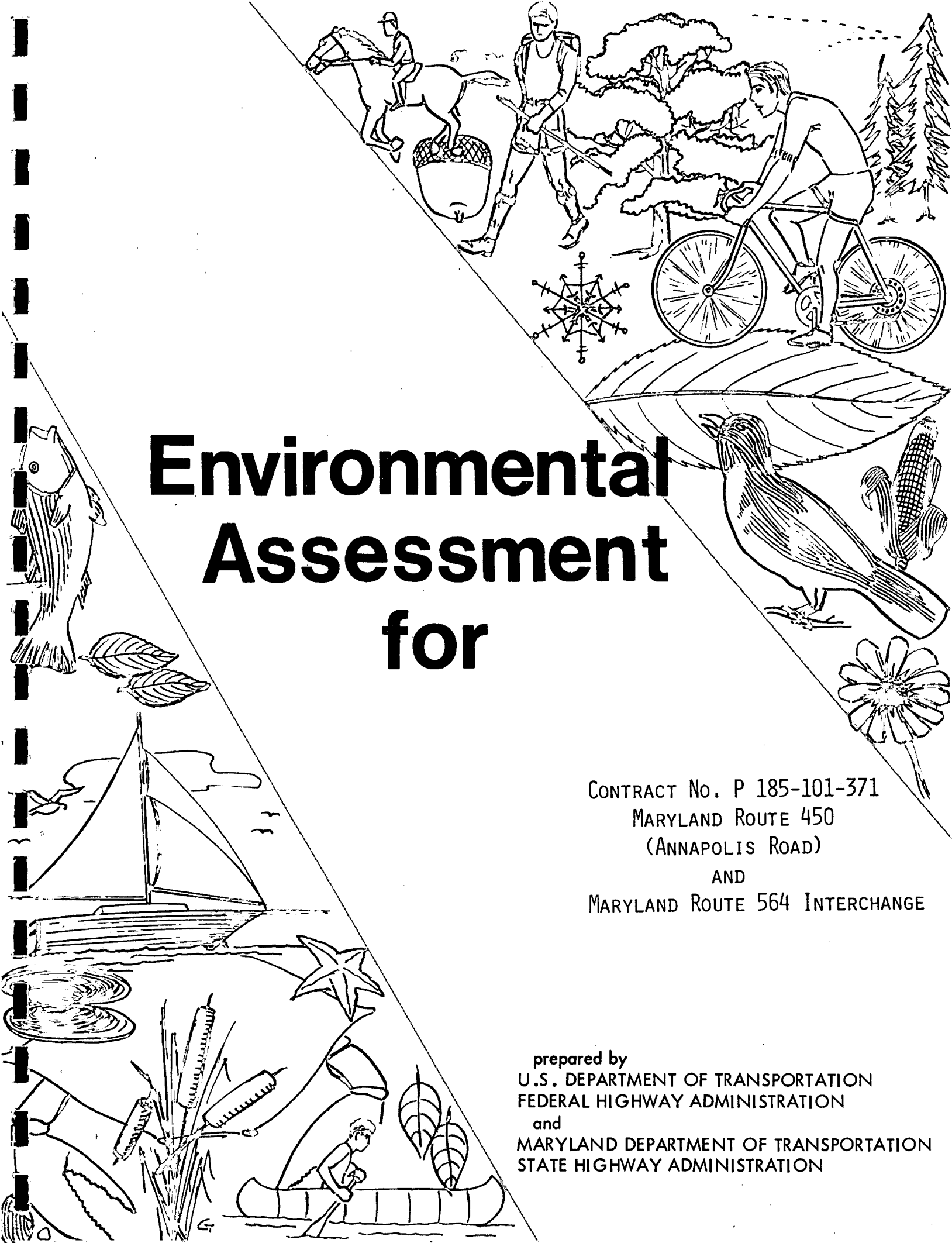

Environmental Assessment for

CONTRACT NO. P 185-101-371
MARYLAND ROUTE 450
(ANNAPOLIS ROAD)
AND
MARYLAND ROUTE 564 INTERCHANGE

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

2

REPORT NUMBER: FHWA-MD-EA-80-02-D

REGION III

Maryland Route 450 (Annapolis Road) and Maryland Route 564 Interchange Prince George's County, Maryland

ADMINISTRATIVE ACTION

Environmental Assessment

U. S. Department of Transportation
Federal Highway Administration

and

State of Maryland
Department of Transportation
State Highway Administration

Submitted pursuant to 42 U.S.C. 4332 (2)(C) 23 U.S.C. 128 (a)
CEQ Regulations (40 CFR 1500 et seq.)

- SUMMARY -

MARYLAND ROUTES 450/564 INTERCHANGE STUDIES

1. ADMINISTRATIVE ACTION:

(x) Environmental Assessment
( ) Draft Section 4(f) Evaluation
( ) Final Section 4(f) Evaluation

2. ADDITIONAL INFORMATION:

Additional information concerning this action may be obtained by contacting:

Mr. Eugene T. Camponeschi, Chief
Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 22101
Telephone: (301)-383-4327
Hours: 8:15 AM - 4:15 PM

Mr. Roy Gingrich
District Engineer
Federal Highway Administration
The Rotunda - Suite 220
711 East 40th Street
Baltimore, Maryland 21211
Telephone: (301)-962-4011
Hours: 7:45 AM - 4:15 PM

3. DESCRIPTION OF PROPOSED ACTION:

The Maryland State Highway Administration and the Federal Highway Administration propose to improve the intersection of Maryland Routes 450/564 in order to increase roadway capacity and safety, and to replace the substandard bridge at the Maryland Route 450 crossing of the Amtrak high-speed railway.

4. ALTERNATES CONSIDERED:

Three alternates are under consideration in this study, each offering varying solutions and degrees of environmental impacts. These three alternates are briefly described as follows, and illustrated and described in detail in Section III-B of this document.

Alternate No. 1 (No-Build) - would provide no improvements to the study area roadway network or to the bridge over the Amtrak Railroad; however, roadway maintenance and safety improvements would continue as necessary.

Alternate No. 2 (Grade Separation) - consists of the construction of a grade separation to accommodate present traffic movements between Maryland Routes 450 and 564. Maryland Route 450 would become a 6-lane divided urban highway. This alternate would eliminate the existing signalized intersection by grade separating eastbound Maryland Route 564 and Maryland Route 450, and includes a new wider Maryland Route 450 structure over the Amtrak Railroad.

Alternate No. 3 (Full Interchange) - consists of constructing an interchange similar to Alternate 2, plus a loop ramp from westbound Maryland Route 564 to eastbound Maryland Route 450 and the return via an outer connecting ramp. This return movement requires an additional structure over the Amtrak Railroad.

5. PROJECT CONSISTENCY WITH NATIONAL URBAN POLICY:

The improvement alternates being considered for the intersection of Maryland Routes 450 and 564 and the Maryland Route 450 Bridge over the Amtrak Railroad are consistent with the President's National Urban Policy and energy conservation goals. The consistency of this project with the five U. S. Department of Transportation policy objectives, developed in response to the President's goals, is discussed as follows:

a. Urban Impact - Transportation improvements should be consistent with state and local land use and development plans, and should not reduce the viability of Central City areas. As is discussed in Section I-C-2 of this document, the proposed action is consistent with existing local land use plans. Since the area adjacent to the proposed action is already occupied by dense residential and commercial development with little land available for additional development, and since this is a local improvement and will not generate unplanned growth and development and will not draw patrons or merchants from the adjacent Central City (Washington, D. C.), it will not reduce the viability of that area.

b. Energy Conservation - Transportation improvements associated with either of the two Build Alternates will facilitate energy conservation.

