modification than Alternate 3, the six lane facility

- Storm water management provisions (to control runoff from increased highway paving) would have to be based on changes in runoff for the entire limits of the proposed highway improvements. The detailed hydrologic and hydraulic studies would be considered in the design phase.

None of the proposed alternates would have a significant encroachment on the floodplain resulting in any risks or impacts to the beneficial floodplain values or provide direct or indirect support to further development within the floodplain. Storm water management ponds and/or subsurface storage are proposed for the facility which should reduce the impact of storm flows in the downstream reaches as required WRA regulations, Montgomery County SCS regulations and FHPM C 732. Construction impacts should be minimal with the installation of prescribed sediment and erosion control measures.

6. Noise Impact
(Refer to Figures IV-1A and IV-1B)

A detailed noise impact analysis has been completed for the proposed action. The Technical Noise Report (dated April 1980) is available for review at the Maryland Department of Transportation, State Highway Administration, 300 West Preston Street, Baltimore, Maryland 21201.

The method used to predict the noise levels resulting from the proposed improvement of Maryland Route 182 was developed by the Environmental Analysis Bureau of the New York State Department of Transportation. The prediction model utilizes a computer program (HUSH003) which is based on work performed by the Michigan Department of State Highways and Transportation and distributed by the Federal Highway Administration (FHWA).

A field measurement program to determine ambient noise levels was conducted utilizing the latest methods for environmental noise analysis. Two methods were used to obtain ambient noise levels in the project area: an automated instrumentation system and equipment procedure and the manual method of noise level measurement as prescribed by the Federal Highway Administration in the publication, "Fundamentals and Abatement of Highway Traffic Noise" (June, 1973).

Adverse impacts from traffic generated noise would be realized at noise sensitive receptors in the study area. Negligible to severe increases in L_{10} noises levels would occur and there would be occurrences where Federal design noise level criteria are exceeded under each of the alternates under consideration. Tables IV-1A, B, C, present general comparative information on the projected impacts of each alternate.

Nine (9) historic sites would be impacted by the proposed project alternates. Under the No Build Alternate (Alt. 1), three (3) of the six sites would experience L_{10} noise levels in excess of Federal design Criteria. Under the two Build Alternates (Alt. 2 & 3), one site would experience noise levels that would exceed design levels, however, this site (Layhill Store) would be taken by Montgomery County in 1981. Also, one of the sites may be taken in right-of-way under the Build Alternates. (Anderson) Relocation of this structure is being considered.

There would be minor to significant increases in L_{10} noise levels at the site of the proposed Glenfield Local Park. However, design noise levels would not be exceeded at any of the proposed locations of activity areas (picnic shelter, sports field, etc.)

No noise abatement measures would be implemented with the No-Build Alternate (Alternate 1).

Noise abatement potential was investigated at NSA's 3, 4, 10, 18, 20, 23, 34, and 36 for both Build Alternates (Alternates 2 and 3) where design noise levels are exceeded. The following discussion addresses the mitigation potential for each noise sensitive area.

At NSA 3, Winexburg Manor Apartments, noise abatement would not be considered because there are no exterior use areas associated with the complex in vicinity of Maryland 182. The apartments do not have balconies, and the area between the buildings and Maryland 182 is used only for resident parking. The apartment building is air-conditioned, thus interior noise levels would not exceed design criteria.

Noise abatement would not be feasible for either Build Alternate at NSA's 4, 18, 20, 23, and 34. All of these areas consist of no more than three individual residences and abatement in such cases would not be cost-effective.

Associated costs at each of these areas would be as follows:

NSA	Number of Residences Protected	Approximate Cost of Abatement
4	1	$60-80,000
18	3	$130-150,000
20	3	$160-180,000
23	3	$140-150,000
34	1	$48-500,000

In addition, two other factors make abatement impractical: 1) access conditions along the roadway would necessitate gaps in any proposed barriers and would limit potential noise reductions to about 3 dBA, and 2) insufficient right of way width to facilitate placement of abatement features.

Noise abatement would not be feasible for NSA's 10 or 36 under the Build Alternates. Right of way width adjacent to these areas is not sufficient to allow for placement of noise abatement barriers or landscape plantings.

In addition, mitigation potential was investigated at NSA's 8, 15, 17, 22, 24, 28, and 33 where significant or severe noise level increases would result from either of the Build Alternates but design noise levels would not be exceeded.

At each of the sensitive areas 8, 15, 17, 24, 28, and 33, only 1-3 residences are involved and abatement in such cases would not be cost-effective. Associated costs would be as follows:

NSA	Number of Residences Protected	Approximate Cost of Abatement
8	1-2 (plus church)	$250-300,000
15	1	$150-160,000
17	3 (proposed)	$180-200,000
24	2	$160-180,000
28	1	$80-100,000
33	1	$250,000

Again, access conditions would create gaps in any barriers, thus limiting potential noise reductions to about 3 dBA.

At NSA 22, construction of a noise barrier system for the six (6) subdivision residences that constitute this sensitive area would not obtain significant positive results at reasonable cost. The limiting factor at this area is the existing Post Lane entrance to Maryland 182, which would severely compromise the acoustic performance of a barrier system. The cost of this proposed system would be approximately $200,000 for a net result of 2 - 3 dBA reduction.

Partial abatement in the form of landscape plantings appears feasible. Plantings could be placed along the right of way extending approximately 250 feet north and 500 feet south of Post Lane to provide a visual buffer for residences of the area. Actual reduction in noise levels due to the plantings would be negligible.

Traffic management, as a form of partial noise abatement, does appear feasible. Prohibition of heavy-duty trucks on Maryland 182 in the project area could result in a reduction of approximately 3 - 7 dBA in projected design year noise levels. The ultimate feasibility of implementation of a traffic management plan would require further study by the State Highway Administration to determine the availability and potential capacities of alternate routes, travel distance effects, etc.

The following brief compilation of data from Tables IV-1A, 1B, and 1C summarizes the noise impacts predicted for Alternates 1, 2 and 3 for the design year and year of completion.

	No. of Sites in Which Predicted L_{10} Level Creates a "severe" noise Impact		No of Sites for Which Predicted L_{10} Levels Exceed Criteria	
Alternative	Ambient	2006	Ambient	2006
1 - No-Build	0	1	2	12
2 - Four-Lane	-	0	-	10
3 - Six-Lane	-	5	-	10

Noise Sensitive Area Descriptions

Thirty-eight (38) noise sensitive areas were identified in the project area. The table below presents a brief description of each area as well as any pertinent information as it relates to the project alternates.

NOISE SENSITIVE AREAS
Maryland Route 182
(Layhill Road)

Noise Sensitive Area	Description
1	Glenway Garden Apartments--Three (3) three-story, air-conditioned brick apartment buildings.
2	One (1) three-story, brick apartment building located on west side of Maryland 182.
3	Winexburg Manor Apartments--Two (2) three-story, air-conditioned, brick apartment buildings located on east side of Maryland 182 north of Glenallan Avenue with access to Maryland 182.
4	One (1) single story, single family, brick residence on west side of Maryland 182 with access to Maryland 182.
5	Saddlebrook Elementary School--Single-story, brick building (not air-conditioned), located approximately 300' east of Maryland 182 and approximately 10' below the existing roadway elevation.

Noise Sensitive Area	Description
6	Proposed Glenfield Local Park located off west side of Maryland 182 between Glenallen Avenue and Briggs Road. The proposed development includes a soccer/football field and picnic shelter to be situate approximately 220' 280' from the traffic flow of Maryland 182.
7	Eighteen (18) split-level, two-story, single family residences located along east side of Maryland 182 south of Briggs Road. (Layhill South Subdivision)
8	Pilgrim Church--Single story, brick building (not air-conditioned), located southwest of Briggs Road/ Maryland 182 intersection with access to Briggs Road. Also included in this area are two (2) single family residences on west side of Maryland 182, north of Briggs Road.
9	One (1) split-level, single family, brick residence located on northwest corner of Briggs Road/ Maryland 182 intersection with access to briggs Road. The structure is under construction (as of March, 1980) and would be taken in right-of-way under Alternates 2 or 3.
10	Six (6) two-story, single family residences located along east side of Maryland 182 between Briggs Road and Marigold Lane. Access for these residences is to Camellia Drive. Backyard areas of these properties abutt Maryland 182. (Layhill Gardens subdivision)
11	Four (4) two-story, single family, brick and frame residences on west side of Maryland 182 opposite Marigold Lane with access to Maryland 182. One of these is the locally historic Connelly House.
12	Two (2) single story, single family, brick and frame residences located atop hill off west side of Maryland 182, south of Hathaway Drive with access drives to Maryland 182. (Ellenberger's subdivision)
13	Three (3) single family residences located at Hathaway Dirve on west side of Maryland 182 with access to Rockview Court or Hathaway Drive. In general, backyard areas are the closest portions of the properties to Maryland 182. (Strathmore at Bel Pre subdivision)

Noise Sensitive Area	Description
14	One (1) single family, single story, brick residence located on west side of Maryland 182 south of Fargrove Lane with access to Maryland 182.
15	Barrie Day School and Camp--One (1) single family, brick residence which houses the day school located on north side of Fargrove Lane west of Maryland 182 with access drive to both Fargrove Lane and Maryland 182.
16a, b, c & 17	Proposed B.F. Saul Subdivision--A proposed tract presently (as of March, 1980) undeveloped land which has been tentatively subdivided for single family and townhouse residential units. No direct access to Maryland 182 is planned for any of the properties abutting Maryland 182 (existing or realigned). Four (4) separate areas were chosen for the noise impact study based upon tentative subdivision property lines which are currently being revised. Natural sounds dominate the acoustic environment at the locations studied; only minor influence from traffic noise from Maryland 182 was noted.
18	Three (3) single family frame dwellings located on west side of Maryland 182 north of Fargrove Lane with access to Maryland 182.
19	One (1) single family frame residence located on east side of Maryland 182 approximately 600' south of Middlevale Lane with access drive to Maryland 182.
20	Three (3) two-story, single family, residences on east side of Maryland 182 at intersection with Middlevale Lane.
21	One (1) single family, two-story, frame residence located on east side of Maryland 182 opposite Post Lane.
22	Four (4) two-story, single family residences located north and south of Post Lane along west side of Maryland 182 with access to either Post Lane or North Drive. (Layhill Village subdivision)

