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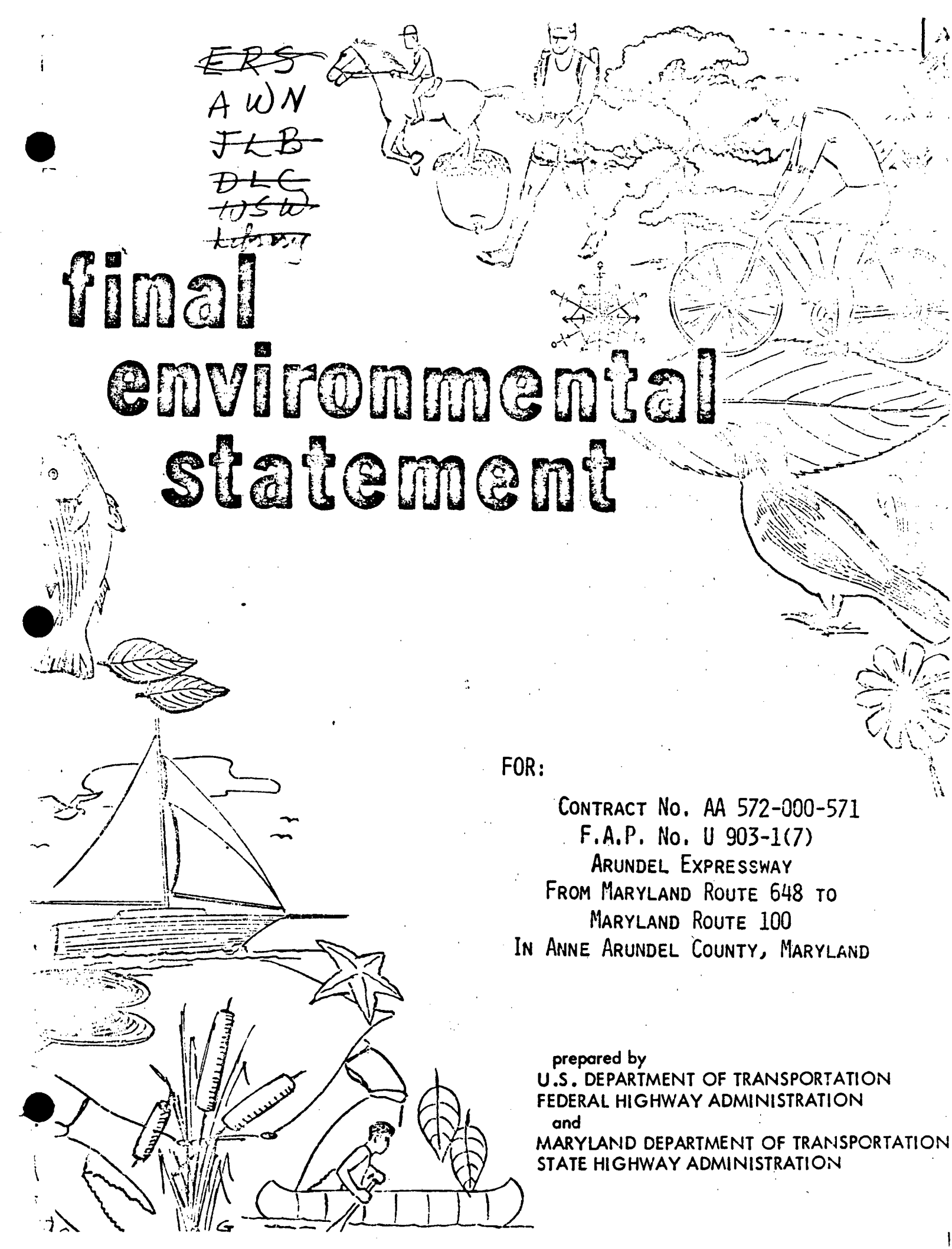
final environmental statement



FOR:

CONTRACT No. AA 572-000-571
F.A.P. No. U 903-1(7)
ARUNDEL EXPRESSWAY
FROM MARYLAND ROUTE 648 TO
MARYLAND ROUTE 100
IN ANNE ARUNDEL 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-75-04-F

Federal Highway Administration
Region III

ARUNDEL EXPRESSWAY

Maryland Route 648 (Glen Burnie) to Maryland Route 100
Anne Arundel County, Maryland

ADMINISTRATIVE ACTION

FINAL
ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

and

MARYLAND DEPARTMENT OF TRANSPORTATION
State Highway Administration

Submitted pursuant to 42 U.S.C. 4332(2)(C), 23 U.S.C. 128(a)

M. S. Caltrider
State Highway Administrator

September 8, 1978
Date

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

January 12, 1979
Date

by: Stanley R. Davis
R. A. Davino, Director
Office of Environment and Design
Federal Highway Administration
Region Three

This Environmental Impact Statement

was prepared

under the direction of

THE MARYLAND STATE HIGHWAY ADMINISTRATION

and

THE FEDERAL HIGHWAY ADMINISTRATION

by

Rummel, Klepper & Kahl

with special assistance by:

Yule, Jordan & Associates, Inc. in
Air Quality Analysis & Socio-Economics;

Environmental Concern, Inc. in
Wetlands Impact Mitigation;

and

Thunderbird Research, Inc. in
Archeological Impact Determination

- SUMMARY SHEET -

1 - Administrative Action Environmental Statement:

( ) Draft (x) Final
( ) Section 4(f) Statement attached

2 - For further information concerning this project contact:

Mr. Eugene T. Camponeschi
Maryland State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201
Area Code (301)-383-4327
Office Hours: 8:15 a.m. to 4:15 p.m.

Mr. Roy D. Gingrich
Federal Highway Administration
The Rotunda Building - Suite 220
711 West 40th Street
Baltimore, Maryland 21211
Area Code (301)-962-3940
Office Hours: 8:00 a.m. to 4:30 p.m.

3 - Description of Action:

The proposed highway improvement is located in Anne Arundel County, Maryland and consists of the completion of the Arundel Expressway (4-lane divided highway) on new location from Old Annapolis Road (Maryland Route 648) in Glen Burnie southerly to Maryland Route 100, a distance of approximately 2.1 miles.

4 - Summary of Environmental Impact:

A safer, more efficient highway system will result from the proposed project, with increased social and economic opportunities. The displacement of residents, proximity to established neighborhoods and schools and increases in noise levels, appear to be the major adverse environmental effects. Relocation assistance services, aesthetically designed landscaping and various types of noise barriers will minimize these impacts.

5

5 - Alternatives Considered:

* Alternate 1 proposed the completion of the Arundel Expressway from Old Annapolis Road (Maryland Route 648) to Maryland Route 100. A direct connection to Ritchie Highway was proposed in the vicinity of Pasadena Road, in addition to ramp connections to an improved Mountain Road and Maryland Route 100.

* Alternate 2 (Selected Alternate) - The proposed completion of the mainline of the Arundel Expressway is identical to Alternate 1. Ramp connections are proposed to an improved Mountain Road and to Maryland Route 100. The connection to Ritchie Highway is an expansion of the interchange between the proposed Expressway, Maryland Route 100 and Ritchie Highway.

Alternate 3 was the "Do-Nothing" alternative.

Alternate 4 - The proposed mainline of the Arundel Expressway was identical to Alternate 1. Ramp connections are proposed to Maryland Route 100 and to an improved Mountain Road. A direct connection to Ritchie Highway was not proposed with this alternative.

Note: Only one Arundel Expressway alignment was proposed for all build alternatives because the location has generally been kept free of new construction since 1960 with the cooperation of the Anne Arundel County Planning & Zoning Commission. Shifting the alignment to the west would adversely impact existing residential and apartment communities, as well as the Southdale Shopping Center, as shown on Drawing Nos. 4 and 6. An alignment shift easterly would also disrupt residential and apartment communities, in addition to the several schools situated in this area.

* Alternates 1, 2 and 4 have identical mainline corridor configurations. Each of these Alternates, however, differs in the type of ramp connections provided with existing Ritchie Highway. Alternates 1 and 2 would include direct connections to Ritchie Highway from the Expressway. During the development and coordination from the Draft EIS, the Anne Arundel County Office of Planning & Zoning raised objections to providing direct connections to Ritchie Highway. The Regional Planning Council also supported this concern. In response to these positions, the Draft EIS presented these Alternates but indicated that they were no longer under consideration.

Prior to the Public Hearing, the State Highway Administration reviewed the alternatives proposed for this project and noted that Alternate 4 (the only build alternative under consideration) would require all traffic exchange between Ritchie Highway and the proposed Arundel Expressway to occur on the local road system. Alternate 2 proposes that this exchange of traffic be made via an expanded interchange in the vicinity of Maryland Route 100 and thereby provide a route, which utilizes the major roads and proposed ramps in the area rather than the local roads. For this reason, the decision was made to include Alternate 2 for consideration at the Public Hearing and is the recommended alternate in this Final Environmental Statement. The selection of Alternate 2 for this project will not affect the future consideration of improvement alternatives in the Ritchie Highway Corridor as proposed in the Baltimore-Annapolis Transportation Corridor Study.

6 - <u>Entities from which comments have been requested:</u>

Distribution List
Draft Environmental Statement
(FHWA-MD-EIS-75-04-D)

- FEDERAL AGENCIES -

* U. S. Department of the Interior
Assistant Secretary for Program Policy
Washington, D. C. 20240
Attention: Director, Environmental Project Review

Regional Administrator
Department of Housing & Urban Development
Curtis Building
Sixth & Walnut Streets
Philadelphia, Pennsylvania 19106

Office of the Secretary
Department of Agriculture
Washington, D. C. 20250

Deputy Assistant
Secretary for Environmental Affairs
U. S. Department of Commerce
14th & Constitution Avenue
Room 3876
Washington, D. C. 20230

Department of Health, Education & Welfare
Assistant Secretary for Health & Science Affairs
HEW - North Building
Washington, D. C. 20202

* Environmental Protection Agency
Director of Impact Statements Office
6th & Walnut Streets
Philadelphia, Pennsylvania 19106

Office of Economic Opportunity
1200 - 19th Street, N. W.
Washington, D. C. 20506

* U. S. Department of Agriculture
Soil Conservation Service
4321 Hartwick Road
Room 522
College Park, Maryland 20740

* Denotes respondents

- FEDERAL AGENCIES -
(Continued)

Corps of Engineers, Baltimore District
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Baltimore, Maryland 21201

Department of Energy
Office of Environmental Programs
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Washington, D. C. 20461

* U. S. Coast Guard
431 Crawford Street
Portsmouth, Virginia 23703

Urban Mass Transportation Administration
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Washington, D. C. 20024

* U. S. Department of Agriculture
Forest Service
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* U. S. Department of Transportation
Office of the Secretary
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* Denotes respondents

- STATE OF MARYLAND -

Department of Budget and Fiscal Planning
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Baltimore, Maryland 21201

Department of General Services
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Baltimore, Maryland 21201

Department of Economic and Community Development
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Annapolis, Maryland 21404

* Maryland Historical Trust
Shaw House
21 State Circle
Annapolis, Maryland 21401

* Maryland Historical Society
201 West Monument Street
Baltimore, Maryland 21201

State Department of Education
301 West Preston Street
Baltimore, Maryland 21201

* Department of Natural Resources
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Annapolis, Maryland 21404

* Department of State Planning
State Office Building
Baltimore, Maryland 21201

Department of Public Safety and Correctional Services
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Executive Plaza One
Hunt Valley, Maryland 21030

Maryland Office of Economic Opportunity
1100 North Eutaw Street
Baltimore, Maryland 21201

* Department of Health & Mental Hygiene
201 West Preston Street
Baltimore, Maryland 21201

* Denotes respondents

- STATE OF MARYLAND -
(Continued)

Department of Transportation
Baltimore-Washington International Airport
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State Soil Conservation Committee
University of Maryland
1103A - H. J. Patterson Hall
College Park, Maryland 20742

* Baltimore Regional Planning Council
St. Paul and Monument Streets
Baltimore, Maryland 21202

- BALTIMORE CITY & ANNE ARUNDEL COUNTY -

* Baltimore City Department of Planning
222 E. Saratoga Street
Baltimore, Maryland 21202

Anne Arundel County
Department of Public Works
1 Harry S. Truman Parkway
Annapolis, Maryland 21401

Anne Arundel County
Office of Planning & Zoning
The Arundel Center
Annapolis, Maryland 21401

7 - Date that the Draft Statement was mailed to CEQ:

Draft Environmental Statement was mailed to CEQ on April 15, 1976.

* Denotes respondents

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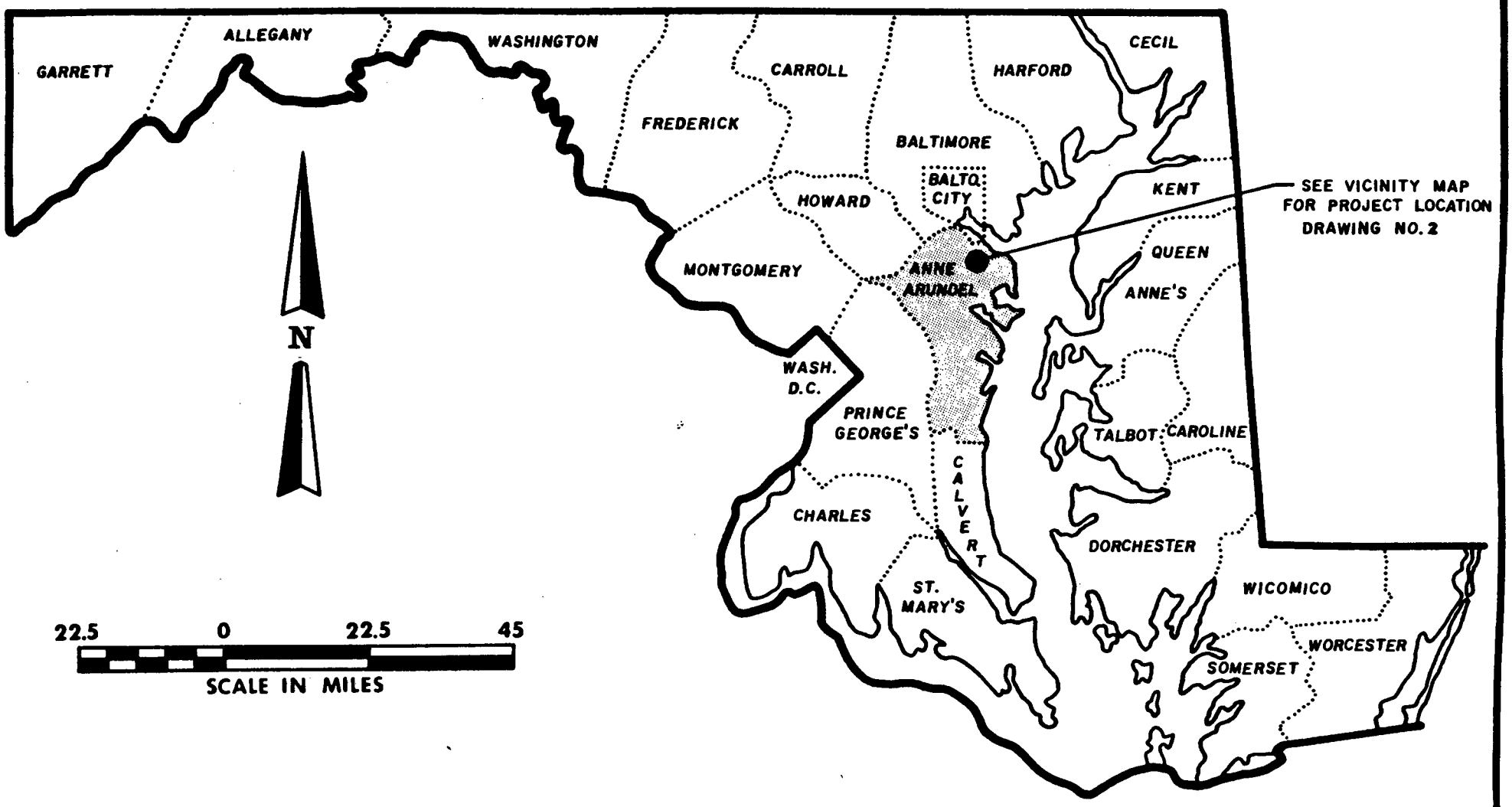
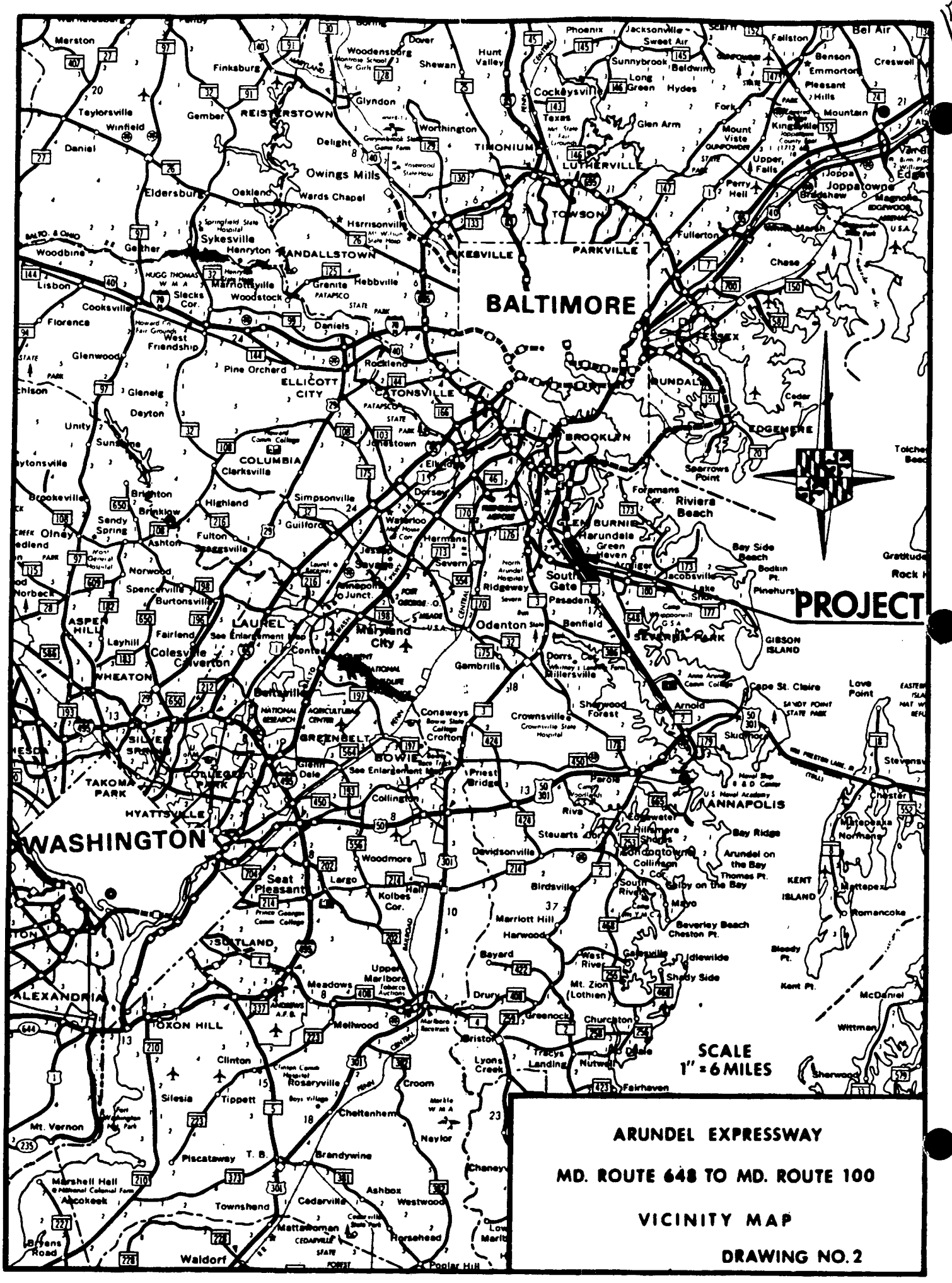


DRAWING NO. 1

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
STATE OF MARYLAND
PROJECT LOCATION MAP



ARUNDEL EXPRESSWAY

MD. ROUTE 648 TO MD. ROUTE 100

VICINITY MAP

DRAWING NO. 2

16

A. PROJECT DESCRIPTION AND NEED:

1. General Description -

This project is included in the General Development Plan for the Baltimore Region and is part of the State Primary System as designated in the Maryland Department of Transportation Consolidated Transportation Program. The Arundel Expressway, as proposed by the State Highway Administration, is located south of Baltimore City and east of the Governor Ritchie Highway in the Baltimore-Annapolis Corridor of Anne Arundel County, Maryland. Drawing No. 1 is a Project Location Map - State of Maryland, showing the general location of the proposed project.

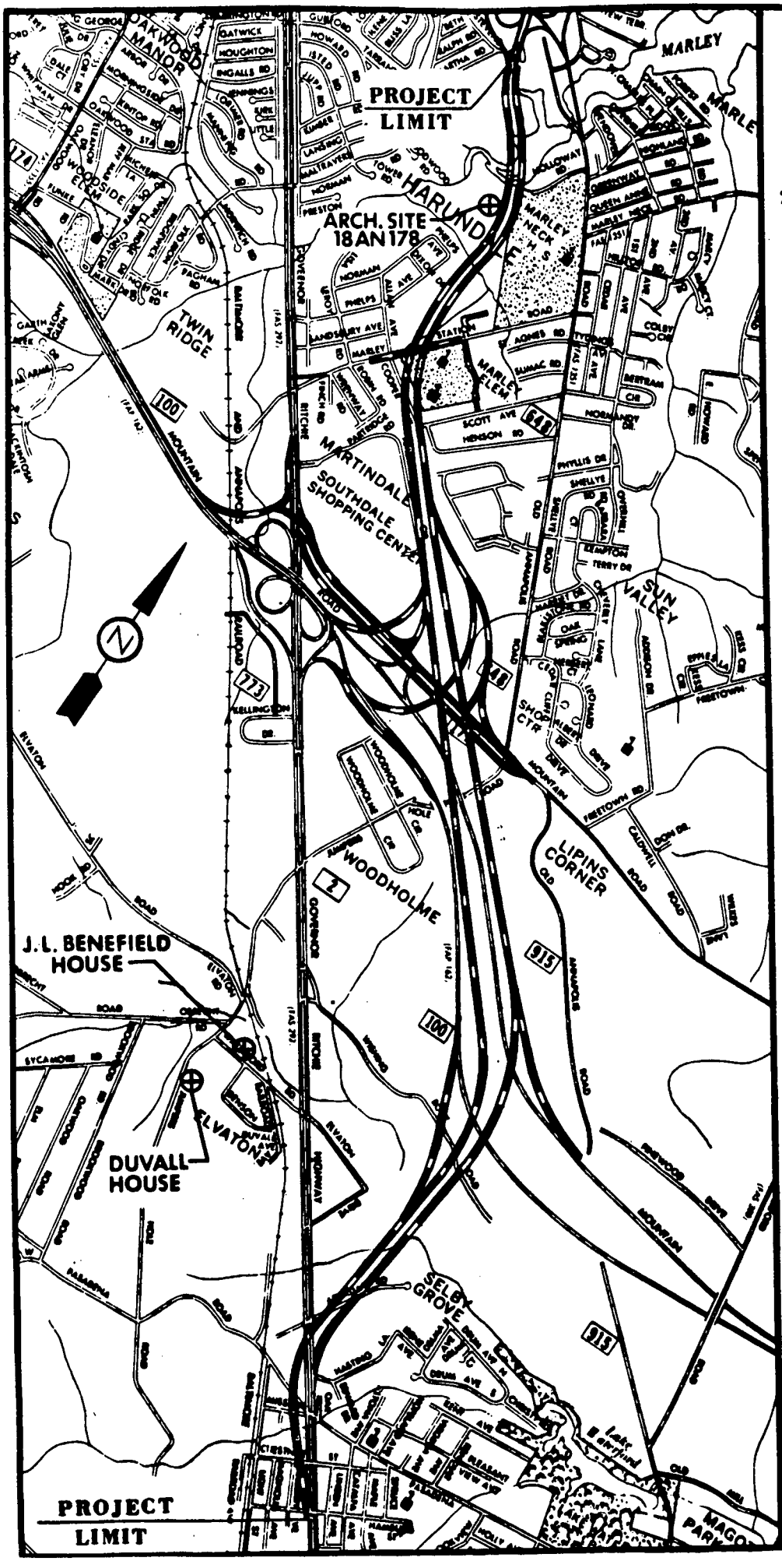
The northern section of the Arundel Expressway, from the Baltimore Beltway to Maryland Route 648, was opened to traffic in several sections from 1972 to 1978. The project under consideration in this Statement consists of the continuation of the Arundel Expressway from Maryland Route 648 southerly to Maryland Route 100, a distance of approximately 2.1 miles. Drawing No. 2 is a Vicinity Map, showing the location of the project in the Baltimore-Annapolis Corridor. This section of the Arundel Expressway stands by itself as a complete project and is essential for the operation of the Expressway, which will make it a usable facility between two principal arterial highways, the Baltimore Beltway on the north and Maryland Route 100 on the south. All improvements in the Ritchie Highway Corridor south of Maryland Route 100 have been delayed at the request of Anne Arundel County and the Regional Planning Council so that they can be evaluated by the on-going Baltimore - Annapolis Transportation Corridor Study (BATCS). A general discussion of the BATC Study alternatives are included in this Final Statement on page B-3.

In the beginning of the Arundel Expressway Study, from Maryland Route 648 to Maryland Route 100, two expressway proposals were developed and designated as Alternates 1 and 2 (see Drawing Nos. 3 and 4, respectively). Both of these alternates proposed the extension of the Arundel Expressway from Maryland Route 648 to Maryland Route 100 along with a connection from the Arundel Expressway to existing Governor Ritchie Highway in the vicinity of Maryland Route 100. In response to concerns of the Anne Arundel County Office of Planning and Zoning, which were supported by the Regional Planning Council, the DEIS presented Alternates 1 and 2, but indicated that they were no longer under consideration. Anne Arundel County was concerned that Alternate 1 would be disruptive to the Pasadena community and create a land use problem. Alternate 2 avoids the objectionable land use features of Alternate 1; however, the County was concerned with the required acquisition of several homes fronting on Ritchie Highway. Alternate 4 as presented in the DEIS and this FEIS is the same as Alternate 2, except that no direct connection is planned to the Ritchie Highway and thereby avoids the land use problems associated with Alternate 1. Alternate 2, which was

modified subquent to the DEIS to include a service road on the east side of Ritchie Highway has become the selected alternate in this FEIS. Selected Alternate 2 will permit the homes fronting on Ritchie Highway to remain in place and removes the County's concern with this alternate. Anne Arundel County and Regional Planning Council concerns south of Maryland Route 100 will be addressed in the BATC Study.

The decision was made to reconsider Alternate 2 at the Public Hearing and in this Final Environmental Statement because Alternate 4 requires all traffic exchange between the Ritchie Highway and the Arundel Expressway to occur on the local road system. Southbound Arundel Expressway traffic, with a Ritchie Highway destination, would exit at the Mountain Road interchange and either go west on existing Mountain Road through the Southdale Shopping area to Ritchie Highway, or cross existing Mountain Road at-grade, go west on Maryland Route 100 and negotiate the loop ramp in order to proceed south on Ritchie Highway. Northbound Ritchie Highway would use the following routes to gain access to the Arundel Expressway: North on Ritchie Highway and east on Mountain Road through the shopping area to the northbound ramp of the Arundel Expressway; or north on Ritchie Highway, east on Jumpers Hole Road to Mountain Road and then west to the northbound ramp of the Arundel Expressway. The second alternate would route traffic through the Woodholme residential community. At some point along each of the above described routes, traffic would be confined to a single-lane passing through a signalized at-grade intersection. This would be a restriction in the free flow of traffic and could result in long queues of vehicles through the Southdale Shopping area and the Woodholme subdivision. Alternate 2 proposes that the exchange of traffic between the Ritchie Highway and the Arundel Expressway be made via an expanded interchange in the vicinity of existing Maryland Route 100, and thereby provide a route which utilizes the major roads in the area and bypasses the local communities.

The improvements proposed for consideration at the Public Hearing consisted of the continuation of the Arundel Expressway from Old Annapplis Road (Maryland Route 648) in Glen Burnie southerly to Maryland Route 100, a distance of approximately 2.1 miles. The alignment and construction proposed with the build alternatives (Alternates 2 and 4) were identical with respect to the extension of the Arundel Expressway. Alternate 2 provided for ramp connections to an improved Mountain Road and for a direct connection from the Arundel Expressway to Ritchie Highway by utilizing the interchange between existing Maryland Route 100, Ritchie Highway and the proposed Expressway. Alternate 4 provided for ramp connections from the Arundel Expressway to an improved Mountain Road and access to Ritchie Highway would be made via the local street system. The general locations proposed for Alternates 2 and 4, and the relationship to the surrounding development are shown on Drawings No. 4 and 6, respectively. The "Do-Nothing" alternative (Alternate 3) was also considered and consists of terminating the Arundel Expressway at Old Annapolis Road (Maryland Route 648) in Glen Burnie (see Drawing No. 5).



LEGEND

⊕ HISTORIC SITES

ALTERNATE 1

2000 0 2000

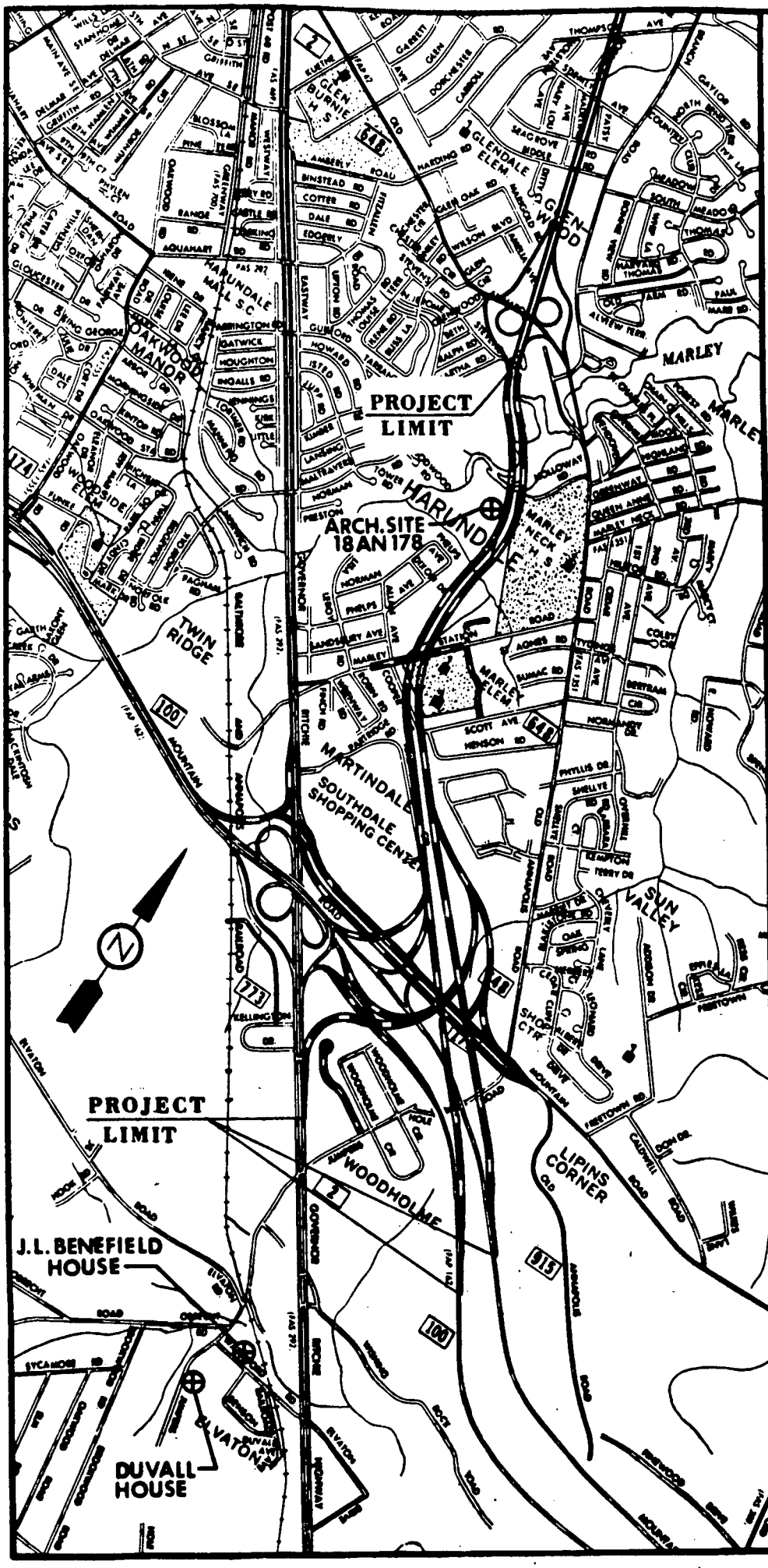
SCALE IN FEET

ARUNDEL EXPRESSWAY

MD. ROUTE 648
TO
MD. ROUTE 100
AND
INTERCHANGE AT
MARYLAND ROUTE 100

LOCATION MAP
ALTERNATE 1

DRAWING NO. 3



LEGEND

⊕ HISTORIC SITES

ALTERNATE 2

2000 0 2000

SCALE IN FEET

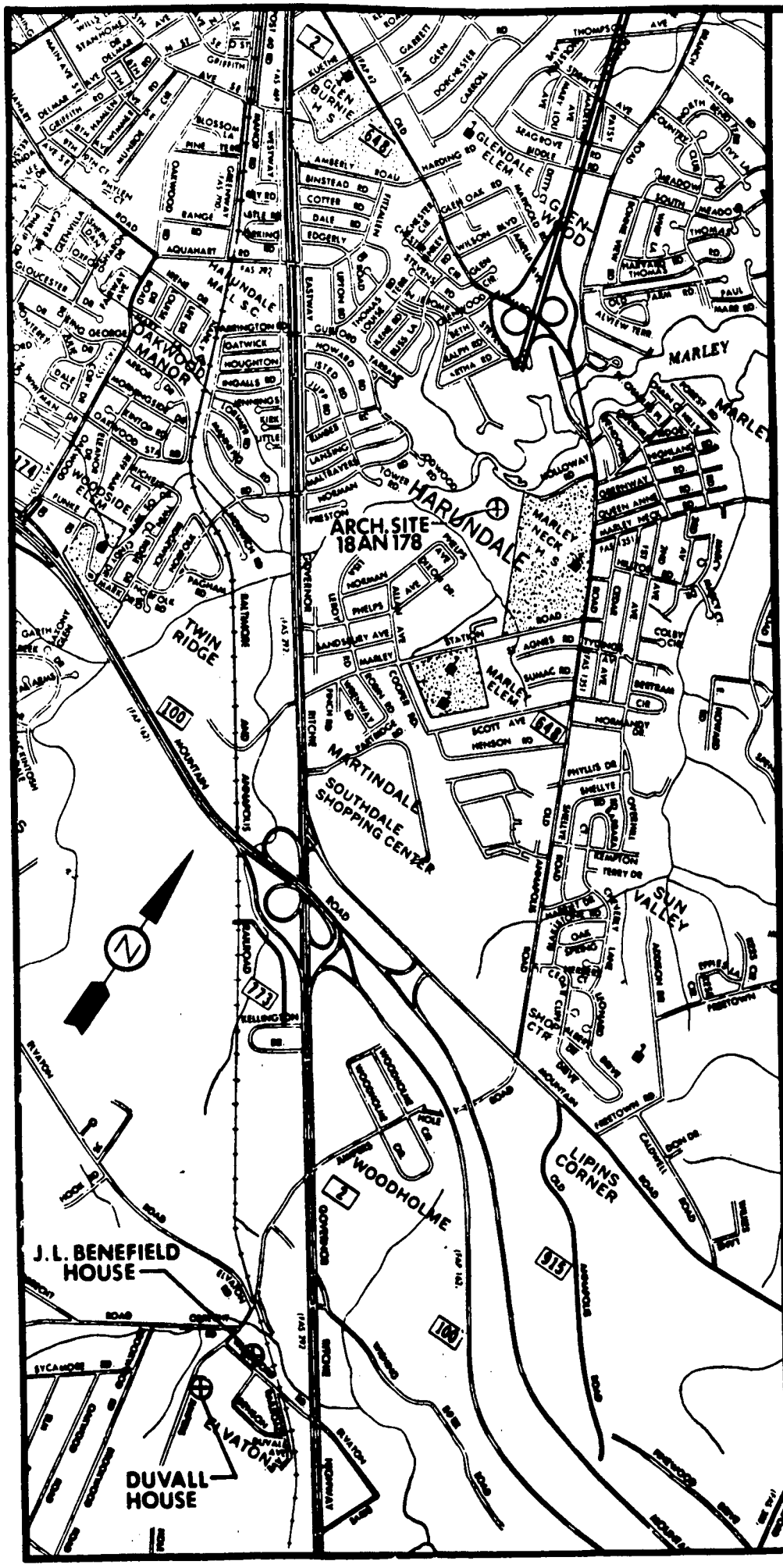
Alternate 2 Is The Selected Alternate.

ARUNDEL EXPRESSWAY

MD. ROUTE 648
TO
MD. ROUTE 100
AND
INTERCHANGE AT
MARYLAND ROUTE 100

LOCATION MAP
ALTERNATE 2

DRAWING NO. 4



LEGEND

⊕ **HISTORIC SITES**

2000 0 2000

SCALE IN FEET

Alternate 3 Is The "Do-Nothing" Alternative. The Existing Arterial Road System Would Remain Unchanged With No Construction Proposed In The Corridor.

ARUNDEL EXPRESSWAY

MD. ROUTE 648

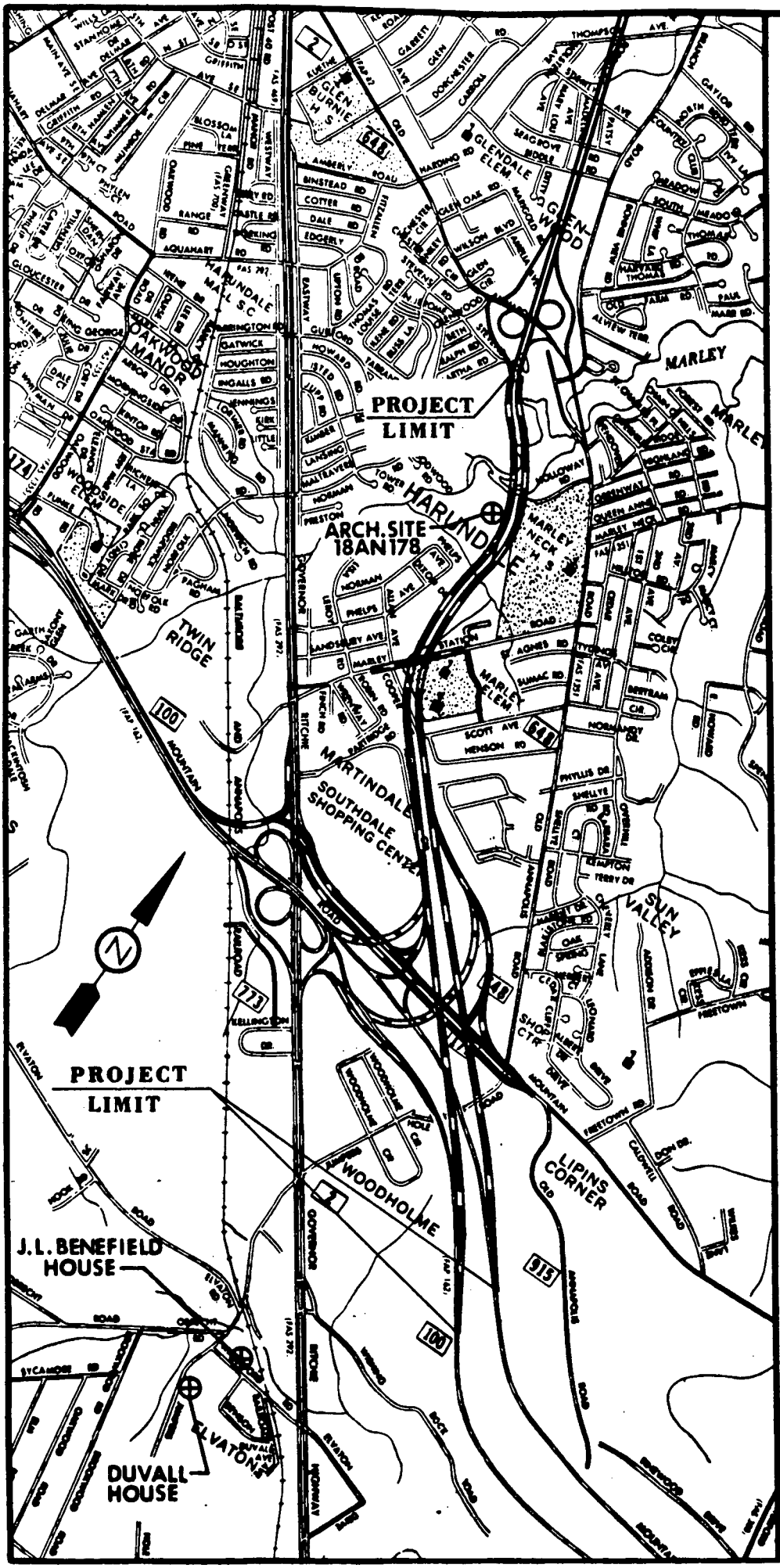
TO

MD. ROUTE 100

LOCATION MAP

ALTERNATE 3

DRAWING NO. 5



LEGEND

- ⊕ HISTORIC SITES
- ALTERNATE 4
- FUTURE RAMPS

2000 0 2000

SCALE IN FEET

ARUNDEL EXPRESSWAY

MD. ROUTE 648
TO
MD. ROUTE 100
AND
INTERCHANGE AT
MARYLAND ROUTE 100

LOCATION MAP
ALTERNATE 4

DRAWING NO. 6

The Arundel Expressway is proposed as an Expressway (Freeway by definition of the American Association of State Highway Transportation Officials) with complete control of access and geometric and safety features based upon a design speed of 70 miles per hour. Construction is planned as a four-lane dual highway, consisting of a 24-foot roadway in each direction, separated by a 74-foot median which widens in the vicinity of Maryland Route 100. Paved shoulders, 10-feet wide on the outside and 4-feet wide on the median side, will be provided for each roadway. The typical right-of-way width would be 300 feet. The ongoing Baltimore-Annapolis Transportation Corridor Study is currently evaluating the need for improvement to Ritchie Highway Corridor south of Maryland Route 100, as well as the potential need for 6 lanes north of Maryland Route 100.

The project recommendation (Alternate 2), including the basis for the selection of this alternate, is described on page A-19 of this Final Environmental Statement.

2. Need for the Project -

This project will provide safe and convenient highway transportation to the many thousands of residents living in the Governor Ritchie Highway corridor, and will substantially relieve peak-hour traffic tie-ups that occur at most signalized intersections through the heavily developed commercial areas. The proposed extension of the Arundel Expressway will complete a usable and safe highway facility from the Baltimore Beltway on the north to Maryland Route 100 and Ritchie Highway on the south, and provide a bypass to the east of the Glen Burnie area and the heavy commercial development along Ritchie Highway.

The construction of the Arundel Expressway from Maryland Route Maryland Route 100 is recommended in the Regional Planning Council's current General Development Plan for the Baltimore Region. The need for this project was also recognized by Anne Arundel County in its preliminary "1980 Transportation Plan for Anne Arundel County", dated January 18, 1974. The Arundel Expressway, as recommended in this Statement, (Alternate 2) is in conformance with both the General Development Plan and the County's 1980 Transportation Plan. The construction, as planned with Alternate 2 in this Statement, will terminate the project with the interchange at Maryland Route 100 making the expressway a complete facility and independent of other highway improvements. The BATC Study will determine the improvements needed in the Ritchie Highway Corridor south of Maryland Route 100.