As is discussed in Section IV-B-7, predicted traffic volumes for the design year (2005) are independent of the alternate selected; therefore, energy usage is dependent on the geometric aspects of each alternate. Implementation of either Alternate 2 or 3 would result in a decrease in energy expenditure in comparison to the No-Build. These alternates propose removal of the existing Maryland Route 450/564 intersection by either a grade separation (Alternate 2) or full interchange (Alternate 3), resulting in a freer flow of traffic throughout the immediate area. This freer flow of traffic will produce a reduction in both delay time and traffic congestion, resulting in a net decrease in fuel consumption.

Also included in both Build Alternates is the construction of a 60-space fringe parking lot, with two bus bays at the intersection of Maryland Route 450 and Princess Garden Parkway. The implementation of this lot would reduce the number of vehicle miles traveled and, thus, decrease the use of fuel consumed in comparison to the No-Build.

c. Minority and Neighborhood Effects - Transportation improvements should fully consider effects on minorities, lower income residents, and the neighborhoods in which they live. As discussed in Section IV-B-1, Alternate 2 would acquire two residences occupied by six persons.[1] One of these dwellings is owner-occupied and one is tenant-occupied. The owner-occupants are retired and living on a fixed income. Alternate 3 would acquire 22 residences occupied by 55 persons.[2] Sixteen of these residences are owner-occupied, and tenant families reside in the other 6 homes. A large proportion of the residents that would be affected are retired, or close to retirement, and are living on a fixed income. One resident is handicapped (quadriplegic).

Either Build Alternate would also increase the safety and efficiency of this portion of the local roadway network for all users, including minorities and low-income individuals.

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1 One additional occupied residence has already been acquired by SHA.

2 Ibid.

d. Improvements to Existing Systems - Transportation improvements should fully consider the use of existing systems, including the No-Build option supported by appropriate Restoration, Rehabilitation, Reconstruction (RRR) or Transportation Systems Management (TSM) proposals. The two Build Alternates, Alternate 2 (Grade Separation) and Alternate 3 (Full Interchange) contain major improvements in existing location. Alternate 1, the No-Build Alternate, is being fully considered. This alternate, as discussed in Section III-B, is considered as an existing Transportation Systems Management (TSM) Alternate. Signalization along Maryland Route 450, within the study area, has been improved using the most up-to-date progressive signalization techniques. Any further traffic operational improvements require major construction.

e. Consideration of Alternates - Transportation improvements should insure that the cost-effectiveness of all alternatives is fully analyzed. A Cost-Effectiveness Analysis of the alternatives under consideration is presented on Table S-1 of this section. More detailed discussion of these impacts is given in the sections of this document that are referenced in this Table.

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
SOCIAL IMPACTS (See Section IV-B-1)			
1. Residences Displaced	0	2 [1]	22 [1]
2. Residents Relocated	0	6	55
3. Minority Families Relocated	0	0	0
4. Handicapped Persons Relocated	0	0	1
5. Sufficient Replacement Housing Is Available For All Relocated Residents, However, Last Resort Housing Could Be Required For Some Rental Tenants			
6. Effect On Residential Access	None	Improved	Improved
7. Effect On Neighborhood Integrity	None	None	None
8. Effect On Minority Neighborhoods	None	None	None
9. Effect On Community Facilities	None	Safer	Safer
10. Effect On Necessary Services	None	None	None
ECONOMIC IMPACTS (See Section IV-B-2)			
1. Businesses Displaced	0	12	12
2. Persons Employed By Displaced Businesses	0	60	60
3. Both Build Alternatives Would Displace The Same Twelve Businesses			
4. All Of These Businesses Are Likely To Suffer Economic Injury Due To Higher Rent Costs And Expenses Which Are Non-Compensable Under State Relocation Law.			

1 One Additional Occupied Residence Has Already Been Acquired By SHA.

INTERCHANGE STUDIES
MARYLAND
ROUTES 450/564

STATE PROJECT NO. P185-101-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1
SHEET 1 OF 6

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
ECONOMIC IMPACTS - CONTINUED			8
5. Several Of These Businesses Could Experience Relocation Difficulties Due To Special Zoning Or Permit Requirements Currently In Effect In Prince George's County.			
6. Effect On Access To Remaining Businesses	None	Improved Safety	Improved Safety
CONSISTANCY WITH NATIONAL URBAN POLICY			
1. Urban Impact	None	Beneficial	Beneficial
2. Energy Conservation	No Improvement	Improved	Improved
ALTERNATES 2 And 3 Include A 60 Space Fringe Parking Lot			
3. Minority And Neighborhood Effects	None	2 Residences Acquired	22 Residences Acquired
4. Improvements To Existing Systems	None	Existing & New Location	Existing & New Location
CONSISTENT WITH STATE AND LOCAL LAND USE PLANS			
1. Adopted And Approved Master Plan Of Glen Dale, Seabrook, Lanham And Vicinity For Planning Area 70 (Oct. 1977)	No	Yes	Yes
2. Proposed Amendment To The General Plan For The Maryland-Washington Regional District (Nov. 1977)	No	Yes	Yes

INTERCHANGE STUDIES
MARYLAND
ROUTES 450/564

STATE PROJECT NO. P185-101-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1
SHEET 2 OF 6

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
NATURAL ENVIRONMENTAL IMPACTS (See Section IV-B-4)			
1. Due To The Present Urbanized Condition Of The Study Area, Implementation Of The Proposed Action Would Result In No Significant Impacts To The Natural Environment.			
2. Stream Relocations	None	None	None
3. Loss Of Natural Habitat	None	None	None
4. Effect On Water Quality	None	None	None
5. Effect On Wildlife Populations	None	None	None
6. Effect On Threatened Or Endangered Species	None	None	None
7. Effect On Prime Or Unique Farmland	None	None	None
8. Effect On 100 Yr. Floodplain	None	None	None
9. No Wetlands Exist Within The Study Area			
NOISE IMPACTS (See Section IV-B-5)			
Year Of Completion (1985) Levels At Selected Receptors			
1. Range Predicted (dBA)	65-73	64-85	65-77
2. Number With "Severe" Noise Impact	0	0	0
3. Number Exceeding Design Noise Levels	2	1	2
Design Year (2005) Levels At Selected Receptors			
4. Range Predicted (dBA)	66-74	66-77	66-78
5. Number With "Severe" Noise Impact	0	0	0
6. Number Exceeding Design Noise Levels	4	3	3
7. All Sites Affected Are Private Residences			
8. Attenuation Of Noise Levels Is Not Considered Practical			

INTERCHANGE STUDIES
MARYLAND
ROUTES 450/564

STATE PROJECT NO. P185-101-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1
SHEET 3 OF 6