Noise Sensitive Area	Description
23	Three (3) single family, frame residences located on east side of Maryland 182 near East Gate Drive.
24	Two (2) single family residences located at East Gate Drive off west side of Maryland 182 with access to East Gate Drive. (Layhill Village subdivision)
25	One (1) single family, two-story, brick and frame dwelling located on northeast corner of Queensguard Road and Maryland 182. (Layhill Village East subdivision)
26	Two (2) single family frame residences located on east side of Maryland 182 north of Queensguard Road with access to Maryland 182. One of the structures is the locally historic Champayne House.
27 (To Be Taken By Others)	One (1) two-story, frame grocery store and single family residence located on the northwest corner of Maryland 182 and Bel Pre Road. The building is an identified historic structure (Layhill Store & Post Office, Hulls Store). The structure will be removed during scheduled improvements to Bel Pre/Bonifant Roads by Montgomery County DPW forces in early 1981.
28	One (1) single family, single story, brick dwelling located on east side of Maryland 182 approximately 300' south of Argyle Club Road.
29	Four (4) single family, frame residences located on east side of Maryland 182 at Argyle Club Road with access to Maryland 182. Ambient noise levels dominated by traffic noise from Maryland 182. All four structures would be taken in right-of-way under Alternates 2 & 3.
30	Argyle Country Club--Golf course located along west of Maryland 182 in the vicinity of Argyle Club Road. Noise measurements, etc. were taken on a green located approximately 140' from Maryland 182 (the closest use area to the road).
31	Oak Chapel--Single story, frame church and cemetery located at Argyle Club Road and Maryland 182 with access to Argyle Club Road. This is an identified historic inventory site.
32	Two (2) single family, single story dwellings located on east side of Maryland 182 south of Norvale Road at the northern project terminus.

Noise Sensitive Area	Description
33	Parker Farm--An identified historic inventory site, a privately owned two-story frame mansion with distinctive square lantern tower at the roof peak located approximately 500' west of Maryland 182, south of Bel Pre Road.
34	One (1) two-story, single family, frame residence located on west side of Maryland 182 opposite Atwood Drive with access to Maryland 182. The building is an historic inventory site.
35	One (1) single family, two-story, frame dwelling located on east side of Maryland 182 south of Atwood Drive with access to Atwood Drive and Maryland 182. This structure is an historic inventory site. This structure would be taken in right-of-way under Alternates 2 & 3. Relocation on the same property is being considered.
36	Two (2) single family brick and frame residences located on east side of Maryland 182 at Marigold Lane. (Layhill Gardens subdivision)

7. Air Quality Impacts
(Refer to Figure IV-1A and IV-1B for Receptors)

An air quality analysis has also been completed for this project. The Technical Air Quality Report (dated March, 1980), summarized below, is available for review at the Maryland Department of Transportation, State Highway Administration, 300 West Preston Street, Baltimore, Maryland 21201. The objectives of this air quality analysis were to: compare the carbon monoxide (CO) concentrations estimated to result from the traffic configurations and volumes of each alternative with the State and National Ambient Air Quality Standards (S/NAAQS). The NAAQS and SAAQS are identical for CO.

To meet these objectives, a microscale CO pollutant diffusion simulation analysis, based on free-flow traffic conditions and an estimate of worst-case CO emissions at selected signalized intersections, was conducted. This analysis consisted of calculating one- and eight-hour CO concentrations resutling from automobile emissions at various receptor sites. All calculations were performed for 1986 (year of completion) and 2006 (year of design). The emission factors were obtained from the EPA program MOBILE1, and line source CO dispersion estimates were calculated using the EPA program HIWAY (A Gaussian dispersion-statistics model). CO emissions generated by vehicles idling at intersection traffic signals were also factored into results where required.

TABLE I
SUMMARY OF NOISE IMPACTS
MARYALND ROUTE 182
(LAYHILL ROAD)

ALTERNATE		NO-BUILT ALT. (ALTERNATE 1)	ALTERNATE 2	ALTERNATE 3
NO. OF NOISE SENSITIVE AREAS		38	34	34
	RESIDENCES/ APT. BLDGS.	74/3	67/3	67/3
	SCHOOLS	1-ELEMENTARY 1 DAY SCHOOL CAMP	1-ELEMENTARY 1 OAY SCHOOL/CAMP	1-ELEMENTARY 1 DAY SCHOOL/CAMP
	CHURCHES	2	2	2
	OTHER	PROPOSED SUBDIVISION--4 POTENTIAL IMPACT AREAS GOLF COURSE	GOLF COURSE	GOLF COURSE
SECTION 4f AREAS				
	HISTORIC	7	5 ~~4~~	5 ~~4~~
	PARKS	1 (PROPOSED)	1 (PROPOSED)	1 (PROPOSED)
NO. OF VIOLATIONS OF DESIGN NOISE LEVELS		~~12~~ 11	10 ~~8~~	10 ~~8~~
NO. OF SIGNIFICANT NOISE LEVEL INCREASES (11-15dBA)		10	12	12
NO. OF SEVERE NOISE LEVEL INCREASE (> 15 dBA)		1	5	5
TYPE OF ALTERNATE ACCESS CONTROL		UNCONTROLLED	PARTIALLY CONTROLLED	PARTIALLY CONTROLLEO

OESIGN NOISE LEVELS - dBA

LEQ (h)[1]	L10 (h)[2]
67 (EXTERIOR)	70 (EXTERIOR)

OESCRIPTION OF ACTIVITY CATEGORY

B) PICNIC AREAS, RECREATION AREAS, PLAYGROUNOS, ACTIVITY SPORTS AREAS, AND PARKS WHICH ARE NOT INCLUDED IN CATEGORY A ANO RESIDENCES, MOTELS, HOTELS, PUBLIC MEETING ROOMS, SCHOOLS, CHURCHES, LIBRARIES, AND HOSPITALS.

[1] LEQ (h) - THE EQUIVALENT STEADY STATE SOUNO LEVEL WHICH WOULD CONTAIN THE SAME ACOUSTIC ENGERY AS THE TIME-VARYING SOUND LEVEL FOR A PERIOD OF ONE HOUR.

[2] L_{10} (h) - THE SOUND LEVEL THAT IS EXCEEDED 10 PERCENT OF A ONE HOUR PERIOO.

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

NOISE IMPACT ASSESSMENT

Table IV-1A

PROJECT NOISE LEVELS

MARYLAND ROUTE 182
(LAYHILL ROAD)

NSA	DESCRIPTION	AMBIENT L_{10}	DESIGN YEAR (2006) L_{10}		
			ALTERNATE 1 (NO-BUILD)	ALTERNATE 2 (BUILD 4 LANES)	ALTERNATE 3 (BUILD 6 LANES)
1	RESID./APTS.	60 dBA	70 dBA	70 dBA	70 dBA
2	RESID./APTS.	60 dBA	71 dBA*	70 71 dBA*	70 dBA*
3	RESID./APTS.	60 dBA	69 dBA	72 71 dBA*	71 dBA*
4	RESID.	63 dBA	68 dBA	71 dBA*	71 dBA*
5	SCHOOL	52 dBA	62 dBA	61 dBA	61 dBA
6	PROPOSED PARK	52 dBA	62 dBA	63 dBA	63 dBA
7	RESID.	63 dBA	72 dBA*	70 dBA	70 dBA
8	RESID/CHURCH	54 dBA	64 dBA	65 dBA	65 dBA
9	RESID.	64 dBA	73 dBA+	-- **	-- **
10	RESID.	54 dBA	67 dBA	71 dBA*	71 dBA*
11	RESID/HISTORIC	64 dBA	74 dBA*	70 dBA	70 dBA
12	RESID.	54 dBA	64 dBA	63 dBA	65 63 dBA
13	RESID.	57 dBA	65 dBA	65 dBA	65 66 dBA
14	RESID.	59 dBA	69 dBA	68 ~~70~~ dBA	68 70 dBA
15	RES/DAY SCHOOL	47 dBA	66 dBA	65 ~~68~~ dBA	65 67 dBA
16a	PROPOSED SUBDIVISION	52 dBA	64 dBA	68 dBA	68 dBA
~~16b~~	~~PROPOSED~~	~~58 dBA~~	~~68 dBA~~	~~72 dBA*~~	~~72 dBA*~~
~~16c~~	~~SUBDIVISION~~	~~53 dBA~~	~~68 dBA~~	~~70 dBA~~	~~70 dBA~~
17		52 dBA	64 dBA	65 dBA	65 dBA
18	RESID.	63 dBA	70 dBA	71 dBA*	72 dBA*
19	RESID.	60 dBA	67 dBA	67 dBA	67 dBA
20	RESID.	72 dBA*	77 dBA*	72 dBA*	73 dBA*
21	RESID.	62 dBA	71 dBA*	70 dBA	70 dBA
22	RESID.	56 dBA	64 dBA	67 dBA	67 dBA
23	RESID.	73 dBA*	76 dBA*	73 dBA*	73 dBA*
24	RESID.	57 dBA	68 dBA	70 dBA	70 dBA

* FEDERAL DESIGN NOISE LEVEL (TABLE II) EXCEEDED

** AREA TAKEN IN RIGHT-OF-WAY

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

PROJECT NOISE LEVEL

Table IV-1B

PROJECT NOISE LEVELS

MARYLAND ROUTE 182
(LAYHILL ROAD) (CONTINUED)

NSA	DESCRIPTION	AMBIENT L_{10}	DESIGN YEAR ( )L_{10}		
			ALTERNATE 1 (NO BUILD)	ALTERNATE 2 (BUILD 4 LANES)	ALTERNATE 3 (BUILD 6 LANES)
25	RESID.	65 dBA	75 dBA*	69 dBA	70 dBA
26	RESID/HISTORIC	55 dBA	64 dBA	62 dBA	62 dBA
27	RESID/HISTORIC	67 dBA	77 dBA*	-- **	-- **
28	RESID.	59 dBA	70 dBA	70 dBA	70 dBA
29	RESID.	59 dBA	73 dBA*	-- **	-- **
30	GOLF COURSE	59 dBA	67 dBA	66 dBA	66 dBA
31	CHURCH/HISTORIC	59 dBA	72 dBA*	69 dBA	69 dBA
32	RESID.	61 dBA	64 dBA	64 dBA	64 dBA
33	RESID/HISTORIC	46 dBA	57 dBA	59 dBA	59 dBA
34	RESID/HISTORIC	62 dBA	73 dBA*	74 dBA*	75 dBA*
35	RESID/HISTORIC	63 dBA	69 dBA	-- **	-- **
36	RESID.	59 dBA	65 dBA	71 dBA*	71 dBA*

* FEDERAL DESIGN NOISE LEVELS (TABLE II) EXCEEDED

** AREA TAKEN IN RIGHT-OF-WAY

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

PROJECT NOISE LEVEL

Table IV-IC

Background CO levels were projected based upon historical monitoring conducted at a nearby monitoring station on Georgia Avenue, located north of the study area.