- Existing Highway System -

The Governor Ritchie Highway (Maryland Route 2) is the only arterial highway east of Glen Burnie connecting Baltimore with Annapolis and the

Eastern Shore of Maryland and, at present, is a four to six-lane divided highway with no control of access, except through the interchange areas at the Baltimore Beltway, Maryland Route 100 and U. S. Route 50/301.

From the Baltimore Beltway south to the Crain Highway, Ritchie Highway consists of three 12-foot travel lanes in each direction, separated by a raised 16-foot median in a 110-foot right-of-way. Numerous left-turns lanes, with cross-overs and outside curbs with marginal sidewalks, are provided through this densely developed urban commercial section. South of the Crain Highway to U. S. Route 50/301, the highway median widens to approximately 42 feet and is depressed. Two 12-foot travel lanes are provided in each direction, with 10 to 12-foot surfaced shoulders in a 150-foot right-of-way. This section also has a great number of cross-overs, with left-turn lanes provided at major intersections. Extensive residential and commercial development has resulted in numerous entrances along the facility. Posted speed limits range from 30 to 55 miles per hour. The alignment and gradient for the most part are satisfactory, except at certain locations where the stopping sight distance is restricted by short vertical curves, resulting in unsafe conditions, particularly at signalized intersections. The high-volume usage and relatively high speeds tend to emphasize the dangers of poor sight distance and lack of access control.

In addition to the Ritchie Highway, other major State roads located in the Project Study Area include the Old Annapolis Road (Md. Route 648), the Baltimore Beltway (Interstate Route 695), and Maryland Route 100.

Old Annapolis Road (Md. Route 648) is the original north-south road in the transportation corridor extending from Baltimore to Annapolis. The roadway consists of a two-lane, non-divided paved travelway 20-24 feet in width with narrow shoulders. In some urban and commercial areas, curbs and/or additional lanes have been added. The existing roadway is, for the most part, substandard in capacity, cross-section, alignment and gradient, and can be described as hazardous with culvert headwalls, trees, utility poles and drainage ditches located within a few feet of the traveled roadway. Old Annapolis Road is generally contained in a 40 to 60-foot uncontrolled right-of-way with numerous residential entrances located along both sides of the facility. Posted speed limits are 30 to 50 miles per hour. North of Mountain Road, Old Annapolis Road is heavily traveled, acting as a collector for the highly developed communities in the Glen Burnie area, and as a supplementary arterial for the overloaded Ritchie Highway. South of Mountain Road, Old Annapolis Road loses its continuity, and travel volumes are greatly reduced.

The Baltimore Beltway is the northern terminal of the Arundel Expressway and, with the completion of this project, Maryland Route 100 will be the southern terminal. A brief description of both of these major facilities is included below.

The Baltimore Beltway (Interstate Route 695 and Maryland Route 695) is a 2 to 8 lane circumferential expressway, with full control of access encircling the City of Baltimore, and is located an average of 7 miles from the Central Business District. The Beltway is the most significant highway in the Baltimore region, acting as a distribution route for traffic approaching the City from all directions, and as a principal arterial route for the employment and population centers located in clusters around the City.

Maryland Route 100 is a 4-lane dual expressway, with full control of access extending across Anne Arundel County from Maryland Route 177 at Lake Shore westerly to Maryland Route 3. Planned extensions may carry this Expressway west from Maryland Route 3 to interchange with I-95. At the present time, Maryland Route 100 functions as a western bypass for the heavily congested Glen Burnie area. In the future, it will not only act as a Glen Burnie bypass, it may provide a safe and convenient connection to I-95, the major north-south interstate route in the Baltimore region.

The existing traffic conditions in the Arundel Expressway Study area may be evaluated by two parameters: Average Daily Traffic (ADT) and Level of Service. The Level of Service is a measure of the traffic conditions under which a roadway operates as it accommodates various traffic volumes. Influencing factors include speed, travel time, traffic interruptions, maneuvering freedom, safety, driving comfort, economy and, of course, the volume of traffic.

For interrupted flow conditions, such as major highways and arterials with traffic signals, Levels of Service are ranked from A to F (best to worst), as follows:

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

Level B - occasional delays at traffic signals.

Level C - increasing volumes, moderate delays at traffic signals.

Level D - lower speeds, increasing volumes, frequent delays at traffic signals.

Level E - low speeds, high volumes, signal backups almost to previous signal.

Level F - forced traffic flow, successive backups between signals.

For expressways and freeways with uninterrupted flow conditions, the following Levels of Service apply:

Level A - free traffic flow, low volumes, high speeds.

Level B - stable traffic flow, some speed restrictions.

Level C - stable flow, increasing traffic volumes.

Level D - approaching unstable flow, heavy traffic volumes, decreasing speeds.

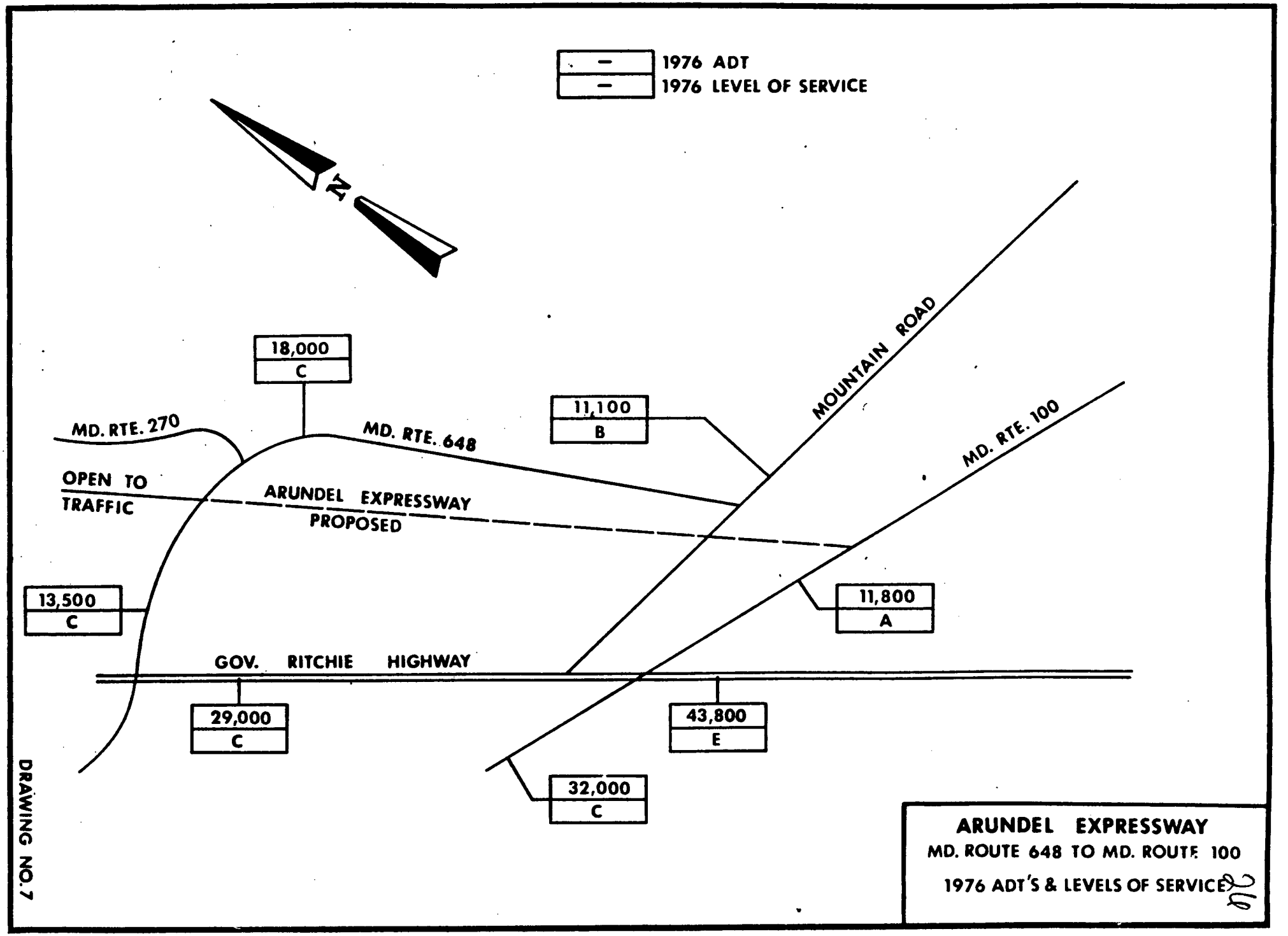
Level E - low speeds, high traffic volumes approaching roadway capacity, temporary delays.

Level F - forced traffic flow at low speeds, low volumes and high densities, frequent delays.

The 1976 ADT volumes and Levels of Service for the major roads in the project study area are listed below and shown on Drawing No. 7. The traffic volumes were obtained from the 1976 State Highway Administration traffic map.

Route	1976 ADT	Level of Service
Governor Ritchie Highway:		
Md. Rte. 648 to Md. Rte. 100	29,000	C
Md. Rte. 100 to the South	43,800	E
Maryland Route 648:		
Md. Rte. 2 to Md. Rte. 270	13,500	C
Md. Rte. 270 to Mountain Rd.	18,000	C
Mountain Road		
East of Md. Rte. 648	11,100	B
Maryland Route 100:		
East of Governor Ritchie Highway	11,800	A
West of Governor Ritchie Highway	32,000	C
Arundel Expressway:		
Beltway to Ordnance Rd.	7,800	A
Ordnance Rd. to Md. Rte. 648	-	-

In 1976 traffic conditions on the above roads were generally satisfactory. It should be noted, however, that the level of service on Governor Ritchie Highway is unsatisfactory through the Glen Burnie area. The segment of the Arundel Expressway under consideration in this Statement will complete a usable bypass of Glen Burnie.


1976 ADT
1976 LEVEL OF SERVICE
N
18,000
C
11,100
B
MD. RTE. 270
MD. RTE. 648
MOUNTAIN ROAD
MD. RTE. 100
OPEN TO TRAFFIC
ARUNDEL EXPRESSWAY
PROPOSED
13,500
C
11,800
A
GOV. RITCHIE HIGHWAY
29,000
C
43,800
E
32,000
C
DRAWING NO.7
ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
1976 ADT'S & LEVELS OF SERVICE

- Public Transportation System -

Bus service is the only public transportation system operational in the study area. Current planning for rapid transit in Anne Arundel County is described in Section B of this Statement.

The Mass Transit Administration provides local bus service to the following sections of the transportation corridor:

No. 6 Bus Line -
Baltimore City to Riviera Beach via Hanover Street, Hawkins Point Road and Fort Smallwood Road. The route services Brooklyn, Fairfield, Curtis Bay and Riviera Beach.

No. 14 Bus Line -
Baltimore City to Annapolis via Hanover Street and Ritchie Highway. The route services Westport, Brooklyn, Linthicum, Glen Burnie, Harundale, Severna Park and Annapolis.

No. 17 Bus Line -
Baltimore City to Gibson Island via Hanover Street, Ritchie Highway, Old Annapolis Road and Mountain Road. The route services Brooklyn, Motor Vehicles Administration, Glen Burnie, Marley, Lipins Corner, Green Haven, Jacobsville, Lake Shore, Long Point and Gibson Island.

3. Historical Background and Current Project Status -

- History of Arundel Expressway -

The proposal for a freeway on new location in the Baltimore-Annapolis Corridor, to supplement the Governor Ritchie Highway (Maryland Route 2) and bypass the Glen Burnie Community, was first studied by the State Highway Administration (then State Roads Commission) in cooperation with the Anne Arundel County Planning and Zoning Commission in 1956. This study of future highway needs in the County resulted in the Arundel Expressway being included in the State Highway System Study, dated February 1, 1958, as an additional project to Maryland's 12-Year Program, which was initiated in 1952. The 1958 State Highway System Study was developed as a needs study, and money was not appropriated to implement projects such as the Arundel Expressway, which was not included in the original 12-Year Program.

Studies were continued and, in the Spring of 1960, the State Highway Administration took action to authorize funds for the preparation of photogrammetry mapping and to complete detailed studies of the project. Included in this administrative action was a sum of money for the protection of the needed right-of-way. With the close cooperation of the Anne Arundel Planning and Zoning Commission, the corridor has generally been kept free of new construction since 1960. The Baltimore Metropolitan Area Transportation Study, prepared by Wilbur Smith and Associates in 1963, also indicated the need for the Arundel Expressway as part of the freeway system in the Baltimore region. As a result of the aforementioned studies, the Arundel Expressway from the Baltimore City Line to Pasadena was included as one of the critical primary highways in the 20-Year Highway Needs Study Program, dated February 1, 1964, and was programmed for construction in the 1964-1970 State Primary and Secondary Highway Construction Program. The Arundel Expressway, from the Baltimore Beltway to Relocated Maryland Route 648, was constructed and opened to traffic in three stages - Baltimore Beltway to Relocated Md. Route 710 - 1972; Relocated Md. Route 710 to Md. Route 270 - 1977; Md. Route 270 to Md. Route 648 - March, 1978.

In March, 1973, the Planning Commission of Baltimore City voted to remove the Arundel Expressway from the City's Master Plan. In the City, the Arundel Expressway was generally to have followed Hanover and Potee Streets to the southern City Line, and connect to the completed Arundel Expressway-Baltimore Beltway Interchange. Indecision on its general location and method of linking it to the City's Expressway System resulted in this action by Baltimore City's Planning Commission.

- Current Project Status - Arundel Expressway -

In accordance with the project notification and review system established under the Intergovernmental Cooperation Act of 1968 and Bureau of Budget Circular A-95, the State Clearinghouse has reviewed the project and has determined that it is in accord with State Plans, programs and objectives. The coordination process has been completed, as required by the approved State Action Plan. A coordination letter with attached map was circulated June 12, 1974 to 42 agencies, groups and officials, resulting in receipt of 14 replies.

A Public Informational Meeting was held at the Glen Burnie Senior High School on May 2, 1974, in order to inform residents in the area, and other interested agencies and officials, as to the current status of the Arundel Expressway project, the alternatives under consideration and to allow all citizens the opportunity to make their concerns known and to become involved in the planning process for this project. The opinions and concerns of citizens received at this meeting were, in part, responsible for eliminating the Alternate 1 connection to Ritchie Highway as part of this project.

In April, 1976, a Draft Environmental/Section 4(f) Statement (Report No. FHWA-MD-EIS-75-04-D) was circulated for the Arundel Expressway, from Maryland Route 648 to Maryland Route 100. This Statement primarily addressed the social, economic and environmental effects of Alternates 3 and 4, but included presentations of Alternates 1 and 2. Interested parties were requested to review the Draft Statement and submit written comments.

On June 3, 1976, a Combined Location/Design Public Hearing was held for this project in the Glen Burnie Senior High School. This Hearing gave all interested parties an opportunity to comment orally, or in writing, on the need for, location, design and environmental effects of the proposed project.

In a news release on December 20, 1976, the State Highway Administration announced the selection of Alternate 2 for the construction of the Arundel Expressway (Md. Route 10) from Maryland Route 648 to Maryland Route 100.

Inflation and the reduction in the amount of gas tax funds available for highways has caused the Arundel Expressway project to be delayed until the 1980's. The current Primary Highway Program (1979-1983) makes funds availably only for planning and engineering in FY 1978. Projected revenues indicate that additional engineering, right-of-way and construction funds could be available from 1979 to 1983. It is estimated that the entire project will be constructed and be available to the traveling public in 1983.

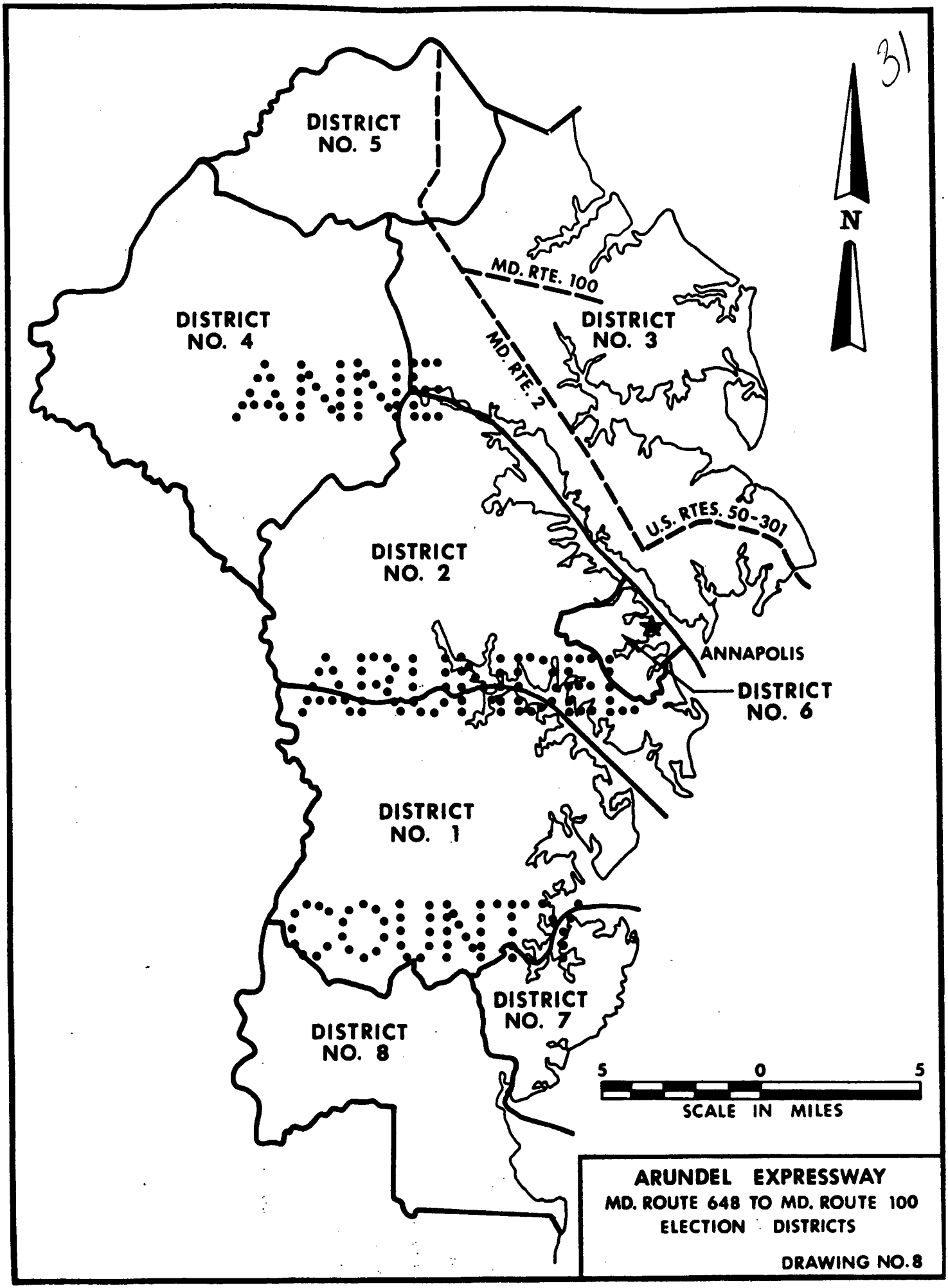
4. Inventory of Population and Economic Conditions -

- Population -

Anne Arundel County's population increased at a faster rate between 1960-1970 than did the State of Maryland or the United States. While the U.S. population increased about 13.3%, the State of Maryland's population increased about 26.5% (from 3.1 million people to 3.9), and Anne Arundel County's population increased from 206,634 to 297,539, or about 44.0%. The total net migration for Anne Arundel County between 1960-1970 was 54,942, or about 26.6%, partly due to increased employment opportunities in Baltimore and Washington.

The proposed Arundel Expressway is situated in the 3rd and 5th Election Districts in Anne Arundel County (see Drawing No. 8). Election Districts used in this Statement are synonymous to the minor civil divisions, as defined by the Bureau of Census, and do not conform to current election boundaries. The 5th District, which borders on Baltimore City to the north, includes greater part of the Glen Burnie community. The 5th District had a population of 60,868 in 1970, and a density of 1795.5 persons per square mile. The Arundel Expressway has been completed through the 5th District. The proposed Expressway extension is located in the 3rd District, which is situated south of Marley Creek. The 3rd District had a population of 96,127 in 1970, and a density of 1064.5 persons per square mile. District 3 had the second highest growth rate in the County during the 1960's and, because of its proximity to Baltimore City and the recreation areas along the Chesapeake Bay, Magothy and Severn Rivers, continued residential and industrial growth has been anticipated for this area by both State and County planning agencies. Significant population centers in the vicinity of the project are Glen Burnie (population 38,608 in 1970) and Severna Park (population 16,358 in 1970). The above population and density data was obtained from "Maryland Population (1930-1970) by Election Districts, Cities and Towns" - Publication No. 171 by the Maryland Department of State Planning.

The character of the Governor Ritchie Highway transportation corridor might be capsulized as follows: Baltimore City lies at the north end of the corridor, with its port facilities and heavy industry located along the Patapsco River. Industrial zoning in this area extends as far south as Stoney Creek for virtually the entire Marley Neck Peninsula. The northwest portion of the corridor has densely developed residential areas from the northern county line south through Glen Burnie and Harundale to Marley Station, with Baltimore-Washington International Airport located to the west of Glen Burnie. Strip commercial development is almost continuous along the Governor Ritchie Highway, Furnace Branch Road and Mountain Road. South of Maryland Route 100, the entire Ritchie Highway corridor is located between the Severn River and the Chesapeake Bay, with two individual land areas separated by the Magothy River. Beaches, marinas and private homes are located all along the shorelines of the Chesapeake Bay, Magothy and Severn Rivers, providing many outdoor recreational opportunities forpeople in the region.



ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
ELECTION DISTRICTS

DRAWING NO. 8

- Economic Activity in the Corridor -

Anne Arundel County is located on the western shore of Maryland's Chesapeake Bay, contiguous to the southern boundary of Baltimore City and 13 miles east of Washington, D. C. It is centrally located in the east coast megalopolis, which extends from Massachusetts to North Carolina, an area containing one-third of the total population of the United States.

Most of the heavy industry in the County is concentrated in the northern portion adjacent to the Baltimore port, where excellent road and rail services are available. The Marley Neck Industrial area, consisting of approximately 3300 acres, is located south of Marley Creek and is the largest industrially zoned area in the County. All Utilities are available for this area, including a 259,000 KW electric generating station operated by the Baltimore Gas & Electric Company. In addition to the Marley Neck Industrial area, two other industrial sites are located along Ordnance Road and Dover Road, north of Furnace Creek where the Arundel Expressway has been completed.

The Baltimore-Washington International Airport, consisting of approximately 3200 acres, is located west of Glen Burnie and Maryland Route 3.

The Federal Government is still the largest employer for the people of Anne Arundel County. Changes in the major employment sectors of the County are noted by the shift away from natural resource related activities (farming and fisheries) to manufacturing, retail and wholesale trade, with a continuing importance of the Federal, State and Local components. Gains in employment and output in Anne Arundel County have been reflected in a substantial growth of income, with the median family income being $11,478 in 1969. The Regional Planning Council has estimated that Glen Burnie's employment will increase about 99% between 1970-1990 (12,773 to 25,453 workers), while Severna Park's employment will increase by about 144% (3,359 to 8,178 workers).

The 1976-1977 real property tax rate for Anne Arundel County is $2.43 per $100.00 of assessed value at 50% assessment, plus a State rate of $0.23 per $100.00 of assessed value.

5. Public Facilities and Services -

- Educational, Medical and Other Facilities -

Churches of most denominations and schools are situated throughout the corridor. The Marley Neck Junior High School, Marley Elementary School, and the Marley Special School are located in the vicinity of the proposed extension of the Arundel Expressway at Marley Station Road. The Calvary Baptist Church is located on Marley Station Road and the Church of the Crucifixion is located on Scott Avenue.

The North Arundel General is a 300-bed hospital located on the south side of Maryland Route 100, one mile west of Ritchie Highway. The Anne Arundel County Health Department is located in Annapolis and provides clinic services in 13 health centers throughout the County.

The U. S. Postal Service has branch offices in Glen Burnie (21061), Pasadena (21122), and Severna Park (21146).

Libraries in the vicinity of the project are the Kuethe Memorial Branch on Crain Highway in Glen Burnie; North County Area Branch on Eastway in Harundale; Riviera Beach Branch on Fort Smallwood Road, and the Severna Park Branch on McKinsey Road, west of Ritchie Highway.

- Emergency Facilities and Services -

Police protection is maintained in the corridor by the County and State Police. A State Police Post is located in the Motor Vehicles Administration Building on Ritchie Highway, south of the Baltimore Beltway, and a County Station is located in Millersville, west of Maryland Route 3.

Anne Arundel County has 26 Volunteer Fire Companies, and Annapolis has 5 Fire Stations. A central alarm at the Millersville Station coordinates all equipment and dispatches all alarms throughout the entire County including Annapolis. Fire companies in the immediate vicinity of the project are as follows:

Glen Burnie Volunteer Fire Co., Crain Highway in Glen Burnie
Marley Volunteer Fire Co., Marley Neck Rd. near Old Annapolis Rd.
Powhattan Beach Volunteer Co., Mountain Rd. near Solley Rd.

Ambulance service for the entire County is controlled and dispatched by the central alarm in the Millersville Fire Station. Ambulances are garaged at most fire stations.

6. Description of Existing Natural Environment -

- General Ecology -

The terrain throughout the corridor is relatively flat to rolling with the exception of the Marley Creek area and another low area to the immediate north of Arcada Road. Soils are typical sands and gravel (Podzolic) common to the Coastal Plain. Variations in soil and terrain are apparently not extreme enough to cause major diversity in floristic associations, except in Marley Creek tidal areas where some hydrophilic species were observed.

Natural areas in the corridor are composed of forest communities. Minor variation in plant associations observed in these areas are probably the result of successional stages, rather than soil or climatic variations. Because of these variations, descriptive comments will be discussed in the following segments: Marley Creek to Marley Station Road; Marley Station Road to Southdale Shopping Center; and Southdale Shopping Center to Jumpers Hole Road.

It is particularly difficult to predict the possibility of encountering rare or endanged species of plants. The probability of their existence within a major portion of the corridor is remote, except along the streambank and wetland areas. The field reviews that have been conducted within these areas did not encounter any rare or endangered plant species.

a. Marley Creek to Marley Station Road

The forested area adjoining Marley Creek is unique to the corridor because of the relatively steep slopes on both sides of the wetlands and the presence of hydrophilic plant species. In addition, many economically valuable tree species have been cut in the forest tract north of Phelps and Norman Avenues. The remaining or existing vegetation is pioneer[1] species and softwoods.

The proposed highway will cross Marley Creek at the most upstream portion of the stream which is subject to tidal action. This section of the creek is located just west of the Route 648 bridge at Marley. Due to the tidal action which affects the stream and its shoreline, the Marley Creek Basin is part of Maryland's Wetlands. The limits of existing wetlands are shown on Drawing No. 9

[1]Pioneer Plant - One of the first plants to appear on a site after clearing.

The Marley Creek Basin consists of three different types of wetlands. They are: grass wetlands, shrub wetlands and wooded wetlands. The shrub wetland is the most dominant type west of the Route 648 bridge. This portion of the wetlands near the headwaters of the creek have been adversely affected by the surrounding developments. These developments have contributed large amounts of sediment to the creek. This sediment has filled in the creek channel to the point where it is hardly navigable to the smallest of boats. The sediment has also degraded the appearance of the creek. The creek is usually very turbid.

The vegetation which surrounds the low lying marsh lands of the creek is very suitable habitat for many songbirds and water fowl. The ground cover consists of Virginia Creeper, Poison Ivy, Bedstraw, Morning Glory, Milkweed and Greenbriar. The shrub layer consists of Sassafras, Holly, Ninebark and Arrowood. The canopy trees consist of River Birch, Loblolly Pine, Virginia Pine, Red Maple, Choke Cherry, Quaking Aspen, Willow Oak and Cucumber Magnolia. Some of the wildlife viewed during the field inspections included the Wood Duck, Mallard, Myrtle Warbler, Redheaded Woodpecker, Barn Swallow, Rough Winged Swallow, Red Winged Blackbird and several other warblers that were not identifiable. At low tide when the mud flats are exposed, it would not be very unusual to see a Common Egret or the Great Blue Heron feeding on small organisms stranded on the flat.

Fishes that would likely be found in Marley Creek consist of both resident species and seasonal populations of anadromous forms. Resident species collected in Marley Creek were Creek Chubsucker (Erimyzon Oblongus), Carp (Cyprinus Carpio), and Brown Bullhead (Ictalurus Nebulosus). Anadromous fishes collected were Alewife (Alosa Pseudoharengus) and White Perch (Morone Americana). (U.S. Department of Commerce National Marine Fisheries Service Report, 1972.)

Other forms of fish likely to occur in Marley Creek are Yellow Perch (Perca Flarescens), American Eel, (Anguilla Rostrata), Pumpkinseed (Lepomis Macrochirus) and Gizzerd Shad (Dorosoma Cededianum). (Personal Communication Maryland Department of Natural Resources).

Because of the low salinity, few if any shellfish would be expected to occur in the area.

Marley Creek has no unique ecological system which, if disrupted by construction, would have a significantly adverse impact on the Chesapeake Bay food chain. This is not to imply that the ecosystem in Marley Creek or other similar creeks along the Chesapeake Bay is not important. Rather, destruction of such ecosystems would have an incremental adverse impact on the Bay Area.

MD. RTE. 270

MD. RTE. 648

OLD MD. RTE. 648

HOLLOWAY RD.

MARLEY CREEK

WOODED ISLAND

C.S.

S.T.

T.S.

S.C.

ARUNDEL EXPRESSWAY

240

245

250

255

260

265

270

2°-30'

3°-00'

PROPOSED ℄

SHANA RD.

A.A. CO. PUMPING STATION

1

2

3

4

5

LEGEND

EXISTING WETLANDS

EXISTING WATER AREA

5 LOCATION OF BORINGS

200 0 50 100 150 200

SCALE IN FEET

P.V.C.

P.V.T.

PROPOSED PROFILE GRADE
V.C. 1200'

EXISTING GROUND LINE

-1.1%

+0.6%

50 40 30 20 10 0 10 20

245 250 255 260 265

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
PLAN AND PROFILE
EXISTING CONDITIONS
IN
MARLEY CREEK BASIN

DRAWING NO. 9

b. Marley Station Road to Southdale Shopping Center

This area has several forest communities in the low-lying areas near Marley School. These forests are in early succession and dominant species may not be indicative of the "climax" vegetation of the region.

The flora observed in this segment is as follows:

1) Ground Cover - Virginia Creeper, Bedstraw, Greenbriar.

2) Shrub Layer - Azalea, Blueberry, Arrowood, Laurel, Sassafras.

3) Canopy - White Oak, Sweet Gum, Red Maple, Loblolly Pine, Virginia Pine.

c. Southdale Shopping Center to Jumpers Hole Road

The forest community observed in this segment is primarily composed of younger trees, which ecologists refer to as a successional stage of "sere".

A community such as the one mentioned is not necessarily ecologically less important than a mature or "climax" forest and even may prove to be more beneficial to man because it may support species of more economic value.

Flora observed in this segment are listed below:

1) Ground Cover - Pipsissiwa, Greenbriar, Honeysuckle, Wild Grape.

2) Shrub Layer - Holly, Sassafras, Laurel, Red Maple, Dogwood.

3) Canopy - Virginia Pine, Sweet Gum, Chestnut Oak, Loblolly Pine, White Oak.

d. Wildlife

Because of the extensive highway network already existing in the area and the residential density of the study area, wildlife species in the forest tracts are restricted to those species more tolerant to these conditions. Wildlife species that may be found within the project area would likely be those "compatible" to living in natural areas close to high human population densities and able to adapt to man's modifications of natural ecosystems. Some modifications would consist of litter, air and water pollution, noise and others. While there may be a slight adverse impact through the elimination or alteration of a localized portion of their habitat, their wide range of distribution will not be appreciably affected. None of the species identified are classified as rare or endangered. The legislation protecting the rare and endangered species applies to any plant, animal, or other species whose extinction is threatened or which is relatively rare compared to its former population. This determination is made on both the Federal and State levels.

-Mammals common to the Study Area -

Oppossum, Starnosed Mole, Short-Tailed Shrew, Striped Skunk, Eastern Chipmunk, Red Squirrel, White-footed Mouse, Deer Mouse, House Mouse and Rabbit.

-Birds common to the Study Area-

A list of bird species that can be expected to be found in the study area is available at the State Highway Administration.

- Geomorphological Conditions -
(An Engineering Geology and Aquifer Formation Map is included as Drawing No. 10)

Topography: Varies from level to moderately sloping. Entire area is within the Coastal Plain Physiographic Province. Approximate surface elevations above sea level: 0-90 feet.

Natural Ground Slopes: Generally within a range of 0%-10%.

Ground Water Conditions: Depths to seasonally high water table (usually occurring in early spring): (1) floodplains of perennial and intermittent streams: 0.0 - 1.0 feet; (2) lower slope areas: 1.0 - 4.0 feet; (3) upper slope and upland areas: 4.0 feet or more.

Rock Conditions: Depths to rock vary from 500 to 1,000 feet in the Coastal Plain Physiographic Province. The overlying unconsolidated sedimentary materials are composed predominately of sands, clays and silts. Power equipment should be sufficient to meet excavation needs for this project.

Soil Conditions: General characteristics of soils in the project area are as follows: (A Soils Map of the area is shown on Drawing No. 11.)

Soil Textures: Silt loams, sandy loams, loams, loamy sands and clays are dominant throughout the contract area.

Soil Stability: (1) Floodplains of perennial streams: poor; (2) other areas: poor to fair.

Susceptibility to Frost Action: (1) Floodplains of perennial and intermittent streams and lower slope areas: high; (2) upper slope and upland areas: low to moderate.

Seasonally High Ground Water Table: Found at depths of 0.0 - 4.0 feet throughout the contract area.

Water Erosion Hazard: Moderate to high throughout the contract area.

Wind Erosion Hazard: (1) Upland areas with soils of loamy sand textures: high; (2) other areas: low to moderate.

Drainage: (1) Floodplains of perennial and intermittent streams: poor; (2) lower slope areas: fair; (3) upper slope and upland areas: good.

- Water Quality -

For the most part, the surface water encountered in the study area for the proposed construction are not utilized to any significant degree for identifiable beneficial use. Some recreational use undoubtedly does occur, but this does not involve contact sports, such as swimming, so far as was determined. No public water supplies using surface sources were identified in the study area. However, one large stream (Marley Creek) will be crossed by the project.

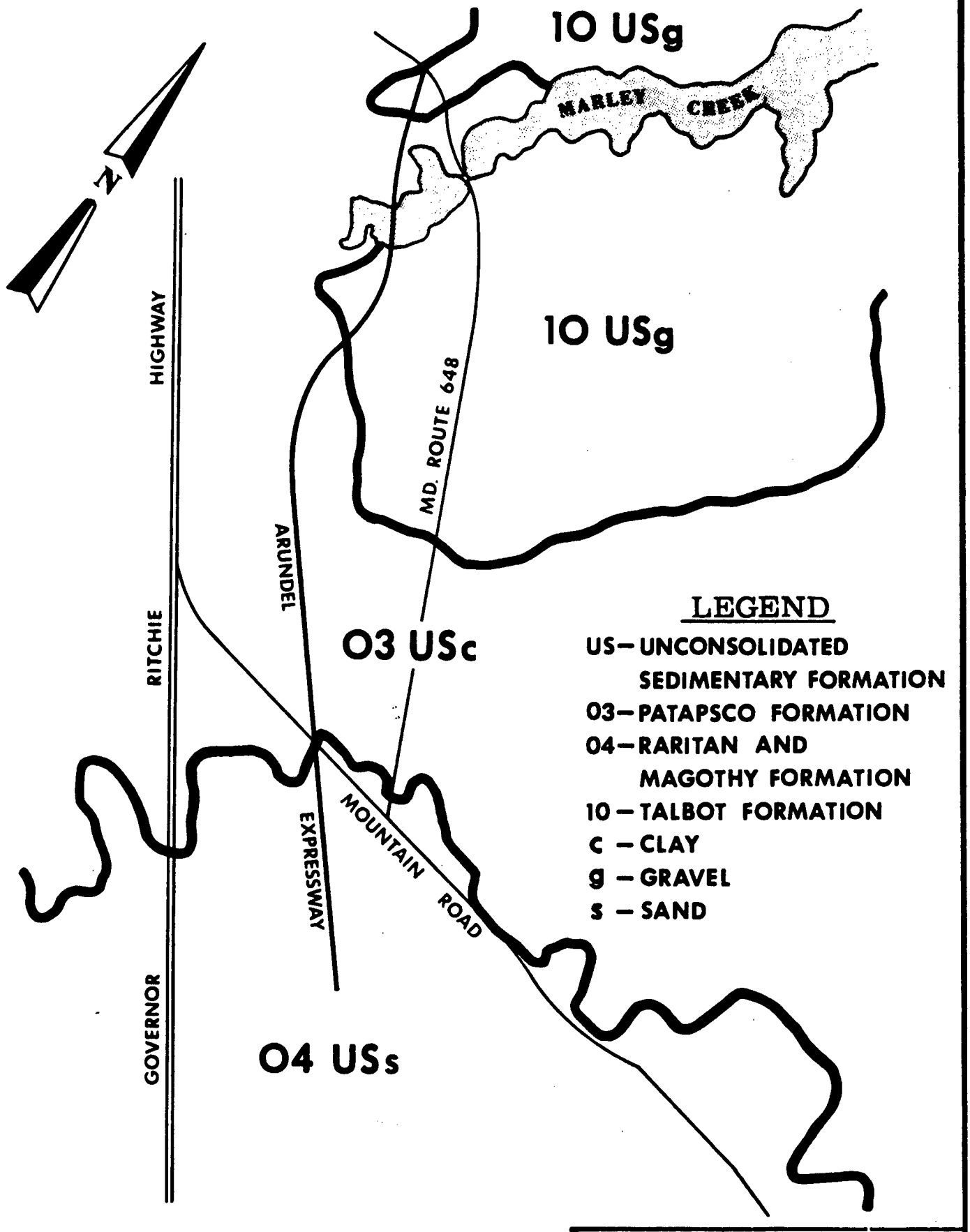
Marley Creek is classified as Class One recreational waters by the Maryland Water Resources Administration. Examination of the bacterial surveys done for this creek by the Anne Arundel Health Department, shows that this stream does not meet the state-wide standards for acceptable levels of E. coli for Class One recreational waters.[1, 2] However, this is not unusual for any stream or tidal marshlands along the Chesapeake Bay. Most will have high bacterial counts due to the extensive development that exists throughout the Baltimore-Annapolis Corridor. There are no known point sources of pollution (sewage treatment plants, factories, etc.) located along the upper reaches of Marley Creek. The overflow from on-site sewage facilities and a sewage pumping station may be the major contributors to this problem. Recreational use of this stream within the study area is minor, and little effect from any sedimentation which may occur is expected. The stream presently is very turbid in the vicinity of the proposed construction, receiving large amounts of sediment from open soils of the surrounding developments.

- Noise Levels and Air Quality -

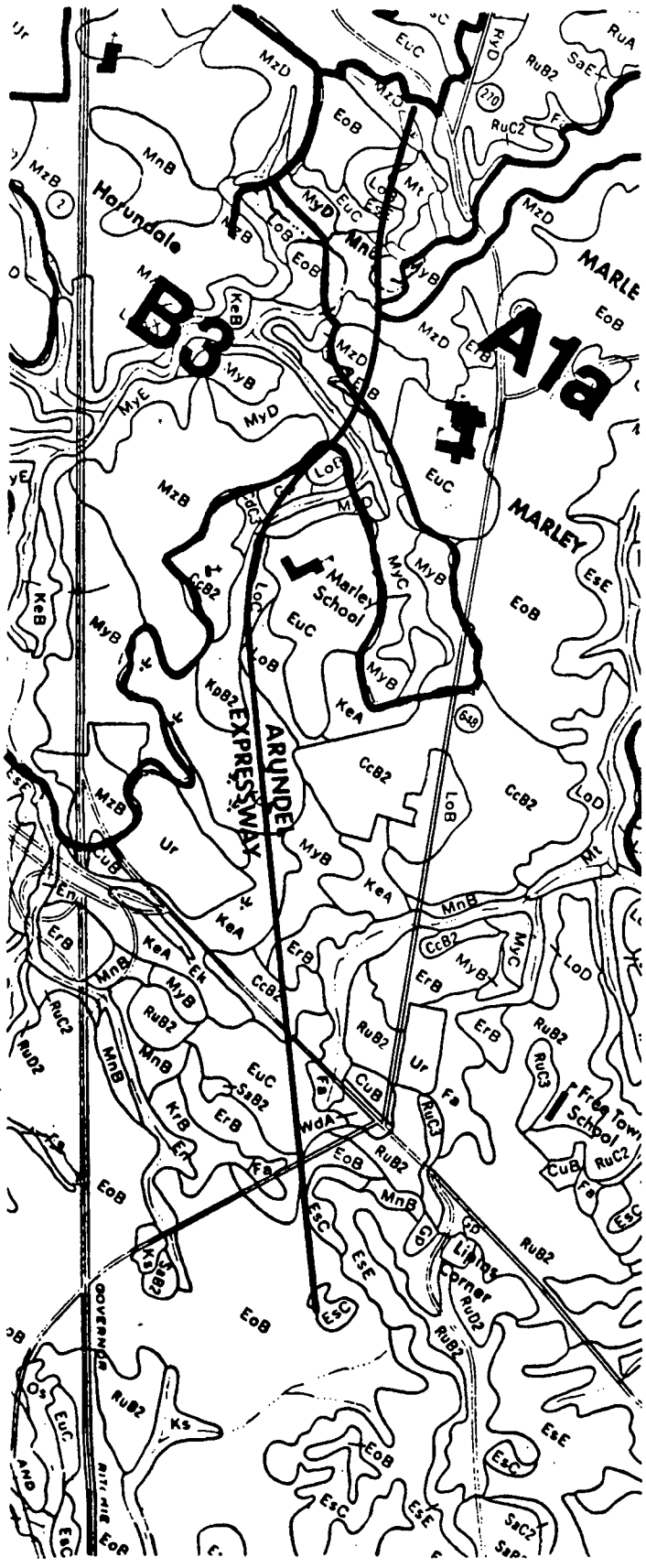
The present ambient noise levels and existing air quality are discussed in Section C of this Statement.

[1] Water Pollution Control Regulations adopted by the Water Resources Administration of the Department of Natural Resources (Bacteriological Standard = log mean of 200/100 ml).

[2] Samples taken by the Anne Arundel County Department of Health for 1970 through 1972 generally ranged from a minimum of 390/100 ml to a maximum of 24,000/100 ml. All samples recorded exceeded the Bacteriological Standard.



ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
ENGINEERING GEOLOGY AND AQUIFER FORMATION MAP
DRAWING NO. 10



LEGEND

ALL SLOPES ARE 0 TO 10 PERCENT UNLESS OTHERWISE NOTED THUS (X-X)

A1a - This group consists of deep, very sandy, somewhat excessively to excessively drained soils. They are strongly to extremely acid, very rapidly permeable and have low to very low moisture capacity. They are extremely susceptible to erosion by wind when dry and without vegatative cover.

B3 - These deep, well drained soils are easily recognized by brilliant red colors and unstable character. These soils have extreme properties that make them hazardous or poorly suited for many uses. The clay is very plastic, sticky, and slowly permeable. Its most important characteristic is poor stability. The clay frequently slides, slumps, or flows down the surface of a cut.