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
AIR QUALITY IMPACTS (See Section IV-B-6).			10
1. Violations Of 1 Hour Or 8 Hour Standards	Yes	No	No
2. The Maryland Department Of Health And Mental Hygene Has Found This Project To Be Consistant With Its Plans, Programs And Objectives.			
3. Annual Pollutant Burden (Tons/Year):			
1985 - Carbon Monoxide	220.0	220.0	180.0
2005 - Carbon Monoxide	233.0	195.0	199.0
SAFETY OPERATIONS (See Section III-B)			
1. Degree Of Improvements To The Very Unsafe Intersection Of Md. 450/Md. 564	None	Partial	Full
2. Improvements For Safer Access To Businesses	None	Yes	Yes
3. Improvements In Roadway Capacity, Thereby Reducing Accident Rates	None	Yes	Yes
4. Improvements In Railroad Safety, Sight Distances And Provision Of Crash Wall On Md. 450 Bridge	No	Yes	Yes

INTERCHANGE STUDIES
MARYLAND
ROUTES 450/564

STATE PROJECT NO. P185-101-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1
SHEET 4 OF 6

ANALYSIS ITEM		ALT 1 NO BUILD	ALT 2	ALT 3
TRAFFIC OPERATIONS (See Section IV-B-7).				//
1. Traffic Demand On Md. Rte. 450 Over Amtrak Bridge				
1985 ADT		22,600	22,600	22,600
2005 ADT		32,000	32,000	32,000
2. Traffic Demand On Md. Rte. 564 West Of Cipriano Road				
1985 ADT		21,100	21,100	21,100
2005 ADT		26,000	26,000	26,000
3. Intersection Level Of Service				
Md. 450/564	1985/2005	D/E	Free Flow	Free Flow
Princess Garden Parkway	1985/2005	D/E	C/D	C/D
Whitfield Chapel Road	1985/2005	D/E	C/D	C/D
Cipriano Road		N/A/D	C/C	C/C
4. Ability To Accommodate Desired Traffic Turning Movements At Md. 450/Md. 564 Intersection		UNMET WB MD. 450 TO EB MD. 564 & WB MD. 564 TO EB MD. 450	UNMET WB MD. 450 TO EB MD. 564 & WB MD. 564 TO EB MD. 450	ALL

INTERCHANGE STUDIES
MARYLAND
ROUTES 450/564

STATE PROJECT NO. P185-101-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1
SHEET 5 OF 6

ANALYSIS ITEM	ALT 1 NO BUILD	ALT 2	ALT 3
CONSTRUCTION IMPACTS (See Section IV-B-12)			
1. Utilities - Utilities Could Be Maintained Without Disruption During The Construction Of Either Build Alternate.			
2. Maintenance Of Traffic - Satisfactory Movement Of Traffic Could Generally Be Maintained During The Construction Phase Of Either Build Alternative. Construction At The Md. Rte. 450/Whitfield Chapel Rd. Intersection Would Require The Detour Of Local Whitfield Chapel Rd. Traffic For Short Periods Of Time Through The Adjacent Local Community.			
SECTION 4(f) IMPACTS			
No Alternative Under Consideration As Part Of This Study Would Impact Any Publicly Owned Park, Recreation Area, Wildlife Or Waterfowl Rufuge, Historic Or Archeological Site Of National, State Or Local Significance.	None	None	None
COST (1979 Dollars)			
1. Construction	None	$ 8,414,000	$12,200,000
2. Right-Of-Way Acquisition	None	3,321,000	5,626,000
3. Relocation	None	434,000	892,000
4. Total Cost		$12,169,000	$18,718,000
Additional Detail Is Given In Table III-1			

INTERCHANGE STUDIES
MARYLAND
ROUTES 450/564

STATE PROJECT NO. P185-101-371

COST-EFFECTIVENESS ANALYSIS

TABLE S-1
SHEET 6 OF 6

6. ENVIRONMENTAL ASSESSMENT FORM:

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

The checklist identifies specific areas of the natural and social-economic environment which have been considered while preparing this environmental assessment. The reviewer can refer to the appropriate sections of the document, as indicated in the "Comment" column of the form, for a description of specific characteristics of the natural or social-economic environment within the proposed project area. It will also highlight any potential impacts, beneficial or adverse, that the action may incur. The "No" column indicates that during the scoping and early coordination processes, that specific area of the environment was not identified to be within the project area or would not be impacted by the proposed action.

ENVIRONMENTAL ASSESSMENT FORM

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

	YES	NO	COMMENTS
6. Will the action require a grading plan or a sediment control permit?	X	_	
7. Will the action require a mining permit for deep or surface mining?	___	X	
8. Will the action require a permit for drilling a gas or oil well?	___	X	
9. Will the action require a permit for airport construction?	___	X	
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	___	X	
11. Will the action affect the use of a public recreation area, park, forest, wildlife, management area, scenic river or wildland?	___	X	
12. Will the action affect the use of natural or man-made features that are unique to the county, state or nation?	___	X	
13. Will the action affect the use of an archeological or historical site or structure?	___	X	

B. Water Use Considerations

14. Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	___	X	
15. Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	___	X	
16. Will the action change the overland flow of stormwater or reduce the absorption capacity of the ground?	X	_	

		YES	NO	COMMENTS
17.	Will the action require a permit for the drilling of a water well?	___	X	___
18.	Will the action require a permit for water appropriation:	___	X	___
19.	Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	___	X	___
20.	Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?	___	X	___
21.	Will the action result in any discharge into surface or subsurface water?	___	X	___
22.	If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	___	X	___

C. Air Use Considerations

23.	Will the action result in any discharge into the air?	X	_	IV-B-6
24.	If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	___	X	___
25.	Will the action generate additional noise which differs in character or level from present conditions?	X	_	IV-B-5
26.	Will the action preclude future use of related air space?	___	X	___
27.	Will the action generate any radiological, electrical, magnetic, or light influences?	___	X	___

	YES	NO	COMMENTS
D. Plants and Animals			
28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?	___	X	_____
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?	___	X	_____
30. Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?	___	X	_____
E. Socio-Econimic			
31. Will the action result in a preemption or division of properties or impair their economic use?	X	_	IV-B-1
32. Will the action cause relocation of activities, structures, or result in a change in the population density or distribution?	X	_	IV-B-1
33. Will the action alter land values?	X	_	IV-B-1
34. Will the action affect traffic flow and volume?	X	_	IV-B-7
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	___	X	_____
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	___	X	_____
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans - including zoning?	X	_	III-B

	YES	NO	COMMENTS
38. Will the action affect the employment opportunities for persons in the area?	X	_	IV-B-2
39. Will the action affect the ability of the area to attract new sources of tax revenue?	X	_	IV-B-2
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?	___	X	_____
41. Will the action affect the ability of the area to attract tourism?	X	_	_____
F. Other Considerations			
42. Could the action endanger the public health, safety or welfare?	___	X	_____
43. Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?	___	X	_____
44. Will the action be of statewide significance?	X	_	I-B
45. Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action could result in a cumulative or synergistic impact on the public health, safety, welfare or environment?	X	_	I-C-3
46. Will the action require additional power generation or transmission capacity?	___	X	_____
47. This agency will develop a complete environmental effects report on the proposed action.	___	X	_____