Using the RPC (Regional Planning Council) estimate of a two percent area growth rate and MOBILE1 to adjust area CO emission factors, the following projected background CO levels were calculated:

CO, mg/m^3

	one-hour	Eight-hour
1986	4.9	1.5
2006	3.4	1.1

The results of this analysis indicate that violations of the one-hour CO air quality standard will occur due to implementation of the No-Build alternate in 1986 and 2006. The No-Build alternate generally produces levels of CO at the receptor sites which are elevated relative to either Build alternate, due to lower vehicle running speeds and longer vehicle queues predicted for No-Build in the years 1986 and 2006. No violation of either standard is predicted if either Build alternate is implemented. (Refer to Table IV-2 for CO relation to sensitive receptors)

The air quality consistency of this project on a regional level is assessed in the following ways:

(a) The National Memorandum of Understanding between U.S. Department of Transportation and Environmental Protection Agency dated June 14, 1978 formally integrates the transportation and air quality planning processes for transportation projects receiving federal aid highway funds. This Agreement recognizes that the "reduction of air pollution is an important national goal, and must be among the highest priorities of the transportation planning process in areas not meeting primary Air Quality Standards". This process provides for extensive input from the public, local and State transportation, and air quality agencies. In addition, the procedures call for the joint administration of the air quality aspects of the urban transportation planning process between U.S. Department of Transportation and Environmental Protection Agency. This includes joint review of the following documents and activities to ensure that air quality considerations are adequately addressed:

(1) The Transportation Plan for the urban area,

(2) The Transportation Improvement Program (TIP) which identifies projects for implementation,

(3) The State Implementation Plan (SIP). Transportation Control Plan for addressing attainment with Air Quality Standards,

(4) The review process which "certifies" that adequate transportation and air quality planning is being conducted in the urbanized area.

CO CONCENTRATIONS AT EACH SITE, mg/m^3

SITE NO.	DESCRIPTION	TOTAL CO, mg/m^3											
		PEAK ONE HOUR						MAXIMUM EIGHT HOUR					
		ALTERNATE 1		ALTERNATE 2		ALTERNATE 3		ALTERNATE 1		ALTERNATE 2		ALTERNATE 3	
		1986	2006	1986	2006	1986	2006	1986	2006	1986	2006	1986	2006
1	TWO-STORY DWELLING 12327 JUDSON RD.	27.7	20.7	27.7	20.7	27.7	20.7	6.6	5.9	6.6	5.9	6.6	5.9
2	THREE-STORY APTS. 2403 LAYHILL RD.	33.2	46.1	25.2	18.0	26.0	18.8	7.9	8.8	5.5	3.7	5.6	3.0
3	TWO-STORY DWELLING 13001 LAYHILL RD.	39.5	41.8	17.3	21.4	18.4	22.4	8.3	8.2	4.2	4.7	4.5	5.0
4	OAK CHAPEL ARGYLE CLUB RD.	14.0	16.7	5.8	4.9	5.6	4.6	3.7	3.8	2.0	3.0	2.0	2.7
5	SADDLEBROOK E.S. LAYHILL RD.	5.1	3.6	5.1	4.0	5.5	3.9	1.9	1.6	1.8	1.4	1.7	1.4
6	ONE-STORY DWELLING 13440 LAYHILL RD.	11.6	12.6	8.4	8.1	8.5	8.2	3.7	3.6	2.9	2.9	2.9	2.9
7	TWO-STORY DWELLING 14011 LAYHILL RD.	24.8	45.6	10.2	11.4	10.4	11.6	7.7	9.2	3.5	4.0	3.5	2.9

S/NAAQS FOR CO: ONE HR. MAX = 40 mg/m^3
EIGHT HR. MAX = 10 mg/m^3

Table IV-2

b. Through the urban transportation planning requirement of Title 23, United States Code, Section 134, as implemented by the RPC (or TPB/COG) forum, the same state and local agencies responsible for planning transportation projects in the urbanized area are also responsible--from a transportation control plan perspective--for assuring attainment of Air Quality Standards.

c. Therefore, Maryland Route 182 is included in the regional transportation plan and Transportation Improvement Program for the urbanized area and is programmed for federal-aid highway funding. Thus it is subjected to this federal review and project development process. Therefore, the regional consistency of this project is addressed prior to undertaking the final project planning studies presented in this environmental document.

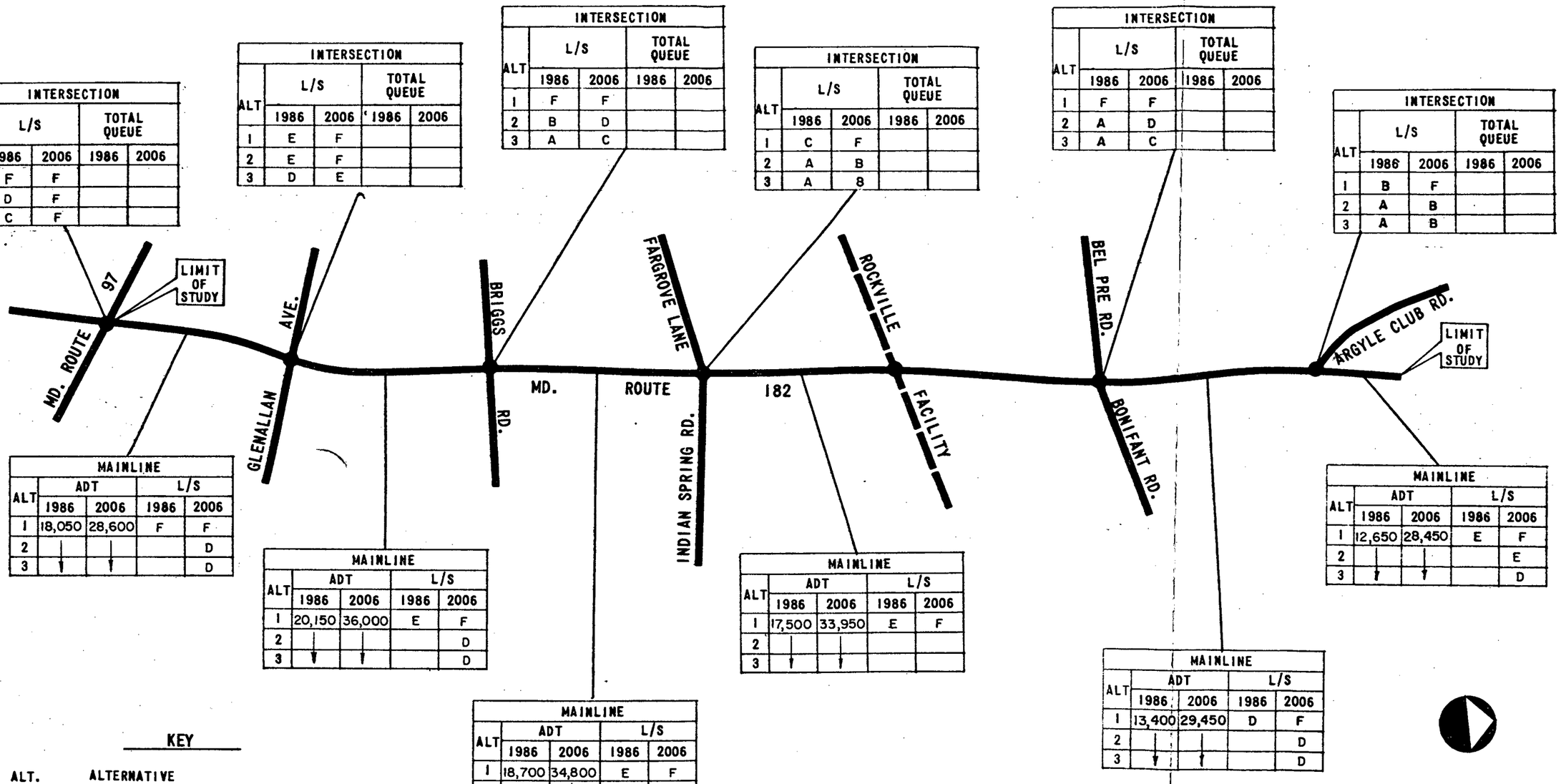
Since regional pollutants such as hydrocarbons and oxides of nitrogen, precursers of photochemical oxidants (smog) are addressed through this regional planning process only carbon monoxide emissions, a more localized pollutant, are being addressed quantatively in this Environmental Assessment.

Based on this analysis of microscale, regional and construction air quality and coordination with the U.S. Environmental Protection Agency and the Maryland Bureau of Air Quality, we find the project consistent with the State Implementation Plan.

8. Traffic Service

Traffic volumes (Average Daily Traffic, ADT), Levels of Service (L/S), and Queue lengths have been developed for the No-Build and the two Build Alternates for the expected year of completion (1986) and the design year (2006). These data are summarized on Figures IV-2A and IV-2B. (For existing traffic data refer to Section II-A) These data also reflect the possible connection with the proposed Rockville Facility as indicated.