MAP SYMBOLS

CcB2 - Cristiana silt loam, moderately eroded
CdC3 - Christiana clay, severly eroded
EoB - Evesboro loamy sand
ErB - Evesboro loamy sand, clayey substratum
EsC - Evesboro and Galestown loamy sands (6-12)
EsE - Evesboro and Galestown loamy sands (12-40)
EuC - Evesboro - Urban land complex (0-15)
Fa - Fallsington sandy loam
Gp - Gravel and borrow pits
KeA - Keyport sandy loam (0-2)
KeB - Keyport sandy loam (2-5)
KpA - Keyport sandy loam (0-2)
KpB2 - Keyport silt loam, moderately eroded
LoB - Loamy and clayey land (0-5)
LoC - Loamy and clayey land (5-10)
MnB - Matawan loamy fine sand
Mt - Mixed alluvial land
MyB - Muirkirk loamy sand (0-5)
MyD - Muirkirk loamy sand (10-15)
MzD - Muirkirk - Urban land complex (5-15)
Ur - Urban Land

0 0.5 1
SCALE IN MILES

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
NATURAL SOIL GROUPS
DRAWING NO. 11

7. Project Recommendation -

- Recommended Alternate and Basis for Selection -

The selection of Alternate 2 for the Arundel Expressway Project, from Md. Route 648 to Md. Route 100, was based on the following reasoning:

a. Construction of the project will connect the Arundel Expressway to the State's principal arterial highway system making it a complete facility. The Expressway would connect to the Baltimore Beltway (Md. 695) and the Outer Harbor Crossing on the north, and to Maryland Route 100 and Ritchie Highway (Md. Route 2) on the south.

b. By utilizing the interchange proposed at Maryland Route 100 and the ramp connection to Ritchie Highway, Alternate 2 will provide a direct connection for the exchange of traffic between existing Ritchie Highway and the proposed Arundel Expressway. This exchange of traffic is accomplished on the major highways in the area and does not require traffic to utilize existing local roads, such as Jumpers Hole Road and Mountain Road.

c. Alternate 2 will not preclude the future consideration of other alternatives proposed in the Baltimore-Annapolis Transportation Corridor Study.

d. Satisfactory measures to mitigate the adverse impact on the archeological remains at Site No. 18AN178 have been completed. Results of intensive test excavations undertaken at this site have indicated that a sufficient sample of artifacts have been recovered to provide information on chronology, activity, and inter-site distribution.

e. Satisfactory measures have been developed to mitigate the impact on the Marley Creek Wetlands.

- Major Design Features - Recommended Alternate -

The Arundel Expressway is proposed as an Expressway (Freeway by definition of the American Association of State Highway Transportation Officials), with full control of access. Roadway geometry and safety features will be based upon a design speed of 70 miles per hour, although the posted speed will be lower. Initial expressway construction will consist of dual 24-foot roadways, separated by a 74-foot depressed median, which widens in the vicinity of Maryland Route 100. Bridge widths are based on ultimate 36-foot roadways. The median will be graded with flat slopes to provide a safety recovery area for each roadway, thereby minimiaing the potential for vehicular head-on collision. Paved shoulders, 4-foot in width, will also be constructed along the median edge of each roadway pavement. Outer shoulders will be paved for a 10-foot width, with an additional 20 feet beyond the outer shoulders graded with flat 6:1 slopes to provide a safety recovery area. The provision of 30-foot safety recovery areas along both sides of each roadway conforms to nationally recognized criteria to minimize accidents and injuries when a vehicle strays from the travelway. The proposed Expressway will be fenced through built-up areas. Bridge structures are planned to carry existing streets over or under the Expressway except for Cooper Avenue, which will be relocated. The Expressway will also cross Marley Creek on structure. The typical right-of-way width for this project is 300 feet. Ultimate pavement widths required for the mainline roadways will be determined by the Baltimore-Annapolis Transportation Corridor Study.

- Detailed Project Description - Recommended Alternate -

The location and major construction details proposed for the extension of the Arundel Expressway are shown on the plan and profile of Alternate 2, which are included as Drawing No. 12 in this Final Environmental Statement. Typical sections of improvement for the Arundel Expressway, Mountain Road, Marley Station Road and Relocated Cooper Avenue are shown on Drawing No. 13.

The project begins just south of Old Annapolis Road (Maryland Route 648) in Glen Burnie as an extension of the completed portion of the Arundel Expressway, and is located between the Ritchie Highway and Old Annapolis Road. The facility extends on new location across Marley Creek, approximately 1000 feet west of Old Annapolis Road. Dual bridges approximately 350 feet in length will span the existing channels of Marley Creek. The bridge superstructures will consist of 6 - span continuous curved rolled steel beams with composite reinforced concrete decks. A minimum vertical clearance of 9.6 feet to mean high water will be provided.

ALTERNATE 2

ARUNDEL EXPRESSWAY

PROPOSED ROADWAYS

PROPOSED ROADWAYS BY OTHERS

0 200 600 1000

TO BALTIMORE BELTWAY

OPEN TO TRAFFIC

MARLEY HEIGHTS

SUN VALLEY

FREETOWN ROAD

LIPINS CORNER

OLD ANNAPOLIS ROAD

MARLEY JUNIOR HIGH SCHOOL

GERARD DR.

ENTRANCE ROAD

MARLEY ELEMENTARY SCHOOL

MARLEY SPECIAL SCHOOL

ST. GEORGE'S GATE APARTMENTS

PINEWOOD APTS.

TEMPORARY CONNECTIONS TO RTE. 100

AMERICANA CIRCLE

AMERICANA HARUNDALE APARTMENTS

DIXON DR.

GERARD PLAZA

MARTINDALE

SOUTHDALE SHOPPING CENTER

RAMP 1

RELOC.

RAMP A-2

SERVICE ROAD

WOODHOLME

MURPHYS MART

TO ANNAPOLIS

HARUNDALE

UPTON RD.

EASTWAY

WESTWAY

RAMP 2

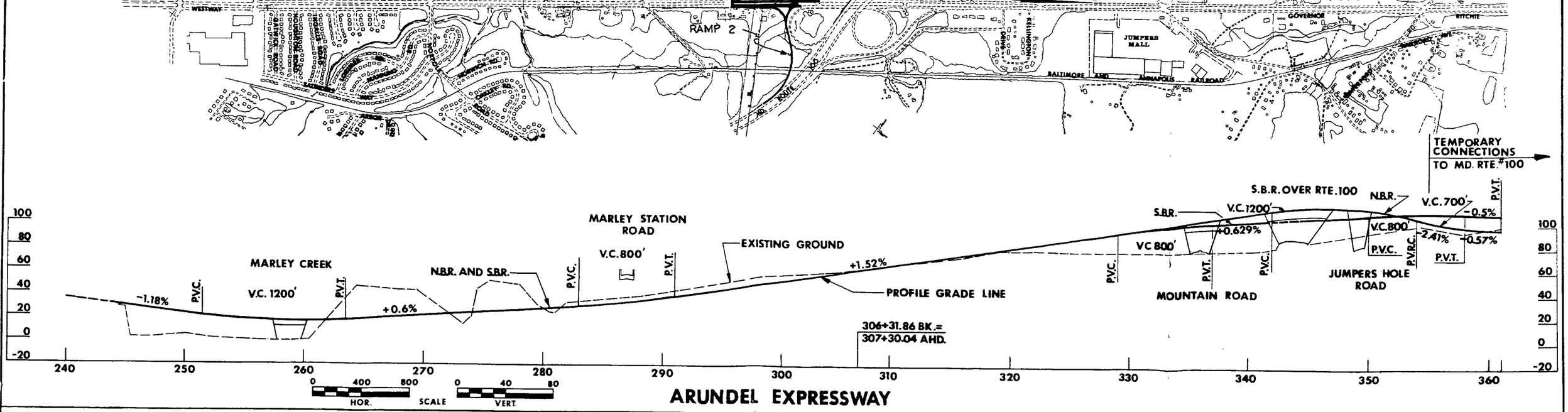
JUMPERS MALL

BALTIMORE AND ANNAPOLIS RAILROAD

GOVERNOR

RITCHIE

LIMIT OF PROTECT



ARUNDEL EXPRESSWAY

Maryland Department Of Transportation

State Highway Administration

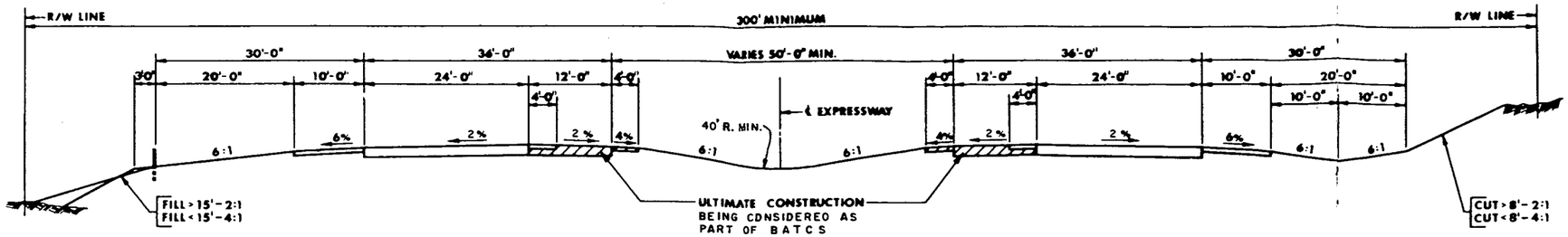
ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
CONTRACT NO. AA 572-000-571
FEDERAL AID PROJECT NO. U 803-1(7)
ANNE ARUNDEL COUNTY, MARYLAND

RECOMMENDED ALTERNATE
PLAN AND PROFILE

SCALE AS SHOWN

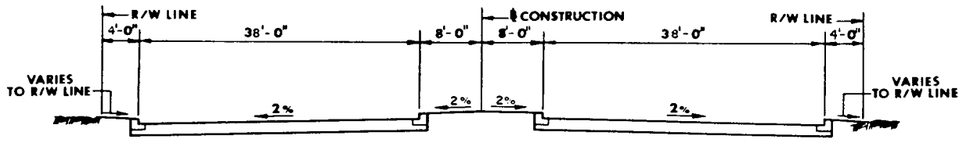
DRAWING NO. 12

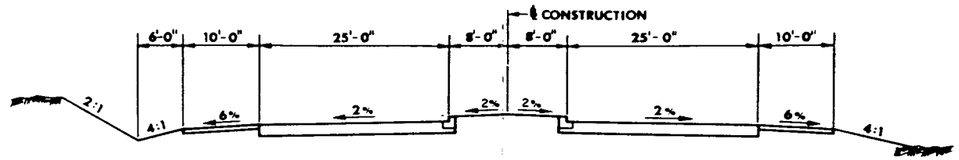
DATE



ARUNDEL EXPRESSWAY

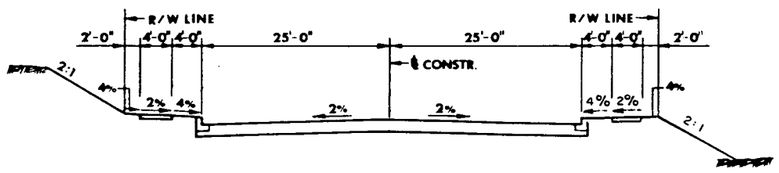
NOTE: BRIDGE CROSS SECTIONS WILL ACCOMMODATE THE ULTIMATE ROADWAY WIDTHS PLUS PAVED SHOULDERS OR SIDEWALKS



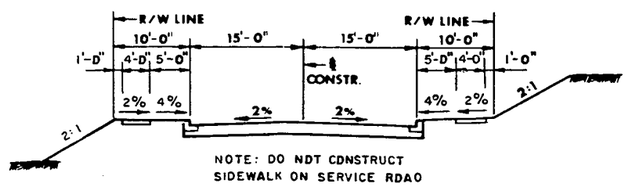


MOUNTAIN ROAD

MD. ROUTE 2 TO
PROPOSED RAMP 'B'

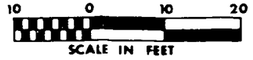


MARLEY STATION ROAD



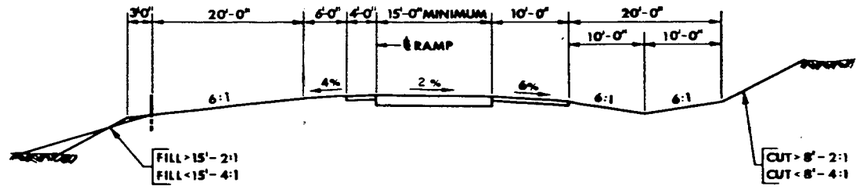
NOTE: DO NOT CONSTRUCT
SIDEWALK ON SERVICE ROAD

RELOCATED COOPER ROAD
& SERVICE ROAD



MOUNTAIN ROAD

PROPOSED RAMP 'B'
TO OLD ANNAPOLIS ROAD



RAMPS

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

Maryland Department Of Transportation **State Highway Administration**	**ARUNDEL EXPRESSWAY** MD. ROUTE 648 TO MD. ROUTE 100 CONTRACT NO. AA 572-000-571 FEDERAL AID PROJECT NO. U 903-1(7) ANNE ARUNDEL COUNTY, MARYLAND	**RECOMMENDED ALTERNATE** **TYPICAL ROADWAY SECTIONS** SCALE AS SHOWN	DRAWING NO. 13 DATE

The proposed Expressway passes between the Marley Junior High School and Phelps Avenue in the Gerard Plaza subdivision and crosses under Marley Station Road, immediately west of the Marley Elementary School and Marley Special School. Marley Station Road will be reconstructed in its same location to pass over the proposed Expressway on a structure with several hundred feet of approach road. The typical section of Marley Station Road will be 50-feet curb-to-curb, with sidewalks on both sides. Both the alignment and typical section are in agreement with Anne Arundel County's plan for the reconstruction of Marley Station Road.

Just to the south of Marley Station Road, the project crosses Cooper Road, which will be terminated on both sides of the Expressway. Cooper Road acts as one of the access roads to the Marley Special School from Marley Station Road to Scott Avenue, and a replacement street providing this same function will be constructed as part of the project on the eastern edge of the School property. The project continues in a southerly direction through a previously established right-of-way reservation for the proposed Arundel Expressway and crosses over Mountain Road, approximately 1100 feet west of Old Annapolis Road. Through this area, the Americana Harundale Apartment development and Southdale Shopping Center are located to the west of the right-of-way reservation, and to the east is the St. George's Gate Apartments and Pinewood, a public housing apartment project for senior citizens.

The interchanges proposed in this area include a half-diamond interchange on the north side of Mountain Road (Maryland Route 177) and directional connections to Maryland Route 100. Mountain Road will be dualized with a basic typical section having a 16-foot median and two travel roadways in each direction from Ritchie Highway through the proposed interchange area to Old Annapolis Road. Because of the proximity of Maryland Route 100 and Mountain Road at their intersection with the Arundel Expressway, directional ramps required for traffic from the north on Arundel Expressway to go west on Maryland Route 100 and return, occupy the same general location as the diamond ramps required for the Mountain Road Interchange. Southbound, a single exit is planned from the Arundel Expressway, and after approximately 800 feet allowed for proper signing, this ramp splits into two branches; one, ramp (B) terminates at Mountain Road to serve the local community; and the other, ramp (B-1) overpasses Mountain Road and connects to Maryland Route 100 for traffic desiring to go west on that facility. Ramp (B-1) will require the removal of an existing ramp originating at Mountain Road, the need for which will be eliminated with the construction of Ramp 2 in the northwest quadrant of the existing Ritchie Highway-Maryland Route 100 Interchange.

The directional ramp (A-1) for eastbound traffic on Maryland Route 100 desiring to turn north on the Arundel Expressway joins with ramp (A-2) from Ritchie Highway and with the northbound diamond ramp (A) from Mountain Road and, after a suitable merging distance, connects to the Arundel Expressway as a single-lane entrance ramp. The northbound directional ramp (A-1) will require a bridge over the existing westbound lane of Marylane Route 100 and a third level on the Arundel Expressway bridges over Mountain Road. Ramp (A-2) from Ritchie Highway also requires a bridge over the existing eastbound and westbound roadways of Maryland Route 100. The existing ramp that permits northbound Ritchie Highway traffic to turn east on Maryland Route 100 will be relocated adjacent to the eastbound roadway of Maryland Route 100 so as to eliminate interference with the proposed exit nose of Ramp A-1.

Ramp (A-2) requires the construction of a service road on the east side of Ritchie Highway. The service road is generally parallel to Woodholme Circle and connects to Jumpers Hole Road approximately 900 feet east of Ritchie Highway. The typical section of the service road will be 30-feet curb to curb, with 10-foot graded areas on both sides.

South of Mountain Road and the bridges over Jumpers Hole Road, the roadways of the proposed Expressway are separated with the southbound roadway located between the existing eastbound and westbound lanes of Maryland Route 100, and the northbound roadway located parallel to and east of the existing westbound lane of Maryland Route 100. Sufficient right-of-way was acquired during the construction of Maryland Route 100 to accommodate this location for the Arundel Expressway. Approximately 600 feet southeast of Jumpers Hole Road, both roadways of the proposed Arundel Expressway terminate with direct high-speed connections to existing Maryland Route 100. These ramps are planned for southbound traffic on the proposed Arundel Expressway to proceed easterly on Maryland Route 100, and for the respective return movement.

The estimated costs of recommended Alternate No. 2 are as follows. The costs are based on 1977 prices.

Highway Construction Cost	$25,700,000*
Right-of-Way Cost	8,300,000
Total Project Cost =	$34,000,000

*Includes $750,000 for tentative noise abatement recommendations.

Additional funds will be required to widen the mainline roadway pavement to 6-lanes, the need for which will be determined by the BATC Study.

B. RELATIONSHIP TO LAND USE AND PUBLIC FACILITY PLANS:

1. Relationship to Land Use Plans -

The Regional Planning Council (RPC) was created by the Maryland General Assembly in 1963 and charged with preparing a development plan for Baltimore City and Anne Arundel, Baltimore, Carroll, Harford and Howard Counties. The current report, entitled the "General Development Plan", is dated January, 1978 and recommends the construction of the Arundel Expressway, from the Baltimore Beltway to south of Maryland Route 100. The location of the Expressway, as proposed with Alternate 2 in this Statement between Maryland Routes 648 and 100, is in conformance with the General Development Plan.

- Anne Arundel County -

The first comprehensive land use plan developed by Anne Arundel County was its General Development Plan, adopted in 1968. This report was the County's "first step" in directing its ongoing conversion from a rural community to part of the Baltimore-Washington Metropolitan Area in an orderly manner.

As additional population and employment data became available (specifically, the 1970 Census data), the County intensified its study of the necessary transportation network and its expected impacts for the target year of 1980. The resulting report, prepared by the County's Office of Planning and Zoning, is the preliminary "1980 Transportation Plan for Anne Arundel County", dated January 18, 1974. (See Drawing No. 14) Although this plan presents more specific transportation recommendations than the County's General Development Plan, its goals, policies and land development plans are consistent with the original plan.

The preliminary 1980 Transportation Plan for Anne Arundel County also recommends construction of the Arundel Expressway from the Baltimore Beltway to Maryland Route 100 on new location. The Arundel Expressway, as proposed in this Statement, (Alternate 2) is also in conformance with the County's 1980 Transportation Plan. The 1980 Transportation Plan acknowledged that another study (The Baltimore-Annapolis Transportation Corridor Study) will determine the need for and location of further improvements south of Maryland Route 100.

The land use changes expected to be induced by the proposed transportation network were also studied, in order that public services will be provided where necessary. The heavily populated area along Maryland Route 2 through Glen Burnie is expected to expand to include the Arundel Expressway Corridor. Also, a 3300-acre Marley Neck Industrial Park is planned 2 to 3 miles east of the proposed Expressway.

Land use planning, including transportation improvements are shown on the County's Generalized Comprehensive Zoning Plan, which was adopted in November, 1974. The zoning plan indicates an expressway between Maryland Routes 648 and 100, in the general location of Alternate 2. Zoning in the vicinity of the expressway segment is primarily residential, including low density, multi-family districts. Commercial zoning is principally "Highway Commercial District", but also includes "General Commercial" and "Community Retail" district. Large light and heavy industrial districts are located along Marley Neck Road, northeast of this project.

In summary, the Arundel Expressway has been considered a necessary part of Anne Arundel County's transportation network, since its first comprehensive planning report in 1968. This planning has proceeded beyond the traffic impacts of this expressway to the expected land use changes, in order that the necessary public utilities and services will be provided.

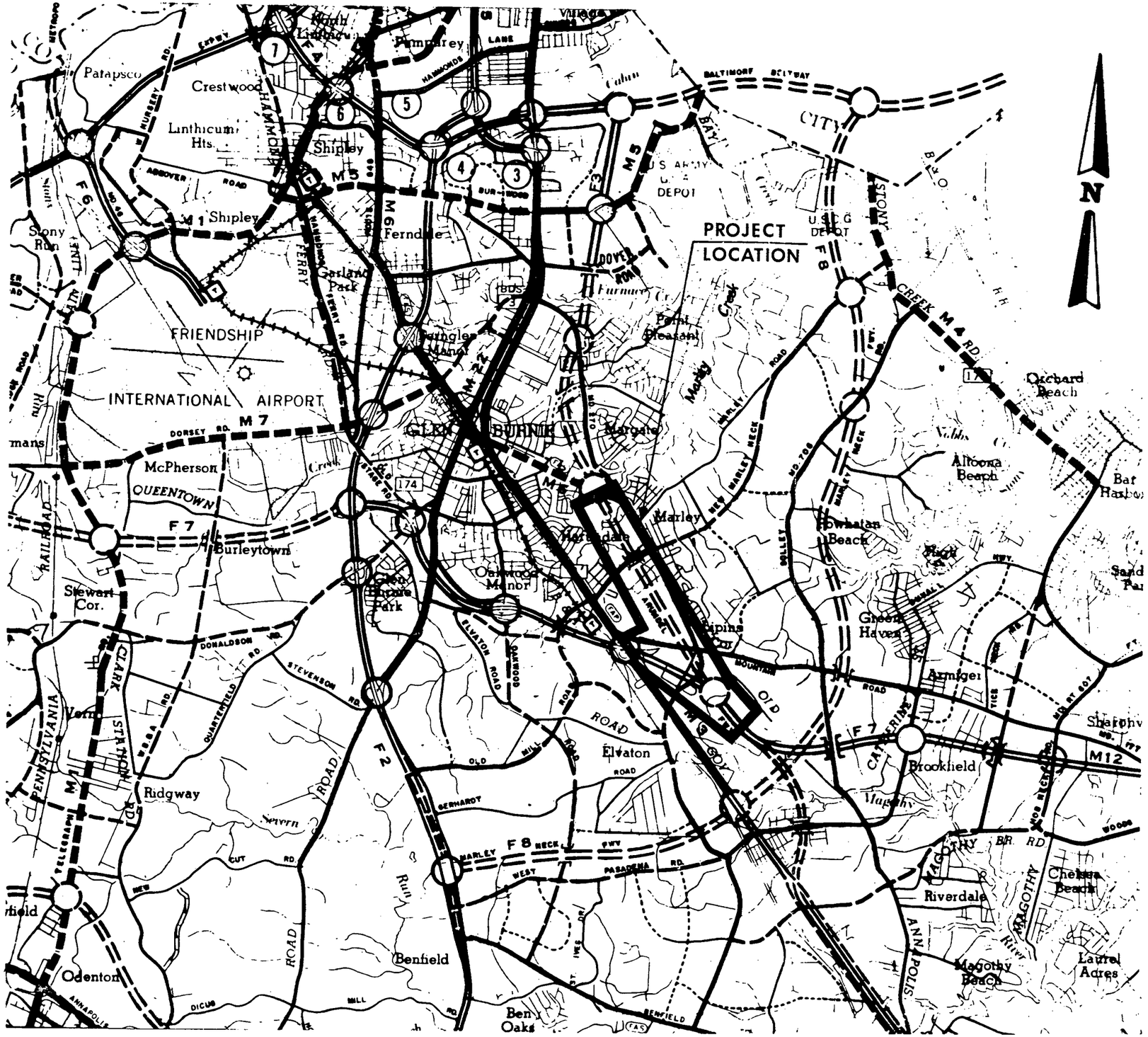
Existing Land Use -

Existing land uses in the vicinity of the project, including a brief summary of the man-made features and their relationship to Governor Ritchie Highway and the Arundel Expressway, are described below. An Existing Land Use Map (Drawing No. 15) supplements the written description.

(Residential)

The Glen Burnie area is almost completely developed with medium density cottage-type residential housing. The residential communities of Sumac Fields and Foxwell are located east of the proposed Arundel Expressway and south of Marley Station Road. The communities of Gerard Plaza and Martindale are located on the west side of the proposed Expressway, along Marley Station Road. South of Mountain Road, the area adjacent to the proposed Expressway is generally undeveloped except for the Woodholme subdivision at Jumpers Hole Road.

In recent years, a large number of apartment units have also been constructed in this area. The Expressway will pass between two apartment developments (St. George's Gate and Americana Apartments), north of Mountain Road. In addition, a 200-unit public housing development (Pinewood) is situated approximately 1500 feet north of Mountain Road, on a site adjacent to the Arundel Expressway.



LEGEND

EXISTING	PROPOSED (OR TO BE IMPROVED)	
F 4	F 3	FREEWAY
		INTERCHANGE
M 3	M 4 EM 2 (EXPY.)	MAJOR HIGHWAY
		ARTERIAL
		COLLECTOR

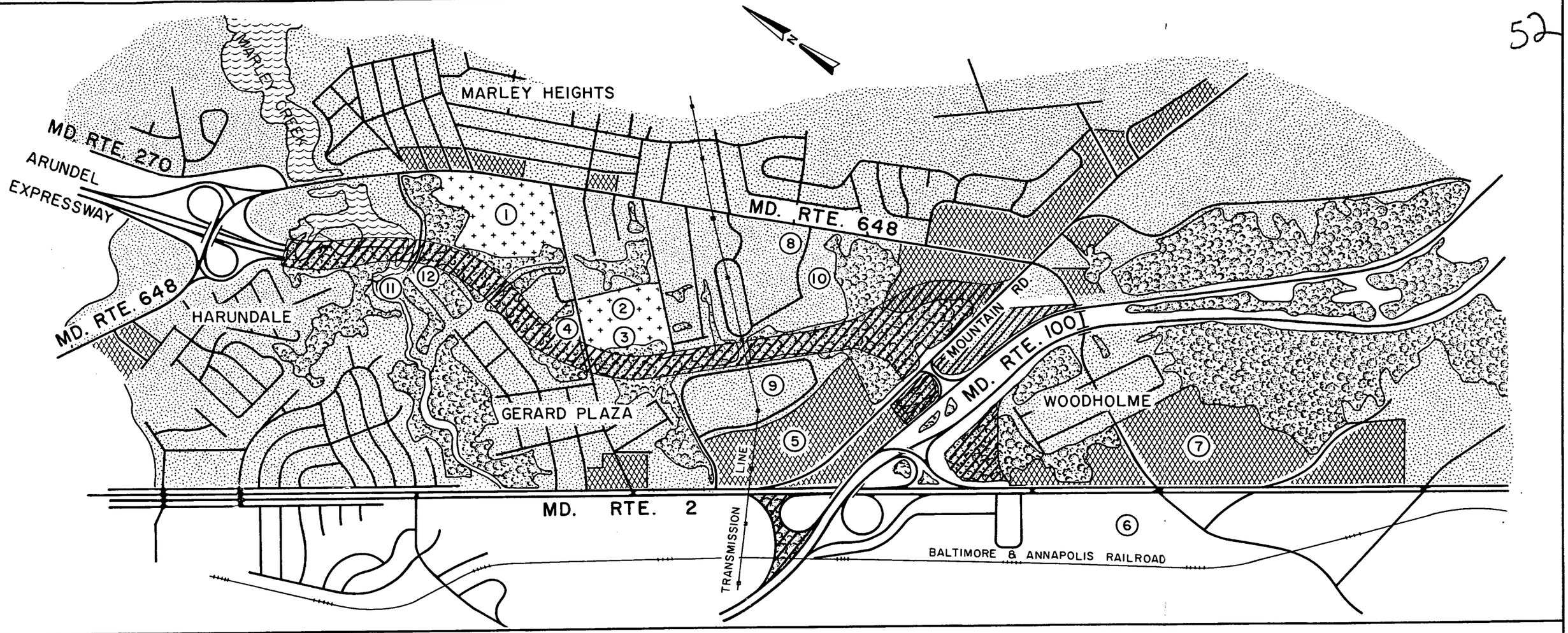
Note: Lake Waterford Park Will Be Bypassed By All Alternatives Under Consideration In The BATC Study.

SCALE IN MILES

0 1 2 3

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
PRELIMINARY
1980 TRANSPORTATION PLAN
FOR ANNE ARUNDEL COUNTY

DRAWING NO. 14



KEY:

- Required Right Of Way
- Existing Highway Right Of Way

LAND USE

- Residential
- Commercial
- Institutional

HABITATS

- Wetlands
- Woodlands

SCHOOLS

1. Marley Junior High School
2. Marley Elementary School
3. Marley Special School

RECREATIONAL CLUBS

4. Gerard Plaza Recreation Club

SHOPPING CENTERS

5. Southdale Shopping Center
6. Jumpers Mall
7. Murphy Mart

APARTMENTS

8. St. George's Gate Apartments
9. Americana Harundale Apartments
10. Pinewood Apartments

UTILITIES

11. Pumping Station

ARCHAEOLOGICAL SITES

12. Site 18AN 178

1200 0 1200
Scale In Feet

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
EXISTING LAND USE
IN VICINITY OF
RECOMMENDED ALTERNATE

DRAWING NO. 15

(Commercial)

Commercial interests have developed on Governor Ritchie Highway, Maryland Route 648 and Mountain Road, with major shopping areas located along Governor Ritchie Highway at Maryland Route 648 in Glen Burnie, at Mountain Road, at Jumpers Hole Road, and at the intersection of Maryland Route 648 and Mountain Road. The regional Southdale Shopping Center is located on the north side of Mountain Road, between the Arundel Expressway and Governor Ritchie Highway.

2. Relationship to Public Facility Plans -

- Baltimore-Annapolis Transportation Corridor Study -

Initiated in 1974, the Baltimore-Annapolis Transportation Corridor Study (BATC Study) has investigated highway transportation conditions in northern Anne Arundel County. This study is expected to result in the definition of, and recommendations for, an adequate highway network. The study area and major routes under consideration for improvements are shown on Drawing No. 16.

In December 1975, an Interim Alternatives Location Report for the BATC Study was circulated. This report described all roadway alternatives developed during the preliminary phase of the project, and identified those selected for further study. This report is available for inspection at the Maryland State Highway Administration, 300 West Preston Street, Baltimore, Maryland. Subsequent to the circulation and public review of the Interim Report, the State Highway Administration determined that Interstate Routes should be developed to connect Baltimore with Annapolis and Washington, D. C. with Annapolis. The location of the Interstate route from Baltimore to Annapolis is being considered in the Maryland Route 2 corridor and in the Maryland Routes 3, 32, 178 corridors, with the final corridor location to be determined by the BATC Study. The Interstate locations have been combined with other Expressway and Boulevard proposals described in the Interim Report into five corridor alternatives, which will be studied and presented in the Draft Environmental Statement as part of the BATC Study. These corridor alternatives are shown graphically on Drawing No. 17. In the BATC Study, the Arundel Expressway is assumed to be operational from the Baltimore Beltway to Maryland Route 100.

The Arundel Expressway, as proposed with the selected Alternate 2 in this Final Statement, has been coordinated with the BATC Study and is consistent with all of the alternatives under consideration in that study for the Maryland Route 2 corridor. The construction of Alternate 2, which fulfills the currently identified needs from the Baltimore Beltway to Maryland Route 100, will be compatible with any alternative being proposed in the Baltimore-Annapolis Transportation Corridor Study.

- Baltimore Region Rapid Transit System -

In the 1960's, a decision was made to investigate the region's public transportation needs. Two major studies related to improved public transportation were conducted between 1964 and 1968, and both concluded that rapid transit was a necessary ingredient in the region's overall transportation system. However, the Metropolitan Transit Authority, created in 1961, was not vested with the authority to implement these recommendations.

In 1969, the Maryland State Legislature established a new Metropolitan Transit Authority, which was empowered to adopt a transit program to meet the growing needs of the Baltimore region. Six corridors radiating from downtown Baltimore and serving the northwest, north, northeast, southeast, south, and west regions, were chosen for fixed-way rapid transit lines or combined fixed-way rapid transit lines and exclusive bus-ways.

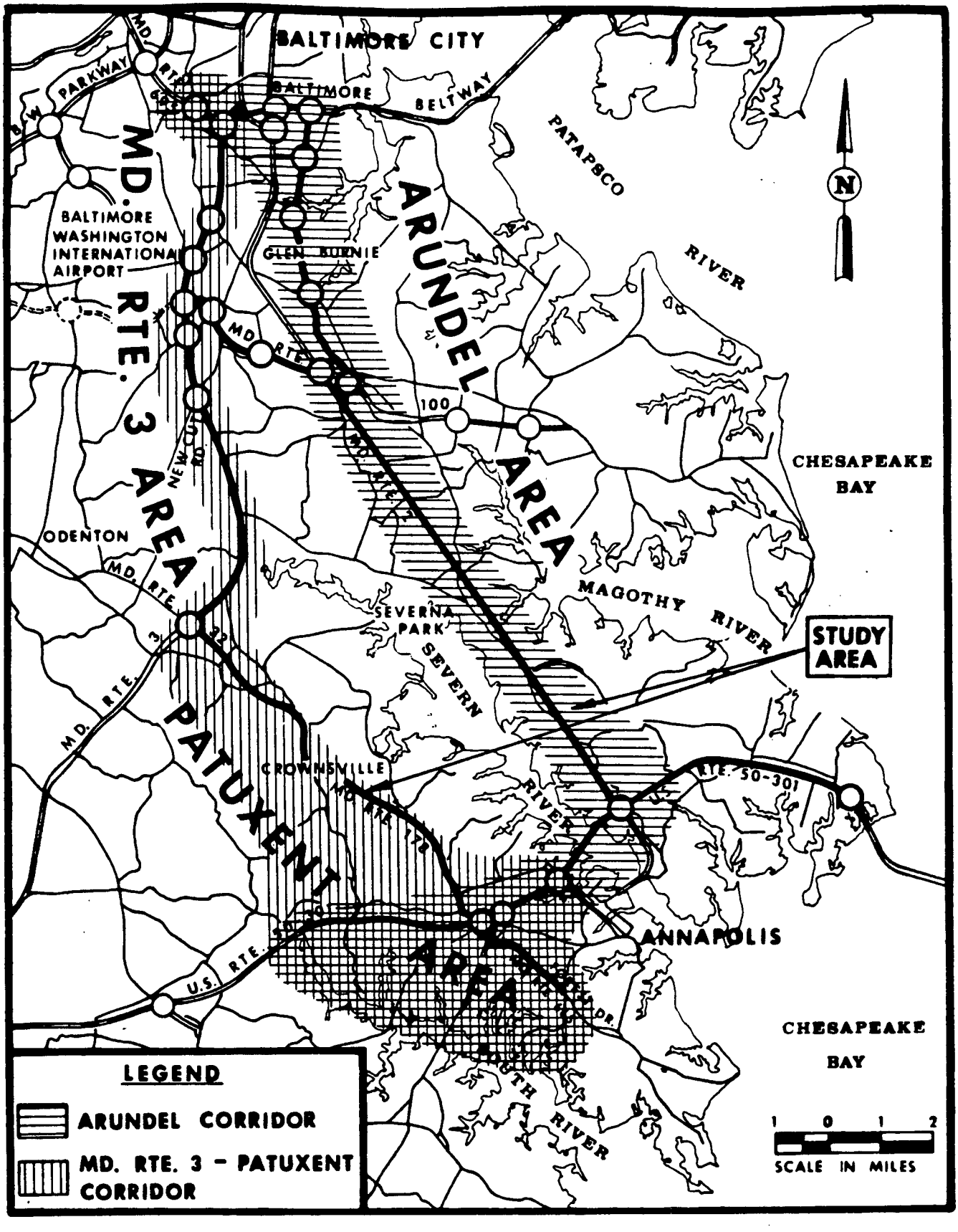
A Phase I rapid transit plan was then developed which would implement fixed-way rapid transit service in the northwest and south corridors. This line would extend from Owings Mills in Baltimore County, through Charles Center in downtown Baltimore, to a terminus at Marley Station, south of Glen Burnie in Anne Arundel County. Friendship Airport (now Baltimore-Washington International Airport), located in northern Anne Arundel County, would also be served by the southern leg of this line.

In January, 1971, the Board of Directors of the Metropolitan Transit Authority officially adopted the "Baltimore Region Rapid Transit System, Phase I".

Construction has begun on the Northwest Line, and the Phase I System was scheduled to begin operation in the early 1980's. However, the Maryland Department of Transportation has recently decided to re-analyze the Phase I South Line from Charles Center in downtown Baltimore to Marley Station in Anne Arundel County as part of the on-going Phase II Rapid Transit Study. This re-evaluation will include both alignment and mode.

According to the Maryland Department of Transportation:

> "There are two major reasons for the restudy of the South Line. Overall, there is the reality of the financial situation; inflation and revenue shortfalls have challenged long-range plans and short-term commitments.
>
> "Secondly, a great deal of community concern has been expressed about Phase I in northern Anne Arundel



BALTIMORE-ANNAPOLIS TRANSPORTATION CORRIDOR STUDY
STUDY AREA

DRAWING NO. 16

BALTIMORE ANNAPOLIS TRANSPORTATION CORRIDOR STUDY
• REGIONAL INTERSTATE ALTERNATIVES •

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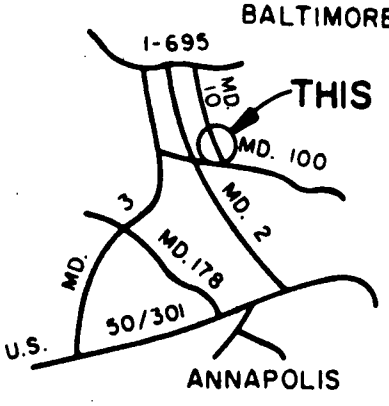
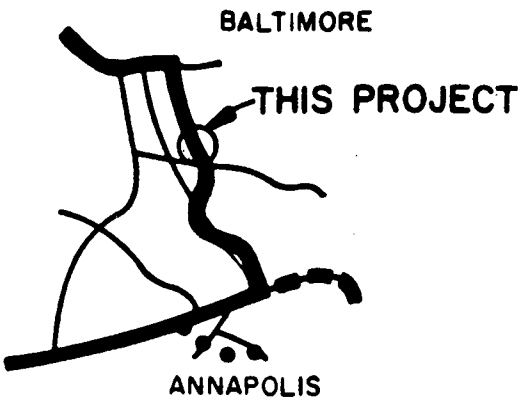


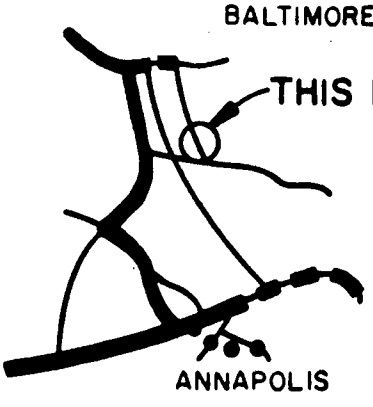
ALTERNATIVE No. 1

No Build - Md. 2
No Build - Md. 3-178



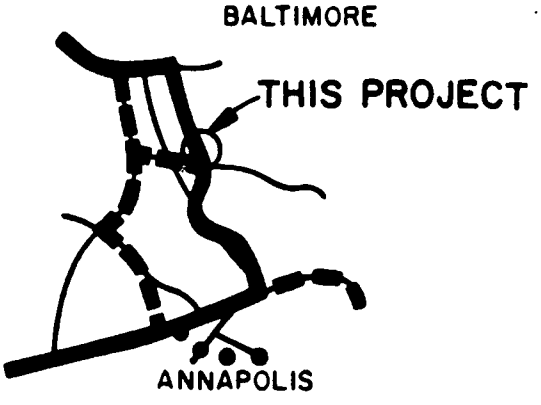
ALTERNATIVE No. 2

Build Interstate - Md. 2 & U.S. 50/301
No Build - Md. 3-178



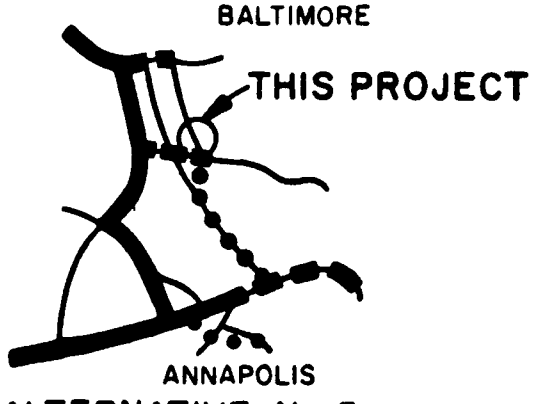
ALTERNATIVE No. 3

No Build - Md. 2
Build Interstate - Md. 3-178 & U.S. 50/301



ALTERNATIVE No. 4

Build Interstate - Md. 2 & U.S. 50/301
Build Expressway - Md. 3-178



ALTERNATIVE No. 5

Build Boulevard - Md. 2
Build Interstate - Md. 3-178 & U.S. 50/301

Legend

- EXISTING ROADS
- INTERSTATE ROUTE (I 97)
- FREEWAY EXPRESSWAY (NON INTERSTATE)
- BOULEVARD

DRAWING NO. 17

County. By re-analyzing this line as part of the Phase II Study process, the issues of mode, alignment and need can be revised on a regional basis."

Phase II studies in the south sector have included the consideration of two modes: Light Rail, and Rail Rapid Transit. The alternatives developed are briefly described below:

- Phase I with Rail Rapid Transit - This line runs in a tunnel from Charles Center to the Hanover Street Bridge, and then along Hanover/ Potee Streets to the City Line. From this point south, this route uses the Baltimore & Annapolis (B&A) Railroad right-of-way, with a connection to the Baltimore-Washington International Airport.

- B&A Railroad right-of-way with Light Rail Transit - This route would operate as a subway from Charles Center to Westport. It then follows the B&A Railroad right-of-way to Severna Park.

- Arundel Expressway alignment with Light Rail Transit - This route would use the Baltimore & Ohio Railroad right-of-way from Charles Center to the Ordinance Depot, and then along the Arundel Expressway to Furnace Creek. Between Furnace Creek and Severna Park, the facility could use the Arundel Expressway, Governor Ritchie Highway or B&A Railroad right-of-way.

- Maryland Route 3 with Light Rail Transit - This route would run in a tunnel from Charles Center to Westport. South of Westport, the route utilizes the medians of Maryland Routes 3 and 100.

The final report on the "Phase II Transit Study", completed in January, 1977, recommended a south light rail line running in a tunnel under Light Street, through Westport, and then either in the Route 3 median or following the B&A Railroad right-of-way. After a review of the final report and public hearings have been held, the Maryland Department of Transportation will make a final decision on which lines will be studied further.

C. PROBABLE IMPACT ON THE ENVIRONMENT:

This section describes the significant beneficial and detrimental environmental consequences anticipated with the implementation of recommended Alternate 2.

1. Secondary Impacts -

Transportation is only one of the many factors which have a major influence on development patterns. Development is not usually stimulated by increasing highway capacity alone. Other factors of attraction must be present, such as proximity to employment, schools, recreation, or environmental amenities. In many cases, the price and availability of land are the prime attractions to development, regardless of road capacity.[1]

By 1980, the Regional Planning Council predicts that Glen Burnie will become a regional employment subcenter. This predicted growth in employment is based partially on the assumption that efficient transportation, such as the Arundel Expressway, will be provided. The project would provide the necessary highway transportation facility to support the residential, commercial and industrial developments existing and projected for the Glen Burnie, Marley Neck and Mountain Road areas. Since a large part of the workers in Anne Arundel County commute and work outside of the County, of which two-thirds work in Baltimore City, the development of an Expressway to bypass Ritchie Highway through the Glen Burnie area is essential to stabilize the traffic burden on existing highways. In the major area affected by the Expressway, Glen Burnie had 43.7% of its workers employed outside of the County in 1970.

Secondary impacts resulting from the construction of the proposed Arundel Expressway, including the implementation of planned improvements to public facilities and services is not expected to result in significant increases in population and employment growth in the vicinity of the project.

The corridor in the vicinity of the Arundel Expressway from Maryland Route 648 to Maryland Route 100 is well served by local arterial highways and the area is almost completely developed; therefore, accessibility is not a major factor in this area with respect to induced residential construction and business growth.