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APPENDICES

LIST OF FIGURES

LIST OF TABLES

I. DESCRIPTION OF PROPOSED ACTION

I. DESCRIPTION OF PROPOSED ACTION

A. PROJECT LOCATION:

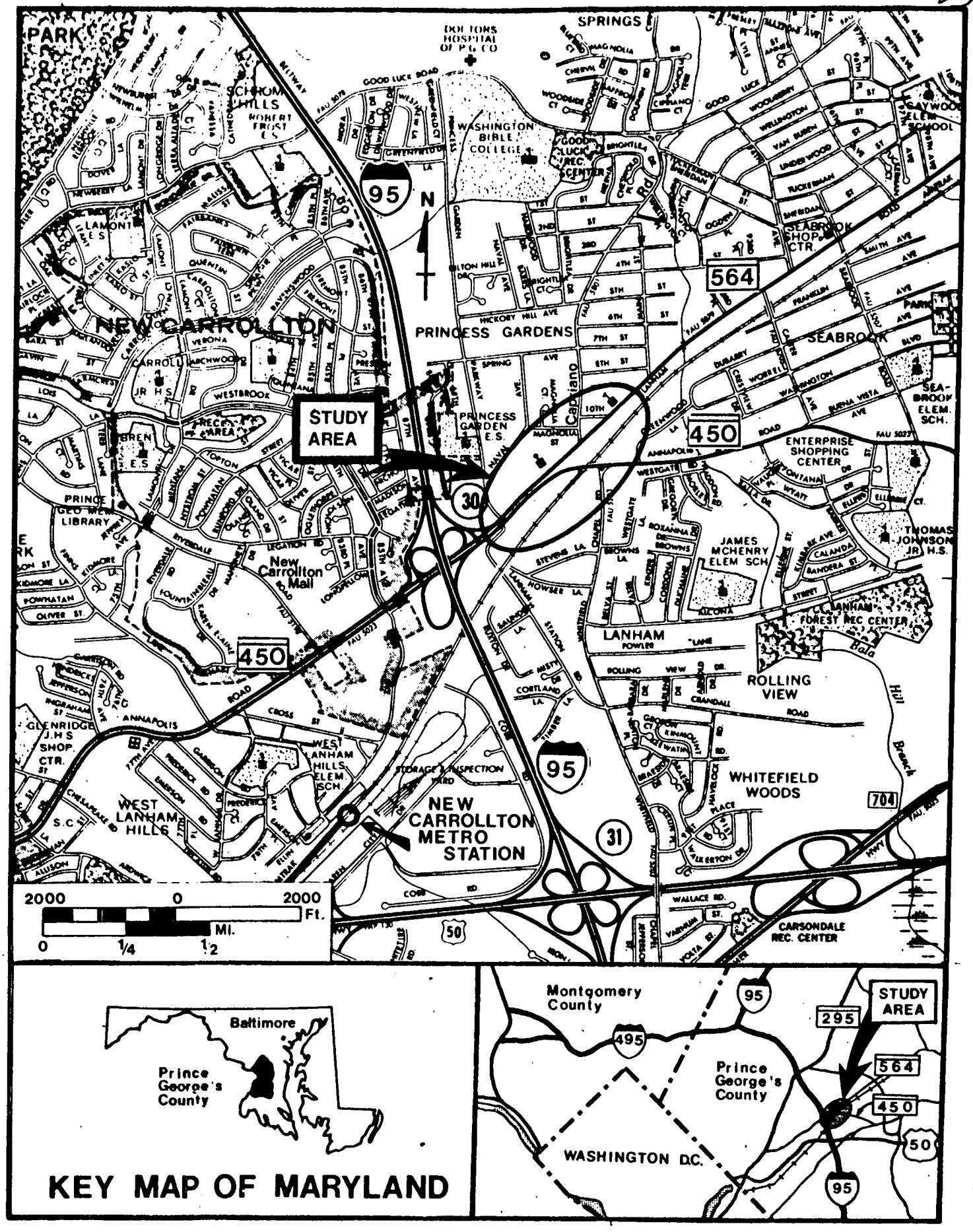
This project is located northeast of Washington, D. C. at Lanham in north-central Prince George's County, Maryland, immediately east of the Capital Beltway (I-95) interchange with Maryland Route 450. As shown on Figure I-1, the project area includes the intersection of Maryland Route 450 (Annapolis Road) and Maryland Route 564 (Lanham-Severn Road), and the Maryland Route 450 bridge over the Amtrak Railroad.

The limits for this project extend west from the intersection of Princess Garden Parkway/Md. Route 450/564 to the intersection of Maryland Route 450/Greenwood Lane (0.23 mile) and the intersection of Maryland Route 564/10th Street (0.20 mile). The Maryland Route 450/564 project area consists of four (4) nearly contiguous at-grade intersections which regularly experience moderate to severe congestion and which have been designated as "High-Accident Intersections". Three (3) of these intersections (Maryland Route 450/Princess Garden Parkway, Maryland Route 450/Whitfield Chapel Road and Maryland Route 564/Cipriano Road) bound the project area and closely encompass the fourth, the Maryland Route 450/Maryland Route 564 intersection. Augmenting operational problems are the geometric deficiencies causing restricted sight distance (less than 175 feet) at the bridge over the Northeast Corridor of the National Passenger Railroad System (AMTRAK) which adjoins the Whitfield Chapel Road intersection.

The Maryland Route 450/564 project is primarily structural. These structures, which represent approximately 50% of the estimated construction cost, include 1) bridge(s) over the Railroad which involve relocation of electrification facilities; 2) a retaining wall along frontage road; and 3) a retaining wall along the Railroad.

B. PROJECT DESCRIPTION:

The proposed improvements to Maryland Routes 450 and 564 require replacing the existing at-grade intersection with a grade separation providing the same traffic movements that occur at the existing intersection. The two "Build Alternates" presented in this Assessment reconstruct Maryland Route 450 as a 6-lane divided urban highway between its intersection with Princess Garden Parkway to the west, and Greenwood Lane to the east. Maryland Route 564, which intersects Maryland Route 450 west of the Railroad, would be widened to provide 4 traffic lanes between Princess Garden Parkway/Maryland Route 450 and 10th Street.



STUDY AREA LOCATION MAP

FIGURE I-1

The two "Build" alternates include improvements to the intersection at Princess Garden Parkway, and the merge at Maryland Routes 450/564. Other improvements include sidewalks, a 60-space fringe parking lot with two bus bays at Princess Garden Parkway, and a frontage road together with access control through the intersection.

Also included in the improvements to Maryland Route 450 is the reconstruction of the substandard 2-lane bridge over the Amtrak Railroad. The new bridge would provide for 6 highway traffic lanes; improved roadway sight distances and adequate clearance (both horizontal and vertical) around the railroad tracks.

The No-Build Alternate, Alternates 2 (Grade Separation) and 3 (Full Interchange) are described in detail in Section III of this document.

C. DESCRIPTION OF EXISTING ENVIRONMENT:

1. Socio-Economic & Natural Environment

The Maryland Route 450/564 study area is urbanized and characterized by commercial development along Maryland Route 450 adjacent to the Capital Beltway (i.e., a high-rise motel, a large automobile dealer, restaurants, and other retail businesses), and single-family dwellings set on small lots throughout the rest of the area. An apartment complex is located along the west side of Whitfield Chapel Road from Maryland Route 450 to Stevens Lane. Maryland Route 450 crosses, and Maryland Route 564 runs parallel to, the high-speed railroad tracks of the Northeast Corridor of the National Passenger Railroad System (AMTRAK) in this study area.

No parkland or public recreation facilities are present in the study area. Schools, fire stations and other public facilities are not within the immediate project area, but are located nearby to serve local businesses and residents.