Alternate 1, the No-Build alternate, is predicted to experience increasing deterioration in the level of service to the design year (2006) at which time traffic volumes are expected to increase from 115 to 370 percent depending on the roadway segment considered. These increases are independent of the alternate and they are expected to result in intolerable operating conditions. The overall level of service for Alternate 1 in the design year is LOS-F.



INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	F	F		
2	D	F		
3	C	F		

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	E	F		
2	E	F		
3	D	E		

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	F	F		
2	B	D		
3	A	C		

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	C	F		
2	A	B		
3	A	B		

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	F	F		
2	A	D		
3	A	C		

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	B	F		
2	A	B		
3	A	B		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1	18,050	28,600	F	F
2	↓	↓		D
3	↓	↓		D

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1	20,150	36,000	E	F
2	↓	↓		D
3	↓	↓		D

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1	18,700	34,800	E	F
2	↓	↓		D
3	↓	↓		D

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1	17,500	33,950	E	F
2	↓	↓		
3	↓	↓		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1	12,650	28,450	E	F
2	↓	↓		E
3	↓	↓		D

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1	13,400	29,450	D	F
2	↓	↓		D
3	↓	↓		D

KEY

ALT.	ALTERNATIVE
ADT	AVERAGE DAILY TRAFFIC BOTH DIRECTIONS
L/S	LEVEL OF SERVICE RANGE FROM A (FREE FLOW) TO D (MINIMUM DESIRABLE) TO E (CAPACITY) AND F (BREAKDOWN)
TOTAL QUEUE	TOTAL LENGTH OF QUEUE (IN FEET) FOR VEHICLES WAITING AT ALL APPROACHES
N/A	NOT APPLICABLE
N.A.	NOT AVAILABLE

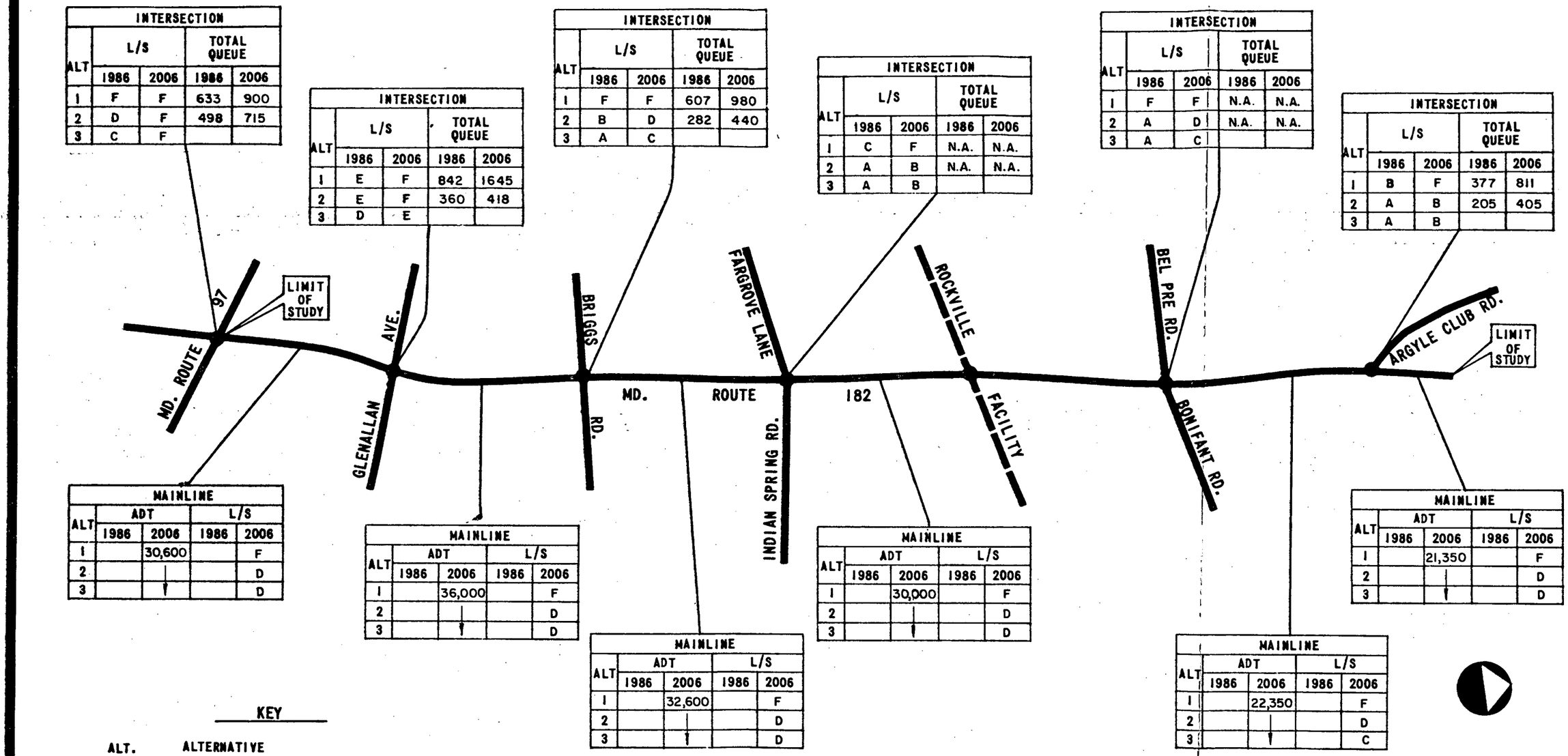
PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

PROJECTED ADT TRAFFIC VOLUMES (w/o Rockville Facility)

Figure IV-2A



INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	F	F	633	900
2	D	F	498	715
3	C	F		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1		30,600		F
2		↓		D
3		↓		D

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	E	F	842	1645
2	E	F	360	418
3	D	E		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1		36,000		F
2		↓		D
3		↓		D

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	F	F	607	980
2	B	D	282	440
3	A	C		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1		32,600		F
2		↓		D
3		↓		D

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	C	F	N.A.	N.A.
2	A	B	N.A.	N.A.
3	A	B		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1		30,000		F
2		↓		D
3		↓		D

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	F	F	N.A.	N.A.
2	A	D	N.A.	N.A.
3	A	C		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1		22,350		F
2		↓		D
3		↓		C

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1986	2006	1986	2006
1	B	F	377	811
2	A	B	205	405
3	A	B		

MAINLINE				
ALT	ADT		L/S	
	1986	2006	1986	2006
1		21,350		F
2		↓		D
3		↓		D

KEY

ALT.	ALTERNATIVE
ADT	AVERAGE DAILY TRAFFIC BOTH DIRECTIONS
L/S	LEVEL OF SERVICE RANGE FROM A (FREE FLOW) TO D (MINIMUM DESIRABLE) TO E (CAPACITY) AND F (BREAKDOWN)
TOTAL QUEUE	TOTAL LENGTH OF QUEUE (IN FEET) FOR VEHICLES WAITING AT ALL APPROACHES
N/A	NOT APPLICABLE
N.A.	NOT AVAILABLE

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182

(LAYHILL ROAD)

Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

PROJECTED ADT TRAFFIC VOLUMES (w/Rockville Facility)

Figure IV-2B

Alternate 2 and Alternate 3, the Build Alternates, exhibit a significantly higher level of service in the design year (2006) for the same ADT traffic demand. Both alternates maintain a consistent level of service (LOS-D) throughout the improvement corridor which satisfies the design year planning criteria. This level of service is maintained even with the predicted Rockville Facility traffic volume added to the demand, assuming no additional signalized intersections at the Rockville Facility. It should be noted that the comparison of levels of service between Alternate 2 and Alternate 3 reveals no significant difference in service between the Build alternates. This finding is the result of the constraints imposed on roadway levels of service by the capacity of major intersections. Therefore, the overall level of service is largely determined by the capacity of intersections. Both Build alternates experience a progressive deterioration in the intersection level of service as they approach Maryland Route 97. The level of service for all the alternates is LOS-F at that juncture. This is due in part to the influence of downstream intersections and, in particular the intersection of Maryland Route 97 and Randolph Road.

9. Highway Safety

As was noted in Section II-A of this document, the existing intersections of Maryland Route 182 at Maryland Route 97 and Maryland Route 182 at Glenallan Road have been designated High Accident Intersections (HAI). Additionally, segments have been designated High Accident Locations (HAL). If Alternate 1 is selected, these conditions are expected to remain and additional HAI and HAL designations are probable in other areas. The existing continuous geometric deficiencies are the primary factors in these accident occurrences and the implementation of either Build Alternate should alleviate these conditions. The extent of saftey improvement will be difficult to evaluate due to new more stringent accident reporting procedures.

The type of collisions on the existing facility which exceed the weighted statewide averages are opposite direction and left turn collisions. Alternate 1, the No-Build, would not alleviate the incidence of these collisions. Alternate 2 and Alternate 3 both have a divided roadway and raised median traffic channelization feature which could eliminate many of these collisions. This feature would preclude mid-block left turns and present a barrier to preclude most opposite direction collisions. The inclusion of signalized left turning lanes at major intersections as proposed in Alternates 2 and 3 would also serve to reduce the incidence of these type of turning collisions. Alternate 1, by contrast, does not include any channelization north of Glenallan Road.

The existing roadway characteristics are not favorable to the use of bicycles or pedestrian usage. The provision in Alternates 2 and 3, of exclusive use marked bicycle lanes will allow safer operation for bicycle commuters as the demand for this mode of alternative transportation increases. Sidewalks and bus bays as proposed in Alternates 2 and 3 will allow for safer pedestrian commuting as well as encourage public transit usage.

Both Build alternates propose the inclusion of a frontage road between Saddlebrook Lane and Briggs Road to serve 18 residences on the east side of the improvement. Access to these residences is presently by driveways which are closely spaced. The proposed frontage road would eliminate vehicles backing directly into the traffic lanes and thereby reduce the potential for access related collisions in this location.

