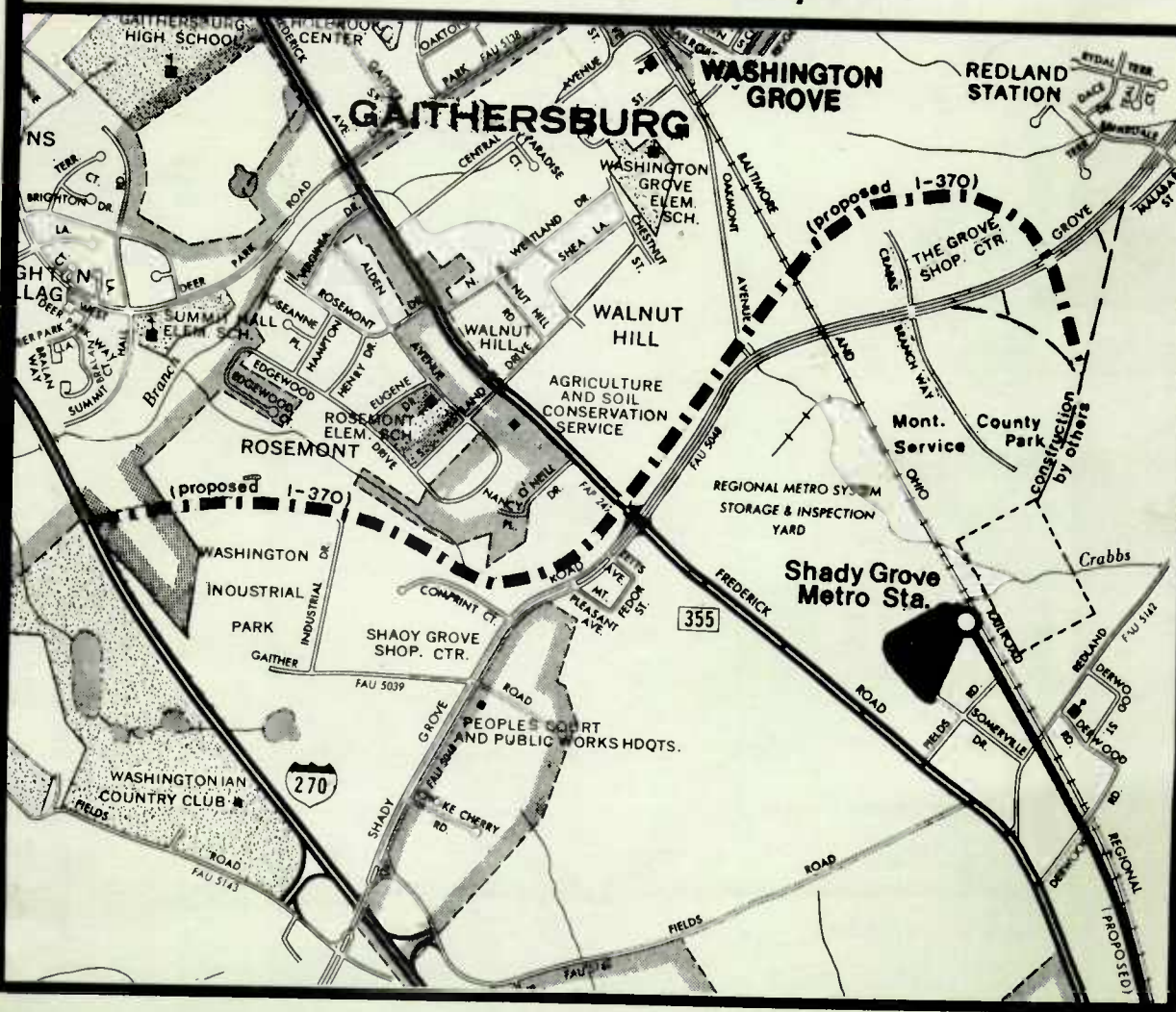
FINAL ENVIRONMENTAL STATEMENT

Contract No. M-248-151-372
F.A.P. No. I-370-1(1)0
Interstate Route 370
From West of I-270 To The Shady Grove Metro Station Access Road in Montgomery County, Maryland



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

and
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

REPORT NUMBER: FHWA-MD-EIS-82-02-F

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REGION III

Interstate I-370
From I-270 to the Shady Grove Metro Station
in Montgomery County, Maryland

FINAL ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to 42 U.S.C. 4332 (2) (C)

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

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

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7/19/82
DATE

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Hal Kassoff
For Md. State Highway Administration

8/4/82
DATE

Knight A. Stearns
For Federal Highway Administration

The purpose of the project was to develop and evaluate roadway alternates to provide safe and efficient access to the Shady Grove Metro Station. The Selected Alternate, Alternate 3 Modified, would provide improved interstate access from Interstate 270 and areas to the north and west to the Metro Station. The project is included in the plans for the area as designated in the Shady Grove Sector Plan.

Environmental impacts associated with the selected alternate include Right of Way acquisition and homes and businesses, minor floodplain involvement, and in some areas Federal Design Noise Levels are exceeded. All of the impacts will be adequately mitigated. Proposed mitigation measures are described in the document.

FILE EXHIBIT 3

Maryland Department of Transportation
State Highway Administration

William K. Hellmann
Secretary

Hal Kassoff
Administrator

October 22, 1984

Contract No. M 248-503-372
Interstate Route 370
I-270 to 3000 ft. west of
Maryland Route 355 including the
I-270/I-370 Interchange

Supplemental 4(f) Evaluation

Transmitted for your review and comment are copies of the subject document. The document has been prepared in accordance with CEQ Regulations, DOT Order 5610.1c and the revised Federal-Aid Highway Program Manual, Volume 7, Chapter 7, Section 2.

You are requested to provide comments on or before December 21, 1984. Please feel free to contact me, or send your comments to:

Mr. Louis H. Ege, Jr., Acting Chief
Bureau of Project Planning
State Highway Administration
707 North Calvert Street (Rm. 310)
Baltimore, Maryland 21202

Very truly yours,

Neil J Pedersen

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

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Gaithersburg, Maryland 20877

Maryland State Highway Administration
- Bureau of Highway Design
- Bureau of Landscape ✓
- Office of Real Estate

12/7/84 5
BAB

M 248 - 503-372
I 370 I 270 to 3000' w of 355

[illegible] 4f [illegible] /84

p4 [illegible] Summit Hall Park 1.6 ac
Mudd[illegible] Branch Park .32 ac

not presently used and
All [illegible] required is [illegible] planned for recreational activity use.
p7 [illegible] fill slopes [illegible] [illegible]
p8 revegetation [illegible] - parks & recreation requirements

in other words no commitments

SUMMARY

1. ACTION

Federal Highway Administration
Administrative Action Environmental Statement

( ) Draft (X) Final
( ) Section 4(f) Evaluation

2. CONTACTS

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

Mr. Roy Gingrich, District Engineer
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3. DESCRIPTION OF SELECTED ACTION

The selected action is construction of an Interstate highway (I-370) in Montgomery County, Maryland, in the vicinity of the Cities of Rockville and Gaithersburg. I-370 will provide access from the I-270 corridor to the northern terminal station for the Washington Metropolitan Area Transit Authority's Shady Grove Route (formerly the Rockville Route). The action is consistent with state planning for multi-modal transportation facilities, and it helps insure maximum use of the public investment in the area's Metro rail transit system. I-370 will also encourage an increased number of person-trips using Metro instead of private automobiles on I-270, thus relieving traffic congestion at the I-270/Shady Grove Road interchange.

The **Selected Alternate, 3E Modified,** would provide an interstate highway along new alignment from the I-270 corridor to the Shady Grove Metro Station. The alignment extends 3.4 miles from its western end at Fields Road to its eastern connection with the Metro Station's access road. An interchange with I-270 is proposed about one mile north of Shady Grove Road.

Other than planned and programmed transportation improvements, no subsequent Federal actions are required in the area as a result of the implementation of this project.

4. ALTERNATES CONSIDERED

A preliminary set of alternates was reduced through a series of agency reviews and public meetings to six alternates studied in detail.

- Alternate 1 - No-Build. This alternate would make no additional improvements to existing facilities in the vicinity of the Metro Station beyond those reasonably expected otherwise to be in place by the design year, 2006.

- Alternates 2C and 2D. These alternates would provide added capacity by upgrading Shady Grove Road and improving intersection geometrics. The configuration of the interchange at I-270 and Shady Grove Road differs slightly between the two Alternates. A grade-separated interchange is provided at the existing intersection of MD 355 and Shady Grove Road.

- Alternate 3C. This alternate provides a limited-access interstate facility on new location from I-270 to the Metro Access Road, with a connector to Fields Road. A modified cloverleaf interchange is provided at I-270 with other interchanges at MD 355 and at Shady Grove Road near the Metro Station. Also included as part of this alternate would be construction of a ramp in the southwest quadrant of the I-270/Shady Grove Road interchange. This alternate would accommodate traffic generated by presently adopted and approved master plans.

- Alternate 3D. This alternate proposes a limited-access interstate facility on new location from I-270 to the Metro Access Road with a connector to Fields Road. It provides an interchange at I-270 with a directional ramp configuration. Other interchanges are provided at MD 355 and at Shady Grove Road near the Metro Station. A ramp in the southwest quadrant of the I-270/Shady Grove Road interchange is also part of Alternate 3D. This Alternate would accommodate traffic generated by intensified land use west of I-270 as proposed in the **Staff Draft Gaithersburg Vicinity Master Plan** dated November 1981.

- Alternate 3E. This Alternate is identical to Alternate 3D, except it has a different alignment through the Rosemont Park/Comprint Court area. The alignment is shifted westward to avoid Rosemont Park and a nearby apartment building by passing closer to Comprint Court. Alternate 3C also follows Alternate 3E's shifted alignment through the Rosemont Park/Comprint Court area.

- **Alternate 3E Modified (Selected Alternate).** This Alternate is identical to 3E, including the avoidance of Rosemont Park, but the I-270/I-370 interchange is shifted southward to avoid Muddy Branch and Summit Hall parks, and includes an interlaced collector-distributor road system. The alternate was also modified in the vicinity of the Redland Station Community to move the alignment further away from the community and to reduce the effects on Mill Creek. Because Alternate 3E and **3E Modified** are identical except for these changes, Alternate 3E will not be discussed as a separate alternate in this document.

5. ENVIRONMENTAL CONSEQUENCES AND MITIGATING MEASURES

The **Selected Alternate, 3E Modified,** would significantly benefit the transportation system in the vicinity of the proposed Shady Grove Metro Station and provide at least partial relief to the already congested Shady Grove Road between I-270 and MD 355. **Alternate 3E Modified,** the construction of I-370, will accommodate total projected design year traffic along this section of Shady Grove Road. It will also provide direct Interstate highway access between the soon-to-be-opened Metro Station and I-270 and is, therefore, a critical part of the master planning which provides for the development of large tracts of vacant land in the area. The Washingtonian Country Club site (Washingtonian Tract) is considered one of the most desirable locations for future development in the study area by Montgomery County.

Alternate 3E Modified has been developed in coordination with the **Staff Draft Gaithersburg Vicinity Master Plan,** and projected development in the study area can be accommodated in accordance with the County's Adequate Public Facilities Ordinance. The situation under any alternate other than the new alignment would require substantial revisions to proposed land use plans in the study area. Tax revenues under **Alternate 3E Modified** are expected to increase by $9.7 million annually. **Alternate 3E Modified** will cause the dislocation of 36 area businesses, potentially affecting some 184 jobs. Residential displacement under this alternate, however, is relatively modest, affecting 10 families (30 people), some of whom may need housing of last resort.

Alternate 3E Modified will have some impacts on topography and natural systems because it involves construction on new location. Some remaining woodland and farmland in the area will be converted to impervious paved areas and vegetated embankments. The **Selected Alternate** will require about 700 feet of stream relocation and culvert in the headwaters of Mill Creek. Appropriate sediment and erosion control measures of the Maryland State Highway Administration and the U. S. Soil Conservation Service will be stringently applied to protect terrestrial and aquatic habitats. The **Selected Alternate** will not adversely affect air quality. However, FHWA Design Noise Levels will be exceeded at seven sites. Abatement measures, including sound barriers, are being considered at three of the sites. Requests for exceptions to design noise levels will be sought for the other four sites.

There are no known rare or endangered species of plant or animal life in the study area that would be affected by the proposed action nor any significant historic sites. However, with regard to archeological sites, it is recommended that construction be kept within the proposed project right-of-way in order to minimize disturbance near the sites of two turn-of-the-century farmhouses. The right-of-way through this area will be fenced.

6. AREAS OF CONTROVERSY AND UNRESOLVED ISSUES

The first potential area of controversy involves the perceived traffic impacts associated with the provision of access to Fields Road, thereby increasing the attractiveness of the Washingtonian Country Club property for future development. The City of Rockville has expressed concern regarding the potential over-development of the Shady Grove area resulting in increased traffic, access and circulation problems. Although in full support of I-370 as a direct link from I-270 to the Shady Grove Metro Station, the City contends that the amount of office/commercial space proposed in the Washingtonian Tract would overburden the existing and future traffic circulation system and would impose additional inconvenience to the employees already located in the study area. In contrast to the City of Rockville's position, Montgomery County feels the access from I-370 to Fields Road is important to the future development of the County. It is the County's position that the proposed connection of I-370 to Fields Road would improve local traffic circulation and local access to both the Interstate and Metro systems.

The second controversy is the potential for adverse effects on the integrity of the Washington Grove historic district. Elected officials and some residents of Washington Grove felt that the proximity of I-370 would affect the town's historic character.

The Maryland State Highway Administration and the Federal Highway Administration have identified no significant unresolved issues to affect the approval of the FEIS.

Minor local issues may materialize during later phases and will be promptly addressed. The necessary permits, such as for water quality, will be obtained through the subsequent permit application and coordination process.

7. SUMMARY OF IMPACTS

The summary (Table S-1) represents a comprehensive comparison of the significant impacts associated with each alternate studied expressed in terms of the objectives to be achieved by the proposed project.

The impacts included in this analysis are summarized in monetary and non-monetary terms. This differs from a cost/benefit analysis where all impacts are expressed in dollar values. Where dollar values are given, only costs that are a direct result of studied improvements are considered. All costs are expressed in 1981-82 dollars.

TABLE S-1

SUMMARY OF IMPACTS

OBJECTIVES	No additional transportation improvements Alt. 1	Limited access Interstate facility on new location from Fields Road to the Metro Access Road. Alignment avoids Rosemont Park and Rosedale Apartments Alt. 3E	Upgrading Shady Grove Road and Improving Interchange geometrics Alt. 2C	Identical to 2C except slightly different interchange at I-270 Alt. 2D	Identical to 3E except modified cloverleaf interchange at I-270 Alt. 3C	Identical to 3E except for alignment through Rosemont Park Alt. 3D	Identical to 3E except I-270/I-370 interchange moved south to avoid parks & eastern curve shifted to minimize stream relocation Alt. 3E Mod. (Selec. Alt.)
Make Efficient Use of Existing Transportation Facilities	low	high	moderate	moderate	high	high	high
Number of Intersections Exceeding Design Capacity	4	1	2	2	1	1	1
Effect on Emergency Vehicle Access	negative	positive	negative	negative	positive	positive	positive
Consistency with Energy Conservation Goals	low	high	moderate	moderate	high	high	high
Provide Improved Transit Accessibility	low	high	low	low	high	high	high
Traffic Delay In Vehicle Hours	2,630	220	590	590	180	220	220
Develop a Transportation System Which Supports Local Land Use Plans	low	high	low	low	moderate	high	high
Percent of Projected Land Use Accommodated	3 %	100 %	34 %	34 %	80 %	100 %	100 %

Table S-1, continued

OBJECTIVES	Alt. 1	Alt. 3E	Alt. 2C	Alt. 2D	Alt. 3C	Alt. 3D	Alt. 3E Mod. (Selec. Alt.)
Protect Natural/Cultural Resources	high	moderate	high	high	moderate	low	moderate
Acres of Prime Agricultural Land Lost	0	12	0	0	12	12	12
Number of Stream Relocations	0	1	0	0	1	2	1
Linear Feet of Stream Relocation	0	1,500	0	0	1,500	2,400	700
Acres of Flood Plain Encroachment	0	3	0	0	7	3	<1
Flood Hazard	none	negligible	none	none	negligible	negligible	negligible
Number of Wetlands Affected	none	none	none	none	none	none	none
Effect on Water Quality	none	minor	negligible	negligible	minor	minor	minor
Length of Stream Habitat Disrupted (feet)	0	1300	0	0	1300	2240	560
Aquatic Habitats Lost (linear feet)	0	100	0	0	100	480	60
Terrestrial Habitats Disruption (acres lost)	0	54	0	0	56	57	54
Threatened and Endangered Species Affected	none	none	none	none	none	none	none
Number of Historic Sites Affected	none	none	none	none	none	none	none

Table S-1, continued

OBJECTIVES	Alt. 1	Alt. 3E	Alt. 2C	Alt. 2D	Alt. 3C	Alt. 3D	Alt. 3E Mod. (Selec. Alt.)
Number of Archeological Sites Affected	none	none	none	none	none	none	none
Number of Acres of Parkland Required	0	0.8	-	-	2.0	5.0	none
Preserve Existing Public Investment in Parkland	high	moderate	high	high	moderate	low	high
Access to Community Facilities	low	high	moderate	moderate	high	moderate	high
Minimize Residential and Business Displacements							
Total Number of Residences Displaced	0	10	8	8	10	46	10
Total Number of Minority Residences Displaced	0	5	5	5	5	5	5
Total Number of Businesses Displaced	0	36	1	0	36	2	36
Ensure Acceptable Air Quality and Noise Levels	low	moderate	high	high	moderate	moderate	moderate
Number of Sites Where CO Concentrations Exceed Standards	0	0	0	0	0	0	0
Number of Sites Exceeding Design Noise Levels w/o Recommended Barriers	4	7	4	4	8	7	7
Number of Barriers Recommended	N/A	3	0	0	3	3	3
Number of Sites Exceeding Design Noise Level with Recommended Barriers in Place	4	4	4	4	5	4	4

Table S-I, continued

OBJECTIVES	Alt. 1	Alt. 3E	Alt. 2C	Alt. 2D	Alt. 3C	Alt. 3D	Alt. 3E Mod. (Selec. Alt.)
1981-82 Facility Investment Costs[1]							
Construction	0	$100,588,000	$18,776,000	$19,642,000	$74,997,000	$ 98,566,000	$ 96,928,000
Right-of-Way	0	$ 28,435,000	$ 4,928,000	$ 3,489,000	$26,325,000	$ 26,350,000	$ 31,244,000
Development	0	$ 5,412,000	$ 1,151,000	$ 1,364,000	$ 4,168,000	$ 5,298,000	$ 6,143,000
Total	0	$134,435,000	$24,855,000	$24,495,000	$105,490,000	$130,214,000	$134,315,000
User Costs							
Annual Vehicle Operating Cost on Major Roadway Links	$11,500,000	$18,800,000	$12,200,000	$12,200,000	$16,200,000	$18,800,000	$18,800,000
Annual Vehicle Delay Cost on Shady Grove Road	$ 2,840,000	$ 230,000	$ 640,000	$ 640,000	$ 190,000	$ 230,000	$ 230,000
Economic Development Potential							
Additional, Annual Real Property Tax Receipts	$300,000	$9,700,000	$3,300,000	$3,300,000	$7,800,000	$9,700,000	$9,700,000
Total Development Potential (New Building Construction Cost)	$14,500,000	$514,600,000	$145,000,000	$145,000,000	$386,600,000	$514,600,000	$514,600,000
Potential Employment Growth (Number of New Employees)	1,200	38,200	13,000	13,000	30,500	38,200	38,200

1 Based on 1981-82 costs. All costs updated in June 1982.

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I. PURPOSE AND NEED

A. PROJECT LOCATION/DESCRIPTION

1. MONTGOMERY COUNTY OVERVIEW

Montgomery County is situated in central Maryland just north of Washington, D.C. (see Figure I-1). The County, a rapidly developing suburb of the Washington metropolitan area, has a relatively affluent populace and is composed primarily of residential subdivisions expanding northward into an agricultural countryside. Major employers consist of Federal agencies and their associate service industries, research and development organizations, retail establishments, and other light industries. The densest population centers in the county are primarily located further to the south but also stretch northward along the I-270 corridor to include Rockville and Gaithersburg and vicinity. The county enjoys a relatively mild, modified continental-type temperate climate with moderate rainfall and mild winters.

2. INTERSTATE 370 STUDY AREA

The study area for Interstate 370 (I-370) lies within the center of the I-270 corridor and is depicted in Figure I-2. It extends northward to include part of the City of Gaithersburg, westward to existing MD 28, eastward to the Mill Creek watershed, and southward to include proposed Gude Drive and the northern part of the City of Rockville. I-270 and MD 355 presently are the major north-south transportation links in the area, but these will be supplemented by the completion and scheduled opening of the Shady Grove Route of the Washington Metropolitan Area Transit Authority's (WMATA) Metrorail transit system in 1984. Shady Grove Road, which connects to both I-270 and MD 355, serves east-west transportation and is presently the major existing access to the Shady Grove Metro Station.

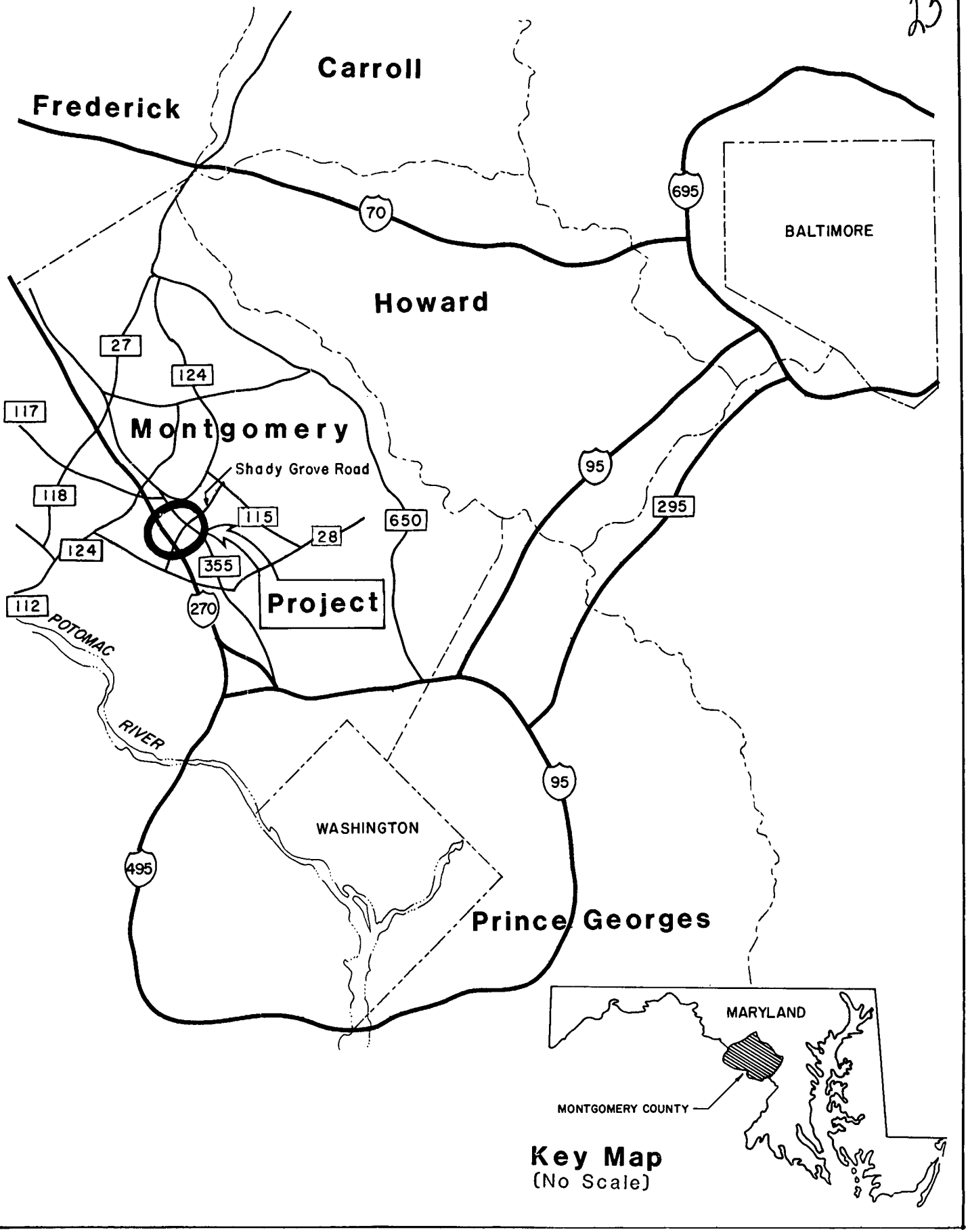
The economic base of the area is primarily composed of suburban corporate offices, research and development facilities, and government agencies. There is still a substantial amount of open space as evidenced by farmland and a golf course. More intensive development of these largely vacant lands is planned for under the **Staff Draft Gaithersburg Vicinity Master Plan,** which is currently scheduled for public hearings before the Montgomery County Planning Board.

Residential development has occurred in a scattered pattern about the edges of the study area. Several subdivisions are in close proximity to the proposed alignment options and have affected location and design considerations.

3. DESCRIPTION OF SELECTED ACTION

I-370 will provide access from the I-270 corridor to the northern terminal station for the Metro's Shady Grove Route. Improved Metro Station access is expected to increase use of the public transportation system while improving the operating efficiency of existing interstate facilities. Another important function of I-370 will be to provide additional roadway capacity in an area already experiencing severe traffic congestion and in which significant additional development is anticipated. If such development were to occur without adequate highway facilities, access to the Metro station would be restricted.

The **Selected Alternate, 3E Modified,** will provide an interstate highway along new

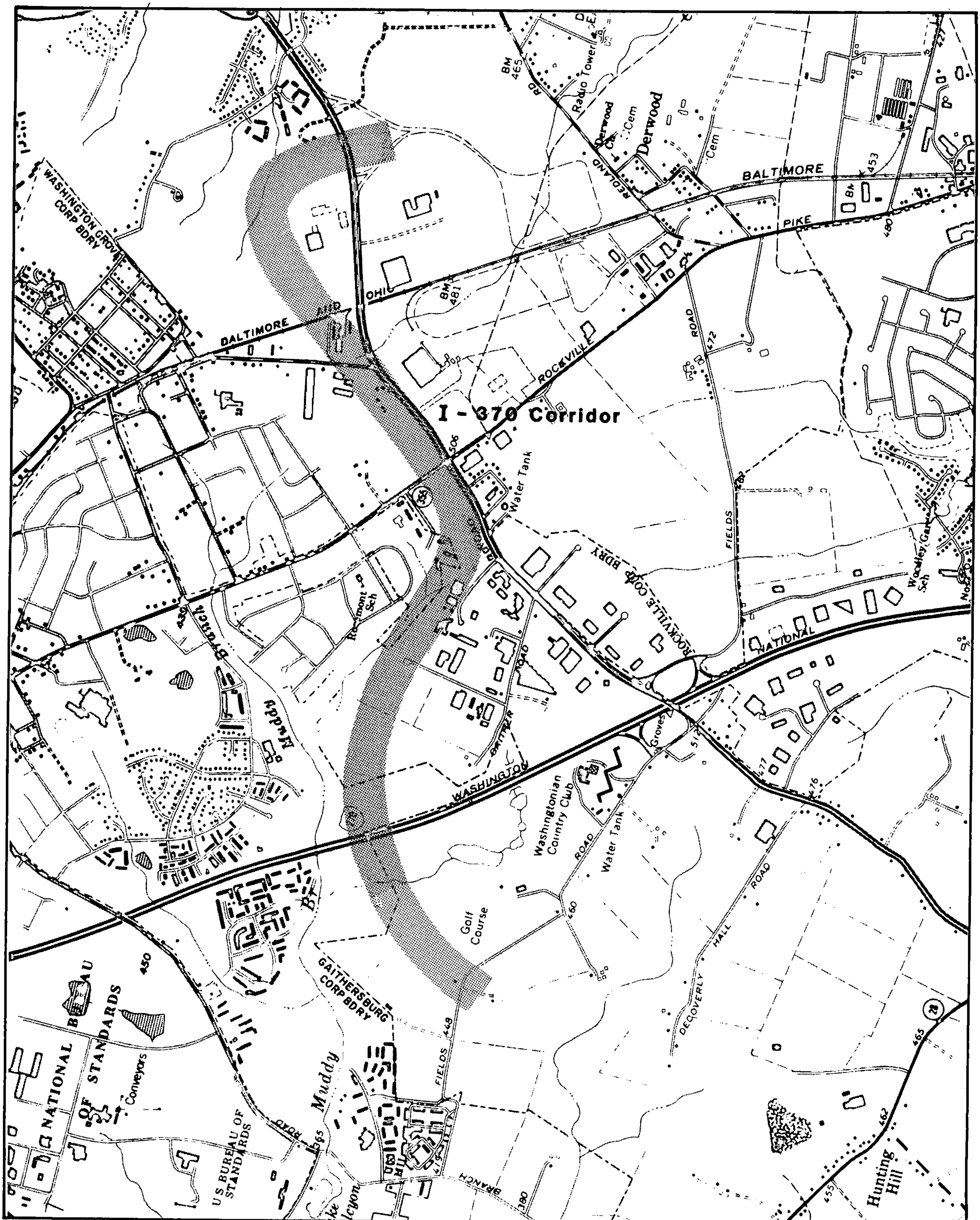


Project Vicinity Map

INTERSTATE 370

0 MILES 3 6 9

Figure I - 1



I - 370 Corridor
BALTIMORE
PIKE
BALTIMORE AND OHIO
ROCKVILLE
ROCKVILLE CORP BDRY
WASHINGTON GROVE CORP BDRY
NATIONAL
WASHINGTON
Radio Tower
Derwood
REDLAND RD
Cem
Water Tank
FIELDS
ROAD
Rosemont Sch
Muddy
Branch
Groves
Washingtonian Country Club
Golf Course
GAITHERSBURG CORP BDRY
DECOVERLY
HALL
NATIONAL BUREAU OF STANDARDS
U S BUREAU OF STANDARDS
Conveyors
Hunting Hill
Woodley Gardens Sch
BRANCH

Study Area

INTERSTATE 370

0 FEET 1000 2000 3000

Figure I - 2

alignment from I-270 to the Shady Grove Metro Station with access provided to Fields Road west of I-270. The alignment covers a distance of 3.4 miles, and the interchange with I-270 is proposed to be about one mile north of Shady Grove Road. The connection between I-270 and Fields Road will only be made concurrent with or following upgrading of Fields Road to a four-lane urban arterial and will be designed to be adequate to serve travel demand at the time of opening. If increased development occurs on land adjacent to the connection following initial construction, improvements will be made to provide access from this development, which will ensure that the connection will operate at an acceptable level of service. Such improvements will be made as a separate action, since the design and location of these improvements need to be compatible with the development. Other interchanges are proposed at MD 355 and at Shady Grove Road near the Metro Station.

B. BASIS FOR SELECTED ACTION

1. TRAFFIC AND OPERATING CONDITIONS

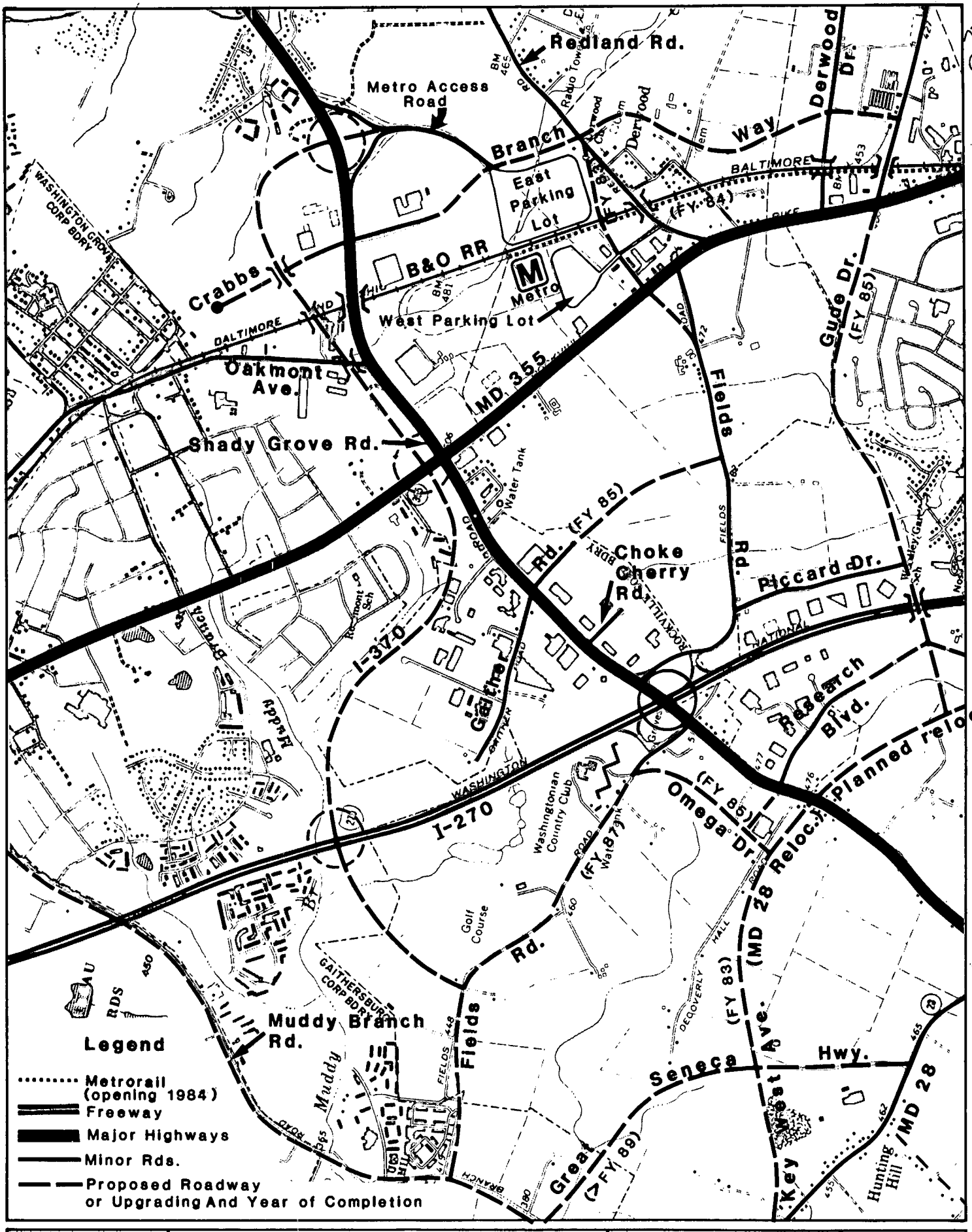
The I-370 study area is located in an area of rapid growth. Roads in the vicinity of the Shady Grove Metro Station are already heavily loaded, while large parcels of land have yet to be developed. Traffic patterns in the area are dominated by I-270 and development along the I-270 corridor. I-270 is paralleled by MD 355, both serving predominantly radial traffic demands of the Washington metropolitan area. Major facilities serving east-west movements are limited to Shady Grove Road. Other roads in the area highway network are generally two-lane facilities with grades, curves, and widths restrictive to present day traffic use. The study area highway network and Shady Grove Metro Station are shown in Figure I-3.

The Shady Grove Station will be the terminal station of the Shady Grove Route (formerly the Rockville Route or Metro "A" Route) which is scheduled to open in 1984. Originally, this route was designed to terminate at the Rockville Station. However, parking space and access problems in the Rockville Station vicinity led to extension of the line to Shady Grove, where parking and access conditions were considered more favorable. The Shady Grove Metro Station facilities are presently under construction and are located parallel to the B&O railroad tracks just north of Fields Road. Over 2,000 parking spaces are planned for the eastern lot and nearly 1,000 on the western side of the station site. Bus feeder and "Kiss-n-Ride" facilities are also under construction, as well as storage and inspection yards.

Passengers using the Shady Grove Station will be drawn principally from areas west of I-270 and north of Montgomery Village but will also include those outside the area who have work trip destinations at study area employers. The station has 3000 parking spaces that are projected to be fully utilized, and substantial feeder bus and "kiss-n-ride" trips are also expected. Access to the station will be primarily along I-270, MD 355, MD 115, and Shady Grove Road. The proposed I-370 Metro station connector has been considered a vital part of access in all previous planning for the Metro station.

I-370 is proposed to provide a high level of vehicular access to the Shady Grove Metro station and encourage the removal of vehicular trips from I-270 in favor of person trips on Metro. It will directly link Fields Road, I-270, and MD 355 with the station via a fully access-controlled roadway built to Interstate standards. Without I-370, access to the station would be along portions of Shady Grove Road which even now are heavily congested, and use of Metro would likely be discouraged as a result. Among the worst bottlenecks in Montgomery County are the intersections of Shady Grove Road with I-270, Gaither Road, and MD 355. The section of Shady Grove Road between I-270 and MD 355, including the intersection with Gaither Road, is particularly congested.

Anticipated commercial developments in the area will greatly increase traffic demands. In the four years between 1976 and 1980, total traffic approaching the intersection of MD 355 and Shady Grove Road has grown by 37 percent. During the same period traffic volume on Shady Grove Road east of MD 355 has more than doubled. By 1986, traffic along Shady Grove Road between I-270 and the Metro Access Road is forecast to increase by another one-third without I-370. By 2006, if projected land use development occurs without I-370, traffic demand along this section would double compared to 1980 levels.



Area Highway Network

INTERSTATE 370

0 FEET 1000 2000 3000

Figure I-3

As indicated in Section III, the forecast traffic demand levels could result in a complete breakdown of Shady Grove Road between Research Boulevard and Maryland 355. The costs of delay at intersections along this section of Shady Grove Road were estimated as part of this study to be approximately $10 million annually if these conditions are allowed to occur (see Section III). No doubt, as traffic conditions worsen (even with planned upgrading of Shady Grove Road), private market forces would most likely respond by curtailing the level of development. Thus, actual increases in traffic volumes would be affected accordingly. These anticipated results highlight the need for improved traffic facilities in the area, not only to serve Metro traffic, but also to facilitate the economic development anticipated within the area.

The Fields Road/Muddy Branch area is expected to generate a substantial number of additional trips to and from the Metro station, and Fields Road itself will be upgraded to a four-lane, urban arterial roadway by the County within the expected construction timetable for I-370. Traffic projections indicate that the design year (2006) average daily traffic for I-370 with the western connection to Fields Road would be 70,000 while I-370 without this connection would only be 50,000. Without the connection to Fields Road, future Interstate and Metro-bound traffic originating west of I-270 would be forced to use surrounding routes, e.g., Fields Road to Shady Grove Road via Omega Drive or Fields Road to the I-270/MD 124 interchange via Muddy Branch Road, MD 28, and MD 124. These other routes are not proposed to accommodate this additional traffic and neither are the other interchanges with I-270 (at MD 28, MD 124, and Shady Grove Road). These three interchanges with I-270 are currently breaking down with today's traffic levels. The connection to Fields Road would provide direct access to the Metro Station and divert this additional traffic from the local street network. In the case of the I-270/Shady Grove Road interchange in particular, the I-370 connection to Fields Road would significantly reduce projected traffic using this interchange at the time of opening through the design year 2006 to a volume less than existing volumes. Furthermore, the existing ramp connections to Fields Road at this interchange could be eliminated, reducing congestion below that experienced with existing traffic volumes.

2. COMMUNITY AND ECONOMIC DEVELOPMENT

During the past two decades, metropolitan Washington and Montgomery County in particular have experienced rapid economic growth. The location, pace, and extent of development that has taken place in Montgomery County have been guided by locally adopted land use plans and by strong legislative ordinances and policies such as the provision of adequate public facilities. Today, the County represents a strong market for commercial and industrial investment opportunities, as well as housing and new residential construction.

Based on projections prepared by the Metropolitan Washington Council of Governments and the Montgomery County staff of the Maryland-National Capital Park and Planning Commission, this economic expansion in Montgomery County is expected to continue over the next two decades, though at a somewhat diminished rate. According to these long-range projections, employment in Montgomery County will exceed one-half million (524,000) by the year 2006. If realized, this would represent virtually a doubling of total 1978 employment of 270,500. Much of this growth is expected to occur in a significant northward thrust along the I-270 corridor.

Over the past decade, the I-270 corridor has emerged as an important center for suburban corporate office space and research and development facilities. Complementary business services, clients and customers, retail facilities, and lodging

accommodations are nearby, further enhancing its appeal.

The I-370 study area includes the most intensively developed commercial areas in the I-270 corridor. In 1980, just over 14,000 persons worked in the area which now contains approximately 4.7 million square feet of commercial space. More than half of the office, manufacturing, and warehousing space in the I-270 corridor is located in the study area. This also includes about 15 percent of all retail space.

The rate of development within the study area has increased over the past two years. Almost 1.2 million square feet of space were completed during the 18-month period ending June 1981. Three-quarters of this development has been office space.

Projects currently underway -- those under construction by early 1982 -- include over one million square feet of space, about three-fourths of which will be office-related and the remainder, multi-functional research and development and retail-oriented. No new manufacturing or major freestanding warehouse facilities are currently under construction within the study area. A minimum of 6.2 million square feet of additional space has been identified in projects under consideration for development after 1983. More than half of this space is proposed for office use.

Additional development within the study area will undoubtedly occur. A variety of sites have high development potential. Foremost among these is the 218-acre Washingtonian Country Club tract fronting I-270. Further expansion of the 288-acre Montgomery County Medical Center is also anticipated.

Employment is expected to at least triple by the year 2006, reflecting the highly appealing locational attributes and the concurrent pace of development activity. By that time, actual employment levels could very well exceed "official projections." Upwards of 50,000 persons conceivably could be employed at study area locations.

The central portion of the study area, between I-270 and the B&O Railroad tracks, currently accounts for about 70 percent of total employment. Employment is projected to increase by approximately 13,000 in that segment. The zones adjacent to Shady Grove Road will account for much of this anticipated growth. In contrast, growth in employment in the northeast segment of the study area, farthest away from highway access, is expected to be relatively modest.

The segment of the study area lying to the southwest of I-270 is today relatively undeveloped. However, it represents the largest single concentration of vacant land available for private development within the study area. Under official projections, employment is forecast to nearly quadruple (to just over 13,000) over current levels. These projections, however, assume only partial development of the area, in part due to accessibility constraints. The potential for even greater intensity of development exists, specifically on the Washingtonian Tract, and upwards of 13,500 additional new jobs could be generated.

As stated above, both long-range and specific projects under development within the study area would exceed the growth anticipated in official projections. The projected addition of nearly 25,000 jobs in the study area alone would account for approximately ten percent of total employment growth in Montgomery County over the 26-year forecast period.

As a result of this projected development, if the I-370 project is not undertaken, projected traffic volumes on Shady Grove Road would far exceed capacity. Already, traffic congestion in the area is a major concern to developers and employers alike.

If no further improvements beyond the widening of Shady Grove Road to six lanes are made, it is doubtful that the private sector will undertake all the projects now being considered or those required to fulfill or exceed anticipated employment levels by the year 2006.

3. DEFICIENCIES IN EXISTING FACILITIES

Traffic conditions and deficiencies in the study area have been researched in recent years and reported in the following documents:

(1) Metro Station Access Study, Access Recommendations: Nicholson Lane, Twinbrook, Rockville, and Shady Grove Metro Stations. Prepared for MDOT by JHK & Associates, March 1977.

(2) Sector Plan for the Shady Grove Transit Station Area. Publication No. 3802772506, M-NCPPC and Montgomery County Planning Board, April 1977.

(3) Intersection Peak Hour Level of Service Inventory (as of June 1980), Transportation Planning Division/MCPD and M-NCPPC, January 28, 1981.

All three sources indicate that intersections along Shady Grove Road are the most critical traffic deficiencies in the vicinity of the Shady Grove Metro Station.

Based on the level of service (LOS) inventory cited above, the following intersections are currently operating at less than desirable levels during peak hours:

(1) Shady Grove Road and I-270 (LOS D)
(2) Shady Grove Road and Choke Cherry Road (LOS D)
(3) Shady Grove Road and Gaither Road (LOS D)
(4) Shady Grove Road and MD 355 (LOS F)

Level of service (LOS) is a term that describes traffic operating conditions and varies primarily with traffic volume and number of lanes. It is a measure of such factors as speed, traffic interruptions or restrictions, and freedom to maneuver. Six levels of service, designated A through F, from best to worst, have been established to identify traffic operation (Highway Capacity Manual, 1965). Level of service A represents a condition of relatively free flow (low volumes and higher speeds). Levels B and C describe conditions involving stable flow but increasing restrictions on operating speeds and maneuvering. Level of service D approaches unstable flow (tolerable delays in case of urban streets), while level of service E represents unstable flow with sometimes intolerable delays. At level of service E, volumes are at or near the capacity of the highway. Level of service F represents conditions below capacity, in which there are operational breakdowns with forced flow.

At present rates of traffic growth, all of the above intersections will soon be operating at LOS F unless improvements are made. The scheduled widening of Shady Grove Road between I-270 and MD 355, from four lanes to six lanes, will provide only temporary relief. Similarly, the effect of proposed improvements to the interchange between I-270 and Shady Grove Road will be temporary.

Other traffic improvements scheduled for the area, such as the widening of I-270, the extension of Gaither Road to Fields Road, and the upgrading of Fields Road between Gaither and Redland Roads, also will improve station access and general traffic conditions. However, unless a major increase in traffic capacity is provided for east-

west movement, traffic congestion along Shady Grove Road will inevitably worsen, Metro station access will deteriorate, and economic development potential may be jeopardized.

4. BENEFITS TO STATE, REGION, AND COMMUNITY

Benefits from project implementation can be perceived for a broad area. There are direct benefits to the local communities and the entire I-270 corridor. These benefits are also extended to the Federal agencies located within the I-270 corridor.

The primary goal and benefit to be derived from constructing I-370 is to increase access to the Shady Grove Metrorail Station, which is scheduled to open in 1984. This is the northernmost station for the Shady Grove Route and will provide service to the study area and the region northward. Currently, access to the station site is along Shady Grove Road, which experiences periods of heavy congestion. Without improved access, utilization of the Metro station would not reach its full potential, and the substantial public investment in the Metrorail system would not be maximized.

The I-270 corridor is one of the predominant growth locations in Maryland. Over the past decade the area has emerged as an important center for Federal agencies, along with private research and development facilities and suburban office space. Planning agencies have targeted the area as the prime activity corridor in Montgomery County. Under their "Wedges and Corridors" plan, growth is to be centralized in this area in order to preserve the natural character of other parts of the County. All of the build alternates are in general conformance with this plan and help promote the concept of contained development, but only the alternates on new location allow full implementation of the current general plan. The No-Build Alternate would require constraint of development to levels only slightly above existing conditions which would also adversely affect the implementation of the **Staff Draft Gaithersburg Vicinity Master Plan.**

Furthermore, the **Selected Alternate** is considered essential to the implementation of area land use plans as well as a cornerstone to other improvements in the area's roadway system. Based on Montgomery County's current six-year Capital Improvements Plan, the county has programmed approximately $40 million for extensive improvements to the local road system in the area in order to alleviate current traffic congestion and support anticipated development. This commitment to local road improvements includes construction of the Great Seneca Highway, Omega Drive, and Key West Avenue, the extension of Gaither Road, and substantial reconstruction of Fields Road, Shady Grove Road, and Muddy Branch Road (see Figure I-3). All of these projects are interrelated elements of the regional transportation system which includes I-370 and the Shady Grove Metro Station. Thus, the proposed action is necessary if the County is to receive the full traffic service and development benefits from its substantial capital investment in local road improvements.

Local communities gain directly from improved transportation access within the study area. Easing traffic congestion will improve the quality of life in the study area while reducing the number of accidents and increasing access for emergency vehicles. Improved Metro station access has the potential to increase employment opportunities for the area's labor force by providing a direct link to major regional employment centers. Planned development expected to occur as a result of transportation improvements will add significantly to the tax base of area municipalities as well as provide social benefits from added employment.

C. HISTORICAL BACKGROUND/PLANNING

1. PREVIOUS PLANNING STUDIES

Consistent with goals, guidelines, and concepts as originally outlined and adopted in the 1964 Maryland-National Capital Park and Planning Commission's **On Wedges and Corridors, A General Plan for the Maryland-Washington Regional District,** the largest and most complex of four urban development corridors identified for the region lies alongside Interstate Route 270 (I-270) in northern Montgomery County. As noted in the 1971 **Gaithersburg Vicinity Master Plan,** the City of Rockville is the first established Corridor City in this large development area. Gaithersburg and Germantown are planned for subsequent development along this corridor.

I-270 has long served as the spine of the corridor circulation pattern. It has tied together and supported various land uses and has encouraged interaction among them. Today, I-270's capacity has been outstripped by traffic growth, and frequently the highway cannot handle peak travel demand in the vicinity of Gaithersburg and Rockville.

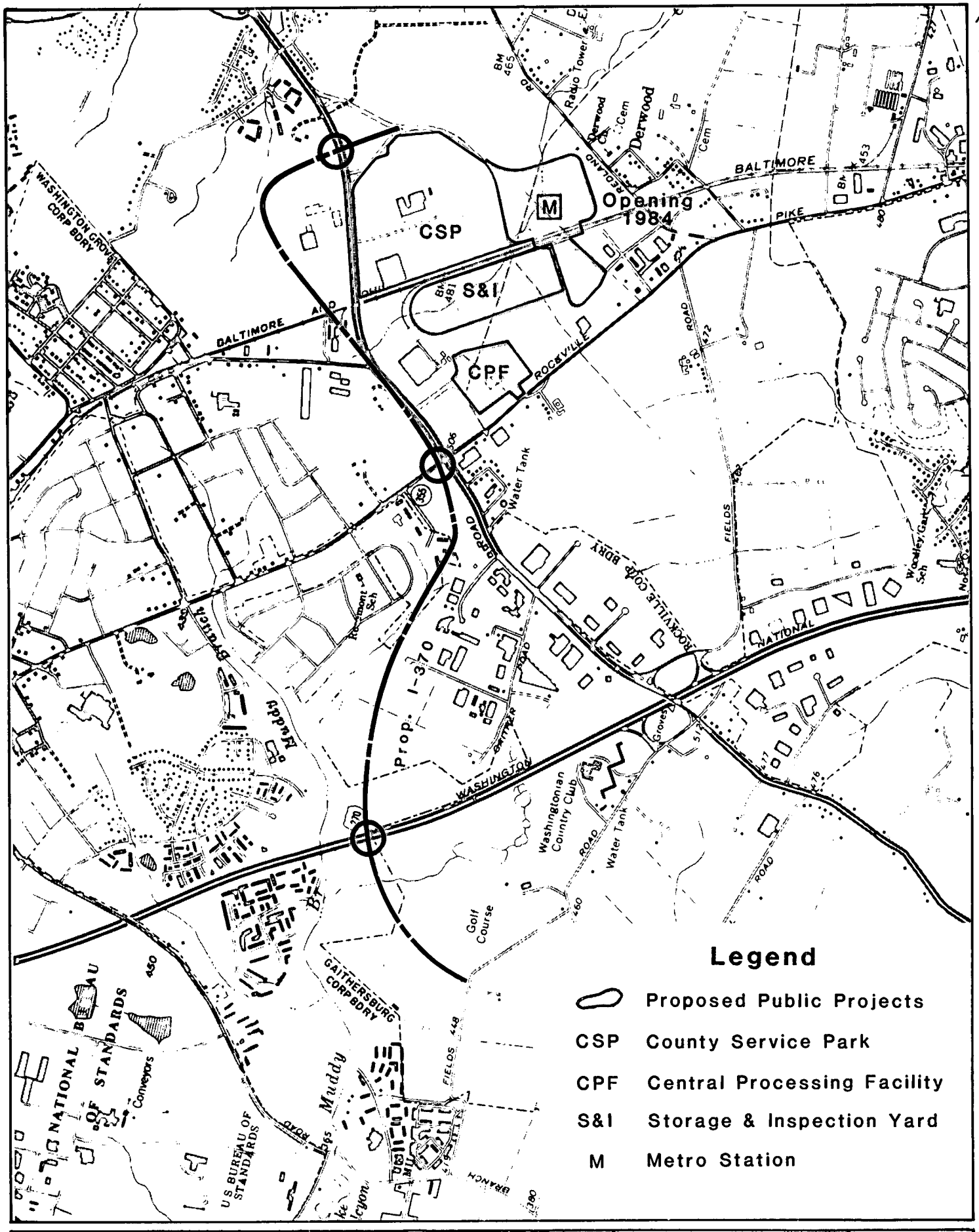
In 1968, when the Washington Metropolitan Area Transit Authority first approved the Metro Adopted Regional System, it placed the terminal station for its "A" route in downtown Rockville, Maryland. Later, the constrained nature of the Rockville site was shown to limit the number of available surface parking spaces and the surrounding street network was determined inadequate to handle the traffic forecast for the Metro facility. Montgomery County subsequently identified a terminal at Shady Grove Road as the preferred extension in lieu of the Rockville site. This new station benefited from lower construction cost, less community impact, right-of-way availability, and more convenient station access.

In 1971, the proposed extension of rail rapid transit was seen as the key to the planning and development of the Gaithersburg corridor city, and a transit station was recommended near Shady Grove Road, convenient for park-and-ride patrons. Efforts were undertaken to develop implementable alternates toward this end.

The principal access-related advantage of a Metro station at the Shady Grove site was its proximity to Shady Grove Road, which serves as a major east-west transportation link in the area. However, a Metro Access Study later indicated that Shady Grove Road could not adequately serve the Montgomery County Service Park and the Metro station (see location of Service Park in Figure I-4). Furthermore, planned development for vacant land adjacent to the site might serve to place even more traffic demands on Shady Grove Road.

The Montgomery County Council in 1973 resolved that a direct Interstate connection between the Shady Grove Metro Station and the corridor expressway system (I-270) be requested to solve the forecast Metro station access problem. Subsequently, the Maryland Department of Transportation requested the U. S. Department of Transportation to fund the extension of Metro from Rockville to Shady Grove and, as the vital link, I-370, connecting I-270 to the Shady Grove Metro Station Access Road. This request was granted in late 1975.

The Maryland-National Capital Park and Planning Commission, in cooperation with the City of Gaithersburg, developed the **Shady Grove Sector Plan** in 1977, which noted that the I-370 connector was critical to the Metro extension and to the subsequent



Montgomery County Service Park

INTERSTATE 370

0 FEET 1000 2000 3000

Figure I – 4

growth in development forecast for the Montgomery County area. Additional funding provided through the transfer of funds from the Highway Trust Fund was felt essential if the Metro extension was to be completed.

In 1978, the Maryland Department of Transportation, Division of Systems Planning and Development ranked the roadway link connecting I-270 to the Shady Grove Metro Access Road to be of "highest priority". The connector between I-270 and the Shady Grove Road Metro Station was identified as a logical and essential addition to the Interstate System with utility independent of other regional transportation systems studies underway or planned for the future.

Such an improvement would provide direct access from the regional transportation system to a terminal station of the regional rapid rail transit system (Metro) and accommodate the planned development of the Montgomery County Service Park. The I-370 project would serve the vital function of providing direct and convenient access to the Metro Station and the Montgomery County employment center from a broad market area.

2. THE SHADY GROVE SECTOR PLAN

The **Sector Plan for the Shady Grove Transit Station Area,** adopted in April 1977, was the first area plan to identify specifically the need for an interstate access road that would link I-270 to the Shady Grove Metro Station. Developed as a policy guide for anticipated development within the Shady Grove transit station area, the plan provides recommendations for achieving high-speed access to the transit station, including the construction of a limited-access connector (I-370). Successful implementation of the **Shady Grove Sector Plan** is predicated on the construction of I-370 and the project is listed among transportation improvements of "highest priority" in the Plan's Capital Improvements Program recommendations.

As envisioned in the **Shady Grove Sector Plan,** I-370 would provide direct access to the Metro Station without interfering with local traffic circulation patterns. With approximately 22,000 people forecast to use the Shady Grove Station in each 24-hour period, this proposed addition to the transportation system allows a significant amount of traffic to bypass the Maryland 355/Shady Grove Road intersection, thus alleviating a chronic traffic problem. It encourages additional vehicle diversion to the station, along with a rapid turn-around for feeder buses from and to I-270. In summary, the Plan states that I-370 provides the most feasible and desirable means of accommodating project travel demands while realizing the full advantage and potential of the Metrorail system.

The adoption of the **Shady Grove Sector Plan,** which amended a portion of the foregoing **Master Plan for the Gaithersburg Vicinity Planning Area** (M-NCPPC, 1971) and the **Master Plan for the Rock Creek Planning Area** (M-NCPPC, 1967), signaled that the County placed a high priority on development in the Shady Grove area. Substantial regional public facilities located at Shady Grove (see Figure I-4) significantly committed the area to develop as a major public service activity center, serving the transportation, industrial, and warehousing needs of the County.

The 1971 **Gaithersburg Vicinity Master Plan** is currently being updated by the Montgomery County Planning Board. The Staff Draft of the Plan, published in November 1981, makes no land use or zoning recommendations for the area included in the Shady Grove Sector Plan. It does, however, reinforce the basic concept of the Shady Grove Sector Plan by basing the development of the Staff Draft Plan on assumptions that: (1) the Shady Grove area develop into a major employment and

housing center; and (2) I-370 be built to provide improved access to the Shady Grove Metrorail Station.

3. CURRENT PROJECT PLANNING STUDIES

Study efforts for I-370 were initiated with meetings of the Project Study/Management Team, the Interagency Task Force, and the Traffic Task Force in March through June 1979 (see Section 6.A for members of these groups and their responsibilities). Six Project Initiation Workshops were held in October and November 1979 in an attempt to raise thoughtful citizen interaction, and considerable support for I-370 was evidenced.

An Alternates Public Meeting was held in March 1980, as part of the public involvement process. The Project Planning Study was refined at this time to:

1) Develop and evaluate roadway alternates to provide safe and efficient access to the Shady Grove Metro Station; and

2) Provide additional roadway capacity for an area in which significant additional development is planned (per the **Shady Grove Sector Plan**).

Subsequent to the distribution of the Draft Environmental Impact Statement (DEIS), a Location/Design Public Hearing for I-370 was held. All comments received on the DEIS plus oral and written statements received as a result of the Hearing were considered prior to selection of **Alternate 3E Modified** by the Maryland State Highway Administration.

This Final Environmental Impact Statement (FEIS) addresses the environmental effects of the **Selected Alternate** and substantive comments received on the DEIS.

Once the Federal Highway Administration grants location and design approval, the I-370 project will proceed to detailed design. Funds for detailed design have already been committed by Maryland SHA. It is anticipated that the project will be completed by the mid-1980's, dependent upon the availability of funding and assuming no unusual delays are encountered.

4. RELATIONSHIP TO PROPOSED INTERCOUNTY CONNECTOR

While the alignment for the selected action may be utilized by one of the four alternates under consideration as part of the proposed Intercounty Connector (ICC), the ICC is still the subject of an ongoing major Project Planning Study which includes a no-action alternate (see Appendix D). The corridor for I-370 is part of the ICC Master Plan corridor. However, the selected alignment for I-370 has been slightly shifted from the ICC master plan corridor to reduce environmental impacts. I-370 was selected as a separate project because of its demonstrated utility in providing improved access to the Shady Grove Metro Station and surrounding area entirely independent of its possible future incorporation as part of the proposed ICC. Furthermore, any ICC alternate which utilizes I-370 will be judged on its own merit without prejudice based on the implementation of this proposed action. It should be noted that the major purpose of the ICC study is to analyze fully existing and projected east-west transportation problems in Montgomery and Prince George's Counties and to consider alternatives for making improvements to solve problems. At the present time existing funding constraints limit the magnitude of any east-west transportation improvements in the next ten years. The future possibility of

constructing all or portions of any ICC alternate would most likely depend on the ability of the Counties to continue to reserve land for future highway construction and the availability of funds for construction of the project. None of these circumstances related to the ICC should influence the implementation of the I-370 proposed action.

II. ALTERNATES INCLUDING THE SELECTED ACTION

A. PRELIMINARY ALTERNATES

1. GENERAL

The selected action involves construction of an Interstate highway facility to provide a direct connection from I-270 to the northern terminal station of Metrorail. Concentrated development is planned for the study area, and the selected action will also accommodate traffic from this expected development. A preliminary set of alternates was developed in an attempt to meet these two goals. An iterative process of reviews and public interaction as described in the Maryland Action Plan was used to reduce the number of alternates to the set presented at the Alternates Public Meeting. Subsequently the alternates were further refined into the set studied in detail and presented in the Draft Environmental Impact Statement and this Final Environmental Impact Statement.

2. PRELIMINARY ALTERNATE SET

A number of preliminary alternates with a resultant wide range of possible impacts and benefits were developed. These may be placed into three categories: 1) operational modifications; 2) upgrading existing roads; and 3) construction along new alignments.

a. Operational Modifications

- o No-Build. This alternate included the existing and proposed transportation facilities expected to be completed by 2006. As well as being a possible selected alternate, this alternate is used as a comparative base for all other alternates. Many of the proposed facilities included in the no-build network are undergoing independent study, and their assumed configuration is based on the currently favored design/location alternate. This alternate was updated and included for detailed study.

- o Transportation System Management (TSM). This alternate considered such improvements to the Shady Grove Road corridor as relatively minor pavement modifications, coordinated traffic signals, preferential treatments for high occupancy vehicles (HOV), increased public transit, and promotion of ride sharing. It was soon discovered that traffic growth in the study area was forecast to increase beyond a level which could reasonably be accommodated by TSM measures alone. However, TSM improvements are incorporated as a portion of those alternates selected for detailed study. In addition, TSM measures have been identified at the I-270/Shady Grove Road interchange by a separate study and will likely be implemented prior to the I-370 study's **Selected Alternate.**

b. Upgrading Existing Roads

This category of alternates incorporated physical roadway improvements in addition to those already included in the No-Build network and could be considered major TSM improvements.

- o Shady Grove Road. Improvements studied included parallel service roads, additional lanes, grade-separated intersections, and widened approaches to intersections.

- o Rockville Pike (MD 355). Various interchange configurations at the intersection of MD 355 and Shady Grove Road were studied.

- o Other Roadways. Alternates were considered which made improvements to the secondary roads in the study area as well as those major facilities already mentioned. Access to I-270 from the proposed Gude Drive extension and also from an extended Gaither Road were investigated as a means of relieving congestion on Shady Grove Road. A route to the Metro Station via an improved Fields/Redland Road was included with these preliminary alternates.