The original natural environment of the study area has been almost completely superseded by urban development. Some undeveloped land, consisting of a narrow strip of field habitat or scrubby, immature woodland, does remain along the railroad right-of-way, but even this small tract has been much compromised and no longer supports wildlife. No known threatened or endangered species inhabit the study area.

No floodplain or wetlands exists within the study area. An extensive storm drainage system, in combination with previous channelization of the significant surface drainage features, exists throughout the study area. The study area lies within the Coastal Plain Province, and is generally flat.

2. Land Use

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

Residential development within the study area is primarily located in the western part of the study area, and consists of single-family residences on individual lots. Most of the commercially-zoned land in the study area is located along Maryland Route 564 in the vicinity of the intersection with Maryland Route 450. Many of the existing commercial areas in the study area suffer from insufficient parking facilities.

The Adopted and Approved Master Plan for Glenn Dale, Seabrook, Lanham and vicinity (October 1977), indicates areas presently undeveloped between Maryland Route 450 and the Amtrak Railroad are planned for commercial development in the future. No other development or alteration in development is ex-pected. Also included in the Master Plan are proposed improvements to Maryland Route 450, Maryland Route 564 and Whitfield Chapel Road.

3. Existing Roadway System

U. S. Routes 50, Maryland Route 450, the Amtrak Railway, and the New Carrollton Route of the Metro Rapid Transit System, with stations at Cheverly, Landover, and New Carrollton, form perhaps the most important transportation corridor on the east side of the Nation's Capitol.

Maryland Route 450 (Annapolis Rd.)[1] and Maryland Route 564 (Lanham-Severn Rd.)[2] are expected to play an important role as development within the study area continues to increase. These two highways, along with the Capital Beltway (I-95), U. S. Route 50, and the New Carrollton Metro Station, provide access for study area residents to and from Washington, D. C.. Maryland Routes 450 and 564 serve as connecting routes between Bowie, Maryland, located approximately 6 miles east of the study area, to the Capital Beltway, Washington, D. C. and other major intersecting routes.

Maryland Route 450, within the limits of the Capital Beltway intersection and the immediate vicinity of the intersection with Maryland Route 564, is a two-way, four-lane roadway. Immediately east of the intersection, Maryland Route 450 tapers to two lanes; while west of the Capital Beltway, it becomes six lanes. The 1978 average daily traffic volume on Maryland Route 450 at Princess Garden Parkway (both directions) is 38,000 vehicles.

---

1 Maryland Route 450, a functional Class III minor arterial highway.

2 Maryland Route 564, a functional Class IV major collector highway.

Maryland Route 564 within the immediate vicinity of the intersection with Maryland Route 450, is a two-way, four-lane roadway tapering to two lanes immediately east of the intersection. The average daily traffic volume (both directions) on Maryland Route 564 within the study area was approximately 19,000 vehicles in 1978.

Access to areas north and south of the study area is provided by the Capital Beltway (I-95) located directly west of the project. The Capital Beltway is an Urban Interstate Highway which encircles Washington, D. C. at an average distance of about 8 miles from the center of the City. The western half, which is designated as I-495, consists of 6 and 8 lane sections. The eastern half of the Beltway, directly adjacent to the project area, is designated as I-95 and provides 8 lanes as it bypasses Washington, D. C. The Capital Beltway over Maryland Route 450 carries approximately 95,000 vehicles per day (both directions).

To the south of the project area is U. S. Route 50, a four-lane divided principal arterial freeway. U. S. Route 50 runs in an east-west direction connecting Washington, D. C. to Bowie, Annapolis, the Chesapeake Bay Bridge and the Eastern Shore.

Carter Avenue (see Figure I-1), located approximately 0.60 miles to the east of the Maryland Route 450/564 intersection, is a residential street connecting Maryland Route 450 and Maryland Route 564. This grade separation structure and approach roadways were constructed in 1979 over the Amtrak Railroad, permitting closure of the at-grade railroad crossing at Seabrook Road. Much of the intra-county traffic formerly using Seabrook Road has been diverted to Carter Avenue.

4. Public Transit System

a. Amtrak - The three Amtrak Railroad tracks in this project area carry high-speed rail traffic along the northeast Corridor, between Washington, D. C. and Boston, Massachusetts. Approximately 68 high-speed Amtrak passenger trains, 6 local commuter trains, and 40 freight trains pass through the Study Area on an average week-day. The commuter trains, and several of the passenger trains, make stops at Seabrook (east of the study area) and at the Capital Beltway Station (west of the study area). Amtrak's long range plans indicate addition of a fourth track to increase the capacity of the Northeast Corridor.

b. Metro - Both bus and rapid rail transit service are provided for the study area by the WashingtonMetropolitan Area Transit Authority (WMATA). The opening of the New Carrollton subway station, in November of 1978, with its 1900 car parking lot, provides a high level of transit service for the study area residents to the entire metropolitan area. The New Carrollton subway station, one of an ultimate 86 station system is the westernmost

station along the Orange Line (one of seven major radial lines) of the Washington Metro System. This System, presently consisting of 33.7 miles (38 stations) of track connecting lo-cations in Maryland and Virginia to the Business Districts of Washington, D. C. is expected to be completed in the early 1990's. The completed system will consist of over 101 miles of track. Feeder bus service is provided to this station from Maryland Routes 450 and 564 by two separate Metro bus routes as described below:

Route T-12 - a part of the Bowie Belair Line, runs between Belair Shopping Center and the New Carrollton Metro Station, when Metrorail is operating, and is extended to Farragut Square in Washington, D. C., when Metrorail is closed. This line uses Maryland Route 450 (Annapolis Road) within the study area limits, stopping at the intersection of Maryland Route 450 and Princess Garden Parkway. It has an approximate headway of 30 minutes on weekdays and 60 minutes on weekends.

Route T-14 - also part of the Bowie Belair Line, travels between Bowie, Maryland and the New Carrollton Metro Station, when Metrorail is operating, and is extended to Farragut Square in Washington, D. C., when Metrorail is closed. This line uses both Maryland Route 450 (Annapolis Road) and Maryland Route 564 (Lanham-Severn Road) within the study area limits, and stops at the intersection of Maryland Route 450 and Princess Garden Parkway. It has an approximate headway range of 30 minutes on weekdays and 60 minutes on weekends.

II. NEED FOR THE PROJECT

II. NEED FOR THE PROJECT

A. DESCRIPTION OF THE HIGHWAY TRANSPORTATION PROBLEM:

The highway transportation problem at Maryland Routes 450/564 includes geometric deficiencies, inadequate capacity and excessive collision experience. These are caused by heavy traffic volumes exceeding the capacity of the existing signalized at-grade intersection, weaving and turning movements, roadside friction due to commercial driveway entrances, excessive delays, and accident rates which are more than twice the statewide average for similar facilities. These problems are aggravated by the adjacent signalized intersection at Princess Garden Parkway and the Capital Beltway ramps immediately west of this intersection, the narrow bridge over the Amtrak Railroad, and the signalized intersection at Whitfield Chapel Road. (See Figure III-1.)