10. Access

a. Alternate 1 - If the No-Build Alternate were to be selected, no changes in the uncontrolled access within the study area would occur. All movements that are now possible, would remain as they now exist. Significant functional impairement would occur with increasing volumes of traffic and consequent congestion. Access to proposed regional transportation improvements would be severely impacted due to congestion.

b. Alternates 2 and 3

Access and traffic channelization for both Build Alternates is identical. Uncontrolled midblock left turning access to businesses, residences and services on opposing roadways would be eliminated by a raised median throughout the improvement. Access to these facilities would then be at the most convenient median crossover. Access along the same roadway would remain uncontrolled except at the frontage road area where access would be controlled by entrance and exit slip ramps. The regulation of individual entrances to either Alternate would continue by permit.

11. Maintenance of Traffic

Alternate No. 1 - If the "No-Build" Alternate were selected, no construction would be undertaken and no disruption of existing traffic patterns would take place.

Alternates 2 and 3, the Build Alternates - If either alternates were selected, major construction activities would be necessary. A traffic management plan containing details of construction scheduling and temporary traffic routing would be developed during the final design phase. This plan will be designed to move traffic through the construction zone in a manner that is conducive to the safety of the motorists and construction workers.

It is anticipated that, due to the degree of urbanization present and the physically constrained right-of-way, convenient access to businesses and residences may be signficantly impaired during construction. Advantage has been made of the existing stream crossing structure immediately north of Hathaway Drive to maintain traffic across the area during construction of the northbound roadway and structure.

Impacts on local traffic movements, if either Alternate 2 or 3 were selected, are summarized as follows:

a. Local access to adjacent properties would at times require the use of temporary drives maintained through construction sites.

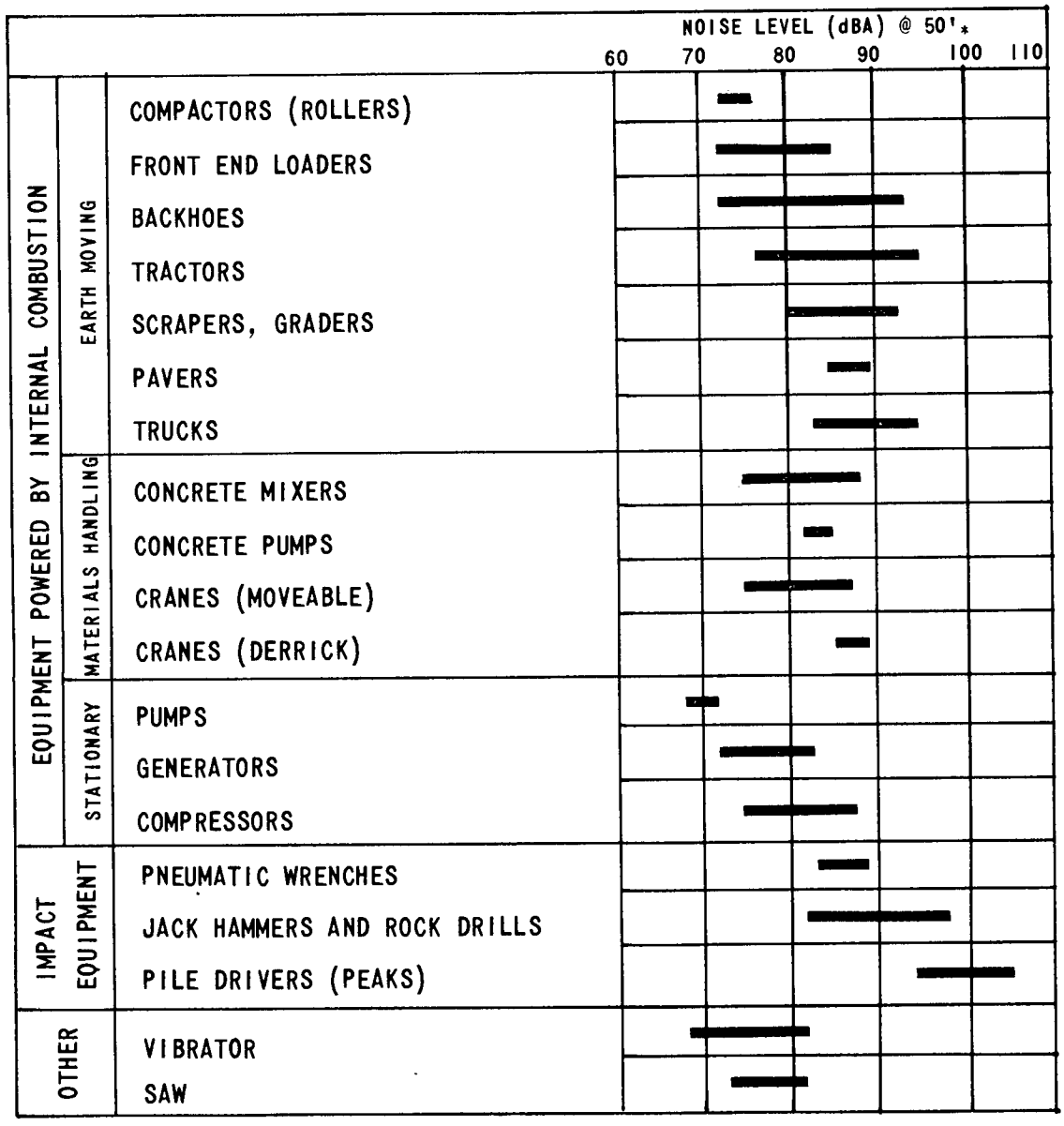
b. Normal traffic patterns on adjacent local streets may be temporarily altered as local traffic detours to avoid construction sites.

c. Although all reasonable uses of traffic barriers, signs, signals, special pavement markings, and flagmen would be employed during construction, traffic congestion through the construction site would increase over presently experienced levels. Travel time through the area would be variably lengthened during peak traffic periods, depending upon the specific construction activities in progress. Both Build Alternates are equally disruptive to local traffic moments.

12. Construction Impacts

If Alternate 1, the No-Build, is selected, there would be no construction impacts. If either of the "Build Alternates" are selected, the immediate project area would experience temporary inconveniences due to construction activities which would occur over an approximately two (2) year period. These inconveniences would result from slowing of traffic through construction zones, temporary property accesses, and the noise, dirt and visual impacts of and construction activities in relatively close proximity to adjacent improved properties. If Alternate 3, the six lane facility, is selected, then the construction impacts, discussed therein, would be marginally greater than the impacts under Alternate 2 due to the greater width.

Noise impacts at construction sites are potential problems and since noise levels produced by construction equipment are higher than those normally associated with highway traffic, present levels will be exceeded during construction (see Table IV-3). However, there are no hospitals or other sensitive receptors which would require exceptionally quiet conditions in the study area. Normal noise control measures, such as proper maintenance of equipment mufflers and restricting working hours, should prove effective in minimizing noise impact during construction.



NOTE: BASED ON LIMITED AVAILABLE DATA.

REFERENCE: HIGHWAY NOISE REPORT FOR U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION AND MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION FOR ARUNDEL EXPRESSWAY, MD. RTE. 648 TO MD. RTE. 100 AND ALTERNATE CONNECTIONS TO MD. RTE. 2, REGNANI ASSOCIATES, INC. 1975.

* THESE FIGURES REPRESENT THE NOISE LEVELS AT A DISTANCE OF 50 FEET FROM THE EQUIPMENT. THE NOISE LEVELS AT 100 FEET WOULD BE APPROXIMATELY 60 dBA LESS THAN THOSE SHOWN HERE, AND THE NOISE LEVELS AT 200 FEET WOULD BE APPROXIMATELY 12 dBA LESS THAN SHOWN HERE.

PROJECT PLANNING STUDIES

MARYLAND ROUTE 182
(LAYHILL ROAD)
Georgia Avenue to Argyle Club Road

STATE PROJECT M581-151-371

CONSTRUCTION EQT. NOISE RANGES

Table IV-3

The following measures will be taken to prevent or minimize other construction impacts if a "Build Alternate" is selected:

- Care will be taken during construction to prevent significant temporary diversions of local drainage flows, and to prevent siltation or other blockage of local drainage ditches, drainage pipes, culverts, etc. Sediment traps shall be utilized to trap sediment-laden water before it leaves the construction site.

- In order to prevent introduction of additional sediment loads into receiving waters or local storm water drainage systems, bare earth areas would be seeded and stabilized immediately after the completion of grading.

- Sprinkling or other approved methods would be employed to control dust during construction operations.

- Solid wastes would be disposed of off the site. On-site burning would be prohibited. No hazardous, toxic or petroleum wastes would be buried or otherwise disposed of on the construction site.

13. Cost

Alternate 1, the No-Build Alternate, would require no expenditure for construction or right-of-way acquisition. The approximate total cost of Alternates 2 and 3 are given in Table IV-4. (Below)

Category	Alternate 2	Alternate 3
Roadway Construction	6,923,000	8,652,000
Structures	500,000	600,000
Frontage Road	168,000	168,000
Drainage	1,065,000	1,150,000
Sub-Total	8,656,000	10,570,000
Administration	195,000	195,000
Total Roadway Construction	8,851,000	10,765,000
Right of Way	1,453,000	1,666,000
Relocation Assistance	90,000	90,000
Utilities Relocation	600,000	600,000
Total (includes 10% contigency)	12,093,000	14,433,000

V. COMMENTS AND COORDINATION

V. COMMENTS AND COORDINATION

INTRODUCTION:

The following lists reference pertinent coordination by the State Highway Administration with Federal, State and Local agencies and community organizations during the development of the Maryland Route 182 Project Planning Study.

As an aid to the reviewer, this project coordination has been listed by categories, including:

A. Public Meetings and Hearings
B. Environmental
C. Archeological and Historic
D. Other (Community Meetings, etc.)

Important letters resulting from these coordination efforts are reproduced on the following section by category in chronological order. These letters are indicated by an asterisk. All remaining letters and memoranda are available for inspection at the State Highway Administration, Bureau of Project Planning, 300 West Preston Street, Baltimore, Maryland 21201.