Alternates which involve improvements to Shady Grove Road, MD 355, and I-270 have been retained for further study. The proposed connections of Gude Drive and Gaither Road to I-270 were dropped since those additional access points did not conform to Federal Interstate criteria and also created severe problems with traffic weaving movements along I-270. The use of Fields/Redland Road as a main route for traffic to the Metro Station was eliminated because of a conflict with the parking and circulation patterns for the proposed Metro Station. A plan for an interchange at Shady Grove Road and Gaither Road was studied but was discarded since during construction it would have required either closing Shady Grove Road or removing adjacent buildings for a detour; neither solution was considered acceptable.

c. Construct New Alignments

- o Shady Grove Road Viaduct. An alignment constructed above Shady Grove Road on bridges was considered. Under such an alternate, Shady Grove Road in its present form would have remained in operation for local traffic. Through traffic would have been diverted to the overhead lanes. This overhead alignment was eventually eliminated for several reasons. Construction costs were high due to the extensive use of bridges and to the added design complexity at interchanges. Adverse noise and visual impacts would have been greater than for any of the at-grade alignments under consideration. Steep grades would have been required in order to provide access to the elevated alignment. During construction this alternate would have required extensive detouring of traffic, and local access would have been severely impaired.

- o Southern Alignment. Another alignment for I-370 was investigated which followed a more southerly route. This alternate began at the I-270/Shady Grove Road Interchange. It crossed existing farm land south of Shady Grove Road in a direct path eastward to the Metro station. The Southern alignment was dropped from further study since its limited-access alignment conflicted with area master plans. In addition, this alignment was inconsistent with planned circulation patterns for the Metro Station; it connected to the smaller western parking area rather than the planned connection to the larger eastern parking area. Connecting three major roadways near I-270 and Shady Grove Road would have required restrictions on some traffic movements and would have required a complex ramp configuration to be constructed within an area restricted by existing development.

- o Intercounty Connector Alignment (Master Plan Alignment). Most of the new alignments developed for preliminary investigation fell within the corridor for the Intercounty Connector, which is presently undergoing separate study (see Appendix D). This alignment has been historically established and displayed in area master plans and street maps. Some of the right-of-way is already reserved or purchased and forms a band from I-270 north of Shady Grove

Road to the Metro station. Alternates were developed with varied end points, typical sections, and interchange configurations.

The original alternate set maintained an Interstate facility along the Master Plan Alignment which did not provide access to MD 355. Preliminary traffic evaluation revealed that forecast congestion along existing roads was not relieved and I-370 was underutilized. While this provided excellent service to Metro-bound traffic, it resulted in an unfavorable balance of costs and user benefits. The alternates retained for detailed study strive to improve congestion on the local road network as well as to service Metro-bound traffic.

Another of the alternates along the Master Plan Alignment involved connecting to Shady Grove Road near the B&O Railroad east of MD 355. This alternate was eliminated since it was not compatible with an eastward extension under the Intercounty Connector project.

3. ALTERNATES PRESENTED AT ALTERNATES PUBLIC MEETING

- Alternate 1 - No-Build. The No-Build Alternate was the same as previously described but was updated to reflect changes to the facilities programmed by others. At this stage, the no-build network did not include widening of Shady Grove Road to six lanes; this improvement is included in the no-build network as later defined for detailed study.

- Alternate 2 - Major Improvements to Existing Roads. This alternate proposed major improvements to Shady Grove Road, including a reconstructed interchange with I-270, widening between I-270 and MD 355, and major improvements to its intersection with MD 355. At MD 355 two options were presented: a reconstructed, at-grade intersection (Alternate 2); or a grade separation of the two roads (Alternate 2A).

  The interchange of I-270 and Shady Grove Road was to be reconstructed as a three-level interchange and would have provided direct through movements on Shady Grove Road. This was accomplished almost completely within the existing available right-of-way. Shady Grove Road was to be developed to six lanes via construction of new lanes in the median.

  The proposed at-grade reconstruction of the intersection at MD 355 (Alternate 2) consisted of separating the east and westbound lanes of Shady Grove Road by about 300 feet. The grade separation (Alternate 2A) consisted of a standard diamond-type interchange with all turning movements provided. Shady Grove Road was raised (elevated) over MD 355.

  East of MD 355, access to the transit station would be via present Shady Grove Road and the Metro Station Access Road.

- Alternate 3 - Interstate Facility. This alternate consisted of approximately 3 miles of an Interstate-type, four-lane facility from I-270 to the Shady Grove Metro Access Road. It would be located in the right-of-way previously reserved by Montgomery County as part of its master planning efforts. Studies for this alternate included consideration of priority lanes for buses and other high occupancy vehicles.

  Three interchanges were provided: at I-270, at MD 355, and at Shady Grove Road near the Metro Station Access Road. Two options were indicated for

the MD 355 interchange: construction either over or under MD 355.

The three basic alternates presented at the Alternates Public Meeting have been retained for detailed study but with modifications described in the next section. Most of the proposed interchanges have been altered to reflect changes in traffic forecasts. General alignments and types of facilities remain basically the same.

4. MODIFICATIONS EVALUATED SINCE THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

- Citizen's "Alternate 4" - This modification was presented by the Town of Washington Grove at the Public Hearing on March 30, 1982. The basic idea of this scheme was to keep Shady Grove Road as the major connection to the Metro Station Access Road. The I-370 connection or interchange with Shady Grove Road would fall between MD 355 and the B&O Railroad. Only one circular ramp loop would be constructed for eastbound I-370 off-movement to northbound MD 355. This would be a modification of the full-build alternates.

- Alternate 3E Modified - As a result of the concerns and suggestions at the Public Hearing, several modifications and refinements were deemed worthy of detailed analysis. Basically, the modifications investigated included: 1) shifting the I-370/I-270 interchange southward to eliminate the 4(f) involvement in the parkland; 2) determining if I-370 should pass over or under MD 355; 3) adding a ramp (Ramp N) between westbound I-370 and northbound MD 355; 4) realigning the curve at the eastern end in order to eliminate the channel relocation in the main water course of Mill Creek and move further away from the Redland Station community; 5) changing Ramp J at MD 355 to underpass I-370. These modifications are not considered a substantial change from those presented in the DEIS.

B. ALTERNATES DEVELOPED FOR DETAILED STUDY

1. DESCRIPTION OF ALTERNATES

Six alternates were developed for detailed study from the preliminary concepts presented at the Alternates Public Meeting. They retain the numerical designations based on those concepts. Each alternate provides services from the I-270 corridor to the Metrorail Station. The alternates for detailed study are as follows:

1) Alternate 1 - No-Build

2) Alternate 2C - Widen Shady Grove Road with partial cloverleaf at I-270 and a grade separation at MD 355.

3) Alternate 2D - Identical to Alternate 2C except with a directional ramp at I-270 for southbound traffic.

4) Alternate 3C - I-370 on new alignment from Fields Road to the Metrorail Station with a cloverleaf type interchange at I-270 and a four to six-lane mainline configuration.

5) Alternate 3D - I-370 on new alignment from Fields Road to the Metrorail Station with an interchange having directional ramps at I-270 and a four to six-lane basic mainline configuration.

6) Alternate 3E - I-370 as in Alternate 3D except a shifted alignment at Rosemont Park.

Two modifications to the full-build alternates were studied after public meetings and consideration of comments:

- Citizen's "Alternate 4" - I-370 connected to Shady Grove Road west of the B&O Railroad.
- **Alternate 3E Modified** - **(Selected Alternate)** I-370/I-270 interchange shifted south, I-370 over MD 355, a ramp added, and eastern curve flattened.

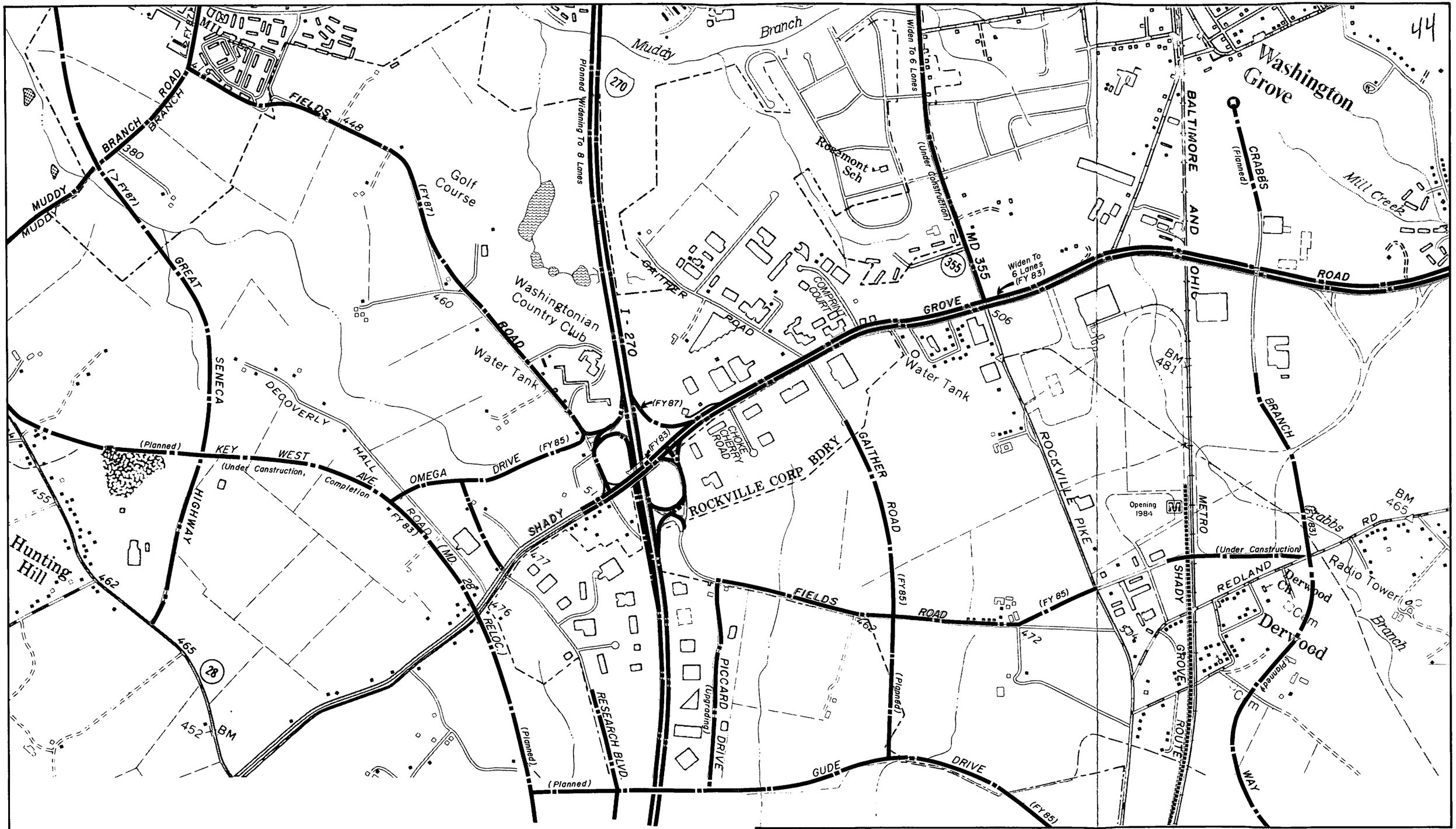
a. Alternate 1 - No Build

This alternate includes all existing and proposed transportation facilities which could reasonably be expected to be constructed prior to the design year. It does not include projects which would be implemented as a direct result of this study. Two versions of the no-build network were identified, one for each of the analysis years of 1986 (estimated year of completion) and 2006 (design year). Proposed projects included in the no-build networks are listed in Table II-1 and shown in Figure II-1. Major features of the proposed no-build network are highlighted below.

- I-270 widened to eight lanes
- Shady Grove Road widened to six lanes

TABLE II-1
ALTERNATE 1 - NO BUILD
PROPOSED PROJECTS IN BASE NETWORK

PROJECT	FROM	TO	Total Through Lanes Existing	1986	2006
Metro Shady Grove Route	Dupont Circle	Shady Grove Station	-	x	x
Metro Access Road	Shady Grove Road	Shady Grove Station	-	4	4
I-270	Spur	Germantown Road (MD 118)	6	6	8
I-270/Shady Grove Road Interchange Improvements			-	x	x
I-270/Diamond Avenue (MD 117) Interchange	-	-	-	x	x
Frederick Avenue (MD 355)	Shady Grove Road	Summit Avenue	2/4	6	6
Frederick Avenue (MD 355)	Summit Avenue	Chestnut Street	2	2	6
Suburban Blvd. (MD 115 Reloc)	Montgomery Village Avenue	Shady Grove Road	-	2	4
Key West Avenue (MD 28 Reloc)	Existing MD 28	Shady Groave Road	-	-	4
Key West Avenue (MD 28 Reloc)	Shady Grove Road	Great Seneca Highway	-	2	4
Key West Avenue/MD 28	Great Seneca Highway	Quince Orchard Road	0/2	0/2	4
Great Seneca Highway	MD 28	Middlebrook Road (MD 118)	-	2	4
Shady Grove Road	Key West	Briardale Road	4	6	6
Gude Drive	Hungerford Drive (MD 355)	Norbeck Road (MD 28)	2	4	4
Gude Drive	Hungerford Drive (MD 355)	Piccard Drive	-	2	4
Gude Drive	Piccard Drive	Research Boulevard	-	4	4
Research Boulevard Extended	-	-	-	4	4
Redland-Fields Road	Piccard Drive	Crabb's Branch Way	2	4	4
Fields Road West	Shady Grove Road	Muddy Branch Road	2	2	4
Redland Road	Needwood Road	Eastern Arterial (MD 115)	2	2	3
Piccard Drive	Fields Road East	Gude Drive	2	4	4
Crabb's Branch Way	Derwood Road	Gude Drive	-	4	4
Gaither Road Extended	-	Redland-Fields Road	-	4	4
Muddy Branch Road	MD 28	West Diamond Avenue	2	2	4
Omega Drive	Fields Road West	MD 28 Relocated	-	4	4
Diamond Back Drive	Shady Grove Road	MD 28 Relocated	-	-	4
Clopper Road/Diamond Avenue	Quince Orchard Road (MD 124)	Frederick Avenue (MD 355)	2	2	4



(FY 85) Indicates scheduled year of completion.
Planned Indicates unprogrammed, future facility.

Alternate 1 No Build

INTERSTATE 370

0 FEET 1000 2000

Figure II-1

- o New bridge across I-270 for westbound Shady Grove Road
- o Improvements to the I-270/Shady Grove Road Interchange
- o Gude Drive extended across I-270 as two lanes
- o Great Seneca Highway constructed as four lanes
- o Metrorail completed to Shady Grove Station

b. Alternate 2C

This alternate consists of increasing capacity along Shady Grove Road in order to improve access to the Metro Station (Figure II-2). An interchange is added at MD 355, and the interchange at I-270 is reconstructed. Other intersections along Shady Grove Road are improved by widening the pavement and adding traffic signals. Traffic signals would be sequenced to coordinate vehicle flow.

Pavement widening along Shady Grove Road from I-270 to Comprint Court involves adding to the outer edges and on the median as required to accommodate one additional travel lane in each direction (for a total of eight lanes). Median width is reduced to a minimum of four feet. The segment from Comprint Court to the grade separation at MD 355 requires only six through lanes (three in each direction).

Some additional right-of-way is required. The width varies, but in most cases does not exceed 12 feet. Additional right-of-way is restricted to the south side of Shady Grove Road.

A tight, urban, diamond interchange is proposed for the intersection of Shady Grove Road and MD 355. Through traffic on MD 355 is raised above the existing intersection. Ramps connected to MD 355 intersect Shady Grove Road at the existing pavement grade. All turns at the interchange and through traffic on Shady Grove Road are controlled by traffic signals at the existing pavement level.

The interchange at I-270 and Shady Grove Road is shown in Figure II-2. Left turns from northbound I-270 to westbound Shady Grove Road and from southbound I-270 to eastbound Shady Grove Road are through signalized intersections. Other movements are handled by partial-cloverleaf ramp configurations. The planned and existing bridges over I-270 must be widened to accommodate additional lanes. These bridges must also be modified to allow new ramps to be constructed between the piers and the abutments below the bridges.

c. Alternate 2D

Alternate 2D is identical to Alternate 2C except for the interchange at I-270 and Shady Grove Road. In Alternate 2C the movement from westbound Shady Grove Road to southbound I-270 is accomplished by a circular loop ramp. In Alternate 2D (Figure II-3) this same movement is accomplished by a directional ramp. This change in ramp geometry allows a more compact interchange and requires less right-of-way than Alternate 2C. Also, the future bridge to be constructed for Shady Grove Road over I-270 does not require additional widening as part of Alternate 2D.

d. Alternate 3C

A roadway along new alignment is proposed for this Alternate as shown in Figure II-4. The western limit of the alignment begins with an at-grade intersection at Fields Road. The roadway follows the alignment planned for the Intercounty Connector with one exception; in the Rosemont Park/Comprint Court area Alternate 3C is shifted about 250 feet westward to avoid Rosemont Park and an apartment building. The eastern end of the alignment connects to the Metro Access Road near Shady Grove Road.

A six-lane typical section to Interstate standards would be used from I-270 to MD 355, continuing as four lanes to the Metrorail station. The typical section from the I-270 interchange westward to Fields Road would have a curbed section similar to an urban arterial street. I-370 would have a design speed of 65 mph through most of its length with transitions to lesser speeds at the eastern and western ends.

A new interchange at I-270 would have a modified cloverleaf ramp configuration. A partial interchange is proposed at MD 355; no provisions are made for exits from westbound I-370 or for eastbound entrances to I-370. Near the Metro station, ramps are provided for access to Shady Grove Road. Grade separations without connections are provided at Oakmont Avenue and Crabb's Branch Way. The intersection of MD 355 and Shady Grove Road is widened for increased capacity. At Shady Grove Road, a ramp is added to allow access to southbound I-270 from the west.

The vertical alignment begins at grade with Fields Road, then bridges over the stream west of I-270. The mainline profile continues over I-270 and under MD 355, then rises above Oakmont Avenue, the Baltimore and Ohio Railroad, and proposed Crabb's Branch Way. I-370 passes under Shady Grove Road near the Metro Station.

Bridges are required whenever I-370 or its proposed interchange ramps cross other roadways. The stream west of I-270 is bridged, and the ramp in the north-east quadrant of the I-270 interchange bridges Muddy Branch near Summit Hall Park.

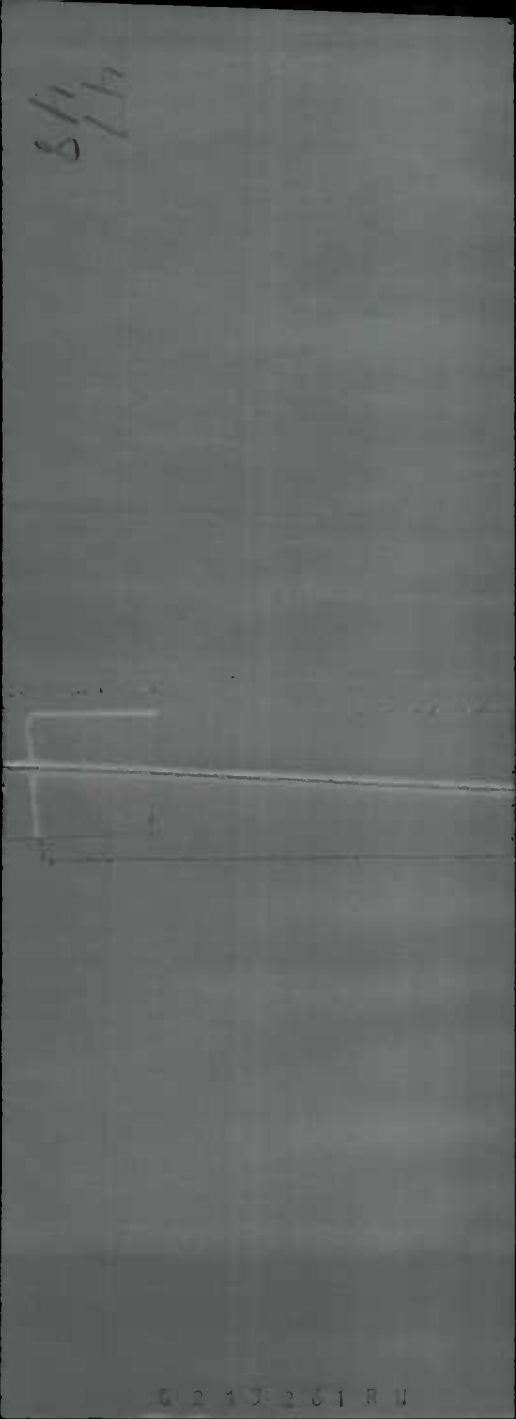
Retaining walls, varying from 20 to 30 feet high, are used to protect properties adjacent to widened I-270 north of the I-370 interchange. Near Summit Hall Park, a wall up to 20 feet high is used to keep the fill slope from encroaching upon the channel of Muddy Branch. Walls up to 52 feet high are used where I-370 is adjacent to Shady Grove Road near MD 355. The apartment building near Rosemont Park is protected by a 20 foot high retaining wall.

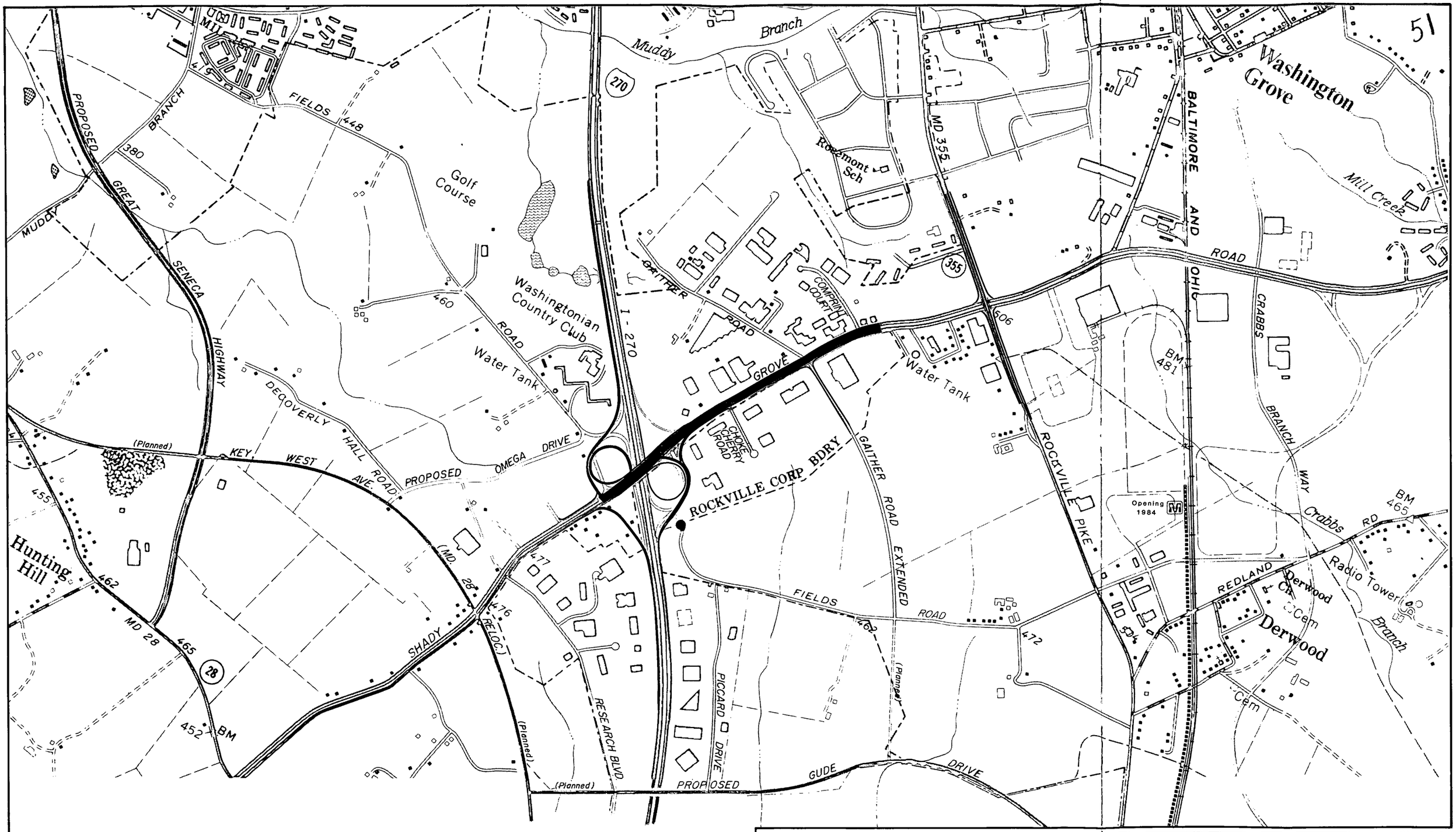
e. Alternate 3D

The alignment proposed for Alternate 3D is shown in Figure II-5. Alternate 3D follows the alignment planned for the Intercounty Connector. It passes through Rosemont Park instead of having the more westward alignment of Alternate 3C. This tighter horizontal alignment reduces the design speed to 60 mph.

From Fields Road to the I-270 interchange a six-lane curbed typical section is proposed. A six-lane, interstate facility would be constructed from I-270 to MD 355. Two lanes are dropped at MD 355, and I-370 continues as a four-lane, Interstate facility until connecting with the Metro Access Road.

Interchanges and grade separations occur with the same roadways as Alternate 3C, except the interchange at I-270 is substantially different. With Alternate 3D, all the ramps at I-270, except one, have a directional configuration. The single exception is the ramp carrying traffic from west of I-270 onto northbound I-270; this ramp has a





Alternate 2C

INTERSTATE 370

0 FEET 1000 2000

Figure II-2

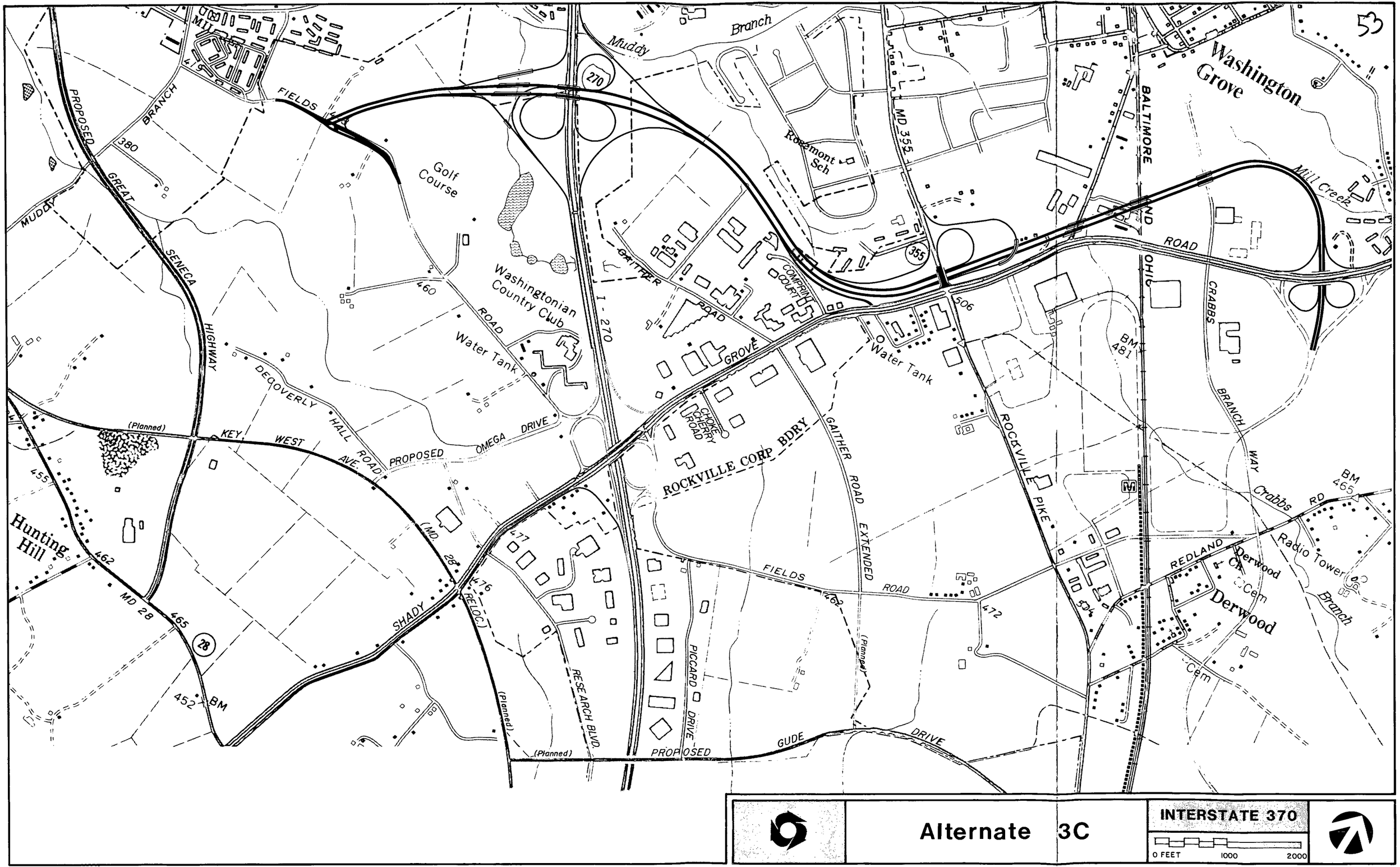
Muddy Branch
PROPOSED GREAT SENECA HIGHWAY
FIELDS ROAD
380
448
460
Golf Course
Washingtonian Country Club
Water Tank
DEQOVERLY HALL ROAD
(Planned) KEY WEST AVE.
PROPOSED OMEGA DRIVE
455
462
Hunting Hill
MD 28
465
452 BM
(MD 28 RELOC)
476
SHADY
(Planned)
RESEARCH BLVD
PICCARD DRIVE
PROPOSED
GUDE DRIVE
270
I-270
ROCKVILLE CORP BDRY
GAITHER ROAD EXTENDED
(Planned)
FIELDS ROAD
462
472
GAITHER ROAD
COMPRINT COURT
GROVE
CHOKE CHERRY ROAD
Rosemont Sch
MD 355
355
606
Water Tank
ROCKVILLE PIKE
BALTIMORE AND OHIO
Washington Grove
Mill Creek
ROAD
CRABBS BRANCH WAY
BM 481
BM 465
Crabbs RD
REDLAND CR
Derwood Cem
Derwood
Radio Tower
Branch
Cem

Alternate 2D

INTERSTATE 370

0 FEET 1000 2000

Figure II-3



	Alternate 3C	INTERSTATE 370 0 FEET 1000 2000

Figure II-4

ALTERNATE 3E MODIFIED
(SELECTED)

INTERSTATE 370

0 FEET 1000 2000

Figure II-6

recalculated. Costs for "over" and "under" were too close to make a choice on the basis of cost alone. It was decided, however, to take I-370 over MD 355 because it simplified Ramp J bridge structure although requiring some additional Ramp N earth excavation. In addition, construction of the over option would cause far less traffic disruption on MD 355 than the under.

The flattening of the eastern curve, using a series of compound curves, removed the need for rechanneling the main watercourse of Mill Creek and moved the alignment further from Redland Station, but will require rechanneling and culvert for an already affected small tributary. Two of the three natural springs in the Mill Creek floodplain will remain untouched, but the third will require enclosure. This new alignment no longer makes the noise barrier in the area cost-effective, and an exception to Federal Design Noise Levels will be requested.

2. BASIS FOR SELECTION

a. Criteria

The factors presented in Table II-2, Costs, and Table II-3, Comparison of Impacts, were all considered in selecting an alternate. The most critical, and the basic justification for the proposed action at its inception, was the ability of the selected alternate to handle projected traffic levels adequately. This first criterion being met, levels of impact for the tabulated areas of concern were considered. Some of the important areas were parkland involvement, residential and business displacement, and stream relocations. At the last level of analysis, costs, construction risk factors, and traffic safety during construction were analyzed.

b. Evaluation of Alternates

Alternate 1, No-Build, was not selected because of its inability to handle projected traffic, causing total breakdown during peak hours. In addition, this congestion would have constrained development as planned by county and local governments. The low cost and level of other impacts were outweighed by these considerations.

Alternates 2C and 2D, which upgrade existing roads, cost far less than any of the other build alternates, and had fewer environmental and socioeconomic impacts. However, they failed to accommodate projected traffic and constrain economic growth in the region. As for Alternate 1, these problems weighed against the acceptability of either 2C or 2D.

The remaining alternates, 3C, 3D, 3E, and **3E Modified,** have the needed capability to handle most or all projected traffic, but differ from each other in other aspects. Table II-2 shows that all are more costly than 1, 2C, or 2D, but these costs are justified because of traffic service needs, including access to Metro, and conformity with local and regional master plans. They would also provide for increased development and tax revenues. As shown in Table II-3, each full-scale alternate differs from the others. Alternate 3D was rejected due parkland involvement at the I-270/I-370 interchange and Rosemont Park stream relocations in the park, and the displacement of 108 more people than the other alternates. Alternates 3C and 3E (unmodified) avoided Rosemont Park and the apartment building, but required parkland at the I-270 interchange and involved stream relocation at the eastern terminus. Additionally, 3C was unable to handle the full projected traffic load.

Alternate 3E Modified, although the most costly initially, was selected because it best satisfies projected traffic demands and planned development. Furthermore, it

two-lane, loop configuration. The I-270 interchange includes collector/distributor (C/D) roads along both sides of I-270 as shown in the typical cross sections. These C/D ramps service all turning traffic and simplify through movements on I-270.

Vertical alignment is similar to that described above for Alternate 3C.

Alternate 3D requires bridges and retaining walls as described for Alternate 3C except at the I-270 interchange. The directional interchange at I-270 requires bridges to provide vertical separation of the turning movements. Retaining walls are required northward along I-270 to allow the C/D roads to be constructed within existing right-of-way. No retaining wall would be required at the apartment building at Rosemont Park, since the building would be displaced by right-of-way for Alternate 3D.

f. Citizen's "Alternate 4"

The suggested connection/interchange of I-370 and Shady Grove Road from the Washington Grove representatives was detailed into a geometric plan and a traffic assignment was forecasted on this network. The system exceeded LOS F (failure) on Shady Grove Road between the B&O Railroad and the Metro Access Road. A cost estimate indicated that the bridge structures involved in Alternate 4 were very expensive. This Alternate was not considered reasonable under the following criteria. It would not satisfy projected traffic demands, but would instead increase existing problems, and would not provide the desired level of safe and convenient access to the Shady Grove Metro Station. The design would not conform to minimum interstate highway standards; conformity would require revisions which would increase impacts on homes, apartments, a community center, and parks. The proposed modification would eliminate two apartment buildings and require relocation of the residents. For these reasons, "Alternate 4" was not a reasonable alternative.

g. **Alternate 3E Modified (Selected Alternate)**

The refinement and detailed analysis of Alternate 3E as presented at the March 30, 1982 Public Hearing underwent several modifications for further analysis. These modifications were: 1) shift the I-370/I-270 interchange southward to eliminate the impacts on Muddy Branch and Summit Hall parks; 2) determine that I-370 should bridge MD 355; 3) add Ramp N between westbound I-370 and northbound MD 355; 4) realign the eastern curve to eliminate rechanneling Mill Creek; 5) change Ramp J to underpass I-370 at MD 355. The original modification to Alternate 3, to develop Alternate 3E, was to realign the route westward in the Rosemont Park/Comprint Court area. This shifted alignment avoids Rosemont Park and a nearby apartment building, but affects commercial development on the eastern side of Comprint Court. A curbed four-lane divided highway with continuous acceleration/deceleration lanes in each direction is used west of I-270, and an Interstate typical section with four lanes with acceleration/deceleration lanes is used from I-270 to the Metro Access Road. Directional ramps are used at the I-270/I-370 interchange, with an interlaced collector-distributor road system along I-270 between Shady Grove Road and the proposed interchange. The interlacing of the C-D roads along I-270 enables elimination of critical weave sections in both directions between the Shady Grove Road and I-370 interchanges. The southward shift of the I-270/I-370 interchange allows the elimination of parkland encroachment. These changes are all shown in Figure II-6, with typical sections in Figures II-7 (I-370) and II-8 (Extension to Fields Road).

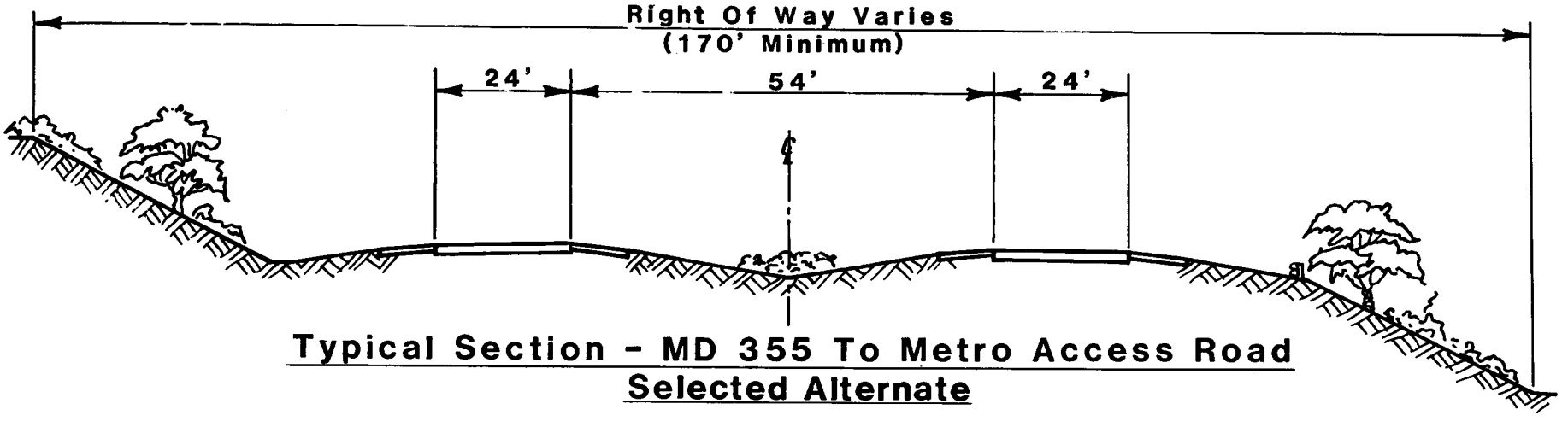
Detailed engineering analysis was made of the choice between I-370 crossing over or under MD 355. This analysis included refinement of the length, height, and structural detail of retaining walls and bridge structures, and project earthwork was

Alternate 3D

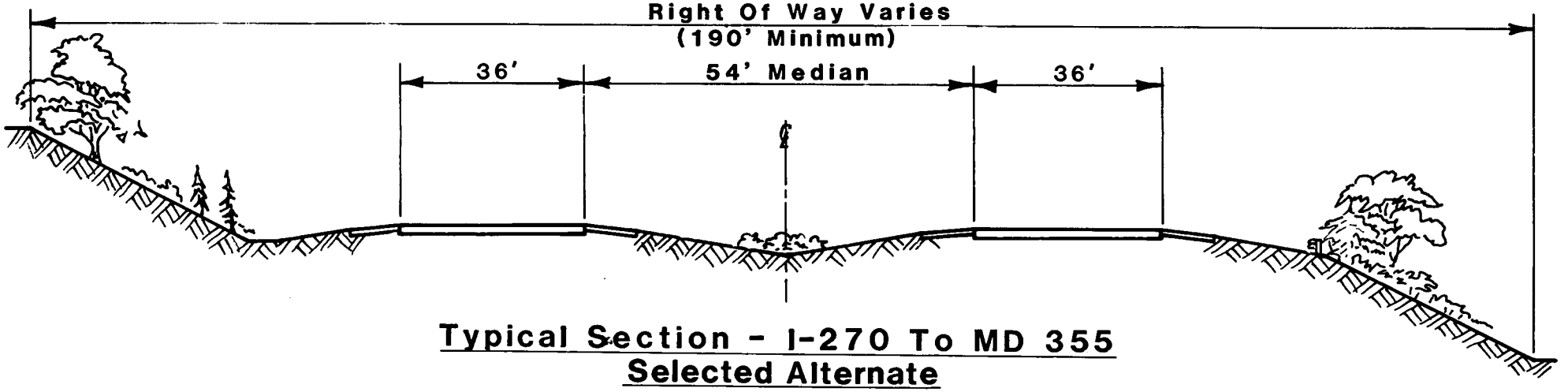
INTERSTATE 370

0 FEET 1000 2000

Figure II-5



Typical Section - MD 355 To Metro Access Road
Selected Alternate

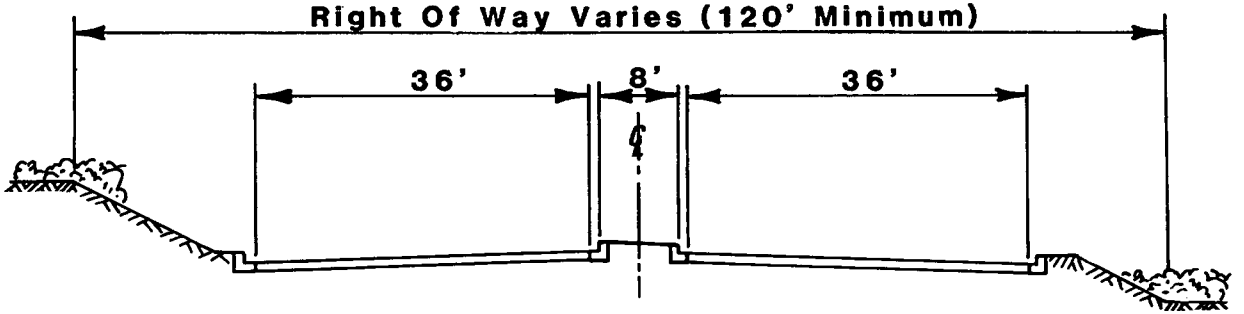


Typical Section - I-270 To MD 355
Selected Alternate

The Dimensions Shown Are For The Purpose Of Determining Cost Estimates And Environmental Impacts, And Are Subject To Change During The Final Design Phase.

	Typical Sections I-370 On New Location I-270 To Metro Access Road	INTERSTATE 370 0 FEET 15 30 45	58

Figure II-7



Typical Section — Fields Road To I-370
Selected Alternate

The Dimensions Shown Are For The Purpose Of Determining Cost Estimates And Environmental Impacts, And Are Subject To Change During The Final Design Phase.

	Typical Section **I-370 Connection On New Location** **I-370 To Fields Road**	INTERSTATE 370 0 FEET 10 20 30	59

Figure II-8

TABLE II-2

Preliminary Capital Cost Summary
(In Thousands of Dollars)

Alternate	Construction[1]	Right-of-Way[2]	Other[3]	Total
1	0	0	0	0
2C	18,776	4,928	1,151	24,855
2D	19,642	3,489	1,364	24,495
3C	74,997	26,325	4,168	105,490
3D	98,566	26,350	5,298	130,214
3E	100,588	28,435	5,412	134,435
3E Mod.[4]	96,928	31,244	6,143	134,315

1. Based on 1981-82 costs; includes cost for construction engineering, administration, and overhead. All cost estimates updated in June 1982.

2. Includes relocation costs, administration, and overhead.

3. Includes costs for project planning and preliminary engineering with their resultant administration and overhead.

4. Selected Alternate.

TABLE II-3
COMPARISON OF IMPACTS BY ALTERNATE

	SOCIOECONOMICS						TRANSPORTATION			AIR QUALITY	NOISE		
	Residential Displacement	Access to Community Facilities	Disruption of Neighborhoods	Accommodation of Planned Land Use	Business Displacement	Increase in Tax Revenues	Constraints on Design Year Traffic - Critical Link on Shady Grove Rd.	Traffic Delay (Vehicle Hrs)	No. of Intersec. Exceeding Design Capacity (LOS D)	Sites Where CO Concentrations Exceed Standards	No. of Sites Exceeding FHWA Design Noise Levels	No. of Sites with Sign. Noise Impact	Historical and Archeological Resources
Alternate 1	none	some difficulty due to traffic congestion	none	3 %	none	$300,000	24 % constraint	2,630	4	none	4	0	no disturbance
Alternate 2C	8 families, 24 people	some difficulty due to traffic congestion	none	34 %	1 gas station	$3,300,000	12 % constraint	590	2	none	4	0	no disturbance
Alternate 2D	8 families, 24 people	some difficulty due to traffic congestion	none	34 %	none	$3,300,000	12 % constraint	590	2	none	4	0	no disturbance
Alternate 3C	10 families, 30 people	no impairment	none	80 %	36	$7,800,000	none	180	1	none	8	5	no disturbance
Alternate 3D	46 families, 138 people	physical barrier created in Rosemont Park	none	100 %	2	$9,700,000	none	220	1	none	7	4	no disturbance
Alternate 3E Modified (Selected Alternate)	10 families, 30 people	no impairment	none	100 %	36	$9,700,000	none	220	1	none	7	5	no disturbance

TABLE II-3
COMPARISON OF IMPACTS BY ALTERNATE (cont.)

	NATURAL RESOURCES										
	Visual & Scenic Resources	Topography	Soils	Water Resources	Water Quality	Stream Modification	Wetlands	Flood Hazard	Terrestrial Habitats	Aquatic Habitats	Threatened & Endangered Species
Alternate 1	no disturbance	none	none	none	no change	none	none	none	none	none	none
Alternate 2C	minimal	negligible	some erosion	none	negligible	none	none	none	none	none	none
Alternate 2D	minimal	negligible	some erosion	none	negligible	none	none	none	none	none	none
Alternate 3C	loss of open space, woodland	alterations for roadway	cut & fill exposure, erosion	negligible	construction, road runoff	1 relocation, several culvert crossings	none	negligible	open fields, woodlands lost to rdwy const.	alteration from stream relocation, culvert	none
Alternate 3D	loss of open space, woodland	alterations for roadway	cut & fill exposure, erosion	negligible	construction, road runoff	2 relocations, several culvert crossings	none	negligible	open fields, woodlands lost to rdwy const.	alteration from stream relocation, culvert	none
Alternate 3E Modified (Selected Alt.)	loss of open space, woodland	alterations for roadway	cut & fill exposure, erosion	negligible	construction, road runoff	1 relocation, several culvert crossings	none	negligible	open fields, woodlands lost to rdwy const.	alteration from stream relocation, culvert	none

avoids all possible park involvements and minimizes stream relocation and culverting. The one remaining choice, whether to go over or under MD 355 at its intersection with I-370, was decided in favor of the over option, because costs were roughly equal and the over option involved less risk to construct and caused fewer problems with traffic maintenance.

III. AFFECTED ENVIRONMENT

A. SOCIAL, ECONOMIC, AND LAND USE PLANNING

1. SOCIAL/DEMOGRAPHIC CHARACTERISTICS

The proposed I-370 project is centered in the fast-growing industrial and residential corridor between Gaithersburg and Rockville. The social and demographic characteristics of the affected environment continue to reflect the rapid rate of economic growth in both industry and housing over the past two decades. Figure III-1 (Neighborhoods/Communities) gives an overview of the social elements and the census tract boundaries in the I-370 study area. Major social/demographic characteristics of the area are highlighted below.

a. Settlement Pattern

Prior to the 1950's the area was characterized by gently rolling hills, farmlands, widely dispersed houses, and open spaces and was considered largely outside of the Washington metropolitan area. In the 1950's suburbanization began and has continued to the present. Ninety percent of the existing houses in the area were built since 1950 and over 50 percent since 1965 (M-NCPPC, April 1977). In addition, the area has attracted research-oriented firms and federal agencies such as the Bureau of Standards.

In response to continued development pressures, Interstate 270 was developed paralleling the older MD 355. Each of these two highway development corridors contains extensive commercial and industrial activities. Within the area these corridors are linked by Shady Grove Road, which is itself an activity corridor with extensive industrial and commercial uses along either side. Around the corridors new residential subdivisions such as Shady Grove Village, Townes of Warther, Redland Station, and Parkside Estates have filled in the development mosaic. The remaining pockets of agricultural land and open space presently wait for a more favorable financial/political climate before residential and commercial development in the area will be completed.

b. Population

Six percent of Montgomery County's 1980 population, including people residing within the corporate limits of Rockville, Gaithersburg and the town of Washington Grove, lives in the project vicinity. A detailed breakdown of 1980 population in this general vicinity is shown in Table III-1. Half of the population, approximately 17,000 persons, lives in the immediate vicinity (1980 Census Tracts 7.04, 7.05,. 7.11, and 8.01 as indicated in Table III-1 and Figure III-1). In addition, the day-time population includes in excess of 5,000 workers (M-NCPPC, 1977).

Table III-2 shows the change in population for various census tracts in the area between 1970 and 1980. The two fastest growing areas during the period, Brighton and Muddy Branch, are within the corporate limits of Gaithersburg. They correspond to census tracts 7.05 and 8.01 shown in Figure III-1.

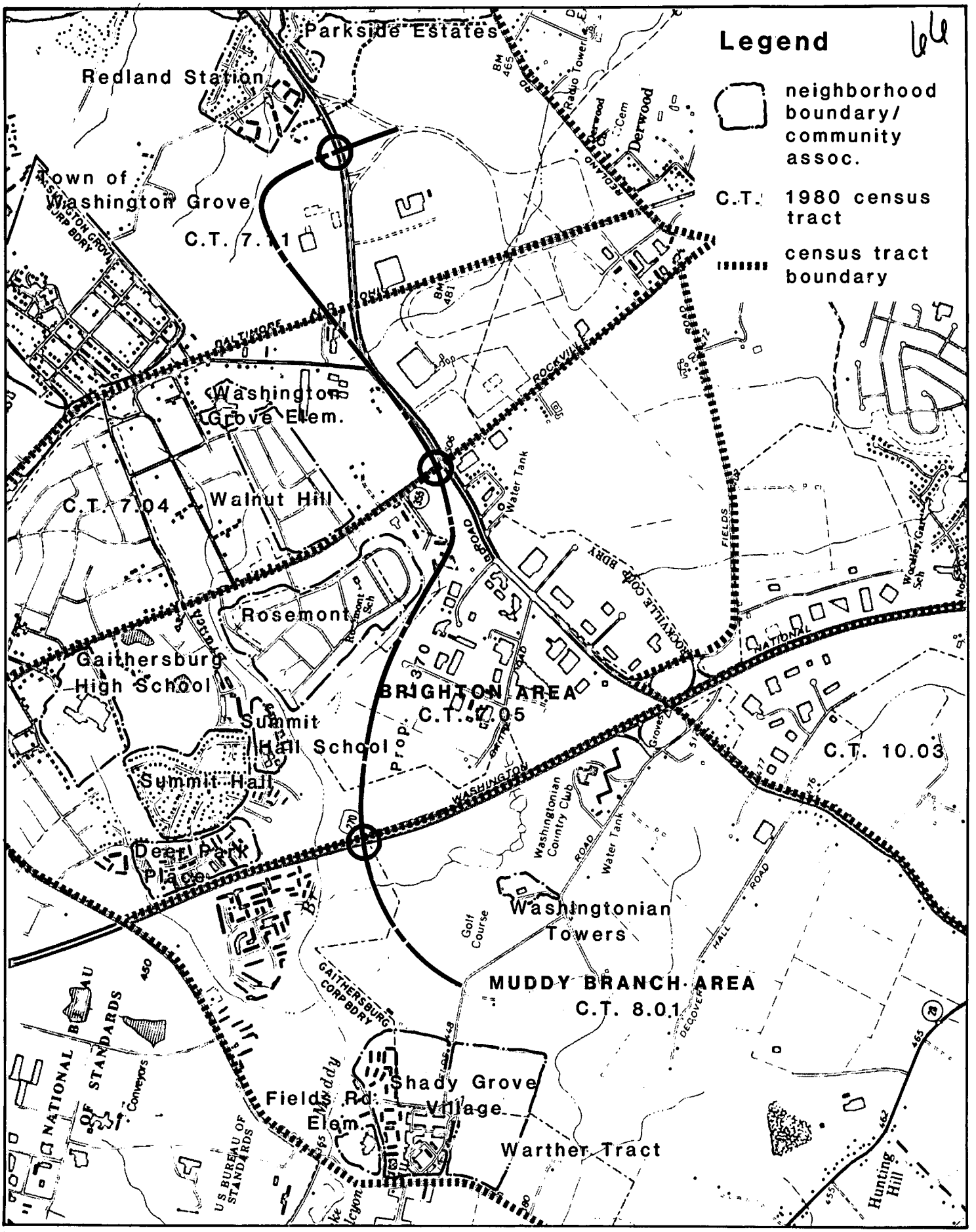

Legend
neighborhood boundary/ community assoc.
C.T. 1980 census tract
census tract boundary
Parkside Estates
Redland Station
Town of Washington Grove
C.T. 7.11
Washington Grove Elem.
C.T. 7.04
Walnut Hill
Rosemont
Gaithersburg High School
Summit Hall School
Summit Hall
Deer Park
Place
BRIGHTON AREA
C.T. 8.05
C.T. 10.03
Washingtonian Towers
MUDDY BRANCH AREA
C.T. 8.01
Shady Grove Village
Fields Rd. Elem.
Warther Tract
Derwood
Water Tank
Golf Course
Hunting Hill
NATIONAL BUREAU OF STANDARDS
Neighborhoods/Communities
INTERSTATE 370
0 FEET 1000 2000 3000

Figure III - 1

TABLE III-1

Population in General Vicinity of I-370 Study Area
Preliminary 1980 Census of Population for Selected Census Tracts
Montgomery County, Including the City of Rockville, City of Gaithersburg and Town of Washington Grove, Maryland

Census Tract/Area Name		Total	White	Black	Indian/Eskimo	Asian	Other	Spanish
7.04	**Montgomery County**	**2,335**	**2,223**	**28**	**7**	**64**	**13**	**58**
	Gaithersburg	1,680	1,606	17	7	64	6	38
	Remainder	655	617	11	-	20	7	20
7.05	**Montgomery County**	**5,133**	**4,612**	**191**	**17**	**268**	**44**	**101**
	Gaithersburg	4,735	4,239	176	17	259	44	95
	Rockville	-	-	-	-	-	-	-
	Remainder	398	373	16	-	9	-	6
7.10	**Montgomery County**	**3,008**	**2,790**	**131**	**1**	**67**	**19**	**64**
7.11	**Montgomery County**	**4,292**	**2,876**	**1,211**	**6**	**145**	**56**	**98**
	Washington Grove	527	516	3	-	6	2	15
	Remainder	3,765	2,360	1,208	6	139	54	83
8.01	**Montgomery County**	**4,740**	**3,862**	**517**	**19**	**279**	**63**	**195**
	Gaithersburg	4,384	3,511	517	19	277	60	185
	Remainder	356	351	-	-	2	3	10
10.03	**Montgomery County**	**5,305**	**4,890**	**113**	**4**	**269**	**29**	**291**
	Rockville	11	11	-	-	-	-	-
	Remainder	135	133	2	-	-	-	-
10.04	**Montgomery County**	**6,024**	**5,412**	**245**	**4**	**268**	**95**	**221**
	Rockville	3,255	2,863	169	3	156	64	142
	Remainder	2,514	2,302	75	1	105	31	78
		255	247	1	-	7	-	1
12.08	**Montgomery County**	**2,332**	**2,160**	**62**	**2**	**53**	**15**	**40**
	Rockville	54	34	19	1	-	-	1
	Remainder	2,278	2,126	49	1	53	15	39
VICINITY TOTAL		**33,169**	**28,825**	**2,498**	**60**	**1,413**	**334**	**1,068**

SOURCE: Maryland, Department of State Planning, **Memorandum to Planning Directors,** March 18, 1981.

TABLE III-2

1970-1980 Census of Population, Change for Selected Census Tracts:
Montgomery County, Cities of Rockville and Gaithersburg, Maryland

Census Tract	1970 Census	1980 Census	70-80 Change
7.04	2,881	2,335	-19 %
7.05	2,719	5,133	89 %
8.01	672	4,740	605 %
10.03	831	5,305	538 %
10.04	6,556	6,024	-8 %
12.08	1,349	2,332	73 %

Source: Maryland, Department of State Planning, **Memorandum to Planning Directors,** March 18, 1981

The M-NCPPC, **Information Bulletin, No. 18, Area, Population and Housing Counts, 1970-1975 for Election Districts and Census Tracts,** Montgomery County, Maryland, January 1976.

Development allowed a six-fold increase in Muddy Branch's population, and Brighton's increased 90%. This growth largely caused transportation problems. The rapid expansion during 1970-1980 in the Muddy Branch area is predicted into the 80's at the same rate, further intensifying traffic pressures on the road network.

Census tract 7.04 was the only area with a significant loss in population over the last decade. As shown in Table III-2, population in this tract declined by 546 persons, 19 percent between 1970 and 1980. One factor contributing to the decline may be the prevalence of older, single-family homes in the Deer Park area. Most of Deer Park's housing stock was constructed in the 1950's and occupied by families with children. Today, many Deer Park homes are occupied by couples whose children have grown and moved away, lowering the average number of persons per household. Census tract 10.04 also experienced a modest loss in population (8%) fromm 1970 to 1980.

The City of Gaithersburg was the fastest growing incorporated city in the Washington metropolitan area during the 1970's, from 8,344 persons in 1970 to 26,424 in 1980. The growth rate was 216 percent compared to only 10.8 percent for the County. The City of Rockville increased slightly to 43,811 persons, 2.5 percent. These increases are significant when compared with other cities in the region which generally experienced modest losses in population. Most of the population increase in the study area was due to the in-migration of new residents.

c. Households

Consistent with national, state and regional trends, population growth in the study area has been outstripped by the rate of growth in the number of households. The reasons for the higher rate of household growth is the decline in the average number

of people per housing unit and reflects continued trends of lower birth rates, more two-worker households and increases in the singles population. This trend is expected to continue according to COG Cooperative Forecasts, which project an increase in the number of households in the Gaithersburg area from 21,190 in 1980 to 33,160 by the year 2,000, an increase of 56 percent. This figure compares with a projected increase in population of only 40 percent over the same period.

d. Density

The study area represents typical bedroom community densities with a few exceptions. Washingtonian Tower, a multi-family building located immediately west of I-270 near Fields Road, and Rosedale Garden Apartments, located in the northwest quadrant of the Shady Grove Road and MD 355 intersection, are among the few high-density exceptions in the general vicinity. Average dwelling units per acre are 33-43 for the high-rise and 12-21 for the garden apartments. Other single-family detached units range from two-and-a-half to four dwelling units per acre and townhouses 12-14 units per acre. Average population per household in the I-270 corridor is slightly over the county density of 3.07, with 3.16 persons per household (M-NCPPC, January 1976). This figure is expected to decline to 2.59 persons per household by the year 2000 (MWCOG, 1979).

e. Income and Age Distribution

Families living in the area generally own their homes and can be characterized as white, relatively young, middle-income families with children. The tendency has been for new arrivals to have lower median age and family income than the comparable Montgomery County medians. There are no low-income areas in the study area, and the incidence of poverty (as a percentage of families with incomes below the poverty level) is less than the county level.

f. Housing

The predominance of younger households in the study area reflects the unique characteristics of the housing stock in the Gaithersburg area. In 1980, the Gaithersburg area contained 20,110 dwelling units of which 51 percent were multi-family (garden apartments and high-rise apartments). This is substantially higher than the 33 percent County share of multi-family units. Townhouse development has also flourished, particularly in the Muddy Branch area where 35 percent of the townhouses were found in 1976.

The housing stock for Muddy Branch and Brighton is approximately 3,600 units in place and is of three types: apartments (60 percent), townhouses (24 percent), and single family (16 percent). Average price of housing in 1979 ranged from $60,000 to $67,000. Average rentals for the same year ranged from $295 to $340.

A City of Gaithersburg survey indicated a low, 3 percent overall apartment vacancy rate. Approximately 70 percent of those landlords reporting revealed no vacancies. The remaining 30 percent reported vacancies of one to five percent. The vacancies appear more frequently in the larger, higher rent, newer complexes. No permits for new apartment construction have been issued by Gaithersburg since 1974 (City of Gaithersburg, Planning Department, July 1980).

The housing market trend in the area is more townhouse development; of approximately 2,000 new units under review or construction in Gaithersburg, 77 percent are townhouse units.

g. Ethnic Characteristics

The populace is predominantly white, especially in older neighborhoods. New arrivals include some blacks, and peoples of Indian/Eskimo, Asian, and Spanish origins who are being assimilated in the new subdivisions. There are no ethnic concentrations in the area, and the percentage of ethnic groups for the area is somewhat lower than the average county composition for these groups.

h. Neighborhoods/Social Units

The Shady Grove area has attracted families from elsewhere in Montgomery County closer to the District of Columbia and other more urban areas because of low density, abundance of open space, and community services. However, migration to the Shady Grove area has resulted in a decrease in open space. Residents are increasingly concerned about the impact of newcomers on space and services, the adequacy of the road system, and community identity (M-NCPPC, April 1977). In response to similar concerns, older communities, such as Washington Grove, and Walnut Hill, Rosemont and other subdivisions, have organized citizens' associations.

2. COMMUNITY FACILITIES

This section reviews community facilities which are most likely to be affected by the proposed project. In the paragraphs which follow, facilities depicted in Figure III-2 are reviewed.

a. Churches

Among various churches scattered throughout the area, two are close to the proposed project. Both are approximately 3,000 feet north of Shady Grove Road on MD 355. Gaithersburg Presbyterian Church sits on the north side of Rosemont Drive and Epworth Methodist Church on the south side adjacent to the Rosemont subdivision across from Walnut Hill.

b. Schools

Many of the subdivisions in the area include an elementary school and a neighborhood park in accordance with the county planning principles for school siting. The schools are presently operating at near capacity in contrast with more urbanized areas of the county where many of the schools are facing closings. Rosemont and Summit Hall Elementary Schools are the two schools closest to the proposed project. Both are in Gaithersburg east of I-270. Primary access to Summit Hall School is via Deer Park Road, a collector road which ties into Muddy Branch road to the north and MD 355 to the east. Rosemont School, the closer one to the proposed project, is serviced by South Westland Drive, linking to MD 355 approximately 3,000 feet north of Shady Grove Road. Rosemont Elementary is expected to operate at 95 percent of its capacity (285-350 pupils) in the coming year. According to Rosemont School officials, only about 20 students come from the south on MD 355.

c. Parks and Open Space

It has been county policy to utilize stream valleys, wetlands, and floodplains as open spaces and for recreational purposes. Three such areas along the tributaries of Muddy Branch in Gaithersburg are likely to be affected by the proposed project. The affected areas include portions of Muddy Branch Park, Rosemont Park and Summit Hall Park.