Existing traffic volumes exceed the capacities of the approach roadways, as well as the intersection of Maryland Route 450 and Maryland Route 564. On Maryland Route 450, just west of the intersection with Maryland Route 564, the average daily traffic (ADT) in 1978 was 37,000 vehicles per day (both directions). Just east of the intersection, the 1978 traffic volume on Maryland Route 450 exceeded 18,500 vehicles per day (both directions), while the traffic volume on Maryland Route 564 exceeded 19,000 vehicles per day (both directions). The intersection of Maryland Routes 450 and 564 now operates at a Level of Service 'E' during the peak hours.[1]

Current land use forecasts in the study area and the adjacent Capital Beltway Interchange influence area, indicate a continuation of growth which will further aggravate traffic operations in this area. By the design year 2005, traffic volumes west of the Maryland Route 450/564 intersection on Maryland Route 450 are expected to increase 55%, while east of the intersection an 80% increase is expected. On Maryland Route 564, an increase of approximately 40% is expected east of the intersection. With these traffic volume increases, delays and accident rates are expected to worsen, and the Maryland Route 450/564 intersection is expected to operate at Level of Service 'F' (breakdown) in the design year.

Traffic volumes on the three adjacent intersections of Maryland Route 450/Princess Garden Parkway, Maryland Route 450/Whitfield Chapel Road, and Maryland Route 564/Cipriano Road are approaching their respective intersection capacities and operate at Level of Service 'E' during the peak hours. Traffic signal demand for green time is increasing with increased traffic volumes resulting in long vehicle queues (see Section IV-B-7), spillover to and from adjacent intersections, excessive delays, high air quality emissions of CO and HC, and energy waste due to extended idling.

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1 See Glossary in Appendix A.

A major contributor to the operational deficiencies of the Maryland Route 450/Princess Garden Parkway intersection is the off-ramp from northbound Capital Beltway to eastbound Maryland Route 450. Vehicles which exit from the Beltway and desire to turn left from Maryland Route 450 onto Princess Garden Parkway must weave across two lanes of traffic in a distance of about 125 feet. This maneuver contributes significantly to the traffic congestion, delays and accidents which regularly occur at this intersection.

The critical nature of highway traffic operation problems along Maryland Routes 450 and 564 in the Study Area are indicated by highway accident statistics. Between January 1, 1974 and December 31, 1978, 758 accidents occurred within the vicinity of the Maryland Routes 450 and 564 intersection. Accident data for the study area are shown in the following table:

- ACCIDENT RATES AT THE MD. ROUTE 450/564 INTERSECTION -[1]
1974 thru 1978
(Accidents per 100 Million Vehicle Miles of Travel)

	Statewide Average	Md. Route 450/564 Study Area
Daily Rate	626.89	1006.77
Peak Period Rate	619.94	1361.07

As shown, accident rates for the study area during the peak period are almost 1.4 times greater than the daily rate, and more than twice the statewide average for similar facilities. The daily accident rate is almost twice that of the statewide average.

Listed below are the accident severities by year for the project area.

Number Of:	1974	1975	1976	1977	1978	Total
Fatal Accidents	0	0	0	0	0	0
Injury Accidents	50	51	31	57	52	241
Property Damage Accidents	93	101	117	105	101	517
TOTAL ACCIDENTS	143	152	148	162	153	758

1 Accident data obtained from Accident Cost and Economic Assessment, Md. Rte. 450 at Md. Rte. 564, Prince Georges County (January 4, 1980)

Several intersections in this study area have been designated as "High-Accident Intersections". Designation is limited to those locations with accident experience above the 99th percentile of State Highway intersections in Prince George's County. These intersections, and the years for which they were listed are:

Md. Rte. 450 @ Princess Garden Pkwy. (1974, 1975, 1976)
Md. Rte. 450 @ Md. Rte. 564 (1976, 1977, 1978)
Md. Rte. 450 @ Whitfield Chapel Rd. (1976)

The effectiveness of past improvements to the Maryland Route 450/564 intersection has been limited due to its severe skew and the increasing traffic volumes. The predominant collision types found at this intersection are rear-end accidents resulting from the "stop and go" operation of vehicles. The anticipated increases in traffic volumes will result in additional delays and greater queue lengths further aggravating normal traffic control solutions. A serious merge problem also exists for westbound motorists on Maryland Route 564 where a lane is lost in the transition with Maryland Route 450, westbound. This problem has resulted in both sideswipe and rear-end accidents and has been compounded by the many commercial driveways that cause additional interruption to traffic flow. This is very apparent on the westbound Maryland Route 564 approach to the intersection. Eastbound vehicles desiring to turn left into the driveways along this approach have caused numerous accidents of various types; however, left-turn accidents (eastbound left with westbound straight) are the predominant type. These accidents are usually of a severe nature and the potential for fatal accidents or severe injuries remains high. Such accidents are expected to continue to increase in frequency as a result of the anticipated increases in the traffic volume. However, if either of the two "Build"alternates is selected, accident rates at this intersection are expected to decrease and become more comparable to the statewide average.

B. MD. ROUTE 450 BRIDGE OVER THE AMTRAK RAILROAD:

The existing Maryland Route 450 highway bridge over the Amtrak Railroad was constructed in 1931. This single-span thru-girder steel bridge, with girders and floor beams encased in concrete, is 109 feet in length. The bridge provides two lanes of traffic on a 27-foot wide reinforced concrete deck, with a sidewalk located along the east side, outside of the thru girder.

Although the existing bridge was constructed with vertical and horizontal clearances that were acceptable to the Maryland Public Service Commission's 1953 Standards, these standards have been upgraded as part of the major efforts to improve high-speed

rail service in the Northeast Corridor. The existing bridge has a vertical clearance of 23 feet above the top of the railroad tracks. The current minimum prescribed vertical clearance is 24'-3". Horizontal clearance from the center of the northern track is only 14'-6" to the abutment, and from the center of the ultimate southern track only 13'-6" to the abutment. The minimum current prescribed horizontal clearance is 18'-6". These substandard horizontal clearances result in less than desirable sight distances along the track for the trainmen, and produce an unsafe working environment for track maintenance crews (width between track and bridge supports). In addition, the substandard vertical clearance and position of the bridge result in a less than desirable sight distance for the overhead railroad signal bridge.

Although the bridge is structurally sound, there is general cracking and spalling in the wingwalls, deck, sidewalk and curbs. The bridge deck is in a deteriorating condition, with probable chloride damage to the deck reinforcing and supporting steel structure. It is estimated that this bridge deck will require replacement within 5 years. With regard to traffic safety along Maryland Route 450, the lack of crash walls protecting the bridge supports jeopardizes the ability of the existing bridge to withstand a railroad derailment.

The existing, deteriorating bridge provides insufficient roadway width to safely accommodate projected traffic volumes, and provides substandard horizontal and vertical clearances over the Amtrak Railroad. This structure may qualify for Federa-Aid Bridge Replacement Funds due to functional obsolescence based upon a stopping sight distance of 175 feet, inadequate for the posted speed of 30 MPH (200 feet is required).

III. ALTERNATES CONSIDERED

III. ALTERNATES CONSIDERED

A. PROJECT HISTORY:

1. Introduction

The Maryland Routes 450/564 project was initiated in August of 1972 as the final design phase for the production of construction drawings. During a re-evaluation of the project, when construction drawings were 95% complete, it was determined that environmental studies and preparation of an environmental document were required. For this reason, the project was discontinued in December of 1975. In December 1977, engineering studies were re-initiated and environmental studies were begun. The No-Build and Build Alternates were proposed for detailed study.