Much of the land surrounding the Arundel Expressway corridor is presently developed to a point where future development will be constrained.

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[1] General Development Plan, January, 1978.

This is especially true in the areas to the north, east and west. Accessibility and traffic service are but one dimension of induced residential development, and sometimes are superseded by other factors. The availability, or lack of sewer service, has been identified as a critical factor in residential development of the area. Approximately 90 percent of the land within one mile of the Arundel Expressway corridor is served by existing sewerage. The remaining area without sewerage is located just south of the Arundel Expressway/Maryland Route 100 connection. Approximately 80 percent of the sewered lands are presently developed.[1]

The local corridor directly served by the proposed improvement has experienced extensive growth in commercial and residential development within the past several decades. Until recent years, erosion and sedimentation were not controlled or monitored to the extent that they are today. The result has been the degradation of local waterways and the subsequent impact on aquatic life. In light of the technical progress that has been made in the field of erosion and sedimentation control and the regulatory measures promulgated by Federal, State and local governments, adequate measures are presently in existence to offset the negative impacts that have adversely affected waterways and aquatic life in the past.

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[1] Adequacy of Facilities Map, October 27, 1976.

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2. Transportation Effectiveness -

Traffic data developed by the State Highway Administration for 1983 has been selected as the basis of the initial design proposed for the completion of the Arundel Expressway from Old Annapolis Road to Maryland Route 100.

One of the alternatives being considered in the Baltimore-Annapolis Transportation Corridor Study is a future improvement in the Ritchie Highway Corridor from Maryland Route 100 south to U. S. Route 50/301 and, if selected, future traffic increases will also be reflected on the Expressway link being considered in this proposal. Assuming the need for a future improvement, traffic forecasts for the year 1996 as shown on page C-24 of this Statement, have been used in order to determine the effect that this project would have on future noise levels. Noise abatement measures required by possible traffic associated with improvements south to U. S. Route 50/301, will be proposed as future construction items in that proposal. Traffic forecasts used to determine the effect of the project on future air quality has been included with the air quality analysis on page C-33 of this Final Statement. All traffic volumes used in this Statement were developed by the Traffic Planning Section of the State Highway Administration.

The average daily traffic (ADT) volumes and levels of service on the major roads in the project study area were projected for the estimated year that the project would be opened to traffic (1983). This data is listed below and diagrammed on Drawing No. 18.

1983 Projected Traffic Conditions

	Alternate 3 (Do-Nothing) ADT - Level of Service	Recommended Alternate 2 ADT - Level of Service
Proposed Arundel Expressway:		
Old Annapolis Rd. to Mountain Rd.	-	27,000 - B
Mountain Rd. to Md. Route 100	-	20,800 - A
Existing Maryland Route 100:		
East of Ritchie Highway	28,330 - B	24,500 - B
West of Ritchie Highway	65,370 - F	46,590 - D
Existing Ritchie Highway:		
North of Md. Route 100	54,890 - E	53,470 - E
South of Md. Route 100	77,780 - F	77,780 - F

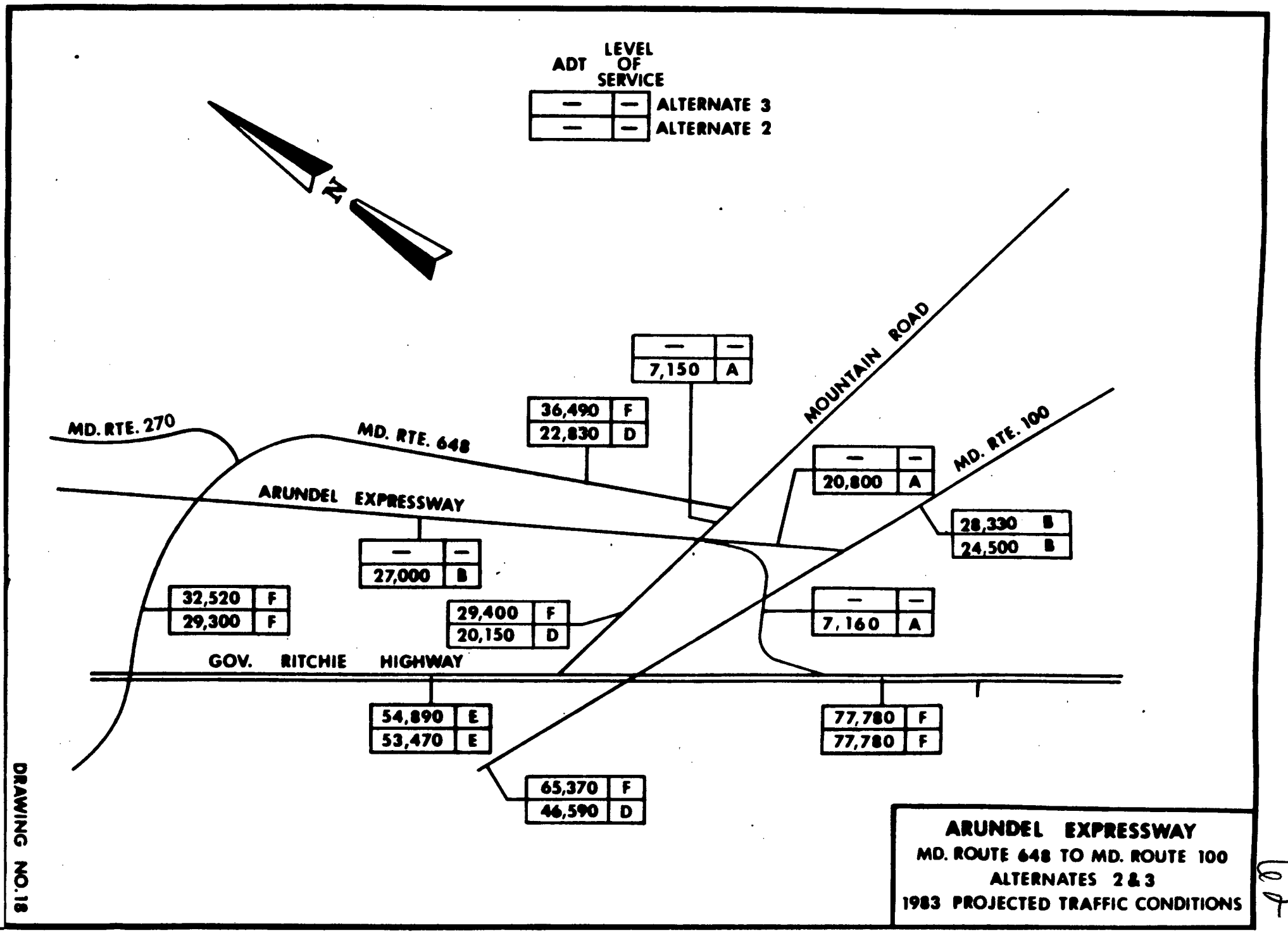
Existing Old Annapolis Road		
Ritchie Hwy. to Arundel Exp.	32,520 - F	29,300 - F
Arundel Exp. to Mountain Rd.	36,490 - F	22,830 - F
Existing Mountain Road:		
East of Ritchie Highway	29,400 - F	-
Proposed Mountain Road:		
Ritchie Hwy. to Arundel Exp.	-	20,150 - D
Arundel Exp. to Old Annapolis Rd.	-	7,150 - A

The entire Ritchie Highway corridor from the Baltimore Beltway to U.S. Route 50/301 is vehicle-oriented. School students are transported by bus, and the majority of residents commute to work and shopping areas by private passenger car. Based on data obtained from the 1970 census, 90% of the workers located in this area travel to work by automobile, 2% utilize buses, and the remaining 8% either worked at home, walked or used some other means of transport.

Highway transportation service in the corridor will be improved with the proposed extension of the Arundel Expressway to Maryland Route 100. The project will provide the additional vehicular capacity necessary to accommodate the travel desires of the population and employment - existing and projected - for the Glen Burnie, Marley Neck and Mountain Road areas. Projected 1983 traffic for the Recommended Build Alternate 2, as compared to traffic for the Do-Nothing Alternate 3, indicates that traffic volumes would be reduced on Maryland Route 100, Old Annapolis Road and Mountain Road, resulting in improved driving conditions and levels of service for shoppers and for those driving to work and schools in this area. Traffic volumes on Ritchie Highway north or south of Maryland Route 100, will not be substantially reduced until additional improvements are completed in the Ritchie Highway Corridor south of Maryland Route 100.

The project, designed as a modern, controlled access Expressway, would provide a needed highway supplement in the corridor for National Defense and for emergencies resulting from natural causes.

Traffic on Ritchie Highway and other existing roads will be maintained during the construction of the Expressway on new location. Vehicular and pedestrian traffic on County and State roads intersecting the project will be continuously maintained by the construction of temporary roadways, the use of existing roads to detour traffic around a construction site, or by utilizing existing roads where a relocation is proposed.


ADT
LEVEL OF SERVICE
— —
ALTERNATE 3
— —
ALTERNATE 2
N
MOUNTAIN ROAD
MD. RTE. 270
MD. RTE. 648
MD. RTE. 100
ARUNDEL EXPRESSWAY
GOV. RITCHIE HIGHWAY
— —
7,150 A
36,490 F
22,830 D
— —
20,800 A
28,330 B
24,500 B
— —
27,000 B
32,520 F
29,300 F
29,400 F
20,150 D
— —
7,160 A
54,890 E
53,470 E
77,780 F
77,780 F
65,370 F
46,590 D
ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
ALTERNATES 2 & 3
1983 PROJECTED TRAFFIC CONDITIONS
DRAWING NO. 18

Traffic volumes in the Ritchie Highway Corridor to the south of Maryland Route 100 are limited at this time to the capacity of Ritchie Highway; therefore, the system-wide impacts of building this project would be minor with reference to increased traffic on the Baltimore Beltway, Maryland Route 100 and other County streets. The ultimate effect on the overall highway system will depend on the alternatives selected as part of the Baltimore-Annapolis Transportation Corridor Study.

3. Accident Statistics - Safety -

The following accident cost and statistical data was developed by the State Highway Administration's Bureau of Accident Statistics and Analysis.

During the years of 1971 and 1972, traffic using the existing Ritchie Highway, which has no control of access, experienced an average accident rate of 352.91 accidents per 100 million vehicle miles of travel, with a resultant accident cost to the motorist of $716,047 per 100 million vehicle miles.

If no improvements are made to the existing roadways (Alternate 3), we can expect, in addition to the normal growth, an increase in vehicular conflictions which are normally associated with congestion on roads of this design. The accident rate will continue to rise with a corresponding increase in motor vehicle accident cost exceeding the aforementioned cost calculated on 100 million vehicle miles of travel basis.

Arundel Expressway (Alternate 2) a fully controlled divided highway, should not exceed an accident rate of 179.27 accidents per 100 million vehicle miles of travel, according to state-wide studies. This safer type highway will reduce the accident cost to $408,343 per 100 million miles. The new savings to the motorist by the construction of the proposed facility would be $307,704 brought about by a reduction of 173.64 accidents for each 100 million vehicle miles of travel; however, there would be no change in the accident rate on Ritchie Highway because there is no change in traffic volume.

More important than the monetary savings to be realized by construction of the proposed highway is the corresponding anticipated decrease in the loss of life and human misery brought about by the reduction in accidents.

The accident costs, as indicated, include present worth of future earnings of persons killed or permanently disabled, as well as monetary losses resulting from injury and property damage accidents. The unit costs utilized in the above computations were based on actual cost values obtained from three independent accident cost studies conducted in Washington, D. C., Illinois and the California Division of Highways and were updated to 1969 prices.

4. Public Facilities and Services -

Three schools are located in close proximity to the proposed project (Alternate 2), as shown on Drawing No. 12. The Marley Junior High School is located on the northwest corner of Md. Route 648 and Marley Station Road and east of the proposed Expressway. The Marley Elementary School and Marley Special School are situated on the same property between Marley Station Road and Scott Avenue, midway between Maryland Route 648 and Maryland Route 2 and also east of the proposed Expressway.

One of the access routes for buses to the Marley Special School would be affected by the project, which requires the removal of Cooper Road from Marley Station Road to Scott Avenue. A replacement street for Cooper Road will be constructed as part of the project from Marley Station Road to Scott Avenue on the east side of the School property. Vehicular access to the other schools would not be affected because of the proposed bridge structure, which will carry Marley Station Road over the Expressway.

Pedestrian access to the Marley Special School is provided via Relocated Cooper Road; however, this is a regional school for retarded children and, according to school authorities, all of these children are transported to school by bus. Normal pedestrian access to the Marley Elementary School is via Marley Station Road, and access to the Marley Junior High School is via Maryland Route 648 and Marley Station Road. Pedestrian access to these schools will be maintained continuously during the construction of this project on a sidewalk along the proposed detour road for Marley Station Road. The President of the Gerard Plaza Community Association stated at the Public Hearing that some students living in the Phelps and Norman Avenue areas of Gerard Plaza, walk across the proposed Arundel Expressway right-of-way to go to the Marley Junior High School, and requested that a pedestrian access be investigated at this location. In response to this request, the following study was made. Refer to Dwg. No. 12 for orientation.

The location studied for the pedestrian access begins on the east side of Phelps Avenue, opposite Dixon Drive, and extends easterly to cross over the Arundel Expressway via a bridge. East of the Expressway two alternate locations were studied to connect this access to existing streets. One alternate proposed to use an existing 15 foot wide right-of-way between two houses in Section IV of the Gerard Plaza subdivision and connect the pedestrian access to Gerard Drive. The second alternate proposed that the access be constructed southerly along the east right-of-way line of the Expressway and through the Gerard Plaza Recreation Club property to connect to Marley Station Road opposite Marley Elementary School. The proposed typical section of the pedestrian access is a 10-foot wide paved walkway on a 14-foot wide graded area with a 10-foot wide bridge over the north and southbound roadways of the Arundel Expressway. The cost of providing this pedestrian access, exclusive of right-of-way, is estimated to be approximately

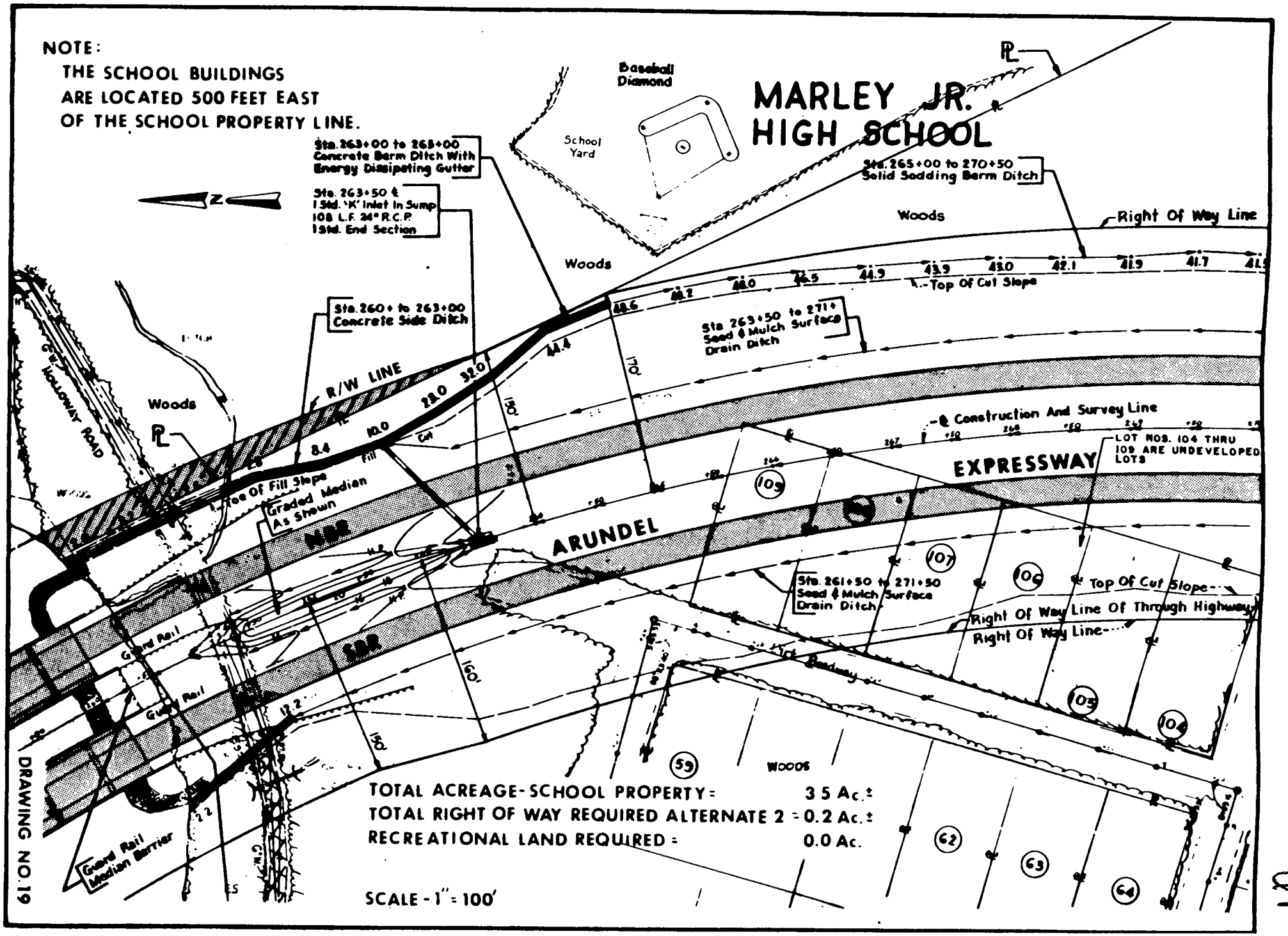
$270,000. The proposed access was reviewed with representatives of the Anne Arundel County Public Schools and the results of this review are contained in a letter dated July 22, 1977 from the Supervisor of Transportation. A copy of this letter is included in Section K of this Final Statement. All pupils in the Gerard Plaza Community live within the maximum walking distance limits of one (1) mile to elementary schools and one and one-half ($1\frac{1}{2}$) miles to junior high schools. Based on the current enrollment of 19 pupils, it is not considered feasible to construct this pedestrian access at a cost of over one quarter of a million dollars ($270,000) as a convenience to reduce the walking distance between the schools and the Gerard Plaza Community.

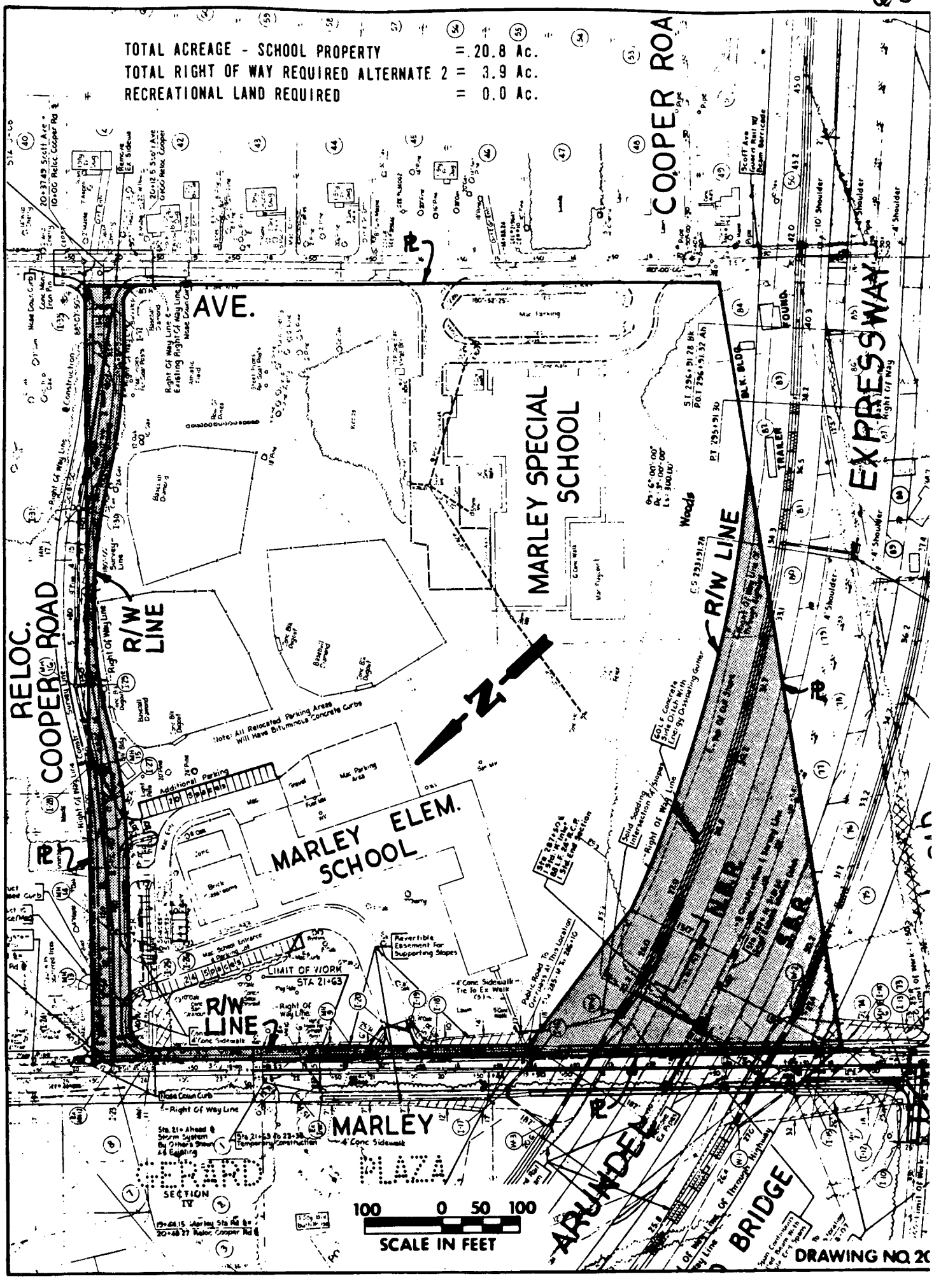
The Marley Special School and Marley Elementary School are in close proximity to the highways proposed with this project and at these locations the principal concern is for the safety of the children. Chain-link fences will be erected along the Expressway right-of-way and along the west side of Relocated Cooper Road through the school property for the protection of children and animals who might stray onto the roadway.

Right-of-way will be required from all three schools for the construction of the project. The location of the right-of-way and its relationship to the schools' recreational facilities are shown on the site plans as Drawings No. 19 and 20. Right-of-way required by the recommended alternate from the three schools adjacent to the project is not used for school or public recreational purposes. The decision by Anne Arundel County to use the monies provided by the highway for non 4-f right-of-way requirements, to either improve or re-align the present ballfields, is an action over which the SHA has no control. Anne Arundel County has no commitment to improve the ballfields at the present time.

Public services requiring the use of fire equipment, police protection, and other emergency services, will be improved by the proposed project. A safer highway will be available to these emergency vehicles with the added benefit of reduced travel time.

Public utility services, such as water lines, sanitary sewers, gas lines and electrical and telephone service, will not be affected by the project. Where the proposed construction is in conflict with a utility, the necessary relocations will be made in order to maintain service. Care will be exercised during the construction period to protect other utilities that are not directly affected by the project.


NOTE:
THE SCHOOL BUILDINGS
ARE LOCATED 500 FEET EAST
OF THE SCHOOL PROPERTY LINE.
MARLEY JR.
HIGH SCHOOL
Baseball Diamond
School Yard
Sta. 263+00 to 265+00
Concrete Berm Ditch With
Energy Dissipating Gutter
Sta. 263+50 ±
1 Std. 'K' Inlet In Sump
108 L.F. 24" R.C.P.
1 Std. End Section
Sta. 265+00 to 270+50
Solid Sodding Berm Ditch
Woods
Right Of Way Line
Top Of Cut Slope
Sta. 260+ to 263+00
Concrete Side Ditch
Sta 263+50 to 271+
Seed & Mulch Surface
Drain Ditch
R/W LINE
Construction And Survey Line
LOT NOS. 104 THRU
109 ARE UNDEVELOPED
LOTS
EXPRESSWAY
ARUNDEL
Toe Of Fill Slope
Graded Median
As Shown
Sta. 261+50 to 271+50
Seed & Mulch Surface
Drain Ditch
Top Of Cut Slope
Right Of Way Line Of Through Highway
Right Of Way Line
Guard Rail
Guard Rail
Guard Rail
Median Barrier
Woods
TOTAL ACREAGE-SCHOOL PROPERTY = 35 Ac. ±
TOTAL RIGHT OF WAY REQUIRED ALTERNATE 2 = 0.2 Ac. ±
RECREATIONAL LAND REQUIRED = 0.0 Ac.
SCALE - 1" = 100'
DRAWING NO. 19


TOTAL ACREAGE - SCHOOL PROPERTY = 20.8 Ac.
TOTAL RIGHT OF WAY REQUIRED ALTERNATE 2 = 3.9 Ac.
RECREATIONAL LAND REQUIRED = 0.0 Ac.
COOPER ROA
AVE.
MARLEY SPECIAL SCHOOL
EXPRESSWAY
RELOC. COOPER ROAD
R/W LINE
MARLEY ELEM. SCHOOL
Note: All Relocated Parking Areas Will Have Bituminous Concrete Curbs
Additional Parking
LIMIT OF WORK STA 21+63
Reversible Easement For Supporting Slopes
MARLEY
SECTION IV
100 0 50 100
SCALE IN FEET
ARUNDEL
BRIDGE
DRAWING NO. 2

5. Community Cohesion -

The existing character of neighborhoods in urban and suburban areas is generally established by actions of the local government, such as zoning regulations, permitted and planned land usage, and available public services. Between Old Annapolis Road (Md. Route 648) in Glen Burnie and Marley Station Raod, the project passes through undeveloped land east of Harundale and Martindale, and to the west of Sumac Fields and Foxwell. The project does not divide these established subdivisions which have their access oriented to either Ritchie Highway, Old Annapolis Road, or Marley Station Road.

The Arundel Expressway would be located east of the main part of the Gerard Plaza Community and does not effect its access to Ritchie Highway via Phelps Avenue and Sandsbury Avenue, or to Marley Station Road via Allan Avenue and Leroy Road. The Expressway separates this part of Gerard Plaza from its recreation club and Section IV of Gerard Plaza, which contains 19 homes, all with access onto Marley Station Road. At the present time, the 19 homes and the recreation club for Gerard Plaza are separated from the main part of the community by approximately 600 feet of woods. Marley Station Road is the only connecting link between the two sections. A bridge is proposed to carry Marley Station Road over the Expressway, and access between the two sections of Gerard Plaza will remain the same as exists today; i.e., via Marley Station Road.

South of Marley Station Road, the project is located in an area reserved for the proposed Expressway between the Americana Apartments, the St. George's Gate Apartments, and the Pinewood Apartment development for the elderly, and then passes to the east of the Southdale Shopping Center on Mountain Road.

To the south of Mountain Road, the land in the vicinity of the project alignment is largely undeveloped, except for the commercial development on Mountain Road and the Woodholme subdivision on Jumpers Hole Road. The project passes to the east of this development, with no effect on community cohesion.

There should be no significant change in the character or zoning make-up of adjacent communities (that is commercial and residential development and population density change). Property values should not change since zoning already reflects the highest and best use. Some properties in close proximity to the project, whose access is not improved, can be subject to adverse visual and acoustical impacts, and also suffer losses in value and in consumer's surplus (the psychological values a resident places on his property over and above what he could receive in a market sale). The majority of the property owners (residences) displaced would benefit in terms

of being relocated in a residence of greater value than their previous residence.

The initial loss of assessable land and buildings required by the project right-of-way would ultimately be replaced by the inevitable increase in property development in the vicinity of the proposed improvement and help to broaden the County tax base in the corridor.

6. Displacement of People, Businesses and Farms -

The following information was provided by the Maryland State Highway Administration, Bureau of Relocation Assistance for Alternate 2.

The community affected by this alternate is almost entirely residential, with a combination of single-family units and apartment building complexes adjacent to the alignment. For the most part, the actual Expressway Corridor has been left undeveloped.

The project will require the displacement of four families, consisting of an estimated 16 persons. Two of these families are located on the southwest side of Cooper Road, Rt. of Sta. 294+, and 2 are on the south side of Mountain Road, Rt. of Sta. 335+. Two of these families are owner-occupants, and two are tenant-occupants. Two additional owner-occupant families may be displaced; the location of their wells and septic systems will be the controlling factor. There are no businesses, farm operations or non-profit organizations that will have to relocate due to this alternate.

There is no adverse impact by Alternate 2 on particular groups, such as the elderly or the handicapped, and all community facilities and services will remain unaffected. The community affected by this alternate is racially mixed. There is one minority family which consists of approximately 4 persons who will be displaced by this alternate. The income level of this family is low and they are living in substandard housing. This condition could necessitate the application of "last resort housing", as described in Appendix B, to accomplish the rehousing.

Since there has always been a large turnover in the housing market in northern Anne Arundel County (Election Districts 3 and 5), there should be sufficient housing to meet the relocation needs of all Federal, State and County programs. A reconnaissance of available housing was conducted by the Maryland State Highway Administration, Bureau of Relocation Assistance in March, 1975. A total of 42 dwellings were for sale in the immediate vicinity of the Arundel Expressway corridor. Seven of these dwellings ranged in price from $0 to $20,000; twenty dwellings were priced between $20,000 and $40,000, and the remaining fifteen dwellings were priced above $40,000. The majority of these dwellings were between 11 and 30 years old. All of the dwellings were detached, with the exception of one rowhouse.

The lead time normally expected for relocations of this type is six months to a year. The successful relocation of those displaced by this alternate can be accomplished in accordance with the requirements of the "Uniform Relocation Assistance and Land Acquisition Policies Act of 1970". Copies of the "Preliminary Relocation Study", as prepared by the Bureau of Relocation Assistance in March, 1978; and "Summary of the Relocation Assistance Program of the State Highway Administration of Maryland" are included as Appendix B in this Final Statement.

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7. Summary of Equal Employment Opportunity Program -

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

8. Aesthetics -

The major portion of the corridor is occupied by residential and commercial development along with the necessary support systems, such as utility and power lines, streets, etc. From Maryland Route 648 to Mountain Road, the project passes through a suburban setting of individual homes, apartments, and schools, and would be seen as a typical modern Expressway. The project passes through undeveloped land or farming operations south of Mountain Road, except for communities along intersecting roads.

Aesthetics is an abstract issue which encompasses many aspects of the natural and man-made environment in addition to the inter-relationship of these features to each other and to the facility design. This discussion will focus on the intrinsic visual characteristics of the facility, and the visual aesthetic impact of the facility on adjacent areas.

From the northern project limit to Marley Station Road, the terrain rises rather abruptly from Marley Creek. The proposed alignment extends from the completed section of the Arundel Expressway, crossing the Marley Creek area approximately twenty feet above the natural terrain. Through this area the proposed roadway will intrude on the Marley Creek wetlands and require the removal of forest vegetation which borders these areas. The roadway will reduce the vista from the residences along Shana Road which is presently dominated by forest vegetation and water. The wetland restoration/replacement measures, included as part of the project proposal, will mitigate the impacts to the wetland area. After crossing Marley Creek, the alignment is located predominantly in a cut section, which will act as a shield for adjacent communities and schools.

South of Marley Station Road to the vicinity of Mountain Road, the proposed roadway grade results in shallow cut or embankment sections and can generally be considered at-grade with adjacent development, which consists of schools, residential subdivisions and apartment developments. The proximity of development adjacent to the corridor limits the extent to which the roadway can be designed to blend with the existing landscape. This factor is further complicated by the removal of the vegetation which presently acts as a natural division between developed areas.

The Maryland State Highway Administration is presently considering the construction of noise barriers adjacent to the northbound roadways. These barriers vary between fifteen and twenty feet in height and will act as a buffer to shield the residential areas and schools along the east side of the project from the visual effects of the highway improvement.

From the area just north of Mountain Road to the project terminus in the south, the Arundel Expressway, its connector ramps and improvements to the local roadways, can be considered compatible with the existing environment which is dominated by highways and highway-related development.

9. General Ecology and Conservation -

The construction of the proposed Arundel Expressway (Alternate 2) would require the acquisition of the following areas within its right-of-way:

Forest Land - Approximately 45 acres would be required for the construction of the entire project.

Open Land - Approximately 30 acres of fields or pasture land would be required for the construction of the entire project.

Wetlands - Approximately 2.4 acres in the vicinity of Marley Creek would be required for the construction of the project.

It is within these areas that the impacts on the terrestrial and aquatic environment will be most significant.

The environmental impacts caused by the removal of forest lands within the project area, which has already been extensively developed by man, are perhaps more severe than in other less-developed areas. Although the land areas that would be acquired are relatively small, they do provide many beneficial aspects to this developed area in the form of places to picnic and observe wildlife in a natural surrounding. Other more subtle factors affecting the natural ecosystems would also be lost with the removal of these lands.

Because of the high density of dwellings in the project area, wildlife species in forest tracts and old-field habitats are probably restricted to those types more tolerant to these conditions. The proposed construction (Alternate 2) should not have any major impact on wildlife and their distribution throughout the area. Limiting factors such as existing roads and residential developments will continue to restrict the numbers of wildlife in the project area.

No rare or endangered species are likely to be encountered in the terrestrial ecosystems in the proposed corridor.

Marley Creek serves man's environment in several different ways. Unfortunately, the construction of a highway will disrupt some of the normal ecological functions that help to serve man's environment.

First, and probably most important, will be the loss of wildlife habitat for songbirds, shore birds and water fowl. The construction of a highway across the creek will physically take some of the wooded, shrub and grass marshland. The loss of this wildlife habitat will, of course, degrade the aesthetic and recreation-educational value of this portion of the Marley Creek Basin. The basin offers nearby residents of surrounding developments an opportunity to enjoy the natural setting and the wildlife found there.

Filling the marsh areas creates the potential for the movement of mud, sediment and decayed organic materials to other areas of the stream. By the use of sandbag levees and turbidity barriers during the life of the proposed construction, it is anticipated that movement of silt will be controlled and not become a significant problem.

Construction in the Marley Creek area would cause some loss of shallow water zone, which is commonly used as a spawning site for resident and anadromous fish. This loss would reduce the number of young produced by fish species that spawn in Marley Creek. Although not economically important, their contribution as an energy source in the food chain should not be overlooked.

Like most wetlands, the marshes of Marley Creek can act as a barrier between the unsanitary wastes of man. The marshes contain both an aerobic and anerobic environment which can absorb nitrates and phosphates while replacing dissolved oxygen to the water. The pollution barrier concept may be very important to maintaining sanitary conditions due to the surrounding developments which are possibly contributing polluted surface water to the basin. The pollutants may include nitrates and phosphates from lawn fertilizers washed from the lawns during heavy rains or may contain effluent from on-site sewage. The loss of this pollution barrier may result from the actual construction of the highway or by indirect impacts associated with increased sedimentation. By replacing the wetlands taken by construction of the highway, the pollution barrier will continue to intercept sediments and nutrients flowing off of the roadways and existing shorelines.

The value of Maryland's wetlands and the concern for their preservation is reflected in the Wetlands Act of 1970[1] which provides for the regulation of dredging and filling in tidal wetlands. The act seeks to maintain the integrity of the wetlands to the greatest possible extent.

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[1] Annotated Code of Maryland, Acts of 1970, Article 66C, Section 718, Chapter 241

Only one alignment was considered for this project because the location has generally been kept free of new construction since 1960 with the cooperation of the Anne Arundel County Planning and Zoning Commission. Considering an alignment shift in either direction at Marley Creek, it was determined that the project would still cross the wetlands and, at the same time, would adversely impact existing residential and apartment communities and/or the several schools in the area, as shown on Dwg. No. 4. Because only one feasible alignment is available, the State Highway Administration authorized additional studies of the Marley Creek crossing to insure that the proposed project would cause a minimum of damage to the wetland environment.

A report was prepared incorporating a number of designs including viaduct construction across the entire Marley Creek basin and various combinations of embankment design with bridges over the Marley Creek channel. The viaduct alternative was not recommended since it would cost approximately $6,000,000 more than the embankment construction, and would have no significant advantage over the embankment in terms of preserving the wetlands. Restoration of marsh and swamp areas beneath the viaducts would be impracticable due to lack of sufficient height and direct sunlight. Alternative designs for embankment construction that were considered included a reduction in median width; a reduction in width of safety grading with 2:1 slopes; and a reduction in width of safety grading with vertical slopes. The third scheme resulted in a maximum reduction in existing wetland area of approximately 0.6 acre required for highway construction, but only by compromising desirable safety features such as the 30-foot graded safety recovery area. It was not considered desirable to reduce the embankment cross-section, since an equivalent area of new wetlands can be constructed to replace the required acreage as described below. The report is available for review at the State Highway Administration, a copy of which was sent to the U. S. Fish and Wildlife Service.

The following is a summary of the recommendations from this report for the measures to mitigate adverse impacts of the expressway construction on the Marley Creek Wetlands. These measures will also be included in the design and construction of recommended Alternate 2 (see Drawings No. 21 and 22).

a. Reconstruct the existing wetlands that would be disturbed by bridge construction (Area A), and restore its usefulness in trapping sediments from Marley Creek headwaters. 0.3 acre

MD. RTE. 270

MD. RTE. 648

OLD MD. RTE. 648

MARLEY CREEK

HOLLOWAY RD.

WOODED ISLAND

C.S.

S.T.

T.S.

S.C.

ARUNDEL EXPRESSWAY

240

245

250

255

260

265

270

TOE OF EMBANKMENT SLOPE

R/W LINE

NORTHBOUND ROADWAY

SOUTHBOUND ROADWAY

2°-30' EMBANKMENT SLOPE

3°-00'

SHANA RD.

BEGIN NEW CONSTRUCTION PROPOSED EMBANKMENT

PROPOSED DUAL BRIDGES OVER MARLEY CREEK

A.A. CO. PUMPING STATION

A B C D E

200 0 50 100 150 200

SCALE IN FEET

LEGEND

- EXISTING WETLANDS
- EXISTING WATER AREA
- EXISTING WETLANDS TAKEN BY CONSTRUCTION
- EXISTING WATER AREA TAKEN BY CONSTRUCTION
- RECONSTRUCTED OR RETAINED EXISTING WETLANDS
- NEW WETLANDS IN EXISTING WATER AREA
- SANDBAG LEVEE & TURBIDITY BARRIER
- TURBIDITY BARRIER

P.V.C.

P.V.I.

-1.18%

+0.6%

PROPOSED PROFILE GRADE V.C. 1200'

PROPOSED DUAL BRIDGES

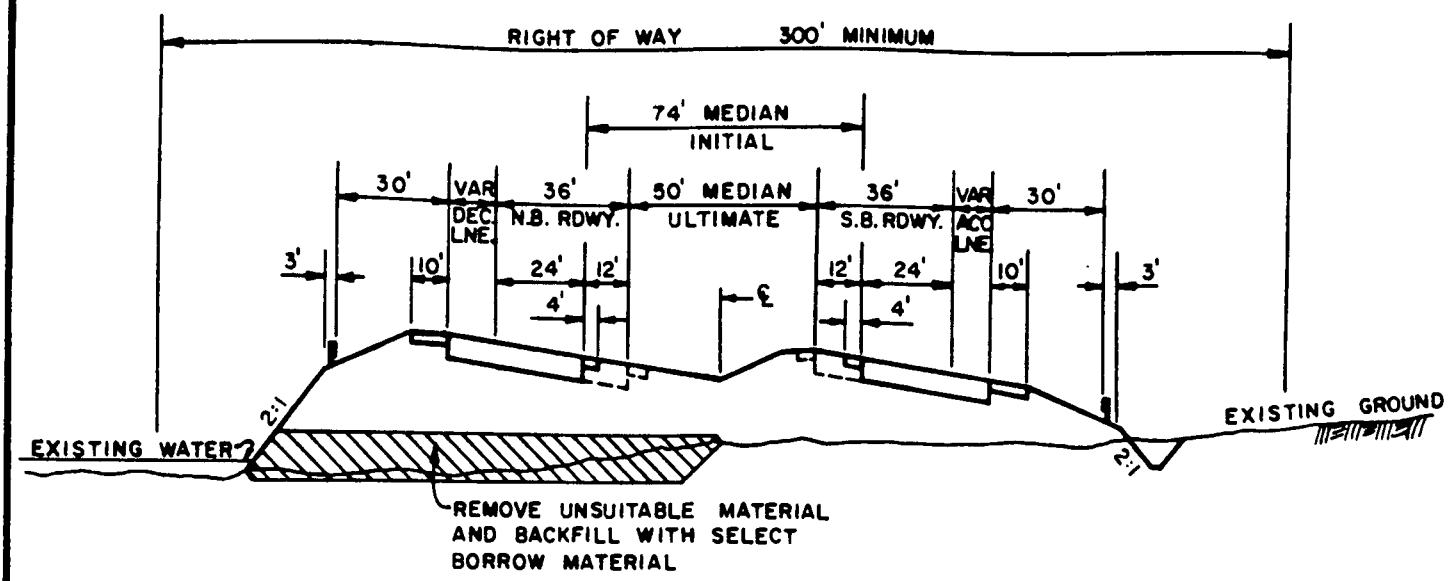
EXISTING GROUND LINE

50 40 30 20 10 0 -10 -20

245 250 255 260 265

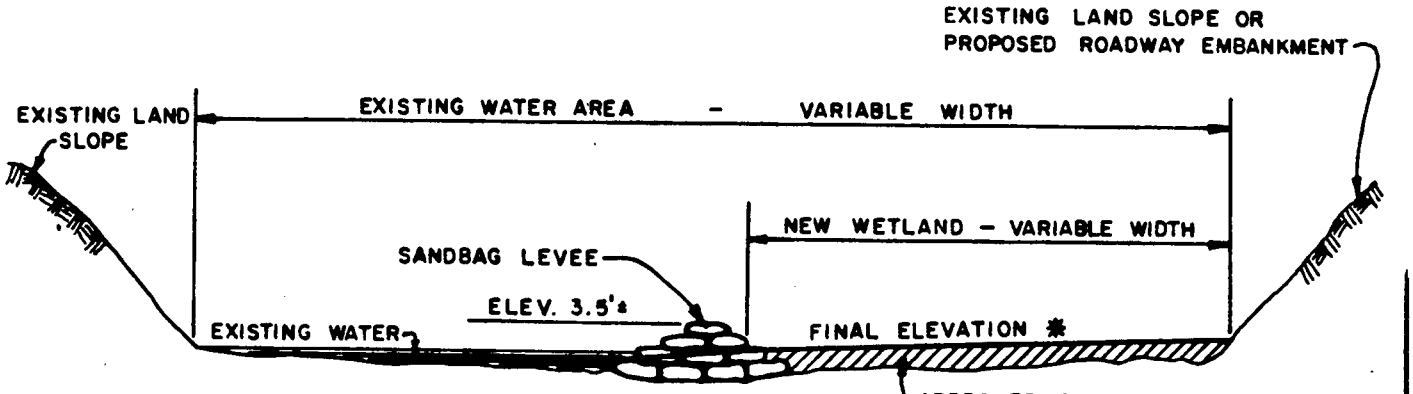
ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
PLAN AND PROFILE
RECOMMENDED CONSTRUCTION
IN
MARLEY CREEK BASIN

DRAWING NO. 21



TYPICAL ROADWAY SECTION
EMBANKMENT CONSTRUCTION

NOT TO SCALE



NOTE: AFTER SATISFACTORY PLACEMENT & GRADING OF NEW WETLAND BORROW, REMOVE MATERIAL FROM SANDBAGS AND GRADE FROM TOP EDGE OF WETLAND ON A 6:1 MAXIMUM SLOPE TO NATURAL BOTTOM OF CREEK.

* FINAL ELEVATION OF NEW WETLAND TO BE DETERMINED IN FIELD FROM EXISTING WETLAND ELEVATIONS.