A. PUBLIC MEETINGS/HEARINGS

Date	Meeting
May 10, 1971	Informational Public Meeting
May 24, 1971	Location/Design Public Hearing, Bel Pre Elementary School
May 19, 1972	Informational Public Meeting in Rockville
March 6, 1980	Alternates Public Meeting Saddlebrook Elementary School 12701 Layhill Road Glenmont, Maryland

B. ENVIRONMENTAL

March 17, 1980*	Letter from Department of Health and Mental Hygiene, Maryland Environmental Health Administration, finding air quality analysis not inconsistent with their programs, plans and objectives.
June 6, 1980*	Letter from Maryland Water Resources Administration outlining their findings and position on floodplain crossing requirements.

C. ARCHEOLOGICAL AND HISTORIC

Date	Meeting
June 22, 1979*	Letter from Maryland Historical Trust identifying historic sites, districts, lands, and boundaries in the project area.
April 17, 1980*	Letter from Maryland Geological Survey stating that the proposed Build Alternates do not impact an "area of archeological potential."
August 21, 1980*	Letter from Maryland Historical Trust rescinding limits and classification of historic district.

D. OTHER

March 1, 1974	Meeting with Montgomery County Council, Civic Associations and Citizens.
February 12, 1980	Letter from Montgomery County, Maryland, Office of Transportation Planning, regarding future bus service to a fringe future parking lot at Maryland Route 97 and Maryland Route 609.
Undated*	Letter from Strathmore-Bel Pre Civic Association, Inc. to Representative Barnes expressing desire to see several "Special Projects" solutions.
June 25, 1980	Meeting with Layhill Civic Association and local elected officials regarding improvement schedules (at Bel Pre Elementary School)
July 14, 1980*	Letter from Maryland-National Capital Parks and Planning Commission re: Parks.
July 16, 1980	Field review with representatives of Layhill Civic Association to identify maintenance requirements and road segments for Special Project consideration.

- APPENDICES -

APPENDIX A

GLOSSARY

GLOSSARY

(These terms may appear either in the environmental document or as noted on the graphics.)

Aux. Lane : Auxiliary Lane
The portion of roadway adjoining the traveled way for parking, speed change, or for other purposes supplementary to the thru-traffic movement.

A.D.T. : Average Daily Traffic
The total volume of auto and truck traffic passing a given point in both directions during a given time period (greater than one day and less than one year) in whole days, divided by the number of days in that time period.

Control of Access : Full - Complete restriction of access to an arterial highway except at interchanges. Grade separations for all crossings.

Uncontrolled - Access control limited only by SHA police powers. All crossroads, driveways, etc. may have points of ingress or egress, as permitted by SHA.

Design Hour Volume (DHV) : The percent of average daily traffic (ADT) generally accepted as the criterion used in the geometric design of rural and urban highways. Ideally, the 30th highest hourly volume during a year, the DHV is commonly found to vary from either 8 percent to 12 percent of the ADT.

Design Speed : A speed selected for purposes of design and correlation of those geometric features of a highway, such as curvature and sight distance, upon which safe vehicle operations is dependent. Not necessarily related to posted speed limits.

Frontage Road : A road contiguous to and generally parelleling an expressway, freeway, parkway or thru-street and so designed as to intercept, collect, and distribute traffic desiring to cross, enter or leave such highway and which may furnish access to property that otherwise would be isolated as a result of the controlled access. (Also referred to as Service Road.)

Levels of Service : Levels of Service are a measure of the conditions under which a roadway operates as it accommodates various traffic volumes. Influencing factors include speed, travel time, traffic interruptions, maneuvering freedom, safety, driving comfort, economy and, of course, the volume of traffic.

For interrupted flow conditions, such as major highways and arterials with traffic signals, the following Levels of Service apply:

Level A - free flow, no appreciable delay at traffic signals.

Level B - occasional delays at traffic signals.

Level C - speeds and maneuverability closely controlled by volumes. Most drivers restricted from selecting speed, changing lanes or passing. Relatively satisfactory operating speeds.

Level D - Beginning to tax capabilities of street section. Approaching unstable flow. Average overall speed 15 miles per hour. Delays at intersections.

Level E - Volumes at capacity. Unstable flow. Speeds near 15 miles per hour. Continuous back-up at intersection approaches.

Level F - Volumes greater than capacity. Forced flow. Speeds below 15 miles per hour. Continuous back-up at intersection approaches and extending back with excess distributed through the section.

Section 4(f) : Section 4(f) of the Department of Transportation Act requires that publically-owned land from a park, recreation area, wildlife and/or waterfowl refuge, or historic site (including archeological sites) of national significance can be used for Federal-Aid Highway projects only if there is no feasible and prudent alternative to its use, and if the project includes all possible planning to minimize harm to "4(f) land." A Section 4(f) Statement, documenting the considerations, consultations and alternative studies for the determination that there are no prudent and feasible alternatives to the use of such lands, and that all possible planning was done to minimize harm, will be included in the Final Environmental Document.

Median : That portion of a divided highway separating the traveled ways for traffic in opposite directions.

Initial - To be constructed initially.

Ultimate - The configuration subsequent to the future construction.

Outer Separation : A separator between a frontage road or ramp and the roadway (or ramp) of a controlled-access highway.

R/W, R.O.W. : Right-of-Way (Line)
The outer limits inside which the State owns and maintains for highway purposes.

Shldr. : Shoulder
That portion of a highway adjacent and parallel to the traveled roadway for the accommodation of stopped vehicles for emergency use and for lateral support. May or may not be fully paved.

Side Slopes : The slope of earth permissible in given locations, as a ratio of horizontal to vertical measurement. (2:1, 4:1, 6:1.)

A P P E N D I X B

SUMMARY OF THE RELOCATION ASSISTANCE PROGRAM OF THE STATE HIGHWAY ADMINISTRATION

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

All State Highway Administration projects must comply with the provisions of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" (P.L. 91-646) and/or the Annotated Code of Maryland, Article 21, Section 12-201 through 12-209. The Maryland Department of Transportation, State Highway Administration, Bureau of Relocation Assistance, administers the Relocation Assistance Program in the State of Maryland.

The Provisions of the Federal and State Law require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments that are provided for include replacement housing payments and/or moving costs. The maximum limits of the replacement housing payments are $15,000 for owner-occupants and $4,000 to tenant-occupants. In addition, but within the above limits, certain payments may be made for increased mortgage interest costs and/or incidental expenses. In order to receive these payments, the displaced person must occupy decent, safe, and sanitary replacement housing. In addition to the replacement housing payments described above, there are also moving cost payments to persons, businesses, farms, and non-profit organizations. Actual moving costs for displaced residences include actual moving costs up to 50 miles or a schedule moving cost payment up to $500.

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

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Generally, payments for the actual reasonable moving expenses are limited to a 50 mile radius. In both cases, the expenses must be supported by receipted bills. An inventory of the items to be moved must be prepared, and two estimates of the cost must be obtained. The owner may be paid the amount equal to the low bid or estimate. In some circumstances, the State may negotiate an amount not to exceed the lower of the two bids. The allowable expenses of a self-move may include amounts paid for equipment hired, the cost of using the business's vehicles or equipment, wages paid to persons who phycially participate in the move, and the cost of the actual supervision of the move.

When personal property of a displaced business is of low value and high bulk, and the estimated cost of moving would be disproportionate in relation to the value, the State may negotiate for an amount not to exceed the difference between the cost of the replacement and the amount that could be realized from the sale of the personal property.

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 is to be re-established, and personal property is not moved, but is replaced at the new location, the payment would be the lesser of the replacement costs minus the net proceeds of the sale or the estimated cost of moving the item. If the business is being discontinued or the item is not to be replaced in the re-established business, the payment will be the lesser of the difference between the depreciated value of the item in place and the net proceeds of the sale or the estimated cost of moving the item.

If no offer is received for the personal property, the owner is entitled to receive the reasonable expenses of the sale and the estimated cost of moving the item. In this case, the business should arrange to have the personal property removed from the premises.

The owner of a displaced business may be reimbursed for the actual reasonable expenses in searching for a replacement business up to $500. All expenses must be supported by receipted bills. Time spent in the actual search may be reimbursed on an hourly basis, but such rate may not exceed $10 per hour.

In lieu of the payments described above, the owner of a displaced business is eligible to receive a payment equal to the average annual net earnings of the business. Such payment shall not be less than $2,500 nor more than $10,000. 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 at least one other estiablishment in the same or similar business that is not being acquired, and the business contributes materially to the income of a displaced owner.

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 net earnings of the business is considered to be one-half of the net earings 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, with approval of the Federal Highway Administration, may use another two-year period that would be more representative. Average annual net earnings include any compensation paid by the business to the owner, his spouse, or his dependents during the period. Should a business be in operation less than two years, but for twelve consecutive months during the two taxable years prior to the taxable year in which it is required to relocate, the owner of the business is 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, for the tax years in question.

For displaced farms and non-profit organizations, actual reasonable moving costs generally up to 50 miles, actual direct losses of tangible personal property, and searching costs are paid. The "in lieu of" actual moving cost payments provide that a displaced farm may be paid a minimum of $2,500 to a maximum of $10,000 based upon the net income of the farm, provided that the farm cannot be established in the area or cannot operate as an economic unit. A non-profit organization is eligible to receive "in lieu of" actual moving cost payments, in the amount of $2,500.

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
DELMARVA AREA OFFICE
1825 VIRGINIA STREET
ANNAPOLIS, MD 21401

September 29, 1980

Mr. Richard S. Krolak, Chief
Environmental Management
Bureau of Project Planning (Room 404)
State Highway Administration
300 West Preston Street
Baltimore, MD 21201

Dear Mr. Krolak:

This responds to your September 25, 1980, request for information on the presence of Federally listed or proposed endangered or threatened species within the impact area of the proposed modifications of Maryland Route 182 from Maryland Route 97 to Argyle Club Road, Montgomery County, Maryland.

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

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

Please contact Andy Moser (301-269-6324), our Endangered Species Specialist, if you need further assistance.