2. Development of Study Alternates

During the preliminary stage of this project planning study, five initial alternates were developed. These alternates offered varying solutions and degrees of environmental impacts. These five alternates were:

Alternate No. 1 - the No-Build Alternate, would provide no improvements to the study area roadway network or to the bridge over the Amtrak Railroad. Roadway maintenance and safety improvements will continue as needed. This alternate was presented at the Alternates Public Meeting. See Section III-B-1 for a more detailed discussion.

Alternate No. 2 - consisted of eliminating the existing Maryland Routes 450/564 intersection by dividing eastbound and westbound Maryland 564 into two roadways. The eastbound roadway of Maryland Route 564 would pass under Maryland Route 450 at the railroad embankment and tie into existing Maryland Route 564 in the vicinity of Cipriano Road. Westbound Maryland Route 564 from Cipriano Road would approximate the alignment of existing Maryland Route 564. Traffic movements from westbound Maryland Route 564 to eastbound Maryland Route 450 and the return are served at Carter Avenue. (See Figure I-1.)

Maryland Route 450 would be upgraded to a four-lane, 54-foot wide divided roadway from its merge point with Maryland Route 564 to Whitfield Chapel

Road. East of Whitfield Chapel Road, Maryland Route 450 is proposed as an ultimate six-lane divided urban roadway. Maryland Route 450 would consist of a 20-foot median, a 5-foot sidewalk and widened curb lane providing a shared roadway accommodation for bicycles.

Alternate 2 also included a 32-foot wide frontage road for access control north of westbound Maryland Route 564 from Cipriano Road to Princess Garden Parkway. This two-way urban roadway would contain a 5-foot sidewalk along the north side. Access along eastbound Maryland Route 450, in the vicinity of Lanham Station Road, would be limited to the signalized intersection of Maryland Route 450 with Princess Garden Parkway.

Alternate No. 2, Grade Separation, was presented at the Alternates Public Meeting. See Section III-B-2 for a more detailed discussion.

Alternate No. 3 - was similar to Alternate 2, but with the provision for traffic movements from westbound Maryland Route 564 to eastbound Maryland Route 450 via loop ramp and the return. An additional auxiliary lane would be carried across the new bridge structure over the Amtrak Railroad. Alternate 3 would have the same access control as did Alternate 2 and include essentially the same provisions for pedestrian and bicyclist activity.

Alternate No. 3, Interchange, was presented at the Alternates Public Meeting. See Section III-B-3 for a more detailed discussion.

Alternate No. 4 - this alternate was identical to Alternate 3 except that the return ramp from westbound Maryland Route 450 to eastbound Maryland Route 564 would be located approximately 300 feet west of the Maryland Route 450/Whitfield Chapel Road intersection.

Due to several geometric deficiencies, such as insufficient ramp radii, this alternate was not presented at the Alternates Public Meeting and dropped from consideration.

Alternate No. 5 - consisted of eliminating the existing Maryland Routes 450/564 intersection and replacing this intersection with a triangular one-way system including an extension of Whitfield Chapel Road north to Maryland Route 564 into Cipriano Rd. Eastbound and westbound Maryland Route 450 would be divided into two roadways. The eastbound roadway would diverge at Maryland Route 564 and extend eastward to Whitfield Chapel Road, with a new bridge over Amtrak. The westbound roadway would consist of a reverse curve,but without a tangent section to allow for proper super-elevation transition.

Westbound Maryland Route 450, from Whitfield Chapel Road to westbound Maryland Route 564, would consist of a flyover, which would begin at Whitfield Chapel Road, and required an additional bridge structure over Amtrak. Continuing westbound along Maryland Route 564, westbound Maryland Route 450 would converge with westbound Maryland Route 564 just east of the intersection with Princess Garden Parkway.

Maryland Route 564 would be upgraded to a four-lane 52-foot wide roadway from its merge point with Maryland Route 450 to Cipriano Road. Both urban roadways would consist of a 5-foot sidewalk and a widened curb lane providing a shared roadway accommodation for bicyclists.

This alternate also included a two-way, two-lane extension of Whitfield Chapel Road, extending north to Cipriano Road. This new extension would necessitate another bridge structure over Amtrak and would provide for the return movement from westbound Maryland Route 564 to eastbound Maryland Route 450.

Alternate 5 included the same frontage road for access control north of westbound Maryland Route 564 that is described in Alternate 2.

Due to the potentially dangerous turning and weaving maneuvers that would be taking place on Maryland Route 450, between its intersection with Maryland Route 564 and Princess Garden Parkway, this alternate was not presented at the Alternates Public Meeting and dropped from further consideration.

3. Alternates Public Meeting -

The Alternates Public Meeting was held on November 21, 1978 at the Princess Garden Special Education School in Lanham, Maryland. Alternates 1, 2 and 3 were presented to the public at this meeting. Each alternate was described in detail and illustrated, and their cost and environmental impacts compared. Large maps (1" = 50') of each alternate were also available for examination, and members of the Project Planning Team were present to answer questions. Forty citizens were in attendance at this meeting. Eleven citizens presented verbal comments and written comments were received from seven citizens.

No major issues or objections were brought up at the Alternates Public Meeting. Citizens' comments pertained to general traffic questions, means of access to service roads, and maintenance of traffic during construction. Both Prince George's County and area civic associations support the roadway improvements as envisioned with either Build Alternate 2 or 3.

As a result of citizen and agency input received at this meeting, the three alternates were re-evaluated, modified and are presented in the following Section.