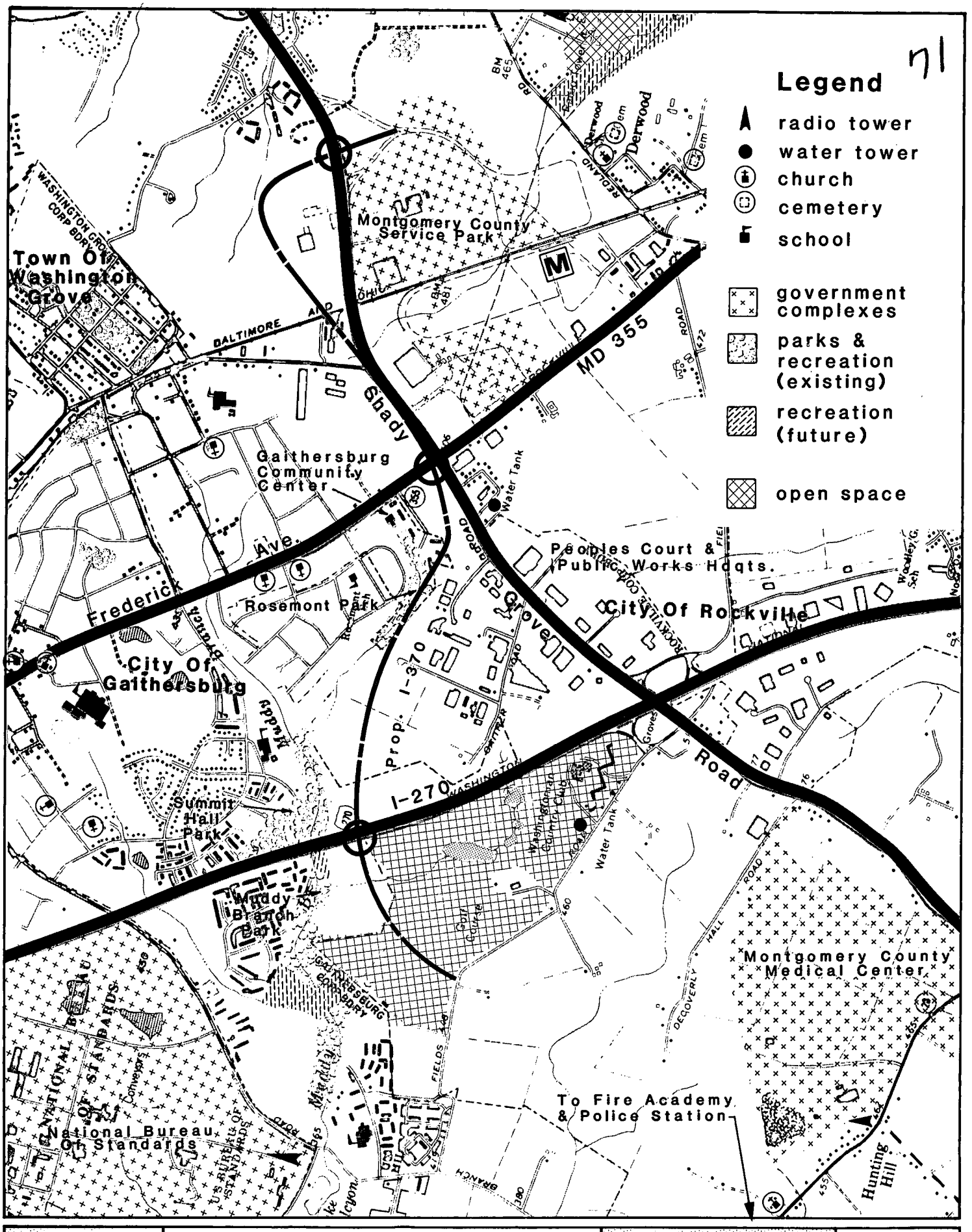

Legend
radio tower
water tower
church
cemetery
school
government complexes
parks & recreation (existing)
recreation (future)
open space
Town Of Washington Grove
Montgomery County Service Park
Gaithersburg Community Center
Rosemont Park
City Of Gaithersburg
Summit Hall Park
Muddy Branch Park
National Bureau Of Standards
Peoples Court & Public Works Hqts.
City Of Rockville
Montgomery County Medical Center
To Fire Academy & Police Station
Hunting Hill
Derwood
MD 355
Frederick Ave.
Shady Grove Road
Prop. I-370
I-270
Baltimore And Ohio
Washington Grove Corp Bdry
Water Tank
Washingtonian Country Club
Gaithersburg Cemetery
Gude Drive
Redland Road
Hall Road
Decoverly Hall Road
Fields Road
Muddy Branch
Gravel Pit
INTERSTATE 370
0 FEET 1000 2000 3000
Community Facilities

Figure III - 2

Muddy Branch Park lies south of the Brighton West development in Gaithersburg; Rosemont Park is located between the Rosemont subdivision, the Rosedale Apartments and the industrial park west of Shady Grove Road. Summit Hall Park lies south of the Summit Hall Elementary School with access from Summit Hill Road and Deer Park Road. Collectively, these areas provide over 100 acres of public parkland, most of which is developed for recreational use. With the exception of Muddy Branch Park, which is mostly wooded, park facilities are extensively used by city and county residents and schoolchildren.

In addition to the parks, the privately-owned Washingtonian Country Club Golf Course is in close proximity to the proposed project. However, the golf club is being considered for extensive commercial development which would foreclose its recreational use.

d. Emergency Services

Fire and rescue services for the area are provided by the Gaithersburg-Washington Grove Volunteer Fire Department through its new fire station, No. 29, located at the intersection of Montgomery Village Avenue and Russell Avenue.

e. Law Enforcement

The study area is served by Montgomery County Police patrols on an areawide response basis in contrast with the traditional urban precinct system. Administrative facilities are located off of MD 28 (Darnestown Road) immediately south of the area. Supplemental police protection is provided by Rockville and Gaithersburg within their city limits.

f. Medical Facilities

The Montgomery County Medical Center, which serves as a central site for the Shady Grove Hospital (otherwise known as the Shady Grove Adventist Hospital), the Regional Institute for Children and Adolescents, the Mental Health Center, the Psychiatric Institute, and various leased private doctors' offices, is the medical complex serving the study area's local medical needs. The center is located between I-270 and MD 28 to the north of Shady Grove Road.

g. Community Transportation Services

Outside of the actual highway and street network, the study area is served by County-operated buses, private commuter buses and vanpools, and commuter rail service.

The Montgomery County Department of Transportation's ride-on bus system also operates nine buses for the Department of Human Services under an advance reservation system to serve elderly, handicapped, and low-income people. Other public and private organizations also provide similar transportation services to selected segments of the area population.

In addition, a number of private employers, including Vitro Labs, Bechtel Corporation, and the National Geographic Society run van-pool programs or subsidize commuter bus service for their employees.

Finally, the B&O Railroad and AMTRAK operate commuter rail service which stops in Gaithersburg, Washington Grove, and Rockville on its way between West Virginia and

the District of Columbia. Once the Metro rail line to Shady Grove opens in late 1983, these commuter rail services will offer transfer capabilities in Rockville.

h. Water and Sewerage Systems

Washington Suburban Sanitary Commission (WSSC) has two major surface water intakes outside the study area which provide water to Montgomery County. About 14 percent of the City of Rockville's population, the City of Gaithersburg and the remaining lands under the jurisdiction of Montgomery County in the area form a part of this system. Approximately 86 percent of Rockville's population is serviced by the city's system, which includes a treatment plant near the Potomac River. The Rockville system interconnects with the WSSC system.

Most of the Gaithersburg area is currently served or programmed for service within the next two years. Sewer and water service priorities are established by the Montgomery County Council through the Comprehensive 10-Year Water Supply and Sewage System Plan.

i. Gas, Power, and Telephone

Other community-wide services are provided by the Washington Gas Light Company for gas; the Potomac Electric Power Company (PEPCO) for electrical energy; and the Chesapeake and Potomac Telephone Company of Maryland for telephone services.

3. ECONOMIC SETTING

a. The Metropolitan Washington Context

The federal establishment (including firms doing business with the government) is, by and large, the basic industry of the metropolitan Washington economy and provides the keystone economic function that manufacturing normally provides in other cities. Manufacturing activity, in fact, accounted for only three percent of Washington's total metropolitan employment in 1978.

Adjoining the District of Columbia, Montgomery County is an integral suburban component of the metropolitan economy, the nearly 300,000 jobs there accounting for 20 percent of total metropolitan employment. Federal agencies are only 15 percent of total. Research and development operations, consulting firms, and others serving the federal establishment are important to the employment base, but the bulk of it is in retail and service establishments catering to the nearly 600,000 persons residing there.

By the year 2000, the metropolitan economy is expected to add another 750,000 jobs to its employment base. Montgomery County itself is projected to account for just over 20 percent of total metropolitan employment growth.

b. The I-270 Corridor

In 1978, the I-270 corridor had 36,600 employees, 14 percent of the Montgomery County total. Employment is expected to increase in this corridor between now and the design year, reaching a total of nearly 120,000.

The I-270 corridor, an important center for suburban corporate office space and research and development facilities, is one of the most highly competitive and desirable locations for high technology firms in the Washington metropolitan area.

Complementary business services, clients and customers, retail facilities, and lodging accommodations serve area firms and their employees.

According to a market analysis prepared by the Maryland-National Capital Park and Planning Commission in November 1980, the I-270 corridor included 8.2 million square feet of office, manufacturing, warehousing, and retail commercial space.

Based on its analysis of vacant land, zoning requirements and permissible building envelopes, the M-NCPPC estimated that the I-270 corridor would accommodate an additional 13.9 million square feet of space in these uses. Given recent market trends and developer intentions, as much as 3.5 to 6.3 million square feet should be built over the 1978-88 decade.

c. The I-370 Study Area

The study area encompasses much of the I-270 corridor and includes intensive commercial development in the Shady Grove Road vicinity. Portions of the cities of Rockville and Gaithersburg are also included.

Development Activity

The I-370 study area contains approximately 4.7 million square feet of space devoted to commercial uses, nearly half of the office, manufacturing and warehousing and about 15 percent of the retail space in the I-270 corridor. As the area has become increasingly attractive to technology-oriented firms, new light industry and warehousing development, once prominent, has, by and large, been priced out of the area. Currently, just over half the commercial space is in office use. Manufacturing and warehousing space accounts for about one-fourth. The remaining space is in research and development and retail use. The rate of development within the study area has increased over the past two years. Almost 1.2 million square feet of space have been completed since early 1980, three-quarters of it office-related and much of it speculatively built. Projects under construction or expected to break ground by the end of 1982 include over one million additional square feet of space. About three-fourths will be office-related, with the remainder multi-functional research and development or retail-oriented. No new manufacturing or major freestanding warehouse facilities construction is underway or anticipated.

Major long-term development projects are now under consideration, and at least 6.2 million square feet of space have been identified in projects likely to be developed after 1983, two-thirds for office use and over one-fourth for research and development. Most of the remaining development will be devoted for retailing and service uses.

Employment

In 1980 over 14,000 persons were employed at the office, research and development, warehousing, and retail facilities, and employment is projected to increase almost three-fold by 2006. By that year, according to official projections, over 39,000 persons are expected to be employed in the area. If zoning changes with accompanying roadway improvements are made as recommended by the **Staff Draft Gaithersburg Vicinity Master Plan,** a minimum of 13,500 could be added to this figure.

The central portion of the study area between I-270 and the B&O Railroad tracks accounts for about 70 percent of total employment, and employment is expected to increase by 13,000 in this portion. In comparison, employment to the northeast,

farthest from highway access, will experience modest growth.

The largely undeveloped portion of the study area southwest of I-270 has the capacity to accommodate substantial employment growth. An increase of at least 9,800 jobs over current employment levels is expected. With the construction of an I-370 facility to Fields Road, development opportunities can support employment levels at double this figure.

Fiscal Implications

Clearly, the capacity of each alternate to accommodate daily trips, especially of area employees, affects the overall level of study area employment and correspondingly the intensity of development. Under restrictions imposed by the County's Adequate Public Facilities Ordinance, overall development thresholds are keyed to the staging of major public facility and roading improvements. Among those programmed is the construction of the I-370 connector. If this roadway improvement is not undertaken, permitted development levels have to be adjusted accordingly.

The level of future development will carry substantial fiscal implications. About 10 million square feet of commercial space could be accommodated in the study area by 2006 if market forces were unimpeded by development controls. In constant 1981 dollar values, this would represent nearly $450 million worth of new construction.

At current property tax assessment ratios, over $280 million in land and improvement value would be added to the property tax rolls at full development. Approximately 20 percent of the employment growth and development activity is expected to occur within the Rockville city limits, under five percent within the City of Gaithersburg, and the remainder in unincorporated sections of Montgomery County. Based on constant 1981 dollar values and tax rates, anticipated development would generate $9.7 million in annual tax revenues in the three jurisdictions. Incorporated Washington Grove is not expected to be further developed.

4. LAND USE PLANNING

a. Planning Process

Rockville, Gaithersburg, and Washington Grove guide development within their respective municipal boundaries through master plans. Areas outside cities and maximum expansion limits are under the jurisdiction of Montgomery County. The Maryland-National Capital Park and Planning Commission's (M-NCPPC) staff performs the planning functions for the county. Municipal and county-level planning functions are conducted autonomously, but often with informal interaction and coordination between municipal and county planning staffs. Table III-3 summarizes the status of municipal-and-county-level planning efforts in the study area.

The M-NCPPC is a bi-county (Montgomery County and Prince George's County) agency created by the General Assembly of Maryland in 1927. The commission operates in Montgomery County through a planning board, appointed by and responsible to the county government. The Planning Board has responsibility for the administration of subdivision regulations and general administration of parks.

Municipal and county-level planning bodies operating within the Washington metropolitan area are required to coordinate with other metropolitan planning agencies, seeking regionwide consensus to solve major area problems.

The Metropolitan Washington Council of Governments (COG), the metropolitan-wide governmental organization concerned with all aspects of metropolitan development was formed in 1957 by the major cities and counties in the metropolitan area. COG coordinates solutions to such regional problems as energy, traffic congestion, inadequate housing, air and water pollution, water supply, and land use. In addition, COG is the regional planning agency for transportation, waste treatment and water quality planning for the metropolitan area. As a part of its functions COG supplies localities with population and traffic forecasts.

The Washington Suburban Sanitary Commission (WSSC) works informally with the Water Resources Planning Board and has responsibility for design, development, maintenance, and operation of public water supply and sanitary sewerage systems for a 1,000 square-mile area, embracing most of Montgomery and Prince Georges Counties. Montgomery County is responsible for preparing a comprehensive water and sewerage plan in consultation with the WSSC. The plan guides development in Montgomery County by providing carrying capacities for each service area, facilitating review of land development applications.

Another metropolitan agency with transportation planning responsibilities in the area is the Washington Metropolitan Area Transit Authority (WMATA). Created by interstate compact in 1966, this agency is charged with planning, developing, operating, and financing the rapid rail and bus transit system for the Washington area. The Montgomery County Council requested the WMATA to prepare construction plans for the terminal station at Shady Grove and directed the Montgomery County Planning Board to prepare the **Sector Plan for the Shady Grove Transit Station Area.**

Interaction between water resources planning and comprehensive land use planning at the county level occurs through implementation of local ordinances and policies. To ensure that the Water Supply and Sewerage System Plan supports comprehensive land use planning, the County maintains a policy that water and sewer service are to be provided only to developments conforming to an adopted and approved master plan or zoning map. Furthermore, the County's Adequate Public Facilities Ordinance limits the subdivision of land by considering adequacy of water and sewerage service. A subdivision's impact on public roadways must be shown by the developer.

b. Relationship of Planning Process to Proposed I-370

Four of the plans guiding development in the I-370 study area are currently undergoing review. These are the Rockville and Gaithersburg master plans and two area plans adopted by the Maryland-National Capital Park and Planning Commission. In their current form, the transportation element of each of these plans supports the proposed I-370 alignment and encourages greater use of public transit. Table III-3 summarizes the status of planning efforts in the study area and their relationship to the proposed project.

c. Existing Land Use

Existing land use as shown in Figure III-3 centers around public facilities: the County Medical Center, Public Service Training Academy, and the County Service Park. The latter includes the Shady Grove Metro Station. To the north of the Metro Station, vacant parcels front existing roadways in the vicinity of the Shady Grove Road and MD 355 intersection. Northwest of this intersection, Rosedale Garden Apartments are adjacent to the project right-of-way. The general area north of Shady Grove Road both east and west of MD 355 is characterized by single family residences with local-serving commercial establishments fronting MD 355.

TABLE III-3
STATUS OF MASTER PLANS

Jurisdictions or Planning Districts	Date Adopted	Review Status	General Description	Transportation
Regional Plans				
1. MNCPPC: ...On Wedges and Corridors, Updated General Plan for the Maryland-Washington Regional District in Montgomery County.	1964	Periodically amended by area plans.	Radial Corridor Plan Delineates corridors of development and wedges of open space. (Policy Plan).	Major thoroughfares and transit to support the major activity centers. Emphasizes use of public transit.
City Plans				
2. Rockville: Proposed Land Use Plan	1973	Review underway.	A General Land Use Plan: based on neighborhood unit concept.	Proposes an interchange at I-270 and Shady Grove Road intersection. Shows an alignment for an Interstate type connector.
3. Gaithersburg: Master Plan	1974	Review underway.	A General Land Use Plan: with an urban core to the south of Montgomery Village.	Suggests the Metro Station and a preliminary network development along the heavily used thoroughfares in a radial form.
Planning Area Plans				
4. MNCPPC: Master Plan for Gaithersburg Vicinity, Planning Area #20	1971	Review underway (amended) (see below).	A General Zoning and Highway Plan: continues the land use and zoning recommendations of the 1971 Gaithersburg Vicinity Master Plan which advocates large tract residential and industrial development with open spaces.	Shows a general alignment for a freeway along the proposed I-370 alignment with interchanges. Indicates another interchange at Shady Grove Road and I-270 intersection.
5. Sector Plan for the Shady Grove Transit	1977	Review underway.	A Sector Plan: Amends the above plan, focuses on the integration of Metro with the expected service development.	Shows I-370 connecting with Metro access road.

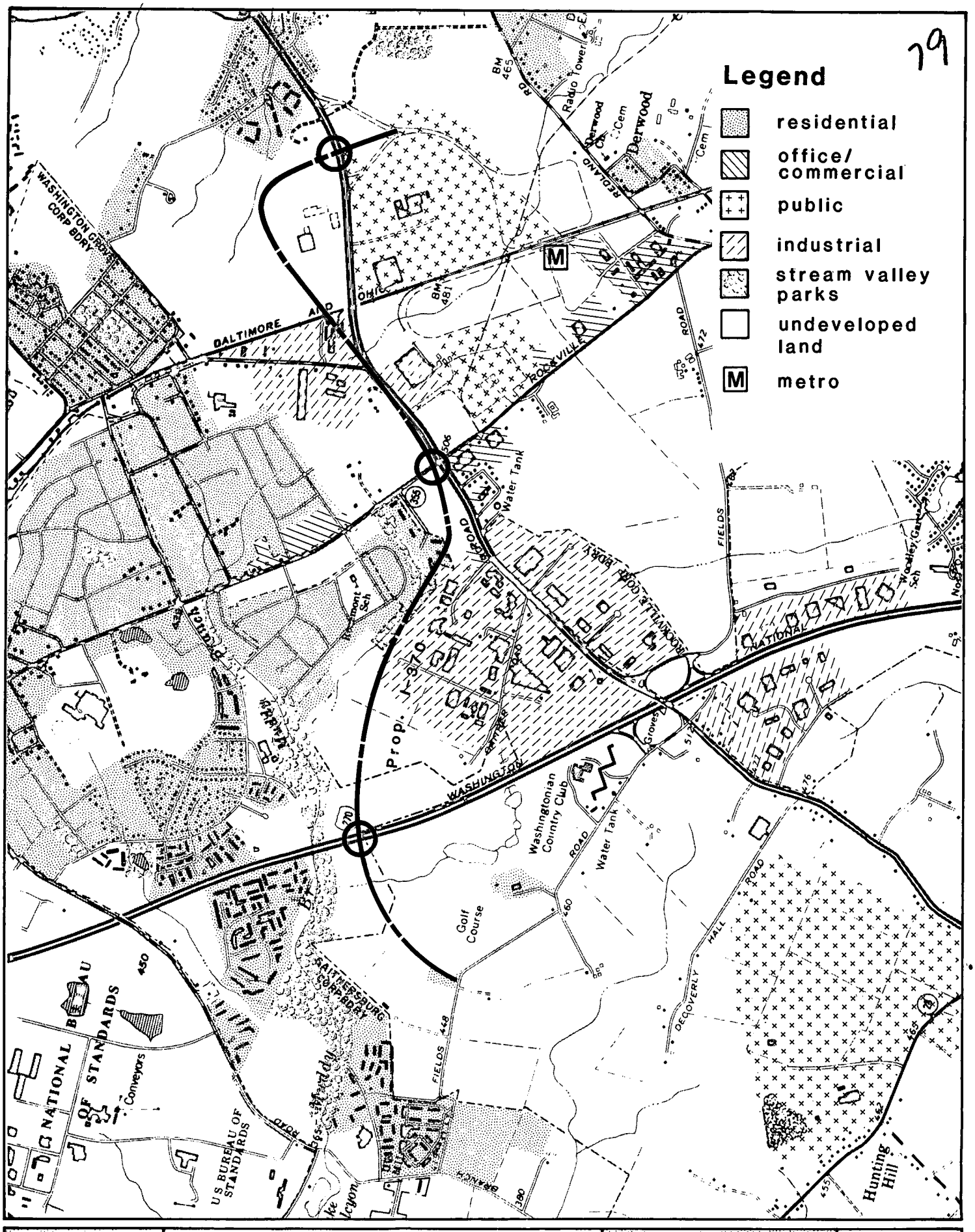
On the southern edge of Shady Grove Road between MD 355 and I-270, the Danac Technological Park contains various industries such as Hewlett-Packard, Kodak, and Danac's own operations. Across from Danac Park on the north side of Shady Grove Road are Bechtel, Shady Grove Shopping Center, various light industrial/wholesale concerns and ancillary uses such as warehousing and restaurants. The area southwest of the intersection of Shady Grove Road and I-270 contains several scattered low-density, single-family, detached homes. Within view of these homes on the north side of Shady Grove Road is the former Shady Grove Music Fair site and a gasoline service station.

West of I-270 and north of Fields Road is the 97-room Quality Inn and restaurant. Adjacent to I-270 and the City of Gaithersburg limits is the Washingtonian Country Club (including the 205-unit Washingtonian Towers Condominium), an important proposed development site. Another is the County Medical Center complex west of I-270 and north of the Shady Grove Road, MD 28 intersection. The area west of the Washingtonian Country Club bounded by Decoverly Hall Road is predominantly vacant and farmland except for several, scattered, single-family homes. Substantial medium-density residential development is taking place in the area east of Muddy Branch Road and the City of Gaithersburg.

d. Future Land Use

As shown in Figure III-4, proposed land use plans call for extensive development (especially commercial and industrial uses) within the study area. As outlined in staff planning drafts undergoing review, the key to increased commercial and industrial activity in the study area is the development of two parcels, the Washingtonian Tract and the County Medical Center. Staff drafts recommend that both areas be rezoned to the proposed Mixed Planned Development Zone which would allow employment and commercial uses on large tracts. The Washingtonian Tract is proposed as a high technology office complex while the Medical Center would accommodate medically related commercial, office and industrial developments and multi-family housing.

The general pattern of future land use is not likely to change substantially from that shown in Figure III-4 if adequate transportation facilities are developed in the area. However, if the proposed I-370 Metro Access Highway or any other master-planned roads are not built, significant changes in current land use plans might become necessary and economic development in accordance with land use plans reduced.



General Land Use Existing

INTERSTATE 370

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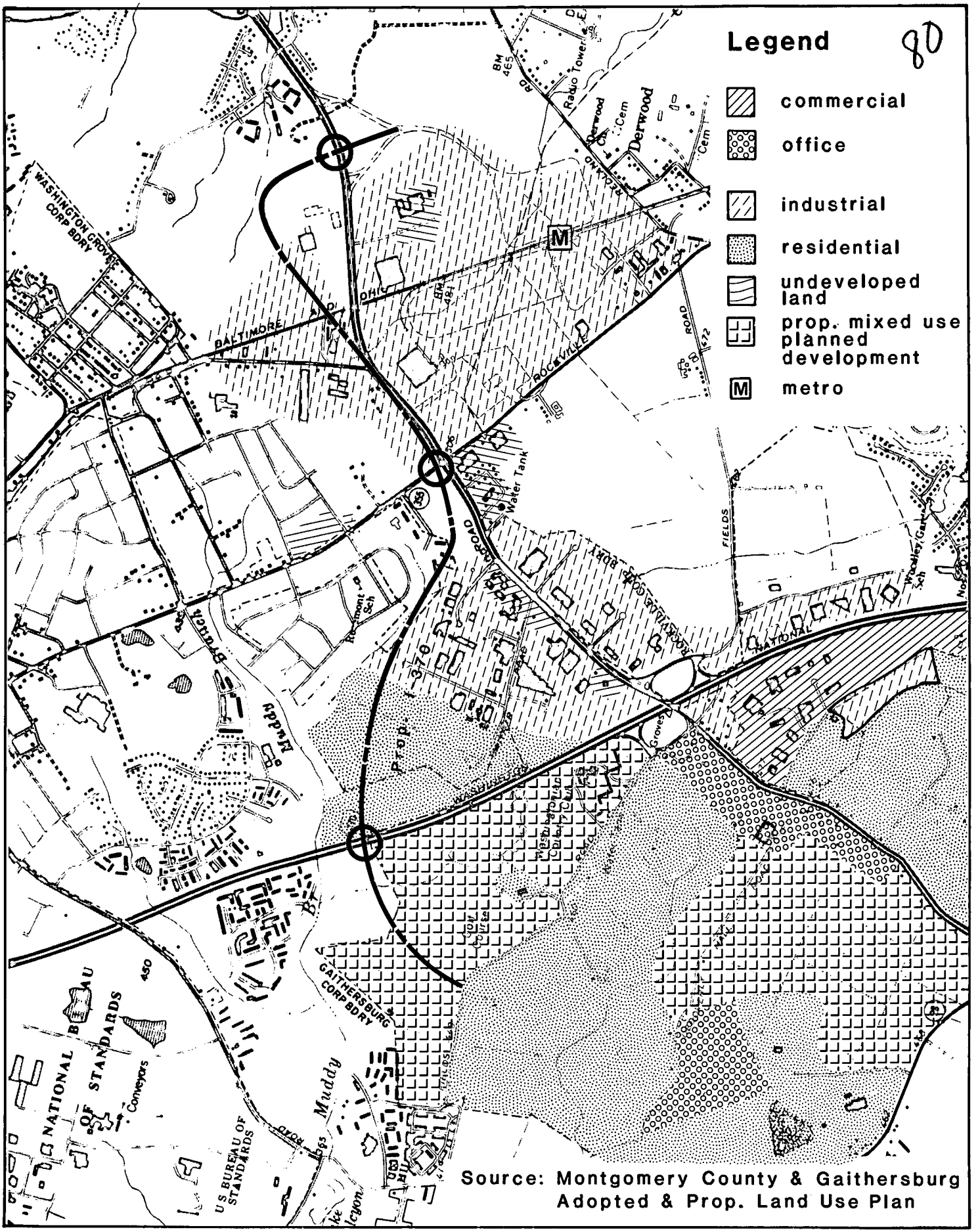
Figure III - 3



Source: Montgomery County & Gaithersburg Adopted & Prop. Land Use Plan

General Land Use Future

INTERSTATE 370

0 FEET 1000 2000 3000

Figure III - 4

B. TRANSPORTATION

1. TRANSPORTATION FACILITIES

a. Existing Facilities

The study area is within a transportation corridor radiating to the northwest from I-495, the Capital Beltway around Washington. I-270, a six-lane interstate facility, and MD 355, a six-lane divided roadway, are the major radial highways serving the corridor. The B&O railroad provides commuter rail service at Gaithersburg. (Metrorail is under construction and scheduled to provide service to the Shady Grove Station by 1984.) Shady Grove Road is the only major arterial serving east to west traffic through the area. Most other roadways are two lane facilities used for local access.

b. Planned Facilities

An extensive network of roadway improvements is programmed for the I-370 area. Other transportation improvements studied or being studied are presented in Table III-4. Several are not included as part of this study's No-Build network as previously presented. The No-Build network is based on results of these studies and also forecasts other actions to 2006.

Some planned and programmed projects of importance to the I-370 study are outlined below.

- Shady Grove Road. The County plans to widen this roadway from the current four lanes to six lanes from west of I-270 east to Briardale Road. Widening from I-270 west to MD 28 and improvements at the Research Boulevard intersection are under consideration.

- MD 355. This roadway is being improved in stages to a six-lane divided section. The bridge on MD 355 over the B&O railroad in Gaithersburg is to be replaced.

- The Great Seneca Highway. This proposed roadway is an element of the County's comprehensive highway plan. It would be a major radial and would provide access to Germantown, Quince Orchard, the ~ureau of Standards, and western Rockville. It would be a western parallel arterial facility apart from and in support of the I-270 Corridor.

- Intercounty Connector (see Appendix D).

- MD 115. Relocation of MD 115 would provide an eastern parallel 4 to 6 lane arterial to support the I-270 corridor.

- Fields Road (west of I-270). This roadway would be improved to a four-lane arterial on improved alignment. The southern portion would be relocated to tie into proposed Omega Drive instead of directly to Shady Grove Road.

TABLE III-4
STATUS OF SELECTED MAJOR ROAD IMPROVEMENTS

County Projects	Under Construction	Programmed[1] Completion	Planned[2]
Great Seneca Highway: Middlebrook Road to MD 28		FY 87+	
Fields Road: Piccard Drive to MD 355		FY 85	
Fields Road-Redland Road: West of B&O Railroad to Needwood Road (bridge over railroad under construction)	X	FY 83	
Fields Road: Shady Grove Road to Muddy Branch Road		FY 87	
Gaither Road: End of existing paving, east of Shady Grove Road to Fields Road		FY 85	
Gaither Road: Fields Road to Gude Drive			X
Shady Grove Road: I-270 to Briardale Road		FY 83	
Shady Grove Road: Second bridge over I-270		FY 83	
Muddy Branch Road: MD 28 to MD 124		FY 87+	
MD 115 Relocated (Eastern Arterial): Shady Grove Road to Montgomery Village Avenue		FY 87	
Crabbs Branch Way: End of existing paving south of Shady Grove Road to Redland Road		FY 83	
Crabbs Branch Way: Redland Road to Gude Drive			X
Longdraft Road: Quince Orchard Road to Clopper Road (portion of project through Great Seneca Park completed)		FY 86	
Gude Drive: Research Boulevard to MD 355 (County participation with City of Rockville)		FY 85	
Gude Drive: MD 355 to Southlawn Lane (adding the southerly 2 lanes)		FY 87	
Key West Avenue: Shady Grove Road to existing Route 28	X	FY 83	
Omega Drive: Fields Road to Key West Avenue		FY 85	
Research Boulevard: Connection between existing northern and southern sections (by City of Rockville)		FY 85	
I-270/Shady Grove Road Improvements		FY 87	

TABLE III-4 (Continued)

STATUS OF SELECTED MAJOR ROAD IMPROVEMENTS

City of Gaithersburg Projects	Under Construction	Programmed Completion[3]	Project Planning
Muddy Branch Road: Street reconstruction (participation with Montgomery County)		FY 87	
Railroad Street Crossing: Improvement program - South Summit Avenue and Chestnut Street	(Completed)		
Clopper Road Widening and Firstfield Road completion from Longraft to Quince Orchard Road	X		
Chestnut Street: Storm drainage improvements		FY 82	

State Projects	Under Construction	Programmed Completion[4]	Project Planning
MD 355: Shady Grove Road to South Summit Avenue	X	FY 82	
MD 355: Chestnut Street to Oden'hal Road	X	FY 86	
MD 355: South Summit Avenue to Chestnut Street		FY 86	
I-270 Improvements: Great Seneca Park to City of Rockville			X
Quince Orchard Road (MD 124): MD 28 to MD 117 (County and developer participation)		FY 82	
I-370: Fields Road to Metro access road (this study)			X
Intercounty Connector:			X
MD 115 Relocated (Eastern Arterial): Norbeck Road to Montgomery Village Avenue			X
I-270/MD 124 Interchange		FY 87	
MD 28: I-270 to PEPCO right-of-way			X

1 Programmed in the Adopted Montgomery County FY 82-87 Capital Improvements Program
2 Shown on area Masterplans but not yet funded or in Project Planning.
3 Programmed in the City of Gaithersburg FY 82-87 Capital Improvements Budget.
4 Programmed in the 1981-1986 State Consolidated Transportation Program.

2. TRAFFIC VOLUMES

Projected traffic volumes in the area for 1986 and 2006 are shown in Figure III-5. For comparison, 1980 volumes are also shown. All traffic volumes are Average Daily Traffic (ADT) with both directions combined. The forecasts assume full land use development up to the level projected for 2006, but do not reflect the construction of I-370. These forecasts indicate the traffic demand levels associated with the assumed land use development if I-370 is not constructed.

As can be seen, forecast growth is considerable for radial traffic and along Shady Grove Road. For 2006 the maximum traffic demand on Shady Grove Road is projected to be 85,000 ADT, a level comparable to that now carried by I-270. The total ADT through the intersection of MD 355 and Shady Grove Road is projected at 120,500 vehicles for 2006 compared to 66,100 vehicles in 1980. A sizeable portion of this growth is directly attributable to Metro Station traffic, but a majority of the growth is from projected land use development in the area.

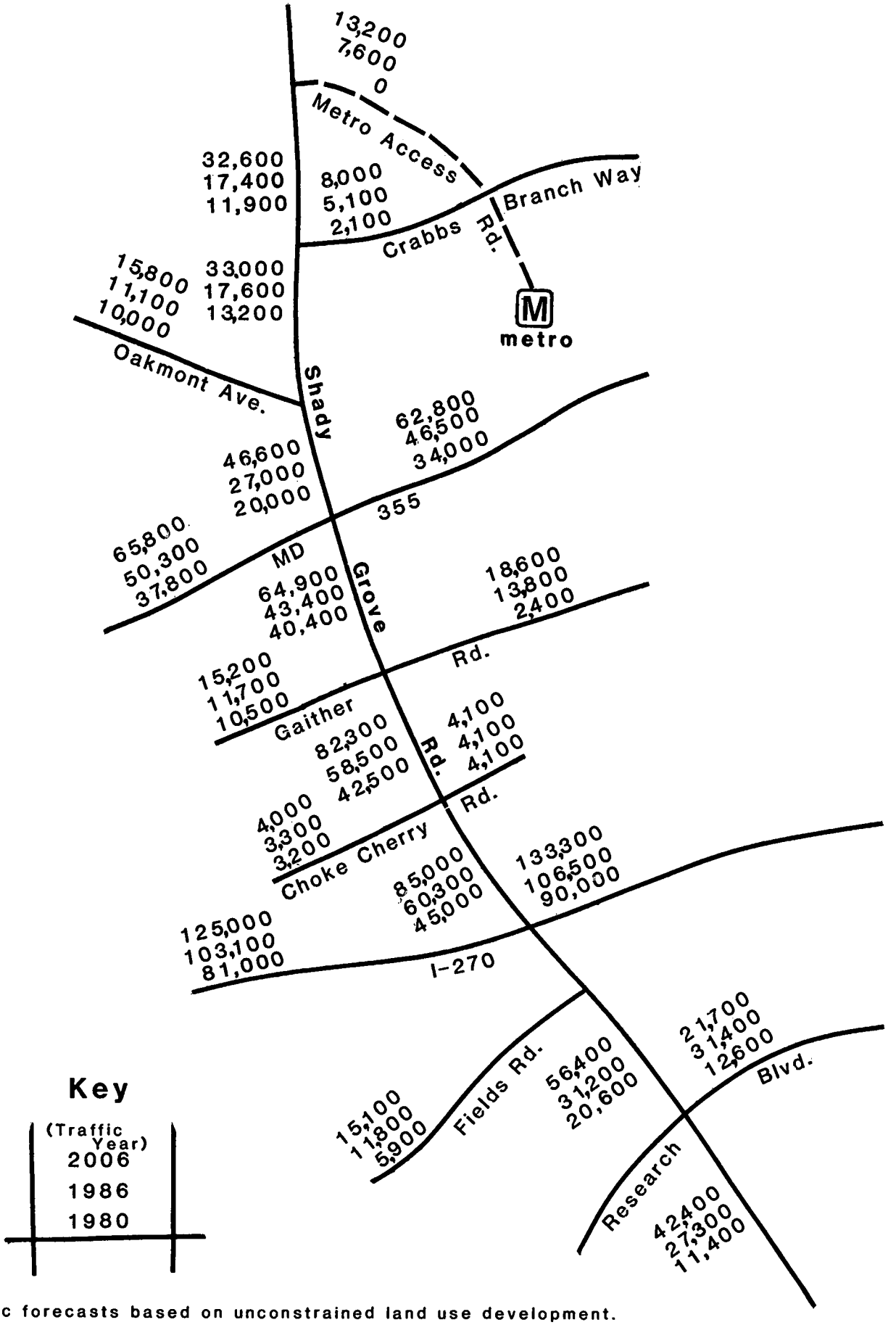
3. TRAFFIC OPERATIONS

Traffic operating conditions along Shady Grove Road under the forecast traffic demands are summarized in Table III-5. A complete breakdown of traffic movement during morning and evening peak hours is indicated. Every intersection along Shady Grove Road from I-270 to MD 355 would be operating at or very near level-of-service "F", indicating long queues at traffic signals and long delays. In fact, the volume of traffic movement forecast for these peak hours exceeds roadway intersection capacities. At such demand levels, queues would build up continuously and expand the duration of the peak traffic period.

The percent saturation figures in Table III-5 indicate the extent to which traffic demands exceed available intersection capacity. A 100 percent saturation level represents the maximum utilization of intersection capacity during an hour; no further traffic could be accommodated. Queues would develop and continue to lengthen until approach volumes fell below the saturation level demand rate.

The vehicle delay figures included in Table III-5 indicate the impact of oversaturated conditions. The average delay per vehicle ranges from 3 minutes to 30 minutes for the intersections analyzed. The total peak-hour delay over all the intersections is estimated at 9,235 vehicle-hours each day. At an average occupancy of 1.2 persons per vehicle and a value of time of $3.00 per hour, the annual cost of delay (annualization factor equals 300) would be ten million dollars. Conditions would be intolerable and undoubtedly would result in a curtailment of development.

These results made it necessary to constrain traffic to levels which could be reasonably accommodated by the area highway network as it is projected to exist in the design year (2006). This implies a corresponding reduction in projected land use development. In the later sections of this report dealing with alternative system traffic forecasts, traffic for each alternate is constrained to the level which can be accommodated by the roadway system associated with that alternate.



Traffic forecasts based on unconstrained land use development.

	Average Daily Traffic Without I-370	**INTERSTATE 370**	
		No Scale	

Figure III - 5

TABLE III-5

TRAFFIC OPERATING CONDITIONS ON SHADY GROVE ROAD YEAR 2006 WITHOUT I-370[1]

Intersection With	Level of Service A.M.	Level of Service P.M.	Percent Saturation A.M.	Percent Saturation P.M.	Hours of Delay[2] A.M.	Hours of Delay[2] P.M.	Delay/Vehicle[3] A.M.	Delay/Vehicle[3] P.M.
I-270 Southbound (Fields Road west)	E/F	F	99	125	119	429	3	9
I-270 Northbound (Fields Road east)	E/F	F	101	125	129	570	3	11
Choke Cherry Road	F	F	111	116	319	476	6	8
Gaither Road	F	F	165	180	1599	2720	20	30
MD 355	F	F	163	152	1354	1520	19	12
TOTAL					9235			

---

1 Traffic forecasts based on full land use development currently planned for Year 2006. See Table IV-5 for level of service and delay under each alternate.

2 Vehicle-hours of delay during the a.m. peak one hour and p.m. peak one hour only.

3 Average delay per vehicle in minutes over all vehicles, on all intersection approaches.

C. NATURAL ENVIRONMENT

1. TOPOGRAPHY, GEOLOGY, AND SOILS

a. Location

The study area (Figure I-2) includes approximately ten square miles in the center of Montgomery County and lies within the Piedmont Plateau of central Maryland. This physiographic province is characterized by upland areas which separate the Atlantic Coastal Plain to the southeast from the Triassic Lowlands and the Blue Ridge Mountains to the west and north.

b. Topography

The area contains gently undulating terrain with a few stream-cut ravines. Ground elevations are generally 400 to 500 feet above sea level. Overall relief varies from under 350 feet in the Muddy Branch stream valley to 557 feet south of the intersection of MD 355 and Shady Grove Road. Slopes are typically between three and ten percent; a few locations along Muddy Branch exceed 15 percent.

c. Drainage

The area is in the Potomac River watershed and contains parts of the headwaters of four drainage basins: Muddy Branch, Rock Creek, Watts Branch, and Seneca Creek (Figure III-6). The streams flow away from this elevated area in all directions, but eventually discharge into the Potomac River to the south.

Natural topography and drainage have been modified by construction of existing roads and railroads and by extensive commercial and residential development.

d. Geology

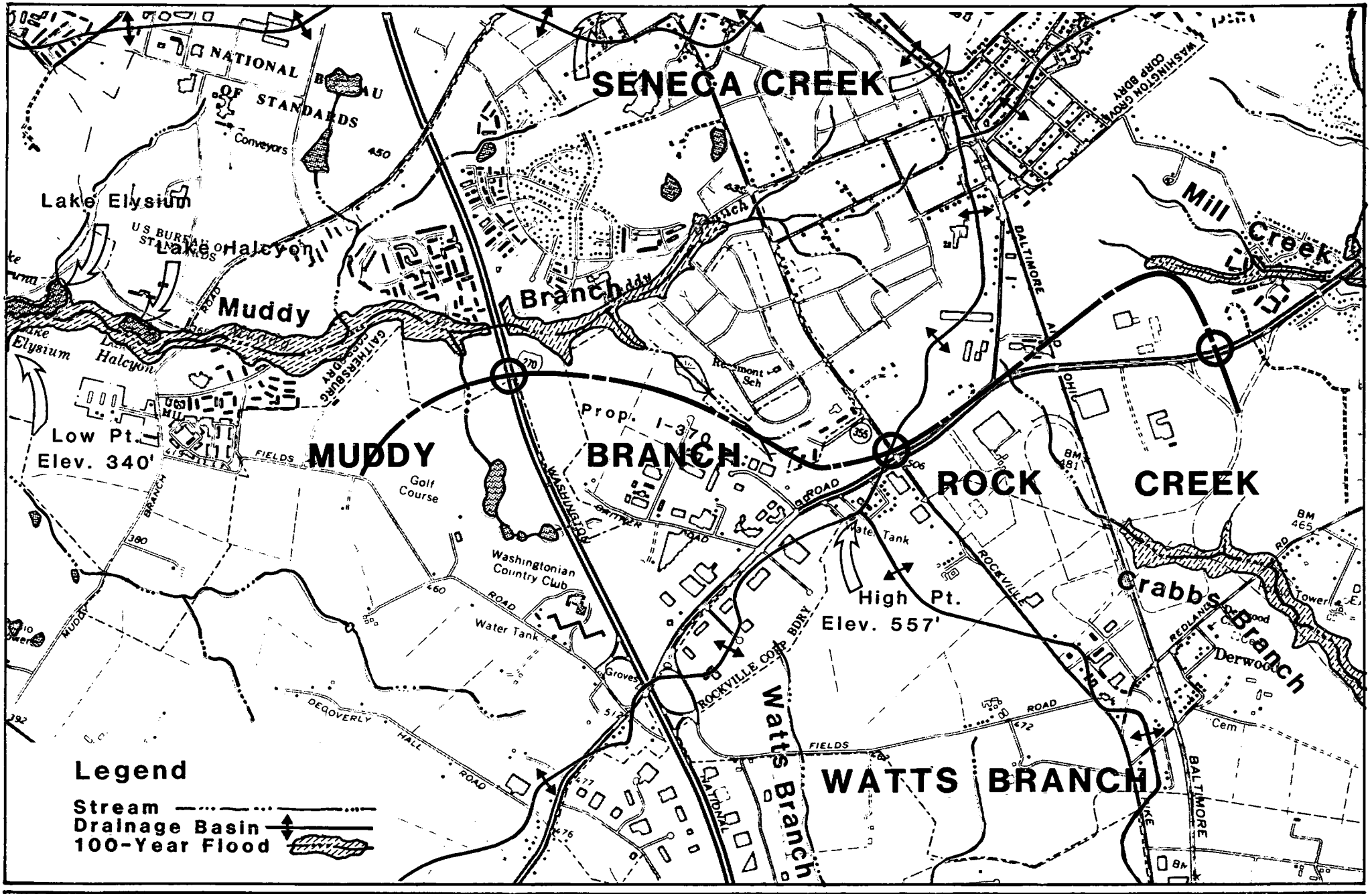
The Maryland Piedmont is underlain by closely folded rocks of sedimentary origin which have been metamorphosed and intruded by igneous materials.

The study area is underlain by the upper peltic schist of the western Wissahickon formation of late Precambrian Age. The rocks are medium grained, banded or laminated, quartz-rich phyllite and schists with magnetite, quartz veins, sandstones and conglomerate beds composed of muscovite, chlorite, albite, and quartz.

The structure forms a broad band, five to nine miles wide, which generally trends toward the northwest. The width of the band and the prevalence of steeply dipping beds suggest a stratigraphy thousands of feet thick.

The bedrock is covered by varying thicknesses of unconsolidated materials, including saprolite (bedrock weathered or decomposed in place), alluvial stream deposits, and artificial fill. This overburden ranges in thickness from zero to more than 50 feet. Bedrock is within 20 feet or less of the surface over much of the northern portion of the area.

Large chunks and boulders of quartz are abundant on sideslopes associated with drainageways. Quartz is much more resistant to weathering than the surrounding schist. Several rock outcrops occur within the I-370 corridor along the stream which



Topography And Water Resources

Figure III - 6

drains the Washingtonian County Club.

e. Soils

The study area contains upland soils (silt loams) of the Glenelg-Manor-Chester association, consisting of well-drained, silty, micaceous soils, moderately deep to deep and usually strongly sloping. The less sloping, poorly drained soils of the Worsham silt loam series occur in depressions and drainageways. Soils adjacent to springs are gleyed, indicating that the soil is saturated most of the time. Saturated soils are soft and plastic and could require subsurface drainage.

The soils are moderately to severely eroded. The degree of erosion is determined by the physical characteristics of the soil, the density and type of vegetative cover, and the length and degree of slope.

Soils in this area are among the best agricultural lands in the County. They are also well-suited for suburban development. Construction, grading, and landscaping activities have completely disturbed the original soil profiles in many locations.

f. Prime Farmland

Prime farmland located in and adjacent to the proposed I-370 corridor includes three soils: Glenelg Silt Loam, 3-8% slopes, moderately eroded; Glenville Silt Loam, 0-3% slopes; and Manor Silt Loam, 3-8% slopes, severely eroded. Nearly all of these soils have been withdrawn from farming and are occupied by urban developments. The only remaining prime land being farmed is on Manor Silt Loam located at the intersection of Shady Grove Road and MD 355. This 16-acre parcel of prime farmland has 400 feet adjacent to both sides of MD 355 and 1,000 feet running along the northwest side of Shady Grove Road. Because of its desirable location at the intersection of Shady Grove Road and MD 355, this area would likely be opened for other development should I-370 not be built.

g. Mineral Resources

The study area contains no known metallic or fossil fuel deposits. A quarry is located in a deposit of dike diabase and serpentinite one mile southwest of Hunting Hill. It produces large quantities of crushed stone used as binder-filler for asphalt paving, as base course for highway construction, and for concrete aggregate.

2. WATER RESOURCES

a. Surface Waters

The study area contains headwaters and tributaries of the following surface waters (Figure III-6):

- Muddy Branch drains 55 percent of the area and flows southwest to the Potomac River.
- Mill Creek and Crabbs Branch drain 26 percent of the area and flow east into Rock Creek.
- Watts Branch drains 19 percent of the area and flows south to the Potomac.
- Long Draught Branch and Whetstone Run drain less than 1 percent of the

area and flow north and west to Great Seneca Creek.

Watercourses vary in size from intermittent rivulets in ditches less than one foot across to the main channel of Muddy Branch, which is 15 to 20 feet wide and several feet deep where it exits the study area. Muddy Branch is carried under I-270 in a corrugated metal pipe ten feet in diameter. Channel cross-sections for most tributaries are 4 to 8 feet wide and from 1 to 6 feet deep depending on the extent of erosion.

A chain of small decorative lakes occurs along tributaries of Muddy Branch on the grounds of the Washingtonian Country Club and the National Bureau of Standards. Three recreational lakes, Halcyon, Elysium, and Varuna, are artificial impoundments near but not on the main stem of Muddy Branch. None of the lakes are greater than six acres in size.

The project would not affect the 260 acre impoundment for emergency water supply and recreation which the Washington Suburban Sanitary Commission (WSSC) and Montgomery County are planning to build on Little Seneca Creek about eight miles northwest of the study area. Any stream-carried sediment which originates in the Muddy Branch watershed, however, would enter the Potomac River about three miles upstream of the intake for the 240 mgd water treatment plant which serves Montgomery and Prince George's counties.

Based on flow records for stream gages nearest the study area, average flow ranges from 4.2 cfs (Watts Branch at Rockville) to 62.3 cfs (Rock Creek at Sherrill Drive). Average runoff for the watersheds ranges from 11.13 to 15.42 inches/year. For most of the stations examined, maximum discharge occurred during Hurricane Agnes on June 22, 1972.

b. Groundwater

The water table in the study area is generally 10 to 35 feet below the surface. In stream valleys and marshes it may intersect the surface, while in small interstream areas on either side of I-270 it may be deeper than 35 feet (Richardson, 1976). The source of groundwater is chiefly local precipitation and infiltration. Analysis of the hydrologic cycle for the Maryland Piedmont indicates that effective groundwater recharge is about 11 inches/year. Much of the groundwater is stored in the weathered zone.

In the crystalline schist bedrock, groundwater occurrence is highly variable, depending on the presence and location of joints, fractures, and other crevices. Most wells are drilled for domestic use. Mean yield is about 9 gpm. (Nutter and Otton, 1969). Some small springs are associated with the drainageways.

c. Water Quality

The Montgomery County Department of Environmental Protection (DEP) has a comprehensive water sampling program which measures standard water quality parameters for surface waters throughout the county. Typical data for streams which originate in the study area are given in Table III-6. Fairly high fecal and total coliform counts are thought to result from animal wastes and stormwater runoff. Much of the turbidity is caused by water transport of colloidal clay and silt particles.

Each year DEP calculates a Water Quality Index (WQI) to describe the overall water quality of each stream based on physical, chemical, and microbiological characteristics. The WQI is a single number ranging from 0 (worst) to 100 (ideal

TABLE III-6

TYPICAL WATER QUALITY DATA FOR STREAMS IN THE STUDY AREA[1]

Water Quality Parameter	Minimum	Mean	Maximum
Temperature (°C)	0	9.7 - 13.6	27
Dissolved oxygen (mg/l)	6.3	9.7 - 10.7	14.0
pH	6.1	6.8 - 7.1	7.7
BOD, 5-day (mg/l)	0.1	1.5 - 1.9	8.1
Nitrate and nitrite (mg/l)	0.4	1.5 - 3.0	9.4
Total phosphate (mg/l)	0.03	0.2 - 0.5	2.9
Turbidity	0.8	4.7 - 50.7	260
Total coliforms (MPN/100 ml)	30	772 - 4725	240,000
Fecal coliforms (MPN/100 ml)	30	79 - 462	46,000
Total residue (mg/l)	51	94 - 254	1816
WQI	60.4	68.8	74.4
Rating	permissible	permissible	good

1. Includes Muddy Branch, Watts Branch, Crabbs Branch, Mill Creek, Upper Rock Creek, North Branch, Whetstone Run, and Long Draught Branch

2. Source: Montgomery County Department of Environmental Conservation, December 1981. "Water Quality of Streams in Montgomery County, Maryland."

water quality) based on the weighted influence of nine key indicators which are widely recognized as being the most influential on water quality. For streams in the study area the WQI has been between 60 and 75 in recent years, and water quality has been judged permissible to good according to DEP's descriptive rating (Montgomery County Department of Environmental Protection, December 1981).

The Maryland Water Resources Administration has classified all surface waters of the State into four categories to be protected for the following uses:

Class I	Water contact recreation, for fish, other aquatic life, and wildlife
Class II	Additional protection for shellfish harvesting
Class III	Natural trout waters
Class IV	Recreational trout waters

All streams in the study area are designated as Class I. Rock Creek and all its tributaries above Route 28 (Darnestown Road - Norbeck Road) have the additional protection of Class IV waters.

Groundwater contains dissolved gases and mineral salts introduced from the atmosphere during precipitation and from the rocks through which the water passes. The mineral content of groundwater is likely to be less at shallow depths than at greater depths where circulation is retarded by bedrock. Groundwater in the study area is generally potable and satisfactory for most uses.

d. Floodplains

Montgomery County has prepared floodplain information maps for the main stems of Muddy Branch, Watts Branch, Rock Creek, Seneca Creek, and many of their tributaries. Fifty- and 100-year flood data are based on ultimate land use as defined in area master plans. Figure III-6 shows the approximate boundaries of the 100-year base flood for stream segments where this information is available.

The Flood Insurance Administration of the U.S. Department of Housing and Urban Development has prepared Flood Insurance Rate maps identifying 100- and 500-year flood boundaries based principally on existing land uses. In the study area this information is available only for Crabbs Branch below Redland Road.

Defined floodplains along Muddy Branch and Mill Creek may be affected by the project. Similar floodplains also exist along Crabbs Branch in the vicinity of the Metro Storage and Inspection Yard.

e. Water Uses

Surface waters are not used for water supply or wastewater disposal in the study area. The WSSC serves the area with potable water from the Potomac Water Filtration Plant and removes wastewater with interceptors and force mains for treatment elsewhere.

Isolated buildings obtain water from wells and discharge into septic systems. Some groundwater is also used for irrigation, stock watering, and space cooling. Streams are generally too small and water quality too poor for any permanent uses other than for wildlife and vegetation and for stream valley parks. Small lakes are used for decorative and recreational purposes.

3. TERRESTRIAL AND AQUATIC HABITATS

The entire study area has been disturbed by lumbering, agriculture, and urbanization, and no original forest remains. Patches of woodland and abandoned fields in the overall area range in age from several to over 100 years, but even the older woods have been disturbed by recent lumbering. In the immediate vicinity of the alternates under consideration, the land along existing routes is intensively developed and now lacks areas of significant biological interest. However, within the new highway corridor proposed for I-370 are four natural areas of ecological interest containing vegetation ranging from recently abandoned open fields to mature oak-hickory-tulip poplar forest (Figure III-7).

In addition, much of the actual route involves floodplains and small springs which feed Muddy Branch and Mill Creek. Field and literature surveys indicate that these streams, being in rapidly urbanizing areas, are already affected by construction and storm runoff, with attendant siltation and bank destabilization. They do not have any significant wildlife populations due to their small size and existing degraded conditions.

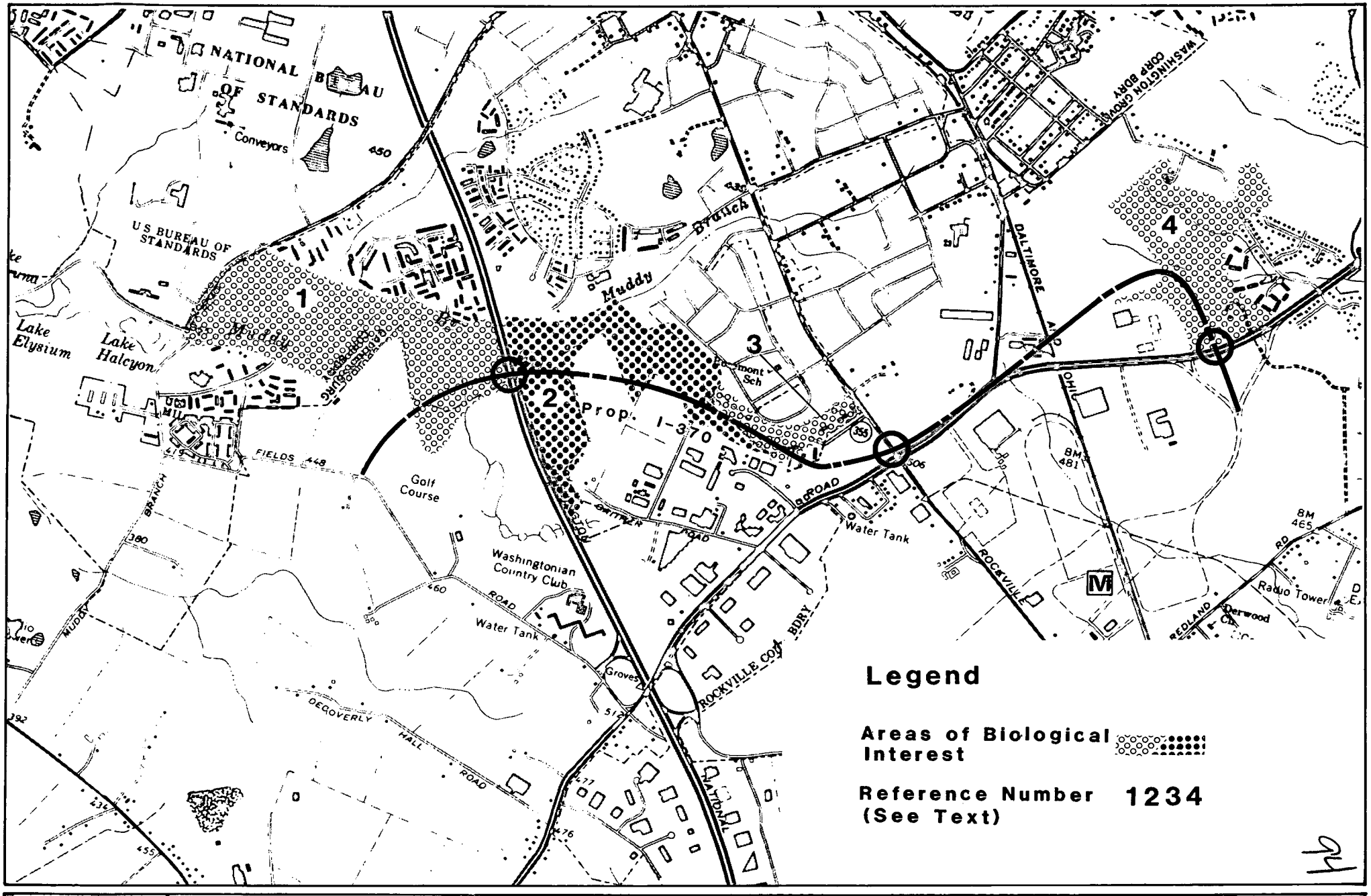
West of I-270 and south of the Brighton West development (area 1) is a 65-acre mosaic of young woods invading abandoned fields and older woods of either red oak-white oak-hickory or steeper uplands of mixed tulip poplar-oak woods, with sycamore-red maple-ash on moister sites. The young woods are Virginia pine, dogwood, red maple, tulip poplar, black cherry, and red cedar mixed with brambles, aster, goldenrod, sumac, and other mature open field species.

With the exception of the low areas along the streams, which are young mixed tulip poplar-oak-ash, much of the 63-acre area east of I-270 and south Muddy Branch (area 2) is recently abandoned farmland now covered with perennial herbs, such as goldenrod, aster, and tickseed, and patches of blackberry, with invading shoots and young trees.

Three springs forming a tributary to Muddy Branch rise on or are adjacent to Rosemont Park, which occupies the floodplain and nearby uplands north of Comprint Court (area 3). The portion of this 12-acre area involved in the proposed project corridor extends northwestward from the southernmost corner of the park and is characterized by uplands ranging from young woods dominated by black locust to mature mixed oak-hickory tulip poplar with well-developed secondary tree, shrub, and perennial herb layers. The moister portions, especially toward the northwest, support red maple-tulip poplar woods, with abundant ferns and skunk cabbage, indicating permanently wet soil.

The small Muddy Branch tributaries are already deteriorated, with considerable bank destabilization and increased erosion evident, as expected due to the closeness of surrounding urbanized and paved areas. The stream in Rosemont Park also contains considerable quantities of trash. Although no water quality data are available, the closeness of roadways and parking lots upslope indicate a high probability of urban runoff pollution.

The largest (approximately 170 acres) undeveloped wooded area is north of Shady Grove Road between the Giant Food facility at Crabbs Branch Way and the Briardale Road development (area 4). This is a mixture of abandoned farmland reverting to shrubs, regenerating young hardwood forest, upland mixed oak-hickory-tulip poplar forest, and streambank forest of oak, tulip poplar, red maple, and elm. There are three springs in the area feeding into the headwaters of Mill Creek, which also traverses the older wooded part of the track. Due to the lesser degree of



Areas of Biological Interest

INTERSTATE 370

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Figure III - 7

urbanization, the headwaters are not as heavily impacted as the Muddy Branch areas are. The small stream to the north of the Giant Food facility is the most affected, being filled with brush and recurring runoff from the facility. The other two streams and the reach below their joining show few signs of streambank destabilization, being well-vegetated. However, according to the Rock Creek Stormwater and Water Quality Management Study, water quality a short distance downstream is already somewhat degraded, being marginal for a warm-water fishery as much as 25% of the time. This probably holds true for the upstream reaches, although to a lesser degree. No on-site data are available.

The other parcels proposed for I-370 right-of-way are farmland, golf course, or developed land and are consequently not further considered here.

The four identified areas in Figure III-7 are the last areas of undeveloped or unfarmed open space in the vicinity of Shady Grove Road and I-270. They have vegetation ranging from open field through regenerating woods to mature woods, both upland and stream valley. This vegetative diversity provides habitats for a wide variety of smaller wildlife and still supports a few white-tail deer. The common and typical animal species expected will not be presented here, as they are found in any suitable habitat and are generally treated in the following references: mammals, Paradiso 1969; birds, Stewart and Robbins, 1958; reptiles and amphibians; Harris, 1975. Consultations with the U.S. Fish and Wildlife Service, local wildlife biologists and the Maryland Natural Heritage Program (see letters in Appendix C) have indicated no federal or state threatened or endangered species present. There are no unique habitats present in the proposed I-370 corridor. However, there is a swampy area to the north of the terminus of Industrial Drive. The primary value of these identified areas is due to the scarcity of any undeveloped land in the immediate vicinity of the proposed project. The larger regional parks (such as Rock Creek Park) preserve greater areas of similar habitat and thereby support larger populations of plants and animals in the area.