Sincerely yours,

John D. Green

John D. Green
Area Manager

State of Maryland

ENVIRONMENTAL HEALTH ADMINISTRATION
DEPARTMENT OF HEALTH AND MENTAL HYGIENE
201 WEST PRESTON STREET • BALTIMORE, MARYLAND 21201 • Area Code 301 • 383-3245
Harry Hughes, Governor
Charles R. Buck, Jr., Sc.D. Secretary

March 17, 1980

Mr. Charles R. Anderson, Chief
Bureau of Landscape Architecture
Joppa & Falls Roads
Brooklandville, Maryland 21022

Dear Mr. Anderson:

RE: Contact No. M 581-004-371 Maryland
Route 182--Maryland Route 97 to
Argyle Club Road

We have reviewed the Air Quality Analysis for the above subject project and have found that it is not inconsistent with the Programs' plans and objectives.

Thank you for the opportunity to review this analysis.

Sincerely yours,

William K. Bonta, Chief
Division of Program Planning & Analysis
Air Quality Programs

WKB:fes

cc. Tom Hewitt

THOMAS C. ANDREWS
DIRECTOR

96

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
WATER RESOURCES ADMINISTRATION
TAWES STATE OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401
(301) 269-2265

June 6, 1980

Eugene T. Camponeschi
State Highway Administration
P.O. Box 717
300 West Preston Street
Baltimore, MD 21203

Re: MD Rte. 182 (Layhill Rd)
MD 97 to Argyle Club Rd
SHA Contract No. M-581-151-371
WRA No. 71-PP-0018

Attention: Donald G. Honeywell

Dear Mr. Camponeschi:

I am writing in response to your May 22, 1980 letter regarding study Alternatives 2 and 3 for the above referenced project. In addition, this letter documents the issues discussed at the June 5, 1980 meeting in this office with your Mr. Honeywell. Accordingly, the following comments are provided for your inclusion in planning studies:

1. The proposed B. F. Saul Subdivision will require waterway construction permits from this Agency since work is proposed within a 100 year floodplain. In addition, eventhough stormwater management is proposed on a two year basis in order to comply with Montgomery County criteria, WRA will evaluate all impacts on the 100 year floodplain and make all efforts to coordinate the development with your highway facility.

2. With respect to the unnamed tributary (intermittent stream) to Northwest Branch, a Waterway Construction Permit will be required. It is requested that any proposed channel modifications be kept to a minimum; therefore, a 4 lane facility is preferred over a 6 lane facility.

3. Regarding the other unnamed tributary (perennial stream) to Northwest Branch, a Waterway Construction Permit will also be required at this location. Detailed hydrologic and hydraulic studies will have to be developed and all impacts to the floodplain will have to be addressed.

4. Changes in storm water runoff will have to be evaluated for the entire project limits. The evaluation will have to follow the guidelines set forth in the Interim Watershed Management Policy (attached).

I trust the comments presented herein are sufficient for your continuation of planning activities. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Kirk Cover
Project Engineer

CKC/bal

Enclosure

cc. Charles G. Wroten
Irvin C. Hughes
C. Carl Schmidt
Thomas W. Hewitt
Richard S. Krolak

aryland Historical Trust

June 22, 1979

Mr. Eugene T. Camponeschi, Chief
Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21203

Subject: Md. Rt. 182, from Md. Rt. 97 to Argyle Club Rd.
M581-004-371. F.A.P. No. SU 9094(2)

Dear Mr. Camponeschi:

At the request of the State Highway Administration, a survey was recently completed by my staff of historic sites in the vicinity of the subject project. This letter supersedes all previous correspondence, statements and agreements made by the Maryland Historical Trust in regard to the subject project. The area surveyed is shown on the attached Map A, and is based on plans shown in the 1974 400' project map with recent minor revisions. All sites previously identified have been re-evaluated. None of the properties appear likely to be eligible for the National Register of Historic Places. The following properties, however, are of local significance, and their historically associated boundaries are described below and shown on Map B:

Oak Chapel (MHT PA 27-10), because of its history. The historically associated property is defined by Argyle Club Road on the west; property line on the north; eastern edge of the cemetery on the east; and on the south, by a line 75' from the south end of the church.

Layhill Store (Hull's Store) (MHT PA 27-11), for its architecture and history. This property includes the log smokehouse to the west of the store. Boundaries are coterminous with both structures.

Champayne-Nicholson House (MHT PA 27-12), for its architecture. Boundaries are defined on the west by a line 50' from the eastern edge of the present roadway; on the north by the property line shown; on the east by a fence line shown; and on the south by the contour line and fence line shown.

Parker Farm (MHT PA 27-13), on the basis of its architecture. Its boundaries are defined by a circle of [illegible] radius from the northeast corner of the Parker house. This does include the log smokehouse identified in previous correspondence as a separate site.

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301)269-2212, 269-2436
Department of Economic and Community Development

Culver Farm (MHT PA 31-1), because of its architecture. Boundaries are defined on the west by the fence line shown; on the north by Indian Head Road; on the east by the line shown; and on the south by the fence line shown.

Connelly House (A), for its architecture. Boundaries include the property line on the north; the contour line on the east; and the lines shown on the south and west sides of the property.

Several structures at the corner of Layhill and Atwood Roads and to the south of this corner comprise a district of local significance (MHT PA 27-14), although they are not significant individually. Boundaries of the district are shown on Map B. The group contains the following structures, also shown on Map B:

1. A'Hearn house, white house on the west side of Layhill Road at Atwood Road.

2. Dark green house on southeast corner of this intersection.

3. Light green house south of #2.

4. Red house on east side of Layhill Road, south of Middlevale Lane.

All sites except the Connelly House are listed in the Maryland-National Capital Park and Planning Commission's Locational Atlas and Index of Historic Sites; under the county's interim preservation ordinance of January 1978, demolition or alteration of sites listed in the Locational Atlas is subject to review by the Montgomery County Planning Board.

Several structures which had earlier been considered potential historic sites no longer exist. These include a house (B) on the east side of Layhill Road north of Indian Head Road, and the blacksmith shop (C) on the southeast corner of Layhill and Bonifant Roads, where a new bank is under construction. Both sites are slightly out of the path of proposed construction. Little remains of the barns (D) south of Atwood Road on the east side of Layhill Road, which are outside the area of proposed construction. In addition, nothing appears to remain of the Van Horn Ruins (E) which had previously been identified at the northeast corner of Layhill and Bonifant Roads. This site is not in the path of proposed construction, but like B, C, and D, if the alignment should shift to the east, then a historical archeologist should be consulted to determine any possible significance and boundaries.

Sincerely,

J. Rodney Little
State Historic
Preservation Officer

JRL/PW/var.
cc: M.Ballard; M.Edwards; E.McGuckian; G.Rothrock; P.Weissman

STATE OF MARYLAND

100

MARYLAND GEOLOGICAL SURVEY

THE JOHNS HOPKINS UNIVERSITY
MERRYMAN HALL
BALTIMORE, MARYLAND 21218

Division of Archeology
17 April 1980

Mr. Eugene T. Camponeschi
Chief, Bureau of Project Planning
State Highway Administration
P. O. Box 717
300 West Preston Street
Baltimore, Maryland 21203

Re: Maryland Route 182
Archeological Involvement

Dear Mr. Camponeschi:

Tyler Bastian has asked me to respond to your 26 March 1980 letter to him concerning the subject project. On 11 April 1980, I conducted a brief field check of the area designated "area of archeological potential" in my 16 May 1979 report.

The area currently consists of a heavily overgrown cornfield and exhibits very poor surface visibility. No artifacts were observed on the surface of the field, but the results of my walkover are considered inconclusive due to the poor field conditions. The area is still believed to have relatively high archeological potential due to its elevated position overlooking a middle order stream and the area's proximity to Northwest Branch, a tributary of the Anacostia River and major waterway in this section of Montgomery County.

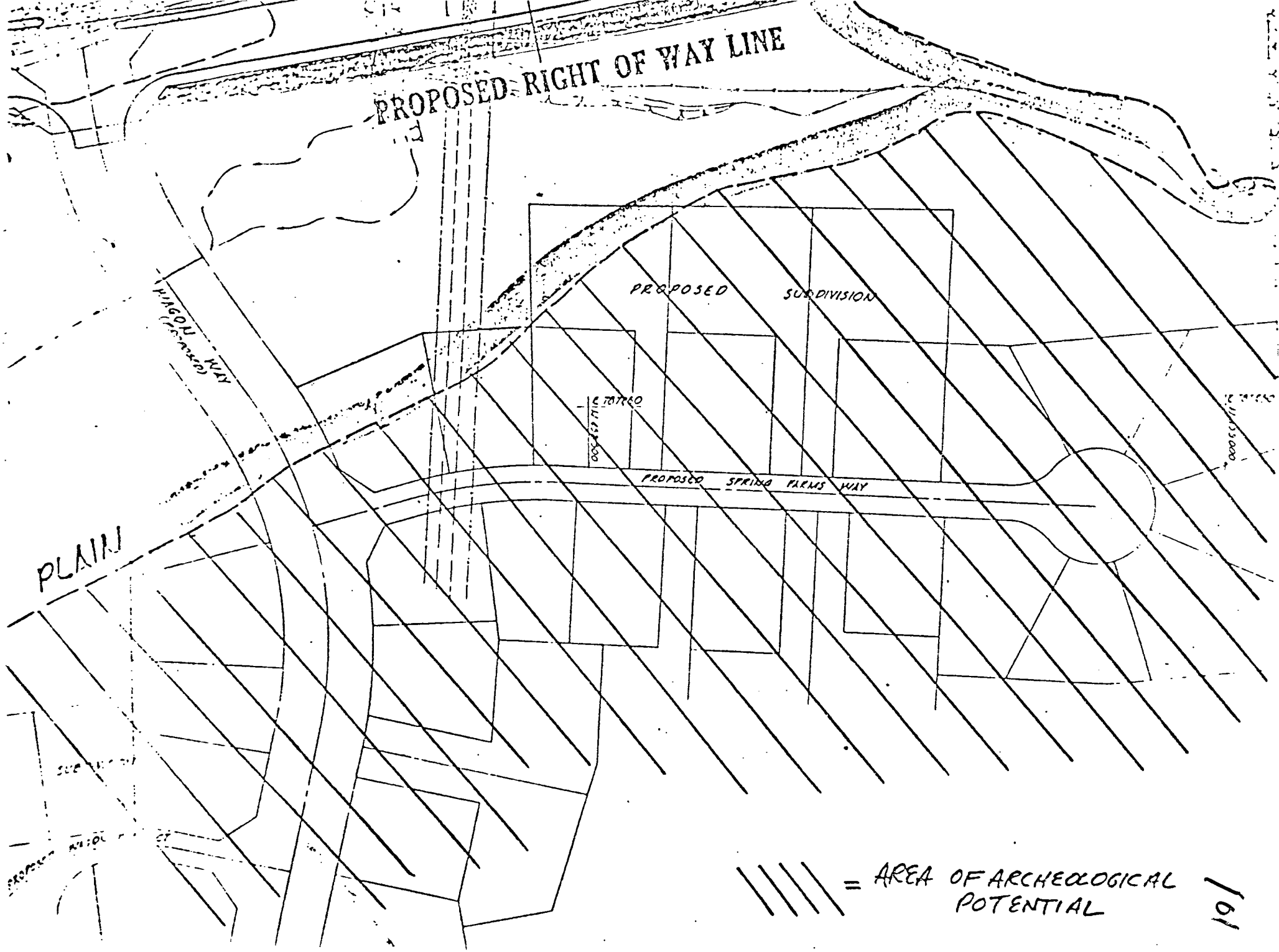
The area of archeological potential (depicted on the attached map) is located entirely outside of the proposed right-of-way and will not be subject to direct impact. Indirect impact as a result of the highway project should be avoided.