TYPICAL WETLAND SECTION
NEW CONSTRUCTION

NOT TO SCALE

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
TYPICAL SECTIONS
RECOMMENDED CONSTRUCTION
IN
MARLEY CREEK BASIN

DRAWING NO. 22

b. Construct new wetlands in what is now open water in in the Marley Creek basin (Areas B and C) which will intercept sediments and nutrients flowing off of the expressway and from eroding shorelines. 2.4 acres

c. Retain the existing wetlands outside the limits of embankment construction (Areas D and E). Additional field survey in the design phase will indicate if it is feasible to improve the quality of these existing wetlands. 1.4 acres

d. The wooded island left of expressway Stations 248+ to 254+ will remain in its natural state, except for the western portion within the limits of embankment construction. The remaining portion of the island will be improved in appearance by removal of dumped trash and debris and selective tree thinning.

The Arundel Expressway project and, more specifically, its' crossing of Marley Creek, has been coordinated with the following agencies and their comments and suggestions have been incorporated into this Final Statement.

U. S. Coast Guard	- Refer to page I-5
U. S. Dept. of the Interior	- Refer to page I-18
U. S. Fish & Wildlife Service	- Refer to Section K
Md. Dept. of Natural Resources	- Refer to page I-34

A bridge permit from the U. S. Coast Guard and a Section 404 permit from the U. S. Army Corps of Engineers will be required for this project.

Upstream from the Arundel Expressway crossing to Ritchie Highway, the Marley Creek floodplain ranges from 500 to 1000 feet in width with relatively steep slopes on both sides. See Dwg. No. 12. Residential development lines both sides of the floodplain with houses located at an elevation of 10.0 or above. Anne Arundel County operates a pumping station on the south bank of Marley Creek at an elevation of 6.0. At the expressway crossing, Marley Creek splits into two channels, separated by an island wetland, much of which is affected by tidal fluctuations. The 100-year storm has been used to evaluate the flood hazard at this location and will produce a runoff of 3634 cfs. Hydraulic computations indicate that the runoff of 3634 cfs will cause the water surface elevation to rise to El. 4.28, with an average V = 2.6'/sec. in the existing floodplain. Assuming the embankments and bridges proposed with Alternate 2 are in place, the computations show that the 100-year flood will flow through the bridges with a V = 3.0'/sec. Upstream of the bridges, the water surface elevation would rise to El. 4.30. The minor increase in elevation of the water surface during a 100-year storm is a result of the wide

bridge opening of 280'. There will be no adverse effects on the floodplain or adjacent development as a result of constructing the expressway across the floodplain. The water surface elevation of the flood of record is El. 8.0, which occurred in 1933. This was caused by hurricane winds, which blew water into the upper reaches of the Chesapeake Bay causing abnormally high tides at the same time as the storm water runoff from the hurricane was at its peak.

10. Solid Waste Disposal and Borrow Area -

The majority of waste materials resulting from a highway construction project can generally be attributed to two items; the removal of buildings and clearing and grubbing operations. Building removal results in waste materials such as wood, glass, piping, plaster, metal ducts, appliances, etc., and clearing operations create materials such as brush, trees and stumps.

The removal and disposal of these waste materials can be confined within the construction limits for large expressway projects as proposed with Alternate 2. Small limbs and brush would be shredded and stockpiled for future use as mulch material. Other miscellaneous materials, including lumber, glass, piping, appliances and stumps could be deposited and buried in designated non-bearing fills, such as the interior of interchange ramps, when specified in the construction contract. Where on-site areas are not available, the current construction specifications of the State Highway Administration require the Contractor to make all necessary arrangements for obtaining suitable borrow pits and disposal areas.

In accordance with the provisions and requirements of Chapter 245 of the Acts of 1970 for the State of Maryland, it is also necessary for the Contractor to obtain permits and/or approvals from the appropriate County agency for any off-site work, which includes off-site borrow pits, waste areas, and the treatment of these during and after the completion of the project. The County agency will refer the plan for such areas to the Soil Conservation District for review and approval of the erosion and sediment control provisions. A copy of the permits and/or approvals must be furnished to the Engineer prior to starting any work covering the said permits and/or approvals. Under the provisions of the Contractor's Erosion and Sediment Control permits and/or approvals for work outside the right-of-way, temporary pollution control shall be inspected by the Commission's Project Engineer. Any deviation from or non-compliance with the provisions of the permits and/or approvals shall be reported to the appropriate agency to enforce compliance. The erosion control features installed by the Contractor shall be acceptably maintained by the Contractor for the duration of the contract.

11. Water Quality -

The major potential impact on water quality resulting from highway construction and maintenance is that of sediment deposited in streams and lakes. Sediment resulting from soil erosion is a significant problem during construction unless proper control measures are taken.

Measures to minimize the effects of sedimentation resulting from construction are applicable to all surface waters throughout the project; however, the stream of major concern in this area is Marley Creek. Due to the very erodible character of the sandy, silty soil, erosion control could be a significant problem during the construction of the Arundel Expressway in the vicinity of Marley Creek. Gross sediment yields for uncontrolled construction activities could be as high as 200 tons/acre/yr. However, erosion control measures will be required on the project so actual yields should be quite low in virtually all instances. The currently used methods of control of both erosion and other potential pollutants would reduce significantly the potential impact of these pollutants.

Embankment stabilization within the Marley Creek basin will require the removal of 1 to 4 feet of unsuitable foundation material within wetland and shallow water areas. Select borrow material will be utilized as backfill to provide a stable foundation for the highway embankment. The unsuitable foundation material will be removed from approximately 2.1 acres of wetland and 1.3 acres of shallow water areas. The volume of material to be removed is approximately 35,000 cubic yards. Based on the results of a soils analysis and survey, which will be made during the design phase of the project, the material unsuitable for embankment foundations in its present state may possibly be used for new wetland construction or dried out for use in embankments. The remainder will be transferred to an approved location. Topsoil, seed and mulch will be placed on all unpaved embankment surfaces within the limits of construction as soon as practicable. This will include the median, shoulder areas and embankment slopes, except where paved slope protection is required.

To minimize the impacts of construction on the water quality in Marley Creek, all planned construction in the Marley Creek basin will be done at the same time under the responsibility of one Contractor. In addition, levees and/or turbidity barriers will be installed and maintained around all proposed construction, including the stabilization of embankment foundations, proposed new wetlands, retained existing wetlands and proposed bridges over Marley Creek as shown on Drawings No. 21 and 22.

- Sediment and Erosion Controls -

The Maryland State Highway Administration has worked closely with the Maryland Water Resources Administration and the U. S. Department of Agriculture, Soil Conservation Service over the past several years to establish guidelines and procedures for the prevention of erosion and sedimentation, as well as material spillage into channels. The adopted standards and specifications as stated in the "Sediment and Erosion Control Program", adopted September 3, 1970, set forth the procedures and controls over construction measures to be used on all highway contracts, in accordance with Federal Highway Administration requirements. The standards and construction measures, adopted in 1970 for use on all highway contracts for the prevention of erosion and sedimentation, have proven successful on other highway projects and include the following:

a. The proper staging of construction activities to permanently stabilize ditches at the top of cuts and at the foot of slopes prior to excavation and formation of embankments.

b. The amount of land cleared and left barren at any time will be limited, and slopes will be seeded or sodded, or otherwise stabilized as soon as practicable.

c. The well-timed placement of sediment traps, temporary slope drains and other control measures.

Bridges, drainage culverts, ditches, channel changes, sediment traps, level spreaders and protective linings will be carefully located and designed so as to cause minimum disruption to waterways and to reflect concern for preservation of aquatic life. The locations and details concerning drainage structures and appurtenances will be contained on the contract plans and are reviewed during the staff level technical reviews at prescribed intervals of 30% and 90% plan completion.

The State Highway Administration is required by state law to submit a sediment control plan and make application for Waterway Construction Permits from the Water Resources Administration for all stream crossings involved in the project. No work can begin on any individual contract until said permits have been obtained and detailed schedules and methods of operations, known as an "Erosion and Sediment Control Plan", have been developed by the Contractor and approved by the State Highway Administration. Also, Contractors are required by Chapter 245 of the Acts of 1970 to obtain permits from the appropriate County Agency in cooperation with the local soil conservation district for any off-site work, including borrow pits, waste areas, etc.

The State Highway Administration, the Water Resources Administration, and on the County level, the Soil Conservation District and the Department of Inspection and Permits, exercise authority over the carrying out of these measures, both in the review of plans during design and by inspection during construction, thus assuring minimum adverse impact from erosion and sedimentation during construction.

Subsequent to construction, the State has regular maintenance programs to keep the roadway, drainage systems and landscaping in proper condition. These normal and regular maintenance procedures will effectively control any erosion that may occur during the operational phase of the project. During the operational phase, water pollution may result from salting operations; however, this situation is limited to heavy snowstorms during the winter months. Salt stockpiles are maintained in special buildings, which are constructed throughout the State, none of which are located along the Arundel Expressway.

12. Noise Impacts -

The standards which stipulate specific design noise levels applicable to highways are contained in the Federal Highway Administration's Federal-Aid Highway Program Manual, Volume 7, Chapter 7, Section 3 (FHPM 7-7-3). This document establishes maximum noise levels allowable for various types of land uses. (See Table A for a summary of these noise criteria.) The existing land uses in the areas adjacent to the planned Arundel Expressway are a mixture of moderate density residential neighborhoods, institutional and commercial sites. Because of the existing character of areas adjacent to the planned roadway, the applicable FHPM 7-7-3 land use category generally is "B", for which the maximum (L_{10}) exterior noise level is 70 dBA. In those cases where abutting properties are commercial or industrial, the appropriate category is "C" (75 dBA).

A highway noise impact occurs when the predicted L_{10} noise levels with the highway improvement exceed Federal design noise levels and/or when the predicted L_{10} noise levels with the highway improvement are significantly higher than the existing noise levels. These impacts are classified as follows:

Negligible Impact - occurs when the predicted L_{10} noise levels with the highway improvement do not exceed existing noise levels by more than 5 dBA;

Minor Impact - occurs when the predicted L_{10} noise levels with the highway improvement exceed existing noise levels by 6 to 10 dBA;

Moderate Impact - occurs when the predicted L_{10} noise levels with the highway improvement exceed existing noise levels by 11 to 15 dBA;

Severe Impact - occurs when the predicted L_{10} noise levels with the highway improvement exceeds existing noise levels by more than 15 dBA.

Where it is predicted that a noise impact will occur, either by exceeding the Federal design noise level for the specified land use, and/or where a "moderate" or "severe" impact occurs with respect to existing noise, an evaluation of possible attenuation measures must be conducted. If the evaluation of these measures shows that attenuation is not expected to reduce the predicted L_{10} noise level to below the design noise levels, an exception to Federal design noise levels must be justified for approval by the Federal Highway Administration before a project can be approved for construction.

TABLE A

DESIGN NOISE LEVELS AND LAND USE RELATIONSHIPS SPECIFIED IN FEDERAL-AID HIGHWAY PROGRAM MANUAL (FHPM) 7-7-3

Land Use Category	Design Noise Level - L_{10}	Description of Land Use Category
A	60 dBA (Exterior)	Tracts of lands 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, which are not included in Category A.
C	75 dBA (Exterior)	Developed lands, properties or activities not included in categories A and B above.
D	---	For requirements on undeveloped lands, see paragraphs 11a and c, FHPM 7-7-3.
E	55 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

- Existing Noise Levels -

In order to determine the noise characteristics existing in the proposed roadway corridor, measurement samples of A-weighted noise levels were taken at locations throughout the study area. In addition, interior noise levels were recorded for critical noise sensitive locations so that the sound reduction capabilities of the various structures involved could be more accurately determined. These facilities include Calvary Baptist Church, Marley Junior High School, Marley Elementary School, Marley Special School, Americana Harundale Apartments and St. George's Gate Apartments. The measurements were conducted during peak hours and off-peak hours on May 7, 8, 21 and 22, 1974, which were Wednesdays and Thursdays.

Table B gives the ambient measurement recorded at each location and the time period along with a brief description of each measurement location. These noise sensitive locations are shown on Drawing No. 23 which also shows existing and proposed roadways and the predicted L_{10} noise contours.

Results of the ambient measurements at the observer locations chosen indicate a variety of contributing sources to the local noise environment. These include birds chirping, rustling leaves, dogs barking, lawn mowers, children playing, jet and small airplane flyovers, in addition to traffic-related noise. Except for a few isolated locations, it can generally be stated that airplane flyovers and traffic-generated sound levels had the greatest influence on the ambient measurements throughout the study area. Similarly, the Governor Ritchie Highway (Maryland Route 2), Old Annapolis Road (Maryland Route 648), Mountain Road (Maryland Route 177), and Maryland Route 100 were the main traffic arteries influencing the noise environment. Marley Station Road and Jumpers Hole Road, in addition to the local street network for the numerous residential developments within the study area, have considerable influence on their respective communities, but very little significance on the total noise environment.

- Predicted Noise Levels -

Predicted L_{10} noise levels (exterior) were developed for this project by using the DOT-TSC-FHWA 72-1 Traffic Noise Prediction Model (TSC).

Noise levels for this project were predicted using the lesser of the 1996 design hourly volume (DHV) or the maximum volume which can be accommodated under Level of Service "C" operating conditions. The average daily traffic during design year 1996 is predicted to be 87,520 ADT north of Mountain Road. This traffic volume was selected to evaluate a worst case potential future condition. This condition would be present if the Expressway were to be improved to six lanes and further improvements made in the Ritchie Highway corridor south of Maryland Route 100 as a result of the BATC Study.

TABLE B

AMBIENT (EXISTING) NOISE MEASUREMENTS

Location Number	Peak Hour Readings (dBA) L_{10}	Peak Hour Readings (dBA) L_{50}	Off-Peak Hour Readings (dBA) L_{10}	Off-Peak Hour Readings (dBA) L_{50}	Description of Measurement Site
1	61.9	54.0			Harundale (End of Shana Rd.)
2	57.5	53.1			Holloway Rd. (450'± W. of Old Annapolis Rd.)
3A			45.8	40.5	Marley Jr. High School (rear inside)
3B			58.5	55.0	Marley Jr. High School (rear outside)
4	48.7	43.7			Harundale (End of Goodwood Rd.)
5	48.6	44.4			Gerard Plaza (Norman Ave. & Phelps Ave.)
6	46.0	43.4			Gerard Plaza (E. side Phelps Ave. 1100'± N. of Allan Dr.)
7	63.0	50.7			Gerard Plaza (Phelps Ave. at Allan Dr.)
8	57.9	52.3			Gerard Plaza (Phelps Ave. at Leroy Rd.)
9	63.5	59.0			Gerard Plaza (Phelps Ave. 150'± E. of Ritchie Highway)
10A			43.0	36.3	Marley Elem. School (Inside)
10B			61.0	51.5	Marley Elem. School (Outside)
11A			63.0	54.0	Marley Special School (Inside)
11B			58.5	56.0	Marley Special School (Outside)
12A	31.6	29.6			Calvary Baptist Church (Inside)
12B	58.5	50.1			Calvary Baptist Church (Outside)
13			56.9	46.5	Martindale (Between Martindale & Americana Apts.)
14			68.0	62.8	Martindale (Between Martindale & Southdale Shopping Center)
15			65.8	61.7	Benny Goodman's Restaurant (E. Parking Lot)
16A	42.6	40.3			St. George's Gate Apts. (100'± E. of Prop. Expwy, Inside)
16B	54.3	50.5			St. George's Gate Apts. (100'± E. of Prop. Expwy, Outside)
17	57.3	52.5			St. George's Gate Apts. (Apt. #132, Outside)
18A			54.4	51.3	Americana Harundale Apts. (Apt. #7896, Outside)
18B			53.8	42.5	Americana Harundale Apts. (Apt. #7896, Inside)
19	68.5	60.7			Sun Valley (Cedarcliff Dr.)
20			55.5	49.7	Woodholme (Perth Rd.)

Noise level contours of L_{10} = 70 dBA based upon predicted exterior noise levels at receptor locations were established along the project alignment from Maryland Route 648 to Maryland Route 100 (see Drawing No. 23). These contours indicate the limits of areas adjacent to the project roadways inside of which the 70 dBA FHWA design noise level will be exceeded (i.e., between the 70 dBA contours). Noise contours reflect the exterior noise environment at a height of ten feet above the existing ground level (approximately first story elevation) for the type of land use that exists in the project study area (Category "B", see Table A for description).

Predicted interior noise levels were established at certain noise sensitive receptors in the project study area by applying actual measured structural noise reduction factors in public buildings. Structural noise reduction factors, taking into consideration open or closed sash conditions, were measured at the following locations:

a. Marley Junior High School -
   13 dBA reduction, open sash condition

b. Marley Elementary School -
   18 dBA reduction, closed sash condition

c. Marley Special School -
   no reduction due to interior noise environment;
   i.e., shouts of children playing or children crying

d. Calvary Baptist Church -
   27 dBA reduction, closed sash condition

- Noise Impact Assessment -

Predicted traffic noise impacts to existing land areas adjacent to this project and selected noise sensitive receptors are summarized in Table C. The assessment of adverse noise impacts are based on the following conditions:

a. Land areas and sensitive receptors located between the 70 dBA exterior noise contours (without noise barriers) as shown on Drawing No. 23, will be adversely impacted by highway noise, since the 70 dBA FHWA design noise level (exterior) will be exceeded.

b. Where predicted L_{10} noise levels with the highway improvement are significantly higher than ambient (existing) noise levels, the sensitive receptors located outside or within the 70 dBA contours will be adversely impacted by highway noise.

NOISE IMPACT ASSESSMENT
RECOMMENDED ALTERNATE 2

TABLE C
SHEET 1 OF 3

NUMBER SEE DWG 23	SENSITIVE RECEPTOR DESCRIPTION	1974 [1] L_{10} dBA MEASURED AMBIENT NOISE LEVEL	1996 [1] L_{10} dBA PREDICTED WITH EXPWY. & NO BARRIERS	1996 [1] L_{10} dBA PREDICTED WITH EXPWY & RECOMMENDED BARRIERS	FEDERAL [1] DESIGN CRITERIA L_{10} dBA	IMPACTS: EXCEEDS FEDERAL DESIGN CRITERIA	IMPACTS [2] WITHOUT BARRIER	IMPACTS: EXCEEDS FEDERAL DESIGN CRITERIA	IMPACTS [2] WITH RECOMMENDED BARRIER (DWG. 24)
1	END OF SHANA RD.	61.9	75	75	70	YES	MODERATE	YES	MODERATE
2	HOLLOWAY RD.	57.5	68	< 65	70	NO	MODERATE	NO	MINOR
3	MARLEY JR. HIGH SCHOOL BUILDING	58.5 / 45.8 *	< 65 / 52 *	< 65 / 52 *	70 / 55 *	NO / NO *	MINOR / MINOR *	NO / NO *	MINOR / MINOR *
4	END OF GOODWOOD RD.	48.7	< 65	< 65	70	NO	SEVERE	NO	SEVERE
5	END OF NORMAN AVE. AT PHELPS AVE.	48 6	65	65	70	NO	SEVERE	NO	SEVERE
6	PHELPS AVE.	46.0	75	75	70	YES	SEVERE	YES	SEVERE
7	ALLAN DRIVE AT PHELPS AVE.	63.0	65	65	70	NO	NEGLIGIBLE	NO	NEGLIGIBLE

GENERAL NOTES

1 ALL L_{10} NOISE LEVELS AND NOISE IMPACTS PRESENTED IN THIS TABLE RELATE TO THE EXTERIOR NOISE ENVIRONMENT UNLESS NOTED BY *.

* INDICATES L_{10} NOISE LEVELS AND NOISE IMPACTS FOR INTERIOR ENVIRONMENT.

2 NOISE IMPACTS ARE BASED ON THE COMPARISON OF EXISTING NOISE LEVELS AND PREDICTED NOISE LEVELS AT THE SAME LOCATION. SEE PAGE C-31 OF TEXT FOR EXPLANATION.

** PREDICTED NOISE LEVELS AT THESE LOCATIONS ARE INFLUENCED BY ROADWAYS OUTSIDE OF THE STUDY AREA.

< INDICATES "LESS THAN"

TABLE C
SHEET 1 OF 3

NOISE IMPACT ASSESSMENT
RECOMMENDED ALTERNATE 2

TABLE C
SHEET 2 OF 3

SENSITIVE RECEPTOR		1974 [1] L_{10} dBA MEASURED AMBIENT NOISE LEVEL	1995 [1] L_{10} dBA PREDICTED WITH EXPWY & NO BARRIERS	1996 [1] L_{10} dBA PREDICTED WITH EXPWY & RECOMMENDED BARRIERS	FEDERAL [1] DESIGN CRITERIA L_{10} dBA	IMPACTS			
NUMBER SEE DWG 23	DESCRIPTION					EXCEEDS FEDERAL DESIGN CRITERIA	IMPACTS [2] WITHOUT BARRIER	EXCEEDS FEDERAL DESIGN CRITERIA	IMPACTS [2] WITH RECOMMENDED BARRIER (DWG 24)
8	LEROY RD. AT PHELPS AVE.	57.9	< 60	< 60	70	NO	NEGLIGIBLE	NO	NEGLIGIBLE
9	PHELPS AVE. AT ENTRANCE TO GERARD PLAZA	63.5	*	*	70				
10	GERARD PLAZA & RECREATION CLUB	61.0	72	72	70	YES	MODERATE	YES	MODERATE
10	MARLEY ELEMENTARY SCHOOL BUILDING	61.0 43 *	73.0 55 *	71.0 53 *	70 55 *	YES NO *	MODERATE MINOR *	YES NO *	MINOR MINOR *
11	MARLEY SPECIAL SCHOOL BUILDING (1)	58.5 63 *	67 57 *	< 65 < 55 *	70 55 *	NO YES *	MINOR NEGLIGIBLE *	NO NO *	MINOR NEGLIGIBLE *
12	CALVARY BAPTIST CHURCH	58.5 32 *	73 46 *	73 46 *	70 55 *	YES NO *	MODERATE MODERATE *	YES NO *	MODERATE MODERATE *
13	END OF WRENWAY ROAD	56.9	< 65	< 65	70	NO	MINOR	NO	MINOR

NOTE: SEE TABLE A. SHEET 1 OF 3 FOR GENERAL NOTES

(1) EXISTING INTERIOR NOISE LEVELS AT THIS LOCATION ARE HIGH DUE TO THE SPECIAL NATURE OF THE SCHOOL I.E. CHILDREN CRYING, SHOUTING, ETC. PREDICTED INTERIOR HIGHWAY NOISE IMPACTS ARE NEGLIGIBLE AT THIS LOCATION BASED ON AN AVERAGE 10dBA STRUCTURAL REDUCTION, OPEN SASH CONDITIONS.

TABLE C
SHEET 2 OF 3

NOISE IMPACT ASSESSMENT
RECOMMENDED ALTERNATE 2

TABLE C
SHEET 3 OF 3

SENSITIVE RECEPTOR		1974 [1] L_{10} dBA MEASURED AMBIENT NOISE LEVEL	1996 [1] L_{10} dBA PREDICTED WITH EXPWY. & NO BARRIERS	1996 [1] L_{10} dBA PREDICTED WITH EXPWY & RECOMMENDED BARRIERS	FEDERAL DESIGN CRITERIA L_{10} dBA	IMPACTS			
NUMBER SEE DWG 23	DESCRIPTION					EXCEEDS FEDERAL DESIGN CRITERIA	IMPACTS WITHOUT BARRIER [2]	EXCEEDS FEDERAL DESIGN CRITERIA	IMPACTS WITH RECOMMENDED BARRIER (DWG 24) [2]
14	ENTRANCE TO APARTMENT COMPLEX	68.0	**	**	70				
15	BENNY GOODMAN'S RESTAURANT	65.8	**	**	75				
16	ST. GEORGE GATE PINEWOOD APARTMENTS	54.3	75	68	70	YES	SEVERE	NO	MODERATE
16	COOPER RD. AT SCOTT AVE.	54.3	75	68	70	YES	SEVERE	NO	MODERATE
17	ST. GEORGE GATE APARTMENT	57.3	65	< 65	70	NO	MINOR	NO	NEGLIGIBLE
18	AMERICANA HARUNDALE APARTMENTS	54.4	74	74	70	YES	SEVERE	YES	SEVERE
19	CEDAR CLIFF DRIVE	68.5 *	**	**	70				
20	PERTH RD	55.5	70	70	70	NO	MODERATE	NO	MODERATE

NOTE: SEE TABLE A. SHEET 1 OF 3 FOR GENERAL NOTES.

16 PREDICTED NOISE LEVELS AT THE SECOND STORY OF APARTMENTS AND ABOVE CANNOT BE EFFECTIVELY ATTENUATED BY NOISE BARRIERS. IMPACTS AT SUCH LOCATIONS ARE CONSIDERED WITHOUT NOISE BARRIERS FOR PURPOSES OF THIS IMPACT ASSESSMENT.

TABLE C
SHEET 3 OF 3

All noise impacts summarized in this Statement were predicted based upon the projected traffic volumes potentially present if further improvements were made south to U. S. Route 50/301 at some time in the future. This would require the ultimate construction of the Arundel Expressway to six lanes north of Maryland Route 100. This basis for evaluation of potential noise impacts is, therefore, considered to provide a "worst case" analysis. As previously stated, the potential further improvements to serve the Ritchie Highway corridor southward will be fully evaluated in a separate study for the Baltimore-Annapolis Transportation Corridor.

- Noise Abatement Measures -

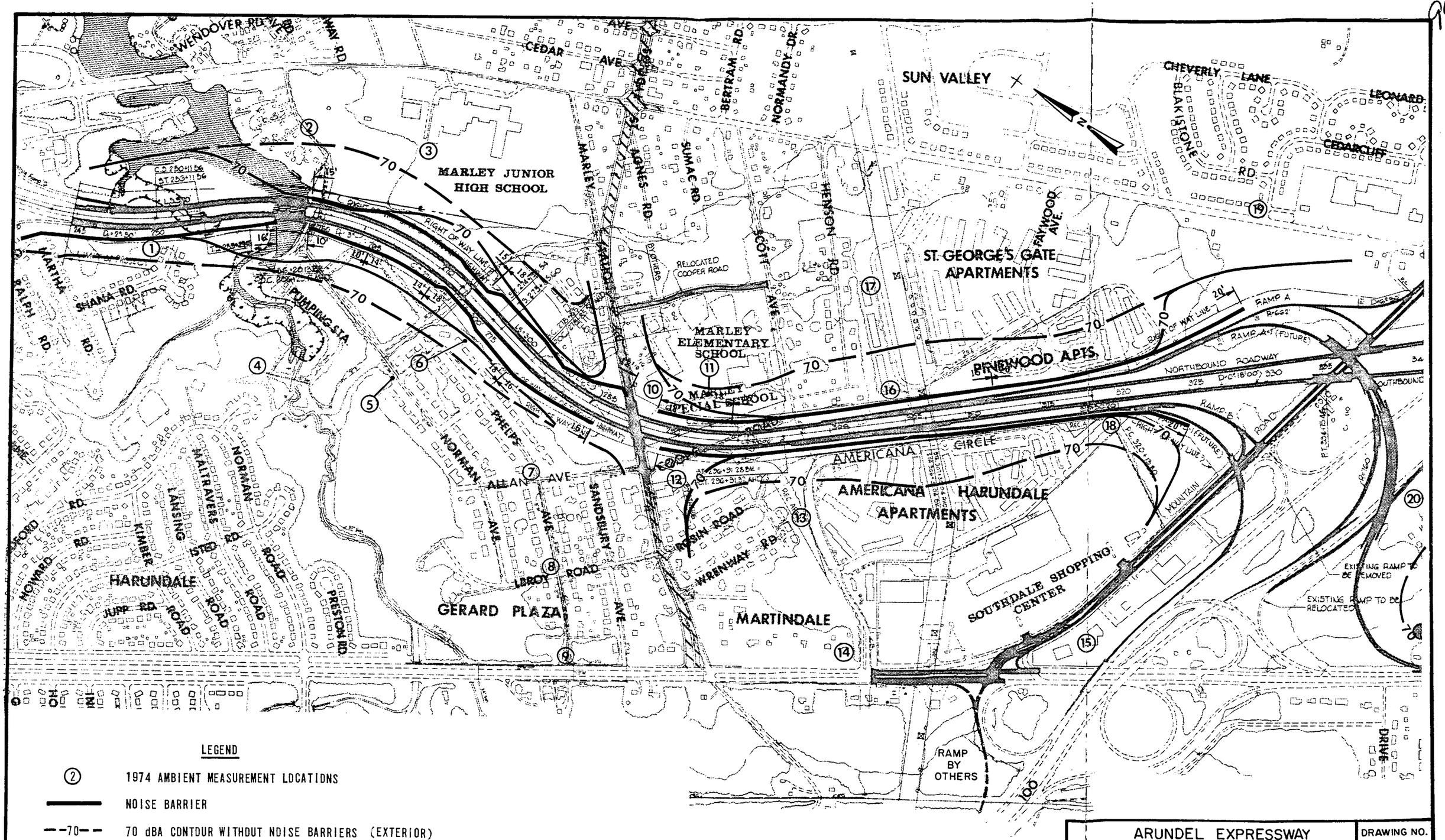
The following noise abatement measures were investigated for the project:

- the installation of noise barriers within the highway right-of-way adjacent to noise sensitive receptors; and

- the acquisition of property for providing buffer zones or for the installation of noise barriers (typically earth berms).

Of these noise abatement measures, the installation of noise barriers within the highway right-of-way was determined to be the more feasible noise abatement measure for this project. The acquisition of right-of-way for providing buffer zones, or for the installation of earth berm noise barriers is not feasible due to severe impacts to adjacent properties, which would have to be acquired outside of the proposed highway right-of-way.

A maximum noise barrier system was developed to attenuate noise levels at all sensitive receptors to levels below the 55 dBA interior and 70 dBA exterior Federal design noise levels such that the noise impacts could be effectively mitigated (with the exception of the upper stories of apartment complexes). As shown on Drawing No. 23, the maximum noise barrier system consists of barriers on both sides of the roadway for virtually the entire length of the project. A preliminary weighting of noise barrier effectiveness (typically reductions of 5 to 15 dBA) versus barrier and property acquisition costs indicates that the maximum noise barrier system may not be a cost-effective solution for noise abatement. As a result of this preliminary weighting, a "recommended" or reduced scope noise barrier system has been developed.

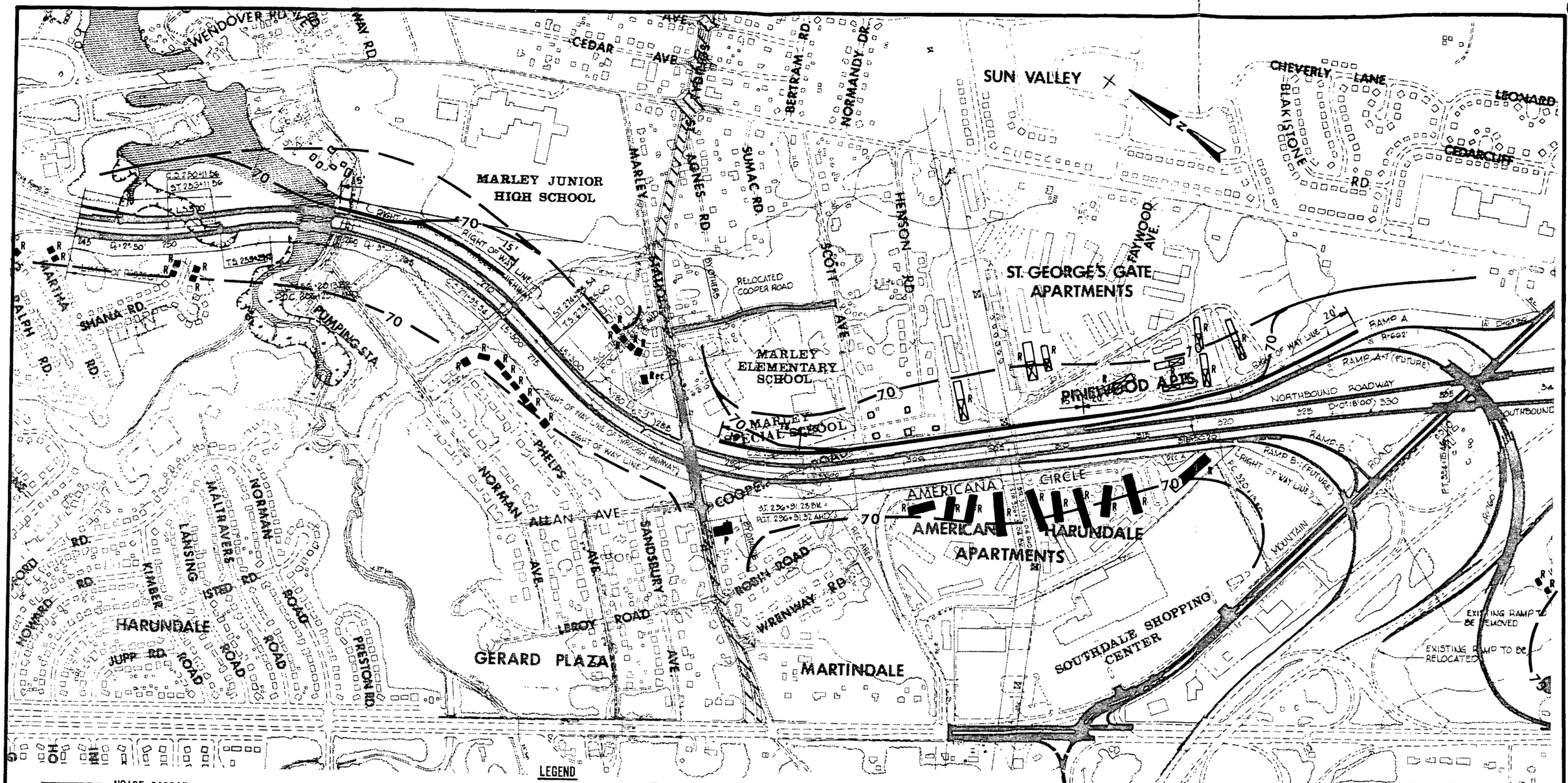


LEGEND

②	1974 AMBIENT MEASUREMENT LOCATIONS
———	NOISE BARRIER
--70--	70 dBA CONTOUR WITHOUT NOISE BARRIERS (EXTERIOR)
—70—	70 dBA CONTOUR WITH NOISE BARRIERS (EXTERIOR)
10' 14'	BARRIER HEIGHT (ABOVE FINISHED GRADE AT BARRIER)

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
RECOMMENDED ALTERNATE 2
MAXIMUM NOISE BARRIER SYSTEM
& PREDICTED L_{10} NOISE LEVEL
CONTOURS - 1996

DRAWING NO. 23



LEGEND

NOISE BARRIER

--70-- 70 dBA CONTOUR WITHOUT NOISE BARRIERS (EXTERIOR)

—70— 70 dBA CONTOUR WITH NOISE BARRIERS (EXTERIOR)

10' | 14' BARRIER HEIGHT (ABOVE FINISHED GRADE AT BARRIER)

R ■ Residential
P ■ Public Facilities
Rec. ■ Recreational

Locations Where Maximum Federal Design Exterior Noise Levels Are Exceeded. Exceptions To Federal Design Noise Criteria Will Be Considered At These Locations. (See Table A & Text For Information On Interior Noise Conditions)

□ – Locations Where Exterior Noise Levels Greater Than 70 dBA Are Attenuated By Recommended Barriers.

Apartment Locations Where First Floor Exterior Noise Levels Greater Than 70 dBA Are Attenuated By Recommended Barriers. Exceptions To Federal Design Exterior Noise Criteria Will Be Considered For Second Floor And Above.

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100

RECOMMENDED ALTERNATE 2

RECOMMENDED NOISE BARRIER SYSTEM & PREDICTED L_{10} NOISE LEVEL CONTOURS – 1996

DRAWING NO. 24

- Recommended Noise Barrier System and Exceptions -

The recommended noise barrier system and corresponding 70 dBA contour developed for this project are shown on Drawing No. 24. This system is located only on the east side of the proposed highway within the right-of way, and typically at the top of cut slopes or the edge of the 30-foot vehicle recovery area at the top of fill slopes. Barriers range in height from 15 feet to 20 feet. The recommended noise barrier system will provide effective noise abatement at the following noise sensitive areas:

- Marley Junior High School and vicinity
- Marley Elementary & Special Schools and vicinities
- St. George's Gate Apartments and vicinity
- Pinewood Apartments and vicinity

It should be noted that noise barriers will only be partially effective in the vicinity of apartment complexes, since only the first story can be shielded. The extreme height of noise barriers required to provide protection for upper stories is financially, technically and aesthetically undesirable.

The recommended noise barrier system was developed based on a preliminary weighting of expected noise abatement benefits and the economic reasonableness of providing noise barriers. Additional evaluations and public meetings which address community acceptance, aesthetics, and highway safety will be undertaken during the design phase of the project. Upon completion of these final evaluations, including public reviews and comments, a noise barrier system, consistent with overall public interest, will be designed. This resulting noise barrier system any, therefore, be somewhat different than the tentatively recommended barrier system shown on Drawing No. 24.

Exceptions to the design noise levels to be considered with the recommended noise barrier system include those residences, public buildings and recreation areas within the 70 dBA contours, where reasonable and effective noise abatement measures cannot be provided to meet the 70 dBA design noise level. Potential exceptions to the 70 dBA exterior design noise levels with the recommended noise barrier system are indicated on Drawing No. 24. These exceptions are tentative and subject to revision after finalizing the noise barrier system during the design phase of this project. Final exceptions will be considered by the Federal Highway Administration on a case-by-case basis. The results of the BATC Study will directly influence the scheduling of abatement measures and/or the need for exceptions.

The construction of this project shall comply with all Federal, State and Local noise control rules, regulations and ordinances, as well as the provisions of the Occupational Safety and Health Act of 1970. Noise-quieted

equipment and limitations on working hours will be required on construction operations in residential areas. The erection of noise barriers at an early stage of construction can also serve as a mitigating factor for construction noise. All construction noise abatement measures developed prior to construction will be adhered to.

A separate Noise Report is available for review at the offices of the State Highway Administration.

13. Air Quality -

-Summary-

The air quality impact of building and of not building the extension of the Arundel Expressway was analyzed by modeling vehicle emissions of carbon monoxide. Two project alternatives are considered in this air quality assessment: (1) the no-build alternative, Alternate 3, and (2) the recommended construction alternative, Alternate 2.

The maximum vehicle emission concentrations during the 1975 to 2000 study period occurred in 1975. The Federal Motor Vehicle Emission Control Program will result in sharp reductions of emissions in the study area in the years from 1975 to 1980, reaching a minimum about 1988. From 1988 to 2000, emissions will rise slowly as traffic volumes increase.

Both the no-build alternate and recommended build Alternate 2 would result in vehicle emission levels below the National Ambient Air Quality Standards[1] from the estimated time of completion of the recommended alternative (1980) through the design year of 2000. Alternate 2, which is proposed as a limited access facility, would reduce vehicle emissions through more efficient vehicle operation. This would permit the expressway to accommodate more traffic growth than the existing highways, while maintaining acceptable concentrations of emissions in the atmosphere.

The complete technical air quality analysis is available at the State Highway Administration for review.

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[1] Standards established pursuant to 42 U.S.C. 1857. (Section 107 of the Clean Air Act of 1970)

-Study Approach-

This air quality impact study was conducted at the microscale level[1]. The initial step in the microscale analysis is to determine the magnitude of the highway contribution to air pollution within its corridor using Carbon Monoxide (CO) as an indicator. Consideration was given to existing and projected land use, location of sensitive receptors and topographical conditions.

Historical air quality and meterological data obtained from the local agency air monitoring station in Glen Burnie and the Baltimore-Washington International Airport was utilized in the analysis. A line source air pollution diffusion model was then used to compute concentrations caused by the project under study, at receptors within the corridor during the worst and most probable meteorological conditions. These concentrations were then added to the background values in order to obtain total concentrations.

Future air quality determinations for the construction alternative (Alternate 2) were made for the estimated time of completion (ETC) of the proposed project (1980) and the ETC + 20 years (2000). Estimates of CO concentrations for the no-build alternative (Alternate 3) were also made for 1975 in addition to the analysis years mentioned above.

The air quality resulting from each alternative was then assessed in terms of the goals of the 1970 Clean Air Act, the goals of the State Implementation Plan and a direct comparison of the pollutant levels for each alternative with the national Ambient Air Quality Standards.

The California Line Source Model was used to predict concentrations of Carbon Monoxide at points 100 feet from Alternates 2 and 3. The results of modeling show that total concentrations of carbon monoxide at these points do not violate applicable standards for carbon monoxide in 1980 and the years through 2000. Since the sensitive receptors in the study area are greater than 100 feet from each alternate, the total concentrations of carbon monoxide at each receptor will also be less than the ambient standard.

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[1]This analysis is limited to that area near the existing or proposed highway which is directly affected by the highway.

-Sensitive Receptors-

The existing sensitive receptors within the project sutdy area have been identified and are indicated on Drawing No. 25.

The receptors are listed below and site numbers correspond to those on Drawing Number 25.

Schools

1. Marley Junior High School
2. Marley Elementary School
3. Marley Special School

Housing for the Elderly

4. Pinewood Apartments

Outdoor Recreation Areas

1. Marley Junior High School
2. Marley Elementary School
3. Marley Special School
5. Gerard Plaza Recreation Club
6. Americana Harundale Recreational Area

-Existing Air Quality-

The Bureau of Air Quality Control recommended that the Glen Burnie AIRMON station data be utilized as background for this project. The Glen Burnie station is located at 300 Baltimore-Annapolis Boulevard, in an area that can be best described as being low density residential and commercial with regard to land use. Five atmospheric constituents, which are considered to be transportation related have been monitored at the Glen Burnie station. These were carbon monoxide, nitrogen dioxide, reactive hydrocarbons, ozone and suspended particulates. The measured concentrations of those atmospheric constituents can be compared to the Ambient Air Quality Standards. The most recent data from the Glen Burnie station, which appeared in "The Maryland State Yearly Air Quality Data Report - 1973", was used as an indicator of air quality in the study area.

The Environmental Protection Agency has categorized the transportation related pollutants into three priority classifications. Projects located within Anne Arundel County are located in the Priority I Region. Priority I Regions are so designated because at the present time the ambient air pollutant levels exceed established National Ambient Air Quality Standards. Anne Arundel County is located in the Region known as the Metropolitan Baltimore Intrastate Region.