D. AIR QUALITY

Regarding most air pollutants for which national or state air quality standards have been established, the air quality of the study area can be characterized as generally acceptable.

While carbon monoxide levels in the Washington area continue to exceed national standards, no air quality alert due to carbon monoxide has been declared in the study area since January 1973. Carbon monoxide data for recent years from established air quality monitoring stations in the general vicinity within Montgomery County are shown in Table III-7 along with two more remote sites in Prince Georges County. These data were obtained from annual published reports of the Maryland Department of Health and Mental Hygiene and indicate a trend of decreasing concentrations.

The Maryland State Implementation Plan (SIP) includes several basic strategies for the attainment and maintenance of ambient CO air quality standards within the National Capital Interstate Air Quality Control Region (AQCR). These include: 1) the continued construction of the transit system in the metropolitan Washington area, 2) the continued reduction of vehicular emissions as a result of the Federal Motor Vehicle Control Program, 3) the implementation of an inspection and maintenance program for motor vehicles in the Maryland portion of the National Capital Interstate AQCR, and 4) the further analysis and implementation of alternative transportation control measures to reduce pollution from the overall regional transportation system.

TABLE III-7

ANNUAL CARBON MONOXIDE CONCENTRATION DATA AT NEARBY MONITORING SITES MONTGOMERY AND PRINCE GEORGES COUNTIES (mg/m^3)

	Arithmetic Mean					Maximum 1-Hour Average					2nd Highest 1-Hour Average					Maximum 8-Hour Average					2nd Highest 8-Hour Average					Number of Days with 8-Hour Average Greater Than 10				
	75	76	77	78	79	75	76	77	78	79	75	76	77	78	79	75	76	77	78	79	75	76	77	78	79	75	76	77	78	79
AIRMON 5 (Silver Spring)	2	1	1	1	-	33	19	19	18	-	22	19	19	16	-	15	15	15	11	-	14	11	13	10	-	9	4	3	1	-
AIRMON 6 (Bethesda)	0	1	1	1	0	19	35	17	17	15	18	33	16	17	12	18	25	11	12	9	16	14	10	11	8	4	2	1	2	0
Environmental Lab (Gaithersburg)	2	4	2	-	-	34	52	14	-	-	26	40	13	-	-	11	19	8	-	-	11	18	8	-	-	2	31	0	-	-

EPA Air Quality Standard: 1-hour average 40 mg/m^3 = 35 ppm
8-hour average 10 mg/m^3 = 9 ppm

Source: State of Maryland, Department of Health and Mental Hygiene

E. NOISE

Within the study area, there is a dense network of busy streets, intermingled railroad lines, and commercial and light industrial development, all of which are contributors to the existing noise profile of the area surrounding the proposed action. Traffic movements, primary contributors to ambient noise in the study area, are usually measured in A-weighted decibels (dBA), a scale of noise levels which corresponds most nearly to the frequency response characteristics of the average human ear. Ambient L_{10} noise levels measured adjacent to heavily traveled streets ranged approximately from 60 to 76 dBA, while ambient levels measured in residential areas somewhat removed from heavily traveled streets averaged approximately 50 dBA. More information on the ambient noise survey conducted as part of this study is contained in Section IV.

F. CULTURAL RESOURCES

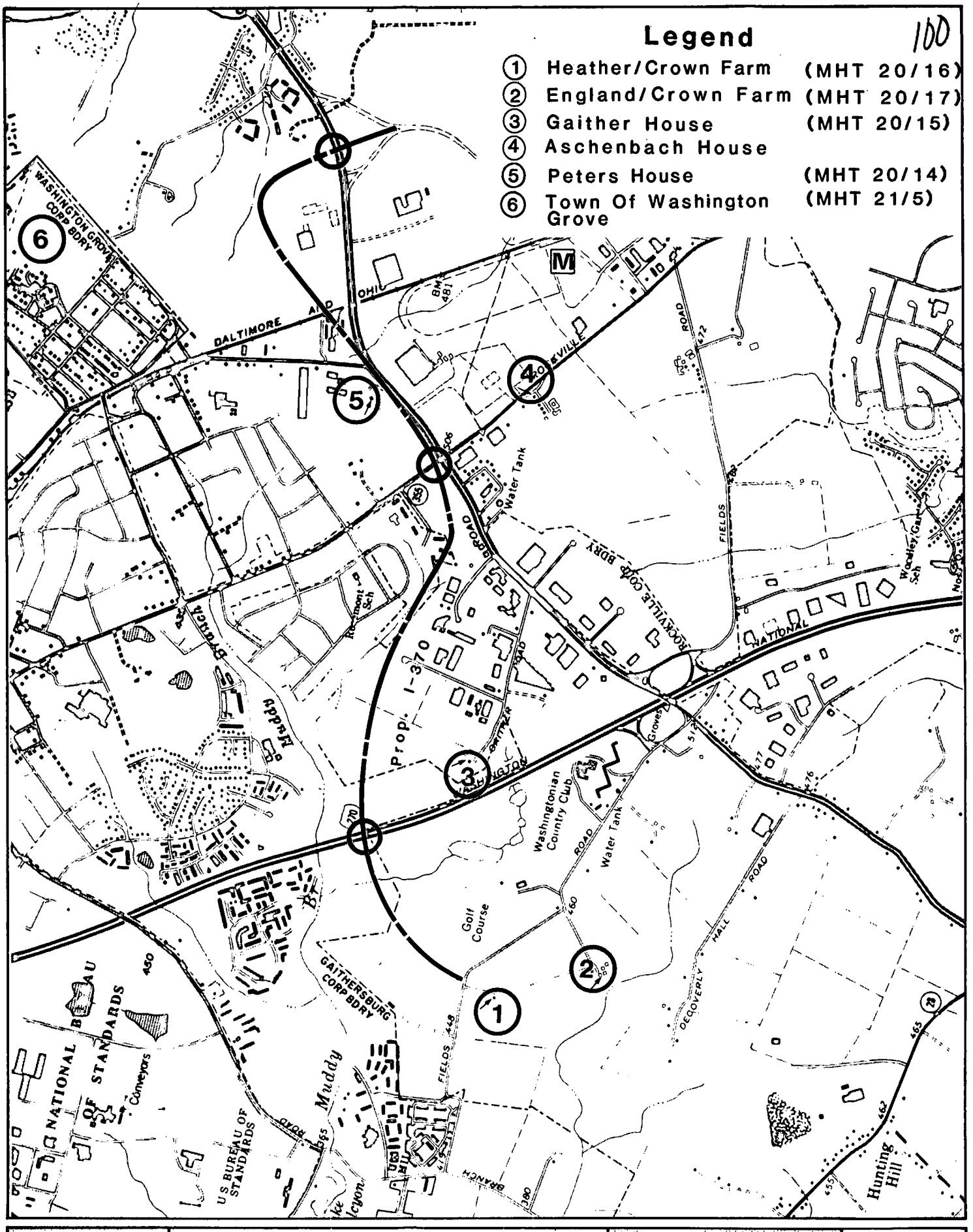
1. HISTORICAL AND ARCHEOLOGICAL RESOURCES

Reconnaissance and field reviews and consultations with the Maryland Historic Trust (MHT) and the Montgomery County historians for M-NCPPC have identified five historical sites of possible local importance, three of which are on the MHT inventory (see letter in Appendix C). These properties, whose locations are shown on Figure III-8, are the Heather-Crown farm (MHT 20/16), the England/Crown farm (MHT 20/17), Gaither House (MHT 20/15), Aschenbach House, and Peters House (MHT 20/14). None of these are eligible for listing on the National Register of Historic Sites. In addition, the Peters House, due to extensive alterations, is no longer considered of local significance. The Town of Washington Grove (MHT 21/5), listed in the National Register, is in the northeast corner of the study area.

An archeological survey conducted by the Maryland Geological Survey revealed three sites in the area, all dating roughly from the turn of the century. The State Historic Preservation Officer determined that these sites were not significant (see letter dated 16 December 1981 in Appendix C).

2. AESTHETICS

Within the I-370 vicinity, three major aesthetic elements significantly contribute to the visual quality of the affected environment. These are the stands of mature woodlands, open fields, and topographic relief. Most of the areas where these natural conditions occur are surrounded by suburban interstate highway and commercial, office, or residential development. These aesthetic elements acquire new value when preserved in the context of development. They are the only remaining elements of the past rural agrarian image. Stands of woodland vegetation set in a mixed-use environment visually separate land uses by blocking buildings, surrounding and containing open lands, creating enclosed areas, and providing visual relief from the angular image of the built environment. Open agricultural fields provide a visual contrast to the massing, density and texture of the built environment. Existing preserved landforms contribute to the natural character of the environment with their unique ground plane character.



Archaeological/Historical Resources

INTERSTATE 370

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Figure III - 8

IV. ENVIRONMENTAL CONSEQUENCES

A. SOCIAL AND ECONOMIC

1. SOCIAL

a. Residential Displacement and Relocation Availability

Table IV-1 summarizes the residential displacement which would result from each alternate for the proposed project. The information contained in this table is based on preliminary relocation studies conducted by SHA. The preliminary relocation report is available for examination at the offices of the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland. An analysis of the probable residential displacement that would be caused by the proposed alternates has been made by the State Highway Administration, Bureau of Relocation Assistance. Relocation of any families and individuals displaced by the proposed project would be accomplished in accordance with the Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 (P.L. 91-446). A summary of the Relocation Assistance Program of the State of Maryland is given in Appendix B.

Alternate 1 - No Build

This alternate would not have involved any residential displacement since no new construction would occur with the selection of the No-Build Alternate for this study.

Alternates 2C and 2D

Either alternate would have displaced eight families scattered over a ten acre area just south of the I-270/Shady Grove Road interchange. The average family is three persons, and the total number of affected persons is 24, of which 15 are members of a minority group. These 15 members comprise 5 families, all of whom are employees of the Washingtonian Motel and are renting housing from that motel. The remaining 3 families are homeowners. No elderly or handicapped individuals were identified.

Values of the houses which would have been acquired and monthly rents paid for such units range from $30,000 to $60,000 and from $300 to $600 as estimated by the Bureau of Relocation Assistance. The rental price range was inferred based on one percent of the estimated housing value. A $600 rent for the type of units in question is likely to be high relative to comparable rental units in this housing market within the study area. Preliminary relocation assistance costs for displaced residents are estimated to be $168,750.

Selected Alternate 3E Modified and Alternate 3C

Alternate 3E Modified will result in the displacement of 30 persons. Due to the proposed upgrading of the Shady Grove Road/I-270 interchange, **Alternate 3E Modified** will displace the same eight families displaced under Alternates 2C and 2D. **Alternate 3E Modified** will additionally displace two families who own their homes in the area east of MD 355. The estimated value of these two houses ranges from $25,000 to $60,000. No additional members of minority groups will be affected, nor will any known elderly or handicapped individuals. Preliminary relocation assistance costs for displaced residents are estimated to be $362,500. Relocation

TABLE IV-1
SUMMARY OF RESIDENTIAL DISPLACEMENT/RELOCATION AVAILABILITY

Residential Displacement By Alternate

	ALTERNATES			
	No Build	2C and 2D	3C and Selec. Alt. 3E Mod.	3D
NUMBER OF FAMILIES	0	8	10	46
Renter	na*	5	5	41
Owner	na	3	5	5
NUMBER OF PERSONS	na	24	30	138
NUMBER OF UNITS	na	8	10	46
Age	na	11-30 yrs	11-30 yrs	11-30 yrs
Bedrooms	na	3	3	2-4
Estimated Rental Values, Single Family	na	$300-600	$300-600	$300-600
Estimated Rental Values, Apartments	na	$200-260	$200-260	$200-260
Estimated Fair Market Value, Single Family Dwellings	na	$30,000 - 60,000	$25,000 - 60,000	$25,000 - 60,000

Relocation Housing Availability

HOUSES FOR SALE	10
Age	Eight @ 0-10 yrs.; 2 @ 11-30 yrs.
No. of Bedrooms	Seven w/3: Three w/4 and up
Price	$60,000 and up
UNITS FOR RENT	38
Bedrooms	Five w/2; 27 w/3; Six w/4 and up
Rent	$300 and up per month

Source: State Highway Administration of the Department of Transportation of Maryland, Bureau of Relocation Assistance: Preliminary Relocation Report.

* na: not applicable

time is estimated at one and one-half years if Maryland has title to the land. The effects of Alternate 3C are identical to **3E Modified.**

Alternate 3D

Alternate 3D had the most significant residential impact, displacing 138 persons: 10 families or 30 persons in single-family detached dwellings and another 108 persons in a single, 36-unit apartment building. Renters number 123, and the remaining 15 are homeowners.

Rents at the affected Rosedale Apartments range from $200 plus utilities for a one bedroom apartment to $265 for a three bedroom unit according to a July 1981 survey of rental properties conducted by the Gaithersburg Code Enforcement Department. Values for owner-occupied houses range from $25,000 - $60,000. Additional rental values and displacee characteristics remain the same as for Alternates 2C, 2D, 3C and **3E Modified.** Preliminary relocation assistance costs for displaced residents under Alternate 3D are estimated to be $737,500.

Housing Availability

Findings of the relocation report indicated that sufficient housing exists on the open market for the owner-occupants, but the rental market is somewhat restricted, with limited numbers of dwellings available and high monthly rents. In the event that tenants displaced are paying below market rents for their units, last resort housing will be provided if necessary to provide adequate decent, safe and sanitary housing. Housing of last resort is likely to be necessary for the residents of the rental houses at the I-270/Shady Grove Road interchange unless the rental market in the area changes substantially.

The need for the development of additional housing opportunities in the Gaithersburg area has been recognized as a key County objective. As the fastest growing area in Montgomery County and the Washington metropolitan area, Gaithersburg represents an important resource for increasing the County's housing stock and providing affordable family housing for the area's growing young population.

Currently, the Gaithersburg area has ample reserves of vacant land suitable for future residential development. The eventual development of these lands is, however, jeopardized by traffic generated by existing land uses. The development of the **Staff Draft Gaithersburg Vicinity Master Plan** indicates that the study area will continue to experience severe traffic congestion unless I-370 and other master-planned roads are built. If the Gaithersburg area is to achieve its full potential as a housing resource for Montgomery County, potential locations for future residential development must have good access by private vehicle and public transportation to employment opportunities.

b. Access to Community Facilities

The study area is served by numerous neighborhood-oriented public facilities such as schools, parks, churches and playfields, none of which would experience any drastic accessibility problem under the proposed alternates. In a few instances temporary inconvenience would be felt during the construction stage at selected locations.

Alternate 1 - No-Build

Since the existing transportation system is already overburdened by the present traffic, the continuation of this problem with no improvements beyond those currently proposed would have had an aggravating effect on accessibility to community facilities within the study area.

Alternates 2C and 2D

Drastic accessibility problems were not expected under either of these alternates. Construction activities may have caused temporary inconvenience to the attendants of Epworth Methodist Church on Frederick Avenue to the north of Shady Grove Road, but these construction activities were not expected to conflict with regular church hours and it is likely that any inconvenience to this group would have been minimal. Casey Barns Community Center, south of the Epworth Church, would have experienced minimal inconvenience due to construction activities.

Alternates 3C and 3D

Alternates 3C and 3D would have taken publicly-owned park land from Summit Hall and Muddy Branch parks, and 3D would have used a portion of Rosemont Park, all 4(f) involvements. Alternate 3D also involved relocating a stream in Rosemont Park, separating Rosemont Park into two parcels. No existing recreational facilities in these parks would have been affected by the taking of land under Alternate 3C or 3D.

Alternate 3E Modified (Selected Alternate)

This alternate has been shifted so as not to involve any parkland, so there is no 4(f) involvement. No other community facilities would be affected.

c. Disruption of Neighborhoods/Communities

Several neighborhoods were identified in Section III and depicted in Figure III-1. These include the subdivision of Rosemont, Walnut Hill, and Shady Grove Village, and the Town of Washington Grove. The **Selected Alternate** does not traverse any of these identified neighborhoods or cut through their current circulation pattern. No change in the lifestyles of study area residents is anticipated. However, some informal pedestrian paths from Rosemont through the park and private property to businesses may be interrupted.

d. Effects of Minority and Other Special Groups

The preliminary 1980 Census of the Population indicated that the majority of residential displacements would occur in Census Tract 10.03. Screening of the study area's inhabitants (see Section III) did not reveal any considerable concentration of special groups, such as minorities, elderly, families with only male or female head or without any family head, low and moderate-income families, handicapped, or others in the vicinity of proposed alternates. However, in Tract 10.03, 15 of the 24 persons in eight households displaced by the Shady Grove Road upgrading are members of minority groups. No facilities serving special groups such as nursing homes, day care centers, or halfway homes were found in the affected areas.

e. Summary of the Equal Opportunity Program of the Maryland State Highway Administration

It is the policy of the Maryland State Highway Administration to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964 and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, national origin, sex, age, religion, or 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 may be given to the social, economic, and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Equal Opportunity Section of the Maryland State Highway Administration for investigation.

2. LAND USE/PLANNING

a. Relationship to Plans, Policies and Controls

The study area is being developed according to policies set forth in the following plans: the **Montgomery County General Plan** ("On Wedges and Corridors"); the **Rockville Master Plan;** the **Gaithersburg Master Plan;** and the **Sector Plan for the Shady Grove Transit Area Station** (which amended portions of the **Gaithersburg Vicinity Master Plan).** In addition, the **Staff Draft Gaithersburg Vicinity Master Plan** assumes I-370 will be built. Staging policies of Montgomery County (M-NCPPC) play an important role in the implementation of these plans in that the physical development of the area must consider public facilities to insure that proposed development can be adequately served. These policies are outlined in the County's Adequate Public Facilities (APF) Ordinance. Public facilities covered by the ordinance include water, sewerage, and transportation systems (which allow services to be maintained in accordance with the contemplated future character of the study area). This approach provides the underlying principle for an array of complex decisions concerning the physical development of the study area.

Transportation improvements associated with the construction of I-370 are consistent with County land use and development plans and do not impair the viability of central city areas. The proposed improvements seek the provision of improved access to major urban employment and retail centers by interconnecting the region's mass transportation system. Improved accessibility would be achieved by providing a link between significant growth areas in Montgomery County and the Shady Grove Metro Station.

Consistent with federal, state, regional and local policies, the proposed improvements make optimal use of existing public investment and increase accessibility between central city areas and major suburban jurisdictions in the Washington metropolitan area. The importance of developing an effective transportation link between Washington, D.C. and the surrounding suburban jurisdictions is addressed by the Metropolitan Washington Council of Governments (COG) in its **Metropolitan Policy Guide.** The Policy Guide, adopted by member local jurisdictions (including the District of Columbia) in December 1980, evolved from several historical planning efforts and documents, from the **Year 2000 Plan** through the 1977 **Metropolitan Growth Policy Statement.** It provides the framework for implementing the growth policy and related policies and plans for transportation, housing, economic development, water resources and other functions. With regard to transportation, the

Policy Guide encourages planned development in Metro station areas, thereby enhancing housing and employment opportunities for the disadvantaged. Complementary economic development policies specifically address the importance of linking unemployed persons in the central city with job opportunities in the suburbs through the development of an extensive rapid rail and related access system.

Transportation improvements associated with the **Selected Alternate** will result in a reduction in the quantity of fuel consumed per vehicle trip compared to the No-Build based on improved level of service (LOS) in the study area. Currently oversaturated conditions along Shady Grove Road, particularly at Gaither Road and MD 355, have resulted in significant traffic congestion and increased energy consumption due to delays. Alternate 1 provides the poorest LOS with a total delay in vehicle hours along Shady Grove Road of 2,628. Alternates 2C and 2D provide a better LOS and a total delay of 588 vehicle hours. Alternates 3C, 3D, and 3E Modified improve the delay time to approximately 200 vehicle hours, provide the best LOS along Shady Grove Road, and introduce more economical and efficient travel speeds.

The alternates provide various transportation services from I-270 to the Metrorail Station, establishing a range of holding capacities for development in the area. Alternates were developed from the concepts presented at the Alternates Public Meeting (March 1980) and represent the following future states: (1) No-Build; (2) Upgraded Shady Grove Road and; (3) I-370 on new alignment from Fields Road and I-270 to Metrorail Station. Their relationship to the plans are assessed for the target year 2006. More detailed discussion relating expected roadway capacities under each alternate to the accommodation of planned land use development in the study area is contained in Section IV.3.

Alternate 1 - No-Build

Under this alternate, even with the programmed improvements to the existing transportation system, the targeted development of employment centers could have accommodated only an additional 1,180 workers. Accordingly, the amount of land absorption fell short of the ultimate development suggested in the adopted plans by 95 percent, i.e., only five percent of planned development could have been accommodated.

Alternates 2C and 2D

These alternates in comparison with Alternate 1 could have facilitated incrementally more land utilization for employment centers by introducing interchange improvements. Only half of the ultimate development suggested in the plans likely would have been implemented.

Alternates 3C, 3D and **Selected Alternate 3E Modified**

A new roadway constructed to interstate standards will provide opportunities for full employment and residential growth as anticipated in adopted master plans for the Shady Grove area. Construction of I-370 will allow a doubling of design year roadway capacities in comparison with Alternates 2C and 2D. Also, **Alternate 3E Modified** will have sufficient roadway capacity to accommodate all additional projected future development anticipated under the **Staff Draft Gaithersburg Vicinity Master Plan.**

The **Selected Alternate** on new location is in conformance with the intent of adopted area master plans because it will provide an adequate transportation link between I-270 and the Shady Grove Metrorail Station. As discussed in Section I.C., it

will serve proposed employment activities and other land development in the Shady Grove study area. In contrast, the No-Build Alternate would have placed limitations on future development envisioned in all adopted and proposed plans for the study area.

The adoption of the **Shady Grove Sector Plan** in 1977 (which amended portions of the 1971 Gaithersburg Vicinity Master Plan) outlined the County's commitment to the development of the Shady Grove area as a major County housing and employment center. Currently proposed revisions to the **Gaithersburg Vicinity Master Plan** recommend an increase in the level of development in the I-370 study area while making no land use or zoning recommendations for the 4.5 square mile area included in the Shady Grove Sector Plan. These revisions are outlined in the M-NCPPC Preliminary Staff Draft Plan which represents a comprehensive amendment to the 1971 **Gaithersburg Vicinity Master Plan** (Planning Area 20) and a portion of the area covered by the 1968 **Rock Creek Master Plan** (Planning Area 22). Specifically, the new Draft Plan recommends more intensive development of the Washingtonian Tract, adjacent to the I-270 corridor.

Alternate 3E Modified will allow full implementation of the currently proposed **Staff Draft Gaithersburg Vicinity Master Plan.** The alternate will accommodate 100 percent of the proposed growth in the Shady Grove study area, including intensive development in the Washingtonian Tract. In contrast, the others would not fully accommodate the level of future development proposed in M-NCPPC's **Staff Draft Gaithersburg Vicinity Master Plan.** While it is recognized that this staff draft plan is currently under review, it has local support, and the final design of Alternate 3E Modified will be consistent with the Gaithersburg Vicinity Master Plan as ultimately adopted. **Alternate 3E Modified** allows implementation of the basic Corridor City concept presented in the "On Wedges and Corridors" Plan by accommodating more intensive use of land in an area recommended for development as a residential and commercial center and by facilitating opportunities for the utilization of all modes of transportation.

3. ECONOMIC

a. Business Displacement and Relocation

Relocation assistance payments will be made, including moving expenses, for all businesses displaced. Estimated costs, of course, are preliminary as conditions may differ at the time of settlement.

Alternate 2C would have required displacement and relocation of only one business establishment, a gasoline service station, and result in the loss of parking area and relocation of pump islands and underground storage tanks. Estimated costs of these improvements were $60,000 for the service station structure and $45,000 for the loss of pumps, storage tanks and parking. Preliminary relocation assistance costs for this business under Alternate 2C were estimated to be $18,750.

Alternate 2D would have resulted in displacement of pumping and underground storage facilities and loss of parking space at the gasoline station. Costs associated with relocating these improvements were estimated at $45,000.

Alternate 3D would have required the taking of two existing business establishments. Two warehouses, six small outbuildings and offices operated by a distributing company and located on Oakmont Road above Shady Grove Road would have been within the

highway right-of-way. The other business displaced was a combination professional office/residence located on MD 355 just north of Shady Grove Road. The total cost of these improvements was estimated at $340,000. Preliminary relocation assistance costs for this business were estimated to be $135,000.

Under **Alternate 3E Modified** and 3C, which avoid Rosemont Park as well as the Rosedale apartment building in the City of Gaithersburg, several other businesses will be taken in addition to those cited for Alternate 3D. These include: a Burger King restaurant with a preliminary structure cost of $100,000; National Tire Wholesale with structure costs of approximately $900,000; and a one-story office building with estimated improvement costs of $900,000. Preliminary relocation assistance payments for these establishments are tentatively placed at $703,750. Relocation time would be one to one and one-half years if the State takes title, two to three years if title is not obtained before relocation assistance begins. A total of 36 businesses with 184 employees (40 of whom are minority) will have to be relocated under **Alternate 3E Modified.** There are no known minority-owned businesses or non-profit organizations involved.

b. Effects on Business Development/Employment

According to the traffic analysis undertaken as a part of this study, the traffic capacity on the "critical link" of Shady Grove Road will not be adequate to accommodate projected traffic volumes unless I-370 is constructed. The constraint of traffic inherent in any of the other alternates would have significant implications for development activity and employment growth in the study area.

Traffic Capacity Constraints

Based on current traffic studies, Alternates 3C, 3D, and **3E Modified** will divert substantial traffic volumes from Shady Grove Road; projected average daily traffic (ADT) on the critical link will be about the same as it is today. If the I-370 project is not undertaken, however, projected traffic volumes on Shady Grove Road would far exceed its expected capacity.

If no further improvements beyond the widening of Shady Grove Road to six lanes are made, it is doubtful that the private sector will undertake all the projects now being considered or those required to fulfill the study area employment projection for the year 2006. Whatever the private sector response, however, public sector growth policy rather than market dynamics is likely to be the decisive element in study area development activity and realization of the employment projections.

In an effort to resolve difficulties in implementing the county's Adequate Public Facilities Ordinance on a project-by-project basis, the Maryland-National Capital Park and Planning Commission has adopted overall development thresholds keyed to the staging of major public facility and roadway improvements in the various policy areas of the County. In the Gaithersburg policy area, of which the I-370 Study Area is a part, M-NCPPC will now permit commercial development accommodating an additional 14,000 employees. This is based on roadway improvements included in current county and state capital improvement programs.

In this analysis of economic impacts of the alternates, it has been assumed that ADT on the critical link of Shady Grove Road would not exceed 110 percent of the roadway design capacity (LOS E). The implications for traffic volumes under the various alternates are shown in Table IV-2.

TABLE IV-2

Projected Average Daily Traffic (ADT) in the Year 2006 on the Critical Link of Shady Grove Road, I-370 Alternates

Alternate		ADT
1	Unconstrained No-Build	85,000
1	Constrained No-Build	65,000
2	Eight-Lane Shady Grove Rd.	75,000
3	I-370 to Fields Road	42,000

Source: Maryland State Highway Administration

As illustrated, constrained ADT on the critical link of Shady Grove Road would amount to no more than 65,000 vehicles. Similarly, if Shady Grove Road were widened to eight lanes, a somewhat higher (75,000 vehicles) ADT would be allowed. Under both of these alternates, development limits in the study area would have to be imposed, as overall unconstrained level of 85,000 ADT would exceed the maximum number of vehicles that could be physically accommodated by an eight-lane Shady Grove Road. If the Washingtonian Tract were to be fully developed without the benefit of I-370, this hypothetical figure would increase even more.

Overall county development thresholds keyed to the staging of major public facility area roadway improvements have been adopted and construction of I-370 is of major importance on this listing of county and state improvements. If this roadway improvement is not undertaken, development thresholds and permitted development activity will presumably be adjusted downward accordingly. Therefore, based on the principal sources of projected traffic on the critical link, this study concluded that constraint of employment-related development would be the only reasonable approach to meeting the traffic capacity constraints on Shady Grove Road that would exist under Alternates 1, 2C, and 2D.

While construction of Alternates 3C, 3D or **3E Modified** will alleviate traffic congestion on the critical link of Shady Grove Road, carrying capacities differ substantially. Each would provide direct highway access to the southwest of I-270, and thus is critical in effecting development potentials of large tracts of vacant land, in particular, the Washingtonian Golf Course site. The site, subject to recommended zoning changes, has the capacity to hold up to 3.4 million square feet of building space. Most of this (about 2.5 million square feet) would likely be devoted to office use, with complementary R&D, commercial, retail and lodging facilities. Proposals to date have projected a 10 to 15 year build-out, well within the end of the study period for I-370 planning (2006). At full development, generated real property tax revenue is projected at $3.4 million per year in constant 1981 dollars.

Under Alternates 3D and **3E Modified,** all of this projected development can be accommodated in accordance with the County's Adequate Public Facilities Ordinance. Under Alternate 3C, however, development clearly would have to have been scaled down. At minimally acceptable levels of traffic congestion (LOS D), an estimated 43

percent of total development could have been accommodated. Employment and tax revenue would have been affected accordingly. In comparison, at severely congested traffic levels (LOS E), 86 percent of development hypothetically could be serviced. Table IV-3 below summarizes the two economic and fiscal consequences of the alternates on development of the Washingtonian Tract vicinity.

TABLE IV-3

Critical Traffic Capacities on I-370 And Their Projected Impacts on Washingtonian Tract Development, Under Alternates 3C and 3D/3E Modified

	Alt. 3C	Alt. 3D/3E Modified*	Difference
	(000)	(000)	(000)
Level of Service	LOS D	LOS C	---
ADT between I-270 and Fields Road	25	75	50
Permissible Sq. Footage	1,462	3,400	1,938
Market Value of Improvements and Land	$96,545	$224,524	$127,979
Assessed Value	$45,183	$105,077	$59,894
Property Tax Revenue	$1,451	$3,374	$1,923
Projected Employment	5,800	13,500	7,700

* Selected Alternate

Note: Dollar amounts expressed in constant 1981 dollars.
Source: Hammer, Siler, George Associates

Development Impacts

To keep within traffic capacity constraints on Shady Grove Road, employment in the study area could account for no more than 16,700 of projected ADT under the No-Build Alternate (65,000). When existing 1980 employment levels and trip generation factors are taken into account, additional development accommodating only 1,180 new employees could take place. This is a small fraction of projected employment growth to the year 2006. Under Alternates 2C and 2D (widening of Shady Grove Road to eight lanes), 26,700 in employment-related ADT could have been accommodated, only a third of the projected employment growth.

The implications of this analysis are clear. Under Alternate 1, only three percent of the commercial real estate development expected over the next 26 years could have been permitted. In contrast to the 9.8 million square feet of maximum anticipated space, only 300,000 square feet would have been permitted. Under Alternates 2C or 2D, the situation was somewhat better, but only 3.3 million square feet of space

could have been accommodated. In this case, only a third of the development expected under official projections would have occurred. Under Alternate 3C, over 80 percent could have been accommodated at LOS D. If LOS E conditions (absolute roadway capacity) were allowed on I-370 and I-270, fully 95 percent of total development could have been handled. **Alternate 3E Modified** and 3D will have sufficient capacity to accommodate total potential development. Assuming that three-fourths of the space projected for development in the study area will be conventional office space and the remainder research and development, retail/commercial, and hotel facilities, the total development potential (value of new buildings construction) for each alternate would be as follows: Alternate 1, $4.5 million; Alternates 2C and 2D, $145.0 million; Alternate 3C, $386.6 million; and Alternates 3D and **3E Modified**, $514.6 million.

c. Effects on Tax Base

Property Tax Rolls

Development activity and assessed values that will accrue to the cities of Gaithersburg and Rockville have been estimated. Assuming that the City of Rockville would annex areas immediately adjacent to present municipal boundaries (specifically the area west of an extended Gaither Road and the area west of Research Boulevard to Shady Grove Road), approximately 20 percent of the employment growth and development activity is expected to occur within the Rockville city limits. Just under five percent is expected to be within the City of Gaithersburg.

The full-scale, unconstrained development activity expected under **Alternate 3E Modified** or 3D will contribute materially to the real property tax base of area jurisdictions. At current property tax assessment ratios, over $280 million in land and improvement value would be added to the property tax rolls. This amount is equivalent to 6.5 percent of the current assessed valuation in the county as a whole. In Rockville, the addition of $55 million in assessed value is equivalent to nearly eight percent of the City's current valuations. In Gaithersburg, the $13 million addition is equivalent to three percent of its current total assessment of $414 million.

Based on interviews with a sample of study area firms conducted as part of this study, if development were constrained in the study area under Alternates 1, 2C, or 2D, it seems likely that 60 to 70 percent of it would occur elsewhere in the county. Much of it would probably shift northward to other locations in the I-270 corridor. Some may also be transferable to the growing U.S. 29 corridor to the east. Since Rockville and Gaithersburg are largely developed at present, it is doubtful that all projects precluded from locating in the I-370 study area would be transferable to other locations in these cities and their property tax rolls would suffer accordingly.

Fiscal Effects

At current tax rates, projected unconstrained development in the study area under **Alternate 3E Modified** and 3D will generate approximately $9.7 million annually in property tax revenues. From all new commercial properties in the study area, Montgomery County will realize $6.4 million in annual revenues. Just under $600,000 will be available to the State of Maryland, and approximately $2.1 million will be collected by special service taxing areas of the County. The City of Rockville will collect approximately $500,000 from the new properties located within its boundaries, and approximately $70,000 will accrue to the City of Gaithersburg.

The fiscal implications of constrained development would be directly proportional. Under Alternate 1, development activity in the study area would have generated only

$300,000 in annual real property tax revenues. Under Alternates 2C and 2D, the comparable figure was $3.5 million. Under Alternate 3C, development would have been constrained to a far lesser degree. Nonetheless, total annual tax revenue would still be one to two million dollars less than under Alternates 3D or **3E Modified.**

B. TRANSPORTATION

1. DESIGN YEAR TRAFFIC

2006 design year average daily traffic (ADT) forecasts for Alternates 1, 2C, 2D, 3C, 3D and 3E Modified are presented in Figures IV-1 through IV-4. As indicated in Section III, these forecasts reflect traffic constraints where necessary to bring traffic demand and traffic capacity into a reasonable balance. (See discussions above under Section IV.A.3. ECONOMIC.) The critical roadway section necessitating traffic constraint is Shady Grove Road between I-270 and Gaither Road, in particular the intersection of Gaither Road and Shady Grove Road. The degree of constraint in this segment for each alternate was as follows:

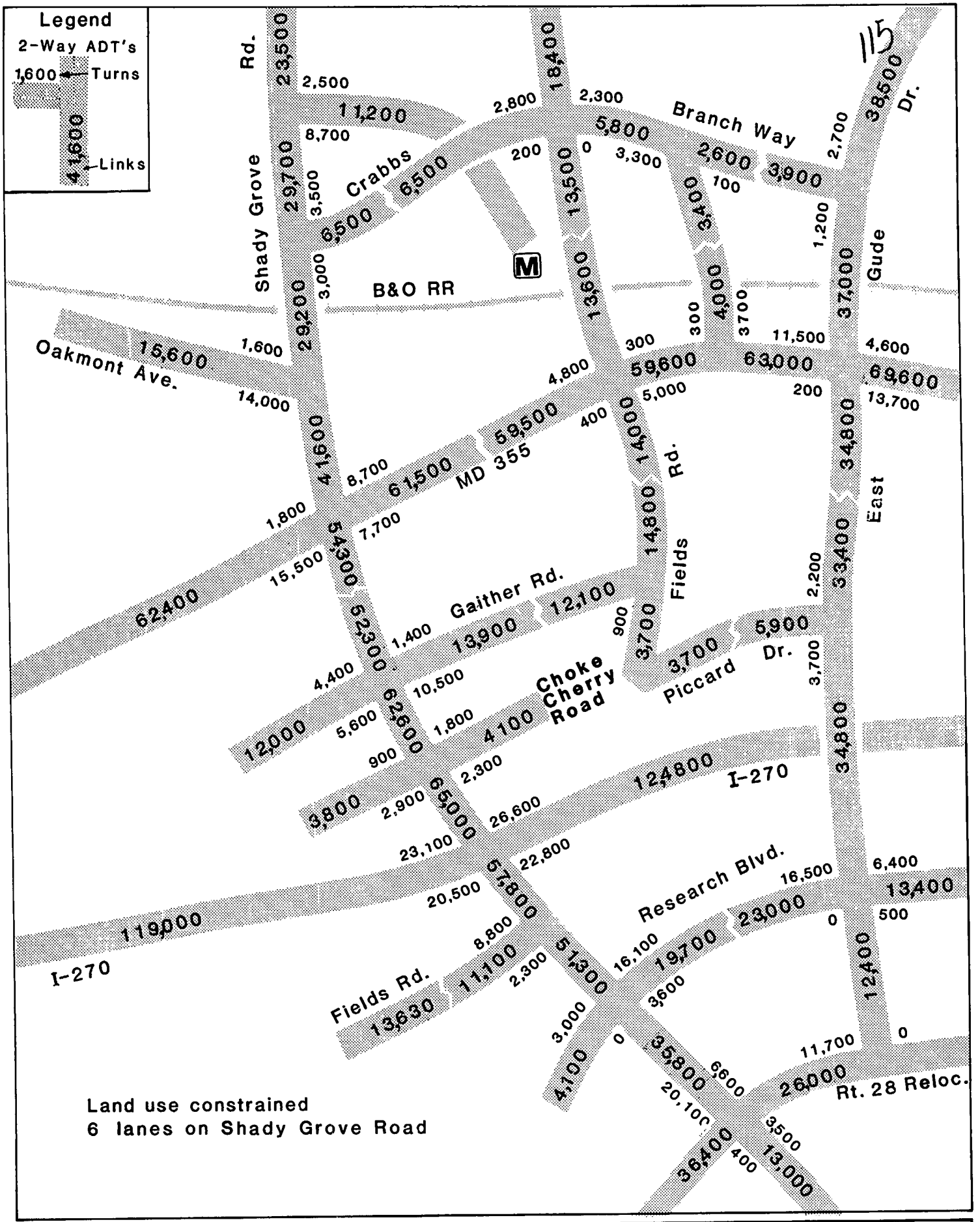
- Alternate 1 - 20,000 vehicles per day, or 24 percent
- Alternates 2C and 2D - 10,000 vehicles per day, or 12 percent
- Alternate 3C - No constraint
- Alternates 3D and 3E Modified - No constraint, plus intense development of Washingtonian Tract

In Alternates 1, 3C, 3D and **3E Modified** Shady Grove Road is assumed to be six lanes wide, and in Alternates 2C and 2D it is further widened to eight lanes.

Alternate system traffic forecasts for 2006 along Shady Grove Road are presented in Figure IV-5. Traffic volumes for 1980 are also included for comparison. Over the critical section of Shady Grove Road, Alternates 2C and 2D exhibited the greatest traffic demand and capacity. Both traffic volume and capacity would have doubled on this section under the design assumptions for Alternates 2C and 2D. Under the no-build (Alternate 1) assumptions, traffic volume and capacity would both have increased by approximately 50 percent. Traffic volumes for **Alternate 3E Modified,** as well as 3C and 3D, will be somewhat lower than 1980 levels due to the diversion of traffic to I-370. Traffic on Shady Grove Road west of I-270 shows relatively little variation among the alternates but also exhibits a much higher rate of increase due to the pattern of projected development. Between Gaither Road and the Metro Access Road, volumes are much lower for Alternates 3C, 3D and **3E Modified** than for Alternates 1, 2C and 2D.

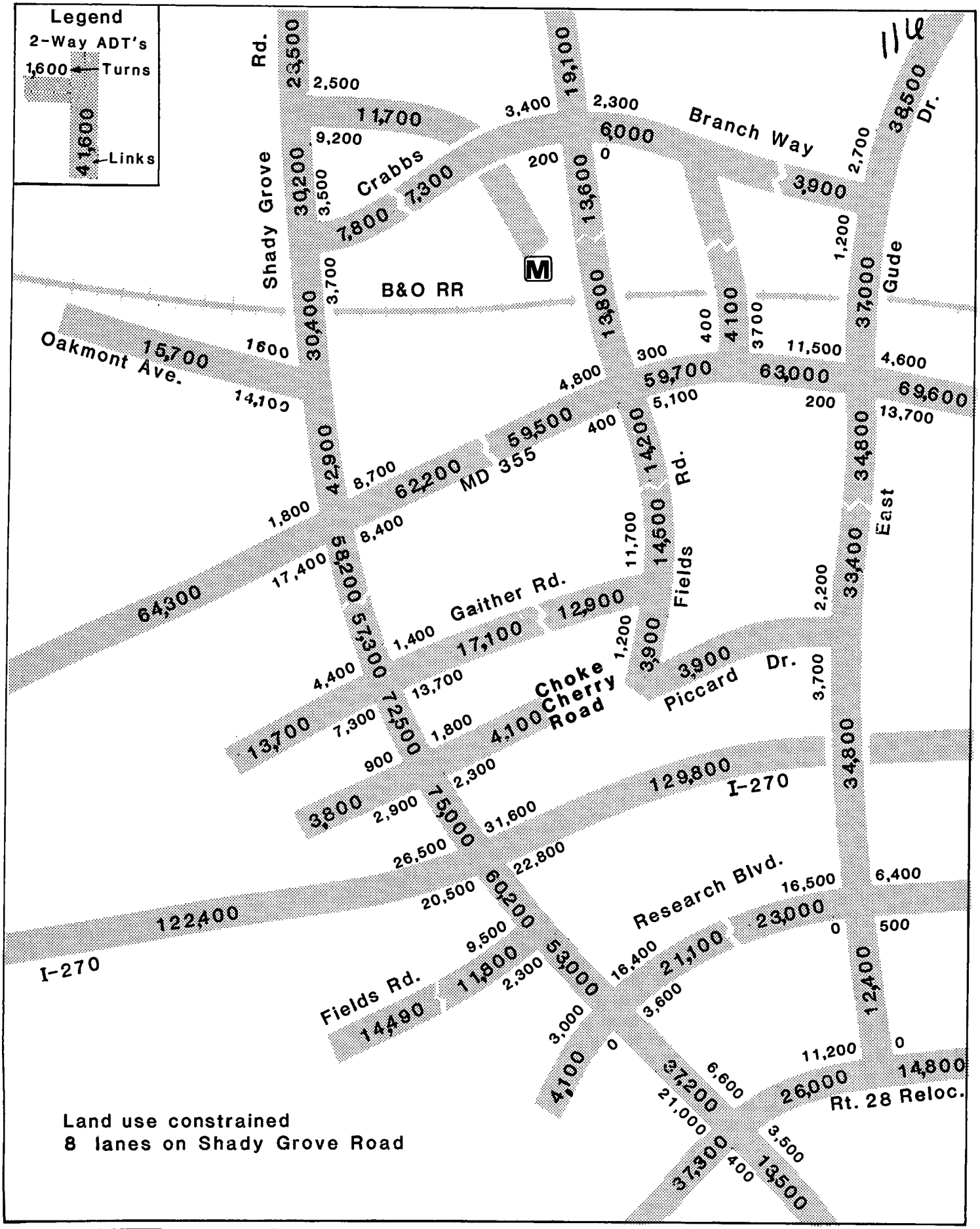
Beyond Shady Grove Road, other significant differences in forecast traffic among the alternates are limited to I-270 and MD 355. The addition of I-370 to the highway network with interchanges at I-270 and MD 355 concentrates more traffic on these other two major facilities. An additional 15,000 to 20,000 vehicles per day, compared to the No-Build, were attracted to I-270 under Alternate 3C. In addition, approximately 5,000 vehicles per day were attracted to MD 355 north of its interchange with I-370. **Alternate 3E Modified** and 3D result in approximately 20,000 more vehicles per day than Alternative 3C on I-270 and 10,000 more on I-370 east of I-270. Approximately 45,000 vehicles per day more will use the portion of I-370 between its terminus at Fields Road and its connection with I-270. This is due to assumptions of increased land-use development in the Fields Road area accommodated by Alternates 3D and **3E Modified.**

Alternates 3C, 3D and **3E Modified** also experience higher traffic because the land-use development and its resultant traffic are unconstrained compared to Alternates 1, 2C and 2D. The unconstrained land use projections are reflected in the overall evaluation of the alternates.



	Alternate 1 **2006 Average Daily Traffic**	**INTERSTATE 370** No Scale	

Figure IV - 1

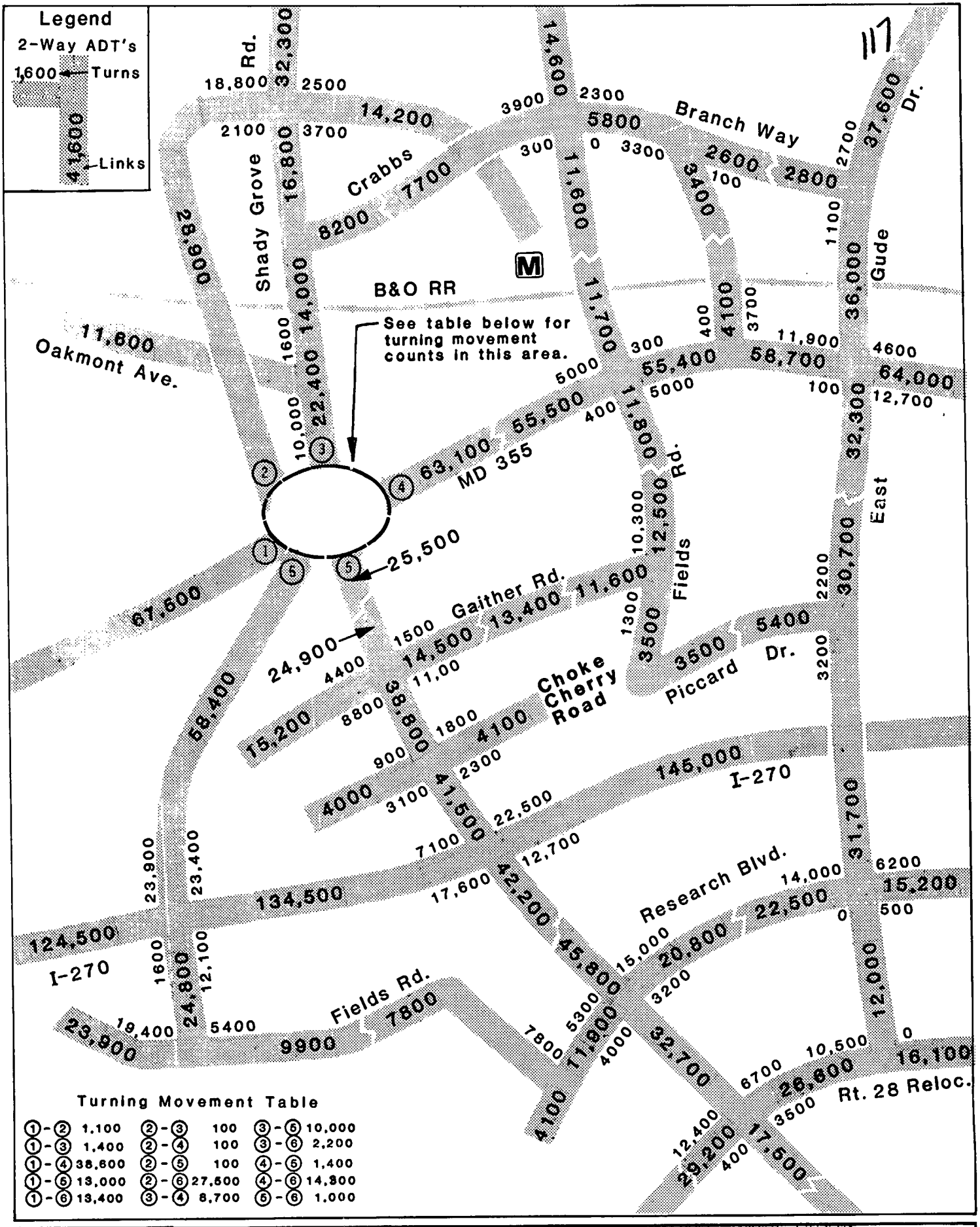


Alternate 2C & 2D
2006 Average Daily Traffic

INTERSTATE 370

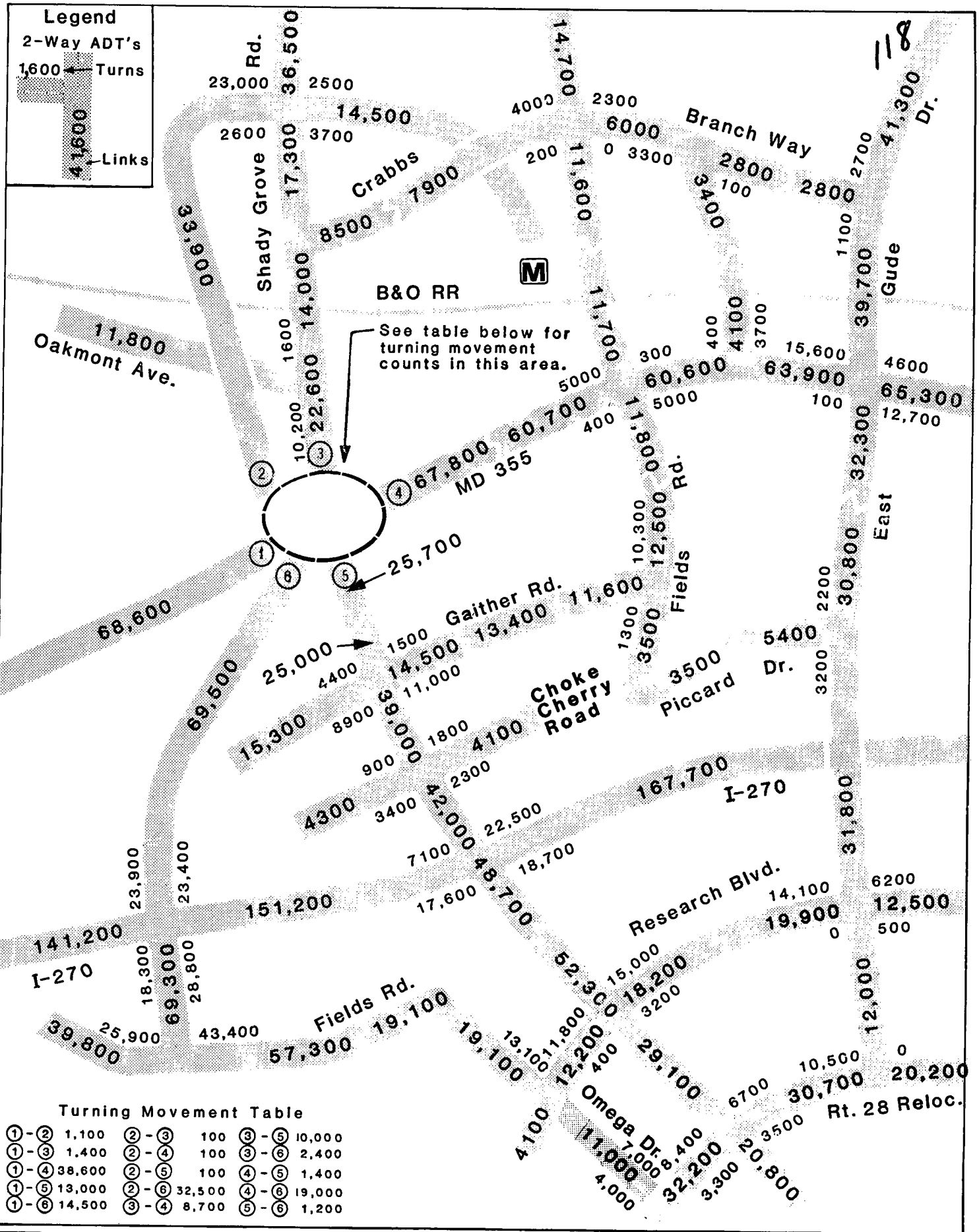
No Scale

Figure IV - 2



	Alternate 3C **2006 Average Daily Traffic**	**INTERSTATE 370** No Scale

Figure IV - 3

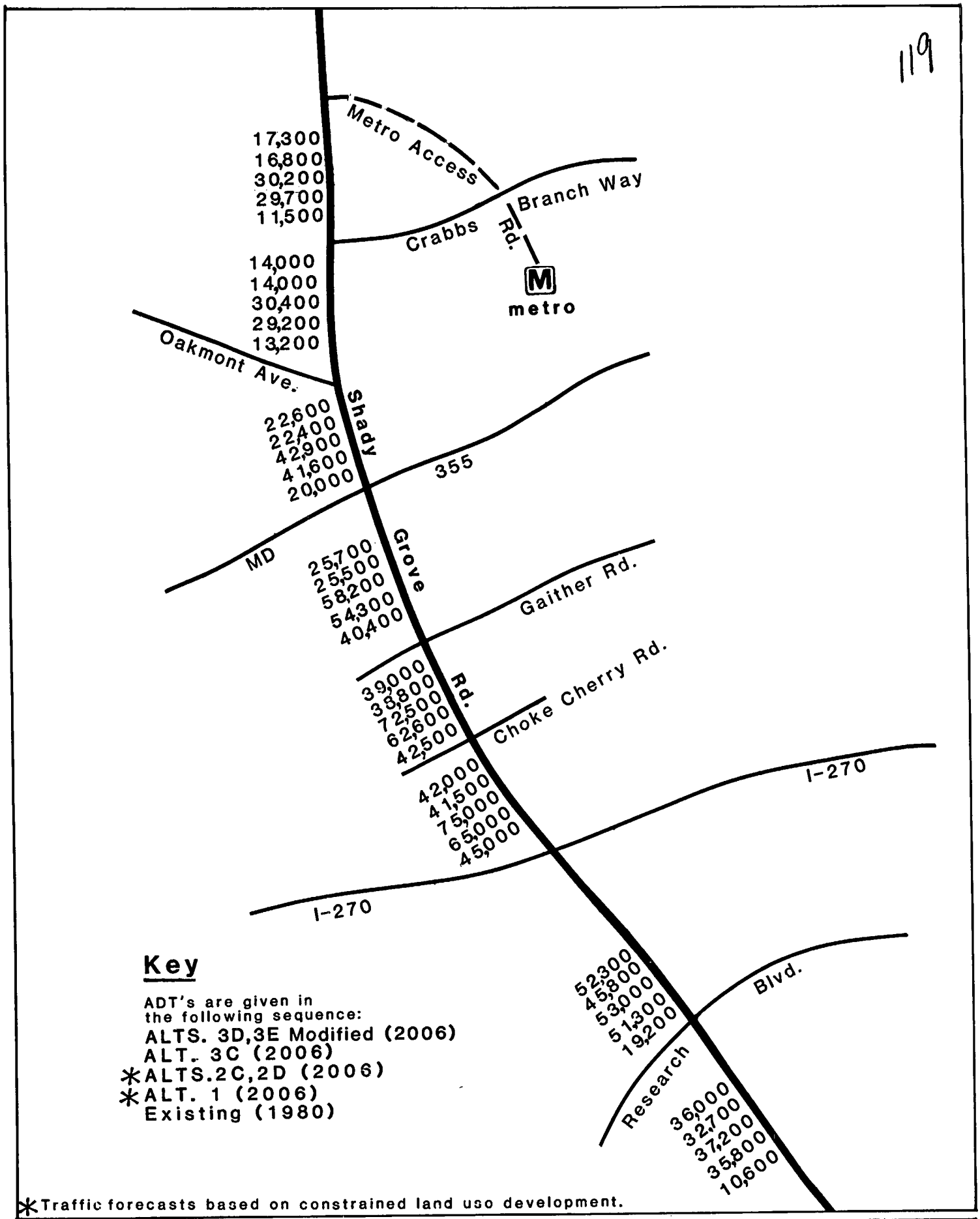


Alternates 3D & 3E Modified 2006 Average Daily Traffic

INTERSTATE 370

No Scale

Figure IV-4



Key

ADT's are given in the following sequence:

ALTS. 3D,3E Modified (2006)
ALT. 3C (2006)
*ALTS.2C,2D (2006)
*ALT. 1 (2006)
Existing (1980)

*Traffic forecasts based on constrained land use development.

	Alternate System Traffic on Shady Grove Road	**INTERSTATE 370**	
		No Scale	

Figure IV-5

2. CAPACITY AND LEVEL OF SERVICE

The major differences in capacity and level of service among the alternates are concentrated along Shady Grove Road. Comparative intersection volumes and capacities along Shady Grove Road are summarized in Table IV-4. The comparative measure shown is percent saturation, discussed earlier in Section III.

Even after traffic constraints have been applied, Alternate 1 exhibited heavily oversaturated conditions along Shady Grove Road at Gaither Road and MD 355. The build alternates generally have much lower levels of percent saturation except at Gaither Road and Shady Grove Road, where no improvement relative to Alternate 1 would exist under Alternates 2C and 2D. However, both these alternates would carry more traffic in this area than would Alternate 1.

Comparative LOS ratings and delay measures are summarized in Table IV-5. Alternate 1 provided the poorest LOS and highest delay, even though its associated traffic forecasts reflect substantial restraint. Alternates 2C and 2D had reasonably good LOS except at Gaither Road. However, these alternates were constrained in their traffic carrying ability. Due to I-370, Alternates 3C, 3D and **3E Modified** reduce traffic along Shady Grove Road to below 1980 levels. This coupled with programmed capacity increasing improvements combine to yield the best service of any of the alternates.

Another area of concern in evaluating the traffic performance of the alternates is the operation of I-270. Weaving movements related to entering and exiting traffic and the operation of interchanges have been analyzed from a capacity and level of service standpoint. The addition of a new interchange with I-270 introduces heavy weaving movements along I-270 between the I-370 and Shady Grove Road interchanges. The close proximity of these interchanges contributes to potential weaving difficulties. Level of service analyses for Alternates 3C, 3D, and **3E Modified** indicate this section of I-270 likely will operate at LOS E during the peak hours (southbound in the am peak and northbound in the pm peak). Weaving conflicts are completely eliminated by interlacing the entrance and exit ramps between the two interchanges. On northbound and southbound I-270, traffic exiting at the downstream interchange is taken off the freeway upstream of the traffic entering onto the freeway. Ramps are grade separated where they cross. This configuration provides for LOS C operation on I-270 between Shady Grove Road and I-370 during peak hours.

Two ramps in Alternate 1 would have operated below desirable levels, the on-ramp carrying westbound traffic from Shady Grove Road to southbound I-270 (LOS D/E) and the off-ramp carrying northbound I-270 traffic to Shady Grove Road (LOS E). Alternates 2C and 2D also exhibited two ramps at below desirable level of service, the on-ramp carrying westbound Shady Grove Road traffic to northbound I-270 (LOS E) and the off-ramp carrying northbound I-270 traffic to Shady Grove Road (LOS E/F). No ramps at Shady Grove Road under Alternates 3C, 3D, and **3E Modified** are expected to operate below LOS D under the traffic volumes projected.

The design of Alternates 3D and **3E Modified** is a direct result of the higher traffic volumes occasioned by the more intense development now envisioned in the Fields Road/I-370 vicinity. None of the other Alternates fully accommodate this higher traffic. In particular, Alternates 1, 2C and 2D were already constrained below the base level of development. Alternate 3C accommodated the base level of development without the need for constraint but would have suffered widespread LOS

TABLE IV-4

PERCENT SATURATION[2] AT SHADY GROVE ROAD INTERSECTIONS BY ALTERNATE

Shady Grove Road Intersection With:	Alt. 1[1] A.M.	Alt. 1[1] P.M.	Alts. 2C & 2D[1] A.M.	Alts. 2C & 2D[1] P.M.	Alt. 3C A.M.	Alt. 3C P.M.	Alts. 3D & 3E Modified (Selec. Alt.) A.M.	Alts. 3D & 3E Modified (Selec. Alt.) P.M.
I-270 Southbound	81	103	83	85	45	53	46	54
I-270 Northbound	87	85	76	79	59	62	59	62
Choke Cherry Road	94	92	84	82	71	57	72	58
Gaither Road	105	103	101	111	90	80	90	81
MD 355	144	130	78	82	72	91	83	94

1 Constrained Traffic Forecasts
2 Correlation between percent saturation and Level of Service is as follows:

LOS	Percent Saturation
A	Less Than 63
B	63-72
C	72-81
D	81-91
E	91-100
F	More Than 100

TABLE IV-5

LEVEL OF SERVICE AND DELAY AT SHADY GROVE ROAD INTERSECTIONS BY ALTERNATE

Shady Grove Road Intersection With:	Alt. 1[1] LOS[1]	Alt. 1[1] Delay	Alts. 2C & 2D[1] LOS	Alts. 2C & 2D[1] Delay	Alt. 3C LOS	Alt. 3C Delay	Alts. 3D & 3E Modified (Selec. Alt.) LOS	Alts. 3D & 3E Modified (Selec. Alt.) Delay
I-270 Southbound	D/F	168	D/D	55	A/A	8	A/A	8
I-270 Northbound	D/D	60	C/C	37	A/A	13	A/A	13
Choke Cherry Road	E/E	160	D/D	45	B/A	13	C/A	14
Gaither Road	F/F	357	F/F	411	D/C	70	D/C	72
MD 355	F/F	1883	C/D	40	B/D	76	D/E	109
Total Delay		2628		588		180		216

1 Level of Service - A.M./P.M.
2 Delay in vehicle hours, a.m. and p.m. peak one hour combined
3 Constrained traffic forecasts

F operation along I-270 and I-370 under the traffic levels of Alternates 3D and **3E Modified.**

C. NATURAL ENVIRONMENT

1. EFFECTS ON TOPOGRAPHY, GEOLOGY, AND SOILS

Construction of roadways and interchanges will require modifications to existing terrain in order to achieve necessary grades, suitable drainage, grade separations, and compatibility with surrounding land uses.

Alternates 2C and 2D would have had little impact on topography, geology, and soils since they involved widening of existing Shady Grove Road and modifications to existing interchanges. These improvements would largely have occurred along the ridge separating the Muddy Branch and Watts Branch and Rock Creek drainage basins. Elevation changes and design of drainage structures might have moved small areas within the interchanges from one drainage basin to another, but the overall impact was considered insignificant.

Alternate **3E Modified,** along with 3C and 3D, will involve some changes in topography along the 3.4 miles of new alignment, especially where the proposed roadway crosses over I-270, under/over MD 355, over the B&O Railroad, and under Shady Grove Road. Alternate 3C would have needed 1 million cubic yards of cut and 1.5 million of borrow and Alternate 3D, 1.3 million of cut and 2.8 million of borrow. **Alternate 3E Modified** will need 0.9 million of cut and 3.4 million of borrow. Maximum depth of cut will be about 58 feet for 3C and 3D and 39 feet for **3E Modified,** while maximum height of fill will be about 61 feet. Less than 200 acres will be disturbed. Borrow material required will be obtained from borrow sites chosen by the contractor and approved by Maryland State Highway Administration in accordance with Maryland standard specifications.