If I can be of further assistance, on this matter, please contact me.

Sincerely yours,

Dennis C. Curry
Archeologist

cc: Richard S. Arold
J. Rodney Little
Thomas W. Hewitt


PROPOSED RIGHT OF WAY LINE
PROPOSED SUBDIVISION
PROPOSED SPRING FARMS WAY
PLAIN
= AREA OF ARCHEOLOGICAL POTENTIAL

Office of Transportation Planning

MONTGOMERY COUNTY, MARYLAND
6110 EXECUTIVE BOULEVARD, FIFTH FLOOR, ROCKVILLE, MARYLAND 20852 • 301 468-4065

102

February 12, 1980

RECEIVED

Md. 182

Mr. Hal Kassoff, Director
Office of Planning and
Preliminary Engineering
State Highway Administration
300 West Preston Street, Room 209
Baltimore, Maryland 21201

Dear Mr. Kassoff:

This is in response to your February 1, 1980 letter regarding transit service to the future fringe parking lot at Md. 97/Md. 609.

The bus service during the peak will be local to Glenmont and then express to Silver Spring. During off-peak periods, the service will be local to Silver Spring. The service actually entering the lot will be the existing Y9 buses (peak only) which now begin or end at Leisure World. The Georgia Avenue pullovers will serve the Olney Y8 and Y9 buses. For further information on transit departures, you may contact Mr. Dave Bone, Division of Transit Services, Montgomery County Department of Transportation, 468-4065.

We have been looking forward to the construction of this lot for some time and it is encouraging to see that the plans are progressing.

In regard to the feasibility of a fringe lot along Md. 182, we believe that few commuters heading to the Glenmont Metrorail Station would utilize such a facility if it were located south of Bel Pre Road. The remainder of the trip to the station is far too short. One or more minor parking areas intended to facilitate carpooling in more distant locations, however, would be practical. The recommended size of the lot(s) would be in the range of 10 - 30 spaces, depending upon the location and number of such lots.

Thank you for requesting our comments on this proposal and please keep us informed on the State's future plans.

Sincerely,

John J. Clark
Acting Director
Office of Transportation Planning

Strathmore BEL PRE

CIVIC ASSOCIATION, INC.
P.O. BOX 6276
SILVER SPRING, MD. 20906

Representative Barnes
8534 Second Avenue
Silver Spring, MD 20910

Dear Sir;

On 6 March representatives of the Strathmore Bel Pre Civic Association, which represents 400 households, attended the Maryland State Highway Administration's public meeting relative to "improvements" for Maryland Route 182, Layhill Road. Alternative plans for improving Layhill Road, to solve current unsafe conditions and to satisfy projected year 2006 traffic esimates, between Georgia Avenue and Argyle Club Road (a distance of two-and-one-half miles), were presented. There is much concern in our community about the Project Planning team's recommendation which is to construct, after 1985 at an estimated cost of $14,059,000, a four-lane divided highway.

The postulated conditions presented by the Planning Team for the year 2006 take little note of current trends, i.e., reduced construction, gasoline conservation and inflation. The Project Team is using projections which show minimal use of Metro buses (mini, intermediate and regional are planned for this area) and Metro rail at Glenmont; also, negligible car and van pooling. The projected traffic growth percentages contained in the Team's brochure are based on Layhill Roads connection to the proposed Rockville Facility, which might not occur.

The concern in our community is that a four-lane divided highway would destroy the residential character of Layhill Road. There is disbelief that Layhill Road will ever be a major commuter route, based on estimates that over half of those which live in this area work in Montgomery County and will not be commuting via Layhill Road.

It is our contention that the Planning Team is moving in the wrong direction based on highly questionable projections. We believe that Layhill Road could be satisfactorily improved by several Special Projects. An example of such a Special Project being that which recently improved the intersection of Longmead and Layhill Roads which involved: acquisition of right-of-way, lowering of a hill, regrading, and creating a turn-off lane. Another Special Project is also being considered for the intersection of Layhill Road and Glenallan Avenue. It would seem that a plan dedicated to use of several small Special Projects rather than a major road project would better serve the interest of the residents of this community at a reduced overall cost.

It is requested that you inquired as to why the State Highway Administration will not seriously entertain either a "less impacting" road improvement alternative, or a series of Special Projects to remedy the specific unsafe conditions which currently exist on Layhill Road. To be considered seriously these other alternatives should have no time impact on current proposals.

cc:
Director, Department of Transportation
Montgomery County Government

Mr. James Crawford
Maryland-National Park and Planning Commission

Director, Department of Enviromental Protection
Montgomery County Government

State Highway Administation
300 West Preston Street Baltimore, MD 21201
Mr. Hal Kassoff, Director
Office of Planning and Preliminary Engineering

9300 Kenilworth Avenue Greenbelt, MD 20770
Mr. William Shook, District 3 Engineer

R.C. Burrell
President

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THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
8787 Georgia Avenue • Silver Spring, Maryland 20907

July 14, 1980

Re: Contract No. M 581-151-371
MD Route 182 (Layhill Road)
MD Route 97 to Argyle Club Rd.

Mr. Robert J. Houst, Acting Chief
Bureau of Project Planning
State Highway Administration
P. O. Box 717
300 West Preston Street
Baltimore, Maryland 21203

Dear Mr. Houst:

In response to your recent request of May 16, 1980, we have reviewed the refined alternatives for improvement to Maryland Route 182 as related to existing and proposed park and recreational facilities and hereby offer the following information:

The proposed Glenfield Local Park is a surplus school site, which has been conveyed from the Montgomery County Board of Education to the Montgomery County Government. It is proposed in the Adopted Glenmont Sector Plan for a future local park. If and when this property is conveyed from Montgomery County to M-NCPPC, we would request that only that portion of the site outside of your proposed right-of-way requirements for the widening of Layhill Road be conveyed to M-NCPPC, with the residue retained by the County and conveyed directly to the State. Although we had some preliminary drawings prepared for the future park development of this site, we see no conflict whatsoever in the design and layout of these facilities with the proposed right-of-way requirements for Layhill Road.

In the case of the Middlevale Local Park, this Commission does own the property that would be affected by the proposed highway improvement; however, the park is not considered to be significant due to the fact that it is currently undeveloped. When we bought this land for park and recreation purposes, we did so with the knowledge that a portion of the western side of the property would be needed at some future time for reconstruction of Layhill Road. The refined alternates which we reviewed indicated there would be no adverse affect on the park and that the additional right-of-way required would be within those limits that have been anticipated for highway use. We have not yet had a Site Development Plan prepared for this park.

The only information which we can provide at this time is a tentative location for future access to the park. We do not anticipate that the Site Development Plan would be approved prior to this roadway construction and, therefore, request that curb cuts be included in your final design planning at the location to be specified. We will forward that location and pertinent information to you as it becomes available. The curb cuts included in your final design should be approved by our landscape architect, prior to construction.

If there is any additional information you need, please contact me.

Sincerely,

Myron B. Goldberg, Chief
Park Planning & Acquisition

MBG:pa

cc: Ed Ferber

Rec'd 107

Maryland Historical Trust

August 21, 1980

STATE HIGHWAY ADMINISTRATION PROJECT PLANNING

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
Maryland Department of Transportation
300 West Preston Street
Baltimore, Maryland 21203

RE: Md. Rt. 182 (Layhill Road) from Md. Rt. 97 to Argyle Club Rd., Contract No. M 581-151-371 F.A.P. No. SU 9094 (2)

Dear Mr. Schneider:

At the request of the State Highway Administration, the Historic District on Layhill Road south of Atwood Drive, listed as MHT PA 27-14 in previous correspondence, was reevaluated in a field survey on August 21, 1980. Because of extensive modern intrusion in the District, the boundaries are no longer justified. Accordingly, the four sites in the area of inventory quality will henceforth be listed individually as follows and with boundaries as indicated on the attached map:

MHT PA 27-14 A	A. Hearn house, white house on the west side of Layhill Road at Atwood Drive
27-14 B	Dark green house on southeast corner of Layhill Road and Atwood Drive
27-14 C	Light green house south of B. across from Post Lane
27-14 D	Red house on east side of Layhill Road, south of Middlevale Lane

It is noted that the State Highway Administration is willing to mitigate the impact of the proposed improvement on Site 27-14 B by the removal of the house back from the right-of-way.

Sincerely,

J. Rodney Little,
State Historic Preservation Officer

21401 (301)269-2212 269-2438