The Environmental Protection Agency's Priority Classification for each pollutant in the Metropolitan Baltimore Intrastate Region are:

Carbon Monoxide	- Priority I
Nitrogen Dioxide	- Priority III
Hydrocarbons	- Priority I
Photochemical Oxidants	- Priority I
Particulate Matter	- Priority I

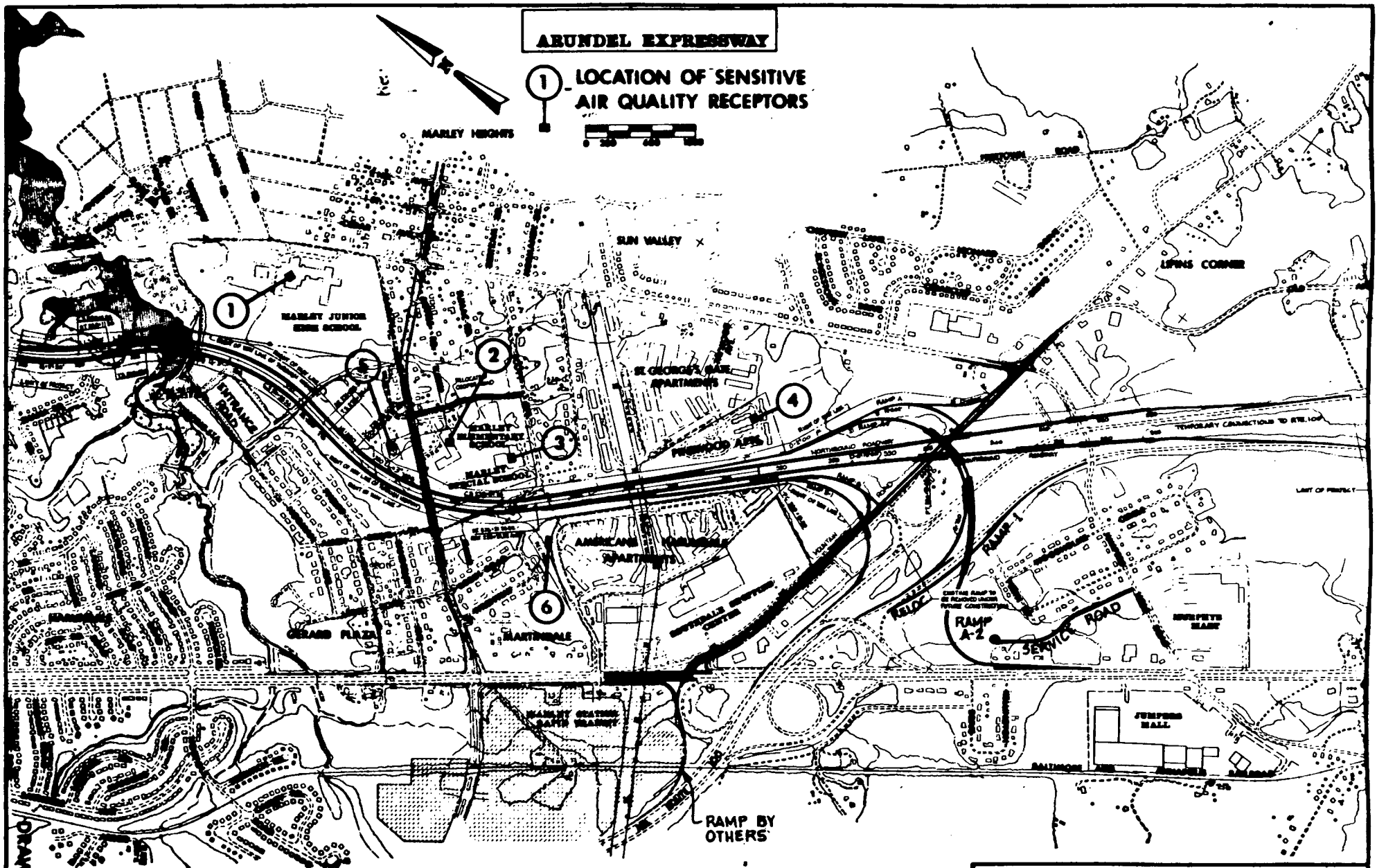
The Priority III Classification indicates that the pollutants do not violate the National Ambient Air Quality Standards.

-Air Quality Impact of the Construction Alternative - Alternate 2-

Having determined the existing ambient air quality, emission modeling was used to assess the effect that the recommended alternative (Alternate 2) will have on future air quality. The background used is specified under the analysis at each alternate. Carbon monoxide was used in this assessment, because it is emitted directly from vehicles and does not react appreciably in the atmosphere. These properties make it the most suitable vehicle emission for modeling atmosphere concentrations. Future air quality was determined by modeling carbon monoxide for worst case meteorological conditions and most probable meteorological conditions in both 1980 and 2000.

Carbon monoxide emission factors were used for the predicted traffic composition. This composition included the percentage of heavy duty vehicles, vehicle age distribution and average route speed. From this information, the model was used to predict the downwind concentrations.

The meteorological parameters that have the most significant affect on air quality are wind speed and stability. Worst case meteorological conditions are the simultaneous occurence of an extremely stable atmosphere and in the case of the subject project, a very light crosswind relative to the highway.



1. MARLEY JUNIOR HIGH SCHOOL
2. MARLEY ELEMENTARY SCHOOL
3. MARLEY SPECIAL SCHOOL
4. PINEWOOD APARTMENTS
5. GERARD PLAZA RECREATION CLUB
6. AMERICANA HARUNDALE APTS. REC. AREA

ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
RECOMMENDED ALTERNATE
LOCATION OF SENSITIVE
AIR QUALITY RECEPTORS

DRAWING NO. 25

The worst case meteorological conditions during the peak hourly volume are represented by crosswinds 22.5 degrees relative to the highway, with the winds from the northwest at a speed of 1 meter/second during Stability Class F.

During the highest consecutive eight-hour volume, the worst case conditions are defined as follows:

12 Noon - 5 P.M., Stability Class D, Winds 2 meters/second
5 P.M. - 12 Midnight, Stability Class F, Winds 1 meter/second
Winds are from the northwest under each condition.

Tables 1 and 2 show the future concentrations of carbon monoxide in the study area resulting from vehicle emissions under worst case meteorological conditions in 1980 and 2000. Concentrations of carbon monoxide in the intermediate years will steadily decline because even though traffic volumes will increase, the emissions per vehicle will be decreased by the Federal Motor Vehicle Emission Control Program (FMVECP). It is the FMVECP that causes the highway originated carbon monoxide concentrations to be less in 2000 than in 1980.

In order to obtain a more accurate portrayal of future concentrations of carbon monoxide, the amount of carbon monoxide attributable to the proposed highway must be added to the amount already existing in the area (background). The following background data have been utilized and are included in the concentrations indicated for Alternate 2.

Background (ppm)

	One Hour	Eight Hour
1980	7.8	5.0
2000	6.3	4.1

If the maximum observed existing concentration of carbon monoxide is added to the maximum modeled concentration during the peak hourly volume, the result is still within the 35 ppm National and State of Maryland Ambient Air Quality Standard. Therefore, it is concluded that Alternate 2 will not exceed the Ambient Air Quality Standard for a one-hour maximum concentration of carbon monoxide. This is reflected below in Table 1.

TABLE I

One Hour Carbon Monoxide Average
Concentration, 100 feet from the Highway
Under Worst Case Meteorological Conditions (ppm)

	1980	2000
Alternate 2	10.1 - 12.2	7.7 - 8.7

Future carbon monoxide concentrations were also computed for comparison with the Federal and State of Maryland Ambient Air Quality Standard for an eight-hour average of carbon monoxide (9ppm). This was done by using highest eight consecutive traffic volume hours and averaging the CO concentrations during the eight-hour period. The range of eight-hour concentrations are indicated in Table 2.

TABLE 2

Eight Hour Carbon Monoxide Average
Concentration, 100 feet from the Highway
Under Worst Case Meteorological Conditions (ppm)

	1980	2000
Alternate 2	5.9 - 6.4	4.6 - 5.4

As indicated above, the maximum eight-hour concentrations in both 1980 and 2000 are below the 9 ppm eight-hour standard.

Future concentrations of carbon monoxide under most probable meteorological conditions will be substantially less than under the worst case just discussed. Most probable meteorological conditions for the study area are neutral atmospheric stability (Stability Class D) occurring 47.8 percent of the time and a 45 degree crosswind from the west at 3.59 - 5.38 meters/second. This windspeed class occurs 11.8 percent of the time. This information was used in the emission model, along with the same traffic data and emission factors used to predict the worst case concentrations.

Table 3 indicates that Alternate 2 will not be in violation of the 35 ppm one-hour standard during the most probable meteorological conditions.

TABLE 3

One Hour Carbon Monoxide Average
Concentration, 100 feet from the Highway
Under Most Probable Meteorological Conditions (ppm)

	1980	2000
Alternate 2	7.9 - 8.1	6.4 - 6.5

Future carbon monoxide concentrations under most probable conditions were also computed for camparison with the eight-hour carbon monoxide standard. The range of concentrations, which are presented in Table 4, were all well within the 9 ppm eight-hour standard.

TABLE 4

Eight Hour Carbon Monoxide Average
Concentration, 100 feet from the Highway
Under Most Probable Meteorological Conditions (ppm)

	1980	2000
Alternate 2	5.1	4.2

Carbon monoxide emission modeling indicates that atmospheric concentrations of vehicle emissions will remain within the Ambient Air Quality Standards, even under the most unfavorable meteorological influences. Under prevailing weather conditions, the concentrations will be even lower.

- The No-Build Alternative - Alternate 3-

If Alternate 2 is not constructed, existing highways would have to continue to serve the transportation needs of the study area. Traffic volumes are projected to increase in the future on these existing highways, and will probably continue to increase until the transportation demand is satisfied or the highway system becomes saturated and reaches its possible capacity. When highways systems become saturated, vehicles cannot operate at peak efficiency and increased emissions result. Therefore, it is necessary to consider the future air quality implications of the no-build alternative.

Carbon monoxide emission modeling was used to evaluate the impact of the no-build alternative in the same manner that it was applied to Alternate 2. The meteorological assumptions for the worst and most probable case are also common with those used for the construction alternative.

Traffic volumes and emissions per vehicle for the no-build alternative were different from those used in the analysis of Alternate 2. The traffic volumes utilized were those that would result on the existing highways if the construction alternative was not provided. As such, they reflect increasing congestion on the existing roads, but only to the point where operating speed and maneuverability are controlled by the volume of traffic. Beyond this point, when traffic becomes stop-and-go, the modeling is inadequate to determine total vehicle emissions because of the varying operating conditions of each vehicle. As a result, modeling of the no-build alternative may underestimate the total atmospheric concentrations of vehicle emissions.

Tables 5 and 6 indicate the future concentrations of carbon monoxide in the area adjacent to existing Maryland Route 2 that are expected to result from vehicle emissions under worst case meteorological conditions in 1975, 1980 and 2000. Concentrations in the years after 1975 reflect decreased levels as a result of the FMVECP reduction in emissions per vehicle.

The model predictions of highway generated carbon monoxide should be added to existing ambient levels in order to determine actual future concentrations. The following background data has been utilized and is included in the concentrations indicated for Alternate 3.

Background (ppm)

	One Hour	Eight Hour
1975	12.9	7.9
1980	7.8	5.0

As discussed previously, existing ambient levels of carbon monoxide in the study area are largely attributable to existing highways. The background levels were closely simulated by the model for both the one-hour and eight-hour concentrations under the most probable meteorological conditions.

TABLE 5

One Hour Carbon Monoxide Average
Concentration, 100 feet from Maryland Route 2
Under Worst Case Meteorological Conditions (ppm)

	1975	1980	2000
Alternate 3 (No Build Alternative)	20.2 - 24.0	11.9 - 13.7	8.5

Table 5 indicates that the National Ambient Air Quality Standard of 35 ppm is not exceeded during the analysis years. Therefore, it is concluded that maintaining the existing highway system without modification will be in agreement with the ambient air quality standard for a one-hour maximum concentration of carbon monoxide.

Future carbon monoxide concentrations were also computed for comparison with the ambient air quality standard for a maximum eight-hour average concentration of carbon monoxide (9ppm). The range of eight-hour concentrations, 100 feet from existing Maryland Route 2 are shown in Table 6.

TABLE 6

Eight Hour Carbon Monoxide Average
Concentration, 100 feet from Maryland Route 2
Under Worst Case Meteorological Conditions (ppm)

	1975	1980	2000
Alternate 3 (No-Build Alternative)	10.7 - 12.1	6.5 - 7.3	5.7

The maximum vehicle emission concentrations occur during 1975 and do exceed the air quality standard by 1.7 - 3.1 ppm. Assuming that the Federal Motor Vehicle Emission Control Program (FMVECP) continues to be implemented, concentrations will steadily decrease from 1975 until about 1988. After 1988, emissions will rise slightly as traffic volumes increase.

Future concentrations of carbon monoxide under the most probable meteorological conditions will be substantially less than those for the worst case conditions just discussed. The results of the modeling for the most probable conditions are indicated in the following tables.

TABLE 7

One Hour Carbon Monoxide Average
Concentration, 100 feet from Maryland Route 2
Under Most Probable Meterological Conditions (ppm)

	1975	1980	2000
Alternate 3 (No-Build Alternative)	13.1 - 13.6	8.3 - 8.5	6.5

During the analysis years, the highest one-hour downwind concentrations will occur adjacent to Maryland Route 2 in the area south of the interchange with Maryland Route 100. However, the projected levels are well within the 35 ppm ambient air quality standard for one-hour maximum carbon monoxide concentrations.

Future carbon monoxide concentrations under most likely conditions were also computed for comparison with the eight-hour carbon monoxide standard. The range of concentrations, which are presented in Table 8, are within the 9 ppm eight-hour standard.

TABLE 8

Eight Hour Carbon Monoxide Average
Concentration, 100 feet from Maryland Route 2
Under Most Probable Meteorological Conditions (ppm)

	1975	1980	2000
Alternate 3 (No-Build Alternative)	8.4 - 8.7	5.3 - 5.5	4.4

No serious impact on future air quality will result with the adoption of the No-Build Alternative. This assessment is predicated, and this must be strongly emphasized, on the continued enforcement of the Federal Emission Control Program. Carbon monoxide emission modeling inidcates that atmospheric concentrations of vehicle emissions will remain below the Federal Standards after 1975 under the most unfavorable meteorological influences. Under prevailing weather conditions, the concentrations will be even more favorable.

Mesoscale Analysis

A mesoscale analysis of the quantities of carbon monoxide and photochemical oxidant precursor pollutants (hydrocarbons and nitrogen oxides) was conducted to determine the impact of the project on regional air quality. The analysis considered the highway network effected by the project (see Drawing No. 26) and utilized AP 42-Supplement 5 as revised in March, 1978 to generate motor vehicle emission factors.

The results of this analysis are shown in Table 9. In all cases the pollutant loadings with the "Build" Alternate 2 are lower than those with the "No-Build" Alternate 3 due to the increased vehicle speeds associated with the "Build" case. Levels for both alternates are lower in the design year (2000) than in the completion year (1983) due to the FMVECP.

TABLE 9

Pollutant Burden
Kg/Day

	1983		2000	
	Build Alt. 2	No-Build Alt. 3	Build Alt. 2	No-Build Alt. 3
Carbon Monoxide	26335	28519	17888	18989
Hydrocarbons	2929	3174	1853	1977
Nitrogen Oxides	5268	5566	4772	4975

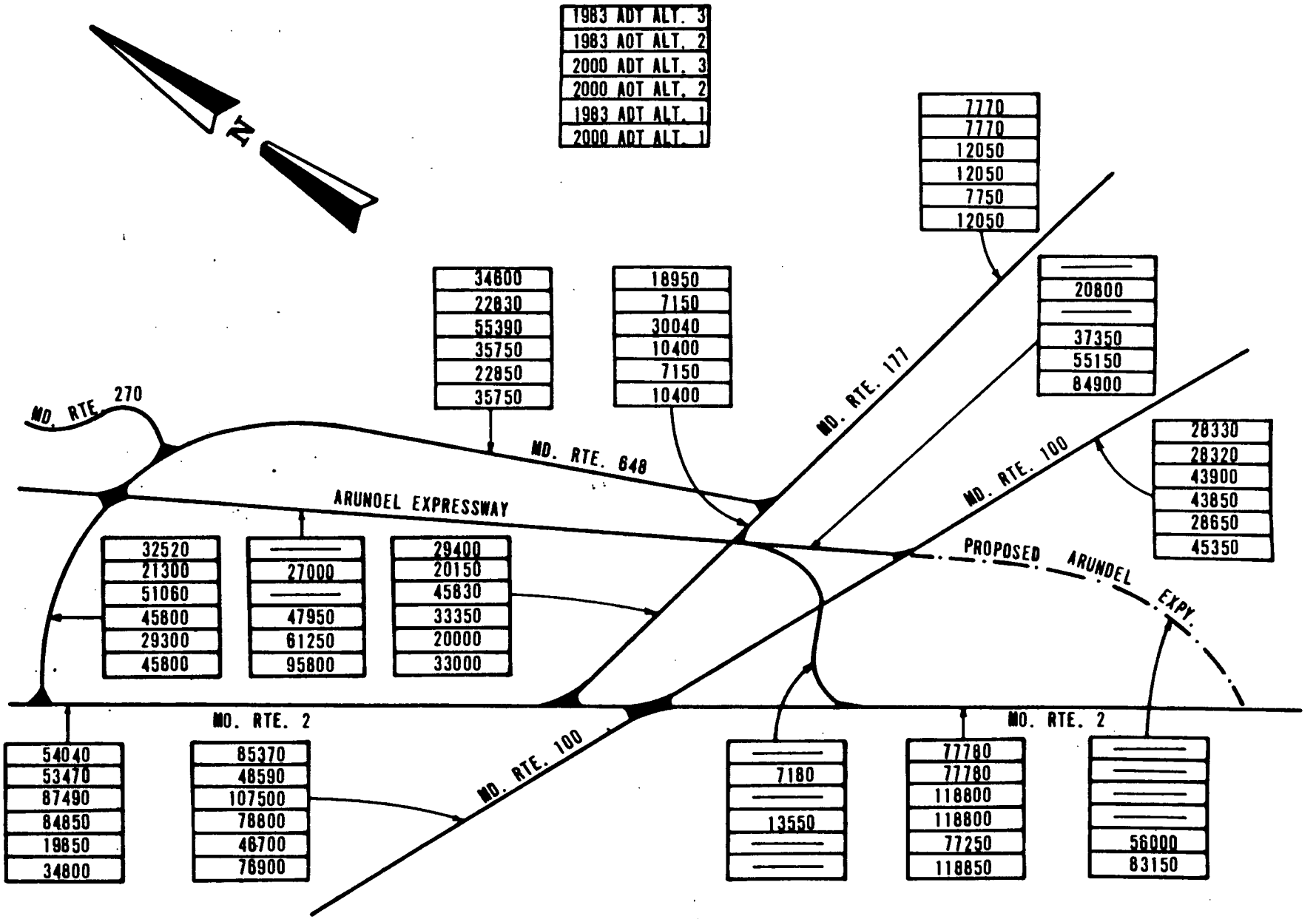
Consistency With State Implementation Plan

As the subject project is located within the Metropolitan Baltimore Intrastate AQCR, it is necessary to evaluate three characteristics of the proposed facility when determining consistency with the State Implementation Plan: micro-scale carbon monoxide levels, construction impact, and the effect on regional air quality.

The project Air Quality Analysis assessed the micro-scale carbon monoxide impact of the facility. This analysis determined that no violation of State or Federal Ambient Air Quality Standards for carbon monoxide will occur adjacent to the project during the completion and design years. As a result of this conclusion, the project may be considered consistent with this aspect of the State Implementation Plan.

The consistency of the project in relation to construction activities was addressed thru consultation with the Maryland Bureau of Air Quality and Noise Control. The State Highway Administration has established Specifications for Materials, Highways, Bridges, and Incidental Structures which specify procedures to be followed by contractors involved in State work. The Maryland Bureau of Air Quality and Noise Control has reviewed these Specifications and has found them consistent with the Regulations Governing the Control of Air Pollution in the State of Maryland.

The impact of the project on regional air quality must be evaluated as parts of the AQCR are designated nonattainment areas for carbon monoxide and photochemical oxidants. As the pollutant burden analysis determined that emissions from the roadway network in the vicinity of the project would be less with the "Build" alternative than with the "No Build" alternative, the project is considered consistent with the objectives of the State Implementation Plan.



ARUNDEL EXPRESSWAY
MD. ROUTE 648 TO MD. ROUTE 100
AVERAGE DAILY TRAFFIC (ADT)
YEARS 1983 & 2000

DRAWING NO. 26

D. ALTERNATIVES:

The following alternates are described in this Final Environmental Statement and were presented for consideration at the Combined Location/ Design Public Hearing on June 3, 1976.

Alternate 2 · (Selected Alternative)

The proposed completion of the Arundel Expressway from Old Annapolis Road (Maryland Route 648) to Maryland Route 100. Ramp connections are proposed to an improved Mountain Road and to Maryland Route 100. The connection to Ritchie Highway is provided by an expansion of the interchange between the proposed Expressway, Maryland Route 100 and Ritchie Highway.

Alternate 3 -

The "Do-Nothing" alternative. The Arundel Expressway would be terminated at Old Annapolis Road (Maryland Route 648).

Alternate 4 -

The completion of the Arundel Expressway from Old Annapolis Road (Maryland Route 648) to Maryland Route 100. Ramp connections are proposed to Maryland Route 100 and to an improved Mountain Road. A direct connection to Ritchie Highway is not proposed with this alternative.

- Alternate 2 -

The major design features and physical location proposed for Alternate 2 is described in detail on page A-28 of this Final Statement. Following the verbal description in Section A is Drawing No. 12 showing the plan and profile of Alternate 2 and Drawing No. 13 showing the proposed typical sections of improvement.

The highway transportation service offered by the project is excellent. It provides a safe and efficient traffic facility for thousands of residents in northeast Anne Arundel County and, acting as a bypass of Glen Burnie, provides a much needed supplement to Ritchie Highway and Old Annapolis Road. The proposed extension will tie the Arundel Expressway

into the State's principal arterial highway system, making it a usable facility for National Defense and other emergencies. Alternate 2 will result in a reduction of 1983 traffic volumes on Old Annapolis Road, Mountain Road and Maryland Route 100, and thereby improve driving conditions for shoppers and for those driving to work and schools in this area. Traffic volumes on Ritchie Highway, north and south of Maryland Route 100, would not be substantially changed.

The impact of the project on water, air, noise and other factors are covered in detail under Section C of this Statement.

The project, as proposed with Alternate 2, will require the acquisition of approximately 3 residences not previously acquired by the State Highway Administration. Approximately 4 families, consisting of 16 people, will be displaced. Of those being displaced, 1 family, consisting of 4 persons, is of a minority group. There are no businesses, farm operations or non-profit organizations that will have to be relocated due to this alternate. All persons to be relocated will be provided with the benefits of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970".

The approximate costs of the highway proposed described as Alternate 2 are as follows. These costs are based on 1977 prices.

Highway Construction	$25,700,000. *
Right-of-Way Costs	8,300,000.
Initial Project Cost	$34,000,000.

* Includes $750,000 for tentative noise abatement recommendations.

Additional funds will be required to widen the mainline roadway to 6 lanes, the need for which will be determined by the Baltimore-Annapolis Transportation Corridor Study.

Alternate 2 will not require property from any public park or recreation land falling within the intent of Section 138 of 23 U.S.C.; however, the project is involved with one site of archeological significance just south of Marley Creek. Section H in this Final Statement describes the recommendations resulting from intensive test excavations performed at this site.

- Decision - Alternate 2 -

Alternate 2 is the recommended alternative selected by the State Highway Administration because it will result in definite transportation, social and economic benefits to the community as a whole, and make the Arundel Expressway a usable facility from the Baltimore Beltway (I-695) and the Outer Harbor Crossing on the north to Maryland Route 100 and Ritchie Highway (Md. Route 2) on the south. The direct connection to Ritchie Highway proposed with Alternate 2 will permit the exchange of traffic with the Expressway to be made on the major roads in the area, rather than on the local road system. Tentative measures have been developed to reduce, where feasible, the impact resulting from increased noise levels; and to mitigate the impact on the Marley Creek wetlands. Archeological Sites 18 AN178A and 18 AN178B have been thoroughly test excavated and it has been recommended that no further archeological work need be performed within the right-of-way limits of the proposed highway.

Listed below are some of the specific benefits that would accrue to the residents of this area as a result of Alternate 2:

- Better accessibility to employment and residential areas;
- Support commercial and industrial development with increased employment opportunities;
- Reduce highway users' costs;
- Reduce travel time of emergency vehicles;
- Reduce accident rates and accident costs.

A chart, comparing the design features and expected environmental impacts of Alternates 2, 3 and 4, is shown on page D-7.

- Alternate 3 -

Alternate 3 is the "Do-Nothing" alternate. This means that the Arundel Expressway would be terminated at Old Annapolis Road (Md. Route 648) in Glen Burnie, and no improvements would be made to existing Ritchie Highway or Old Annapolis Road. The concept of building nothing does not conform to local, regional or state planning for this corridor.

Existing Ritchie Highway, as seen today, is a 4-lane divided highway, with a 42-foot depressed median in a 150-foot right-of-way. Old Annapolis Road is a two-lane undivided roadway with curbs or narrow shoulders. Additional lanes have been added in some urban and commercial areas. A large number of businesses of all types and sizes interspersed with private homes and apartments line both roadways. Detailed descriptions of these existing roads are included on page A-4 of this Statement.

Traffic on the existing roads will continue to increase with the construction of residential and commercial development even in the absence of the proposed Expressway. Additional traffic signals will be required as traffic increases, operating speeds will be reduced and stoppages will occur for longer periods of time. Projected average daily traffic volumes for 1983 are shown on page C-5 for Alternate 3, which assumes that the Arundel Expressway will not be extended to Maryland Route 100. Based on the figures, traffic volumes will have exceeded the theoretical capacity, as defined by the Highway Capacity Manual - 1965, of both Ritchie Highway, south of Maryland Route 100, and Maryland Route 100, west of Ritchie Highway, by 1983. The "Do-Nothing" alternate would leave the Ritchie Highway corridor with inadequate transportation facilities.

Inadequate transportation facilities will inhibit the planned residential and commercial growth in the area, with a resultant adverse effect on the County tax base and employment opportunities. To do nothing will accelerate the deterioration of the presently unsafe traffic condition, and could initiate a downward trend in the value of properties in the community. It will not require the dislocation of any people, businesses or residences.

Public utility services, such as waterlines and sanitary sewers, etc. will not be affected by Alternate 3; however, public transit buses, school buses, fire equipment and other emergency services would be adversely affected by increases required in travel time.

Alternate 3 will have no affect on any public park or recreation land; historic site; fish, waterfowl or wildlife refuge or other lands falling within the intent of Section 138 of 23 U.S.C.

If no construction is undertaken, there can be no impact on physical environment factors such as water quality, or the loss of open space due to new transportation facilities.

The air quality study shows that no adverse effects on air quality would develop between 1980 and 2000 for either the build or no-build alternative.

Without the proposed Expressway, noise levels would continue to rise as a result of continued development and increased traffic so that residences located within 300 to 350 feet of existing roadways would experience noise levels in excess of the FHWA design noise level of 70 dBA.

With no improvement proposed for transportation in the corridor, there would be no requirement for funds to design or build highways as planned under Alternate 2. The capacity, safety and efficiency of the existing road would continue to deteriorate with additional traffic, resulting in increased operating costs for both private and publically-owned vehicles along with the intangible cost of manhours lost due to increased travel time.

- Decision - Alternate 3 -

The adverse impact Alternate 3 would have on transportation service and socio-economic factors are the major reasons for not recommending this alternate for adoption. The concept of building nothing does not conform to local or regional planning for this corridor. Other factors contributing to this decision include the adverse effect on planned growth, the tax base, employment opportunities and highway safety.

- Alternate 4 -

The design features and location proposed for the Arundel Expressway with Alternate 4 are identical to Alternate 2 from Maryland Route 648 to Maryland Route 100, including the ramp connections to Mountain Road and Maryland Route 100 to the east. The major difference with Alternate 4 occurs in the vicinity of the proposed interchange with Maryland Route 100 where no provisions are made for a direct ramp connection to Ritchie Highway. The directional ramps between the Arundel Expressway and Maryland Route 100 to the west are not included in this proposal; however, provisions were made for their future construction. Drawing No. 6 shows the location and interchange ramps proposed with Alternate 4.

Transportation service provided by Alternate 4 is similar to Alternate 2, except for the exchange of traffic between the Ritchie Highway and the proposed Arundel Expressway. This would be accomplished by utilizing the existing road systems; i.e., Mountain Road and Jumpers Hole Road. Acting as a bypass of Glen Burnie, Alternate 4 would provide a much needed supplement to Ritchie Highway and Old Annapolis Road. The proposed extension will tie the Expressway into the State's principal arterial highway

system, making it a usable facility and result in improved driving conditions for shoppers and those driving to work and schools in this area.

The impact of Alternate 4 on water, air, noise and other social and environmental factors are the same as described for Alternate 2 in Section C of this Final Statement.

The project, as proposed with Alternate 4, will require the acquisition of approximately 3 residences not previously acquired by the State Highway Administration. Approximately 4 families, consisting of 16 people, will be displaced. Of those being displaced, one family, consisting of 4 persons, are of a minority group. There are no businesses, farm operations or non-profit organizations that will have to be relocated due to this alternate. All persons to be relocated will be provided with the benefits of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970".

The approximate costs of the highway proposal described as Alternate 4 are as follows. These costs are based on 1977 prices.

Highway Construction	$23,425,000. *
Right-of-Way Costs	7,525,000.
Initial Project Cost	$30,950,000.

* Includes $750,000 for tentative noise abatement recommendations.

An additional $3.1 million will be required to construct the future ramps proposed in the Arundel Expressway - Maryland Route 100 Interchange and to widen the mainline to a 6-lane freeway.

Alternate 4 will not require property from any public park or recreation land falling within the intent of Section 138 of 23 U.S.C.; however, the project will impact Archeological Site 18AN178 just south of Marley Creek to the same degree as Alternate 2. Section H describes the recommendations resulting from test excavations performed at this site.

- Decision - Alternate 4 -

Alternate 4 was not recommended for adoption primarily because it would require all traffic exchange between the Ritchie Highway and the proposed Arundel Expressway to occur on the existing local road system; Mountain Road and Jumpers Hole Road. This would result in increased traffic and noise impacts through the Southdale Shopping area and the Woodholme residential community.

COMPARISON OF ALTERNATIVES

CATEGORY	ALTERNATE NO. 2	ALTERNATE NO. 3	ALTERNATE NO. 4
LAND USAGE			
IN ACCORDANCE WITH ADOPTED LAND-USE PLANS	YES	NO	YES
TRANSPORTATION EFFECTIVENESS (1983 Level of Service)			
Arundel Expressway	B	-	B
Md. Route. 2 - South of Md. 100	F	F	F
Md. Route 100 - West of Md. 2	D	F	D
Md. Route 648 - North of Md. 177	D	F	D
Md. Route 177 - East of Md. 2	D	F	E
SAFETY			
ACCIDENT RATE/100 MVM	197.27	352.91	197.27
ACCIDENT COST/100 MVM	$408,303	$716,047	$408,303
ENVIRONMENT			
ACRES OF VEGETATION DISTURBED — FOREST	45	0	40
ACRES OF VEGETATION DISTURBED — OPEN-LAND (FIELDS)	30	0	30
ACRES OF VEGETATION DISTURBED — WETLANDS	2.4	0	2.4
WILDLIFE IMPACT	SOME	NONE	SOME
EROSION AND SEDIMENTATION	TEMPORARY	NONE	TEMPORARY
RELOCATION			
Homes to be Acquired	3	0	3
Families to be Relocated	4	0	4
Persons to be Displaced	16	0	16
COST			
CONSTRUCTION COST	$25,700,000	0	$23,425,000
RIGHT OF WAY COST	8,300,000	0	7,525,000
INITIAL PROJECT COST	$34,000,000	0	$30,950,000

E. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS:

The implementation of the project will have certain adverse effects on the environment, which cannot be reduced by the use of reasonable abatement measures.

1. Conversion of open land to highway purposes -

The area proposed for the project is now being used as a habitat for small birds and animals. This area consists of approximately 2.4 acres of wetlands, 45 acres of forest land and 30 acres of open fields. The land not already developed through this area has been basically reserved for the proposed Arundel Expressway and, if the project is not built, this open space - except for the wetlands - would ultimately be converted to residential or commercial uses. Measures planned to mitigate adverse impacts on the wetlands are listed on page C-15.

2. Adverse visual impact on adjacent communities -

Normally, the State Highway Administration will provide suitable landscaping to minimize the visual impact of the highway on adjacent communities. Some dwellings and apartment complexes, however, will be so close to the project that landscaping proposals may not be effective.

3. Increase in noise levels -

Exceptions to FHWA design noise levels may be necessary at certain sensitive receptors in the vicinity of the project. Exceptions to Federal design (exterior) noise levels will be considered at the locations shown on Drawing No. 24.

F. RELATIONSHIP BETWEEN SHORT-TERM USE OF ENVIRONMENT AND LONG-TERM PRODUCTIVITY:

The short-term uses of the environment required by this project consist of the demolition of residential properties, relocation of traffic where detours are required, and the erosion, dust and noise associated with highway construction. The relocation of traffic, utility interruptions, and adverse construction impacts will be local in nature with their duration, depending on the type of construction operation. The State Highway Administration, on a continuing basis, will incorporate the latest technology in order to reduce any adverse effects during the construction period. Every effort will be made to minimize encroachment upon man-made and natural features.

The proposed Expressway extension will complete a needed and safe highway facility from the Beltway on the north to Maryland Route 100 and Ritchie Highway on the south. The project must certainly be classified as a long-term productive facility as it fulfills the need for improved transportation service, is compatible with proposed land use for the area and is required for planned future development. In essence, the project will enhance the long-term productivity of man's social and economic environment in this area as envisioned by local, regional and state plans.

G. IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES:

The construction of the Arundel Expressway does represent an irreversible commitment of land and water areas within the right-of-way for use as a transportation corridor. Other resource commitments include the manpower, building materials and energy required for its construction.

In economic terms, the project represents the utilization of an estimated 34 million dollars in public funds to construct the Expressway. This investment reinforces the State's commitment to the General Development Plan for the Baltimore Region and to the need for an efficient primary transportation network.

Although the project does irretrievably commit some natural and human resources, the reason for their use is justifiable resulting in significant social and economic benefits to the entire community.

H. PROPERTIES & SITES OF HISTORIC & CULTURAL SIGNIFICANCE:

Four sites of historic significance were identified in the general area of the project by the Maryland Historical Trust in a letter to the State Highway Administration, dated January 23, 1975. A copy of this letter is included in Section K.

The Duvall House (AA-349) and the J. L. Benefield House (AA-357) are located on Jumpers Hole Road, west of Ritchie Highway, and more than 3,000 feet west of the proposed Expressway (see Drawing No. 4). The Robinson House (AA-347) and Williams Farmstead (AA-353) are located east of Old Annapolis Road, approximately three miles south of the project. Of particular significance is the Robinson House, which is a fine example of early Maryland domestic architecture, having been built in the early 1700's of field-stone, with a gambrel roof.

The Maryland Historical Trust, in the previously referenced letter stated that none of the proposed alternates would adversely effect these properties. The SHA and FHWA concur that Alternate 2 will have no effect on any historic sites in the area.

An archeological and paleontological reconnaissance survey of the project study area was conducted by Dr. William M. Gardner, Associate Professor and Chairman, Department of Anthropology - The Catholic University of America. This report is available for review at the State Highway Administration, 300 West Preston Street, Baltimore, Maryland The following is a brief summary of the findings in this report.

One site of archeological significance (designated 18AN178) was identified in the survey area. A portion of this site, which is located in an area west of the Marley Junior High School and south of Marley Creek, lies within the right-of-way proposed for Alternate 2. Historic occupation of this site all seems to be post-1820, with the bulk of it being closer to present day. Prehistoric occupation of this site has been determined to be culturally significant on both a local and areal level. The bulk of the prehistoric occupation lies to the west of the right-of-way and is not directly impacted by the proposed construction. Prehistoric artifacts in lesser amounts were found within the proposed right-of-way limits. The results also indicate that this same area has been cultivated, and the bulk of the prehistoric occupation lies within the plow zone. The report recommended that test excavations be conducted in the area west of the Marley Junior High School that lies between the south bank of Marley Creek and the north bank of an unnamed intermittent stream, both within and adjacent to the proposed right-of-way of the Arundel Expressway.

Intensive test excavations were undertaken at two separate sites by Dr. William M. Gardner in March, 1977 in the area between the south bank of Marley Creek and a second order stream. Both of these sites are located within the proposed Arundel Expressway right-of-way and for identification purposes have been designated 18 AN 178A and 18 AN 178B. The results of the excavations are included in a report, which is available for review at the State Highway Administration, 300 West Preston Street, Baltimore, Maryland. The following is a brief summary of findings and conclusions in this report.

The earliest components were located along the north bank of the second order stream and are marked by side notched points with ground bases, a few quartzite flakes, a single hearth and little else. The points had been considerably resharpened, used as knives and discarded during the brief period the hearth was used around the year 3000 B.C. Immediately above these side notched points and unassociated with the hearth, was a single straight stemmed point dated at approximately 2000 B.C. Sometime during this period there was a local vegetation change in response to a more widely felt climatic shift that resulted in the hearth being buried under wind blown soil deposits. Possibly due to the changed ecological conditions, the latter occupation appear on the banks near Marley Creek and are associated with springs seeping out of the bank. The earliest components at these sites date to sometime during the late Late Archaic and Early Woodland periods. There is a strong preference for rhyolite during this time. During the Middle and Late Woodland periods, use of the Marley Creek area increases in intensity, but is still best interpreted as sporadic. By this time, the people were manufacturing pottery and using predominantly quartz which, unlike rhyolite, is available locally in pebble form. The Marley Creek area would appear to have been used for short term forays in which hunting played a major part.

Dr. Gardner recommends no further archeological work be performed within the right-of-way limits of the proposed Arundel Expressway. A sufficient sample of artifacts have been recovered to provide information on chronology, activity, and intersite distribution. The State Historic Preservation Officer concurs with Dr. Gardner's recommendations as indicated in the enclosed letter dated December 12, 1977 (see page H-4).

In consideration of the findings and recommendations made by Dr. William M. Gardner, the archeologist, and concurrence from the State Historic Preservation Officer, the Section 4(f) discussion originally in the Draft EIS has not been included in this Final Statement as the area of archeological significance has been determined to lie outside of the highway right-of-way. Both right-of-way lines will be clearly marked in the field through this area and all construction will be contained within the right-of-way limits.

An archeologist will be on call for immediate examination of currently unknown archeological findings (including unusual soil deposits or other stratigraphic features, as well as structural or artifactual remains) uncovered and/or threatened by the process of construction. Should unexpected archeological salvage become necessary, it will be accomplished in accordance with approved FHWA and SHA procedures in consultation with the appropriate agencies.

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Maryland Historical Trust

December 12, 1977

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

RE: Arundel Expressway Archeology

Dear Mr. Camponeschi:

Since the archeologist, William Gardner, after extensive test excavations and survey, recommended no further work in the right-of-way of this project, we concur. The work done is adequate for research needs. Gardner feels any further work would be redundant and we concur.

Sincerely yours,

John N. Pearce
State Historic
Preservation Officer

JNP:LG:mms

cc: Mr. Brice M. Clagett
Mr. Richard McClelland
Mrs. Mary McHenry

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

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Maryland Historical Trust

WSW
JLB
AWA
FILE
170-3

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

April 13, 1977

RE.: Contract No. AA-572-000-571
Arundel Expressway Maryland Route
648 to 100
Archaeological Coordination

Dear Mr. Camponeschi:

The Maryland Historical Trust archaeologist has received your letter and attachments concerning archaeology in the corridor.

As SHPO I would concur that preservation compliance for archaeological resources has been completed.

Sincerely,

John N. Pearce
State Historic Preservation Officer

JNP:bjn
cc: Mrs. Mary McHenry
Mr. Leland Gilsen

FILE
HELWIG
JANATA
KOLLER
WILLIAMSON

APR 26 1977

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

RUMMEL, KLEPPER & KAHL

I. COMMENTS RECEIVED ON DRAFT ENVIRONMENTAL STATEMENT:

The Draft Environmental Statement/Section 4(f) Statement (FHWA-MD-EIS-75-04-D) for the Arundel Expressway (Md. Route 10) from Maryland Route 648 to Maryland Route 100, was circulated on April 30, 1976 to Federal, State and Local agencies for review and comment.

All comments received by the State Highway Administration on the Draft Statement, along with those received at the Public Hearing, have been considered in determining the location and design proposed for this transportation facility. Written comments on the Draft Environmental Statement were received from the following agencies on the dates noted and are included in this section of the Final Environmental Statement along with appropriate responses. Comments received at the Public Hearing are included in Section J of this Final Statement.

Index of Letter Comments Received on
Draft Environmental Statement
(FHWA-MD-EIS-75-04-D)

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
NORTHEASTERN AREA, STATE AND PRIVATE FORESTRY
6816 MARKET STREET, UPPER DARBY, PA. 19082
(215) 596-1671

8400
June 16, 1976

Mr. Robert J. Hajzyk, Director
Office of Planning and
Preliminary Engineering
Maryland Department of Transportation
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201

Refer to: Draft Environmental Statement, Arundel Expressway MD Rte 648 to MD Route 100, Contract No. AA 572-000-571

Dear Mr. Hajzyk:

Construction of the highway described in the above statement appears to have a minor effect on forested land. Improvement of existing roads, however, might relieve much of the present traffic congestion with less effect on wetlands and woodland.

Thank you for the opportunity to review this Draft Statement.

Sincerely,

DALE O. VANDENBURG
Staff Director
Environmental Quality Evaluation

Response to Comment -

Improvement of the existing road system would relieve present traffic congestion; however, this project has been designed to accommodate both present and future traffic volumes based on the projected growth in this area. An improved existing road system is not adequate for these future projections.

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UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE - 4321 Hartwick Rd., Rm. 522

College Park, Maryland 20740

June 21, 1976

Mr. Eugene T. Camponeschi, Chief
Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201

Dear Mr. Camponeschi:

We have reviewed the draft environmental statement for your contract No. AA 572-000-571 and offer the following comments.

The sediment and erosion control section is well prepared and adequately covers the situation. We have no suggestions for improvement. If we can be of assistance in implementing the plan, please let us know.

There is one matter that needs your further attention. In the last paragraph of page C-22, "the Soil Conservation Service", should read "the Soil Conservation District." While the Soil Conservation Service does have a function here it is more specifically done through the local Soil Conservation District in providing technical assistance. As you know, the Soil Conservation District has assigned responsibility in the Maryland Sediment Control Law. The agency interchange is certainly understandable and we hope this correction can be made in the final publication.

We appreciate the opportunity to review this statement and trust our comments are helpful.

Sincerely,

Kenneth A. Pitney acting

Graham T. Munkittrick
State Conservationist

cc: R. M. Davis, Administrator
Office of the Coordinator
Council on Environmental Quality (5 copies)

Response to Comment -
The change in agency name from Soil Conservation Service to Soil Conservation District has been made in the Final Statement.
See page C-20.

___CAMPONESCHI ___CATHERMAN ___HOPKINS
___HOIST ___DUNSEY ___HUTZLER
___KROLAK ___GRANDY ___JANATA
___SCHNEIDER ___HELWIG ___KOLLER
___UHL ___HOFFMAN ___WILLIAMSON
___ACTION ___INFO ___FILE
REMARKS:

JUN 25 1976

RUSSELL, KLEPPER & KAHL

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
COMMANDER (mep)
FIFTH COAST GUARD DISTRICT
FEDERAL BUILDING
431 CRAWFORD STREET
PORTSMOUTH, VIRGINIA 23705
PHONE. (804) 393-9611 Ext. 315

130

5922
10 May 1976

U. S. Department of Transportation
Federal Highway Administration
711 W. 40th Street
Baltimore, MD 21211

Re: Maryland - Draft EIS/Section 4(f)
FHWA-MD-EIS-75-04-D
Arundel Expressway
Anne Arundel County
Project U-903-1(7)

Gentlemen:

The Fifth Coast Guard District has no comment to make concerning the Draft Environmental Statement for Arundel Expressway from Maryland Route 648 to Maryland Route 100. We note that the Fifth District (Bridge Section) has been contacted regarding the proposed crossing over Marley Creek. No other areas of Coast Guard jurisdiction by law or special expertise are expected to be significantly affected by this project.

The opportunity to review this environmental statement is appreciated.

Sincerely,

FRANK J. DIERSEN
Captain, U. S. Coast Guard
Chief, Environmental Protection Branch
By direction of the Commander
Fifth Coast Guard District

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DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS
COMMANDER (oan)
FIFTH COAST GUARD DISTRICT
FEDERAL BUILDING
431 CRAWFORD STREET
PORTSMOUTH, VIRGINIA 23705

•3271
8 July 1976

Mr. Eugene T. Camponeschi
Chief, Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, MD 21201

Dear Mr. Camponeschi:

The draft EIS/Section 4(f) Statement for the Arundel Expressway from Maryland Route 648 to Maryland Route 100 has been reviewed by members of my staff.

Inasmuch as the Federal Highway Administration is the lead agency for purposes of the National Environmental Policy Act and the proposed bridge is only a minor portion of the total project, Coast Guard jurisdiction is limited to the bridge portion of the project crossing Marley Creek, a portion of the navigable waters of the United States.