Modification of surface features will include excavation for roadway, drainage features, and bridge footings and fill to elevate I-370 and the interchange ramps. The I-270/I-370 interchange will involve construction of an overpass and ramps and crossing a small tributary to Muddy Branch. The I-370/MD 355 interchange will involve bridge footings and fill to carry I-370 over MD 355. Fill sections will be used to cross over Oakmont Avenue, the B&O railroad, Crabbs Branch Way, and portions of Mill Creek. Another cut section will be used where I-370 will cross under Shady Grove Road.

Roads form barriers to natural drainage because of the need to remove water from the pavement and keep it out of the base material. Landscaping and drainage structures, such as berms, swales, ditches, culverts, and bridges will be designed to replace the natural drainage to provide for new conditions imposed by the presence of the new highway within the drainage basin. Stream relocations are discussed in Section 3 following.

Because of shallow bedrock in the area, some rock excavation may be required for roadway cuts and drainage and to expose unweathered rock for bridge footings. The location and extent of such rock excavation will be determined during the development of final roadway plans and profiles following detailed soil borings and analysis. No unique or otherwise significant geologic features would be adversely affected by any of the alternates.

Natural soil erosion due to water and wind can be accelerated by highway construction without control measures when vegetative cover is removed and runoff is

concentrated by new drainage patterns. Appropriate erosion and sediment control and stormwater management measures will be stringently employed, as required by the State Highway Administration and the Maryland Water Resources Administration. Topsoil will be stockpiled for use in revegetating median strips, shoulders, and embankments. Fugitive dust will be controlled by revegetation and by use of water or hygroscopic chemicals on unpaved roads during dry weather construction.

Twelve acres of active prime farmland will be converted to roadway use by any of the I-370 alternates on new location. Master planning anticipates development of the entire area, and most of the affected land is currently in reservation for highway use. The loss of farmland is not expected to impair future agricultural production in the region. No farms will be displaced or severed. The production of corn near the intersection of MD 355 and Shady Grove Road is already scheduled to cease in the near future due to development pressures. Soil erosion and nutrient runoff from vegetated highway embankments are expected to be less than that from the active agricultural land under conventional tillage in the area.

2. EFFECTS ON WATER RESOURCES AND WATER QUALITY

In general, highway improvements and other features of urbanization have adverse effects on water resources, including less infiltration and stream base flow, more surface flow, higher stream peak flow, and shortened lag time. Corresponding impacts on water quality include increase in erosion, sedimentation, water contamination, and thermal pollution.

a. Water Resources

The major effects on water resources derive from increased impervious area and resulting runoff. For the Shady Grove sector planning area, impervious areas, based on values for acres in various zoning categories (Montgomery County DEP, 1979; M-NCPPC, 1977), are 42 percent for existing development and 57 percent for planned growth. Assuming that ultimate development in the study area will result in 60% imperviousness, 3840 acres would be rendered 100% impervious. The right-of-way areas disturbed during construction of roadway, including pavement and shoulders, for each alternate are as follows:

Alternate	Disturbed Area (acres)	Impervious Area (acres)	Impervious	Portion of 3840 acres
2C	53	16	30 %	0.4 %
2D	28	12	43 %	0.3 %
3C	212	62	29 %	1.6 %
3D	228	83	36 %	2.2 %
3E Mod (Selec. Alt.)	228	84	37 %	2.2 %

This comparison shows that the change in runoff characteristics due to any of the alternates would be small compared to changes caused by other types of development within the study area. Imperviousness within the I-370 right-of-way would be about 37 percent, compared to the approximately 60 percent projected for ultimate development in the planning sector. **Alternate 3E Modified** will add the most impervious area, but the increase is only 2.2%. Thus the effect of I-370 on groundwater recharge and runoff volume should not be significant compared to expected development in the area. Alternates 2C and 2D would have had little effect, if any, on recharge or runoff.

b. Water Quality

Many of the soils in the study area are highly erodible. Siltation and sedimentation, especially during construction, could cause physical damage such as clogging of ditches and conduits and alteration of stream channels. Small waterways, such as the upper reaches of streams in this area, are more susceptible to impacts associated with erosion and silting because of their shallow cross-sections and variable flows. The existing streams already show signs of such impacts.

To estimate increases in sediment yield due to the various alternates, estimates were made of present yields for the four affected watersheds, Muddy Branch, Watts Branch, Mill Creek, and Crabbs Branch, yields from construction, and yields from operation, and percentages of total yield calculated (HDR, 1982: Technical Report, I-370 Water Resources). The results are as follows, assuming a present yield of 26,300 tons/year:

Alternate	Construction Yield (Percent)		Operation Yield (Percent)	
1	0		0	
2C	1460	(5.6%)	21	(0.1%)
2D	800	(3.0%)	12	(0.1%)
3C	4960	(18.9%)	73	(0.3%)
3D	5460	(20.8%)	81	(0.3%)
3E Mod.	5460	(20.8%)	81	(0.3%)

Yields are clearly highest during construction and fall off to negligible levels for all alternates during operation. **Alternate 3E Modified** gives the highest construction yield, and this would be a 21% increase over existing land use overall, presuming no further disturbance. Breakdown of these effects by watershed shows Crabbs Branch receiving a 30 percent increase for I-370, Mill Creek 20 percent, Muddy Branch 27 percent, and Watts Branch 5 percent during construction. During road use, these values all fall to less than 1 percent (HDR 1982). During construction localized streambank erosion and channel widening may occur in the upper reaches of the affected watersheds, especially where bridge footings and relocation are necessary, as well as short-term increases in sediment loads during storms. These effects should be reduced further downstream, and after revegetation of cut and fill slopes and institution of runoff mitigation measures, the effects should be reduced to levels slightly above existing.

An estimated 600 tons (485 cubic yards) of sediment will enter Lake Needwood from Mill Creek during construction of I-370, an additional 6 percent. Given a trap efficiency of 85% (HDR, 1982), 411 cubic yards will be retained, a small value compared to the lake's storage capacity of 550,000 cubic yards and the 100,000 cubic yards dredged to date. This 6 percent increase is not expected to affect the marsh at the head of the lake significantly, if at all.

Although construction may introduce some pollutants, highway use during operation is more likely to cause problems. Highway use results in the accumulation of potential water pollutants, including: vehicular oil, grease, gasoline, and solvents; wear particles from clutches, brake linings, and tires; exhaust emissions, which collect on the surfaces of pavement and nearby vegetation; roadside litter and debris; de-icing compounds and abrasives applied to roadway surfaces; and materials used for right-of-way maintenance, such as defoliants, pesticides, and fertilizers. These can cause problems such as dissolved oxygen depletion, pathogen introductions, increases in nutrients and suspended solids, and toxicity.

Calculation of deposition rates of roadway materials can give an estimate of maximum potential pollutant loadings, although it is unlikely that all deposited materials wash into local watercourses. Shaheen (1975) measured deposition rates of roadway materials at eight sites in the Washington area. Statistical correlation showed that deposition of many materials was proportional to axle-mileage, while other materials accumulated relative to time since last rainfall.

Since land use, roadways, and traffic in the I-370 study area are generally similar to the sites sampled by Shaheen, his mileage-proportional deposition rates were used with average daily traffic (ADT) and traffic composition data to estimate annual deposition from the highway system in the study area for 1980 and for each of the four alternates under study for the year 2006. The results are as follows:

Highway System	Materials (tons/year)	Increase (Decrease) Over Existing	Increase (Decrease) Over No-Build
Existing (1980)	370	0 %	(46 %)
Alternate 1 (2006-No Build)	677	83 %	0 %
Alternate 2C & 2D (2006)	704	91 %	4 %
Alternate 3C (2006)	785	113 %	16 %
Alternate 3D & **3E Mod.** (2006)	927	151 %	37 %

Annual deposition is thus expected to increase by 83% for the no-build alternate, and by 151% for full-build I-370 by 2006. This means that I-370 will produce an excess of 37% more deposited materials than the no-build. Partitioning the high value of 927 tons among watersheds by proportion of mileage of roadway shows Mill Creek receiving 40%, Crabbs Branch 19%, Watts Branch 28%, and Muddy Branch 49%. Thus the Rock Creek watershed and Lake Needwood would receive the smallest proportion of deposited materials.

Shaheen (1975) also analyzed the deposited materials, and found that of 16 categories, "other" accounted for 81%, volatile solids 5.1%, COD 5.4%, ferrous metals 5.3%, and lead 1.2%. This sort of composition breakdown renders analysis of effects problematical due to the large "other" fraction and the lack of understanding about the mobility of the various components. Many of these, however, are solid particles or are water soluble, and can be transported in runoff.

Although the constituents of highway runoff could have adverse impacts on water quality and aquatic organisms, these impacts were not further quantified because water quality monitoring and modeling were determined to be inappropriate due to low sensitivity of the models to small changes in a watershed such as those resulting from construction and operation of the proposed action. The various pollutants potentially introduced by the proposed project are already entering the streams from existing roads, so the effects of additional amounts of these would be difficult to analyze.

During construction, removal of trees shading Muddy Branch and Mill Creek headwaters may result in elevated water temperatures during summer. Alternates 3C and 3D would have resulted in the most loss of shading for stream relocation, **3E Modified** considerably less, and the others none. Although there is an obvious relationship of length of stream exposed and potential for temperature elevation, too many variables enter in to make a quantitative analysis possible.

Final design for the proposed improvements will include plans for grading, erosion and sediment control, and stormwater management, in accordance with state and federal laws and regulations. Measures to minimize or eliminate erosion and sedimentation

during road construction and later use include provisions for drainage, retaining walls, cribbing, vegetation restoration, rip rap, sedimentation basins, filter fabric fences, and other protective devices. Retention/detention basins can also be used for sediment control and stormwater management. These also retain particulate deposited materials. They will require review and approval by the Maryland State Water Resources Administration (WRA) and Office of Environmental Programs (OEP).

A sediment and erosion control program was adopted by the State Highway Administration in 1970. It incorporates the standards and specifications of the Soil Conservation Service and specifies procedures and controls to be used on highway construction projects. These procedures and controls will be stringently applied to limit the generation and transport of silt. This will be particularly important where construction will be required on steeply sloping stream valleys or in areas of soil having a high erosion potential. This plan would include the following:

- o Staging of construction activities to stabilize ditches permanently at the top of cuts and at the foot of fill slopes prior to excavation and formation of embankments.
- o Seeding, sodding, or otherwise stabilizing slopes as soon as practicable to minimize the area exposed at any time.
- o Timed placement of sediment traps, temporary slope drains, and other control measures.

Numerous variables affect the quantity of pollutants which are washed into streams; however, impacts will be reduced by controlling the application of maintenance and de-icing materials, periodic pavement sweeping, litter control, use of grassy drainage ditches, stormwater detention ponds, and other methods of slowing the flow of stormwater runoff, as discussed above.

Since the alignment will pass through areas of varying slope, soil erodibility, stream size, and vegetation associations, specific control measures could best be defined after design features have been considered. However, with the application of available erosion control technology, no significant impact to surface water quality is generally anticipated.

3. STREAM MODIFICATION AND IMPOUNDMENT IMPACTS

Alternates 2C and 2D would not have resulted in any stream impoundments, diversion, or channel modifications. They were located on a ridge which separates drainage basins, not near watercourses.

Alternate 3E Modified will not create or impact impoundments, but will involve, in the headwaters of Mill Creek, a stream relocation and the enclosure of a spring and 225 feet of its outlet. This also holds for 3C and 3D. As shown in Figure IV-6, top, Alternates 3C and 3D required relocating approximately 1200 feet of Mill Creek channel and adding 300 feet in a culvert under I-370. The total length of the new stream channel created will approximately equal the old removed channel; of open channel length, only 100 feet would be lost. **Alternate 3E Modified,** by being placed closer to the shopping center, avoids Mill Creek, but relocates 500 feet of open channel and adds 200 feet of culvert to a minor tributary already badly damaged due to lack of proper mitigation measures during recent construction of the shopping center. Only 60 feet of open channel are lost, and the new channel exceeds the old by 140 feet.

Alternate 3D would also have involved a stream relocation for a tributary of Muddy Branch (see Figure IV-6). Approximately 940 feet of stream channel would have been lost and 900 feet created, for a net loss of 40 feet. Of the replacement channel, about 340 feet would have been located in culvert under the proposed I-370 embankment, such that the total open channel lost was approximately 380 feet.

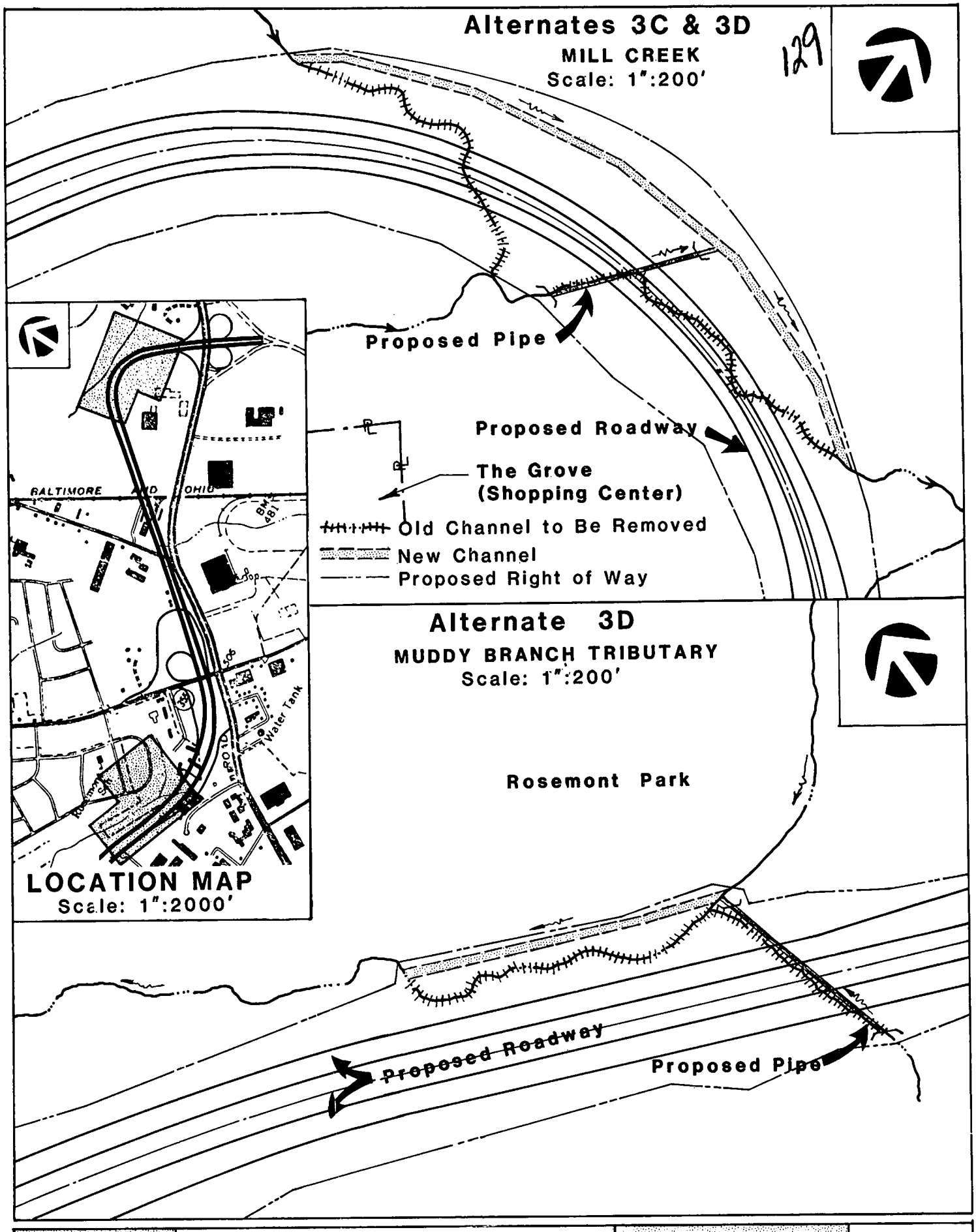
Based on consultations with representatives of the U.S. Fish and Wildlife Service and Maryland DNR, the channel modifications are not considered significant because the distances are relatively short, the streams drain small areas (less than 200 acres), the channels are narrow (less than 10 feet), and portions of the stream beds have already been altered by erosion, grading, and/or sewer construction. Since these consultations, stream relocation has been reduced considerably by the selected action.

There is no practicable alternative which would avoid some channel change at Mill Creek headwaters. I-370 geometrics must avoid the nearby shopping center to the south yet provide the necessary curve to meet the Metro Access Road. **Alternate 3E Modified** is a practicable alternative to avoid the Alternate 3D stream relocation at the tributary to Muddy Branch. **Alternate 3E Modified** also avoids Mill Creek and requires shorter relocation of an already damaged minor tributary behind the shopping center parking lot. Mitigation measures being incorporated in the **Selected Alternate** include reducing the width of the median strip and moving the roadway eastward, away from the main stream channel.

Construction of the proposed channel modifications will result in short-term changes in stream environment which include the removal of streambank vegetation, the creation of a more uniform and unstable substrate, and the creation of a higher potential for stream erosion. While increases in stream turbidity during construction will result in a temporary adverse impact to stream biota, long-term adverse impacts will derive from loss of stream habitat. In Alternate 3D about 380 feet of existing stream bed would have been lost, thereby reducing the number of benthic invertebrates available as food sources for higher trophic-level organisms.

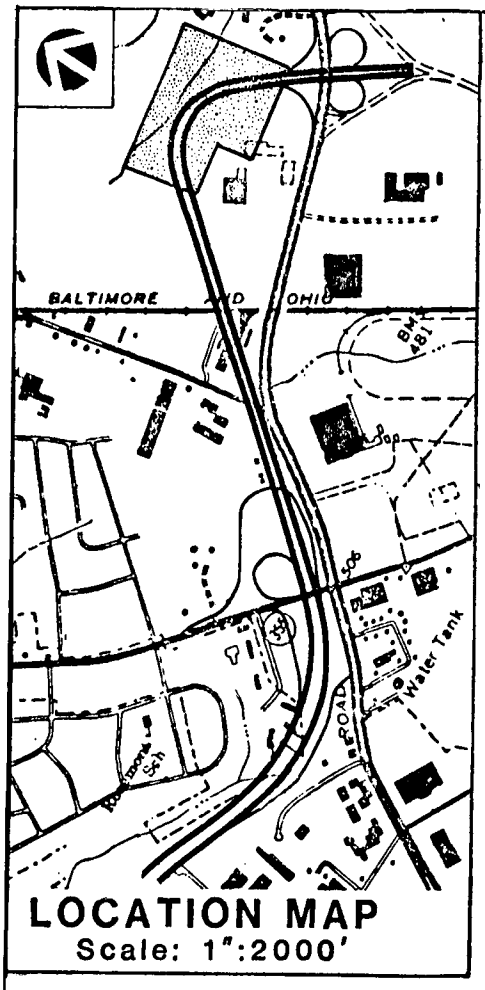
In Alternates 3C and 3D, the Mill Creek area would have lost approximately 60 to 100 feet of existing streambed length. The overall relocation channel for 3C and 3D was 200 feet longer than the existing streambeds, but 300 feet of this were culvert. Similarly, for **Alternate 3E Modified** (Figure IV-7), the new length adds 140 feet, but 200 feet are in culvert, so the open channel is shortened by 60 feet. This would be a minimal reduction in potential habitat, but the new streambeds are potentially more hydraulically efficient than the existing streams.

Relocated stream segments will be constructed in the dry and will have a substrate of similar composition to the existing channel. Highway fill slopes adjacent to any new stream channel will be stabilized and revegetated immediately during construction. Energy dissipators will also be incorporated into the highway design so as to diminish direct water discharges into the creek. This is of some concern, as Mill Creek is a tributary of Rock Creek, already heavily impacted by urbanization. Riprap and other measures will be used to reduce the hydraulic efficiency of the relocated streambeds. In the case of the relocated tributary of Mill Creek, this should help mitigate potential downstream erosion and the resultant increase in siltation at Lake Needwood.



	Alternates 3C & 3D Stream Modifications	**INTERSTATE 370**
		SCALE AS NOTED

Figure IV-6



130

Alternate 3E Modified

MILL CREEK

Scale: 1":200'

PROPOSED PIPE

PROPOSED ROADWAY

Old Channel To Be Removed

New Channel

Proposed Right Of Way

	Alternate 3E Modified Stream Modifications	**INTERSTATE 370**	
		SCALE AS NOTED	

Figure IV-7

4. EFFECTS ON WETLANDS

Pursuant to Executive Order 11990, Protection of Wetlands, wetland areas potentially affected by the proposed project were identified in area 2 (see Figure III-7), downstream from Rosemont Park where extensive swamp land covers much of the stream floodplain. The vegetation is red maple and tulip poplar, with an herbaceous understory of skunk cabbage, violets, jewelweed, and swamp ferns. While it could be indirectly affected by siltation from construction activities, especially under Alternate 3D, use of standard erosion control practices should minimize any adverse effect on the wetlands. None of the alternates would require any land from this wetland.

5. FLOOD HAZARD EVALUATION

Alternates 2C, 2D, and the No-Build would not have encroached on any floodplains since improvements proposed under these alternates were located on the ridge separating drainage basins.

The right-of-way for Alternates 3C and 3D involved two identified 100-year floodplains (Figure III-6): one at Mill Creek north of Shady Grove Road, and another at Muddy Branch east of I-270. Approximately two acres of the Mill Creek floodplain are within the limits of construction just north of Shady Grove Road near the proposed Metro access road. As described in Section IV.C.3., this involvement is not considered significant because the stream drains less than 200 acres at this point, and it is at the upper limit of the floodplain study. **Alternate 3E Modified** encroaches on the Muddy Branch floodplain, but not Mill Creek.

Approximately five acres of the Muddy Branch floodplain were within the limits of construction for Alternate 3C just east of I-270. The proposed highway will encroach upon less than one-and-one-half acres within the floodplain limits for **Alternate 3E Modified** and 3D. For **Alternate 3E Modified,** the radius of the horizontal curve has already been reduced in this area to remove the project from the floodway as much as possible, and a retaining wall is planned to keep additional fill out of the stream channel next to the northeast ramp of the interchange. This encroachment occurs principally because existing I-270 creates ponding in the area under flood conditions, and the floodplain is thus wider here than it might otherwise be. The flood elevation drops 20 feet between the east and west sides of I-270. The encroachment is not considered a significant flood hazard because it will have little if any effect on flood velocity or flood-stage elevation.

Neither of the above encroachments will adversely affect natural and beneficial floodplain values. Compared to existing conditions, such characteristics as flood storage capacity, natural filtering, and floodplain vegetation will remain essentially unchanged with any of the I-370 alternates on new location in place. Likewise, the proposed project is not expected to generate any new pressures for development within these two floodplains. To the contrary, the new I-370 is considered to support compatible stream valley uses since the limited access feature of the proposed roadway will prevent curb cuts on both sides of the facility, and it will provide a partially undisturbed and vegetated buffer between the floodplain and nearby commercial and industrial development along part of its length. In accordance with FHPM 6-7-3-2, a floodplain finding is not required for any of the build alternates..

6. EFFECTS ON TERRESTRIAL AND AQUATIC HABITATS

Because Alternates 2C, 2D, and the No-Build would have had no identifiable effects on the four natural areas of interest (see Figure III-7), only the effects of Alternates 3C, 3D, or **3E Modified** on each of the areas are discussed here.

a. Area 1

Some of this 65-acre area, which includes some of Muddy Branch Park, would have been occupied by part of the interchange of I-370 and I-270 for Alternates 3C and 3D. Alternate 3C would have used roughly 14 acres; Alternate 3D would have taken a slightly smaller area. **Alternate 3E Modified** will avoid Muddy Branch Park, but its right-of-way will cut off a small tract to the southeast. Most of this land is a mosaic of regenerating woodland and upland mixed oak-tulip poplar woods, with a narrow stream valley, which will be bridged by an interchange ramp.

Effects on terrestrial biota, mostly typical species such as Fowler's toad, cottontails, gray squirrels, raccoons, voles, and common songbirds, will result primarily from loss of habitat, which leads to local population reduction at least proportional to area lost. As the small area cut off from the main portion is primarily regenerating old fields, the effect on animals requiring large territories, such as deer, is not expected to be significant.

With regard to aquatic biota, there is potential for siltation and pollution runoff into the Muddy Branch tributary during construction from the large area cleared for construction of the interchange and from the steep slopes on both sides of the stream. This effect, discussed in more detail in part e below, should be reduced after construction.

b. Area 2

Of this 63-acre area, about 25 acres will be dedicated to right-of-way for under all three full-build alternates. Most of this is open field with some invading shrubs and young trees, adjacent to active farmland and commercial development. The interchange will take up most of the old field and young woods adjacent to I-270. The northwestern portion of this is wooded, mostly in oak and tulip poplar, and is continuous with the Summit Hall park area. As in the other areas, the primary effect is terrestrial habitat loss.

A small tributary to Muddy Branch, presently surrounded by young tulip poplar-red maple-lowland oak woods, will be disturbed when the area is cleared for construction. This may result in increased silt load and runoff entering Muddy Branch, with effects on aquatic biota as described for area 1. However, the roadway in this instance is a greater distance from aquatic habitats and the effects should not be as noticeable.

c. Area 3

This 11.5-acre area (Rosemont Park) contiguous to area 2 would have lost 3 acres to right-of-way for Alternate 3D only; 3C and **3E Modified** avoid the park. The right-of-way for Alternate 3D would have divided the park, isolating the western arm and requiring stream bed relocation. The primary upland terrestrial habitat lost is mature mixed oak-hickory-tulip poplar woods, with small wet areas in the narrow stream floodplain. The 940 feet of stream to be relocated (see Section IV.C.3 above) would have been completely changed. Construction of the roadway and a new stream channel would likely have caused some siltation in downstream aquatic habitats. After construction, siltation would have been reduced and eliminated over the long

term. For **Alternate 3E Modified,** the only effects expected would be indirect, such as runoff from areas cleared for construction.

d. Area 4

This, the single largest tract of undeveloped land in the study area (170 acres), would have lost approximately 17 acres to highway right-of-way under Alternates 3C and 3D and will lose approximately 14 acres in **3E Modified.** The alignment will split the parcel, removing mature upland mixed oak-tulip poplar woods, separating the segment adjacent to the shopping center east of Crabbs Branch Way from the rest of the area, reducing the wooded terrestrial habitat acreage and requiring a spring and 225 feet of outlet to be enclosed. The alignment for 3C and 3D also required relocating 1200 feet of the main channel of Mill Creek and placing a culvert over the western tributary. For **3E Modified,** 500 feet of a minor tributary will be relocated and a culvert placed over 200 feet of it. These stream relocations are discussed in more detail in Section IV.C.3 above. Potential effects from relocation are loss of aquatic habitat on-site and temporary degradation of aquatic habitat downstream from increased siltation through construction activities. The relocated channel can, with suggested mitigation measures (see Section IV.C.3.), return to nearly its original state.

e. Overview

In general, all the areas will be similarly affected by road construction and use. Both terrestrial and aquatic habitats will be lost, accompanied by at least proportional reduction in animal populations utilizing those habitats, with greater loss for those terrestrial species whose territories are fragmented. Habitats directly affected include upland oak-hickory-tulip poplar woods, streambank associations, open fields, regenerating woods, and muddy and gravelly stream bottoms with associated animals. This area lost to construction must be considered as an unavoidable impact, since existing land use constrains the routing of the proposed alignment for any new location alternate.

Indirect effects are more difficult to assess. For terrestrial organisms, the additional disturbance from construction and road use would be minor compared to habitat loss, as the urbanization of the area already causes similar disturbance. The potential effects on aquatic organisms downstream from the area are more apparent. Construction, stream relocation, and roadway use can be expected to add sediment and roadway pollutants to adjacent aquatic systems. Of concern here is the marsh at the head of Lake Needwood. The decrease in permeability might increase the intensity of floods, increasing scour and dislodging benthic organisms. The rechannelled stream areas would, for a time, be exposed to summer sun, increasing water temperature and affecting the cool-water species normally found in the higher-order streams in the region. However, the expected effects on water quality due to the project are not expected to add significantly to the existing pollutant and sediment loads. The marsh at Lake Needwood in fact owes its existence to sedimentation from urbanization of the Rock Creek watershed. The aquatic animals and plants in the area are already exposed to the expected disturbances, and species intolerant of these are probably already gone. The shortness of the stream relocations and their locations close to headwaters should minimize the volume of water subject to temperature elevations. Thus, although some indirect effects can be expected, they should be minor, as the same disturbances already exist to a greater degree in the area. In addition, the lack of detailed information on the existing stream biota would make detection of any change (short of extirpation of the whole species assemblage) difficult.

Mitigations are possible at the interchanges, where the land cleared for construction

but not used for the roadway could be allowed to revert to native vegetation, providing some habitat for small terrestrial animals.

Increased erosion from land clearing and introduction of pollutants from road materials and usage can be satisfactorily mitigated by using mitigation techniques specified as part of SHA's sediment and erosion control program, thereby minimizing streambed habitat alteration and streambank erosion. These methods have been reviewed and approved by the Maryland Department of Natural Resources.

The major impact associated with **Alternate 3E Modified,** as well as 3C and 3D, will be loss of undeveloped land. Alternate 3D would in addition have removed wooded land from Rosemont Park and necessitate stream relocation. All three of these Alternates will remove woodland and affect the headwaters of Mill Creek in Area 4. The areas impacted have no unique biological features and, compared to the existing parklands to the east and west, are small in size and low in both habitat and species diversity. The essential value of these areas lies in their being the last undeveloped parcels in an immediate area which is rapidly urbanizing.

7. EFFECTS ON THREATENED AND ENDANGERED SPECIES

Consultations with U.S. Fish and Wildlife Service personnel in Annapolis and the Maryland Department of Natural Resources indicated the absence of federal or state threatened, endangered, or otherwise categorized species in the study area. In addition, the types and degree of disturbance of existing habitats in the area renders the presence of federal or state listed species unlikely, except for rare migrating individuals of bald eagle (Haliaeetus leucocephalus) or peregrine falcon (Falco peregrinus), on which the proposed alternates would have no effect. (See letter in Appendix C.)

D. AIR QUALITY ANALYSIS

1. ANALYSIS OBJECTIVES, METHODOLOGY, AND RESULTS

The objective of the air quality analysis was to evaluate the impact of each alternate on ambient air quality in the vicinity of the proposed project. In order to evaluate the air quality impact of each of the five build alternates and the No-Build Alternate, a microscale carbon monoxide (CO) pollution diffusion analysis was conducted using the third generation California Line Source Dispersion Model, CALINE 3. This microscale analysis consisted of projections of one-hour and eight-hour CO concentrations at sensitive receptor sites under worst-case meteorological conditions for each alternate under consideration for the design year (2006) and for the estimated year of completion (1986). A similar set of projections was also made for comparison purposes for the base year (1980) using the existing roadway network. The primary objective of this analysis was to ascertain whether Federal or State ambient air quality standards for CO will be violated in the future should the project be built. A determination of the relative air quality impact of the various alternates under consideration was also made.

a. Analysis Inputs

Input variables to the microscale analysis included existing background CO concentrations, facility design characteristics, traffic data, vehicular emission factors, and worst-case meteorological conditions. A summary of the analysis inputs is given below. More detailed information concerning these inputs is contained in the I-370 Air Quality Analysis technical report (Air Quality Analysis, I-370 Project Planning Study, January 1982).

Background CO Concentrations

In order to calculate the total concentration of carbon monoxide, which occurs at a particular receptor site during worst-case meteorological conditions, the background CO concentrations are considered in addition to the levels directly attributable to the facility under consideration. The background concentration resulting from area-wide emissions from both mobile and stationary sources was assumed to be 1.1 ppm for the eight-hour period in each analysis year and 3.7 and 3.8 ppm for the one-hour period in the years 1986 and 2006, respectively.

Traffic Data

The traffic data utilized in this analysis were derived from traffic models developed by the Metropolitan Washington Council of Governments, land use projections contained in the "Cooperative Forecasting Round II Summary Report - 1979" by MWCOG, and from data supplied by the Bureau of Highway Statistics of the Maryland State Highway Administration. All design-hour volumes were based on the afternoon peak hourly traffic whereas the eight-hour average volumes were derived from the peak eight-hour traffic volumes forecast to occur between the hours of 11 a.m. and 7 p.m. Vehicle speeds used in calculating CO concentrations under each analysis condition were based on the capacity of each roadway link considered, the applicable speed limit where appropriate, and external influences on speed through the link from immediately adjacent links. Based on the average green time given each movement at a typical signalized intersection, an average vehicle speed of 5 mph was calculated and assumed for intersections where traffic queues form during the peak hour.

Emission Factors

The composite emission factors used in this analysis were derived from the Environmental Protection Agency's Mobile Source Emission Factors, March 1978, which incorporates the statutory timetables for new vehicle emission standards prescribed in the Amendments to the Clean Air Act, August 1977, and were calculated using EPA's MOBILE 1 computer program. An ambient air temperature of 20o F was assumed in calculating the emission factors for the one-hour analysis, and 39o F was assumed for the eight-hour analysis in order to approximate realistic worst-case results for each analysis case. Credit for Maryland's vehicle inspection and maintenance (I/M) programs beginning in 1983 was incorporated into the emission factor calculations.

Meteorological Data

Meteorological variables used in this analysis were selected to reflect realistic worst-case conditions. The variables used can be summarized as follows:

Variable	8-hour Period	1-hour Period
Wind speed	2 meters/second (11 a.m. - 5 p.m.) 1 meter/second (5 p.m. - 7 p.m.)	1 meter/second
Stability Class	D (11 a.m. - 5 p.m.) F (5 p.m. - 7 p.m.)	F
Vertical Mixing Height	1000 meters	1000 meters

The wind direction utilized as part of this analysis was selected in order to produce the maximum CO concentration at any given receptor. Wind directions varied for each receptor and were selected through a systematic scan of CO concentrations associated with different wind directions.

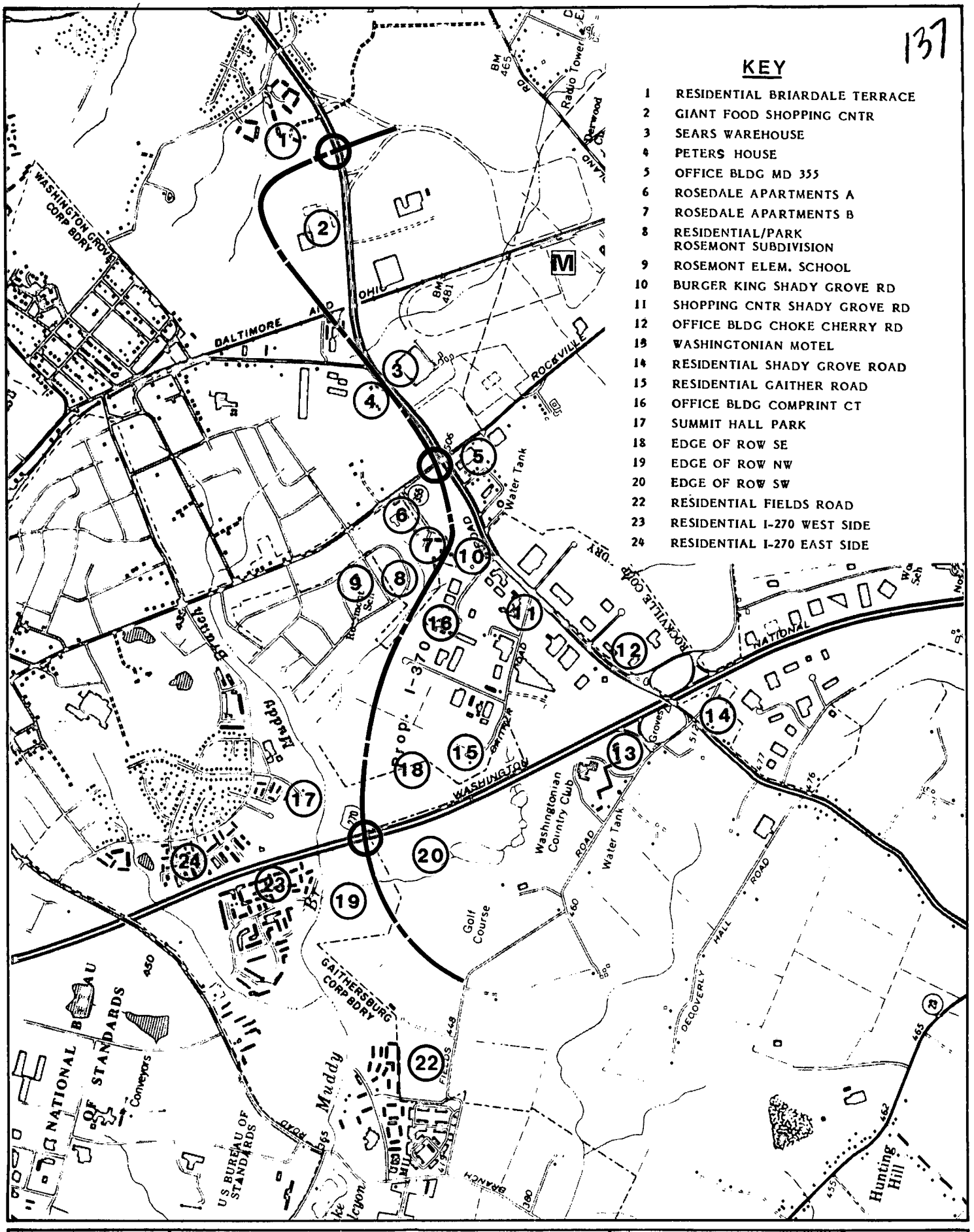
b. Analysis at Sensitive Receptors

Site selection

Site selection of sensitive receptors was made on the basis of proximity to the roadway, type of adjacent land use, the presence of other CO augmenting factors, and changes in traffic patterns on the roadway network. Several "worst-case" edge of right-of-way receptors were included in order to assess CO concentrations immediately adjacent to project right-of-way. The 23 sensitive receptors used in this analysis are shown in Figure IV-8.

Results of Microscale Analysis

The results of the calculation of CO concentrations at each of the identified sensitive receptor sites for the various alternates and analysis conditions are shown in Table IV-6. The values in this table consist of predicted CO concentrations attributable to traffic on various roadway links plus projected background levels. Analysis of the No-Build Alternate using base year (1980) traffic and emission factors was performed for comparison purposes. A review of the resulting concentrations show that no violation of the one-hour or eight-hour National Ambient Air Quality Standards (NAAQS) for CO will occur under any alternate (including the No-Build Alternate). The NAAQS (and the State Standards) for CO are 35 ppm for the maximum one-hour



Air Quality Sensitive Receptors

Figure IV- 8

TABLE IV-6

CO CONCENTRATIONS FOR WORST CASE METEOROLOGICAL CONDITIONS

CO Concentration in ppm
3E Modified - Selected Alternate

CO CONCENTRATION in ppm

Site	Alternate	1980 1 - HR	1980 8 - HR	1986 1 - HR	1986 8 - HR	2006 1 - HR	2006 8 - HR
1	No-Build	8.8	1.5	5.9	1.3	5.4	1.3
	Alt. 2C	--	--	4.5	1.3	4.4	1.2
	Alt. 2D	--	--	4.5	1.3	4.4	1.2
	Alt. 3C	--	--	5.3	1.3	4.7	1.2
	Alt. 3D	--	--	5.3	1.3	4.8	1.2
	Alt. 3E Mod.	--	--	5.3	1.3	4.8	1.2
2	No-Build	11.7	1.7	6.9	1.4	6.5	1.3
	Alt. 2C	--	--	4.8	1.4	4.6	1.3
	Alt. 2D	--	--	4.8	1.4	4.6	1.3
	Alt. 3C	--	--	5.9	1.3	4.8	1.2
	Alt. 3D	--	--	5.9	1.3	5.0	1.2
	Alt. 3E Mod.	--	--	5.9	1.3	5.1	1.2
3	No-Build	21.1	2.3	10.8	1.7	8.4	1.6
	Alt. 2C	--	--	5.7	1.6	5.2	1.4
	Alt. 2D	--	--	5.7	1.6	5.2	1.4
	Alt. 3C	--	--	7.9	1.4	5.7	1.3
	Alt. 3D	--	--	7.9	1.4	6.1	1.3
	Alt. 3E Mod.	--	--	7.9	1.4	6.1	1.4
4	No-Build	16.8	2.0	9.0	1.6	7.2	1.5
	Alt. 2C	--	--	5.3	1.5	5.2	1.3
	Alt. 2D	--	--	5.3	1.5	5.2	1.3
	Alt. 3C	--	--	5.5	2.0	6.4	1.6
	Alt. 3D	--	--	9.0	2.1	7.5	1.7
	Alt. 3E Mod.	--	--	9.0	2.1	7.2	1.6
5	No-Build	24.1	2.2	12.8	1.8	8.2	1.6
	Alt. 2C	--	--	5.6	1.6	4.9	1.3
	Alt. 2D	--	--	5.6	1.6	4.9	1.3
	Alt. 3C	--	--	12.2	1.4	7.9	1.3
	Alt. 3D	--	--	12.2	1.4	8.2	1.3
	Alt. 3E Mod.	--	--	12.2	1.4	7.7	1.3
6	No-Build	19.1	1.8	10.5	1.5	7.2	1.4
	Alt. 2C	--	--	5.2	1.4	5.0	1.3
	Alt. 2D	--	--	5.2	1.4	5.0	1.3
	Alt. 3C	--	--	9.9	1.5	7.1	1.3
	Alt. 3D	--	--	10.1	1.4	7.5	1.3
	Alt. 3E Mod.	--	--	10.1	1.4	7.5	1.3
7	No-Build	12.5	1.8	7.3	1.4	5.6	1.3
	Alt. 2C	--	--	5.2	1.5	5.1	1.3
	Alt. 2D	--	--	5.2	1.5	5.1	1.3
	Alt. 3C	--	-	7.2	1.8	5.7	1.5
	Alt. 3D	--	--	6.9	1.5	5.7	1.3
	Alt. 3E Mod.	--	--	6.9	1.5	6.1	1.6
8	No-Build	10.8	1.5	6.6	1.3	5.3	1.2
	Alt. 2C	--	--	4.6	1.3	4.7	1.3
	Alt. 2D	--	--	4.6	1.3	4.7	1.3
	Alt. 3C	--	--	5.6	1.3	4.9	1.2
	Alt. 3D	--	--	5.6	1.3	4.9	1.3
	Alt. 3E Mod.	--	--	5.6	1.3	4.9	1.3
9	No-Build	12.3	1.5	7.3	1.3	5.6	1.2
	Alt. 2C	--	--	4.5	1.3	4.5	1.2
	Alt. 2D	--	--	4.5	1.3	4.5	1.2
	Alt. 3C	--	--	6.8	1.3	5.4	1.2
	Alt. 3D	--	--	7.0	1.3	5.7	1.2
	Alt. 3E Mod.	--	--	7.0	1.3	5.7	1.2
10	No-Build	16.8	2.4	8.8	1.8	6.4	1.6
	Alt. 2C	--	--	6.3	1.8	5.8	1.5
	Alt. 2D	--	--	6.3	1.8	5.8	1.5
	Alt. 3C	--	--	6.6	1.5	5.1	1.3
	Alt. 3D	--	--	6.7	1.5	5.3	1.4
	Alt. 3E Mod.	--	--	6.7	1.5	5.3	1.4
11	No-Build	26.8	2.3	12.6	1.7	9.7	1.4
	Alt. 2C	--	--	5.9	1.7	5.3	1.5
	Alt. 2D	--	--	5.9	1.7	5.3	1.5
	Alt. 3C	--	--	7.6	1.5	5.2	1.3
	Alt. 3D	--	--	7.6	1.5	5.8	1.3
	Alt. 3E Mod.	--	--	7.6	1.5	5.8	1.3
12	No-Build	13.6	3.5	7.8	2.2	8.1	1.7
	Alt. 2C	--	--	7.2	2.1	6.8	1.7
	Alt. 2D	--	--	7.1	2.1	6.8	1.7
	Alt. 3C	--	--	6.0	1.8	5.1	1.5
	Alt. 3D	--	--	6.0	1.8	6.3	1.6
	Alt. 3E Mod.	--	--	6.0	1.8	6.3	1.6

TABLE IV-6, Cont.

Site	Alternate	1980 1 - HR	1980 8 - HR	1986 1 - HR	1986 8 - HR	2006 1 - HR	2006 8 - HR
13	No-Build	15.5	3.3	8.5	2.0	6.9	1.7
	Alt. 2C	--	--	6.8	2.0	5.7	1.8
	Alt. 2D	--	--	6.7	1.9	5.7	1.8
	Alt. 3C	--	--	6.1	1.7	5.4	1.4
	Alt. 3D	--	--	6.1	1.7	7.0	1.5
	Alt. 3E Mod.	--	--	6.1	1.7	7.0	1.5
14	No-Build	14.6	3.2	8.0	2.1	7.4	1.8
	Alt. 2C	--	--	6.9	2.0	5.9	1.8
	Alt. 2D	--	--	6.9	2.0	5.9	1.8
	Alt. 3C	--	--	6.0	1.7	5.1	1.6
	Alt. 3D	--	--	6.1	1.8	6.7	1.5
	Alt. 3E Mod.	--	--	6.1	1.8	6.7	1.5
15	No-Build	10.8	2.3	5.7	1.6	5.4	1.4
	Alt. 2C	--	--	5.6	1.6	5.2	1.4
	Alt. 2D	--	--	5.6	1.6	5.2	1.4
	Alt. 3C	--	--	5.4	1.6	4.9	1.3
	Alt. 3D	--	--	5.3	1.6	5.8	1.4
	Alt. 3E Mod.	--	--	5.3	1.6	5.8	1.4
16	No-Build	10.6	1.5	6.5	1.3	5.2	1.3
	Alt. 2C	--	--	4.7	1.3	4.8	1.3
	Alt. 2D	--	--	4.7	1.3	4.8	1.3
	Alt. 3C	--	--	5.6	1.3	4.8	1.3
	Alt. 3D	--	--	5.8	1.3	5.1	1.3
	Alt. 3E Mod.	--	--	5.8	1.3	4.9	1.3
17	No-Build	8.1	1.9	5.3	1.4	4.9	1.3
	Alt. 2C	--	--	5.0	1.4	4.7	1.3
	Alt. 2D	--	--	5.0	1.4	4.7	1.3
	Alt. 3C	--	--	5.1	1.4	4.8	1.3
	Alt. 3D	--	--	5.2	1.4	5.5	1.3
	Alt. 3E Mod.	--	--	5.2	1.4	5.5	1.3
18	No-Build	8.7	2.0	5.5	1.4	5.1	1.3
	Alt. 2C	--	--	5.2	1.5	4.9	1.3
	Alt. 2D	--	--	5.2	1.5	4.9	1.4
	Alt. 3C	--	--	5.0	1.5	4.7	1.5
	Alt. 3D	--	--	5.0	1.6	5.7	1.5
	Alt. 3E Mod.	--	--	5.0	1.6	5.7	1.5
19	No-Build	8.5	1.8	5.6	1.4	4.8	1.3
	Alt. 2C	--	--	4.8	1.4	4.5	1.3
	Alt. 2D	--	--	4.8	1.4	4.5	1.3
	Alt. 3C	--	--	5.1	1.4	4.6	1.3
	Alt. 3D	--	--	5.1	1.5	5.0	1.4
	Alt. 3E Mod.	--	--	5.1	1.5	5.0	1.4
20	No-Build	8.8	1.8	5.6	1.4	4.8	1.3
	Alt. 2C	--	--	4.9	1.4	4.5	1.3
	Alt. 2D	--	--	4.9	1.4	4.7	1.4
	Alt. 3C	--	--	5.0	1.5	4.7	1.4
	Alt. 3D	--	--	5.0	1.4	4.9	1.4
	Alt. 3E Mod.	--	--	5.0	1.4	4.9	1.4
22	No-Build	7.2	1.4	5.1	1.2	4.6	1.2
	Alt. 3C	--	--	4.5	1.3	4.3	1.3
	Alt. 3D	--	--	4.5	1.2	4.9	1.4
	Alt. 3E Mod.	--	--	4.5	1.2	4.9	1.4
23	No-Build	--	--	5.8	1.6	4.8	1.6
	Alt. 3C	--	--	5.8	1.7	5.1	1.4
	Alt. 3D	--	--	6.1	1.6	5.6	1.6
	Alt. 3E Mod.	--	--	6.1	1.6	5.6	1.6
24	No-Build	--	--	4.8	1.8	5.2	1.5
	Alt. 3C	--	--	5.7	1.8	4.8	1.4
	Alt. 3D	--	--	5.4	1.4	5.4	1.4
	Alt. 3E Mod.	--	--	5.4	1.4	5.4	1.4

NOTE: Values include background concentrations;
1-HR standard is 35ppm and 8-HR standard is 9ppm.

concentration and 9 ppm for the maximum 8-hour concentration.

Furthermore, in almost every case for a given analysis year, the projected CO concentrations at the selected sensitive receptors under any build alternate are equal to or less than the corresponding CO concentrations for the No-Build Alternate.

For most receptors, Alternates 2C and 2D would have resulted in slightly lower CO concentrations under any analysis conditions than would Alternate 3C, 3D, or **3E Modified.** This primarily results from the fact that total projected traffic volumes for Alternates 2C and 2D were capacity-constrained. Although traffic projections for the No-Build Alternate were also capacity-constrained, the amount of congestion and vehicular queuing projected for this alternate overrode any air quality improvements gained through reduced traffic volumes. This traffic situation will be alleviated under the **Selected Alternate,** and the associated projected CO concentrations at receptor sites, especially those along Shady Grove Road and MD 355, will be reduced.

2. IMPACT OF CONSTRUCTION ACTIVITIES

The construction phase of the proposed project has a potential impact on ambient air quality through such means as fugitive dust from grading operations, materials handling, and burning of land-clearing debris. The State Highway Administration has addressed this possibility by establishing Specifications for Materials, Highways, Bridges and Incidental Structures which delineates procedures to be followed by contractors involved in State work. The Maryland Bureau of Air Quality and Noise Control has determined that the Specifications satisfy the requirements of the Regulations Governing the Control of Air Pollution in the State of Maryland.

3. CONFORMITY WITH REGIONAL AIR QUALITY PLANNING

The project is in an air quality nonattainment area which has transportation control measures in the State Implementation Plan (SIP). This project conforms with the SIP since it comes from a conforming transportation improvement program. The I-370 project is included in the regional transportation plan and Transportation Improvement Program for the Washington Metropolitan urbanized area and is programmed for federal-aid highway funding. Accordingly, it is subjected to this federal review and project development process, and the project's conformity with regional air quality planning was addressed prior to undertaking current project planning studies.

Since pollutants that have regional impacts, such as hydrocarbons and oxides of nitrogen (precursers of photochemical oxidants), are addressed through this regional planning process, only carbon monoxide emissions, a more localized pollutant, are addressed quantitatively in this analysis.

The results of the carbon monoxide air quality analysis presented herein indicate that, for most of the receptor sites analyzed, the **Selected Alternate** will result in either no change or a slight decrease in projected CO concentrations as opposed to expected CO concentrations under the No-Build Alternate for the completion year (1986) and the design year (2006). Projected CO concentrations will not exceed applicable standards. The **Selected Alternate** will conform to the Maryland State Implementation Plan for the attainment and maintenance of ambient CO air quality standards within the National Capital Interstate Air Quality Control Region (AQCR) of which the study area is a part.

E. NOISE IMPACT ANALYSIS

1. DESIGN NOISE LEVEL CRITERIA

The introduction of a major new transportation facility into the study area is likely to add a significant source of noise to the existing profile. In addition to the magnitude of a given sound, variation with time influences impacts.

The Federal Highway Administration (FHWA) has recommended Design Noise Levels for Federal-aid highway projects in terms of the sound level that is exceeded 10 percent of the time (called the L_{10} level). The FHWA Design Noise Levels define the upper limits of acceptable L_{10} levels for different exterior land uses and activities and for certain interior uses. These Design Noise Levels are identified in Table IV-7. For most common land uses such as schools, residences, churches, libraries, hospitals, and parks, the exterior L_{10} Design Noise Level is 70 dBA.

To assess the probable environmental impacts of the alternates, existing ambient noise levels and projected noise levels due to the highway are compared to FHWA Design Noise Levels for the appropriate land use activity.

The Design Noise Levels values are to be applied at those points within the sphere of human activity (at approximate ear-level height) where outdoor activities occur. The values do not apply to an entire tract upon which the activity is based, but only to that portion in which the activity occurs.

The interior Design Noise Level in Category E applies to indoor activities for those situations where no exterior noise sensitive land use or activity is identified.

Design Noise Levels are also used to determine the need for abatement measures for traffic-generated noise for developed land uses and activities in existence at the time of location approval. Exceptions to the Design Noise Levels may be granted on certain types of highway improvements or portions thereof when conditions outlined in the federal guidelines are met.

2. AMBIENT NOISE SURVEY

a. Noise Sensitive Areas

Seventeen noise sensitive sites in the project area (see Figure IV-9) were analyzed. Following is a brief description of these:

- Site 1: Residential townhouses (Redlands Station) on Briardale Terrace 600 feet north of Shady Grove Road. Complex includes 70 attached, 2-story units of frame construction with air conditioning.

- Site 3: Residential use (Peters House) 150 feet north of Shady Grove Road on elevated site approximately 1400 feet east of MD 355. This is a single-family, 2-story dwelling of frame construction. Based on recent determinations by the Maryland Historic Trust and Montgomery County this structure and site are not considered significant.

- Site 4: Residential area (Rosedale Apartments) on O'Neill Road 100 feet west

TABLE IV-7

DESIGN NOISE LEVELS & LAND USE RELATIONSHIPS SPECIFIED IN FHPM 7-7-3

Land Use Category	Design Noise Level - L_{10}	Description of Land Use Category
A	60 dBA (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	70 dBA (Exterior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks.
C	75 dBA (Exterior)	Developed lands, properties or activities not included in categories A and B above.
D	None Prescribed	Land which is undeveloped on the date of public knowledge of the project, and for which no known future development is planned.
E*	55 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

* See paragraph 1(c) of Appendix B of FHPM 7-7-3 for method of application. Partial quotation from paragraph 1(c): "The interior design noise level in Category E applies to indoor activities for those situations where no exterior noise sensitive land use or activity is identified."

of MD 355 and 800 feet north of Shady Grove Road. Complex includes 200 dwelling units in six low-rise buildings of brick construction with air conditioning.

- Site 5: Residential area (Rosedale Apartments) on O'Neill Road 500 feet west of MD 355 and 800 feet north of Shady Grove Road. (Part of same complex as Site 4.)

- Site 6/6A: Residential area (Rosedale Apartments) on O'Neill Road 1000 feet west of MD 355 and 1000 feet north of Shady Grove Road. (Part of same complex as Sites 4 and 5.) Site 6A would be displaced under Alternate 3D.

- Site 7: Residential area/park (Rosemont) on Edgewood Drive 1500 feet north of Shady Grove Road. Most of the single family homes in this subdivision are of brick and frame construction and most are air conditioned. The adjacent City of Gaithersburg Park follows the stream valley and has no developed recreation facilities with the exception of the Casey Barns Community Center adjacent to MD 355.

- Site 8: School (Rosemont Elementary School) on Alden Avenue 700 feet west of MD 355. School is two stories high, brick construction, and not air conditioned.

- Site 9: Residential use at the north end of Gaither Road 500 feet east of I-270. This is a single-family, 2-story dwelling of frame construction.

- Site 10: Park (Summit Hall Park) off Summit Hall Road 700 feet east of I-270. This City of Gaithersburg Park has developed recreation facilities including tennis courts, play equipment, basketball courts, and a softball field.

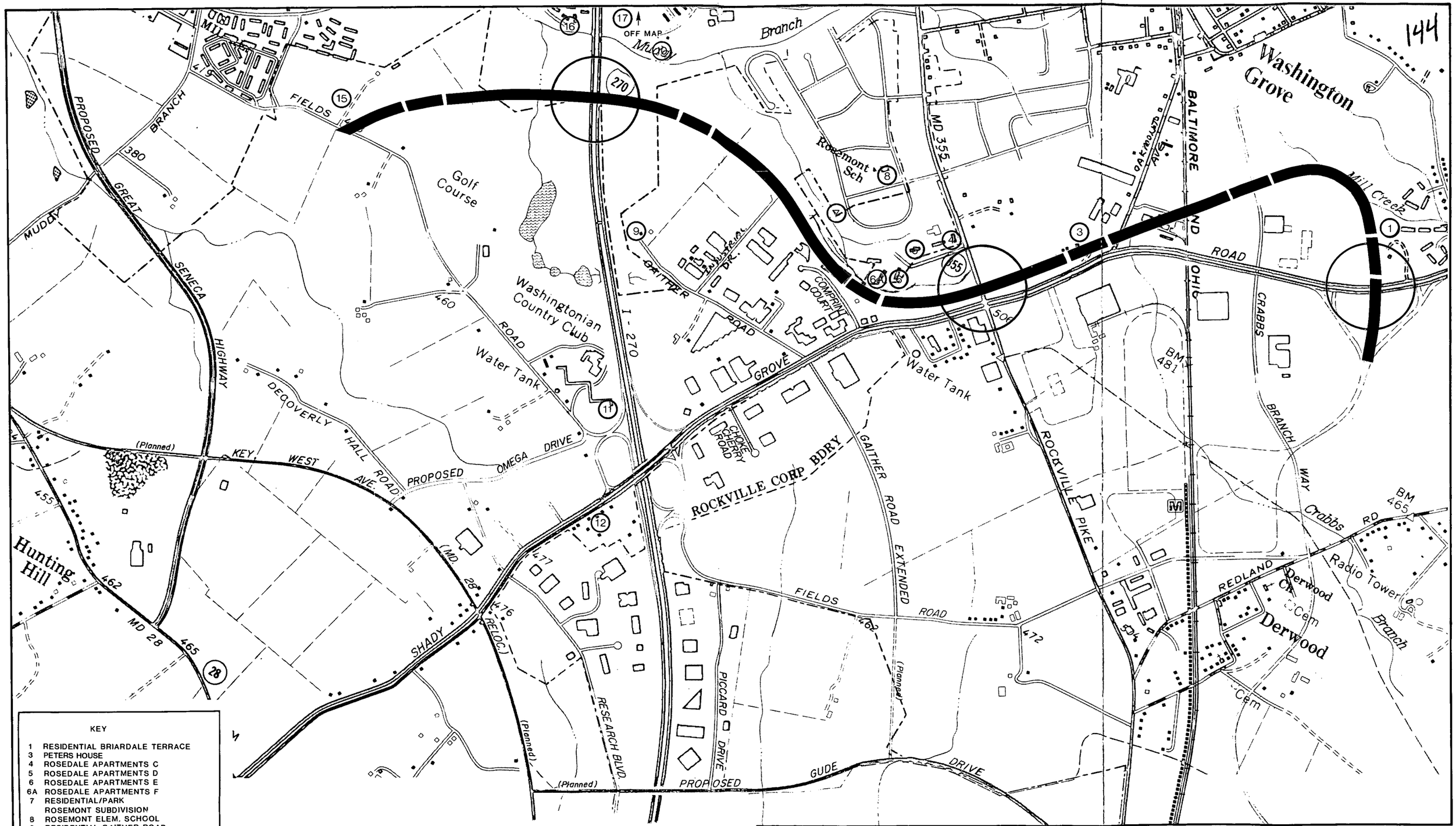
- Site 11: Motel (Washingtonian) on Fields Road and 150 feet west of I-270 at its closest point. The one-story motel is of masonry construction and air conditioned.

- Site 12: Residential uses 100 feet south of Shady Grove Road and 600 feet west of I-270. These are single-family homes of masonry and frame construction.

- Site 15: Residential (Courts of Watch Hill) 400 feet north of the western terminus of the proposed I-370 at Fields Road. These homes are of frame construction and air conditioned.

- Site 16: Residential townhouses (Brighton Village) 75 feet west of I-270 (at its closest point) between the proposed I-370 alignment and Muddy Branch Road. These townhouses are of masonry construction and are air conditioned.

- Site 17: Residential apartments (Fireside Condominiums) 100 feet east of I-270 and 1000 feet north of Summit Hall Park. These garden-style apartments are of masonry construction, three stories, and air conditioned.



KEY

1 RESIDENTIAL BRIARDALE TERRACE
3 PETERS HOUSE
4 ROSEDALE APARTMENTS C
5 ROSEDALE APARTMENTS D
6 ROSEDALE APARTMENTS E
6A ROSEDALE APARTMENTS F
7 RESIDENTIAL/PARK ROSEMONT SUBDIVISION
8 ROSEMONT ELEM. SCHOOL
9 RESIDENTIAL GAITHER ROAD
10 SUMMIT HALL PARK
11 WASHINGTONIAN MOTEL
12 RESIDENTIAL SHADY GROVE ROAD
15 RESIDENTIAL/COURTS OF WATCH HILL
16 APARTMENTS WEST SIDE DRIVE
17 RESIDENTIAL DEER PARK COURT

Noise Sensitive Areas

INTERSTATE 370

0 FEET 1000 2000

Figure IV-9

b. Selection of Noise Monitoring Sites

All natural and man-made noises in a given area contribute to ambient noise levels, which differ depending upon the time of day, day of the week, traffic characteristics on nearby roadways, and the presence or absence of other major noise sources. Since it was neither necessary nor desirable to measure ambient noise levels at every individual developed tract of land along each alternate, nine representative monitoring sites were selected for establishing the existing noise environment. In a few areas where existing levels were primarily attributable to I-270 traffic, it was determined that estimates of existing noise levels using the FHWA Model and base year LOS C hourly volumes would be a better indicator of worst-case existing noise conditions than limited measurements.

c. Results

As shown in Table IV-8 the ambient noise levels as recorded in the field monitoring program represent a generalized view of existing noise levels in the study area. It should be recognized that variations in total traffic volume, total truck volume and traffic speed on nearby roadways may cause fluctuations of several decibels in ambient noise levels at any given site. Therefore, the values shown are intended to be representative of the worst-case ambient noise conditions at each site.