The draft EIS adequately assesses the possibility of significant impacts of the bridge structure on the Marley Creek basin. It is requested that further detail and information, if available, be provided concerning the proposed bridge in the FEIS. Such detail should include that information normally provided in an application for a bridge permit. It is realized that such information, including construction techniques may not, as yet, be available if the project has not reached the design phase.

Comment No. 1

Please be advised that six copies of the final EIS will be required at such time as the State Highway Administration makes application for a bridge permit.

Sincerely,

V. R. ROBILLARD
Captain, U. S. Coast Guard
Chief, Aids to Navigation Branch
By direction of the Commander
Fifth Coast Guard District

RECEIVED
JUL 15 1976

CAMPONESCHI
HOUST
KHOLAK
SCHNEIDER
UHL
ACTION
CATHERMAN
DORSEY
GRANDY
HELWIG
HOFFMAN
INFO
FILE
HOPKINS
HUTZLER
JANATA
KOLLER
WILLIAMSON
REMARKS:

T-5

Response to Comments by the
U. S. Coast Guard - Aids to Navigation

Comment No. 1 - Basic span lengths and clearances for the proposed dual Arundel Expressway bridges over Marley Creek are included in this Final Statement on page A-20. Other information required in the application for a bridge permit will be developed during the design phase and be submitted to your office for approval.

Form DOT F 1320.1 (1-67)

UNITED STATES GOVERNMENT

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY

Memorandum

DATE: 01 JUL 1976

In reply refer to:

SUBJECT: Maryland, Anne Arundel Expressway, Ann Arundel County, Draft Environmental Impact Statement/Section 4(f) Determination
FHWA-MD-EIS-75-04-D

FROM : Assistant Secretary for Environment, Safety, and Consumer Affairs

TO : Federal Highway Administrator

We have reviewed the subject draft EIS and offer the following comments:

Alternatives

1. Page A-1 of the draft EIS indicates that the Regional Planning Council and the County Office of Planning and Zoning requested that the project be delayed until specific data is available to support a decision on the ultimate location of the Anne Arundel Expressway south of Maryland Route 100. However, instead of including this two-mile section in the study of the Anne Arundel Expressway corridor study south of Route 100, the State Highway Administration (SHA) asserted that Alternatives 1 and 2, which the planning agencies objected to, were eliminated. However, the State has proposed a new alternate, virtually identical to #2, and named it Alternate 4. The EIS should explain how Alternate 4 resolves the planning agencies' concerns with #1 and #2.

Comment No. 1

2. In Anne Arundel County's letter of July 19, 1974, three alternatives were suggested. An analysis of the three alternatives should be contained in the final EIS.

Comment No. 2

Wetlands

The EIS reports that five acres of wetlands will be filled for this project. It is DOT policy to protect,

preserve and enhance wetlands and avoid filling, drainage and other interference with them, to the maximum extent feasible. The EIS should discuss methods of avoiding the detrimental effects of this project on the Marley Creek wetlands, including alignments which avoid or minimize wetland use, and construction alternatives to minimize filling of the wetlands. Comment No. 3

Social Impacts

The statement (page C-9) indicates there may be some rehousing problems for low income, displaced families. These problems and their proposed solutions should be discussed in the final EIS. Comment No. 4

Section 4(f) and Historic Preservation

1. Lake Waterford Park is discussed in a letter from the Maryland DOT-SHA to the Anne Arundel County Department of Recreation and Parks. Although this project is not expected to impact the park, the location of this section of the expressway could be the determining factor as to whether or not alternatives south of Route 100 will avoid the use of parkland. Comment No. 5

2. The final EIS must contain evidence that the section 106 procedures have been complied with for Archaeological Site No. 18 AN 178. Comment No. 6

Segmentation

As discussed above, it appears that this small highway section is integrally related to the proposals for the Anne Arundel Expressway south of Route 100. It also appears that a decision on this short project could lead to a section 4(f) problem on the adjoining segment. Consequently, it appears that further consideration of this project should be made a part of the corridor study for the Expressway south of Route 100. Comment No. 7

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3

We appreciate the opportunity to review and comment on the draft statement. We look forward to receiving a combined EIS for the overall Anne Arundel Expressway when the corridor studies are completed.

Judith T. Connor

13b

Response to Comments by the
U. S. Department of Transportation

Comment No. 1 - A discussion of the planning agencies concerns regarding Alternates 1 and 2 have been included on page A-1 of this FEIS.

Comment No. 2 - The three alternatives suggested in Anne Arundel County's letter of July 19, 1974 have not been included in this Final Statement. These alternatives were carefully analyzed and were postponed from further study for the following reasons: County Alternates No. 1A and 2A both propose the extension of the Arundel Expressway south of Maryland Route 100 to a connection with Ritchie Highway and in order to avoid fixing the alignment, all locations proposed for the Expressway south of Maryland Route 100 are being considered in the BATC Study. County Alternate No. 2B is similar to SHA Alternate No. 2, except for a direct southbound ramp connection to Ritchie Highway and the reconstruction of the northbound lane of Ritchie Highway. Proper geometrics applied to the County's line sketch indicate full access controls would be required on both sides of Ritchie Highway south to Jumpers Hole Road as a minimum. This would result in severe right-of-way impacts on the business community in this area, which may not be necessary with the completion of the BATC Study.

Comment No. 3 - A study to minimize impacts on the Marley Creek wetlands has been completed. The results of this study are summarized on page C-15 in this Final Statement.

Comment No. 4 - A discussion of rehousing problems for the low income minority family and the proposed solution have been included in this Final Statement on page C-11.

Comment No. 5 - This project (extension of the Arundel Expressway from Maryland Route 648 to Maryland Route 100) has been proposed on its own merits in order to make the previously constructed portion of the expressway a usable facility. The construction of this project would not impose any determining factors regarding the location of the improvements south of Maryland Route 100, particularly with reference to possible future 4(f) problems at Lake Waterford

Park. Feasible and prudent alignment alternatives to avoid Lake Waterford Park have been developed in the BATC Study and the alternate passing through the Park is no longer under consideration.

Comment No. 6 - Based on the State Historic Preservation Officer's concurrence with the recommendations from the intensive test excavations performed at Archeological Sites 18AN178A & B that the work done is adequate for research needs and any further work would be redundant, compliance with the Section 106 procedures has been considered complete. The boundaries of the significant site lie outside the right-of-way and will not be affected by construction activities. See Section H in this Final Statement.

Comment No. 7 - Response to this comment has been discussed in response to Comments No. 1 and 5.

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May 14, 1976

Mr. Eugene T. Camponeschi
Chief, Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Md. 21201

Re: Arundel Expressway from Maryland Route 648 to Maryland Route 100

Dear Mr. Camponeschi:

We have reviewed the draft environmental statement for the above proposed project and have classified it as ER-2 in EPA's Reference Category. Enclosed you will find a copy of the Definition of Codes for the General Nature of EPA Comments to provide a more detailed description of this rating. Also, in accordance with our responsibilities under Section 309 of the Clean Air Act to inform the public of EPA's views on the potential impacts of Federally assisted actions, this rating and its date will be published in the Federal Register.

While the draft statement presents the project in adequate detail, some cause for concern has been found with respect to water quality and noise impacts. More information is needed in the final statement in order for EPA to more fully evaluate the total impact of the project. These areas are outlined below.

With respect to water quality, EPA is concerned with the filling of the marsh area and the possible loss of a pollution barrier. We wish to compliment the Department of Highways in their wetlands discussion appearing on pages A-16 and A-17. However, we question the conclusions drawn pertaining to the project's wetlands impact. Although the Highway Department acknowledges that the disruption of several marsh ecosystems will have a significant adverse effect on the Chesapeake Bay, they contend that the impact of the proposed project will be insignificant as it effects only one small area of the wetlands system. This implies that there will be no future destruction of wetlands associated with the Chesapeake Bay. Since a guaranteed preservation of remaining wetlands is infeasible, EPA considers the filling of Marley Creek Marsh to be significant, since it contributes to the incremental loss of marsh ecosystems on an areawide scale. The filling of marsh areas is not in

Comment No. 1

agreement with either EPA policy or DOT policy on wetlands as found in DOT Order 5660.1, and likely would receive a recommendation of denial after project review under Section 404. We therefore suggest that the final EIS look into the possibilities of crossing both Marley Creek and the associated wetlands on structures which will minimize impacts to water quality and local aquatic life. Also, we are interested in knowing whether the stabilization of the embankments will be done by paving or sodded slopes. It is suggested that the use of sodded slopes be implemented where practical in order to minimize the effect of water run-off on Marley Creek. The final EIS should explain which method will be used and the reasoning behind it. Finally, the salting operations should be further described in the final EIS, i.e. salt chemistry and maintenance of salt stockpiles. Water quality impacts will be further commented on when EPA reviews the permit required for filling in this marsh area.

Comment No. 2

With respect to noise impacts, EPA feels that the results of the studies to determine the cost effectiveness of decreasing predicted exterior and interior noise levels through the use of barriers and/or soundproofing should be included in the final EIS. EPA further suggests that these methods be used when the noise levels exceed the standards, especially at the Marley Elementary School (74.9 dBA), Calvary Baptist Church (76.3 dBA), and the American Harumdale Apartments (83.5 dBA). EPA would also like to mention that while noise impacts are minimal at the Marley Special School, the calculations of the interior noise levels may not be correct unless the peak hour occurs at times when the school is not in use. If this is not the case, it is questioned how the interior noise will be less than the existing level, since the interior noise is generated to a large extent from inside the school. EPA suggests that the hours when the school is in operation be compared to the peak hours of traffic, and if these hours coincide to any extent, then new calculations for interior noise be included in the final statement.

Comment No. 3

Comment No. 4

As a final point, EPA notes that this project in particular demonstrates the need for a directive to reduce noise levels in private buildings through Federal funding or other means of assistance for soundproofing them. This is especially true at the Pinewood Apartments (74.6 dBA) and the Benny Goodman Restaurant (84.8 dBA).

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We hope that this review will assist you in the preparation of the Final Environmental Impact Statement. If you have any questions, or if we can be of further assistance, you may wish to contact Mr. San Little or Mr. William Hoffman of my staff at 215-597-7093. We would appreciate the receipt of five copies of the final EIS at such time as it is filed with the Council on Environmental Quality.

Sincerely yours,

Nicholas M. Ruha
Chief
EIS and Wetlands Review Section

Response to Comments by the
Environmental Protection Agency

Comment No. 1 - The Marley Creek crossing has been studied in detail including measures to minimize impacts on the wetlands in this area. The results of this study are summarized on page C-15 in this Final Statement.

Comment No. 2 - A statement on embankment stabilization and salt stockpiles has been included in this Final Statement on pages C-18 and C-20, respectively.

Comment No. 3 - Noise sensitive sites adjacent to this project have been analyzed to determine possible types and locations of barriers to mitigate noise. The results of these studies are included in the "Noise Impact Section" of this Final Statement, see page C-21.

Comment No. 4 - Comparison is requested for the hours when the Marley Special School is in operation to the peak hours of traffic volume. If these hours coincide to any extent, then the calculations of the interior noise levels may not be correct as presented in the Draft Statement.

School Hours: 8:45 AM to 2:30 PM
According to personnel at the School, these hours represent the time when the buses arrive in the morning until they leave in the evening.

The diurnal traffic curve for the Arundel Expressway indicates that the peak hour traffic flow occurs as follows:
AM Peak - 7-8 AM (8.25% of ADT)
PM Peak - 5-6 PM (9.89% of ADT)
Inasmuch as the peak hours of traffic do not coincide with the school hours, the interior noise levels as indicated are not influenced by noise within the school.

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

142

April 19, 1977

Mr. Charles R. Anderson, Chief
Bureau of Landscape Architecture
Maryland State Highway Administration
2323 West Joppa Road
Brooklandville, Maryland 21022

Re: Air Analysis, Arundel Expressway
Anne Arundel County, Maryland

Dear Mr. Anderson:

Thank you very much for sending us a copy of the air quality analysis performed for the above proposed project. We understand that a final statement is currently being prepared, and that these comments will be considered in its preparation. We regret that our review of the draft EIS did not include these comments.

1. We appreciate the effort made to update the analysis by using emission factors found in AP-42 Supplement No. 5. However, we believe that the final EIS should show the results using these emission factors. This would make it easier for all reviewers to compare the updated CO concentrations to the National Ambient Air Quality Standards.

2. The increase in the HC and NO_x burden resulting from the build alternative (4) should be discussed with respect to the Transportation Control Plan in the Baltimore Area. This is of special concern since pages 24-26 of the analysis shows that the total hydrocarbon level has been recorded above standards on 52 days in 1973, while other stations in the area indicate that NO_2 and photochemical oxidants standards are being exceeded.

This should also be discussed in light of the notice which appeared in the July 12, 1976 Federal Register calling for Maryland SIP revisions in order to attain and maintain CO, Oxidants and total suspended particulates. Specifically, the notice indicated the need for statewide HC control.

Response to Comments:

Comment No. 1 - The CO concentrations in this statement have been updated by using emission factors found in AP-42 Supplement No. 5.

Comment No. 2 - The increase in HC and NO_x burden resulting from this project is discussed on page C-43 of this Final Statement.

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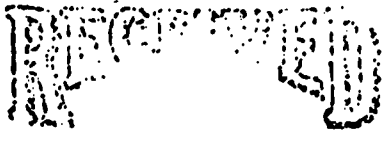
We hope that this review will assist you in preparing the final Environmental Impact Statement. We have classified the supplemental analysis as LO-2 in EPA's Reference Category. If you have any questions or if we can be of further assistance, please contact us.

Sincerely yours,

Nicholas M. Ruha
Chief
EIS and Wetlands Review Section



C R ANDERSON

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In Reply Refer To:
L7619-MQ
(ER-76/383)

JUN 16 1976

Dear Mr. Ackroyd:

This is in response to the request for the Department of the Interior's comments on the draft environmental/Section 4(f) statement for Arundel Expressway, Anne Arundel County, Maryland.

SECTION 4(f) COMMENTS

The statement mentions on page C-7 that "No property that is currently being used by the schools for recreational purposes is required for any alternate." However, the statement does not address whether or not those school lands required by the project are used by the public for recreation pursuits. Comment No. 1

If such public school lands are available to and used by the general public for recreation, Section 4(f) of the Department of Transportation Act of 1966, as amended, would be applicable. The General Counsel of the U. S. Department of Transportation has determined that public school lands may fall within the purview of that statute depending upon the particular characteristics and circumstances of each case.

Two documents appended to the statement contain information on the impacts to school lands and the recreational use thereof. A letter dated June 19, 1975, from Mr. John Weinhold, Engineer, Anne Arundel County Public Schools, notes:

> "During the meeting of May 27, 1975, your office had a concern that if the recreation area of these schools would be disturbed due to the proposed construction additional environmental impact studies would be required. With this in mind, and provided the monies received for land acquisition plus damages are sufficient to do the necessary on-site construction, the Board of Education will release the State Highway Administration from their commitment within the recreational area and have the work done in-house or by contract." (emphasis added)

A June 2, 1975 memorandum entitled "Minutes of Meeting" notes that "The Anne Arundel County Board of Education suggested that even though the ballfield is not physically affected at the north end of the recreation area, the field should be realigned in order to minimize foul balls landing in the roadway." (emphasis added)

Comment No. 2

Both statements strongly imply that the land required from the schools affects a "recreational area", as part of the school grounds.

We further understand that school lands in northern Anne Arundel County are heavily used by the public and organized groups for recreation during non-school hours and constitute important community recreation resources.

From information supplied in the present statement, it is not possible to assess total project impacts on the school lands and the recreational use thereof. The acreage required from the schools is not provided nor are there any maps and descriptive material on the school ground including recreational facilities and use. The final statement should contain maps showing the school grounds and identifying the lands required for the highway. Impacts on pedestrian access to these lands should be discussed also. We note that the school and school grounds would be subject to noise levels exceeding FHWA's standards.

Comment No. 3

Comment No. 4

From the information provided, it appears that Section 4(f) is applicable to the use of the school recreation lands. Accordingly a 4(f) statement should be prepared and circulated for comments dealing with Marley Junior High School and Marley Elementary School. Alternatives to avoid these properties should be discussed. The maps show that the highway, from its northern terminus southward to Scott Avenue extended, involves a reverse curve which other highway departments have rejected to avoid a 4(f) involvement. In this case, removal of this reverse curve would greatly reduce the taking of land from Marley Elementary School and would reduce wetland impacts. In addition, elimination of the reverse curve, the use of which we are told requires special FHWA approval, would make for improved highway-user safety. A response to the second provision of Section 4(f), all possible planning to minimize harm, should include, at a minimum, those measures mentioned in the June 19, 1975 letter from the Anne Arundel County Public Schools, to be accomplished entirely as a cost of the highway project pursuant to FHWA Transmittal #28.

Comment No. 5

Comment No. 6

Comment No. 7

The Section 4(f) Statement for Archeological Site No. 18 AN 178 is generally adequate. This Department concurs that there is no feasible and prudent alternative to the taking of land from this site, and that adequate measures are being planned to minimize harm.

ENVIRONMENTAL STATEMENT COMMENTS

From information in the statement, it is obvious that locational alternatives for this project have been locked in by previous projects and by actions taken in the 1960's to protect from development the proposed project right-of-way. Consideration of alternatives is not possible in this case.

The proposed project, the Arundel Expressway, is ultimately planned to extend further southward to U. S. 50-301, page A-1. The final statement should contain some additional general information and a map of the corridor being considered for the extension. This would enable reviewers to identify potential possible concerns, at this early stage, with the proposed extension. Comment No. 8

The plan and profile for Alternate 4 on Drawing No. 12 suggests that the expressway would be constructed on fill from 15- to 25-feet thick for a distance of about 1,400 feet in the vicinity of Marley Creek. However, we found no specific mention of the proposed source or type of fill material or of the impact of placement of fill on the floodplain, except that the construction would destroy five acres of wetlands. Comment No. 9

Although Item A, page A-16, presents a good description of the wetlands along Marley Creek, there is no mention of fishery values within the main stream segment. A paragraph describing the presence or absence of both fin and shell fish in the project area sector should be addressed. The impacts of the project on fishery resources, if any, in the project area should also be presented in the section entitled General Ecology and Conservation of the statement. Also, Section E, page E-1, should include a summary of the amount and types of wildlife habitat that will be unavoidable lost as a result of project construction. Comment No. 10

The statement shows that bridges will be required to carry the highway over Marley Creek located near the northern terminus of the project area and that certain wetlands will be filled. However, the statement lacks an indication of other interrelated Federal actions as well as adequate information (site-specific location, design and measures to minimize harm) for a full understanding and an evaluation of how the interrelated Federal actions may affect fish and wildlife resources. Accordingly, the comments on this statement do not in any way preclude additional and separate evaluation and comments by the Fish and Wildlife Service, pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661, et. seq.), if project implementation requires a permit from the U.S. Coast Guard and/or the Corps of Engineers, U.S. Army (Section 9 & 10 of the Rivers and Harbor Act of 1899 and Section 404 of P.L. 92-500). Comment No. 11

In review of the applications for such permits, the Fish and Wildlife Service may concur, with or without stipulations, or object to the proposed

work depending on project effects which may be evident at that time on fish and wildlife resources. It would appear that the Fish and Wildlife Service, as a minimum, will probably recommend that the Corps of Engineers/U.S. Coast Guard when issuing a permit, require (1) features to reduce turbidity during project construction, (2) the shoreline area be stabilized with plantings suitable for wildlife utilization, (3) sufficient bridging and culverting being incorporated into the proposal to preserve existing wetland areas, and (4) such other measures as would be apparent and appropriate from the information available at that time.

Comment No. 1

The final statement should evidence appropriate consultation not only with the State Historic Preservation Officer but also with the Advisory Council on Historic Preservation pursuant to 36 CFR 800. Additionally, professional archeological salvage should be provided for as work progresses. A description of such provision should be furnished in the final statement.

Comment No. 1

SUMMARY COMMENTS

Because of this Department's concern for the project's encroachment on public recreation land, and since there is no Section 4(f) statement for this involvement, we are assuming, at this time, a position of objection to the project on environmental grounds [reference DOT ORDER 5610.1B—Item 9-C-(1)-(C)]. By copy of this letter, we are advising the Assistant Secretary for Environment, Safety and Consumer Affairs, U.S. Department of Transportation, of this position,

This Office would be willing to review and comment on any additional Section 4(f) information and statement you prepare and to reconsider our position at that time. The field office assigned the responsibility for coordination and technical assistance on this project is the Regional Director, Bureau of Outdoor Recreation, Federal Office Building, 600 Arch Street, Philadelphia, Pennsylvania 19106, (phone:FTS-597-7989).

Sincerely yours,

(Sgd) Stanley D. Doremus

Deputy Assistant Secretary of the Interior

Mr. Richard Ackroyd
Division Administrator
Federal Highway Administration
Room 206
Geo. H. Fallon Federal Building
31 Hopkins Plaza
Baltimore, Maryland 21201

cc: Mr. Robert J. Hajayk
Maryland DOT

Mrs. Judith T. Connor
U.S. Department of Transportation

148

FNP:TCederstrom:PEP:JFromme:cdl:6/10/76

bcc: Secretary's File Copy
Secretary's Reading File (2)
AS/PDB (2); PEP (2)
FW FWS FOR EGS
Secretary's Special Assistant, Boston
Regional Director, Mid-Atlantic Region
Director's Reading File
M-Reading File
DOT (TES-70) (Stop 330)
M. Lash, FHWA, EV-1 (Stop 29c)
General Counsel, DOT (TGC4)
Council on Environmental Quality (5)

BASIC RETAINED IN ROOM 1210 - MQ

Response to Comments by the
U. S. Department of the Interior

Comment No. 1 - "The right-of-way required by the recommended alternate from the three schools adjacent to the project is not used for school or public recreational purposes. The decision by Anne Arundel County to use the monies provided by the highway for non 4(f) right-of-way requirements, to either improve or re-align the present ballfields is an action over which the SHA has no control. Anne Arundel County has no commitment to improve these ballfields at the present time."

Comment No. 2 - This comment refers to the recreational area in the northeastern part of the Marley Elementary School property and the proposed relocation of Cooper Road. This location was planned in conjunction with the Anne Arundel County Board of Education so that there would be no effect on the recreational area. See Section C4 in this Final Statement. Drawing No. 20 shows the location of the recreational area and how the alignment of Relocated Cooper Road was established to avoid this area.

Comment No. 3 - The relationship of the right-of-way required for this project to school properties and recreational facilities are shown on Drawings No. 19 and 20 in this Final Statement. Acreage of right-of-way required is also noted on these drawings.

Comment No. 4 - A discussion of pedestrian access to these schools is included in this Final Statement on page C-7 . Noise impacts on sensitive sites adjacent to this project are discussed in this Final Statement beginning on page C-21.

Comment No. 5 - The information supplied in this Final Statement as a response to D.O.I. comments No. 1, 2, 3 and 4 shows that Section 4(f) is not applicable.

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Comment No. 6 - The alignment of the Arundel Expressway, including the reverse curve between Maryland Route 648 and Scott Ave., was not planned to avoid 4(f) involvement with school recreational areas. The alignment through this area was designed primarily to minimize the displacement of people and to avoid, as far as possible, adverse effects on the schools. Removal of the reverse curve through this area would require the acquisition of approximately 9 homes on Shana Road and 17 homes along Phelps Avenue, and the reconstruction of an Anne Arundel County Pumping Station. It would reduce the impact on the Marley Creek wetland but have a more severe impact on Archeological Site No. 18AN178. There would be no right-of-way required from the Marley Junior High School; however, right-of-way required from the Marley Elementary School and Marley Special School would remain virtually the same as with the recommended location.

Comment No. 7 - The State Highway Administration has agreed to the measure stipulated in the June 19, 1975 letter from the Anne Arundel County Public Schools. Regardless of 4(f) considerations, these items would normally be considered part of the State's obligation either as a replacement of existing facilities or for the protection of the children.

Comment No. 8 - A general discussion of alternatives for future improvements south of Maryland Route 100 in the Ritchie Highway Corridor, as proposed in the current Baltimore-Annapolis Transportation Corridor Study, is included in this Final Statement on page B-3.

Comment No. 9 - The material specifications for the soil to be placed in the vicinity of Marley Creek will be determined by the State Highway Administration during the design phase of the project. In the State of Maryland, it is the contractor's responsibility to obtain all materials specified by the contract during the construction phase of the project. Because of the large waterway opening proposed with the bridge over Marley Creek, there would be a negligible increase in the width and depth of the upstream floodplain.

Comment No. 10 - Data on fish and other aquatic life in the project area, and the impact on these aquatic resources have been included in this Final Statement on pages A-14 and C-14. The amount and types of wildlife habitat that will be unavoidably lost as a result of the project construction has been included on page E-1 of this Statement.

Comment No. 11 - There are no known inter-related Federal actions, either proposed or underway, in the vicinity of the proposed project.

Comment No. 12 - The State Highway Administration will request a permit from the U. S. Coast Guard for the crossing of Marley Creek and will comply with all recommendations made by the Fish and Wildlife Service in conjunction with issuing said permit.

Comment No. 13 - The statement of concurrence by the State Historic Preservation Officer (that the intensive test excavations performed in the archeological site are adequate for research needs and any further work would be redundant) is the basis of determination that no further consultation is necessary pursuant to 36 CFR 800. The boundaries of the significant site lie outside the right-of-way and will not be affected by construction activities. See Section H in this Final Statement.

A description of the provisions for archeological salvage to be provided during construction of the project has also been included in the Final Statement in Section H.

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JUN 16 1976

MARYLAND

DEPARTMENT OF STATE PLANNING

MARVIN MANDEL
GOVERNOR

301 WEST PRESTON STREET
BALTIMORE, MARYLAND 21201
TELEPHONE: 301-383-2451

VLADIMIR A. WAHBE
SECRETARY OF STATE PLANNING
MADELINE L. SCHUSTER
DEPUTY SECRETARY

June 15, 1976

Mr. Robert Hajzyk, Director
Office of Planning & Preliminary Engineering
State Highway Administration
300 West Preston Street
Baltimore, Maryland

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT REVIEW

Applicant: State Highway Administration

Project: Draft EIS - Arundel Expressway from Md. Route 648 to Md. Rt. 100

State Clearinghouse Control Number: 76-4-848

State Clearinghouse Contact: Warren D. Hodges (383-2467)

Dear Mr. Hajzyk:

he 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 and the Department of Economic and Community Development - noted that the Statement appears to adequately address the areas of interest to their agencies.

Environmental Health Administration - reiterated (copy attached) their recommendation that the Arundel Expressway be postponed pending results from the Baltimore/Annapolis Corridor Transportation Study. The Administration also provided updated information on ambient air quality which should be incorporated in the draft Statement.

Department of Natural Resources - has not responded to several inquiries as of this date; however, if comments are received, they will be forwarded.

Responses follow individual letters

Our staff reviewed the Statement and made the following points which should be considered and addressed in the continuing analysis of the project:

- Given the assumption that the proposed facility will improve transportation movement in the corridor over the no-build alternative, it is not clear how future ADT figures on all area highways can be less with a facility which would increase capacity and enhance accessibility opportunities. Explanation should be provided of how these 'build' versus 'no-build' ADT totals were obtained.

Comment No. 1

The nature of the connection of this facility with Md. Rte. 2 is a crucial point in determining overall volumes, emissions, noise levels, traffic movements, etc. The EIS should include a more specific discussion of this connection's alternatives and their environmental impacts as they are being developed under the Baltimore-Annapolis Corridor Transportation Study.

Comment No.

153

Commer No

- On page C-5 there is reference to decreased congestion stimulating increased commercial activity along affected portions of Governor Ritchie Highway. We note that these two conditions, over time, can become mutually incompatible. 2

- The facility's visual and acoustic impact upon the St. George's Gate, Pinewood and Americana Southdale apartments is undoubtedly going to be severe and appears to warrant the additional expense of instituting noise abatement measures and barriers. Where possible special efforts should be made to retain existing tree cover (or provide new) along these projects to lessen the negative impacts. 4

- The housing relocation section, while noting the need for low income rental housing for those displaced, does not adequately discuss available low income rental options.

- The use of just a portion of the wetlands for this facility will aid in the eventual decline of the remaining isolated section causing a cumulative impact. 6

- The environmental information concerning the crossing of Marly Creek appears inadequate and needs to be further addressed. 7

We appreciate your attention to the A-95 review process and expect that appropriate consideration and response will be given to the cogent observations and concerns expressed by the referenced reviewers. Thank you for your continued cooperation.

Sincerely,

Vladimir Wahbe

Enc.
cc: Nadine Jones
Young Hance
Edward Symes
Donald Noren
Paul McKee
Scrib Sheafor
Lois Gilliam

rg

154

Response to Comments by the
Maryland Department of State Planning

Comment No. 1 - The Arundel Expressway has been designed as a modern, safe, high-speed facility capable of handling large volumes of traffic. Thru trips should be attracted to the expressway because signalized at-grade intersections and interference from driveways have been eliminated. The expressway will siphon off some of the vehicular trips normally made on existing local roadways resulting in lower ADT figures Traffic volumes for this project were furnished by the State Highway Administration.

Comment No. 2 - A general discussion of alternatives for the completion of the Arundel Expressway, south of Maryland Route 100 to U. S. Route 50/301, as proposed in the current Baltimore-Annapolis Transportation Corridor Study, is included in this Final Statement on Page B-3.

Comment No. 3 - Decreased congestion on existing highways resulting in increased commercial activity can, over time, become mutually incompatible. This condition is a much more desirable economic position than one resulting from a "No-Build" proposal, which would cause increased congestion and less commercial activity.

Comment No. 4 - Existing tree cover will be retained beyond the construction limits for the entire length of the project.

Comment No. 5 - A discussion of rehousing problems for low income, displaced families and the proposed solution have been included in this Final Statement on page C-11.

Comment No. 6 - Wetlands removed by the Construction of this project will be replaced by constructing new wetlands. Refer to page C-15 in this Final Statement for a summary of the measures to mitigate the effects of the proposed construction on the Marley Creek Wetlands.

Comment No. 7 - Additional environmental information concerning the crossing of Marley Creek Wetlands has been included in a Report which is available at the State Highway Administration, 300 West Preston Street, Baltimore, Maryland 21202.

155

RECEIVED
MAY 12 1976
DIRECTOR, OFFICE OF
PLANNING & PRELIMINARY ENGINEERING

State of Maryland

DEPARTMENT OF HEALTH AND MENTAL HYGIENE
ENVIRONMENTAL HEALTH ADMINISTRATION
P.O. BOX 13387
201 WEST PRESTON STREET
BALTIMORE, MARYLAND 21203
PHONE • 301-383- 2740

NEIL SOLOMON, M.D., PH.D.
SECRETARY

DONALD H. NOREN
DIRECTOR

Mr. Robert J. Hajzyk, Director
Office of Planning & Preliminary Engineering
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21203

Dear Mr. Hajzyk:

RE: Arundel Expressway
Contract No. AA 572-000-571
F.A.P. No. U-903-1(7)
From Md. Rte. 648 to Md. Rte. 100

The Environmental Health Administration has the Draft EIS for Arundel Expressway from Maryland Route 648 to Route 100 for review.

The Administration would like to reiterate its position that the Arundel Expressway be postponed pending results from the Baltimore/Annapolis Corridor Transportation Study. We realize that only the portion of the expressway south of Maryland Route 100 is formally a part of the study. However, it would seem reasonable that the choice of an alternative for this project would be affected by the study findings. Comment No. 1

Concerning the actual EIS, the Administration has the following comments:

1. The National Primary Ambient Air Quality Standards on pages C-40 and C-45 incorrectly lists the National Particulate Matter Standard as 75 ug/m^3 (annual arithmetic mean). It should be annual geometric mean. Comment No. 2

2. The State of Maryland Ambient Air Quality Standards are not listed or mentioned and these are the standards to which the results of the analysis should be compared. Comment No. 3

3. The 1974 ambient air quality data from the Glen Burnie station should be considered to replace the 1973 data. 1974 data shows higher readings for carbon monoxide and suspended particulate as shown below. Comment No. 4

Carbon Monoxide (ppm)	1973	1974
1 hour maximum	12.3	28.7
8 hour maximum	7.9	14.8

Suspended Particulate (ug/m^3)

	1973	1974
Annual Average (Arith. Mean)	77	82
Maximum 24-hour	197	196

Thus, using 1974 CO data would increase background data and might result in Alternate 4 giving an eight-hour CO worst case condition greater than the National Standard of 9 ppm.

We thank you for this opportunity to offer our comments.

Sincerely yours,

Donald H. Noren, Director
Environmental Health Administration

DHN:bac

Attachment

cc: Mr. Ferreri
Mr. Clise

Response to Comments by the
Maryland Department of Health & Mental Hygiene

- - - - - - - - -

Comment No. 1 - This project completion of the Arundel Expressway from Maryland Route 648 to Maryland Route 100 has been proposed on its own merits in order to make the previously constructed portion of the expressway a usable facility. The construction of this project would not impose any determining factors regarding the location of future improvements in the Ritchie Highway Corridor, or limit the alternatives under consideration in the Baltimore-Annapolis Transportation Corridor Study. A general discussion of alternatives for the completion of the Arundel Expressway, south of Maryland Route 100 to U. S. Route 50/301, as proposed in the BATC Study, is included in this Final Statement on page B-3.

Comment No. 2 - The references to 'annual geometric mean', as noted in the comment, have been deleted in this statement.

Comment No. 3 - The State of Maryland Ambient Air Quality Standards are compared with the results of the analysis on Page C-37 and C-38.

Comment No. 4 - The carbon monoxide readings recorded at the Glen Burnie station during the first six months of 1976 indicated a maximum eight-hour level of 6.1 ppm and a maximum one-hour average carbon monoxide reading of 16.6 ppm. Since neither value would change the results of the analysis, the 1976 data confirms the validity of the 1973 data used as background for CO evaluations.

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MARVIN MANDEL
GOVERNOR

MARYLAND
DEPARTMENT OF STATE PLANNING
301 WEST PRESTON STREET
BALTIMORE, MARYLAND 21201
TELEPHONE: 301-383-2451

1976

VLADIMIR A. WAHBE
SECRETARY OF STATE PLANNING
MADELINE L. BOUCHER
DEPUTY SECRETARY

June 24, 1976

MEMORANDUM

TO: Robert Hajzyk, Director
Office of Planning and Preliminary Engineering

FROM: Warren D. Hodges
Chief, State Clearinghouse

RE: State Clearinghouse Control Number: 76-4-848
Draft EIS - Arundel Expressway from Md. Rt. 648
to Md. Rt. 100

The State Clearinghouse has received further comments from the Department of Natural Resources subsequent to our close-out review letter on the reference project. These comments are forwarded for your information and use.

Encl.
cc: Henry Silbermann - DNR
sw

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Maryland Department of State Planning
State Office Building
301 West Preston Street
Baltimore, Maryland 21201

Date: June 1, 1976

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT REVIEW

Applicant: State Highway Administration

Project: Draft EIS - Arundel Expressway from Md. Rt. 648 to Rt. 100

State Clearinghouse Control Number: 76-4-848

We have reviewed the above draft environmental impact statement and our comments as to the adequacy of treatment of physical, ecological, and sociological effects of concern are shown below:

	Check (X) for each item	
	None	Comment enclosed
1. Additional specific effects which should be assessed:		XX
2. Additional alternatives which should be considered:		
3. Better or more appropriate measures and standards which should be used to evaluate environmental effects:		
4. Additional control measures which should be applied to reduce adverse environmental effects or to avoid or minimize the irreversible or irretrievable commitment of resources:		
5. Our assessment of how serious the environmental damage from this project might be, using the best alternative and control measures:		
6. We identify issues which require further discussion of resolution as shown:		

Signature Kenneth C. Pickett

Title Chief, Planning Division

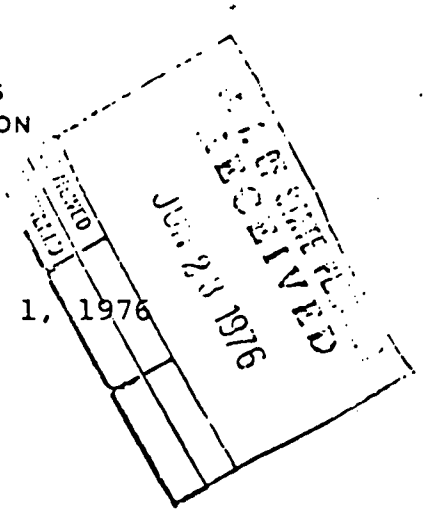
Agency WPA

Ronald W. Pickett

HERBERT M. SACHS
DIRECTOR

160

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
WATER RESOURCES ADMINISTRATION
TAWES STATE OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401



June 1, 1976

MEMORANDUM

TO: Joseph Knapp

FROM: Kenneth E. McElroy, Jr.

SUBJECT: SCH Project 76-4-848, Draft EIS - Arundel Expressway from Md. Rt. 648 to Rt. 100

This project is consistent with the plans, programs and objectives of the Department of Natural Resources. However, the additional comments are brought to the attention of the applicant for further consideration.

The Draft EIS is deficient in that it does not mention effects of the proposal's implementation upon fish and other aquatic life. This oversight occurs despite the fact that section C-9 (impacts: general ecology) states that approximately five acres of wetlands would be required for construction. Comment No. 1

The draft statement also fails to investigate the effects upon water quality and subsequent effects upon the aquatic community which will be posed by the increasing area development. This oversight occurs despite the presence of the correctly made conclusions (p. C-4, section C-2) as to the connections between the improvement of transportation capacity and increased population and employment. Comment No. 2

The Draft EIS cites regional planning council growth projections for northern Anne Arundel County that range from 24 to 137% increases for different subsections (p. C-5). On p. A-17, it is noted that "...the wetlands near the headwaters of the creek have been adversely affected by the surrounding developments. These developments have contributed large amounts of sediment to the creek. This sediment

has filled in the creek channel to the point where it is hardly navigable to the smallest of boats. The sediment has also degraded the appearance of the creek. The creek is usually very turbid.

The Draft EIS takes no cognizance of the relationship between its proposed action and the logically foreseeable consequences of actions which tend to increase population density in the area. This is the primary deficiency, and the one which most detracts from its usefulness as a decision-making tool.

Wetland Construction Permit should be obtained for crossing at Marley Neck.

Ongoing program between WRA and SHA provides for review and approval of this project for sediment control.

KEM/mm

Response to Comments by the
Maryland Department of Natural Resources

Comment No. 1 - The effect of the project's implementation on fish and other aquatic life has been included in this Final Statement on page C-14.

Comment No. 2 - The secondary impacts on water quality and aquatic life as a result of the anticipated increase in development is discussed on page C-2 in this Final Statement.

Comment No. 3 - A 'wetland construction permit' will be obtained for the crossing at Marley Creek.

Comment No. 4 - It is so noted that an ongoing program between WRA and SHA provides for the review and approval of this project for sediment control.

No. 3163

REGIONAL PLANNING COUNCIL
701 St. Paul Street
Baltimore, Maryland 21202

R & P File No. 76-267
B & P Committee June 4, 1976

DLC
JLE 10/5/60

REVIEW AND REFERRAL MEMORANDUM

PROJECT IDENTIFICATION

Jurisdiction: Anne Arundel County

Project Name: Draft Environmental Impact Statement for Arundel Expressway from Md. Rt. 648 to Md. Rt. 100

Applicant: Maryland Department of Transportation/State Highway Administration

Cost: $_____total, $_____federal, $_____state, $_____local

Grant Program:

COMMENTS

This project has been reviewed and found to be not inconsistent with local and metropolitan plans, policies and programs. No intergovernmental issues have been raised.

This is a Draft Environmental Impact Statement for the construction of the Arundel Expressway on a new location from Old Annapolis Road (Md. Rt. 648) in Glen Burnie southerly to Md. Rt. 100, a distance of approximately 2.1 miles. The project is proposed as a four-lane dual expressway with complete control of access and a design speed of 70 miles per hour.

The following impacts are noted:

- The impacts would be minor with reference to increased traffic on the Baltimore Beltway, Md. Rt. 100 and other County streets.
- The project will necessitate the displacement of seven families, or an estimated 28 persons.
- Vehicle emission levels resulting from the project would be below Federal Ambient Air Quality standards.
- Noise levels will be increased at developed areas adjacent to the project.
- Suitable landscaping to minimize the visual impact of the highway on adjacent communities will be provided where possible.

June 18, 1976
Date

Authorized Representative of Clearinghouse
Robert N. Young
Executive Director

RECEIVED
MAR 3 1978
PROJECT PLANNING

Rummel, Klepper & Kahl

164

DATE: May 5, 1976

FROM: Mr. Larry Reich, Director
Department of Planning
222 E. Saratoga Street
Baltimore, Maryland 21202

B & P Meeting: June 1, 1976
R P C Meeting: June 10, 1976

SUBJECT: REFERRAL COORDINATOR REVIEW SUMMARY

Applicant: Maryland Department of Transportation/State Highway Administration

Project: Draft Environmental Impact Statement for Arundel Expressway from Md. Rt. 648 to Md. Rt. 100

R & R File No.: 76-267

Comments Should Be Returned By: May 19, 1976

This project has been forwarded to the following local departments or agencies (Check appropriate blanks and attach comments from the reviewing agencies):

_____Planning _____Public Works

_____Environmental Protection _____Human Relations

_____Others (specify)_____

JURISDICTION'S COMMENTS

Check One

✓ This jurisdiction has no comments on this particular project.

_____This project is consistent with or contributes to the fulfillment of local comprehensive plans, goals or objectives.

_____This project raises problems concerning incompatibility with local plans, or intergovernmental, environmental or civil rights issues and a meeting with the applicant is requested (attach comments).

_____This project is generally consistent with local plans, but qualifying comments are necessary (attach comments).

RETURN TO:
Coordinator, Metropolitan Clearinghouse
Regional Planning Council
701 St. Paul Street
Baltimore, Maryland 21202

Signature _____

Title _____

Agency _____

Date _____

RECEIVED
MAR 9 1978
RUMMEL, Klepper & KAHL

J. COMMENTS RECEIVED AT THE COMBINED LOCATION/DESIGN PUBLIC HEARING:

The Public Hearing for the proposed extension of the Arundel Expressway (Md. Route 10) from Maryland Route 648 (Old Annapolis Road) to Maryland Route 100, was held at the Glen Burnie Senior High School on Thursday, June 3, 1976. The Public Hearing was publicized on eight radio stations and in three local newspapers. In keeping with Federal Law and Maryland Department of Transportation procedures, a Public Notice announcing the date and subject of the Public Hearing was published in the News-American, Anne Arundel Times and Maryland Gazette, a minimum of 30 days prior to the Hearing, and a second time between 5 and 12 days prior to the Hearing.

The agenda for the Public Hearing covered the following information:

1. A description of the highway alternatives under consideration.

2. A discussion of the land acquisition and relocation assistance programs.

3. A presentation of the environmental considerations.

4. A review of the State Highway Administration's nondiscrimination and equal opportunity policies with respect to highway projects.

5. Following these presentations, the public was invited to comment in accordance with hearing guidelines.

All Public Hearing Testimony, including the official project presentation and the testimony of each individual speaking at the hearings, was recorded by public stenographer and tape recorder. The testimony was transcribed and is available for inspection at the State Highway Administration (SHA) Baltimore Office, 300 W. Preston St., Baltimore, Md.; SHA's District #5 Right-of-Way Office, 2200 Sommerville Rd., Parole, Md.; SHA's Glen Burnie Maintenance Shop, Md. Route 3, Glen Burnie, Md.; and SHA's District #5 office, Md. Route 231 at the Benedict Bridge, Calvert County, Md. Written statements and other exhibits in lieu of, or in addition to, the oral testimony at the Public Hearing were received by the Director, Office of Planning & Preliminary Engineering until June 21, 1976 and incorporated into the official record.

The Public Hearing testimony, both oral and written, has been carefully reviewed and, where necessary, additional studies were made to properly evaluate the comments. This section of the Final Environmental Statement summarizes the major concerns expressed in the testimony along with a response to these concerns.

Comment .... Why was Alternate 2 reconsidered at the Public Hearing without advance public notice?