3. PREDICTED NOISE LEVELS

a. Prediction Methodology

Noise levels were predicted for each alternate using the FHWA Level 2 Highway Traffic Noise Prediction Model, STAMINA 1.0. The FHWA model utilizes experimentally and statistically determined, speed-dependent, reference noise emission levels for three classes of vehicles (autos, medium duty trucks, and heavy duty trucks) and applies a series of adjustments to each reference level to arrive at the composite predicted A-weighted sound level from all three vehicle classes. The adjustments account for variations in traffic flow, for varying distances from the roadway, for finite length roadways and for shielding (topographic or man-made) between the roadway (source) and receivers.

b. Traffic Parameters

The traffic data utilized in this analysis were derived from traffic models developed by the Metropolitan Washington Council of Governments, land use projections contained in the "Cooperative Forecasting Round II Summary Report - 1979" by MWCOG, and from data supplied by the Bureau of Highway Statistics of the Maryland State Highway Administration. Traffic volumes and speeds associated with LOS C conditions as defined in the 1965 edition of the "Highway Capacity Manual" were the basis for noise level predictions. This traffic condition (LOS C) has been shown to produce the highest noise level and, thus, represents the worst-case situation.

c. Prediction Results

Table IV-8 presents the results of the noise prediction modeling for each noise sensitive area for each alternate. The predicted L_{10} noise levels shown are for the design year, 2006. Also shown is the land use category at each area, the existing L_{10} noise level, and the applicable FHWA Design Noise Level.

TABLE IV-8
PROJECT NOISE LEVELS AT IDENTIFIED NOISE SENSITIVE AREAS

No. (See Fig. IV-8)	Location	Land Use[1]	Ambient Noise Level (L_{10})	2006 (dBA) Predicted Design Year L_{10} Noise Levels					
				3C	3D	3E M.*	2C	2D	1
1	Briardale Terrace	Residential	53	70	70	67	63	63	63
3	Shady Grove Road	Residential	65	NA	NA	NA	74	74	73
4	O'Neill Road	Residential	69	72	72	72	75	75	73
5	O'Neill Road	Residential	62	66	69	68	65	65	63
6	O'Neill Road	Residential	58	73	77	74	66	66	64
6A	O'Neill Road	Residential	58	75	NA	81	NA	NA	NA
7	Edgewood Drive	Residential/Park	51	68	75	69	61	61	59
8	Alden Avenue	School	51	64	67	66	62	62	60
9	Gaither Road	Residential	(69)	69	69	69	68	68	69
10	Summit Hall Road	Park	(64)3	71	70	70	66	66	65
11	Fields Road	Motel	(76)	78	79	79	79	78	78
12	Shady Grove Road	Residential	(73)	73	77	77	74	75	74
15	Fields Road/I-270	Residential	65	70	70	70	NA	NA	NA
16	West Side Drive	Residential	72	77	78	78	NA	NA	NA
17	Deer Park Place	Residential	66	71	72	72	NA	NA	NA

* Selected Alternate (3E Modified)

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1 FHWA L_{10} Design Noise Level 70 dBA applies to all sites.
2 (Figures) are noise levels predicted using 1980 base year level-of-service C volumes and speeds.
3 Low traffic volume on I-270 during period of measurement causes listed L_{10} to be abnormally low and therefore not representative of actual worst-case conditions at this location.

4. NOISE IMPACT ASSESSMENT

The determination of environmental noise impact is based on the relationship between the predicted noise levels, the established Design Noise Levels and the ambient noise levels at each noise sensitive area (NSA). The applicable design levels are included in the Federal Highway Administrator's Design Noise Level/Land Use Relationships (see Table IV-7) published in FHPM 7-7-3. Apart from the relationship to FHWA Design Noise Levels, the degree or amount of change in predicted L_{10} noise levels from existing levels was also considered and attenuation measures analyzed.

All of the noise sensitive areas analyzed fall into FHWA land use category B, which has a design noise level of 70 dBA. With the exception of sites 11, 12, and 16, the existing noise level at each of the noise areas is below 70 dBA. Sites 11 and 12 are located adjacent to the I-270/Shady Grove Road interchange and have existing noise levels of 76 dBA and 73 dBA, respectively; site 16, adjacent to I-370 south of Muddy Branch Road, has an existing noise level of 72 dBA.

a. No-Build Alternate

Under the No-Build Alternate, no major improvements will have been made to existing roadways in the study area other than those already planned. However, one of these planned improvements is the expansion of Shady Grove Road between I-270 and MD 355 to three lanes in each direction, and noise predictions for the No-Build Alternate incorporate this expected improvement. A total of four NSA's would have experienced future noise levels in excess of Design Noise Levels (Sites 3, 4, 11, and 12). In general, the impact of noise under the No-Build Alternate would have been negligible or minor. At the four specific noise sensitive areas (NSA's) where Design Noise Levels would have been exceeded, the No-Build Alternate would have provided little or no improvement in expected design year noise levels over the other proposed alternates.

b. Alternates 2C and 2D

These alternates would have caused predicted L_{10} levels at four NSA's to be in excess of Design Noise Levels (the same sites as were identified under the No-Build Alternate). Predicted noise levels at all NSA's were identical for both these Alternates except at sites 11 and 12. Here, the different ramp configuration on the west side of I-270 caused Alternate 2C to have a 1 dBA higher predicted level at site 11 (79 vs. 78), while Alternate 2D would have had a 1 dBA higher level at site 12 (75 vs. 74). In general, noise impact under Alternates 2C and 2D would have been lower than that for Alternates 3C, 3D, or **3E Modified** because the facility to be constructed on new location under these Alternates would have resulted in substantially greater impact at certain noise sensitive areas.

c. Alternates 3C, 3D, and **3E Modified**

Alternates 3C and 3D will result in predicted noise levels greater than Design Noise Levels at nine noise sensitive areas (4, 6, 6A, 7, 10, 11, 12, 16, and 17). Alternate 3E Modified will cause predicted noise levels at seven noise sensitive areas (4, 6, 6A, 11, 12, 16, 17).

5. CONSTRUCTION IMPACTS

Noise impacts will also occur during the construction phase of this project, and areas around the construction site will experience this in varied periods and degrees. The project will probably employ the following pieces of equipment which are likely sources of construction noise:

Bulldozers and earthmovers
Graders
Front-end loaders
Dump and other heavy trucks
Compressors

Generally, construction activity will not occur after 5:00 p.m. or before 7:00 a.m. on weekdays, and will likely be limited to weekdays only. Therefore, in the critical time during which evening outdoor recreation and nocturnal rest periods occur, construction noise will not normally be present. Limiting construction activity to non-critical time periods will minimize noise impact on surrounding areas.

Maintenance of construction equipment will be regular and thorough to minimize noise emissions due to inefficiently tuned engines, poorly lubricated moving parts, or ineffective muffling systems.

6. OPPORTUNITIES FOR MITIGATION

Three fundamental measures are commonly employed to abate and/or control highway generated noise and thus moderate the effects of noise on adjacent land uses and activities: (1) the attenuation of noise along its transmission path; (2) attenuation at the receptor, and (3) traffic control measures.

The control of highway-generated noise along its propagation path can take several forms. Shielding of noise sensitive areas can be accomplished by the construction of sound barriers, by depressing the roadway below grade, or by a combination of the two. An earth berm-type barrier may be the most cost effective form for providing noise abatement along highways, dependent on land availability and the cost of suitable fill material. Because of the high cost of fill material and additional right-of-way, reflective wall-type barriers would be the most cost effective method of providing noise abatement for the I-370 project.

The second noise abatement measure, abatement at the receptor, is applicable only to interior noise levels. Where noise sensitive activities are within a publicly-owned building and where other abatement measures appear impractical, it may be desirable to apply noise abatement to individual buildings.

Finally, traffic control measures most applicable to the abatement of noise impact restrict truck traffic since trucks are a major contributor to highway generated noise. While prohibiting trucks from using the proposed I-370 may reduce projected noise impact at certain NSA's, it would likely increase projected noise levels at other NSA's, as the truck traffic would be diverted to other roadways, especially Shady Grove Road. Because of this and the potential for adverse economic effects if truck use of I-370 were restricted, this noise abatement measure was not given further consideration.

In those cases where feasible engineering methods are not available or where the cost of employing noise abatement measures exceeds the benefits that would be gained,

exceptions to design noise levels will be requested.

The **Selected Alternate, 3E Modified,** will cause noise impacts exceeding design levels at seven NSA's (4, 6, 6A, 11, 12, 16, 17). The Maryland State Highway Administration is considering three noise barriers to effect this reduction, as indicated in Table IV-9. Exceptions to exterior Design Noise Levels will be sought for sites 11, 12, 16, and 17 because providing adequate noise mitigation is not practical. A wall-type barrier was determined to be the most effective mitigation measure and is likely to be incorporated into the design of the project at Noise Sensitive Areas 4, 6, and 6A. This barrier will also benefit sites 7 and 8 (see Table IV-9). Information obtained from affected property owners, additional noise and cost effective analysis, and aesthetics will be key factors in determining if noise barriers will be incorporated into the project.

TABLE IV-9

MITIGATION OF NOISE IMPACTS FOR SELECTED ALTERNATE[1]

Site	Alternate	Impact	Noise Reduction Measures
1	3E Modified	Predicted L_{10} = 67 dBA; 14 dBA above ambient level	Noise barrier considered, determined not to be cost effective. Predicted noise levels below design levels.
3	3E Modified	Predicted L_{10} = 73 dBA NSA has been sold for commercial development	Under projected land use activity, predicted L_{10} noise levels are below design noise levels (75 dBA).
4	3E Modified	Predicted L_{10} = 72 dBA	Current Noise Levels: 69 dBA. Impractical to design effective noise barrier which does not impede access to MD 355, the dominant noise source. Considering the low level of noise attenuation possible, such a barrier is not cost effective. One 36-unit apartment building affected.
6,7	3E Mod./Site 6 /Site 7	Predicted L_{10} = 74 dBA Predicted L_{10} = 69 dBA	Recommend a 12-foot-high reflective wall constructed along WB I-370. This wall would extend 2200 feet westward from the point where the feeder ramp from southbound MD 355 ties into WB I-370. Recommend a 15-foot high reflective wall constructed along the feeder ramp from SB MD 355. This wall would extend 700 feet eastward from the above 12-foot-high wall. Recommend a 10-foot-high reflective wall constructed along WB I-370 extending 950 feet between the point where the feeder ramp from SB MD 355 ties into WB I-370 and the bridge parapet for the structure across MD 355. Predicted noise reduction of 8 dBA to 66 dBA at Site 6 and of 7 dBA to 62 dBA at Site 7. Estimated construction cost is $760,000. Noise levels would be reduced at Rosemont Park, approximately 20 houses, one elementary school, and three 36-unit apartment buildings.

Table IV-9 (continued)

Site	Alternate	Impact	Noise Reduction Measures
6A	3E Modified	Predicted L_{10} = 81 dBA	Measures recommended for Sites 6 and 7 would reduce predicted noise levels 13 dBA which would be below exterior Design Noise Level of 70 dBA.
8	3E Modified	Predicted L_{10} = 66 dBA. Does not exceed design noise level; predicted noise level 15 dBA above ambient level.	Noise impact avoided if measures recommended for sites 6 and 7 are implemented. Without these measures a significant noise impact will exist at this site. The recommended measures would reduce projected noise at the school to 61-62 dBA.
11	3E Modified	Predicted L_{10} = 79 dBA Ambient noise level = 76 dBA.	Commercial building is both air conditioned and constructed of masonry and has outside activity. Interior design noise levels of 55 dBA will be met. Expected interior noise level of 53-54 dBA. Existing ambient noise level exceeds Design Noise Level.
12	3E Modified	Predicted L_{10} = 74 dBA. Ambient noise level = 73 dBA.	Eight of nine houses would be displaced by right-of-way. Remaining house not likely to stay residential, as this area is zoned for commercial. Predicted noise levels fall within interior Design Noise Levels. It is not possible to provide a cost-effective noise barrier for this one residence because of multiple noise sources.

Table IV-9 (continued)

Site	Alternate	Impact	Noise Reduction Measures
16	3E Modified	Predicted L_{10} = 78 Ambient noise level = 72 dBA.	Current ambient noise levels exceed DNL's. To achieve the necessary 8 dBA noise level reduction would require a 14-foot high reflective barrier with an estimated construction cost of $160,000. Such a barrier would create an adverse visual intrusion and would offer protection to only a few housing units that are not already protected by existing topography. This barrier is not considered cost-effective. These town-houses are both air conditioned and constructed of masonry, and interior design noise levels of 55 dBA could be met. Expected interior noise level would be 52-53 dBA. There are no exterior use areas located between the apartments and the highway.
17	3E Modified	Predicted L_{10} = 72 dBA Ambient noise level = 66 dBA	Predicted noise levels at this site are marginally in excess of Design Noise Levels. While a 3-foot high and 800-foot long reflective barrier would provide the necessary 1-2 dBA reduction the $38,000 estimated construction cost would provide only limited protection to a few first floor condominiums and would create an adverse visual intrusion. Such a barrier is not considered cost effective. Furthermore, these condo-miniums are both air conditioned and constructed of masonry and interior design noise levels of 55 dBA could be met. Expected interior noise levels would be 52-53 dBA. Current exterior uses (swimming pool, tennis courts) are subjected to noise levels of 66 dBA or greater. Increase in ambient noise over current levels would be only marginally percep-tible.

1 Additional discussion of noise mitigation measures is contained in the noise technical report prepared as part of this study.

F. IMPACT ON PROPERTIES AND SITES OF HISTORICAL AND CULTURAL SIGNIFICANCE

The Washington Grove Historic District, which is listed on the National Register, is located approximately one-third mile north of the proposed I-370 alignment and would not be affected by any of the alternates under consideration (see letter from State Historic Preservation Officer dated 7 June 1982 in Appendix C). No other sites listed or eligible for the National Register of Historic Sites are in the immediate vicinity of the alternates; thus there is no effect to be considered.

None of the three archeological sites in the study area were considered of National Register quality (see letter from State Historic Preservation Officer, 16 December 1981, in Appendix C). However, to avoid disturbance to these sites, construction will be kept within the right-of-way at these locations. Protective fencing will be erected.

G. VISUAL IMPACTS

Alternate 1, the No-Build Alternate, would have had no effect on visual and scenic resources.

Alternates 2C and 2D would not have caused a significant adverse impact on the visual environment. While the proposed Maryland Route 355 overpass of Shady Grove Road and the interchange at I-270 will have a physical impact, neither change will significantly affect the visual aesthetic, or physical characteristics of the surrounding commercial and office communities.

Alternate 3E Modified will be developed on new location. Some visual impacts will result from the loss of vegetation, woodlands, and open space, modifications to topography, alterations to streams and the introduction of retaining walls, bridges, and sound barriers. Much of the existing undeveloped area has already been proposed for future development. Visual impacts in the vicinity of I-370/Maryland Route 355 will be similar to those of Alternates 2C and 2D. For parklands, apartments, and other areas sensitive to visual intrusion, landscaping will be implemented to minimize impacts.

Suggested Mitigation Measures

Where the proposed roadway is visible from neighboring residences, existing vegetation will be preserved as much as possible. In disturbed areas, and additional areas within the right-of-way, some landscaping will be introduced as a screen between residences and the roadway or retaining walls. Vegetation cleared during construction will be seeded. The design and landscaping of potential noise barriers will be coordinated with affected property owners.

H. SECTION 4(f) CONSIDERATIONS

Section 4(f) of the Department of Transportation Act, as amended by Section 18 of the Federal Aid Highway Act of 1968, states that utilizing land from a significant publicly-owned park, recreation area, wildlife refuge, or any significant historic site for a federally funded transportation project is permissible only if there is no feasible and prudent alternative and if all possible planning to minimize harm is included as part of the project. The selected alternate, 3E Modified, avoids involvement with parklands by moving the I-270/I-370 interchange southward to avoid Muddy Branch and Summit Hall parks and by shifting the roadway southwest to avoid Rosemont Park (Figure IV-10).

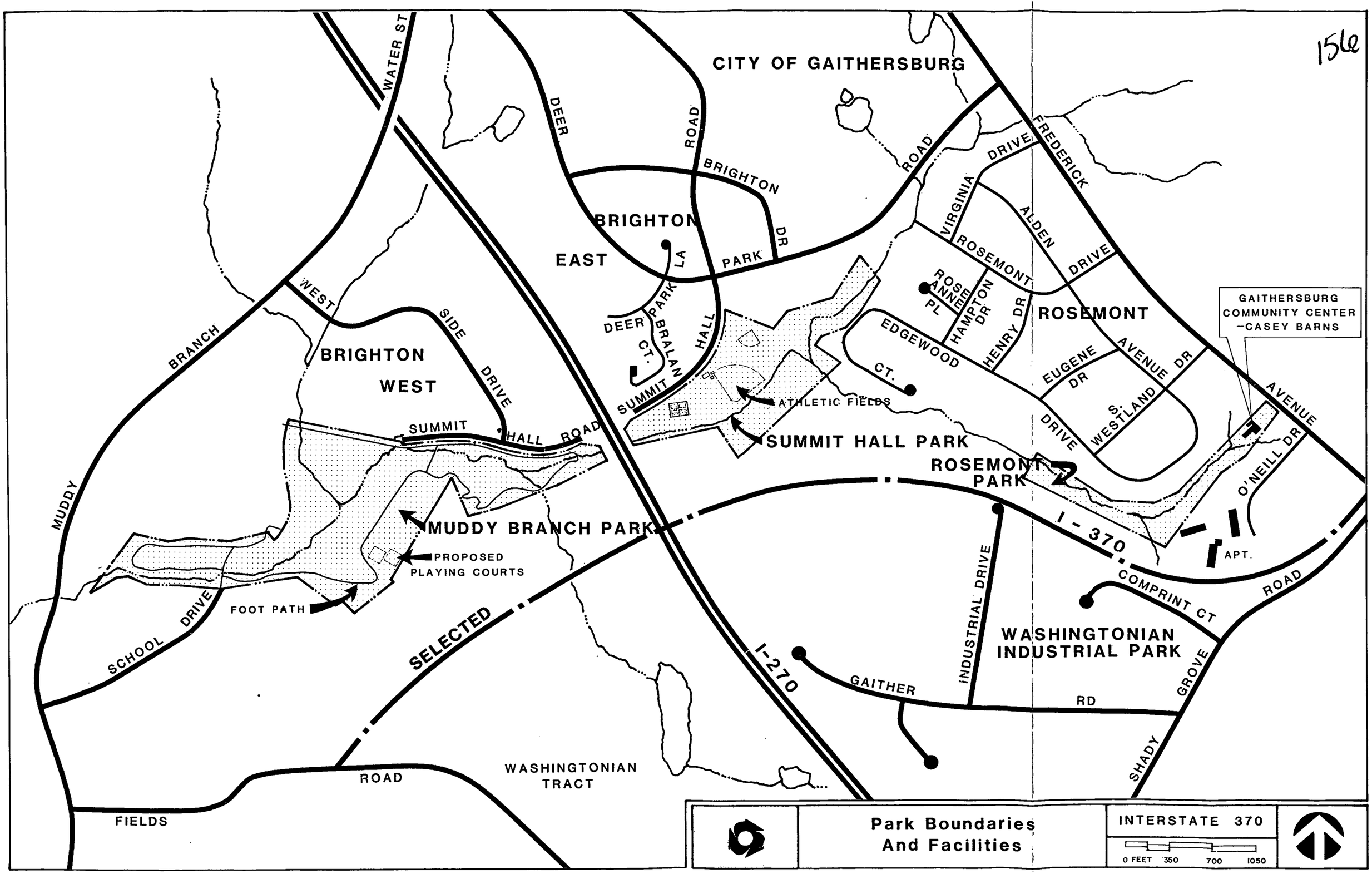
CITY OF GAITHERSBURG
WATER ST
DEER
ROAD
BRIGHTON
DR
PARK
LA
BRIGHTON
EAST
DEER PARK
CT.
BRALAN
HALL
SUMMIT
ROAD
FREDERICK
DRIVE
VIRGINIA
ALDEN
ROSEMONT
DRIVE
ROS ANN PL
HAMPTON DR
HENRY DR
EDGEWOOD
CT.
ROSEMONT
GAITHERSBURG COMMUNITY CENTER —CASEY BARNS
EUGENE
DR
AVENUE
DR
S. WESTLAND
DRIVE
AVENUE
O'NEILL DR
APT.
ATHLETIC FIELDS
SUMMIT HALL PARK
ROSEMONT PARK
I - 370
BRANCH
WEST
SIDE
DRIVE
BRIGHTON
WEST
SUMMIT
HALL
ROAD
MUDDY
MUDDY BRANCH PARK
PROPOSED
PLAYING COURTS
FOOT PATH
SCHOOL
DRIVE
SELECTED
ROAD
FIELDS
WASHINGTONIAN
TRACT
I-270
INDUSTRIAL DRIVE
WASHINGTONIAN
INDUSTRIAL PARK
COMPRINT CT
ROAD
GAITHER
RD
GROVE
SHADY
Park Boundaries
And Facilities
INTERSTATE 370
0 FEET 350 700 1050

Figure IV-10

V. DISTRIBUTION OF DEIS

A. FEDERAL AGENCIES

Those marked with an asterisk (*) commented on the DEIS. These comments and, where appropriate, responses are presented in Chapter VI.

Environmental Impact Statement
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Office of the Secretary
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Washington, D.C.

B. ELECTED OFFICIALS

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*The Honorable William E. Hanna, Jr.
Mayor
City of Rockville
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Rockville, Maryland 20850

*The Honorable Robert Evans
Mayor
Washington Grove
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Washington Grove, Maryland

The Honorable Charles W. Gilchrist
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C. LOCAL GOVERNMENT AGENCIES

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Chairman
Montgomery County Planning
Board
Maryland National Capital Park
& Planning Commission
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Silver Spring, Maryland 20910

E. STATE CLEARINGHOUSE

Local Governments
* Department of State Planning
* Department of Natural Resources
Department of Budget & Fiscal Planning
Department of General Services
Department of Economic & Community Development
Department of Education
Department of Health & Mental Hygiene
Interagency Committee for School Construction
Maryland Environmental Trust
Maryland Geological Survey
Department of Public Safety & Correctional Services
* Maryland Historical Trust

VI. COMMENTS AND COORDINATION

A. COORDINATION

Throughout the conduct of the I-370 Project Planning Study every effort has been made to keep abreast of the opinions and suggestions of private citizens and organizations and to keep lines of communication open to governmental agencies. A citizen participation process was built upon the existing Maryland Action Plan that actively sought consultation with city, county, regional, state, and federal agencies in order to insure that the concerns of all interested parties were considered at points in the study where the input would be meaningful.

1. CITIZEN PARTICIPATION

a. Public Meetings

A principal method for informing the general public of the progress and findings of the study was through informal public meetings which provided a forum for interested citizens to review the progress of the study and to provide input and direction. Local newspapers available to all citizens carried Public Notices advertising the meetings.

On October 2, 3, 4, 8, and 11, 1979, Public Initiation Workshops were held (at Kennedy High School, Point Branch High School, and Magruder High School in Montgomery County and High Point High School in Prince George's County) to acquaint the public with project history, the study process outline, the scope of work, and schedule of activities. Informational brochures were handed out, and citizens had the opportunity to identify their areas of concern on maps during workshop type sessions. To increase the interaction with the community and the exchange of ideas, concerns, and issues, citizens worked together around tables with citizen facilitators assisting the discussion and recording the proceedings. State Highway Administration and study consultant staff were available to answer questions. Those attending indicated support for some type of transportation improvements in the Shady Grove Road corridor.

On March 11, 1980, an Alternates Public Meeting was held in the Gaithersburg High School to acquaint the public with the Alternates developed to date. Once again, local newspapers available to all citizens carried Public Notices inviting interested citizens to attend and express their views regarding proposed I-370 Alternates. A brochure describing the Alternates was mailed to all persons on the project mailing list. Brochures and forms for written comments were also made available at the meeting.

As at the first sessions, the Project Planning Team explained the engineering, economic, social, and environmental aspects of the alternates developed to date, and citizens in small groups reviewed the proposed plans and identified their areas of concern. As a result of this session, planning studies for all the proposed Alternates were continued with incorporation of points raised by the Montgomery County Planning Staff (see letter dated 15 April 1980 in Appendix C.)

b. Citizen Advisory Committee

In addition to these public meetings, groups and organizations with special interests that might be affected by the proposed project were consulted. A Montgomery

County Council-appointed, 15-member Citizen Advisory Committee (CAC) met approximately monthly early in the study to provide input. Members included representatives of the City of Rockville, City of Gaithersburg, Town of Washington Grove, Montgomery County Chamber of Commerce, Suburban Maryland Home Builders Association, League of Women Voters, White Oak Civic Coalition, Montgomery County Civic Federation, Allied Civic Group, Inc., Allenwood-Gayfields-Willson Hills Civic Association, Layhill Civic Association, Inc., Luxmanor Citizens Association, Northern Bethesda Congress, Parkside Civic Association and Sycamore Acres Civic Association.

Others, including the Gaithersburg Chamber of Commerce, the Nature Conservancy, and members of Congress and state legislatures contributed to the exchange of information during the course of the study.

2. GOVERNMENT AGENCY INVOLVEMENT

Basic data collection efforts included contacts with a number of local, state, and federal agencies early in the study process and continued throughout the effort. Contacts were made through two formal groups, the Interagency Task Force and the Traffic Task Force, and on an individual agency basis.

a. Interagency Task Force

The Interagency Task Force consisted of members representing federal, state, regional and local agencies with a need for general information about the project and who could provide valuable feedback about the potential implications of the study. The agencies represented on the Task Force were the Maryland State Highway Administration, Federal Highway Administration, the Maryland Historic Trust, the Water Resources Administration of the Maryland Department of Natural Resources, the Department of State Planning, the Metropolitan Washington Regional Planning Office of the Maryland Department of Transportation, the Metropolitan Washington Council of Governments, the Maryland-National Capital Park and Planning Commission (Montgomery County), the Washington Suburban Sanitary Commission, the Office of the Montgomery County Executive and the Montgomery County Council.

b. Traffic Task Force

A second formal group was organized to advise on traffic forecasting methods. This group included representatives of the Maryland State Highway Administration, the Maryland-National Capital Park and Planning Commission (Montgomery County), the Metropolitan Washington Regional Planning Office of the Maryland Department of Transportation, the Metropolitan Washington Council of Governments, the Montgomery County Department of Transportation, and the study consultants.

The Traffic Task Force met approximately monthly and reviewed previous traffic assignments by COG, approved new assignments, reviewed the alternate networks to be coded, and made technical evaluation.

From October 1981 to January 1982 representative study team members met weekly to facilitate revision of the I-370 Preliminary-Draft Environmental Document and preparation of the Draft Environmental Impact Statement. Engineering and environmental analyses carried out for the updated Alternates were reviewed. Potential delays were identified and actions were taken to mitigate potential problems.

c. Individual Agency Coordination

Information concerning the proposed action was solicited from specific agencies with responsibility for transportation project environmental impacts. Initial briefing sessions introduced I-370 study tasks to area municipalities and agencies. On September 14, 1981, the Gaithersburg City Council and Planning Board were briefed on the status of I-370 study efforts and on 4(f) procedures. As part of the continuing cooperative study, members of the consultant team met individually with City staff. In addition, the Maryland State Highway Administration reviewed the I-370 Project with key federal agencies, including the Environmental Protection Agency and the Department of Interior, at the regularly scheduled quarterly coordination meeting on February 3, 1982.

B. COMMENTS

1. PUBLIC HEARING COMMENTS

a. Introduction

A combined Location/Design Public Hearing for this project was held on 30 March 1982 at Gaithersburg High School in Montgomery County. Mr. Eugene Camponeschi, District Engineer, State Highway Administration, presided. Representatives of SHA's Bureau of Project Planning described the study process and the alternatives under consideration and gave an environmental overview of the study area. Representatives of the State Highway Administration explained the right-of-way acquisition process and the relocation assistance program. Persons attending the Public Hearing were provided a copy of the "Combined Location/Design Public Hearing - Interstate Route 370" brochure, which summarized features of the alternates. The Draft Environmental Impact Statement and a public information display were available for review prior to and at the hearing.

Official transcripts were prepared of the Location/Design Public Hearing. The hearing record contains the remarks of 27 speakers, along with several written statements. Representatives of eight local governments, four private sector firms, nine civic and home associations, and six individual citizens were heard. Copies of the transcripts are available for review at the Maryland State Highway Administration.

b. Summary of Comments

A summary of the major public comments recorded at the Location/Design Public Hearing is presented below. Comments are grouped into four major categories: local jurisdiction/agency comments, private sector comments, civic association comments, and individual citizen comments. Responses to local jurisdiction/agency comments are contained in the Agency Comments section. Responses to major public hearing comments are addressed in the following section, Public Comments and Responses.

- Local Jurisdiction/Agency Comments - With the exception of the Town of Washington Grove, its Planning Commission, and Heritage Committee, support for proposed I-370 by localities in the project study area was unanimous and generally strong. The strongest support came from the office of the Montgomery County Executive, the M-MNCPPC, and the Montgomery County Economic Advisory Council. The City of Gaithersburg and the City of Rockville supported the project, although each raised particular concerns and suggested alignment modifications and mitigation measures.

  Overall, jurisdictions in support of I-370 agreed that the project is justified for four major reasons: traffic congestion, economic development potential, Metro access, and consistency with prior planning. The Town of Washington Grove, which opposes the project, agreed that traffic congestion must be alleviated in the study area, but rejected the remaining three reasons for project support cited by other jurisdictions. Based on environmental and fiscal concerns, the Washington Grove Planning Commission asked the SHA to consider a modification of the full-build alternates, referred to as Citizens' "Alternate 4". The resulting alignment would use the existing Shady Grove Road between Oakmont Avenue and the Metro Access Road.

- o Private Sector Comments - Area businesses expressed support for I-370, and in particular, Alternate 3E. The major reason for project support was traffic congestion in the Shady Grove area. Three firms testified that delay and aggravation experienced by their employees traveling to and from work have led some employers to consider leaving the Shady Grove area and perhaps Montgomery County. Other reasons cited for support of I-370 included increased economic development potential, greater utilization of Metro, and increased transportation safety.

- o Civic Association Comments - Speakers representing nine area civic associations testified. These organizations were opposed to the construction of I-370. At least two civic associations, Redland Station Homes Association and Deer Park Place Homeowners Association, supported "Alternate 4" proposed by the Washington Grove Planning Commission. Others supported Alternates 2C and/or 2D as the best solution to current traffic congestion problems.

  Civic association comments focused on six major areas of concern: impacts of the project on water quality, woodland, animal habitats, and the quality of life in the study area; the potential for increased flood hazard; relationship of the project to the Intercounty Connector (ICC) and Outer Beltway projects; combined air and noise impacts of I-370 and Montgomery County's proposed trash incinerator; validity of the growth projections used in the DEIS; and project costs and benefits. Responses to these major areas of concern are addressed in detail in the following section.

c. Written Comments Received

In addition to public hearing testimony, 33 written comments were received by the Maryland State Highway Administration prior to the closing of the public record on 16 April 1982. Fifteen were question/comment forms and 18 letters. Major comments received by mail were sent a detailed written response by the Maryland SHA.

2. PUBLIC COMMENTS AND RESPONSES

Substantive comments and suggestions received in statements and letters as part of the public participation process are briefly summarized below. A response to each comment is provided. The individual comments used for compilation are presented in Table VI-1.

Comment: Adoption of any of the three alternates on new alignment (Alternate 3C, 3D or 3E), and specifically that portion of the proposed alignment under these alternates which runs from Oakmont Avenue and curves behind the Grove Shopping Center near Redland Station, would destroy an area of prime woodland and animal habitat. Woodlands would also be lost in and about Summit Hall Park.

Raised by: Richard Lewis and representatives of the Redland Station Home Association and the Deer Park Place Citizen's Association.

Response: Woodland areas in the I-370 study area have been disturbed by lumbering, agriculture, and urbanization, and no original forest remains. Patches of woodland do exist and range in age from several to 100 years. The woodland area between the Grove Shopping Center and Redland Station does represent the last area of mature woods outside parks. The woods, however, have no unique features and do not

TABLE VI-1
I-370 PUBLIC HEARING TESTIMONY AND COMMENTS RECEIVED BY MAIL

Public Hearing Testimony

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
1. Mr. Tom Stone	Office of the Montgomery County Executive	3C, 3D and/or 3E	Reasons for support of I-370: - improve Metro access - relieve traffic congestion Areas of concern: - adverse impacts on area streams
2. Hon. Bruce Goldensohn	City of Gaithersburg	3E	Reasons for support of I-370: - improve Metro access - relieve traffic congestion Areas of concern: - adverse community impacts, particularly noise and visual - adverse impacts to streams and natural habitats - relationship of I-370 to an Outer Beltway concept Suggestions: - shift I-370/I-270 interchange slightly to south to avoid park impacts - modify Alternate 3E to include an additional ramp from westbound I-370 to access northbound MD 355 - extend project limits to eliminate the gap between developer-required improvements to Fields Road and I-370 - related improvements
3. Mr. Robert Weirich	City of Rockville	3C, 3D and/or 3E	Reasons for support of I-370: - reduce traffic congestion - increase economic development potential - implement area master plans Areas of concern: - staging of Fields Road connection
4. Hon. Robert Evans	Town of Washington Grove	Proposed Citizen's "Alt. 4"	See detailed response to comments in Agency Comments section.
5. Mr. Norman Christeller	Maryland National Capital Park and Planning Commission	3E	Reasons for support of I-370: - ensure consistency with current and prior planning - increase economic development potential - implement County mass transit and highway plans Areas of concern: - adequate protection of Lake Needwood Watershed - need for maximizing buffer woods near Redland Station Suggestions: - expedite approval of I-370 to minimize delay in implementation of transportation plans and to accommodate Metro opening
6. Mr. Charles Challstrom	Washington Grove Planning Commission	Proposed Citizen's "Alt. 4"	See detailed response to comments in Agency Comments section.
7. Ms. Carole Huberman (also submitted written comments)	Washington Grove Heritage Committee	2C, 2D, and/or Proposed Citizen's "Alt. 4"	See detailed response to comments in Agency Comments section.

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
8. Mr. John Carmen	Suburban Maryland Home Builders	3E	Reasons for support of I-370: - relieve traffic congestion - improve transportation safety - improve Metro access - increase economic development potential
9. Mr. Richard Lewis	Self (Redland Station resident)	2C and/or 2D	Reasons for non-support of I-370: - adverse environmental impacts in the easternmost portion of proposed I-370 Areas of concern: - adverse impacts to streams and wildlife - adverse neighborhood impacts - adverse water quality impacts, including sedimentation problems - elimination of several old foundation remains - loss of mature woodlands
10. Mr. W. K. Benson	Needwood Civic Assoc.	Substantially revised I-370	Reasons for non-support of I-370: - possible connection of I-370 to a future Outer Beltway Suggestions: - provide a limited interchange at I-270 - limit access between I-370 and MD 355, Oakmont Avenue and Crabbs Branch Way - provide a limited interchange with Shady Grove Road east of the Metro Station - institute reversible one-way lanes during peak hours
11. Mr. Ronald Lyons	Deer Park Place Homeowners Assoc.	Proposed Citizen's "Alt. 4"	Reasons for non-support of I-370: - adverse environmental impacts on Deer Park Place Areas of concern: - loss of woodland - noise pollution - aesthetics Suggestions: - shift Ramp D on Alternate 3E further south
12. Mr. Charles Beranek (also submitted written comments)	Self (Winter's Run Subdivision, Rockville resident)	No-Build, 2C and/or 2D	Reasons for non-support of I-370: - possible connection of I-370 to the ICC and Outer Beltway - adverse environmental impacts associated with construction Areas of concern: - adverse impacts on flood plains and increased flash flood potential - adverse impacts on Lake Needwood and the Upper Rock Creek Drainage Basin - lack of a full engineering evaluation of adverse impacts on streams
13. Dr. Robert Teunis	Self (Gaithersburg resident)	No-Build or 2C and/or 2D	Reasons for non-support of I-370: - disrupt use of private property Areas of concern: - loss of street access to home, office and family farm Suggestions: - rezone farm to minimize economic loss - construct a local street paralleling MD 355 to minimize economic loss to home and office

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
14. Mr. Robert Metz	Eig Enterprises	3E	Reasons for support of I-370: - ensure appropriate development of the Washingtonian property - increase employment and economic development benefits - implement area master plans - relieve traffic congestion - improve Metro access
15. Mr. Tom Reutershan (also submitted written comments)	Redland Station Homes Association	Proposed Citizen's "Alt. 4"	Reasons for non-support of I-370: - adverse community and environmental impacts Areas of concern: - project costs - economic loss to homeowners closest to proposed I-370 alignment - lack of consideration of citizen opinion - destruction of prime woodland and animal habitats - damage to three natural springs - stream relocation at Mill Creek - long and indirect routes to the Metro station from I-270 - possible connection of I-370 to a future Outer Beltway
16. Mr. James Bailey	Greater Colesville Citizens Assocation	No-Build, 2C and/or 2D	Reasons for non-support of I-370: - negative benefit/cost Areas of concern: - economic dependence of I-370 on ICC Suggestions: - modify the DEIS to include analysis of entire Intercounty Connector project
17. Mr. Frank Vrataric	Sycamore Acres Citizens Association	No-Build, 2C and/or 2D	Reasons for non-support of I-370: - failure of I-370 to accomplish the stated goals of the DEIS Areas of concern: - transportation safety - low usership
18. Mr. Bruce Hendrickson	Self (Gaithersburg resident)	2C	Reasons for non-support of I-370: - negative cost/benefit Areas of concern: - proper use of taxpayer's dollars Suggestions: - Use I-370 funds for improvements to existing roads
19. Mr. John Tarpe	Montgomery County Civic Federation	2C and/or 2D	Reasons for non-support of I-370: - negative cost/benefit Areas of concern: - relationship of I-370 to ICC and an Outer Beltway concept Suggestions: - Construct 2C or 2D with a full service interchange at I-270 and Shady Grove Road
20. Mr. Ronald Jensen	Westsat, Inc.	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion - improve quality of life for employees - decrease business costs associated with vehicle delay

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
21. Mr. Walter Petzold	Montgomery County Chamber of Commerce	3C, 3D, 3E	Reasons for support of I-370: - implement adopted master plans, particularly the Shady Grove Sector Plan - encourage business retention - improve Metro access - accommodate future growth - support housing and economic development
22. Mr. James Hardin	Mill Creek Town Civic Association	2C or 2D	Reasons for non-support of I-370: - negative cost/benefit - provides excess roadway capacity to Metro Areas of concern: - aesthetics - efficiency Suggestions: - upgrade commuter rail service
23. Mr. Roger Seifert	Shady Grove III Community Assoc.	Proposed Citizen's "Alt.4"	Reasons for non-support of I-370: - negative cost/benefit - encourages high density development of the Washingtonian Property Areas of concern: - increase in commercial development - adverse impacts on Muddy Branch Park - noise impacts at Fields Road Suggestions: - add more ride-on buses to the west to carry people to Metro
24. Mr. John Tilley	Self (Gaithersburg resident)	2C or 2D	Reasons for non-support of I-370: - negative cost/benefit - adverse community impacts Areas of concern: - adverse noise and visual impacts to Rosemont Village - disruption of private property - decline in property values
25. Mr. William Anderson	Rosemont Citizen's Association	2C and/or 2D w/ modifica.	Reasons for non-support of I-370: - negative cost/benefit - fails to achieve stated project objectives
26. Mr. Walter Kaplan	Deer Park Citizen's Association	2C or 2D	Reasons for non-support of I-370: - negative cost/benefit Areas of concern: - level of development planned for the Shady Grove area Suggestions: - redesign I-370/I-270 interchange to eliminate stops
27. Mr. Walter Almeda	Montgomery County Economic Advisory Council	3C, 3D or 3E	Reasons for support of I-370: - sustain economic vitality - maintain quality of life - encourage future development consistent with master plans - relieve traffic congestion - retain area businesses

Comments Received by Mail

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
1. Mr. R. A. Nestor Letter dated 2/22/82	Self (Derwood resident)	3C, 3D, and/or 3E	Reasons for support of I-370: - relieve traffic congestion
2. Mr. Robert H. Metz and Mr. William Kominers Linowes and Blocher Letter dated 2/25/82	Washingtonian Tract property owners	3C, 3D and/or 3E	Reasons for support of I-370: - increase Metro use - increase economic development potential - improve convenience Suggestions: - expedite I-370 project
3. Mr. Robert L. Hails Letter dated 2/25/82	Self (Olney resident)	3E	Reasons for support of I-370: - relieve traffic congestion
4. Ms. Carole Huberman Letter dated 3/1/82 (also testified at Public Hearing)	Washington Grove Heritage Committee	No-Build 2C and/or 2D	Areas of concern: - adverse air quality and noise impacts of combined I-370 and Montgomery County's proposed trash incinerator Requests: - copy of field logs recording measured noise levels in areas adjacent to Shady Grove Road
5. Mr. & Mrs. John H. Scanlin Q/C form received 3/6/82	Self (Rockville resident)	3C	Reasons for support of I-370: - provide safe transportation network Areas of concern: - safety of the Figure 6 interchange for Alternates 3D and 3E
6. Mr. Tom Reutershan Letter dated 3/12/82 (also testified at Public Hearing)	Redland Station Homes Association	Proposed Citizen's "Alt. 4"	Areas of concern: - lack of detail and inaccuracies in public notice and information display materials - failure to adequately explore all appropriate alternatives, including the Washington Grove Planning Commission's proposed alternate - reference to a "preferred alternate" in project materials - timing and method of public availability of DEIS Suggestions: - delay Public Hearing on proposed I-370 for at least 30 days - correct all maps used in all public notices and related materials - provide evidence of consideration of alternative alignments - delete reference to a "preferred alternate" - provide copies of DEIS individually to all communities and landowners adjacent to the project
7. Mr. William H. McCullen Letter dated 3/12/82	I-270 Corridor Employers Group (Comprised of 80 employers with approximately 40,000 employees)	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion - increase economic development potential - expand and retain existing businesses

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
8. Mr. John Clark Q/A form dated 3/20/82	Self (Damascus resident)	3C w/ modifications	Reasons for support of I-370: - increase cost effectiveness - minimize impacts to affected properties - relieve traffic congestion and vehicle delay Suggestions: - construct cloverleaf ramps to and from westbound Shady Grove Road
9. Dr. Leon Transeau Q/A form dated 3/24/82	Self (Rockville resident)	Not stated	Areas of concern: - time and money spent on highway studies
10. Mr. Lawrence Courtney Q/A form dated 3/24/82	Self (Gaithersburg resident)	3E	Reasons for support of I-370: - accommodate growth Suggestions: - expedite project
11. Mr. & Mrs. R. Blood Letter dated 3/25/82	Self (Derwood resident)	No-Build, 2C and/or 2D	Reasons for non-support of I-370: - adverse impacts on Redland Station and surrounding neighborhoods Areas of concern: - destruction of quality of life - destruction of wildlife and free-flowing springs - potential flooding - diversion of sales and other income from area merchants - project costs - joint impacts of I-370 and proposed incinerator
12. Mr. David Doernberg Q/C form dated 3/30/82	Self (Silver Spring resident)	Not stated	Areas of concern: - Alternate 1 provides no median-strip or barrier
13. Mr. Donald E. Jackson Q/C form dated 3/30/82	Self (Gaithersburg resident)	Not stated	Areas of concern: - extent of visual and noise mitigations in residential areas
14. Mr. Joseph Doane Q/C form dated 3/30/82	Self (Potomac resident)	2C and/or 2D w/ modifications	Reasons for non-support of I-370: - provides excess roadway capacity Areas of concern: - adverse impacts in parklands - adverse impacts on commercial properties Suggestions: - modify the I-270/I-370 interchange
15. Mr. N. Wayne Elgin Letter dated 3/30/82	Self (Washington Grove resident)	3C, 3D, or 3E	Reasons for support of I-370: - facilitate growth - relieve traffic congestion
16. Mr. William Randolph Letter received 3/31/82	Self (Gaithersburg resident)	No-Build, 2C and/or 2D	Reasons for non-support of I-370: - adverse impacts to residen. areas - failure to relieve traffic congest. - relationship of I-370 to an Outer Beltway concept - project costs

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
17. Mr. Richard Lurix Q/C form dated 4/1/82	Self (Gaithersburg resident)	2C and/or 2D	Reasons for non-support of I-370: - excessive land takes for R.O.W. - project costs Areas of concern: - adverse neighborhood impacts - adverse impacts on parklands - adverse impacts on wildlife
18. Mr. Walter Petzold Q/C form dated 4/1/82	Self (Rockville resident)	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion - improve Metro access Areas of concern: - justification for a western connection to Fields Road - excessive interchange costs - adverse impacts on adjacent development
19. Ms. Barbara Garrad Q/C form dated 4/2/82	Self (Mt. Airy resident)	Not stated	Areas of concern: - traffic problems along Shady Grove Road
20. Mr. Reed S. Snyder Q/C form dated 4/2/82	Self (Gaithersburg resident)	No-Build	Reasons for non-support of I-370: - adverse impacts to home and neighborhood Areas of concern: - proximity of construction to home - adverse impacts on parklands
21. Mr. Stephen Peterson Q/C form dated 4/3/82	Self (Gaithersburg resident)	3E	Reasons for support of I-370: - relieve traffic congestion - improve Metro access Areas of concern: - adverse noise impacts on residential areas
22. Mr. Cushing Daniel Letter dated 4/5/82	Daniel, Daniel, & Daniel	An interstate facility	Reasons for support of I-370: - improve Metro access - ensure ease of travel for area employees and residents Suggestions: - build I-370 within the existing Shady Grove Road right-of-way
23. Mr. G. L. Cornell Letter dated 4/7/82	G. L. Cornell Co.	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion
24. Mr. Jay Alfandre Q/C form dated 4/8/82	Self (Rockville resident)	3E	Reasons for support of I-370: - increase economic development potential - implement adopted master plans - improve Metro access
25. Mr. Charles Haughney Q/C form received 4/8/82	Self (Rockville resident)	2C or 2D w/ modifications	Reasons for non-support of I-370: -adverse growth-induced impacts Areas of concern: - relationship of I-370 to the Intercounty Connector - adverse noise impacts
26. Mr. Lee Miller Q/C form dated 4/9/82	Self (Gaithersburg resident)	3E	Reasons for support of I-370: - improve Metro access - relieve traffic congestion - implement area master plans

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
27. Mr. William L. Sullivan, Jr. Letter dated 4/10/82	Self (Rockville resident)	No-Build, 2C, and/or 2D	Reasons for non-support of I-370: - failure to relieve traffic congestion - negative cost/benefit
28. Mr. William M. Canby Letter dated 4/11/82	Mr. John Gogarty (Local property owner)	3E	Reasons for support of I-370: - relieve traffic congestion - implement planning recommendations
29. Mr. Richard L. Weaver Letter dated 4/12/82	Hewlett-Packard Co.	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion - retain and attract businesses - accommodate increased growth
30. Mr. Richard J. Pavlin Letter dated 4/13/82	Treatment Center, Montgomery Co. Soc. for Crippled Children and Adults	3C, 3D and/or 3E	Reasons for support of I-370: - improve Metro access for the handicapped - accommodate existing and planned development
31. Mr. Alton D. Fryer Letter dated 4/14/82	Spaulding and Slye	3E	Reasons for support of I-370: - relieve traffic congestion - encourage future development
32. Mr. Murray Kaplin Letter dated 4/14/82	Forty-two (42) employees of Hewlett-Packard Co.	3C, 3D and/or 3E	Reasons for support of I-370: - improve Metro access
33. Mr. James C. Nance Letter dated 4/14/82	Bionetics	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion - increase industrial tax base - attract new development
34. Mr. C. R. Zimmerman Letter dated 4/15/82	Bechtel Power Corp.	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion Suggestions: - construct a northbound ramp onto I-270 from the right westbound lanes of Shady Grove Road
35. Mr. Dean R. Ebner Letter dated 4/15/82	Self (Gaithersburg resident)	No-Build, 2C, and/or 2D	Reasons for non-support of I-370: - failure to relieve traffic congestion Suggestions: - widen existing roadways or consider construction of the Inter-county Connector
36. Mr. Milton F. Johnson Letter dated 4/15/82	Kodak Processing Lab, Inc.	3C, 3D and/or 3E	Reasons for support of I-370: - relieve traffic congestion
37. Mr. Nolan Goldberg Letter dated 4/16/82	Calculon Corp.	3C, 3D and/or 3E	Reasons for support of I-370: - retain area personnel
38. Mr. Louis Cohen Letter dated 4/21/82	Knollwood Development Corporation	3E	Reasons for support of I-370: - facilitate residential and commercial development
39. Mr. David Wise Letter dated 4/23/82	Design-Tech	3E	Reasons for support of I-370: - increase economic development potential

Commentor's Name	Agency/Organization Representing	Alternates Supported	Major Comments
40. Ms. Diane Szafoni Letter dated 4/26/82	Self (Urbana, Ill. resident)	2C and/or 2D	Reasons for non-support of I-370: - adverse environmental impacts Areas of concern: - adverse noise, air quality and water quality impacts - accuracy of growth projections
41. Mr. Charles Beranek Letter dated 4/27/82 (also testified at Public Hearing)	Self (Rockville resident)	No-Build, 2C, and/or 2D	See earlier public hearing comments, page 5.
42. Mr. Charles P. Gilmore Q/A form dated 4/27/82	Self (Rockville resident)	3E	Reasons for support of I-370: - increase economic development potential - assure consistency with local land use plans
43. Mr. Roger M. Williams Q/C form dated 4/30/82	Self (Gaithersburg resident)	2C and/or 2D	Reasons for non-support of I-370: - design traffic capacities exceed projected Metro station traffic - project costs Areas of concern: - adverse impacts on wildlife in the Washington Industrial Park area - disruption of foot travel through the Washington Industrial Park area
44. Mr. William Canby Letter dated 4/30/82	Decoverly Investors	3E	Reasons for support of I-370: - relieve traffic congestion - fulfill planning recommendations
45. Mr. Sydney Fishman Letter dated 5/30/82	Dorsid Enterprises	3D	Reasons for support of I-370: - relieve traffic congestion Areas of concern: - displacement of businesses at 9041 Comprint Court

support any significant wildlife populations due to their small size and existing degraded conditions. It should also be noted that the woods in question, being in private ownership, are not protected and are zoned for residential or light industrial development. Adverse impacts on woodlands in Summit Hall Park have been avoided by shifting the I-270/I-370 interchange further south, preserving the wooded area and offering a visual screen between residential areas and the proposed project.

Comment: The Draft Environmental Impact Statement (DEIS) does not adequately explore the impact on streams and creeks in the area of the proposed project from the standpoint of runoff (imperviousness) and the potential for flash flooding. High imperviousness caused by both I-370 and coincident development will result in a flood potential similar to the 1972 Hurricane Agnes. Available flood data for Mill Creek were absent from the DEIS.

Raised by: Mr. Charles Beranek, resident of Winter's Run Subdivision, and the Redland Station Home Association.

Response: Much of the flood related data referenced in the DEIS was obtained from Maryland National Capital Park and Planning Commission (M-NCPPC) sources; these represent the best available data at the time of production of the DEIS. Additional data from the Federal Emergency Management Agency (FEMA) have since become available, and the same conclusions were reached. The 60 percent imperviousness data relates to the ultimate development of the area in conformance with area master plans. The impact of this ultimate development has been hydraulically modelled as a basis for M-NCPPC's floodplain maps. It is noted that the imperviousness within the I-370 right-of-way is about 40 percent; this is less than the 60 percent for the ultimate surrounding area.

Selection of a 100-year storm is based on a statistical analysis of past rainfall, including Hurricane Agnes, and is not statistically related to land use or changes in imperviousness. Changes in land use and imperviousness do influence the ability of the drainage basin and channel to transport rainfall and thereby can affect flood stages. Flood hazard impacts for **Alternate 3E Modified** have been analyzed in conformance with applicable regulations and Maryland DNR design criteria and are discussed in Section IV.C.5.

Comment: Adoption of Alternate 3E will destroy the residential quality of area neighborhoods which have already been severely impacted by development along Shady Grove Road and in the I-270 corridor generally. Air and noise impacts associated with the proposed project would be significant.

Raised by: The City of Gaithersburg, the Town of Washington Grove, the Washington Grove Heritage Committee, the Redland Station Homes Association, the Deer Park Place Citizen's Association, and individual citizens.

Response: Project impacts on local communities were considered as documented in this FEIS. All reasonable efforts will be made to minimize impacts to local residents and the existing natural environment. Measures to mitigate noise, air, and visual impacts in affected residential areas will be further developed during the detailed design phase of the project. Noise mitigation measures will be developed in consultation with community residents.

Comment: The alternative preferred by the State was once part of the alignment for the Intercounty Connector and the Outer Beltway. Construction of Alternate 3E would be the first step in the revival of these two widely opposed projects.

Raised by: The City of Gaithersburg, Redland Station Homes Association, the Montgomery County Civic Association, and individual citizens.

Response: The Outer Beltway is no longer considered a viable project and has been dropped from all State highway plans and programs. However, that portion of the originally proposed Outer Beltway between I-270 and the Baltimore-Washington Parkway has been redesignated as the Intercounty Connector (ICC) and is under study at this time. The major purpose of the ICC study is to analyze existing and projected east-west transportation problems in this area and, based on these analyses, decide whether and how to alleviate these problems. The ICC studies will not influence decisions made regarding the I-370 project since each of these projects must stand on its own merits. An Environmental Impact Statement assessing the potential beneficial and adverse affects of the Intercounty Connector is being prepared. Refer to Appendix D and the Project Need Section for more information on the relationship of the ICC to the I-370 project.

Comment: The DEIS discusses increased revenues to the County and State as a result of the construction of I-370. Revenues resulting from new construction, new business, new employees, and increased real estate values are among the cost benefits mentioned. However, when project benefits are matched against the costs of project development, the result is a negative benefit/cost for I-370.

Raised by: The Greater Colesville Citizen's Association, the Town of Washington Grove, the Mill Creek Town Civic Association, and individual citizens.

Response: Cost-revenue estimates presented in the DEIS are based on a 20-year build-out schedule commencing in 1986 and continuing to 2006. Benefits are stated in annualized revenue increments from new construction and annualized vehicle delay costs over the 20-year project period. These savings must be balanced against the annualized costs of supporting the estimated $114 million cost of construction, of which 10 percent is state and local cost.

End state commercial/industrial tax benefits and vehicle time-delay cost savings represent an annual revenue increase in 1981 dollars of $5,890,000 to the State and County. This sum, expressed in 20 equal annual payments (plus a final payment of $5.9 million) over the useful life of the project, equals total benefits of $59.7 million. Measured against total principal and interest costs to the State of only $23.4 million over the 20-year period, this represents a reasonable cost equivalent even though no State debt retirement costs will be incurred as a result of this project.

Based on the 20 year scenario for realizing the full economic benefits of I-370, this project more than justifies its costs. Not considered in this analysis are time savings, utilization costs, increased ridership, and economics of scale associated with the capital expenditure made for the Shady Grove Metro Line. If these considerations were defined in dollar amounts and computed in the above cost effectiveness equation, they would further support the construction of I-370.

Comment: The proposed traffic flow levels presented in the DEIS reflect a decade of increased growth in the area. However, this level of growth may not be realized, thereby increasing the possibility of exaggerated future traffic levels and falsifying the assumption that I-370, and in particular the Fields Road extension, is essential to maintain the area's future traffic levels.

Raised by: The Shady Grove Community Association, the Town of Washington Grove, and Diane Szafoni.

Response: Traffic projections were based on existing and proposed local master plans. The Shady Grove area is anticipated to grow at a more rapid rate than most other areas of Montgomery County. This is due to commercial/industrial and dense residential zoning and the soon-to-be-opened Shady Grove Metro Station. The importance of the Fields Road extension in maintaining future traffic levels from the time of opening to the design year in the study area is discussed in the Project Needs Section.

Comment The alternate preferred by the State would have a negative impact on water quality in the study area. Increases in sedimentation would be particularly acute in Lake Needwood, which is now regularly dredged to control sedimentation.

Raised by: Charles Beranek and Richard Lewis.

Response: Deposition of roadway materials contributing to highway runoff is projected to be 927 tons/year under **Alternate 3E Modified**, once completed. Although the constituents of highway runoff could have adverse impact on water quality and aquatic organisms, the measurement of these impacts were found to be beyond the sensitivity of existing water quality computer models. In addition, annual sedimentation is expected to be 87 tons.

It is estimated that 600 tons of sediment would enter Lake Needwood from Mill Creek during construction of Alternate 3E Modified, with significantly lesser amounts during operation. With a trap efficiency of 85%, about 510 yd^3 (1.24T/yd^3) would be retained in the lake. This is insignificant compared to the sediment storage capacity of Lake Needwood (550,147 yd^3) and the 100,000 yd^3 which M-NCPPC has dredged from the lake to date. Impacts to the marsh at the north end of Lake Needwood, considered to be an environmentally sensitive area, are expected to be insignificant.

Comment: The sections of the DEIS dealing with air quality and noise impacts should consider the joint impact of noise levels and emissions generated by I-370 and Montgomery County's proposed incinerator (Mass Burn Facility) at Shady Grove Road at MD 355.

Raised by: Individual citizens and the Washington Grove Heritage Committee.

Response: The traffic parameters used for both the air and noise analyses for I-370 corridor projected truck traffic along nearby roadways to include that portion associated with the operation of the proposed transfer station. Regarding the possible icing and fumigation of I-370, a study by MITRE Corporation for Montgomery County concluded that any such potential problems would be restricted to the incinerator site itself and would not extend to I-370.

Comment: The State should study an alternative endorsed by the Washington Grove Planning Commission, tentatively labeled "Alternate 4" which would eliminate the curve in that portion of the I-370 alignment running behind the Grove Shopping Center by joining I-370 with Shady Grove Road at Oakmont Avenue. Elimination of this curve would avoid the destruction of prime wildlife habitat and natural springs which constitute part of the headwaters of Rock Creek.

Raised by: The Washington Grove Planning Commission, the Town of Washington Grove, and the Redland Station Homes Association.

Response: An analysis of the proposed I-370 "Alternate 4" revision indicates that it would increase rather than decrease existing traffic problems at the Maryland 355/Shady Grove Road intersection and at Crabbs Branch Way. Also, this proposed plan would displace two apartment buildings which would require the relocation of up to 72 families. This plan would not conform to minimum interstate highway design standards since the proposed ramps are too sharp and are spaced too close together. If the recommended plan were revised to conform to current minimum interstate highway design standards, it would result in additional impacts to other apartment buildings, homes, a community center, and parklands. Finally, the proposed I-370 "Alternate 4" revision would not provide the desired level of safe and convenient access to the Shady Grove Metro Station because Metro-bound traffic would leave a controlled access interstate highway, merge with local traffic, and pass through a signalized intersection before entering the Metro parking lot. This would increase travel times, increase the likelihood of accidents, and discourage some Metrorail use.

Comment: The State is proposing a 3.4 mile interstate highway costing over $33 million per mile, whose primary purpose is to fill a 3,000-car parking lot. Considering its high cost and the relatively few commuters benefitting from its construction, I-370 is not justified.

Raised by: Town of Washington Grove, Sycamore Acres Citizens Association, Montgomery County Civic Association, Mill Creek Town Civic Association, Rosemont Citizens Association, and Deer Park Citizens Association.

Response: The construction of I-370 between I-270 and the Metro Access Road is a vital component in the Metro access system. In addition to serving park and ride trips, I-370 will be used by Metrorail patrons who "kiss and ride" and use buses to reach the station. Beyond its objective of providing Metro access, I-370 will reduce traffic congestion in the Shady Grove area and increase local and state tax revenues and employment opportunities.

Comment: Maryland SHA should consider an alternative which provides a limited interchange at I-270 at the Alternate 3 locations, an overpass for I-370 over MD 355 with no exits or intersections with Oakmont Avenue or Crabbs Branch Way, and a limited interchange with Shady Grove Road east of the Metro Station. As a result of these modifications, the proposed I-370 Metro Access Road could be limited to only two lanes, one-way in from 6:00 a.m. to 9:00 a.m. and one way out from 4:00 p.m. to 7:00 p.m., with two ways at other times.

Raised by: The Needwood Civic Association.

Response: This alternative was studied but was not considered reasonable since it

would not adequately serve traffic demand.

3. DRAFT EIS AGENCY COMMENTS

The agencies (federal, state, regional and local) from whom Draft EIS comments were solicited and received are reproduced on the following pages and arranged chronologically by level of government. Nineteen letters were received. Each substantive comment in each letter is identified by a comment number in the right margin of the letter, and responses are correspondingly numbered and set forth to the page at right or following the letter. The responses are either complete in themselves or provide appropriate reference to material contained elsewhere in the document.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

MAR 16 1982

Mr. William F. Schneider, Jr., Chief
Bureau of Project Planning (Room 310)
Maryland State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21201

Re: I-370 from I-270 to Metro Station at Shady Grove Road, Montgomery County, Maryland

Dear Mr. Schneider:

We have reviewed the draft Environmental Impact Statement for the above-proposed project and have classified it as LO-2 in EPA's Reference Category. We have enclosed a copy of the Definition of Codes for the General Nature of EPA Comments to provide a more detailed description of this rating.

-162-

While we have no specific concerns over the air and noise impacts resulting from the facility, we do have some concern with the proposed 1200 ft. channel relocation of Mill Creek. 1)

The EIS has adequately demonstrated that this channel relocation is unavoidable if alternative 3C, 3D, or 3E is selected. However, the EIS has not demonstrated that adequate consideration has been given to mitigating the adverse impacts that may result from this stream relocation. We believe that the relocated channel should be designed with the appropriate features which will enhance its recovery, i.e. - meanders, riffles, pools, shading, etc. The draft EIS has indicated that mitigation measures to minimize the impacts of the relocation will be included into the design of the new channel, but it has not given specific details of the mitigation measures that will be used. The final EIS should provide this information. 2)

We hope that these comments will assist you in meeting your NEPA responsibilities. If you have any questions, or if we can be of further assistance, please contact us at any time.

Sincerely yours,

Peter N. Bibko
Regional Administrator

Enclosure

Environmental Protection Agency (3/10/82)

RESPONSES

1) The need to relocate 1200 feet of Mill Creek has been re-evaluated, and this section of the selected alternate has been redesigned to eliminate the relocation of Mill Creek and limit relocation effects to a 500-foot portion of a minor tributary.

2) Appropriate measures will be incorporated into the final design for the selected alternate in accordance with SHA's adopted erosion and sediment control procedures. Such measures are subject to approval by Maryland DNR prior to construction and to monitoring by DNR during construction.

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

REPLY TO ATTENTION OF:

NABPL-E

18 MAR 1982

Mr. Wm F. Schneider, Jr.
Chief
Bureau of Project Planning (Room 310)
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21201

Dear Mr. Schneider:

1 This letter is in response to your Draft Environmental Impact Statement,
63 Interstate Route 370, dated 25 February 1982. Comments are directed towards tha
1 six alternatives under consideration for the proposed construction which will extend from Interstate 270 to the Shady Grove Metro Station Access Road.

This agency's areas of concern are flood control hazard potentials, permit requirements under Section 404 of the Clean Water Act, Sections 9, 10, and 13 of the River and Harbor Act of 1899, and other direct and indirect impacts on Corps of Engineers' existing and/or proposed projects.

The Flood Plain Management Services Program is the Corps' means of using its technical expertise in floodplain management matters to help those outside the Corps, both Federal and non-Federal, to deal with floods and floodplain related matters. Section 206 of the Flood Control Act of 1960, as amended, provides the authority for this program. The subject DEIS provides sufficient floodplain related information concerning the project and potential adverse impacts from encroachments on the floodplains.

The discharge of fill material for stream crossings and relocations associated with tha various alternatives for this project is authorized under the provisions of a Department of the Army Nationwide permit (33 CFR 323.4-2), as published on 19 July 1977 in the Federal Register. Further information regarding the Clean Water Act Section 404 as it relates to your project can be obtained by contacting Walt Washington of our Operations Division at (301) 962-3477.

It has been determined that there are no existing and/or proposed Corps' projects within the proposed construction locale which would become adversely impacted due to construction.

NABPL-E
Mr. Wm F. Schneider, Jr.

18 MAR 1982

The Baltimore District appreciates the opportunity to comment on your DEIS and is looking forward to the review of the final statement. If we can be of further assistance, please do not hesitate to contact either Mr. Rick Popino or Mr. Larry Lower of my staff at (301) 962-2558.

Sincerely,

Harold L. Nelson

HAROLD L. NELSON
Chief, Planning Division

Baltimore District Corps of Engineers (3/18/82)

RESPONSE

No response required.

1-63

U.S. Department of Transportation
Urban Mass Transportation Administration

Region III
Pennsylvania, D.C., Delaware, Maryland, West Virginia, Virginia

434 Walnut Street
Suite 1010
Philadelphia, PA 19106

March 24, 1982

Mr. William F. Schneider, Jr., Chief
Bureau of Project Planning, Room 310
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21201

I-370

RE: Draft Environmental Impact Statement (EIS)/4(F) Evaluation
I-270 to Metro Station at
Shady Grove Road

Dear Mr. Schneider:

164-1 UMTA has received the Draft EIS and has no comments.

Please note, however, that future documents should be forwarded to:

Peter N. Stowell
Regional Administrator
Urban Mass Transportation Administration
434 Walnut Street, Suite 1010
Philadelphia, Pennsylvania 19106

Sincerely,

Sheldon A. Kinbar
Director, Office of Planning Assistance

Urban Mass Transportation Administration (3/24/82)

RESPONSE

No response required.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

MAR 24 1982

Mr. Louis H. Ege, Jr., Acting Chief
Environmental Management
Bureau of Project Planning (Room 310)
State Highway Administration
707 N. Calvert Street
Baltimore, Maryland 21202

Re: I-370, I-270 to Shady Grove Metro Access Road, Montgomery County, MD

Dear Mr. Ege:

I-165- We reviewed the Draft Air Quality Analysis for the above referenced project. Based upon this review, we have no objection to the project from an air quality standpoint.

If you have any questions, or if we can be of further assistance, please contact us.

Sincerely yours,

John R. Pomponio, Chief
EIS & Wetlands Review Section

Environmental Protection Agency (3/24/82)

RESPONSE

No response required.

U.S. Department of Transportation
Office of the Secretary of Transportation

Memorandum

Subject: Draft Environmental Impact Statement: Highway Project, Section 4(f) Statement, I-370, Montgomery County, Maryland, FHWA-MD-EIS-82-01-D

Date: MAR 28 1982

From: Joseph Canny, Deputy Director for Environment and Policy Review, P-32

Reply to Attn. of

To Chief, Environmental Programs Division
Federal Highway Administration, FHWA/HEV-10

We appreciate the opportunity to review and comment on this draft environmental impact statement. We have no specific comments to offer on the statement.

We would appreciate receiving a copy of the final environmental impact statement.

-166-

U.S D.O.T. Office of the Secretary (3/28/82)

RESPONSES

No response required.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Services Division
Habitat Protection Branch
7 Pleasant Street
Gloucester, Massachusetts 01930-3799

MAR 30 1982

Mr. Wm. F. Schneider, Jr., Chief
Bureau of Project Planning (Room 310)
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21201

Dear Mr. Schneider:

The National Marine Fisheries Service has reviewed the Draft Environmental Impact Statement/4(F) Evaluation for I-270 to Metro Station at Shady Grove Road, Montgomery County, Maryland. The proposed action should not affect resources for which we bear responsibility. We, therefore, have no comments.

Sincerely,

Ruth Rehfus

Ruth O. Rehfus
Branch Chief

-167-

NOAA National Marine Fisheries Service (3/30/82)

RESPONSE

No response required.

Federal Emergency Management Agency

Region III 6th & Walnut Streets Philadelphia, Pennsylvania 19106

MAR 3 1 1982

Mr. Ray Gingrich, District Engineer
Federal Highway Administration
The Rotunda - Suite 220
711 East 40th Street
Baltimore, Maryland 21211

RE: Draft EIS
Gaithersburg, MD

Dear Mr. Gingrich:

We have received and reviewed the Draft Environmental Impact Statement (EIS) prepared for proposed Interstate I-370 located in Gaithersburg, Montgomery County, Maryland.

Based upon our review of the Draft EIS and as is indicated on page 109 of the report, the proposed development encroaches upon the floodway and flood fringe districts of the 100-year flood plain. The City of Gaithersburg, Montgomery County, Maryland is currently under study by the Federal Emergency Management Agency (FEMA). A detailed engineering Flood Insurance Study (FIS) report and related maps dated February 4, 1982 and prepared by the Maryland Soil Conservation Service (SCS) the Environmental Protection Department of Montgomery County, among others under contract to FEMA, delineates the boundaries and floodway district of the 100-year floodplain, provides profiles and 100-year base flood elevations (BFEs) for the Muddy Branch and Tributaries. The 100-year flood elevations as contained in the (FIS) report are based upon existing topography and development. Please identify and provide the exact location and elevation of the site prior to the proposed development and after the development is to be undertaken. A retaining wall and/or bridge may affect the flood carrying capacity of the floodway and lower or increase flood elevations; the encroachment may: 1)

(1) cause a rise in flood heights
(2) change the BFE information in the FIS report

Therefore, we find the Flood Hazard Evaluation Section of the EIS report inconclusive in the assessment that "... no significant flood hazard would exist ..." as a result of the proposed project. In conclusion, we request that a more detailed technical analysis be forwarded to us for further review. 2)

We appreciated the opportunity to have reviewed the draft EIS and your interest in the National Flood Insurance Program (NFIP).

If you need further clarification of the requested information, please feel free to call us at (215) 597-9581.

Sincerely yours,

John Wm. Brucker
Regional Director

cc: William F. Schneider, Jr.
Margie Whilden

-168-

Federal Emergency Management Agency (3/31/82)

RESPONSES

1) The February 4, 1982, Flood Insurance Study report for Gaithersburg, Maryland, has been reviewed,and the floodplain information showed the same results as the analysis of flood impact contained in the DEIS. The Mnryland SHA has maintained close coordination with Montgomery County throughout the conduct of this study and will continue to incorporate the best available information during the detailed design phase of the project to insure that additional potential flood hazards as a result of the I-370 project at Muddy Branch are minimized.

2) The technical analysis related to the flood hazard evaluation was conducted in accordance with applicable FHWA regulations (FHPM 6-7-3-2). FEMA will be provided with any additional technical floodplain information as it is refined as part of final design.

United States Department of Agriculture
Soil Conservation Service
4321 Hartwick Road
College Park, Maryland
20740

April 14, 1982

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
707 North Calvert Street, Room 310
Baltimore, Maryland 21201

Dear Mr. Schneider:

The following comments are offered in regard to the draft environmental impact statement for Interstate Route 370 in Montgomery County, Maryland.

On page 70 under Prime Farmland, the statement is made that because of its desirable location if the 16 acres of prime farmland were not used for I-370 the area would likely be opened for other development. Page 104 states:

"Twelve acres of active prime farmland will be converted to roadway use by any of the I-370 alternates on new location. This is not considered significant because master planning anticipates development of the entire area...."

1)

The Soil Conservation Service takes strong objection to this type of justification for adverse environmental impacts. Instead of explaining away impacts by stating they would occur regardless of the planned work, the environmental impact statement (EIS) should clearly state what losses of prime farmland will occur as a result of the planned action. Consequences of these losses, such as agricultural production foregone and displacement of farm operators, should also be detailed.

2)

The draft EIS also states on page 104:

"Regardless of the alternate selected for implementation, appropriate erosion and sediment control and stormwater management measures will be stringently employed, as required by ... the U. S. Soil Conservation Service."

The statement is incorrect and "the U. S. Soil Conservation Service" should be deleted from the sentence.

3)

If we can be of any further assistance, please contact our office.

Sincerely,

David P. Dan

GERALD R. CALHOUN
State Conservationist

cc: P. C. Myers, Chief, SCS, Washington, D. C.
R. R. Brush, DC, Rockville, Maryland

SCS-AS-1
10-79

USDA Soil Conservation Service (4/14/82)

RESPONSES

1) The parcel addressed consists of 16 acres, 12 acres of which is prime farmland. This parcel is currently in corn production.

2) Based on crop yields from the Montgomery County, Maryland SCS Soil Survey, it is estimated that 650 bu/yr. of corn production would be lost from the 12 acres of prime farmland. While this parcel will no longer be used for crop production following highway construction, no farm operators will be displaced. "This is not considered significant because" has been deleted in the Final EIS.

3) "U.S. Soil Conservation Service" has been deleted in the Final EIS.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
PHILADELPHIA REGIONAL OFFICE
CURTIS BUILDING, SIXTH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

REGION III

IN REPLY REFER TO

APR 3 0 1982

Mr. William F. Schneider, Jr.
Chief
Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21201

Dear Mr. Schneider:

In response to your request we have completed our review of the Draft Environmental Impact Statement for I-370 from I-270 to the Shady Grove Metro Station Access Road in Montgomery County and offer the following comments.

170-

1. In addition to providing access from the I-270 corridor to the Shady Grove Metro Station, I-370 is intended to facilitate an expansion of commercial and industrial development in the area. The preferred alternative (3E), which is the most expensive, is identified in Table 5-1 as offering the potential for generating 38,200 new employees. On p. 94, the discussion of fiscal effects indicates that the preferred alternative would generate approximately $9.7 million in additional property tax revenue. While this figure is not disputed, it conveys a misimpression of the actual fiscal benefit by ignoring post-development costs. As the most expensive alternative it seems reasonable to expect that debt retirement and ongoing highway maintenance, at the very least, are off-setting costs which should be considered if economic benefits are cited as part of the project analysis. It is recommended, therefore, that for purposes of an objective treatment, post-development costs should also be determined so that fiscal gains can be expressed in net terms in the Final EIS, and thereby provide a better basis for selecting among alternatives. 1)

2. Closely related to the point raised in the preceding comment is the fact that despite contributing to a very substantial amount of commercial and industrial development, no attention (except for that related to transportation) is given in the DEIS to the indirect

Department of Housing and Urban Development (4/30/82)

RESPONSES

1) No state debt retirement costs will be incurred as a result of this project. Routine annual maintenance will cost $8500. To pay for the necessary resurfacing every ten years, $136,000 (in current dollars) will be invested in a sinking fund yearly for nine years at 10% interest. Not considered in any of these analyses are time savings, utilization costs, increased ridership and economies of scale associated with the capital expenditure made for the Shady Grove Metro Line. If these considerations were defined in dollar amounts and considered in the above cost benefit analysis, they would further support the construction of I-370. Also it should noted that many of the additional facilities normally needed to support development in the area are already present, and public investment in these facilities would be jeopardized without I-370.

consequences of this stimulated growth upon infraatructure, public servicea and facilitiea. An analyaia of theae indirect impacts of I-370 should be included in the Final EIS, including as well the additional coat, if any, of providing the facilitiea and services that may be required by the many new industrial and commercial establishments and whatever additional growth they foster. 2)

Thank you for the opportunity to comment.

Sincerely,

Thomas J. Gola
Regional Administrator, 3S

Department of Housing and Urban Development (cont'd.)

RESPONSES

2) The Montgomery County Government has promoted an active planning process in the I-270 corridor area that dates from the early 1960's. These plans have consistently promoted this area for intensive commercial, employment and residential development centers conveniently located to both highway access and mass rail transit access. As part of this planning process, the Planning Board has evaluated and documented the fiscal impact of particular mixes of uses and densities, and the results of these studies are available for public review. These existing studies adequately address the issue of the cost of community services to provide for projected development. In the past, Montgomery County has provided a basic service structure in anticipation of significant future development. Most of the capital costs of these services, such as sewer lines and school buildings, have been paid, and these facilities are in place, necessitating only marginal increases in operating costs to serve new growth. However, there would be substantial adverse impact on prior investment in facilities and planning effort if I-370 is not implemented.

190

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In Reply Refer To:
ER 82/399

MAY 10 1982

RECEIVED

MAY 1982

DIRECTOR, OFFICE OF
PLANNING & PRELIMINARY ENGINEERING

Mr. Emil Elinsky
Division Administrator
Federal Highway Administration
711 West 40th Street
Baltimore, Maryland 21201

Dear Mr. Elinsky:

This is in response to the request for tha Department of the Interior's comments on the draft environmental/Section 4(f) statement for I-370 (from I-270 to the Shady Grove Metro Station), Montgomery County, Maryland.

SECTION 4(f) STATEMENT COMMENTS

We concur that there is no feesible and prudent alternative to the use of Muddy Branch Park and Summit Hall Park for the proposed project, under preferred Alternative 3E. We also concur that all possible planning has been done to minimize harm, as described on page 150 of the statement. The final measures to minimize harm should be coordinated with and approved by the Gaithersburg Parks Department, and evidence to that effect should be documented in the final Section 4(f) statement. We also racommend that the proposed bike treil from Casey Barns in Rosemont Park through to Summit Hall Perk be developed at highway expensa. In addition, we recommend thet serious consideration be given to developing a commuter bike trail elong the proposed highway right-of-way. 1)

ENVIRONMENTAL STATEMENT COMMENTS

We believe that the discussion of natural areas (p. 109) fails to fairly avaluate the remnant trects. In this particular area, we would concur that the wildlife habitats are not unique, outstanding or spectacular. However, they are the only erees for what little wildlife remains and as such represent the best areas evailable. For peopla living in the vicinity, these areas provide a pleasant buffer whare some wild animals can be saen and the built environment excluded. 2)

Department of Interior (5/10/82)

RESPONSES

1) Following the public hearing, the interchange at I-270 for the selected action was re-evaluated and subsequently redesigned to eliminate entirely any Section 4(f) involvement with either the Muddy Branch Park or Summit Hall Park. Due to cost and right-of-way limitations, a bicycle trail was not considered practical as part of this project.

2) These natural areas do represent the best habitat available in the immediate vicinity as was stated on page 111 of the Draft EIS. However, the only one of these areas directly affected by the proposed project is privately owned, zoned for residential or light industry, and is not slated for park acquisition. If I-370 is not built, this area would likely be developed and would, thus, be lost regardless.

The stetement does not indicete that e Section 404 permit will be required from the Corps of Engineers for stream channelization. Being headwater streams, permits may not be needed. However, if permits are needed, the U.S. Fish and Wildlife Service (FWS) informs us that they would not comment favorably on the permit applications since no mitigation plan has been provided. A mitigation plan should be developed and included in the finel statement if one of the number 3 alternatives is selected. The FWS suggests, as a minimum, a plan for meandered channel, pool-riffle placement, a vegetation scheme for the banks and adjacent areas, and a storm water management plan. 3).

The statement indicates that application of available erosion control technology will prevent water quality degradation. It is the FWS's experience that rarely, if ever, do the contractors install or the inspectors require even the most basic or rudimentary controls. Deposition of silt into streems and wetlends is extensive and the impacts ere long-lived. The FWS, therefore, urges that erosion control measures be specified in detail in the final statement and that appropriate assurances be given that euch measures will be implemented. 4)

For technical assistance regarding the above fish and wildlife issues, please contact the Area Maneger, Delmarva Area Office, U.S. Fish and Wildlife Service, 1825 Virginia Street, Annapolis, Maryland 21401 (Phone: FTS 922-4197 or Commercial 301-269-6324).

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SUMMARY COMMENTS

Contingent upon a firm commitment to implement the measures to minimize harm to Section 4(f) lands, es discussed above, the Department of the Interior would have no objection to Section 4(f) epproval of this project.

We appreciate the opportunity to provide these comments.

Sincerely,

Bruce Blancherd, Direotor
Environmental Project Review

oo: Mr. Hel Kassoff
Director
Maryland Department of Trensportation
P.O. Box 717
707 North Celvert Street
Baltimore, Maryland 21203

Department of Interior (cont'd.)

RESPONSES

3) As the drainage area for this stream is substentially under five square miles, no individual Section 404 permit will be required from the Corps of Engineers. In eddition, this area of the alignment for the selected action has been redesigned to substantially reduce the need for stream channelization.

4) Effective erosion control measures can only be specified in detail as part of the development of detailed design for the selected action. This effort will not be initiated until after the circulation of the FEIS. However, the SHA has committed itself to its adopted sediment and erosion control program wherein detailed plans for grading, erosion and sediment control, and stormwater management will be developed by SHA, reviewed and approved by Maryland DNR, implemented as part of construction, and monitored by DNR. These specific measures will be set forth in the construction documents.

THOMAS C. ANDREWS
DIRECTOR

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
WATER RESOURCES ADMINISTRATION
TAWES STATE OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401
(301) 269-3846

April 5, 1982

MEMORANDUM

TO: James W. McConnaughhay
Director, State Clearinghouse

VIA: Michael J. Nelson
Department of Natural Resources

FROM: Karen L. Pushkar
Water Resources Administration

SUBJ: State Clearinghouse Control Number 82-3-374
Draft EIS - I-370 from I-270 to Shady Grove
Metro Station (Montgomery County)

The above referenced project has been reviewed by the Department of Natural Resources and the following comments are submitted for your use.

WATER RESOURCES ADMINISTRATION

1. The following alternates are [illegible] preferences:

a - A1 - No build
b - A2C
A2D
c - 3C - 2 stream relocations
3E
d - 3D - 3 stream relocations

2. All of the above except the 'no build' alternate would require the necessary review in accordance with Sections 8-1105 and 8-905 of the Natural Resources Article, Annotated Code of Maryland in regards to methods of sediment pollution control and stormwater management. 1)

3. Waterway construction permits would be required for the stream relocations of alternates 3C, 3E and 3D. 2)

TTY for Deal - Baltimore 269-2609, Washington Metro 565-0450

-174-

Maryland DNR Water Resources Administration (4/5/82)

RESPONSES

1) Appropriate measures will be incorporated into the final design for the selected alternate in accordance with SHA's adopted erosion and sediment control procedures. Such measures are subject to approval by Maryland DNR prior to construction and to monitoring by DNR during construction.

2) The necessary permits will be obtained during the development of final design for the selected alternate.

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CAPITAL PROGRAMS ADMINISTRATION

1. Stream Relocation - Muddy Branch enters the Potomac River in Montgomery County. This stretch of the Potomac is designated as one of Maryland's Scenic Rivers. The preferred alternative will result in a net loss of 380 feet of natural stream channel from a tributary of Muddy Branch. Although this section of the stream is approximately five miles from the Potomac, I must emphasize the importance of minimizing damage to water quality and natural habitats during the relocation stage. 3)

2. Sedimentation - Approximately 75% of the sedimentation caused by construction will enter tributaries that eventually enter the Potomac River in Montgomery County. Strict adherence to sediment control regulations must be maintained in order to minimize adverse environmental impacts. 4)

WILDLIFE ADMINISTRATION

1. Effort should be made to replicate stream substrate of the proposed relocated section (1500 feet) of Mill Creek to protect its designated trout stream potential. The use of native materials from the original streambed should be considered. 5)

KLP

Maryland DNR Water Resources Administration (cont'd.)

RESPONSES

3) This stream channel is not directly affected by Alternate 3E Modified. The net loss of 380 feet of stream channel would only have occurred under Alternate 3D which was not selected for the proposed action.

4) See response to 1) above.

5) Realignment of the curve at the eastern end of the selected alternate leaves the main branch of Mill Creek undisturbed, but requires relocation of about 500 feet of an already heavily modified minor tributary behind the shopping center parking lot. Appropriate measures will be included in the design of this minor channel relocation to prevent further deterioration of Mill Creek itself.

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State of Maryland

REGIONAL INSTITUTE FOR CHILDREN AND ADOLESCENTS - ROCKVILLE
15000 BROSCHART ROAD • ROCKVILLE, MARYLAND 20850 • Area Code 301 • 251-6824

April 12, 1982

Mr. F. Bryan Gatch
Administrative Officer
State Clearinghouse
Department of State Planning
301 West Preston Street
Baltimore, MD 21201

Dear Mr. Gatch:

CLEARINGHOUSE # 82-3-374 DRAFT EIS MONTGOMERY COUNTY

I-176 I have reviewed the draft environmental statement, and the proposed locations of I-370 would appear not to have any direct impact on our program. I do have concern about the proposed arterials that would feed into the system, i.e., Great Seneca Highway and Key West Avenue. The location of RICA-Rockville in relation to these two roads would appear to present both a safety and a noise problem. Both of these roads would apparently carry a significant load of traffic to the Shady Grove Metro and to the I-370 proposed route. To the best of my knowledge, considerations have not been made either by the county and/or state Departments of Transportation to erect safety and/or noise barriers. 1)

Thank you for the opportunity to comment on the proposal. If you have any questions, please feel free to contact me.

Sincerely,

George B. Warner

George B. Warner
Associate Administrator

GBW:jaf

cc: Betsy Barnard
Irv Klein

Regional Institute for Children and Adolescents - Rockville (4/12/82)

RESPONSES

1) The property in question is too far removed from I-370 for any direct noise impacts. However, any impacts resulting from the Great Seneca Highway will be addressed as part of the Draft EIS for that project.

MARYLAND
DEPARTMENT OF STATE PLANNING
301 W. PRESTON STREET
BALTIMORE, MARYLAND 21201

HARRY HUGHES
GOVERNOR

CONSTANCE LIEDER
SECRETARY

April 27, 1982

RECEIVED

APR 28 1982

DIRECTOR, OFFICE OF PLANNING & PRELIM. ENGINEERING

Mr. Hal Kassoff, Director
Office of Planning and Preliminary Engineering
Department of Transportation
State Highway Administration
P.O. Box 717, 707 North Calvert St.
Baltimore, Maryland 21203-0717

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) REVIEW

Applicant: State Highway Administration

Project: Draft EIS - I-370 from I-270 to Metro Station at Shady Grove Road (Montgomery County)
Contract #M248-000-312 FAP #I-370-1(1)0

State Clearinghouse Control Number: 82-3-374

State Clearinghouse Contact: James McConnaughhay (383-7875)

I-177-I

Dear Mr. Kassoff:

The State Clearinghouse has reviewed the above statement. In accordance with the procedures established by the Office of Management and Budget Circular A-95, the State Clearinghouse received comments from the following:

Department of Agriculture, Department of Public Safety and Correctional Services, Department of Budget and Fiscal Planning, Office of Environmental Programs, Interagency Committee for Public School Construction, Department of General Services, Department of Education and our staff noted that the project appears to cover those areas of interest to their agencies.

Department of Economic and Community Development advised that their Historical Trust section is coordinating with the applicant regarding compliance with the National Historic Preservation Act. 1)

Department of Natural Resources listed (copy attached) the alternates in the order of their agency's preference and provided information in the requirements for sediment control and stormwater management, waterway construction permits and measures necessary to minimize damage to water quality and natural habitata.

Department of Health and Mental Hygiene - Office of Planning provided comments (copy attached) from the Regional Institute for Children and Adolescents - Rockville regarding potential safety and noise problems for their facility resulting from the proposed road project.

TELEPHONE: 301-383-7875
OFFICE OF STATE CLEARINGHOUSE

Montgomery County verbally advised that the project is hasically in conformance with their plans, but requested that the applicant maintain close coordination with the County's Department of Environmental Protection in order to insure that the proposed mitigating measures for water quality are sufficient. Also, the anticipated noise levels imports near site 16 - the Brighton East and West Townhouses - appear to be undesirable. Written comments form the County will be forwarded.

The comments made in this review should be considered and addressed in the development of the Final EIS for the proposal. Your agency's attention to the A-95 review process is appreciated and we look forward to continued cooperation with your agency.

Sincerely,

James W. McConnaughhay
Director, State Clearinghouse

cc: Thomas Schmidt
David Ricker
H.E. Binks
William Foy
Earl Seboda
Betsy Barnard
George Warner
Irvin Klein
Nancy King
Lowell Frederick
Clyde Pyers
Herbert Sachs
Max Eisenberg
Jeff Bresee
Walter Scheiber
Reginald Griffith

JMc:BG:pm

Maryland Department of State Planning (4/27/82)

RESPONSES

1) Separate responses to these comments are provided with the following individual letters from each of these agencies.

Maryland Historical Trust

April 28, 1982

Mr. William F. Schneider, Jr., Chief
Bureau of Project Planning
State Highway Administration
707 North Calvert Street, Room 310
Baltimore, Maryland 21202

Dear Mr. Schneider:

One of our archeologists, Dr. Pheriba Stacy, has reviewed the draft EIS for Interstate 370, and the following letter includes her comments:

-178-

If a "build" alternate is selected, the Final Environmental Impact Statement should include a copy of my letter (enclosed) of December 16, 1981, to Louis H. Ege at the State Highway Administration. The letter states that additional archeological work for the project is unneccessary, except for the limited monitoring program recommended. The final EIS should be modified to include provisions for monitoring by an archeologist. 1)

Thank you for the opportunity to comment on the draft EIS for Interstate I-370.

Sincerely,

J. Rodney Little
Director/State Historic
Preservation Officer

JRL/WEC/VPS/mf

cc: Mr. Dennis Curry
Ms. Rita Suffness
Mr. Ronald Anzalone

Enclosure

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301)269-2212, 269-2438
Department of Economic and Community Development

Maryland Historical Trust (4/28/82)

RESPONSES

1) Construction activities for the selected alternate will be monitored by archeologist from the Division of Archeology in order to insure that MHT interests are protected. A copy of MHT's letter of December 16, 1981 is included in Appendix C of this document.

Montgomery County Government

April 14, 1982

Mr. Hal Kassoff, Director
Office of Planning and
Preliminary Engineering
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203

Dear Mr. Kassoff:

Attached is a memorandum containing technical comments from our Traffic Engineering Division relative to the I-370 Draft Environmental Impact Statement (DEIS). In addition, we have the following transportation remarks about what we feel to be an extensive and comprehensive analysis of a very significant transportation project.

1. In Table III-4, we suggest that the cost of the capital projects listed be included. In particular, we wish to point out the considerable Montgomery County investment which has been programmed to upgrade the existing transportation network in the Shady Grove area as outlined on p. 63 of the DEIS. 1)

2. We assume that the frontage road shown for Alternate 3D to service local businesses on the north side of Shady Grove Road opposite Choke Cherry Road should be included on Figure II-11 which depicts preferred Alternate 3E. 2)

3. The development impacts associated with the various improvement Alternatives as described on pages 92 and 93 we found somewhat difficult to follow. Understandably some of this difficulty results from the difficult task of comparing impacts under currently-adopted land use as well as that proposed in the Staff Draft Gaithersburg Master Plan. Given the vital implications of the various Alternatives, however, we suggest that this section be reviewed for clarity. 3)

4. We suggest that the land use associated with all Alternatives in Table IV-5 be indicated, along with the LOS and Delay which would result at the locations listed. 4)

RECEIVED
APR 1982
PLANNING & PRELIMINARY ENGINEERING

Department of Transportation, Office of Transportation Planning
Executive Office Building, 101 Monroe Street, Rockville, Maryland 20850, 301/251-2145, TTY 279-1083

-179-

Montgomery County, J. J. Clark, Director, Office of Transportation Planning (4/14/82)

RESPONSES

1) Montgomery County has programmed transportation network improvements in the Shady Grove Area which are projected to cost $40 million. This is discussed in Section I of the FEIS in lieu of making extensive additions to Table III-4.

2) The frontage road is included within the No-Build Alternate and is therefore considered as part of all alternates. The figures have been revised to reflect this.

3) The pages in question have been reviewed for clarity and revised.

4) An additional footnote has been added to Table IV-5 to indicate the land use assumptions for each of the alternates presented. LOS and delay are presented as separate and distinct transportation descriptors in the text.

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As a general observation, we note the considerable variance in the development levels each of the study Alternates could support, along with the corresponding fiscal implications. We think it important to point out that expanding existing roadways to service the recommended development associated with Alternates 3D or 3E could well result in extensive impacts to the existing land use activity and development/circulation system. 5)

Thank you for the opportunity to submit transportation comments on the I-370 Draft Environmental Impact Statement.

Sincerely,

John J. Clark
Director

JJC:bka

Attachment

RESPONSES

5) According to Council on Environmental Quality (CEQ) NEPA regulations the EIS must consider all reasonable alternatives to the proposed action. Those alternates analyzed within the I-370 DEIS are fully consistent with CEQ regulations. Expanding Alternates 2C or 2D to provide the same level of traffic capacity and service as Alternates 3D or 3E Modified would result in numerous significant adverse impacts. Such an alternate was not considered reasonable and was eliminated early in the project planning process.

MEMORANDUM

April 1, 1982

TO: John J. Clark, Director
Office of Transportation Planning

VIA: Ronald C. Weike, Chief
Division of Traffic Engineering

FROM: Raymond S. Trout, Chief
Traffic Planning & Survey Section

SUBJECT: I-370 - Environmental Impact Statement (EIS)

In response to your memorandum of March 2, 1982, we have reviewed the subject draft E.I.S. and offer the following comments as referenced to the report.

SECTION II B: Alternatives Developed for Detailed Study

Table II-1 and figure II-1 should reflect pending recommendations to provide both developer and capital improvements to Shady Grove Road from Fields Road to Key West Avenue. | 1)

The discussions and pictorial (figure II-3) relative to Alternates 2C and 2D raise several questions as to the effectiveness of several improvements to Shady Grove Road. These are:

1. The left turn traffic both north and southbound at Choke Cherry Road is shown as sharing a lane with through traffic. This is unworkable given the volume of turning traffic and thus may negate the magnitude of benefit from the proposed physical improvements. | 2)

2. The double left movement shown at Gaither Road (northbound) is into only one lane westbound on Gaither Road. This is not acceptable. | 3)

3. The new northbound lane on Shady Grove Road at Gaither Road will function as a right turn storage lane into Galther Road (a benefit); however, through traffic will be unlikely to use this lane due to its discontinuance north of Comprint Court. | 4)

SECTION III-B: Affected Environment - Transportation

Again, reference should be made to the improvements now being considered to Shady Grove Road between Fields Road and Key West Avenue. The outline of "projects of particular importance to the I-370 study" should include the following: | 5)

Montgomery County, Memorandum from R. S. Trout (4/1/82)

RESPONSES

1) This correction has been made in Table II-1.

2) Capacity analyses indicate that the configuration shown in the DEIS is workable. However, neither Alternate 2C nor 2D was selected for the proposed action.

3) Existing development makes widening of Gaither Road to accommodate a double left turn lane undesirable. However, neither Alternate 2C nor 2D was selected for the proposed action.

4) The right turn volume at Gaither Road will discourage use of the curb lane for through traffic. This is indeed a benefit. Through traffic should not be adversely affected, as there would be sufficient gaps in traffic flow to allow through traffic to merge from four to three lanes.

5) These have been added to Table III-4, County Projects.

1. Flelds Road east of 1-270
2. Galther Road south of Shady Grove Road
3. Gude Drive (City of Rockville)

These projects all have the effect of reducing traffic volume on Shady Grove Road.

We have reviewed the 1980 traffic volumes shown on figure III-5 and found significant dlscrepancies. For lnstance, Shady Grove Road volumes between Research Boulevard and Md. 355 are conslstently high. See the following table:

1980 ADT --- SHADY GROVE ROAD

FROM	TO	EIS	Mont. Co.
Research Blvd.	I-270	20,600(+6.7%)	19,300
1-270	Choke Cherry Rd.	45,000(+5.5%)	42,650
Choke Cherry Rd.	Galther Rd.	42,500(+18.4%)	35,900
Galther Rd.	Md. 355	40,400(+11.8%)	36,150

Also, inconsistent varlatlon in slde street volumes is noted.

LOCATION	EIS	Mont. Co
Research Blvd.	12,600(+54.5%)	8,150
I-270 (W)	81,000(+5.5%)	76,800
I-270(E)	90,000(-5.3%)	95,000
Gaither Rd.(N)	10,500(-17.3%)	12,700
Md. 355 (W)	37,800(+2.7%)	36,800
Md. 355 (E)	34,000(-4.8%)	35,700

We have not reviewed the projected volumes for the years 1986 and 2006; however, the findings of the study are consistent with other reports and projectlons based on land use and traffic growth patterns.

SECTION IV-B: Environmental Consequences - Transportation

Although we are not capable of dolng a thorough analysls of the 2006 trlp asslgnments to the varlous alternatlve systems (shown ln flgures IV-1 to IV-4), we question the lack of the link of Omega Orlve between Research Boulevard and Key West Avenue. This llnk ls important in the overall dlstrlbutlon of traffic south of I-270 and may be related to the drop in volume lndlcated on Shady Grove Road south of Research Boulevard in all the alternatlves.

5)

6)

7)

RESPONSES

6) The traffic analyses in the DEIS were based on 24-hour traffic counts conducted by the State Highway Administration. The differences shown can be accounted for largely by normal daily variations in traffic. Note that these variations do not affect the overall findings of the study.

7) Graphic depiction of the Omega Drive link between Research Boulevard and Key West Avenue was left off DEIS figures. This has been corrected in the FEIS.

In conclusion, we concur that alternates 3D and 3E offer the most desirable traffic service for the projected year 2006 development. The difference between these alternatives relates to non-traffic issues. We will be glad to participate in future discussions regarding this project or the EIS. Thank you for the opportunity to provide this input.

RCW:RST:mjo

0299A

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THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
8787 Georgia Avenue • Silver Spring, Maryland 20910-3760

March 22, 1982

MEMORANDUM

TO: Montgomery County Planning Board

FROM: Montgomery County Planning Staff

SUBJECT: Review of Draft Environmental Impact Statement for I-370 from I-270 to the Shady Grove Metro Station

---

Recommendation:

Planning staff has participated in the study and reviewed the draft Environmental Impact Statement for Interstate Route 370. We are recommending that Alternative 3E, the preferred alternative, be selected by the Maryland Department of Transportation for final design and implementation. This alternative best satisfies the long term planning benefits for highway access and capacity while minimizing and mitigating what could be considered as negative impacts. This alternative is a modified alignment of the master plan alignment.

Discussion:

The Planning Board staff has reviewed the document prepared by the State's consultant on this project. We are pleased to see progress at last concerning this very crucial project. In reviewing the detailed studies performed by the consultant and by weighing the alternatives outlined in this report, it is easy to get lost in the many small-scale assumptions and analyses that have been made. The Planning Board staff feels that there are several major basic facts that the community must keep in mind and wants to focus attention on, which are:

1. The existing conditions along Shady Grove Road and the I-270/Shady Grove Interchange are undesirable. They are undesirable not only from the aspect of technical analysis such as level of service, but from the discomfort and chaos that they cause the average commuter on an almost daily basis. It is clear, and it cannot be overlooked by anybody, that the traffic situation in this section of Montgomery County is beyond the capacity of the existing roads to handle. It should also be recognized that the widening of Shady Grove Road to six lanes and the construction of a parallel bridge at Shady Grove Road and I-270 will reduce but not eliminate the congestion caused by the current development. The completion of approved development in the area will further increase the level of congestion.

2. Another finding that the consultant's report and which we had previously reached, is that the small scale improvement alternative, such as the further widening of Shady Grove Road to eight lanes, simply cannot work. They do not work from a capacity point of view and they do not work at individual intersections. This conclusion was made by the Planning Board and County Council in 1976 at the time the Shady Grove Sector Plan was being prepared. It has been reaffirmed by the consultants in this separate review process.

3. Many decisions have been made based upon the understanding that a road providing the function of I-370 would ultimately be built. The community must remember that this project is not new and goes back to the early 60's. Some of the important projects and developments which were predicated on the existence of I-370 are: a) the Shady Grove Metro Station with its parking lots accommodating 3,000 cars and its proposed bus connection system; b) the County Service Park which includes several major County maintenance facilities; c) the Energy Resource Recovery Facility which will be the central trash collection point in the County; and d) the proposed developments of numerous individual and community facilities up and down the I-270 Corridor. Simply put, I-370 has been viewed as the central rung in the ladder of the I-270 Corridor. Without it, stress on the other parts of the ladder will become severe.

4. If this project is not built, many future development proposals important for the implementation of the County's land use plans and its economic development program will never be able to be developed or will be significantly reduced in scope. Such proposals include the expanded County Medical Center; the development of the Washingtonian property; the development of the King Farm; the development of the DANAC property in the Shady Grove West Opportunity area and the development of the Thomas Farm which is within the City of Rockville's maximum expansion limits.

The overall report by Henningson, Durham and Richardson, specifically the special analysis done by Hammer, Siler, George Associates, points out that several proposals for reduced road construction will severely limit development opportunities in the I-270 Corridor and by severely, we mean severely. According to the report only half of the projected employment growth between 1980 and 2000 would be permitted. Under the no-build alternative, less than 5% of the projected growth to the year 2000 could be reasonably accommodated. The consultant's report further discusses the tax revenues to be derived from development enabled to proceed due to the traffic capacity provided by this project. They are substantial for both the County and the State.

Of course there are several additional studies that must be undertaken. These studies center around the need for additional environmental and design analyses. The attached memorandum describe those environmental and design concerns. However, it should not be lost that this project has been described as crucial by several master plans for the area. Because of the great need for this transportation facility we have urged the County, State and Federal Government to move on this project as expeditiously as is humanly possible. We had hoped that this project would be in place by the time Metro opens in 1984. This obviously is not possible. We are glad that the State is now taking action to bring a better sense of balance to the State and County transportation system in this vital section of the County and the State.

Attachment

The Maryland-National Capital Park and Planning Commission (3/22/82)

RESPONSES

See response to comments in attached memorandum on following pages.

MEMO

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

March 22, 1982

TO: Robert Winick, Chief, Transportation Division

VIA: Jorge A. Valladares, Chief
Environmental Planning Division

FROM: John Galli, Planning Technician

SUBJECT: Review of Draft Environmental Impact Statement for I-370

Staff have carefully reviewed the above-referenced draft. While this study is superior to its predecessor in acknowledging many of the negative environmental impacts associated with this type of project, it does leave several important questions/concerns unaddressed. Specifically, we contend that the following concerns could and should have been addressed in far greater detail:

1. Regarding water quality, the study states, on page 104, that "considering the present condition of the streams, no significant overall adverse impacts ara expected due to the new road". This is a misleading assumption in that no water quality modelling was done, and that many water quality parameters that would or could be affected were never tested by DEP. We recommend that the language in the study be modified to reflect this fact, or that detailed water quality analyses be performed by the consultant; 1)

2. The study did not attempt to estimate the potential soil loss/impact on each of the affected watersheds. As 1.5×10^6 yds^3 of cut, 1.0×10^6 yds^3 of fill, etc... will be required in the project, the potential soil loss in tons/ac./yr./watershed could be exceedingly high. This impact on the stream systems needs far more quantification. 2)

3. The study has downplayed many of the potentially negative impacts to the natural stream systems. For an example, the study has only superficially addressed potential impacts on the Mill Creek stream system and on Lake Needwood; i.e., more runoff, more sediment, more pollutants, loss of stream habitat, etc... impacting these systems. Additionally, the study did not identify the marsh at the head of Lake Needwood as a potentially sensitive area (Rock Creek Flora and Fauna and Rock Creek Functional Master Plan studies); 3)

4. Regarding Redland Road, the study did not address the potential for increased flood impacts (Rock Creek Functional Master Plan indicates 10-50% probability of flooding under existing land use, 50% probability for ultimate); and 4)

5. The study only superficially addressed what the impacts associated with more hydraulically efficient channels and more runoff would have on the downstream channel networks/ecosystems. 5)

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M-NCPPC, Memorandum from John Galli (3/22/82)

RESPONSES

1) Although the constitutents of highway runoff could have adverse impacts on water quality and aquatic organisms, these impacts were not further quantified because water quality monitoring and modeling were determined to be inappropriate to this study. Computer models which were investigated were not appropriate due to low sensitivity of the models to small changes in a watershed such as those resulting from construction and operation of the proposed action. The Water Quality section of Chapter IV of the FEIS has been revised to provide more detail regarding potential water quality impacts.

2) The Water Quality section of Chapter IV of the FEIS has been revised to provide more quantification of potential soil loss impact. The results of this analysis indicate that during construction of the selected alternate, localized stream bank erosion and channel widening in the upper reaches of Muddy Branch, Mill Creek, and Crabbs Branch may occur as well as temporary increases in suspended solids during and immediately following storm events. However, once in place, increased soil loss impacts from the selected alternate are not expected to be significant.

3) It is estimated that 600 tons of sediment would enter Lake Needwood from Mill Creek during construction of Alternate 3 E Modified. With a trap efficiency of 85%, about 510 yd^3 (1.24T/yd^3) would be retained in the lake. This is insignificant compared to the sediment storage capacity of Lake Needwood (550,147 yd^3) and the 100,000 yd^3 which M-NCPPC has dredged from the lake to date.

Given that the sediment load will not be significantly increased by either construction or road-use, the additional effects on the biota would probably be minimal. The marsh at the head of Lake Needwood exists because of the lake's function as a sediment trap. Adding a small amount of sediment is not likely to affect the marsh significantly. It is significant to note that the selected alternate has been realigned to avoid the 1400-foot channel change in Mill Creek.

Furthermore, staff will expect, when detailed project plans have been developed, that the preceding concerns be addressed by fully quantifiable analyses. Should you have any questions, please feel free to contact us.

FJG:JAV:el

cc: N. Baig
E. Ferber

M-NCPPC, Memo from John Galli (cont'd.)

RESPONSES

4) Figure III-6 shows the 100-year floodplain for Crabbs Branch at Redland Road. Mill Creek crosses Redland Road downstream from the study area. Alternates 3 C, 3 D, and 3 E Modified could potentially increase the probability of flooding under existing land use for either of these locations. The increase is already included in the 50% probability, however, because the I-370 alignment is included in the County's Master Plan for ultimate development. Stormwater runoff to Crabbs Branch above Redland Road will occur principally from the large parking lots for the Shady Grove Metro Station, rather than from the relatively pervious, more distant I-370 right-of-way.

5) Page 105 notes that imperviousness within the I-370 right-of-way would be about 37 percent compared to about 60 percent for ultimate development in the rest of the planning sector. Although I-370 could increase runoff over existing conditions, it would have less impact compared to other likely uses for the right-of-way. As concerns increased hydraulic efficiency, redesign avoids the channel change in the main branch of Mill Creek and requires relocation of a far shorter stretch on a minor tributary. Design of the relocated channel will mimic the natural streambed.

NATIONAL CAPITAL PLANNING COMMISSION
1325 G STREET NW.
WASHINGTON, D.C. 20576

IN REPLY REFER TO:
NCPC File No. 1993

APR 7 1982

Mr. R. A. Barnhart
Administrstor
Federal Highway Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Mr. Barnhart:

The National Capital Planning Commision, at its meeting on April 1, 1982, approved the enclosed report to the Federal Highway Administration and the Maryland Department of Transportation on the Draft Environmental Impact Statement on Interstate Route 370 from I-270 to the Shady Grove Metro Station Access Road, Montgomery County, Maryland.

Sincerely,

Reginald W. Griffith
Executive Director

Enclosure

cc: William F. Schneider, Jr.

NATIONAL CAPITAL PLANNING COMMISSION
1325 G STREET NW.
WASHINGTON, D.C. 20576

NCPC File No. 1993

I-370 FROM I-270 TO THE SHADY GROVE METRO STATION
ACCESS ROAD, MONTGOMERY COUNTY, MARYLAND -
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Report to the Federal Highway Adminiatration
and the Maryland Department of Transportation

April 1, 1982

The Commission comments to the Federal Highway Administration and the Maryland Department of Transportation on the Draft Environmental Impact Statement on Interstate Route 370 from I-270 to the Shady Grove Metro Station Access Road, dated February 23, 1982, prepared and submitted by the Maryland Department of Transportation as follows:

The construction of I-370 in accordance with any of the alternatives covered in the Draft Environmental Impact Statement would not involve or affect any Federal properties or facilities and would not have a negative impact on the Federal establishment or other Federal interests in the National Capital Region.

* * *

BACKGROUND AND STAFF EVALUATION

Project Description

The Maryland Department of Transportation has circulated a Draft Environmental Impact Statement on the proposed construction of a roadway, to be called Interstate Route 370, connecting I-270 to the Shady Grove Metro Station now under construction in Montgomery County, Maryland. The new highway would extend 3.4 miles from its western end at Fields Rosd to its eastern connection with the Metro Stations access road. It would have a major interchange with I-270 about one mile north of Shady Grove Road.

The DEIS evaluates six alternatives: a no-build, two that would improve Shady Grove Road and its interchange with I-270, and three on new alignments north of Grove Road. The preferred alignment, called "3E" in the DEIS would be a limited access four-to six lane highway extending from Fields Road to the Metro Station access road east of Maryland Route 355. It would have an interchange with directional ramps at I-270, and grade separated interchanges at Rockville Pike (Md 355) and Shady Grove Road where it would connect directly into the Metro Station access road.

Other similar "build" alternates on new alignment are identified as 3C and 3D. Alternate 3C would have the same alignment as 3E, but would have a cloverleaf interchange at I-270. Alternate 3D would have the same interchange at I-270 as 3E, but would have a different alignment west of Rockville Pike where it would invade more of Rosemont Park and displace more residences but fewer businesses.

The alternates 2C and 2D, which would improve Shady Grove Road and grade separate the Rockville Pike intersection, are similar except for the design of the I-270 interchange. The no-build alternate would include only routine maintenance and scheduled improvements to local roads. This would include widening Shady Grove Road to six lanes and improvements to its interchange with I-270, scheduled for FY 1983.

Projected capital costs for the project are $21.3 and $24.0 million for Alternates 2C and 2D, and $90.3, $109.7 and $114.1 million for 3C, 3D and 3E, respectively.

The Maryland Department of Transportation has scheduled a location/deaign hearing on the project for March 30, 1982.

Environmental Impsct

The alignment of the preferred alternate, 3E, would displace 10 families and 36 businesses, compared to 46 families and two buainesses for Alternate 3D. 3D has a more severe impact on parkland, particularly Rosemont Park, a City of Gaithersburg facility. None of the alternatives would affect historic properties or archeological sites.

All of the new alignments, 3C, 3D and 3E would requirs stream relocation, and some streams will be placed in culverts. These would result in the loss of about 100 feet of open channel length.

Based on consultations with representativea of ths U.S. Fish and Wildlifs Service and Maryland DNR, the channel modifications are not considered significant because the distances are relatively short, the streams drain small areas (less than 200 acres), the channels are narrow (less than 10 feet), and portions of the stream beds have already been altered by erosion, grading, and/or sewer construction

In consultations with representatives of the U.S. Fish and Wildlife Service regional office in Annapolis, Maryland, concerning the proposed I-370 Alternates and possible channel modifications, no particulsr concern was expressed regarding potentisl adverse biological effects to streams in the study area.

Analyais of noise impacts gives locations where mitigation measures are needed to protect adjacent properties. Where feasible, noise walls will be included in the project. This would result in four aites having noise levels exceeding Federal design levels for the preferred 3E alternative. This is the same impact that would be found in all of the alternates, including the no-build.

None of the alternates would exceed standards for air quality CO concentrations.

Federal Interest Evaluation

There are no Federal properties affected by any of the alternates described in the DEIS, nor is there any wetland or floodplain involvement which would be contrary to Executive Order 11990, or to the Environmental Element of the Comprehensive Plan, Section 328.00, Environmentally Sensitive Areas.

The construction of I-370 could have a positive impact on efficiency of Federal employee travel by enhancing access to the Shady Grove Metro Station and thence to Federal Employment sites in Montgomery County and the District of Columbia for those employees who reside in Upper Montgomery County and beyond. It also would provide an opportunity for improved access to the National Bureau of Standards by way of I-370, Fields Road and Muddy Branch Road for those employees who live south of the site. Such an access, if provided by a shuttle bus route, could reduce the pressure on I-270 and the interchanges to the north which now serve the National Bureau of Standards.

National Capital Planning Commission (4/7/82)

RESPONSE

No response required.

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metropolitan washington
COUNCIL OF GOVERNMENTS
1875 Eye Street, N.W., Suite 200, Washington, D.C. 20006 223-6800

COG #23

ES —
D.1 —

A-95 METROPOLITAN CLEARINGHOUSE MEMORANDUM

DATE: May 21, 1982
(revision of 4/14/82)

TO: Mr. Roy Gingrich, District Engineer
Federal Highway Administration
The Rotunda - Suite 220
711 East 40th Street
Baltimore, Maryland 21211

SUBJECT: PROJECT NOTIFICATION AND REVIEW FOR

PROJECT: Draft Environmental Statement--I-370 from I-270 to Shady Grove Metro Station--Montgomery County/Rockville/Gaithersburg
COG NO.: 82-02-013
APPLICANT: U.S. Department of Transportation/Maryland Department of Transportation

The project title, COG number, and applicant's name should be used in all correspondence with COG concerning this project. Correspondence should be addressed to Mr. Walter A. Scheiber, Executive Director. The staff may be reached by telephone at 223-6800.

FINAL DISPOSITION

☐ We have concluded review of the above item and have determined that its nature does not warrant metropolitan comments. A copy of this memorandum and any attachments should accompany your application to indicate that the Metropolitan Clearinghouse review has been completed.

☐ A copy of the above item has been sent to _____ for review and comment, with direct response to be made by _____. Copies of any local agency comments which you receive should also accompany your application to the Federal agency.

☐ We have concluded review of the above item and have determined that it is in general accord with the metropolitan planning process and COG's adopted policies. A copy of this memorandum and any attachments should accompany your application to indicate that the Metropolitan Clearinghouse review has been completed.

☒ We have concluded review of the above item and submit herewith, the attached Metropolitan Clearinghouse Review Comments. A copy of this memorandum and the attached comments should accompany your application when submitted to the Federal agency to indicate that the Metropolitan Clearinghouse review has been completed.

WAS(...)
EXECUTIVE DIRECTOR

WE APPRECIATE YOUR COOPERATION

Clearinghouse review comments will be valid for a period of two years from the date of this A-95 Metropolitan Clearinghouse Memorandum. All projects not submitted to the Federal funding agency within that period must be resubmitted to the Clearinghouse for update of the review comments before formal application is made to the Federal Government.

metropolitan washington
COUNCIL OF GOVERNMENTS
1875 Eye Street, N.W., Suite 200, Washington, D.C. 20006 223-6800

May 20, 1982

METROPOLITAN CLEARINGHOUSE REVIEW COMMENTS

COG PROJECT NUMBER:	82-02-013
PROJECT NAME:	Draft Environmental Impact Statement (D-EIS) Section 4(F) Evaluation Interstate Route 370 From I-370 to Shady Grove Metro Station Access Road, Montgomery County, Maryland
APPLICANT:	U.S. Department of Transportation; Federal Highway Administration; and the Maryland Department of Transportation, State Highway Administration (SHA)
FEDERAL AGENCY:	U.S. DOT/FHWA
FEDERAL PROGRAM:	Submitted Pursuant to 42 U.S.C. 4332(2)(C), 23 U.S.C. 128(a)

PROJECT DESCRIPTION:

The D-EIS and Section (4) Evaluation has been prepared in support of an intended action to construct an Interstate Highway (I-370) in Montgomery County between the vicinity of I-270 north of Shady Grove Road Interchange and the Shady Grove Metrorail Station.

The SHA's preferred alternate would follow a general alignment from the I-270 corridor easterly about 3.4 miles to the intersection of the Metro Station access road and Shady Grove Road. The Shady Grove A-Route terminal station has been designed to accommodate the automobile as the principal major access/egress mode.

The project would extend from Fields Road easterly across I-270 (interchange) to the Metro Access Road (see Figure 1-2).

As a result of the project planning phase of the corridor study, six (6) alternates have been studied in some detail. These are summarized as follows:

- Alternate 1 - No Build.
- Alternates 2C and 2D - Upgrading to provide additional capacity to existing Shady Grove Road.
- Alternate 3C - Limited access new facility of 4-6 lanes between Field's Road and Metro Access Road.

District of Columbia • Arlington County • Fairfax County • Loudoun County • Montgomery County • Prince George's County • Prince William County
Alexandria • Bowie • College Park • Fairfax City • Falls Church • Gaithersburg • Greenbelt • Rockville • Takoma Park

- Alternate 3D - Limited access new facility of 4-6 lanes as shown above but with directional ramp interchange at I-270.

- Alternate 3E - Same as 3D except alignment shifted slightly to avoid parkland and apartment buildings.

The D-EIS states that Alternate 3E is the SHA's preferred alternate for the proposed action. No final decision, however, with regard to selecting an alternate will be made until after the public hearing. A summary of the D-EIS has been attached to these draft comments.

RELATIONSHIP TO METROPOLITAN PLANNING PROCESS:

STAFF COMMENTS:

TRANSPORTATION

The corridor is included in the Long Range Element of the TPB Transportation Plan as amended May 21, 1980. The corridor deficiency is identified as being "Currently Under Study".

The proposed corridor improvement developed through the corridor study is also included in the adopted TPB Transportation Improvement Program (TIP) for FY 82-86. The annual element for FY 82 indicates preliminary engineering expenditures only.

Finally, the project is contained in the "1987 Base Case Network" of the TPB indicating that it is in conformance with the Maryland State Implementation Plan for achieving air quality standards. It also is in conformance because it has been included in a conforming TIP. Furthermore, for all alternatives under consideration, the projected CO concentration at the selected sensitive receptors is equal to or less than the corresponding CO concentration for the No-Build Alternate.

The project is intended to provide direct access from I-270 to the Shady Grove Metrorail Station. The improved access will increase use of the Metrorail System. The roadway improvement will also provide increased roadway capacity in an area already experiencing severe congestion. This is an area in which significant additional development is anticipated. If such development were to occur without adequate highway facilities, access to the Metro Station, particularly from the north and west, would be greatly restricted.

The D-EIS indicates that total traffic on Shady Grove Road approaching the intersection of Md. 355 (Rockville Pike) has grown by 37 percent between 1976 and 1980. Without the proposed I-370, parallel to Shady Grove Road, traffic on this arterial would increase by over one-third by 1986. By 2006 (the design year), proposed land use development would result in a doubling of traffic on Shady Grove

Road compared to 1980. Even with arterial improvements suggested in Alternates 2C and 2D, Level of Service "F" conditions could result at the Shady Grove Road and Gaither Road intersection.

The primary goal in constructing I-370 as stated in the D-EIS introduction is to increase access to the Shady Grove Metrorail Station. In fact, a principal reason for modifying the original 1968 Adopted Regional System A-Route alignment was based on the infeasibility of providing good vehicular access to a proposed Rockville terminal station.

Current access to the Shady Grove site is via Shady Grove Road which now experiences heavy congestion. It would be desirable if the Final EIS could provide appropriate analysis regarding the amount and proportion of traffic on each major segment of the corridor that is accessing or egressing the Metrorail Station. This would provide the support toward achieving the stated objective of the project. The improtance of improving vehicular access to Metrorail terminal stations cannot be emphasized enough. Without this access, Metrorail would fail to develop its full potential and the substantial public investment in the system would not be maximized. 1)

Another point deserving of comment is that according to the D-EIS, only Alternates 3D and 3E would permit the full potential land use development in the study area to be realized. The "Staff Draft Gaithersburg Vicinity Master Plan" envisioned an I-370 highway facility to support the intended corridor development in accordance with the County's Adequate Public Facilities Ordnance. If the I-370 facility is not implemented, then the development levels now proposed in the study corridor would be severely restricted.

The issue of development near planned Metrorail Stations is addressed on a regional scale in COG's Metropolitan Policy Guide, adopted by member jurisdictiona in December 1980. This document relates transportation, housing, economic development, and water resource policies into a cohesive policy guide. The guide encouraged planned development around most Metro Stations. The D-EIS provides ample justification from an economic point of view for allowing maximum development to occur particularly on the Washingtonian Country Club property.

Finally, the Cost Effectiveness Summary Table S-1 (see attachment) indicates the desirability of implementing either Alternates 3C, 3D, or 3E (preferred) as the buildalternatives. They scored very high in terms of satisfying three transportation objectives as follows:

(1) Make More Efficient Use of Existing Transportation Facilities,

(2) Provide Improved Transit Accessibility, and

(3) Develop a Transportation System which Supports Local Land Use Plans.

Metropolitan Washington Council of Governments (4/26/82)

RESPONSES

1) Of the traffic destined to the Shady Grove Metrorail Station it is estimated that approximately one-half would use Interstate 370 to access the station. Of the remaining 50 percent, approximately 20 percent would access the station from the east along Shady Grove Road, 20 percent would access the station from the north via Maryland Route 355 and the remaining 10 percent would access the station via other local roadways in the area. If Interstate 370 is not constructed, traffic accessing the Metrorail station from the west and north along the Interstate 270 corridor would have to use overburdened Shady Grove Road instead, thus making access far more difficult for a majority of potential users of the station.

From a cost-effectiveness standpoint, however, the most significant benefit accrues under Alternates 3D and 3E. They produce substantial economic development potential benefits over any of the other alternates.

In summary, the I-370 project is consistent with TPB regional transportation plans and programs as well as the adopted COG Metropolitan Policy Guide. The build alternatives all appear cost-effective based on the economic analysis provided in Summary Table S-1. In helping to improve access to Metrorail, the project meets one of the principal transportation planning objectives of the Transportation Planning Board (TPB).

AIR QUALITY

This proposal is for construction of a new facility 3.4 miles in length from I-270 to the Shady Grove Metro Station. The DEIS summarizes the evaluations of a number of alternatives, including three without construction of a totally new facility. The proposed facility would be located in an area of Montgomery County which is experiencing rapid growth. Passengers who will use the new Shady Grove Metro station will be drawn principally from areas west of I-270 and north of Montgomery Village. Without construction of a new facility, access to the station would be along portions of Shady Grove Road which are already heavily congested. Expansion of Shady Grove Road from six to eight lanes is now planned but without additional capacity level of service would decrease by the design year 2006 to no better than D and in many areasas bad as F. Carbon monoxide emissions are much higher when vehicles are idling than in free-flow conditions. Levels of service in the range of D-F are accompanied by extended periods of idling, particularly at intersections. Some improvement over the no-build condition is therefore desirable.

Two modifications of the no-build alternative were reviewed in the DEIS. Each of these modifications would increase the capacity of Shady Grove Road and would improve intersection geometrics in the area. In two areas, levels of service can be improved to C but much of the traffic would still be operating at levels of service of D or worse. The only alternative which show a significant improvement in traffic movement are those which include construction of a new facility.

The air quality analyses contained in the DEIS show no projected violations of the CO standard for any of the alternatives. Receptor sites modeled were in many cases located immediately adjacent to the right of way and worst case meteorological conditions were assumed.

There is no question that a new facility of this size will significantly increase capacity in the corridor. Because of the opening of the Shady Grove Metro station, traffic in this area is expected to increase dramatically. Three thousand parking spaces will be provided at the station and average daily trips to and from the Metro station are projected at approximately 14,000. In addition to the Metro station, extensive commercial development is planned for this corridor. Travel demand related to this development provides the primary impetus for improvement of facilities in this corridor. I-370 on a new location has been planned since 1973, when the Montgomery County Council requested construction of a direct Interstate connection between the Shady Grove Metro station and I-270. Montgomery County and the City of Gaithersburg continue to support construction of I-370. The City of Rockville generally supports a new facility but has expressed reservations about the western terminus location (see attached letter).

I-370 as proposed has been included in the Base Case Network and was assumed to be in place for calculation of 1987 mobile source hydrocarbon and NOx emissions. Elimination of the facility would not result in a detectable change in regional hydrocarbon emission levels although, as described above, it could impact local CO emissions.

Staff recommends that, of the alternatives considered, the preferred alternative be supported as the one with the most favorable impact on air quality.

STAFF RECOMMENDATION:

The Staff recommends to the TPB and AQPC that the project be endorsed with the proviso that the Final EIS provide more supporting analysis toward the project's stated objective of improving access to Metro. This comment, if endorsed, should be transmitted to the Federal Highway Administration and to the State Highway Administration, Maryland Department of Transportation.

COMMITTEE ACTION:

Transportation Planning Board (TPB) - April 21, 1982.

The TPB endorsed staff comments.

Air Quality Planning Committee (AQPC) - April 21, 1982.

Consideration tabled until May 19, 1982.

Air Quality Planning Committee (AQPC) - May 19, 1982.

The AQPC endorsed staff recommendations.

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Metropolitan Washington
COUNCIL OF GOVERNMENTS
1875 Eye Street, N.W., Suite 200, Washington, D.C. 20006 223-6800

COG #22

A-95 METROPOLITAN CLEARINGHOUSE MEMORANDUM

E: March 9, 1982
(4/26/82)

TO: MS NANCY M KING
GRANTS COORDINATOR
MONTGOMERY COUNTY
OMB 13TH FL
THE EXECUTIVE OFFICE BUILDING
SUBJECT: 101 MONROE ST
ROCKVILLE, MARYLAND 20850

PROJECT: Draft Environmental Statement--I-370 COG NO.: 82-02-013
from I-270 to Shady Grove Metro Station--Montgomery County/Rockville/Gaithersburg
APPLICANT: U. S. Department of Transportation/Maryland Department of Transportation

The project title, COG number, and applicant's name should be used in all correspondence with COG concerning this project. Correspondence should be addressed to Mr. Walter A. Scheiber, Executive Director. The staff may be reached by telephone at 223-6800.

PROJECT NOTIFICATION

☐ The above item was received on _____ and has been referred to appropriate local governmental agencies for their review and comment. This review will be conducted as expeditiously as possible.

☒ A copy of the above item is enclosed for your review and comment, in accordance with OMB Circular A-95 requirements. Your review should focus on this item's compatibility with the plans, programs and objectives of your organization. You may indicate your interest in or comments concerning this item by returning this sheet to the Metropolitan Clearinghouse by 3/23/82.

RESPONSE TO CLEARINGHOUSE

☐ We do not wish to comment on the above item.

☐ We have reviewed the above item, find it in conformance with local plans, programs and objectives, and recommend a favorable Metropolitan Clearinghouse review.

☒ We are interested in the above item and wish to make the following comments: (Use attachment)

☐ We desire an extension of time until _____ for further consideration of this item (subject to certain restraints imposed by the OMB Circular).