Response .... Alternate 4 would require all traffic exchange between the Ritchie Highway and the proposed Arundel Expressway to occur on the local road system; i.e., Mountain Road and Jumpers Hole Road. This would result in adverse traffic impacts in the Southdale Shopping area and the Woodholme residential community. Alternate 2 was included for consideration at the Public Hearing in order to permit the exchange of traffic between the Ritchie Highway and the Arundel Expressway to occur on existing Maryland Route 100 and thereby avoid these adverse community impacts. The decision to reconsider Alternate 2 at this Public Hearing was made after the Draft Environmental Statement had been circulated, and lack of time prevented advance public notice regarding its reconsideration. Opportunity for comment on Alternate No. 2 was available to the public, both orally at the Public Hearing, and in writing for the prescribed period following the Public Hearing.

* * * * * * * * * * * * *

Comment .... Residents of the area expressed concern over the present silted condition of Marley Creek and suggested that the State Highway Administration should have the Creek dredged out.

Response .... This condition has occurred over a number of years and is due in part to sedimentation entering the Creek as a result of subdivision construction in the upstream watershed, and from any sewage overflow from the treatment plant at the end of Holloway Road. The SHA has no plans to dredge Marley Creek, and it was suggested that the residents contact Anne Arundel County to see if they have the authority or any proposals to clean out the Creek.

* * * * * * * * * * * * *

Comment .... Can the right-of-way width be reduced, expressway be depressed, and trees be left to minimize impacts to adjacent neighborhoods?

Response .... The right-of-way width cannot be reduced without adversely affecting the safety of this facility. Thirty-foot wide vehicle recovery areas to the right of each roadway are necessary to reduce the severity of accidents. The ultimate 50-foot median width is less than current recommendations for this type of facility, but is the same as the median width of the completed expressway to the north.

In setting grades, both cost and visual impacts have been considered. The project, as described in this report, is generally depressed or at-grade through residential areas, and is believed to be the best compromise between visual acceptability and cost.

Trees within 30 feet of the roadways must be removed in order to provide an effective recovery area. Any trees located in the right-of-way, but beyond the limit of construction, will be saved.

* * * * * * * * * * * * *

Comment .... Arundel Expressway connections to Ritchie Highway south of Md. 100 were opposed because of the overcrowded traffic conditions on the existing road in the vicinity of Pasadena.

Response .... Proposals for improving traffic conditions on Ritchie Highway through the Pasadena area and to the south are under consideration in the Baltimore-Annapolis Transportation Corridor Study.

* * * * * * * * * * * * *

168

Comment .... Super highways kill land and people.

Response .... The Arundel Expressway is consistent with all present and planned land usage in the study area, and has been considered a necessary part of the County's transportation network since its first comprehensive planning report in 1968.

Statistical studies have shown that accident rates on controlled access freeways, such as the proposed Arundel Expressway, are significantly lower than on other highways, with only partial or no control of access.

* * * * * * * * * * * * *

Comment .... Can a pedestrian crossing be constructed over the expressway to replace a dirt path presently connecting Gerard Plaza homes and the Marley Junior High School?

Response .... A study was made for a pedestrian crossing beginning on the east side of Phelps Ave., opposite Dixon Drive, and extending easterly over the Expressway via a bridge. East of the Expressway, two locations were studied to connect this access to existing streets. At the present time, all pupils in the Gerard Plaza Community live within the maximum walking distance limits of 1 mile to elementary schools and $1\frac{1}{2}$ miles to junior high schools. Based on the current enrollment of 19 pupils, it is not considered feasible to construct this pedestrian access at a cost of over one quarter of a million dollars ($270,000) as a convenience to reduce the walking distance.

* * * * * * * * * * * * *

Comment .... The decision for this section of Arundel Expressway should be made by the BATC Study.

Response .... The extension of the Expressway to Md. 100 is needed to complete a usable highway facility between the Baltimore Beltway on the north and Md. Route 100 on the south. As such, the project stands on its own and has been considered on its own merits. Improvements in the Ritchie Highway Corridor south of Md. 100 are being evaluated in the on-going BATC Study.

* * * * * * * * * * * * *

Comment .... What happened to the right-of-way previously purchased for the Arundel Expressway?

Response .... Right-of-way previously purchased for this project is still owned by the State and is available for construction of the Expressway. The State Highway Administration never sells land previously acquired for highway use until it is clearly demonstrated that the land is no longer required for highway or related purposes. If this condition arises, the SHA is required by law to first offer to resell the land back to the original owner.

* * * * * * * * * * * * *

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Seven comments supporting the no-build alternative, and three comments supporting the build alternative were given.

Other comments, which have been discussed in this Statement, are listed below:

- Location and type of noise abatement measures (see page C-21).
- The relationship of this project to the BATC Study (see page B-3).
- The wetlands along Marley Creek should be preserved (see page C-14).
- The project will divide the Gerard Plaza community (see page C-9).
- Right-of-way and construction schedule (see page A-9).

K. COORDINATION/CORRESPONDENCE:

C
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P
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Anne Arundel County Public Schools

June 20, 1974

Mr. Eugene T. Camponeschi, Chief
Bureau of Project Planning
Maryland Department of Transportation
State Highway Administration
6601 Ritchie Highway
Glen Burnie, Maryland

Dear Sir:

Mr. Hartmann, Transportation Specialist with the Maryland State Department of Education, visited our office on June 19 relative to your letter of June 12 to Dr. James Sensenbaugh. He asked that we forward our comments to you.

After reviewing the three proposed plans for the Arundel Expressway, we have only one concern with alternate plans 1 and 2. That concern is how is the expressway extension going to affect the Marley Glen School for handicapped pupils? Marley Glen is not shown on the map, however, it is located immediately to the rear of Marley Elementary School. The driveways enter onto Scott Avenue. Cooper Road is our main access road to Scott Avenue and the school. We need this access as it is close to Rt. 2.

See page C-7

Assuming the new expressway is going to be elevated over Marley Station Road, what protection is going to be afforded pupils at either school site from objects being thrown from cars passing overhead? There is a large play area between both schools and it appears the northbound lanes will pass near or over that play area.

See page C-8

If alternate plan 3 is followed, we may experience an increase in the amount of traffic along Rt. 648 which could require more signalization and additional crossing guards especially in the area of Marley Junior High. Also, in the area near Glen Burnie High School, which is already congested traffic-wise may become a hazard for pedestrian and vehicular traffic alike.

Shown on your map was the route for the Rapid Transit system. We feel this is going to affect us more than the Arundel Expressway extension. We would appreciate any information available as to the plans and time table for its construction.

See page B-4

Very truly yours,

/signed/ William P. Kerns
Supervisor of Transportation

WPK:rb
cc: Mr. Bennie Hartmann

173

STATE OF MARYLAND
PUBLIC SCHOOL CONSTRUCTION [illegible]
SUITE 600, INTERNATIONAL TOWER BUILDING
6510 EXECUTIVE BOULEVARD
LINTHICUM, MARYLAND 21090
301 - 796 - 4120

MARVIN MANDEL
GOVERNOR

[illegible]
CONSULTANT
ALFORD R. CAREY JR.
EXECUTIVE DIRECTOR

DR. JAMES A. SENSENBAUGH
CHAIRMAN

INTERAGENCY COMMITTEE FOR STATE PUBLIC SCHOOL CONSTRUCTION

June 21, 1974

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

RE: Contract No. AA 572-571
Arundel Expressway
Maryland Rte. 648 to Maryland Rte. 100
and Alternate Connections to Maryland
Rte. 2

Dear Mr. Camponeschi:

Your letter of June 12, 1974, regarding the subject contract which was sent to Dr. James A. Sensenbaugh, Director of the State Department of Education, has been referred to the Interagency Committee for State Public School Construction for comment.

After a staff review of the proposed project, we have concluded that we would not be opposed to its construction. However, since the proposed roadway is indicated as passing immediately adjacent to the Marley Junior High School, the Marley Glen Special Education School, and the Marley Elementary School we would encourage the inclusion with this project of adequate screening and sound buffer in the vicinity of these three schools.

See page C-21

We would also like to suggest, if you have not already done so, that you solicit comments from the Anne Arundel County Board of Education.

Sincerely,

Alford R. Carey, Jr.
Executive Director

ARC/BF/jc

CC: Dr. James A. Sensenbaugh
Dr. Edward J. Anderson

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WESTERN REGION

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Porter

State of Maryland

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Hoel Solomon, M.D., Ph.D., Secretary

ENVIRONMENTAL HEALTH ADMINISTRATION

610 N. HOWARD STREET • BALTIMORE, MARYLAND 21201 • Area Code 301 • 383-2779

June 28, 1974

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

Dear Mr. Camponeschi:

RE: Contract No. AA 572-571 Arundel Expressway from Md. Rte. 648 to Md. Rte. 100

Your letter of June 12, 1974 to Dr. Solomon concerning the Arundel Expressway has been referred to the Bureau of Air Quality Control for comment. As you know, we are very interested in the Baltimore-Annapolis corridor and particularly, the Arundel Expressway. We hope to be actively involved in the Baltimore-Annapolis Corridor Transportation Study.

It was our understanding that action on the Arundel Expressway would be postponed pending results from the corridor study. We realize that only the portion of the expressway south of Maryland Route 100 is formally a part of the study. However, it would seem reasonable that the choice of an alternate for this project would be affected by the study findings. For example, if a transit option is chosen south of Maryland Route 100, the interchange design for the above project may need to be modified.

See page A-1

Another consideration is Maryland Route 3. The Maryland Department of Transportation has requested designation of Maryland Route 3 as an interstate route. As such, it will be reconstructed as a six-lane expressway. What impact does this decision have on the original traffic projections for the Arundel Expressway? These questions should be addressed in the Environmental Impact Statement in addition to the air quality impact assessment.

See Response on next page

Please keep this office informed of the progress of the Environmental Impact Statement and public hearings. Thank you for this opportunity to offer our comments.

Sincerely yours,

George P. Ferreri

George P. Ferreri, Director
Bureau of Air Quality Control

GPF:AMD:bac

cc: Anne Arundel Co. Health Dept.

Response to Comment:

The proposed interstate route between Baltimore and Annapolis will be located either in the Md. Route 2 area or Md. Route 3 area. This decision will be reached as a result of the BATC Study. Until that decision has been reached, traffic projections for the Arundel Expressway will vary with each alternative under consideration, and impacts will be addressed in the DEIS for the BATCS.

United States Department of the Interior
BUREAU OF OUTDOOR RECREATION
NORTHEAST REGIONAL OFFICE
Federal Building - Room 9310
600 ARCH STREET
Philadelphia, Pennsylvania 19106

IN REPLY REFER TO:

July 1, 1974

Mr. Eugene T. Camponeschi, Chief
Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201

Dear Mr. Camponeschi:

This is in response to your request for technical assistance on the Arundel Expressway from Maryland Route 648 at Glen Burnie through Maryland Route 100 with a connection to Maryland Route 2 north of Jumpers Hole Road.

As you may know, section 4(f) of the Department of Transportation Act of 1968, as amended, has been found applicable to some school grounds if the grounds affected by the highway have recreation facilities open to the public. If, in this case, such grounds are affected by the above project, then we suggest a 4(f) statement be prepared in addition to the environmental statement.

See page C-8

If we may be of any further service in evaluating the impacts of this project on publicly owned recreation lands, please contact us. Our staff level contact for this project will be Mr. Edward (Ted) Davis; he may be reached at telephone number 215/597-7383.

The above is provided on a technical assistance basis and does not represent our views on an environmental and/or 4(f) statement.

Sincerely yours,

ANTHONY M. CORBISIERO
Deputy Regional Director

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

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EASTERN REGION
WESTERN REGION
EUGENE T. CAMPONESCHI

177

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Post Office and Courthouse Building
Boston, Massachusetts 02109

JUL 10 1974

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

Dear Mr. Camponeschi:

This responds to your letter of June 12, 1974 soliciting the views of the Department of the Interior relative to a study of the Arundel Expressway as outlined in the description of the project.

The following comments reflect the views of the Fish and Wildlife Service only. They are provided on a technical assistance basis and are not being made on a draft environmental statement.

1. Identify fish and wildlife species inhabiting the proposed alignment and/or all alternate alignments as well as the types of habitat for each species.

see page A-13

2. Identify and list number of acres of aquatic and natural environments such as streams, farmlands, woodlots, and wetlands that will be destroyed or altered, either directly or indirectly as a result of road construction.

see page C-13

3. Consideration should be given to measures that would minimize damage to natural environments during construction such as erosion, sedimentation, contamination of public water supply systems and effects on ground water and flooding.

see page C-16 & C-1

4. Include revegetation plans for project affected areas.

see page C-18

5. U. S. Coast Guard and/or Corps of Engineers permits are required on bridge construction over navigable waters. Our Division of River Basin Studies will furnish comments on fish and wildlife values

related to any proposed modifications of natural wetland ecosystems associated with the construction proposal.

6. Coordinate the proposed studies with the Maryland Department of Natural Resources.

The opportunity to present our views on the subject project is appreciated.

Sincerely yours,

Richard E. Griffith

Regional Director

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DLC

Anne Arundel County

Office of Planning & Zoning

Annapolis, Maryland 21404

July 19, 1974

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

Re: Contract No. AA572-571
Arundel Expressway

Dear Mr. Camponeschi:

In response to your letter of June 12, and the consultant's presentation, we have reviewed the alternatives with respect to social, economic, and environmental aspects.

We found Alternate No. 1 to be extremely disruptive to the Pasadena community by taking existing homes and businesses and by eliminating access to Ritchie Highway on the west side for three quarters of a mile. It also cuts off Hastings Lane (shown as Edwards Drive on your map) which is the only access road for approximately 80 homes since Maryland Avenue does not exist between Drum Avenue S. and Kent Avenue. It is not clear whether or not a long strip of land would be left between this new southbound lane and Ritchie Highway or if it would be acquired.

Alternate No. 1 also creates a land use problem by encircling and isolating about 240 acres between Md. Routes 2 and 100. The route divides an area that is an established low density residential neighborhood, separating these homes in the Elvaton Road area from the potential stream valley park connection to Lake Waterford Park. The enclosure of this 240 acre cell containing a mixture of commercial, residential and considerable vacant land would generate pressures for further commercialization and destruction of residential character. This would be contrary to the county's planning policies toward limiting strip commercial growth.

We recognize the possible functional advantages of Alternate No. 1 in terms of traffic flow by its circumvention of the Jumpers Hole Road intersection where commercial activities conflict with through traffic movements. However, for the reasons described above, we cannot support Alternate No. 1 as proposed.

Alternate No. 2 would appear to be the least costly and would avoid most of the objectionable features of Alternate No. 1 although it would affect several homes fronting on Ritchie Highway. In terms of land use impact, this alternate is preferable to Alternate 1. This scheme does not appear to conform to 70

miles per hour design criteria as you state in your letter, but is more accurately described as a large ramp configuration.

We suggest that possible consideration might be given to a modified Alternate No. 2. One possible solution would be similar to the attached sketch map entitled Alternate 2A. This scheme provides for a direct southbound movement and an improved ramp connection to Md. Route 100.

The obvious difference in this scheme is that the major emphasis is placed on the Arundel Freeway movement and not on Route 100. The reason for this emphasis is to accommodate the projected traffic which will flow principally between Md. Rt. 2 and the Arundel Freeway. According to the traffic figures presented by your consultant, this is the major movement while Rt. 100 traffic is not shown to be affected significantly.

This scheme would be compatible with the upgrading of Route 2 from this point south in lieu of the further extension of the Arundel Freeway on new location. It would also decrease the amount of land affected in the Pinewood Village housing project, which is now under design.

From a traffic flow standpoint we believe that 2A offers a solution to the problem that the proposed Alternate 2 may present. An additional feature that it accomplishes is the improved flow from northbound Route 2 to westbound Route 100. This is very important in coordinating a safe design in conjunction with the transit station access by eliminating the existing unsafe weaving and merging condition.

In order to avoid traffic conflicts, left turns could be prohibited southbound at Jumpers Hole Road and the movement accommodated by a right turn channelization loop around the gas station. This should be a low speed design and need not acquire the enclosed land nor restrict access to the gas station. This could help to increase the southbound road capacity at this point where backups occur in the P.M. peak period.

We recommend Alternate 2A as the most preferable for all of the reasons described above. We also considered a minor modified scheme 2-B which provides the direct southbound movement but lacks all of the other advantages of 2-A.

In the event that Alternates No. 2A and 2B are not feasible, we would suggest, as a third opportunity, a modified Alternate No. 1-A. This scheme would minimize most of the objectionable features of the presently proposed Alternate No. 1. By moving the ramp connections further north, we reduce the enclosed area to about 145 acres rather than 240. We also place the road between existing residential and commercial uses forming a buffer to preserve the residential character on the southeast side.

Bringing the Arundel Freeway lanes into the center rather than the sides of Route 2 will avoid the taking of many existing homes and businesses and would permit continued accessibility through the Pasadena community. This design

also provides for an adequate weaving distance along Md. Route 2 approaching Pasadena Road to accommodate left turn movements. Route 2 could be widened to eight lanes in this area for easy transition. The northbound lane of Route 2 would have to be relocated to accommodate the Arundel Freeway lanes within the median. 1-A is a shorter route and utilizes less right of way than the proposed Alternate No. 1, in addition to its less disruptive effects on the community.

Another benefit of the 1-A plan is that it will allow southbound ramp connections to Route 100. Even though projections may not indicate a heavy movement in this direction, we believe that it would be a serious error not to provide for it while the opportunity exists.

We cannot seriously consider Alternate No. 3, the do-nothing alternate, as a viable choice. The resulting traffic impact on the existing road network would result in severe congestion and necessitate many widening projects which would affect adjacent property owners along Md. Rt. 648 and other roads in the area. Alt. 3 would also limit the effectiveness of that portion of the Arundel Freeway which is now built or under construction resulting in a waste of the public investment. Heavy volumes of traffic on local roads would have an eroding effect on the residential desirability of adjacent neighborhoods.

In Summary we submit that Alternates 1-A, 2-A and 2-B be considered in light of our environmental, social, and economic concerns as well as for their merits in design. If you would like to arrange a meeting to discuss any of the details, please do not hesitate to call.

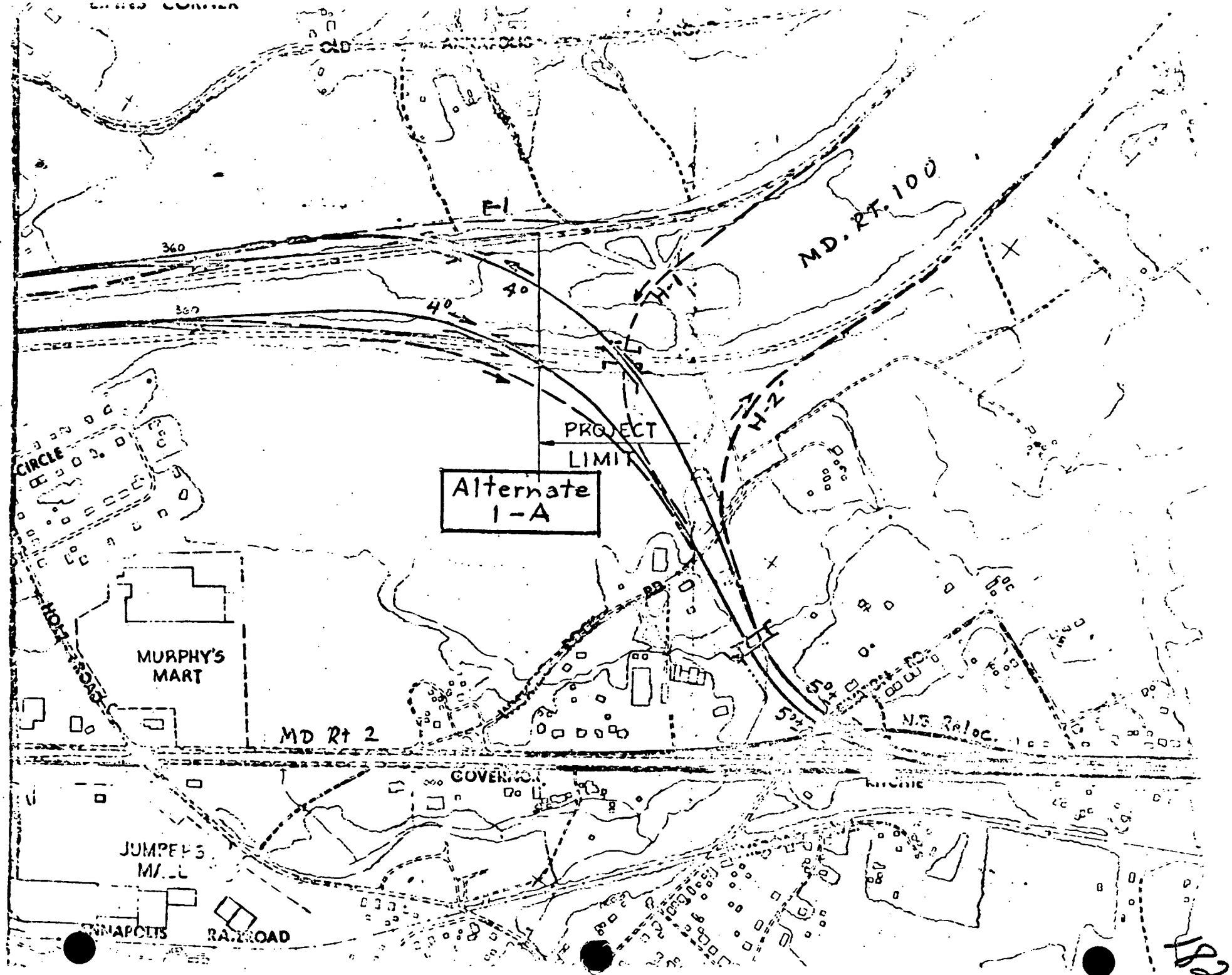
Sincerely yours,

Marion J. McCoy
Planning and Zoning Officer

MJM-RD/bac

cc: George Neimeyer
Eugene Harvey
Dan Tsamouras
Ray Streib

Response to Anne Arundel County's concerns with Alternate Nos. 1 and 2 are discussed on page A-1 of this FEIS.


E-1
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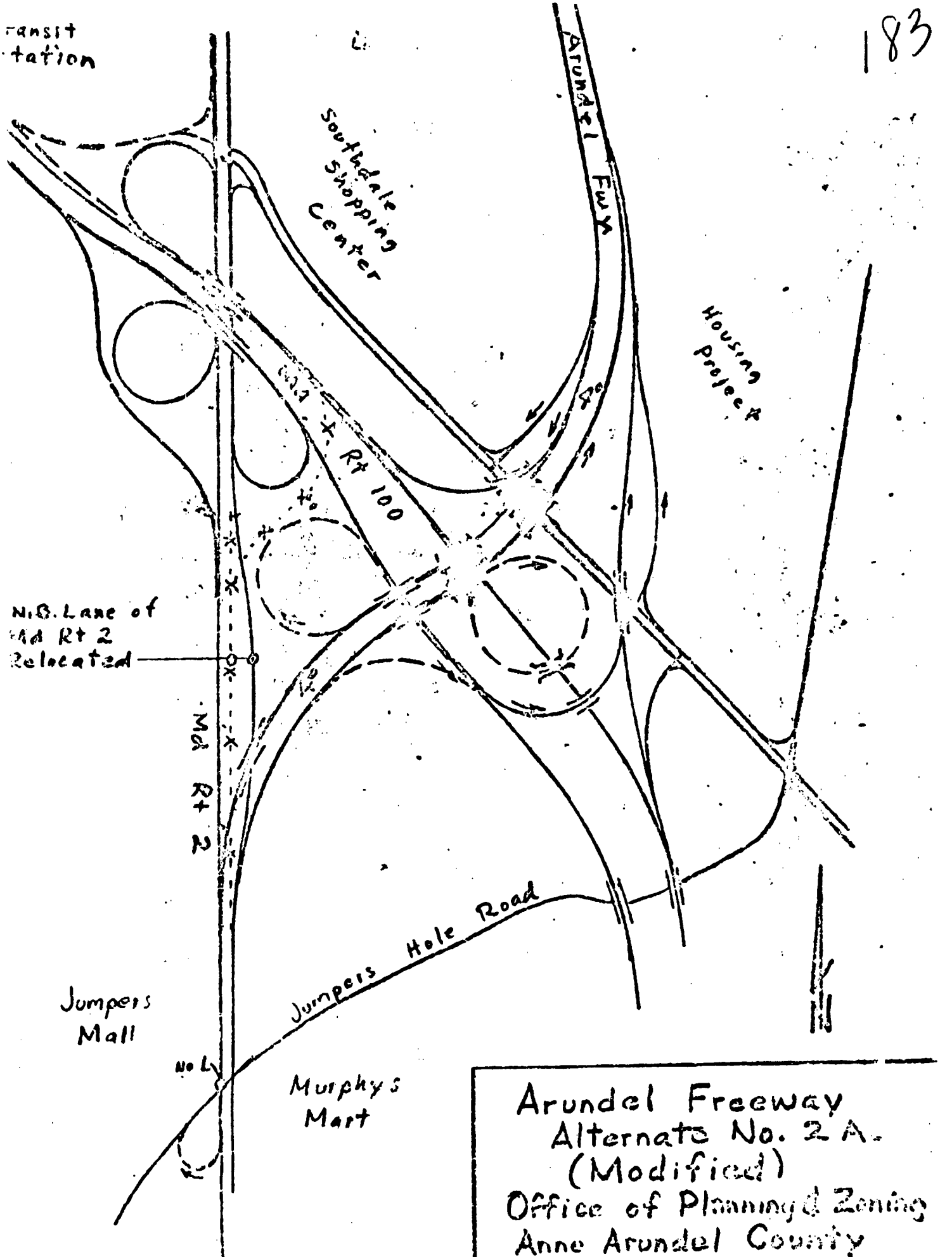
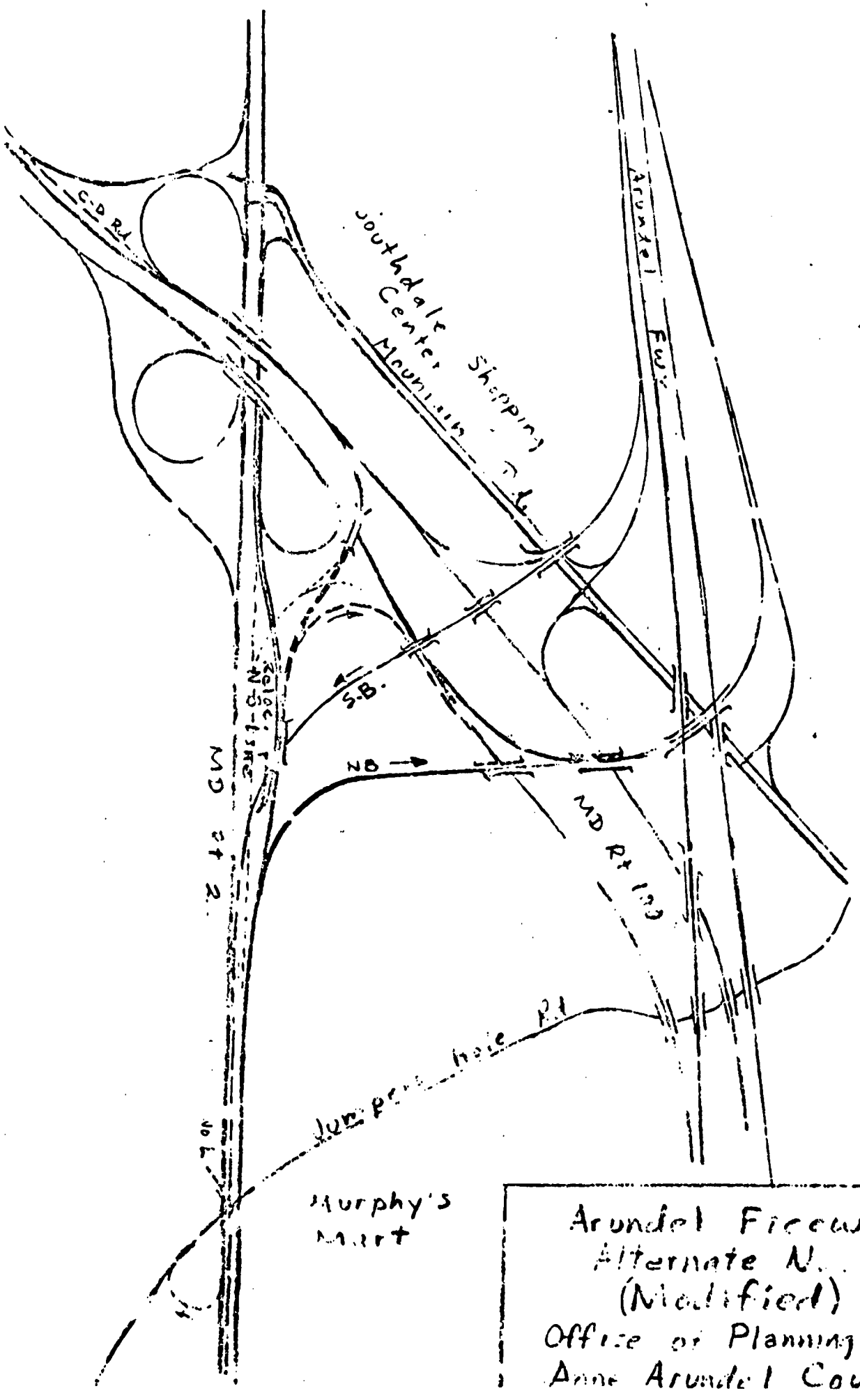


Arundel Freeway
Alternate No. 2 A.
(Modified)
Office of Planning & Zoning
Anne Arundel County



Arundel Freeway
Alternate No. 2B
(Modified)
Office of Planning & Zoning
Anne Arundel County

FILE
IN HIS
CORRESPONDENCE

Maryland Historical Trust
2525 Riva Road Annapolis Maryland 21401
(301) 267-5087

1975 JAN 27 AM 11 32 35

January 23, 1975

ADMINISTRATION
PROJECT PLANNING

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

RE: AA 572-571
Arundel Expressway

Dear Mr. Camponeschi:

Enclosed is a copy of a portion of your study for the Arundel Expressway from Maryland Route 648 to Maryland Route 100 in Anne Arundel County. The four sites shown are listed in our records as being significant historical sites. It is felt that none of your proposals as shown would adversely affect these properties.

However, the Robinson House, AA-347, is particularly significant of the group. It is a fine example of early Maryland domestic architecture, having been built in the early 1700's of field-stone with a gambrel roof. Of all the sites, this one is closest to the proposed expressway. The Trust requests that you give due consideration to this property, so that the proposed route will be placed away from it as far as possible.

Thank you for your help.

Sincerely,

George J. Andreve

George J. Andreve
Assistant Architectural
Historian,
Historic Sites Surveyor

GJA:sh

Enclosure

cc R.K.K. Dave Clawson
1-30-75

✓ CAMPONESCHI	HELWIG	JANATA
DORSEY	[illegible]	ACKLER
ECKHARDT	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

ACTION ✓ INFO COPIES

REMARKS:

Historical and Cultural Administration
Department of Economic and Community Development

Maryland Department of Transportation
State Highway Administration

Harry R. Hughes
Secretary
Bernard M. Evans
Administrator

18e

April 5, 1977

RE: Contract No. AA 572-000-571
F. A. P. No. U 903-1 (7)
Arundel Expressway -
Maryland Route 648 to
Maryland Route 100

DLC
JLB
AWN
FILE
170-5

Mr. Bill Landry
406 Norman Avenue
Glen Burnie, MD 21061

Dear Mr. Landry:

This is in reference to your statement given at a public hearing held on June 3, 1976 requesting that the State Highway Administration consider a pedestrian bridge from Gerald Plaza to Marley Junior High School.

Prior to determining the location of the pedestrian bridge we would like to meet with you for an on sight investigation to pin point the area most frequently used. This will enable the State Highway Administration to properly locate the pedestrian bridge for maximum use.

It is requested that you contact the writer by phone and schedule a field review at your convenience. We would like to accomplish this on or before April 29, 1977.

Your cooperation is appreciated and I want to thank you for your participation and representing your community association at the public hearing.

Very truly yours,

Eugene T. Camponeschi, Chief
Bureau of Project Planning

by: Foster T. Hoffman

Foster T. Hoffman
Project Manager
Bureau of Project Planning
383-4331

ETC:FTH:ss

cc: Mr. Arnold L. Gardner
Mr. John L. Bell
Mr. Reuben S. Thomas

RECEIVED
APR 11 1977
RUMMEL, KLEPPER & KAHL

P.O. Box 717 / 300 West Preston Street Baltimore, Maryland 21203

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Maryland Department of Transportation
State Highway Administration

Hermann K. Intemann
Secretary
Bernard M. Evans
Administrator

July 12, 1977

RE: Contract No. AA 572-000-571
F.A.P. No. U 903-1 (7)
Arundel Expressway
Maryland Route 648 to
Maryland Route 100

DLC
JEB-TWS
AM

Mr. William Kerns
Supervisor of Transportation
Anne Arundel County, Public Schools
2644 Riva Road
Annapolis, Maryland 21401

Dear Mr. Kerns:

As a result of our conference with you on June 29, 1977, we request your review and comments on the need for a pedestrian bridge over the Arundel Expressway to provide access to Marley Junior High School.

According to citizen testimony at the public hearing on June 3, 1976, the Arundel Expressway will cut off a walking path through the woods that children presently use going to and from Marley Junior High School.

The enclosed 50 scale plan shows the proposed construction of the Arundel Expressway project in the vicinity of Marley Station Road between Maryland Route 2 and Maryland Route 648. The location for the pedestrian bridge shown on the plan is an extension of Dixon Drive easterly over the expressway to connect with Gerard Drive or Marley Station Road in the vicinity of Marley Elementary School. The purpose of this bridge is to provide a means by which children living in the Gerard Plaza community could continue to walk to Marley Junior High School after the Arundel Expressway is built.

The proposed construction of the Arunel Expressway project includes a portion of Marley Station Road to be rebuilt over the freeway as a fifty (50) foot wide curbed street from Allan Avenue to Marley Elementary School. A four (4) foot wide sidewalk will be constructed on both sides of Marley Station Road for the entire length of the proposed relocation.

If you have any questions concerning this request, please contact Mr. Foster T. Hoffman, Project Manager, telephone 383-4331.

We will appreciate your review and comments by letter at your earliest convenience.

Very truly yours,

Eugene T. Camponeschi

Eugene T. Camponeschi, Chief
Bureau of Project Planning

ETC:FTH:mca
Attachment
cc: Mr. J. Weinhold
Mr. J. Bell
Mr. W. Lins, Jr.

198

ANNE ARUNDEL COUNTY PUBLIC SCHOOLS

Transportation Division
2644 Riva Road
Annapolis, Maryland 21401
Telephone: 301-224-0113

July 22, 1977

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

RE: Contract No. AA 572-000-571
F.A.P. No. U 903-1 (7)
Arundel Expressway
Maryland Route 648 to
Maryland Route 100

Dear Mr. Camponeschi:

We have reviewed the plans for the routing of the Arundel Expressway and upgrading Marley Station Road as well as reviewed the need for a pedestrian bridge as indicated on those plans. If the State follows through with its present proposed construction plans as outlined in paragraph #4 of your letter (July 12, 1977), we see no need for a pedestrian bridge to be constructed.

It would appear all pupils in the Gerard Plaza community would be within the one-mile walking distance of Marley Elementary School via Allan Avenue and Marley Station Road. The same would be true for pupils assigned to Marley Junior High School who are required to walk a mile and a half to that facility.

Current information indicates there are eight pupils living along Norman Drive, Dixon Drive and Phelps Drive east of Allan Avenue attending Marley Elementary school who might use the pedestrian bridge since it would be closer for them. There are 11 Marley Junior High School pupils living in the same area who would use the bridge were it available. The remainder of Gerard Plaza pupils would use Allan Avenue and Marley Station Road to get to their respective schools. We also understand there may be additional development north of Gerard Plaza extending to the pumping station. However, because this area is so small, it is doubtful the number of pupils would even be doubled. We find it hard to justify the cost of erecting a pedestrian bridge for so few a number of pupils, especially when they are within walking distance of their assigned schools. This bridge would be strictly a convenience in reducing the walking distance for those pupils.

If you have any questions relative to this information, please contact this office.

Very truly yours,

William P. Kerns

William P. Kerns
Supervisor of Transportation

WPK:km

APPENDIX A

ENVIRONMENTAL ASSESSMENT FORM

The Environmental Assessment Form
is a requirement of the
Maryland Environmental Policy Act of July, 1974

EAF 190

ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL EFFECTS

The following questions should be answered by placing a check in the appropriate column(s). If desirable, the "comments attached" column can be checked by itself or in combination with an answer of "yes" or "no" to provide additional information to overcome an affirmative presumption.

In answering the questions, the significant beneficial and adverse, short and long term effects of the proposed action, on-site and off-site during construction and operation should be considered.

All questions should be answered as if the agency is subject to the same requirements as a private person requesting a license or permit from the State or Federal Government.

	Yes	No	Comments Attached
Land Use Considerations			
1. Will the action be within the 100 year flood plain?	✓		
2. Will the action require a permit for construction or alteration within the 50 year flood plain?	✓		
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	✓		
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?	✓		
5. Will the action occur on slopes exceeding 15%?	✓		
6. Will the action require a grading plan or a sediment control permit?	✓		
7. Will the action require a mining permit for deep or surface mining?		✓	
8. Will the action require a permit for drilling a gas or oil well?		✓	
9. Will the action require a permit for airport construction?		✓	
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?		✓	

	Yes	No	Comments Attached
11. Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wildland?	—	✓	—
12. Will the action affect the use of any natural or man-made features that are unique to the county, state or nation?	—	✓	—
13. Will the action affect the use of an archaeological or historical site or structure?	—	—	✓
B. Water Use Considerations			
14. Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	✓	—	—
15. Will the action require the construction, alteration or removal of a dam, reservoir or waterway obstruction?	—	✓	—
16. Will the action change the over-land flow of storm water or reduce the absorption capacity of the ground?	✓	—	—
17. Will the action require a permit for the drilling of a water well?	—	✓	—
18. Will the action require a permit for water appropriation?	—	✓	—
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	—	✓	—
20. Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?	—	✓	—
21. Will the action result in any discharge into surface or sub-surface water?	✓	—	—

	Yes	No	Comments Attached
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	✓		

C. Air Use Considerations

23. Will the action result in any discharge into the air?	✓		
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	✓		
25. Will the action generate additional noise which differs in character or level from present conditions?	✓		
26. Will the action preclude future use of related air space?		✓	
27. Will the action generate any radiological, electrical, magnetic, or light influences?		✓	

D. Plants and Animals

28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?		✓	
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?		✓	
30. Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?		✓	

E. Socio-Economic

31. Will the action result in a preemption or division of properties or impair their economic use?	✓		

Appendix A (cont'd)

	Yes	No	Comments Attached
32. Will the action cause relocation of activities, structures or result in a change in the population density or distribution?	✓		
33. Will the action alter land values?	✓		
34. Will the action affect traffic flow and volume?	✓		
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?		✓	
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?		✓	
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans--including zoning?	✓		
38. Will the action affect the employment opportunities for persons in the area?	✓		
39. Will the action affect the ability of the area to attract new sources of tax revenue?	✓		
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?		✓	
41. Will the action affect the ability of the area to attract tourism?		✓	
F. Other Considerations			
42. Could the action endanger the public health, safety or welfare?		✓	
43. Could the action be eliminated without deleterious effects to the public health, safety, welfare or the natural environment?		✓	

		Yes	No	Comments Attached
44.	Will the action be of statewide significance?	✓		
45.	Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action could result in a cumulative or synergistic impact on the public health, safety, welfare or environment?		✓	
46.	Will the action require additional power generation or transmission capacity?	✓		

G. Conclusion

47.	This agency will develop a complete environmental effects report on the proposed action.		✓	✓

AN ENVIRONMENTAL IMPACT STATEMENT HAS BEEN PREPARED FOR THIS ACTION IN ACCORDANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT.

APPENDIX B

Preliminary Relocation Study

Summary of the Relocation Assistance Program of the State Highway Administration of Maryland

Bureau of Relocation Assistance
Office of Real Estate
300 West Preston Street - Room 402
Baltimore, Maryland 21201

STATE HIGHWAY ADMINISTRATION
OF THE
DEPARTMENT OF TRANSPORTATION
OF MARYLAND

S.H.A. 63.0-D*-1 (10-15-74) Page 1 Preliminary Relocation Studies

Maryland *roject: AA 572-5-571 Federal Aid Project: U 903-1 (5)

Termini: Arundel Expressway - Md. Rte. 648 to Md. Rte. 100 Alternate Number: 2 General File No. 66828

Indicate which of the following applies to the information below: Draft Environmental Impact Statement _____ Conceptual Stage Study _____ Final Environmental Impact Statement X Acquisition Stage Study ____

RESIDENTIAL OCCUPANTS AND IMPROVEMENTS AFFECTED

OCCUPANCY STATUS	DWLGS.	DWLG. UNITS	FAM.	IND.	TYPE OF CONSTRUCTION							AGE			ROOMS						BEDROOMS				ESTIMATED VALUE (000's) OR RENT (PER MO.)		
					BRICK	FRAME	COND.	DET.	SEM. DET.	ROW	MULTI FAM.	0-10 YRS.	11-30 YRS.	31 YRS. UP	3	4	5	6	7	8 up	1	2	3	4 up	$0-$70	$70-$90	$90 -
OWNER OCCUPIED	2	2	2			1	1	2					2					2					2		1		1
TENANT OCCUPIED	1	2	2			1		1					1					2					2		2		
TOTALS	3	4	4			2	1	3					3					4					4		3		1

RESIDENTIAL IMPROVEMENTS AVAILABLE

FOR SALE

ASKING PRICE RANGE ($000's)	DWLGS.	TYPE OF CONSTRUCTION						AGE			ROOMS						BEDROOMS			
		BRICK	FRAME	COND.	DET.	SEM. DET.	ROW	0-10 YRS.	11-30 YRS.	31 YRS. UP	3	4	5	6	7	8 up	1	2	3	4 up
$0-20	7	1	6		6		1		5	2		3	3	1			3	4		
$20-40	20	2	11	7	20			2	15	3		1	5	6	8			6	13	1
$40 -	15	6	4	5	15			3	10	2					10	5			10	5
TOTALS	42	9	21	12	41		1	5	30	7		4	8	7	18	5	3	10	23	6

Sources: _____

FOR RENT

BDR.	MONTHLY RENT						APT.	HOMES	TOTALS
	0 to $100	$100 to $150	$150 to $200	$200 to $250	$250 to $300	$300 & UP			
1									
2									
3									
4 up									

Sources: _____

BUSINESSES, FARMS, AND NON-PROFIT ORGANIZATIONS AFFECTED

OCCUPANCY STATUS	BUSINESSES					FARMS				NON-PROFIT ORGANIZATIONS			
	RETAIL	COMM.	MFGR.	CRAFT	EMP.	DAIRY	CATTLE	TRUCK	EMP.	RFL.	SOC.	INST.	EMP.
OWNER													
TENANT													
TOTALS													

AVAILABLE REPLACEMENT SITES

TYPE OF SITE	BUSINESS	NON-PROFIT	FARMS
SALE			
LEASE			
TOTALS			

Sources: A. A. Co. Multiple List, Field Observations

Remarks: The listed availables reflect only those for sale in the immediate area. The two homes with possible well and septic problems are not shown.

Estimated average family size 4
Estimated total number persons affected 16, number of owner occupant families 1, number of tenant occupant families 0, and number of individuals 0.

Estimated number of minority owned or operated businesses n/a.
Estimated number of minority employees n/a.
Estimated number of minority owned or operated farms n/a.
Estimated number of minority employees n/a.
Estimated number of minority non-profit organizations n/a.
Estimated number of minority employees n/a.

Signature: _____
(RELOCATION OFFICER) (DATE)

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"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, Article 21, Sections 12-201 thru 12-209. The Maryland Department of Transportation, State Highway Administration, Bureau of Relocation Assistance, administers the Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State Law require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments that are provided include replacement housing payments and/or moving costs. The maximum limits of the replacement housing payments are $15,000 for owner-occupants and $4,000 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's 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.