☐ We have further interest and/or questions concerning the above item and wish the Clearinghouse to set up a conference with the applicant.

Signature _____

Organization Montgomery County Government

District of Columbia • Arlington County • Fairfax County • Loudoun County • Montgomery County • Prince George's County • Prince William County

To: Bryan Gatch, State Clearinghouse

Sub: Comments on Draft Environmental Statement on Interstate 370
State: 82-3-374 COG: 82-02-013 .

The project is in conformance with local plans, programs and objectives.

Two comments should be considered however:

The Townhouses at Site 16 - The estimates of the STAMINA Model (Noise Analysis) do not include the impact of I-370 on the Brighton East and West townhouses where it is expected that the L_{10} values will go above 80 dBA. 2)

The subject report should recommend close coordination between the highway planners and designers and the Montgomery County Department of Environmental Protection during planning and design phases to ensure that mitigating measures planned by each compliment each other. This coordination could provide a higher level of protection of the water resources at savings to both the State and County. 3)

Metropolitan Washington Council of Governments (4/26/82)

RESPONSES

2) Although Sites 16 and 17 are in Brighton Village and Fireside condominiums, respectively, they were selected as worst-case noise sites on either side of I-270 for analysis purposes and, thus, are representative of worst-case noise impacts that could be expected in the Brighton East and Brighton West residential areas closest to I-270. Under the selected alternate, the STAMINA Model predicted design year L_{10} noise levels of 78dBA at Site 16 and 72 dBA at Site 17. Based on these results, it is not expected that L_{10} noise levels will go above 80 dBA at either the Brighton East or Brighton West townhouses.

3) In all cases where noise mitigation measures such as walls or berms are considered during detailed design, such measures will be closely coordinated with representatives of Montgomery County and the City of Gaithersburg as appropriate.

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STATEMENT OF ROBERT D. EVANS
MAYOR, TOWN OF WASHINGTON GROVE,
ON PROPOSED INTERSTATE ROUTE 370
MARCH 30, 1982

I am Robert D. Evans, Mayor of the Town of Washington Grove. I appear before you in furtherance of action taken by our Town Council on March 8. At that time, our Council adopted a resolution urging that no approval be given to any of the I-370 alternatives unless and until environmental, financial, design and other concerns cited in the resolution have been adequately addressed. A copy of the resolution is attached to my testimony and I ask that both it and my written testimony be made part of the record.

In the very brief time available to me this evening, let me highlight some of our concerns. There are a number of unresolved questions in our minds about this proposal, and I will touch on only a few of the more important ones.

Environmental Factors

First, in the area of environmental impacts, I would point out the following:

*Preferred alternate 3E would cause the disruption of 54 acres of terrestrial habitat and would eliminate 12 acres of prime agricultural land. Alternates 2C and 2D, the proposals to expand existing Shady Grove Road, would preserve all of this acreage. 1)

Town of Washington Grove, Statement by R. D. Evans, Mayor (3/30/82)

RESPONSES

1) While this statement is largely true, the choice of the selected alternate required a balancing of all possible adverse and beneficial effects and was done in recognition of the disruption of terrestrial habitat and prime farmlands.

*Preferred alternate 3E would cause far greater levels of carbon monoxide in 18 out of 20 locations than would alternative 2C. 2)

*The environmental impact assessment has been made on the basis of the addition of the highway in isolation. It does not attempt, for example, to assess the combined air pollution which would result from the construction of I-370 and of the county's proposed trash incinerator. Levels of pollution may, arguably, be acceptable for each project separately but have a disastrous effect when combined. Further, no projections are provided for the noise and other environmental impacts which would result from the eventual completion of the Inter-County Connector. 3)

We in the Shady Grove area are increasingly concerned that we are seeing our area hacked away on a piecemeal basis, and no one is analyzing what the overall effects of these developments will be. This is not sound planning and we think further study of these elements is in order.

Historical District

The 200-page draft environmental statement on this project deals with the subject of "impacts on properties and sites of historical and cultural significance" in two paragraphs. The entire treatment of Washington Grove is contained in this sentence:

Town of Washington Grove (3/30/82)

RESPONSES

2) While it is true that in the design year (2006) CO concentrations at most air quality analysis sites would be greater under Alternate 3E Modified compared to Alternate 2C, in many cases the differences are so slight as to render them insignificant. As can be seen from the results shown in Table IV-6, none of the projected CO concentrations for either of these alternates would violate applicable National Ambient Air Quality Standards or State Standards for CO.

3) The environmental assessment of potential I-370 impacts was not performed in isolation without regard to other changes that are projected to take place in the study area within the time period of study. For instance the No-Build Alternate includes a number of roadway improvements not in existence today but expected to be in place before the design year 2006. In particular, the air quality analysis not only considered projected traffic on any given alternate alignment, but also included projected traffic in other roadways in the study area. Furthermore, the CO concentrations shown in Table IV-6 include cumulative changes in background concentrations projected to occur in the study area between now and the design year. Even though specific analysis of the air quality impact of the County's proposed trash incinerator facility was beyond the scope of the I-370 project, review of the issue in a study performed by MITRE Corporation for Montgomery County (Solid Waste Energy Recovery Project, Vol. 6, Environmental Review) concluded that CO and SO_2 emissions from such a facility would be well within all standards. Given the reduction in CO from I-370 compared to the No-Build Alternate, the cumulative air quality impacts should not be significant.

Regarding the Intercounty Connector, this project is undergoing a separate project planning study. Only one of four alternates under consideration would connect with I-370 (see the discussion of relationship between I-370 and the ICC in the FEIS.)

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"The Washington Grove Historic District which is listed on the National Register is located approximately one-half mile north of the proposed I-370 alignment and would not be affected by any of the alternates under consideration."

That strikes us as a rather cavalier treatment of the subject. We are, in fact, only about 1,900 feet from the highway, and the intervening space is flat, open countryside. We are also rather disturbed that, in response to our request for information about noise and air quality impacts on our town, we were given the results of studies taken not in our town but in other areas along the highway path. 4) 5)

Growth Projections; Costs

The bottom-line response to the concerns we have raised about the impact of I-370 is that only I-370 can satisfy the traffic needs of the Shady Grove area under current growth projections. According to the statistics provided in the environmental statement, preferred alternate 3E could handle 85,000 cars, or 100% of the need; alternate 2C could handle 75,000 cars, or 88% of the need, and the no-build alternate could handle 65,000 cars, or 76% of the need.

We have some serious doubts that, if the county constructs a trash incinerator where it now proposes, we will see the kind of growth in this area that has been projected. 6)

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Town of Washington Grove (cont'd.)

RESPONSES

4) The FEIS has been changed to read "approximately one-third mile". The historic district would remain unaffected by any of the Alternates under consideration, as determined through consultations with the State Historic Preservation Officer (see letter from SHPO dated 7 June 1982 in Appendix C).

5) At the specific request of Washington Grove, detailed noise and air quality analyses were performed to estimate the impact at Washington Grove. This analysis showed that no adverse impact would result from any of the alternates under consideration.

6) Projected growth is not likely to be affected for several reasons. The site is included in all comprehensive planning studies, a transfer station already exists at the site, the immediate neighborhood is zoned for light industry, overall truck traffic in the county is expected to be reduced due to use of larger trucks, and the incinerator is expected to have no significant environmental effects based on studies performed by Montgomery County.

But let us assume that the growth projections are correct and let's take a look at the costs.

Alternate 2C would take care of one-half the projected traffic gap between the no-build alternate and the I-370 alternate. It would do so at a cost of $21 million, or $2,100 per vehicle. I-370, under alternate 3E, would take care of the other one-half at an additional cost of $93 million, or $9,300 per vehicle. In short, the marginal cost per vehicle for the last 10,000 vehicles under the I-370 approach is about 4 1/2 times greater than the marginal cost under the Shady Grove expansion proposals.

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Isn't there a cheaper way to meet the need than spending an additional $93 million? Could, for example, Shady Grove Road be expanded even further? 7)

What financial benefits are there to the projected growth? The draft environmental statement, on page viii, states that the county will realize additional tax revenues under alternate 3E of $9.7 million, as compared with $3.3 million under alternate 2C -- or a net gain of $6.4 million. But on the same page we are told that the annual user costs for alternate 3E will exceed annual user costs under alternate 2C by $6.2 million -- virtually the same amount. What is given with one hand is taken away with another.

Even if we ignore user costs, we're talking about annual revenue of $6.4 million/year. This revenue, however, must be

Town of Washington Grove (cont'd.)

RESPONSES

7) An alternate which would expand the capacity of Shady Grove Road beyond that envisioned under Alternates 2C and 2D was investigated early in the I-370 study process but was dropped from further consideration because of the extremely adverse impacts that would accrue to property owners with frontage along Shady Grove Road and the unusually high right-of-way costs that would result from such an alternate. Because of these adverse impacts, further expansion of Shady Grove Road was not considered.

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offset against the additional initial construction cost of $93 million: it will take a very, very long time, indeed, to recover that cost through increased revenues.

What, then, is the economic justification for this highway? One cannot help but wonder if the availability of federal funding for 90% of the cost is a principal motivating factor. From the perspective of the state and county, I-370 costs only $11.4 million, or about half the cost of an expanded Shady Grove Road. But to those of us who pay federal taxes as well as state and county taxes, I-370 costs five times as much. From our perspective, that's hard to justify.

What we see being proposed is a 3.4 mile interstate highway costing over $33 million per mile, whose primary, if not sole, purpose is to fill a 3,000 car parking lot five days a week. We do not believe that adequate justification for this project has been provided and that it should not be approved in the present configuration. We urge you to seriously consider other alternatives, including that proposed by our Planning Commission. 8)

Thank you.

Town of Washington Grove (cont'd.)

RESPONSES

8) The EIS provides a summary of impacts table which displays the monetary and nonmonetary costs and benefits associated with the proposed project. This differs from a cost/benefit analysis where all impacts are expressed in dollar values. This summary was developed in response to NEPA legislation which directs Federal agencies to develop methods and procedures to insure that "unquantified environmental amenities and value be given appropriate consideration in decision-making along with economic and technical considerations."

The capital costs of the proposed project are quantified in the EIS and are presented in Table S-1. While at first glance these monetary costs and benefits may appear to result in a negative cost/benefit equation, there are substantial benefits of the proposed action that are not quantified. One of the major benefits of I-370 is to allow the realization of the economic potential projected for the area as part of the on-going local planning process. Montgomery County has long targeted the area around the Shady Grove Metro Station and I-270 as a major growth/development area with I-370 as a key element in an integrated transportation system. A number of decisions regarding the investment of substantial public monies for facilities in the area (streets, metro-rail, sewers, etc.) have been predicated on this projected growth.

Even without consideration of other unquantified benefits to the local economy (i.e., additional personal income from new job opportunities, retention of businesses that are already located in the area but would likely relocate if current traffic problems are not mitigated, etc.), the selected alternate is justified on the basis that it preserves the prior and on-going public investment for other facilities in the area.

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THE TOWN OF WASHINGTON GROVE

RESOLUTION

WHEREAS the Planning Commission and the Town Council of the Town of Washington Grove have studied the proposed Interstate Route 370 (I-370) highway project; and

WHEREAS the Town has consistently supported the principle that highway expansion and construction should be done in a manner which minimizes the adverse environmental impacts of such construction and should be limited in scope to those highways which are unquestionably justified; and

WHEREAS several of the proposed I-370 alternatives would result in visual impacts, air and noise pollution significantly degrading the environment, livability and amenity for which the Town is recognized by inclusion in the National Register of Historic Places;

NOW, THEREFORE, BE IT RESOLVED that the Town of Washington Grove urges that all responsible decision-making and review officials not approve any alternatives for I-370 until they are fully satisfied that the following concerns have been adequately addressed:

1. That full opportunity has been afforded the citizens of the affected residential areas to present testimony on the merits and impacts of the proposed alternatives;
2. That other possible routes and alternatives for this facility have been fully explored including that which has been proposed by the Planning Commission of the Town of Washington Grove;
3. That the Environmental Impacts Study completely addresses the total impacts of all the alternatives on the surrounding areas and includes the effects of the trash incinerator proposed for the Shady Grove area;
4. That the Maryland Historic Trust is convinced that all adverse impacts on the Washington Grove Historic District have been minimized.

1)

Approved by Mayor and Town Council

MAYOR DATE

ATTEST:

SECRETARY DATE

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Resolution from the Town of Washington Grove (3/8/82)

RESPONSES

1) All concerns herein have been adequately addressed.

State of Maryland
State Highway Administration

3/30/82

STATEMENT ON BEHALF OF

THE WASHINGTON GROVE HERITAGE COMMITTEE

AT LOCATION/DESIGN HEARING RE: I-370

This statement is presented on behalf of the Washington Grove Heritage Committee at the Combined Location/Design Public Hearing held on March 30, 1982. It would be useful to note at the outset that in April 1980, the United States Department of the Interior designated the Town of Washington Grove a National Register Historic District.

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Our Committee does not believe that the proposed planning for I-370, and the Highway Administration's preferred Alternative Route 3E complies with either the National Environmental Policy Act; Section 4(f) of the United States Department of Transportation Act, as amended; or Section 106 of the National Historic Preservation Act, as amended. 1)

The Draft Environmental Statement (DES) for I-370 evidences a lack of objectivity and a lack of comprehensive planning. The DES does not reflect an effort by the State Highway Administration to address the transportation problems of the Shady Grove corridor or of Montgomery County in a manner that realistically reflects available funds and funding priorities. Alternative 3E is estimated at $114 million in 1981 dollars. Proposals such as Alternative 2D or the proposal put forth by the Town of Washington Grove and its Planning Commission would be less costly and have fewer negative environmental impacts. These alternatives would not inundate the Parkside, Redland Station, and Washington Grove residential areas and public forest lands with noise and air pollution as would Alternative 3E. They are, moreover, far more likely to be built. 2)

Washington Grove Heritage Committee, Statement by R. C. Huberman (3/30/82)

RESPONSES

1) The Draft EIS was prepared in direct compliance with NEPA requirements for a "detailed statement on the environmental impact of the proposed action" to include "any adverse environmental effects which cannot be avoided should the proposal be implemented." Consistent with Council on Environmental Quality (CEQ) NEPA regulations, the Draft EIS served, in part, as a vehicle for obtaining the comments of any Federal Agency having jurisdiction by law or special expertise, as well as the public, with respect to any environmental impact involved. Included in this statement is consideration of the effects of the proposed action on sites and properties of historical and cultural significance. Thus far this project has been developed in full compliance with NEPA.

Furthermore, in compliance with Section 4(f) of the Department of Transportation Act as amended, the Draft EIS addresses the potential for taking of land from any significant park, recreation area, historic site, or wildlife refuge in Section IV. H. No alternate considered for the proposed project would require the take of land from the Washington Grove Historic District nor would any alternate approach Washington Grove closely enough to constitute a constructive take of this historic district. In addition, the DEIS addressed properties and site which are included on or eligible for inclusion on the National Register of Historic Places as required by the National Historic Preservation Act; Executive Order 11544, and Advisory Council on Historic Preservation (ACHP) regulations. Applying the ACHP's "criteria for effect" to the Washington Grove Historic District it was determined that the proposed action would not have an effect on this National Register property. This same conclusion was reached by the SHPO (see letter dated 7 June 1982 in Appendix C.)

2) This project is among those with the highest funding priority within the state. Legislation enacted at the most recent session of the Maryland legislature is expected to provide the necessary revenues to proceed with the selected alternate. The ability of the State to secure Interstate funding for I-370 from the Federal government further increases the likelihood that I-370 will be built. Also see response to comment 13.

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To illustrate the lack of objective and comprehensive planning evidenced in the I-370 DES, we wish to point out the following examples of deficient planning:

1. Failure to consider emissions from additional development induced by I-370 and I-370 induced traffic increases;

2. Failure to consider emissions from I-370 traffic entering, leaving, and idling in the two planned Metro parking lots--especially the increases in such traffic that would result from I-370's construction. Note that the DES, at p. 97, states that construction of I-370 would add 5000 vehicles to daily traffic on Route 355 and would increase traffic to the Shady Grove Metro Station. 3)

3. Failure to consider the joint impact on air quality and noise levels of I-370 traffic and Montgomery County's proposed incinerator at Shady Grove Road and Route 355. Garbage trucks will increase road noise and emissions while the incinerator will superimpose emissions of carbon monoxide, nitrogen oxides and hydrocarbons. Emissions from the proposed incinerator may fumigate I-370 and drift from incinerator cooling towers may cause fogging and icing on overpaths and sunken roadways. 4)

4. Failure to provide an environmental impact assessment for the entire Intercounty Connector. The configuration of I-370 proposed for that road east of Oakmont Avenue is clearly designed as an integral part of the Intercounty Connector. (See p. 16 and 62 of the DES). This piecemeal evaluation of the Intercounty Connector is poor planning practice and does not comply with NEPA. 5)

5. Failure to consider the effective taking of Washington Grove [illegible] at the northwest 6)

RESPONSES

3) The air quality analysis for I-370 did include consideration of future ambient CO concentrations for the study area which reflect projected development expected to occur in the study area and elsewhere in Montgomery County. Furthermore, projected traffic on roadways other than I-370 itself was considered as part of the air quality analysis. The emissions analysis took into account traffic using the Metro parking lot.

4) The traffic parameters used for both the air and noise analyses for I-370 consider projected truck traffic along nearby roadways to include that portion associated with the operation of the proposed transfer station. Regarding the possible icing and fumigation of I-370, a study by MITRE Corp. for Montgomery County concluded that any such potential problems would be restricted to the incinerator site itself and would not extend to I-370.

5) Refer to Section I.C.4. of the FEIS which discusses the Intercounty Connector project. While the alignment for the selected action may be utilized by one of the four alternates (including the no-build) under consideration for the ICC, the ICC project is still the subject of an ongoing major project planning study which will include the preparation of an EIS in compliance with NEPA. I-370 was studied as a separate project because of its demonstrated utility in providing improved access to the Metro Station entirely independent of the future possibility of constructing all or portions of any ICC alternate.

6) Refer to Response 1).

of I-370. This failure is contrary to the requirements of Section 4(f), supra, and Section 106, supra. 6)

6. Failure to consider the increased vehicular traffic emissions from vehicles traveling on, or backed up on I-370 and other I-370 induced traffic resulting from pending relaxation of vehicle emission control regulations, and from the apparent demise of the State of Maryland's vehicle emission inspection and maintenance program. 7)

7. Failure to provide more than a superficial analysis of the noise impacts of I-370 induced traffic. With I-370, some 33,000 automobiles would be added to daily area traffic. Yet, the State Highway Administration seeks to rely for its noise estimates on 20 minute non-rush hour samples for 4 to 8 separate ~~four~~ days of data from present traffic levels. 8)

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The DES states that FHWA noise standards would be regularly exceeded in residential areas. The FHWA standards, in turn, exceed Maryland State Standards. Compare the FHWA standard of 70 dBA with the Maryland Standard for Environmental Noise of 55 dBA. The FHWA standard, itself could be exceeded 10% of the time or 876 hours per year.

Residantial area noise levels are predicted to rise by 17 dBA. (DES, p.125). From the above, it can be seen that the DES uses sparse data, without and allowance for a margin of error, to predict noise levels in excess of State standards and which are marginal by FHWA standards. This noise will hit an area characterized by young households. (DES, p.49). We note that either Alternative 2C or the Grove alternative would alleviate some residential area noise impacts. 9)

8. Failure to consider the impact of traffic from the realigned Md. Route 115. 10)

Washington Grove Heritage Committee (cont'd.)

RESPONSES

7) The air quality analysis was based on the existing Clean Air Act and is consistent with EPA air quality regulations as are currently in effect. Although revisions to the Clean Air Act are under consideration by the U.S. Congress, there is no way to predict the outcome of these considerations. EPA has not relaxed its current requirements for performing air quality analyses and will not likely do so until and unless the Clean Air Act is renewed. The Inspection and Maintenance program for Maryland will begin in 1983, and this was considered as part of the air analysis.

8) Traffic projections used for the noise analysis include so-called "induced" traffic as well as traffic that would choose to relocate from other roadways in the area. The ambient noise survey was purposely conducted during non-rush hour time periods in order to establish worst case daytime ambient noise conditions. Highway generated noise is at a maximum during non-rush hour periods of relatively free-flowing traffic which is traveling at or near the posted speed limits. Short-period sampling is a statistically valid method for determining noise levels.

9) The noise analysis reported in the DEIS was conducted according to accepted procedures using the state-of-the-art FHWA Highway Noise Prediction Model. The analysis was done using worst-case assumptions, per CEQ regulations, rather than averaging, to determine maximum effect. Therefore, the predicted noise levels should, if anything, be higher than will actually be the case once the proposed project is built. Worst-case analysis predicts levels at the location of most severe effect. Away from this point levels decrease at a rate in excess of 3dBA per doubling of distance. The predicted noise levels are compared to FHWA Design Noise Levels (which are target objectives rather than "standards") because they are applicable to all Federal-aid highway projects. There are no Maryland noise standards which would be applicable to operation of the proposed project.

10) Relocated MD 115 was included as part of the No-Build Alternate and was assumed to be in place as part of the traffic analysis for each alternate.

9. Failure to carefully consider the natural environment of the north-eastern ~~western~~ portion of the road site. With increased development, such natural areas become inceasingly significant. 11)

10. Failure to consider adverse fiscal and urban effects that will result if I-370 takes business away from the U.S. 29 corridor or from down-county areas, or if I-370 spurs movement of jobs from the District of Columbia. The DES fails to consider how I-370 may act to further urban sprawl, and retard development of subway stops further up-county. 12)

11. Failure to adequately consider the impact of Alternative 3E upon the Washington Grove Historic District.

a. The DES does not mention the Washington Grove Master Plan.

b. The impact of I-370 on the Town's west woods is not considered; and,

c. The discussion of cultural resources omits Washington Grove.

On November 3, 1981, the Washington Grove Heritage Committee, on behalf of the Town, initiated the Section 106 proceedings with a letter to Mr. J. Rodney Little, the State Historic Preservation Officer, with a copy to Mr. Eugene Camponeschi of SHA.

Since the proposed I-370 would constitute a federal undertaking, being federally funded, it would be contrary to the federal preservation policy if I-370 were to adversely affect a designated National Register historic district.

The piece-meal planning and promotional character of the DES indicates that the State Highway Administration should turn its attention to smaller projects more in line with the funds available

Washington Grove Heritage Committee (cont'd.)

RESPONSES

11) The DEIS does consider the natural environment. It is not possible to avoid all natural areas, but the one in question is disturbed. A number of less-disturbed, larger wooded areas nearby are already preserved as parkland. These include Muddy Branch, Rock Creek, and Great Seneca Parks.

12) Transportation improvements associated with the construction of I-370 are fully consistent with County land use and development plans and are not expected to impact the viability of central city areas. Regional growth policies adopted by the local jurisdictions comprising the Washington metropolitan area (including the District of Columbia) support this conclusion by encouraging planned development in Metro station areas. Complementary regional economic development policies specifically address the importsnce of increasing accessibility between central city areas and major suburban activity centers. (For further discussion see responses to similar comments made by Mayor Robert D. Evans starting on page 195.)

for all highway projects in Maryland. SHA should carefully consider the alternative put forth by the Washington Grove Planning Commission and should reissue an objective and comprehensive DES. 13)

Respectfully submitted,

R. Carole Huberman
Chairman
Washington Grove Heritage Committee

P.O. Box 5
WG 20880

Washington Grove Heritage Committee (cont'd.)

RESPONSES

13) **The alternate put forth by the Washington Grove Planning Commission received full consideration, and discussion of this alternate is in the FEIS.**

ROCKVILLE
City of Rockville □ Maryland Avenue at Vinson □ Rockville, Maryland 20850 □ (301) 424-8000

March 26, 1982

Mr. Hal Kassoff, Director
Office of Planning and Preliminary Engineering
Post Office Box 717
Baltimore, Maryland 21203

Re: Interstate 370, Draft Environmental Impact Statement

Dear Mr. Kassoff:

The City of Rockville Planning Commission has reviewed the Preliminary Draft Environmental Impact Statement for Interstate 370. The Commission does support the construction of an interstate spur from I-270 to the Shady Grove Metro station. The need for this road is clear. Existing Shady Grove Road will be unable to handle traffic from existing and proposed development in the area and Metrn generated traffic.

This proposal to upgrade Shady Grove Road (Alternates 2C and 2D) would not alleviate the congestion that will occur. The lack of road capacity in this area is increasingly becoming a severe constraint in attracting quality research and development firms. Adding Metro traffic to Shady Grove Road will only increase this constraint. Therefore, the Commission believes it is essential that I-370 be constructed as sonn as possible.

However, in reviewing the proposed alternates, the Commission notes that the preferred one - 3E - has a facility investment cost over $20 million greater than alternate 3C. This greater cost is due in large part to the interchange design at I-270. Whereas 3C has a modified cloverleaf, alternate 3E has a directional ramp configuration. Considering the financial status of the State and Federal Highway Administrations, the Commission suggests that alternate 3C makes much more economic sense. To spend an additional $20 million solely for the directional ramp interchange at I-270 is not warranted. The State should seriously consider the cost savings that would result if alternate 3C is selected. 1)

In addition, the Commission is very concerned over the proposal to extend I-370 to Fields Road. The primary purpose of I-370 is tn provide access to the Shady Grove Metro station from I-270. The extension to Fields Road is not required for that purpose. The deletion of this extension would also result in a significant reduction in the cost of this road and the Commission recommends that the State make this deletion. 2)

City of Rockville Planning Commission (3/26/82)

RESPONSES

1) Alternate 3C does not provide the capacity adequate to accommodate projected design year traffic. The higher cost of Alternate 3E Modified is due not only to the additional cost to construct a directional interchange at I-270, but also the additional costs involved with the construction of a complex ramp system that would link the I-270/I-370 interchange with the existing interchange at Shady Grove Road. The directional interchange is necessary from a safety and traffic movement standpoint. These proposed facilities can handle larger volumes of traffic and at the same time provide safer operating conditions.

2) Concerning the proposed access to be provided between I-370 and Fields Road west of I-270, reference is made to page 7 of this document which discusses the need for this connection as part of the selected action. It is important to note that without this connection the I-270/Shady Grove Road interchange would not be able to handle projected traffic volumes within acceptable levels of service and this would cause the proposed I-370 interchange at I-270 to also break down.

The Planning Commission appreciates the opportunity to review this report which has an impact on the plans and prugrams of the City.

Sincerely,

Granville E. Paules, Chairman
City of Rockville Planning Commission

GEP/RPM/dep

CITY OF ROCKVILLE STATEMENT BEFORE THE MARYLAND STATE HIGHWAY ADMINISTRATION ON THE LOCATION/DESIGN FOR INTERSTATE I-370

I am Robert Weirich, Chairman of the Traffic and Transportation Commission of the City of Rockville and I am here to testify in support of the construction of Interstate I-370. The City's support comes with one major reservation, however, which I will discuss later in my presentation.

The City believes that the need for the construction of I-370, rather than merely widening Shady Grove Road, is clear. The movement of traffic from I-270 to the Shady Grove Metro station, combined with the existing and expected traffic from office and industrial development in the Shady Grove area cannot be handled by a widened Shady Grove Road alone. Congestion could not be alleviated by an upgraded Shady Grove Road. Because the construction of I-370 would relieve congestion on Shady Grove, there would be additional traffic capacity for the planned development in the area. Not building I-370 would severly limit the development potential in this area.

The City's one reservation in its support for I-370, however, concerns the staging of the indicated connection to Fields Road. The primary purpose of I-370 is to provide a direct link from I-270 to the Metro station. The extension to Fields Road is not required to meet the purpose. In the future, if there is to be an extension of I-370 it should be to an already in place Western Arterial. Dumping I-370 traffic onto Fields Road will greatly overburden the capacity of this road. Fields Road should not be used as a substitute for the Western Arterial. Therefore, while Rockville does not oppose the eventual connection to the Western Arterial, it does oppose the intermediate connection to Fields Road. 1)

Finally, we would like to note that proposed I-370 has been shown and been recommended by the various Master Plans that have covered this area for years. Each successive update of a plan has reconfirmed the need for this road. Traffic

studies undertaken in the Shady Grove area have indicated this need will be even greater with the opening of the Metro station. It is therefore essential that this road be in place as soon as possible. As it stands now, the Metro station will be open in advance of I-370 and Shady Grove Road will experience severe traffic congestion. This congestion can only be satisfactorily relieved by the construction of I-370.

City of Rockville Statement 3/30/82

RESPONSES

1) The connection between I-270 and Fields Road will only be made concurrent with or following upgrading of Fields Road to a four-lane urban arterial and will be designed to be adequate to serve travel demand at the time of opening. If increased development occurs on land adjacent to the connection following initial construction, improvements will be made to provide access from this development, which will ensure that the connection will operate at an acceptable level of service. Such improvements will be made as a separate action, since the design and location of these improvements need to be compatible with the development.

VII. LIST OF PREPARERS

This Final Environmental Impact Statement was prepared by the Maryland State Highway Administration, Bureau of Project Planning, with assistance from Henningson, Durham & Richardson; Hammer, Siler, George Associates; EDAW, Inc.; and PRC Voorhees. The following personnel were instrumental in the preparation of this document:

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VIII. APPENDICES

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

All State Highway Administration projects must comply with the provisions of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" (Public Law 91-646) and/or the Annotated Code of Maryland, Real Property, Title 12, Subtitle 2, Sections 12-201 thru 12-212. 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. Payments include replacement housing payments and/or moving costs. The maximum limits of the replacements housing payments are $15,000 for owner-occupants and $4,000 for 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 residences include actual moving costs up to 50 miles or a schedule moving cost payment, including a dislocation allowance, 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 estimates of the cost may be obtained. The owner may be paid an 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' vehicles or equipment, wages paid to persons who physically 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 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 reestablished 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 reestablished business, the payment will be the lesser of the difference between the value of the item for continued use 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 and the property is abandoned, the owner is entitled to receive the lesser of the value for continued use of the item in place or the estimated cost of moving the item and the reasonable expenses of the sale. When personal property is abandoned without an effort by the owner to dispose of the property by sale, the owner will not be entitled to moving expenses or losses for the item involved.

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 State may determine that 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 establishment 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 annual net earnings of the business is considered to be one-half of the net earnings before taxes during the two taxable years immediately preceding the taxable year in which the business is relocated. If the two taxable years are not representative, the State, 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 the State may determine 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 has been discontinued or relocated. In some cases, payments "in lieu of" actual moving costs may be made to farm operations that are affected by a partial acquisition. A non-profit organization is eligible to receive "in lieu of" actual moving cost payments 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.

In the event comparable replacement housing is not available to rehouse persons displaced by public projects or that available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. Detailed studies will be completed by the State Highway Administration and approved by the Federal Highway Administration before "housing as a last resort" could be utilized. "Housing as a last resort" could be provided to displaced persons in several different ways although not limited to the following:

1. An improved property can be purchased or leased.

2. Dwelling units can be rehabilitated and purchased or leased.

3. New dwelling units can be constructed.

4. State acquired dwellings can be relocated, rehabilitated, and purchased or leased.

Any of these methods could be utilized by the State Highway Administration, and such housing would be made available to displaced persons. In addition to the above procedure, individual replacement housing payments can be increased beyond the statutory limits in order to allow a displaced person to purchase or rent a dwelling unit that is within his financial means.

The "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" requires that the State Highway Administration shall not proceed with any phase of any project which will cause the relocation of any person or proceed with any construction project until it has furnished satisfactory assurances that the above payments will be provided and that all displaced persons will be satisfactorily relocated to comparable decent, safe and sanitary housing within their financial means or that such housing is in place and has been made available to the displaced person.

C. SELECTED CORRESPONDENCE

Maryland Historical Trust

June 7, 1982

Mr. Louis H. Ege, Acting Chief
Environmental Management Section
Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203

RE: Contract No. M. 248-151-372
I-370; from I-270 to the Shady
Grove Access Road

Dear Mr. Ege:

Thank you for your letter of May 14, 1982, regarding the project listed above. We agree with your determination that there will be no effect on the Washington Grove (National Register) Historic District from this project. Since the new road will be visible to some degree during the winter from a portion of the District, we recommend that your agency consider evergreen landscaping within appropriate portions of the right-of-way. However, the landscape we suggest is not required since this is a determination of no effect.

Sincerely,

J. Rodney Little
Director/State Historic
Preservation Officer

JRL:GJA:mms

cc: Ms. McGuckian
Ms. Hall

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301)269-2212, 269-2438
Department of Economic and Community Development

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

Michael A. Barnett, PhD.
Senior Ecologist
Henningson, Durham and Richardson
441 North Lee Street
Alexandria, VA 22314

Dear Dr. Barnett:

This responds to your December 2, 1981, request for information on the presence of Federally listed or proposed endangered or threatened species within the area of Interstate 370 in Montgomery County, Maryland.

Except for occasional transient individuals, no Federally listed or proposed species under our jurisdiction are known to exist in the project area you described. Therefore, no Biological Assessment or further Section 7 Consultation pursuant to the Endangered Species Act of 1973 is required with the Fish and Wildlife Service. 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. We understand that you have already contacted Mr. Robert Zepp of our Division of Ecological Services (phone: 301/269-5448) to discuss possible project impacts to other fish and wildlife resources.

Thank you for your interest in endangered species. If we can be of further assistance, please contact Martha Carlisle of our staff at 301/269-6324.

Sincerely yours,

James A. Hutcheson
ACTING FOR
John D. Green
Area Manager

Maryland Historical Trust

December 16, 1981

Mr. Louis H. Ege
Acting Chief
Environmental Management Section
Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

RE: I-370
Contract No. M 248-151-372
F.A.P. No. I-370-1 (10)

Dear Mr. Ege:

Thank you for the letter written by Tyler Bastian of the Maryland Geological Survey concerning the reevaluation of the significance of sites 20/14, 18 MO 168, 18 MO 189 and 18 MO 170. I have discussed with Wayne Clark the recommendations of Tyler's letter of November 25 and your follow-up letter of December 11. Based on the contents of the letters and our discussion, I concur that sites 20/14, 18 MO 189 and 18 MO 170 are not significant and therefore do not warrant additional section 106 considerations. We do appreciate your statement that appropriate personnel will be notified about the existence and location of sites 18 MO 189 and 18 MO 170 and steps will be taken to minimize disturbance. We request that your archeologists at the Division of Archeology be given the opportunity to contact the construction firm to discuss the site location and to monitor construction activity to determine the impact on these sites.

Concerning site 18 MO 168, we defer judgement on the eligibility of this site since you have indicated that the section of the highway which would impact the site has been dropped from further consideration. The location of the site should be made known to the contractor and the area not used as a borrow source. In summary, other than the recommended limited monitoring program, additional archeological work is deemed unnecessary because of the lack of significance of the sites or the avoidance of the sites. Thank you for coordinating the reevaluation of the sites as requested.

Sincerely,

J. Rodney Little
Director/State Historic
Preservation Officer

JRL:WEC:mms

cc: Mr. Curry, Ms. Suffness, Mr. Gonzalone, Ms. McGuckian, Ms. Hall

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301)269-2272, 269-2438
Department of Economic and Community Development

STATE OF MARYLAND

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MARYLAND GEOLOGICAL SURVEY

THE JOHNS HOPKINS UNIVERSITY
MERRYMAN HALL
BALTIMORE, MARYLAND 21218 338-7236

25 November 1981

Mr. William F. Schneider, Jr.
Chief
Bureau of Project Planning
State Highway Administration
707 North Calvert Street, Third Floor
Baltimore, Maryland 21202

RE: I-370
Archeological Involvement

Dear Mr. Schneider:

As per your 21 September 1981 request, we have re-assessed the significance of the four archeological sites discussed in the 14 August 1980 reconnaissance report on the subject project. Our revised assessment is based mainly on recent discussions with the Maryland Historical Trust concerning significance evaluation. Attempts at locating maps from the 1979 to 1923 period were unsuccessful. However, the 1923 USGS map cited by Epperson was surveyed in 1906 and, therefore, all structures depicted on that map (including the four sites presently under consideration) can be expected to date to at least that year. The need for additional archeological work is reconsidered below for each site individually.

"20/14". No additional archeological work is recommended at this site. This recommendation is partially based on the MHT re-assessment that the site is ineligible for the National Register based on historical and architectural grounds. Furthermore, the archeological potential of the site does not appear to warrant additional work. Archeological data from the house itself (including the 1899 foundations) are likely to be replicable elsewhere in Montgomery County. The one rather unusual aspect of the site - reported cabins, tents, and other features associated with the site's use as a tuberculosis sanitarium - is unlikely to be distinctively apparent in the archeological record, especially with typical treatment calling merely for ample clean air and proper diet. Furthermore, due to the concerted effort to stem the spread of tuberculosis in the early 1900's, it is probable that the numerous detailed records (e.g., Report to the Tuberculosis Commission and Report of the Maryland Association for Prevention and Relief of Tuberculosis) outlining conditions, recommended treatments, appropriate facilities and so forth would provide a better and less costly source of information on this matter than archeology.

18M0170 (Hottinger). No additional archeological work is recommended at this site. The two architectural features reported from this site (house foundations and outbuilding) are both located outside of the right-of-way, although the proposed construction will occur between these two features. While additional features (trash pits, wells, etc.,) may exist in the right-of-way, it is likely that other 20th century sites contain similar features which could yield information comparable to that expected from 18M0170. It is recommended that construction activity in the area of 18M0170 be strictly confined to the right-of-way, thereby minimizing impact to this site and preserving major portions should future investigators wish to study the site.

18M0189 ("Possible" Site). No additional archeological work is recommended at this site. Again, major portions of the site are located outside of the proposed right-of-way and other 20th century sites are likely to replicate any data that may be destroyed. Furthermore, possible prior disturbance during golf course landscaping may have created contextual problems at the site. As with 18M0170, the portion of 18M0189 outside the right-of-way should be avoided during construction.

18M0169 (Crown). As originally determined in Epperson's reconnaissance report, additional (Phase II) archeological work would be appropriate to determine the significance of this site. However, based on discussions with other archeologists and in an attempt to reduce costs while maximizing data recovery, we recommend minor alterations to Epperson's proposed research design.

Based on preliminary data gathered by Epperson, the site appears to be a late 19th/early 20th century low-status rural farmstead. Occupied by members of one family over a relatively short (35 years) period of time, the site would seem to offer an excellent opportunity to examine a single component of a poorly documented social class. Furthermore, the range of investigative tools (archival, oral history, archeological) available for this site should provide for multi-dimensional study, with each investigative tool serving as a cross -check for the others.

The recommended course of action consists of a controlled surface collection following plowing and limited test excavations combined with archival and oral history research. The controlled surface collection will provide data on the range and distribution of artifacts. Test excavations should be aimed at gathering architectural information on the remains of the log house as well as data on other features. Archival work should be aimed at pinpointing construction/demolition dates and, if possible, an inventory of property improvements. Oral history (including a search for photographs) should be directed at compiling both social and architectural/structural information. Below is a revised proposed budget for the recommended work.

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18M0168

Fieldwork		
Archeologist/supervisor	$120/day for 5 days	$ 600.00
3 Assistants	$50/day/person for 5 days	750.00
Lab Work		
Assistant	$50/day for 10 days	500.00
Archival/Oral History	$50/day for 10 days	500.00
Report Preparation		
Archeologist	$120/day for 15 days	1,800.00
Assistant	$50/day for 10 days	500.00
Typist	$50/day for 5 days	250.00
	SALARIES	$4,900.00
Mileage - 2000 miles @ 18¢/mile		360.00
Supplies, Duplication, Report Distribution		300.00
	TOTAL	$5,560.00

If we can be of further assistance on this matter, please let me know.

Sincerely,

Tyler Bastian

Tyler Bastian
State Archeologist

TB:DCC/csw

cc: J.R. Little
L. Ege
R. Suffness

251

The Redland Station Homes Association, Inc.

7899 Briardale Terrace / Rockville, Maryland 20855

March 6, 1981

Mr. Larry Saben
Director, Regional Planning Office
Maryland Department of Transportation
8720 Georgia Avenue, Room 904
Silver Spring, Maryland 20910

Dear Mr. Saben:

As President of Redland Station Homes Association, Inc. and on behalf of all Redland Station residents, I am forwarding the enclosed environmental impact report for your review and consideration.

This report describes the probable negative consequences of construction of the proposed "I-370" connector and the "Intercounty Connector" on the physical and aesthetic quality of our community and its immediate surroundings.

We strongly believe that the transportation benefits from implementation of these proposals will be seriously offset by their detrimental environmental impact. As residents of this area and concerned citizens, we are committed to maintaining the high quality of life in this community. We view with alarm the trend toward the growing and possibly unnecessary "concretization" of this area. The tract of land which is the subject of the enclosed report, as the last vestige of prime woodland in the region, is more suitable for dedication as parkland than as yet another highway.

While we recognize the need for access to the Shady Grove METRO station and the upgrading of the I-270/Shady Grove and Shady Grove/Route 355 interchanges, we believe that these objectives can be attained without construction which would severely impinge on our community and the contiguous area which is the subject of the enclosed report.

We would welcome the opportunity to discuss this matter more fully with you. We would also appreciate having your response to the report's findings and your support for the preservation of the subject area as natural woodland.

With kindest regards,

Sincerely,

Thomas P. Reutershan
President
Redland Station Homes Association, Inc.

Enclosure

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MARYLAND DEPARTMENT OF NATURAL RESOURCES
WILDLIFE ADMINISTRATION

BERNARD F. HALLA
DIRECTOR

TAWES STATE OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401
(301) 269-3195

January 29, 1981

Mr. Michael A. Barnett
HDR Sciences
1020 North Fairfax Street
Alexandria, Virginia 22314

Dear Mr. Barnett:

There are no known populations of threatened or endangered species within the area of project influence for the Intercounty Connector/Rockville Facility as described in your meeting of this date with our staff. Further, we know of no areas of essential wildlife habitat that would be significantly degraded or destroyed by this action. As you are aware however, any loss of habitat translates into diminished wildlife populations.

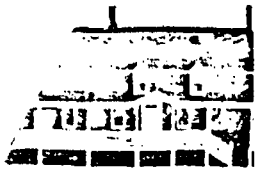
Sincerely,

Robert L. Miller
Forest Wildlife
Program Manager

Joshua L. Sandt
Upland Wildlife
Program Manager

Gary J. Taylor
Nongame & Endangered
Species Program Manager

RLM:JLS:GJT:bw
cc: Carlo Brunori



Maryland Historical Trust

January 12, 1981

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

RE: Intercounty Connector/Rockville Facility
Contract No.: M 248-151-372, FAP I-370-1(10)

Dear Mr. Schneider:

This letter is an addendum to my letter of December 18, 1980. The Heater/Crown Farm (M-20-16) and the England/Crown Farm (M-20-17) are assessed as Maryland Historical Trust Inventory quality only.

Sincerely yours,

Janet L. Davis

Janet L. Davis
Historic Sites Surveyor

cc: George J. Andreve
Richard Krolak
Rita Suffness
Michael Dwyer

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301)269-2212, 269-2438
Department of Economic and Community Development

CITY OF GAITHERSBURG

31 SOUTH SUMMIT AVENUE TELEPHONE: 948-3220
GAITHERSBURG, MARYLAND 20760

September 21, 1980

Carl David Feske, P.E.
Senior Transportation Planner
Henningson, Durham and Richardson
5454 Wisconsin Avenue
Chevy Chase, Maryland 20015

Re: I-370 Study

Dear Mr. Feske:

In the course of the meeting on September 9th, 1980, relating to the projected traffic to be anticipated through the year 2006 in the area around the Metro Terminal, it was indicated by Neil Pederson of JHK Associates, Traffic Consultants, that if I-370 were constructed to support the facility, some form of an interchange would be required at the confluence of I-370, Shady Grove Road and Maryland Route 355. The interchange concept was necessitated by the excessive number of left-turn movements at the intersection as determined by the traffic assignments.

The City of Gaithersburg has for many years been a proponent of the grade separation at this critical intersection, well before I-370 was projected to be located in the general area. The City has not altered its position in this regard and strongly supports the concept of inter-connection of the various elements of the highways under consideration.

In this light, the City has taken the liberty of preparing a very preliminary study of an interchange linking the affected highways. It should be understood that any attempt to link high speed highways with urban roads is difficult because of the resulting weaving movements. Enclosed you will find a copy of the proposal for your amusement, amazement, and perusal. It is hoped that some of the elements have merit.

The City appreciates the opportunity to participate in the study and is hopeful that the efforts will come to positive fruition.

Sincerely,

George R. Kelley

George R. Kelley
City Engineer

GRK/lm

Enclosure

United States Department of the Interior

NATIONAL PARK SERVICE
NATIONAL CAPITAL REGION
1100 OHIO DRIVE, S. W.
WASHINGTON, D.C. 20242

In reply refer to:
D30-NCR(LUCE)

1980 JUN 25

Mr. Hal Kassoff
Director
Maryland State Highway Administration
300 West Preston Street
Baltimore, Maryland 21203

Dear Mr. Kassoff:

This is in response to the Federal Highway Administration (FHWA) notice in the Federal Register, dated April 17, indicating that an environmental impact statement will be prepared on a proposal to construct Interstate Route 370 in Montgomery County, Maryland, from Interstate Route 270 to the Shady Grove Metro Station.

While at this time it does not appear that this proposal will directly affect any National Park Service lands, we are concerned that this area lies within the Rock Creek watershed. Therefore, we request that we be kept apprised of the progress of the impact statement and consideration be carefully given to proposal related storm water management and surface runoff controls.

Thank you for the opportunity to comment at this early date.

Sincerely yours,

Robert J. Stanton

Acting Regional Director, National Capital Region

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GAITHERSBURG CHAMBER OF COMMERCE

P.O. BOX 652 • GAITHERSBURG, MARYLAND 20760
TELEPHONE 301 - 840 1400

June 5, 1980

Slade Clatrider
Maryland Department of Transportation
PO Box 717
300 W. Preston St.
Baltimore, Md. 21203

Dear Mr. Clatrider,

The Gaithersburg Chamber of Commerce thanks you for sending the Project Status Report on the access road from I270 to the Shady Grove Metro Station known as I370.

At a joint meeting of the Economic Development and Legislative Committees of the Chamber the following recommendations were made:

* The Chamber supports Alternate 2A - improve Shady Grove Road with an at-grade intersection at Rt. 355.

* Expedite the development of M83 (Rt. 115). This area north-east of the Metro Station houses the majority of commuters and general traffic.

SHA
6/9/80

* Expedite the construction of the Shady Grove Road bridge over I270. This bridge is a hazard at the present time.

The Chamber has mixed emotions on I370. The project might be more acceptable if the road were to be elevated.

Please keep the Chamber informed as to the progress of all road development in the Gaithersburg area.

Very truly yours,

Richard S. Will, V.P.
Legislation

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
8787 Georgia Avenue • Silver Spring, Maryland 20907
(301) 279-1000

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April 15, 1980

Mr. James J. O'Donnell
Secretary
Maryland Department of Transportation
P.O. Box 8755
Baltimore-Washington International Airport
Baltimore, Maryland 21240

Dear Jim:

The Montgomery County Planning Board, at its regular meeting of April 3, 1980, reviewed the alternatives which are under consideration in the project planning study for the I-370 Connector in the Shady Grove area.

This review once again raised the issue of the lack of consistency between the project planning process being followed by the State with the master planning process of the County. The Planning Board wants to bring this important matter to your personal attention, both as a specific issue and as a symptom of the more general problem. We would request to meet with you, Mr. Caltrider and appropriate staff to seek resolution of these issues.

The Planning Staff memorandum discussing the I-370 Connector alternatives, which is attached, describes in more detail this particular example of the inconsistency with which we are concerned. The recent Shady Grove Sector Plan was prepared to reflect the previous decision by Federal, State and County Government and WMATA to extend the initial terminal station and train yard of the "A" line of the Metrorail system from Rockville to Shady Grove. That earlier decision included the approval and designation of I-370 by the appropriate State and Federal Authorities.

Extensive effort was made in preparing the Shady Grove Plan to coordinate the land use plans with the State and County transportation plans for the area. Yet despite those efforts, the project planning study for I-370 has come forth with an alternative that was studied and rejected by the County government. Further, that

alternative is contrary to the comprehensive plans for the area, would require a reassessment of land use and zoning for the area and probably a short-term and long-term decrease in the development potential of the area. The development potential for the Shady Grove area is a key element of the overall plans of the County as well as being a vital resource to the economy and tax base of the State.

In the project planning studies being carried out by the Maryland Department of Transportation, the alternatives being studied should provide approximately equal transportation services in obtaining the objectives for which the project is intended. Having alternatives which do not do so, can have the consequence of upsetting the balance in the comprehensive plan for the areas being served by the proposed improvement. The Planning Board is extremely distressed with this particular example in the I-370 project planning study of the lack of consistency with the approved and adopted plans of the County.

The Planning Board has been very concerned with this general issue for a number of years. We had explored remedies with your Department and took part almost three years ago in an all day conference set up by Maryland Department of Transportation on Coordinating County Master Planning with Transportation Planning. To date, these efforts at seeking some administrative solution have not yet borne any fruit. We are aware of efforts, which are just now beginning, to go through an update of the Action Plan. That administrative action could accommodate some of our concerns first expressed three years ago.

The Planning Board is of the opinion that this is a very significant problem in Federal/State relations, as well as Federal/Local relations. We think that the dilemmas raised by this lack of consistency of the Federal and State processes with the local process is one of the biggest single threats to the capacity of local government to plan in a comprehensive manner. It is becoming painfully obvious to us that we need to seek legislative cures at both the Federal and State levels. They would be in addition to any appropriate and desirable administrative changes such as ones to the Action Plan. Such a dual approach could provide for a proper balance between the mandates of the Federal law and the requirements of local planning.

We would like to meet with you to go over our concern with this particular instance of the I-370 project planning study as well as to obtain the help of the Maryland Department of Transportation in seeking appropriate legislation. In the meantime, the Planning Board and our staff will be in contact with appropriate national interest groups and elected officials to review these concerns with them.

Sincerely,

Royce

Royce Hanson
Chairman

RH:RMW:bap

Attachment

APPENDIX D

Stage II, Phase A, engineering and environmental studies for the Intercounty Connector/Rockville Facility (ICC/RF) project planning study are complete.

The Maryland State Highway Administration (MSHA) has decided which of the seven project Alternates from Stage II, Phase A should be carried forward into Phase B for further study. The preparation of detailed alignment studies and presentation of the Draft Environmental Document at the Location Public Hearing scheduled for December 1982 will complete this stage of effort. The selection of a final alternate will be made in the Spring of 1983. This schedule is tentative and subject to revision.

The alternates selected for final study are Alternate A, No-Build; Alternate CDE Combined, Upgrading of Existing Facilities; Alternate F, Modified Master Plan Alignment and Rockville Facility; and Alternate G, Master Plan Alignment. These are shown in Figure VIII-1 and described in more detail below.

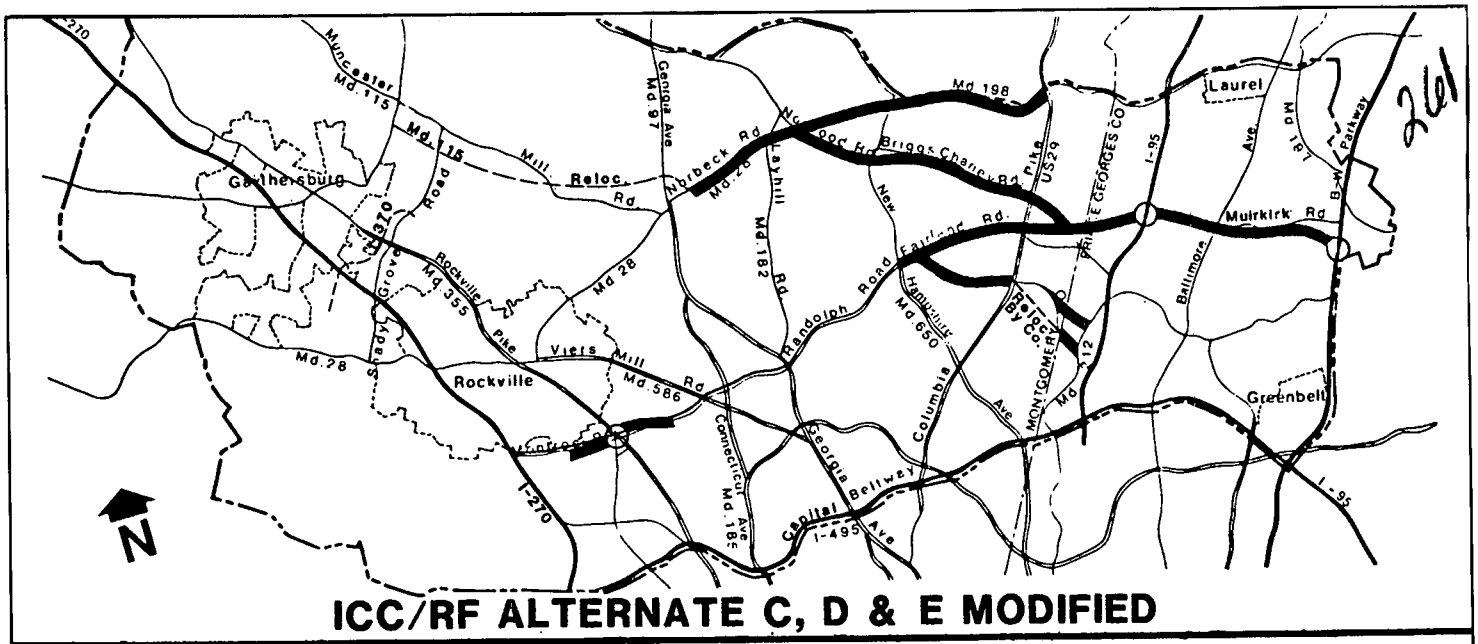
- Alternate A. Consists of existing and proposed transportation facilities expected to be in place by 2010. Includes short-range, low capital cost improvements such as existing intersection upgrades. This alternate also used as a base against which other alternates compared.

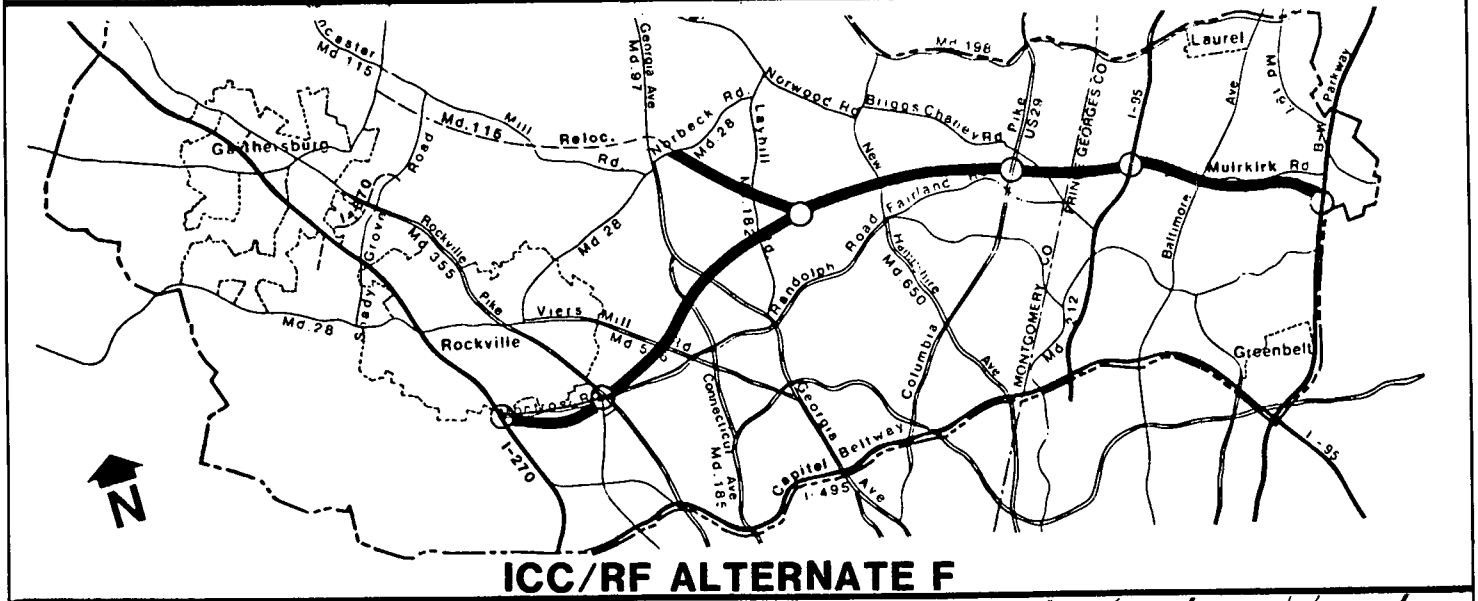
- Alternate CDE. In southern corridor, reconstruct portions of Randolph Road, East Randolph/Cherry Hill Road, and MD 212, construct bridge over B&O Railroad, interchange of Montrose Road with MD 355. In northern corridor, reconstruct portion of MD 28 (Norbeck Road) and MD 198 (Spencerville Road), and construct new highway, MD 28 at MD 182 to MD 198 at MD 650. In central corridor, reconstruct portions of Norwood Road, Briggs Chaney Road, Fairland Road, Muirkirk Road, construct new highway on Master Plan Alignment in vicinity of Montgomery/Prince George's County line, from I-95 to Muirkirk Road, and on Master Plan Alignment from Muirkirk Road to Baltimore/Washington Parkway. Reconstructions at least to four-lane highway, in some cases to six lanes.

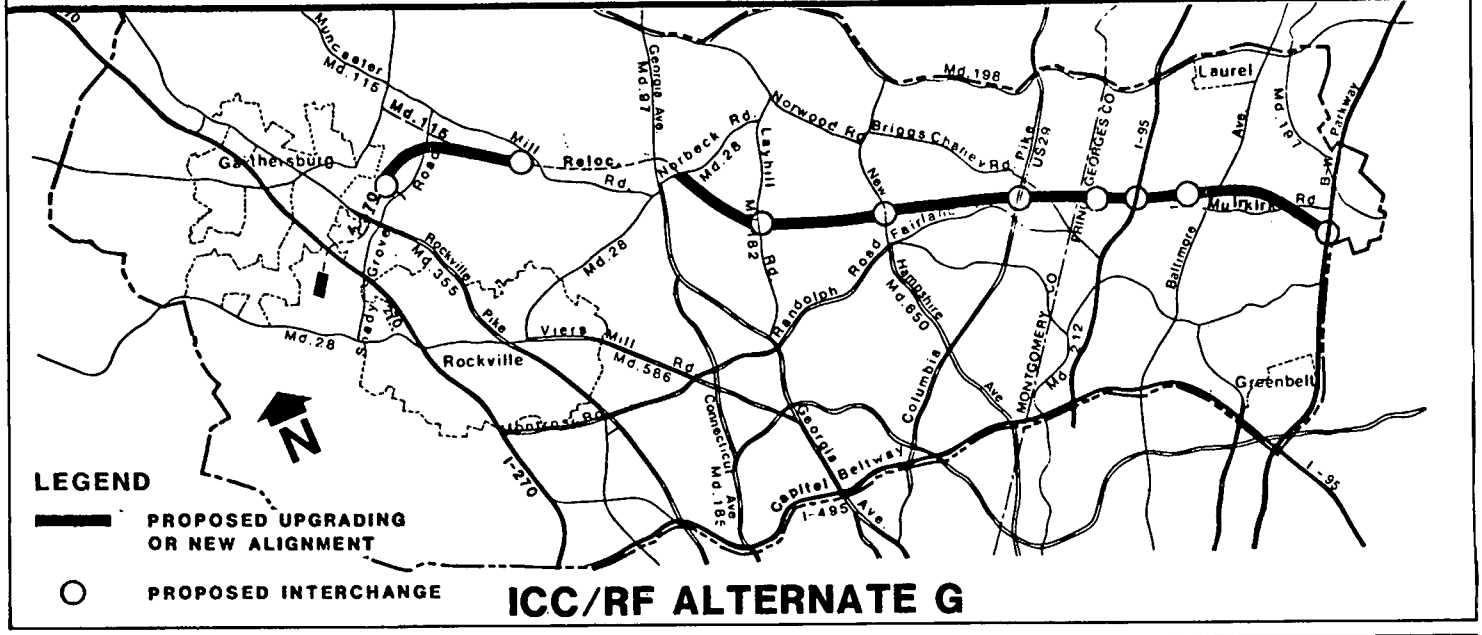
- Alternate F. Construct compact four-lane parkway/high-occupancy vehicle arterial along Rockville Facility, major four-lane divided arterial highway with minimum number of interchanges along Master Plan Alignment. Extend MD 115 Relocated southeast to Master Plan Alignment to provide access from northwest. East of I-95, follow corridor for Alternate CDE rather than Master Plan.

- Alternate G. Construct access-controlled four-lane divided arterial with compact interchanges at all major intersecting roadways along Master Plan Alignment from MD 115 Relocated to Baltimore/Washington Parkway. Construct new segments to connect proposed I-370 to MD 115 Relocated and proposed Great Seneca Highway. No Rockville Facility.

If a "Build" alternate is selected by the State Highway Administrator, a Final Environmental Impact Statement (FEIS) will be prepared in consultation with the Federal Highway Administration (FHWA) based on the Selected Alternate with summary and response to all Public Hearing comments. The approved FEIS will be made available to appropriate federal, state, and local agencies as well as to interested citizens.







	ICC Alternates Under Study	INTERSTATE 370	
		SCALE AS NOTED	

Figure VIII-1

Following numerous meetings with the Secretary of Transportation during the early 1970's, Montgomery and Prince George's County elected officials reached a consensus that the proposed Intercounty Connector and Rockville Facility projects should be studied so that future transportation needs and negative and positive impacts could better be defined.

There was no commitment made for any type of construction then, and no money has been provided for construction in the Consolidated Transportation Program (CTP). The CTP is updated and reviewed by local elected officials annually. In the current CTP, the ICC/RF study is listed along with several other projects throughout the state as "Projects to be deleted following completion of current activities". The specific termination point will vary by project, but is intended to be the earliest possible stopping point which will protect prior investments in these projects and, to the extent feasible, allow future use of study data. With the ICC/RF study, the termination point would be either following the Public Hearing or upon receipt of Location Approval from the FHWA. Termination of all or parts of the study before these two likely stopping points would most likely be due to study findings which show that the entire project or certain Alternates are not feasible.

The future possibility of constructing all or portions of any Alternate for which FHWA Location Approval may ultimately be received would most likely depend on the ability of the County to reserve land for future construction through its planning and zoning regulations and funding availability.

An ICC/RF decision will not lessen the need for I-370. SHA will make its project decisions independently, based upon the separate indicated needs. However, as shown above, the master planned alignment is only one of the Alternates currently under consideration.

IX. INDEX