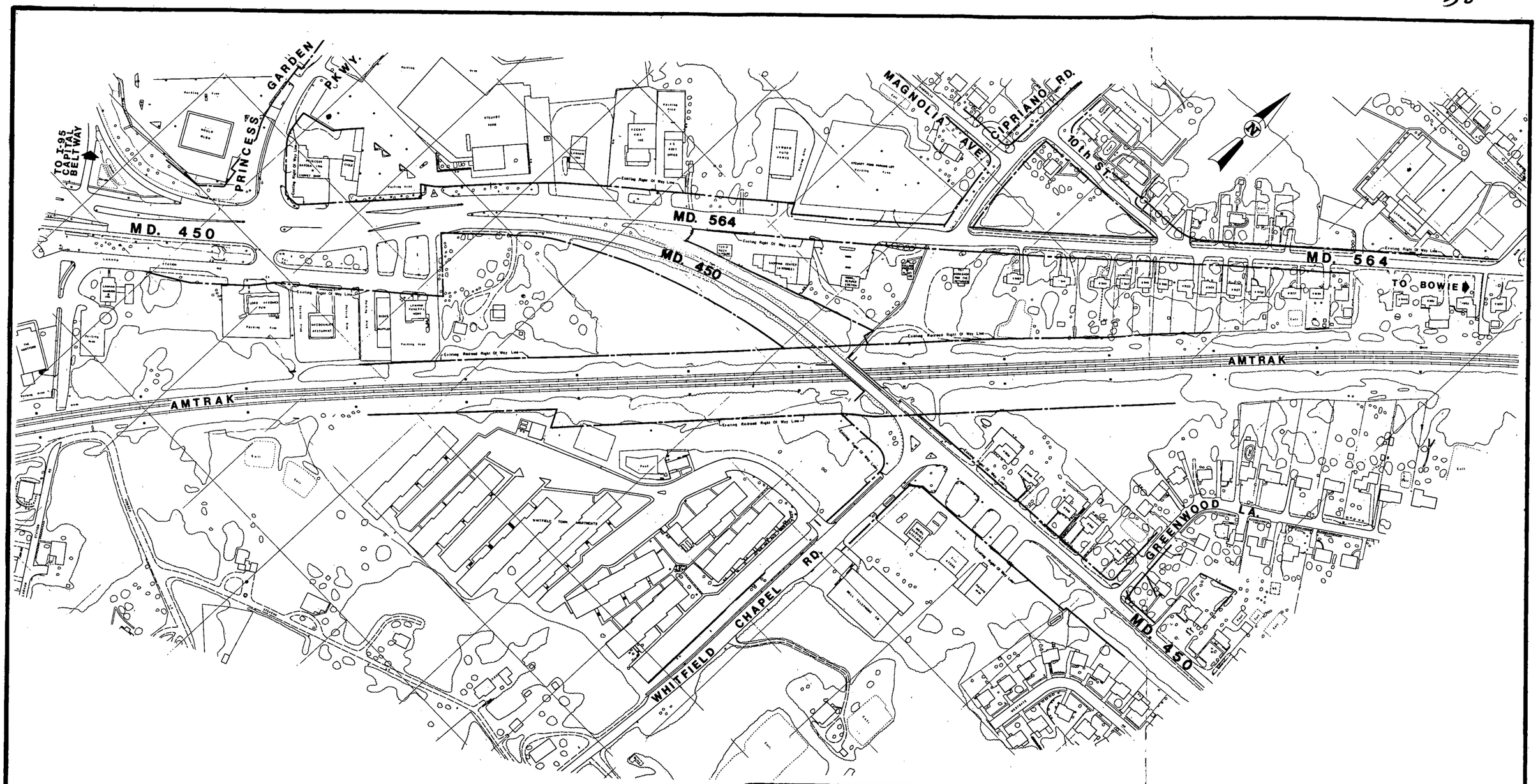
B. ALTERNATES NOW UNDER CONSIDERATION:

1. Alternate 1: No-Build Alternate

Alternate 1 is the No-Build Alternate. This alternate would retain the existing "scissors" configuration of the intersection and the bridge over the high-speed Amtrak Railroad. The approach roadways to the intersection of Maryland Route 450 and Maryland Route 564 would remain as they are today, except for periodic maintenance such as resurfacing. The plan and typical sections for Alternate 1 are shown on Figures III-1 and III-2.

Both roadways approaching this skewed intersection typically consist of one 12-foot lane, without shoulders, in each direction with a posted speed of 30 MPH. Within this intersection each roadway has been striped to include two 12-foot lanes.

Maryland Route 564, between Maryland Route 450 and Cipriano Road, contains two lanes of varying widths accommodating two-way traffic. Access to commercial activities on the north side of Maryland Route 564 is provided by short driveways extending from their parking areas to the roadway. East of Cipriano Road, Maryland Route 564 tapers to two 10-foot lanes, with narrow shoulders on both sides which provide roadside parking for residents. The posted speed along this portion of Maryland Route 564 is 40 MPH.



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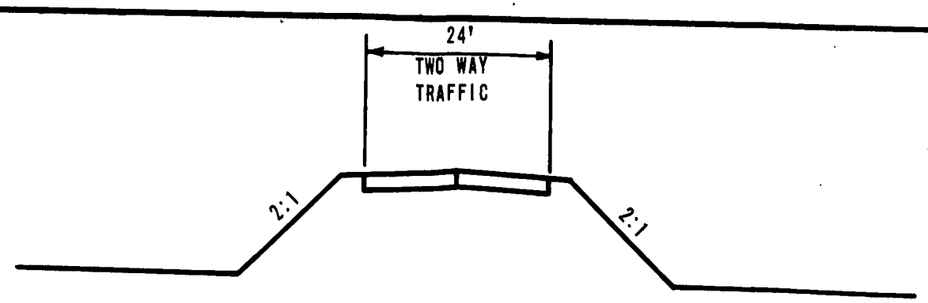
INTERCHANGE STUDIES

MARYLAND ROUTES 450/564

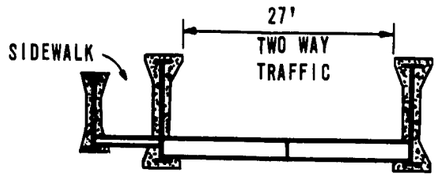
State Project No. P185-101-371

PLAN ALTERNATE 1 NO BUILD

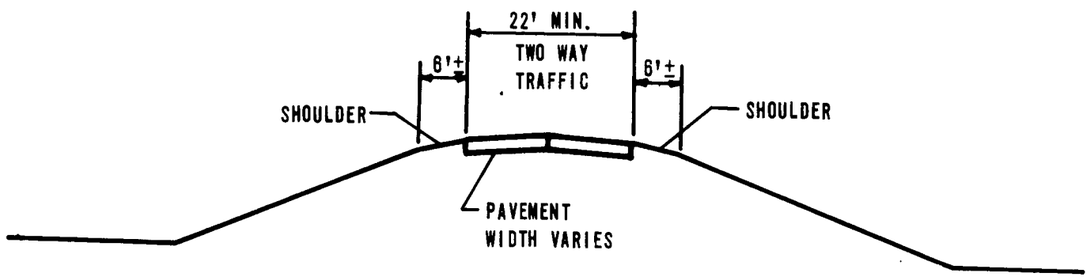
FIGURE III 1



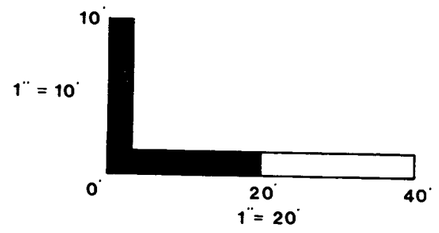
MD ROUTE 450
(BETWEEN MD. ROUTE 564 & RAILROAD BRIDGE)



RAILROAD BRIDGE



MD ROUTE 564
(BETWEEN MD ROUTE 450 & CIPRIANO ROAD)



INTERCHANGE STUDIES

MARYLAND
ROUTES 450/564

State Project No. P185-101-371

TYPICAL SECTIONS

ALTERNATE 1
NO - BUILD

FIGURE III - 2

Maryland Route 450, between Maryland Route 564 and Whitfield Chapel Road, consists of two 12-foot lanes, one in each direction, without shoulders. Beyond the intersection with Whitfield Chapel Road, Maryland Route 450 contains two 12-foot lanes with narrow shoulders on both sides.

Alternate 1 is considered an existing Transportation Systems Management (TSM) Alternate because the signalization along Maryland Route 450, within the study area, has been improved using the most up-to-date progressive, signalization techniques. Further traffic operational improvements require major construction.

Except for routine highway maintenance and bridge rehabilitation costs, this alternate has no other construction costs.

Safety deficiencies and present and future traffic volumes of the existing roadways are described in Sections II-A and IV-B-7, respectively.

2. Alternate 2: Grade Separation and Railroad Bridge Replacement

Alternate 2 consists of roadway improvements to accommodate all existing traffic movements between Maryland Routes 450 and 564. The westbound Maryland Route 450 to eastbound Maryland Route 564 movement and return are not presently available at this intersection. These movements would necessarily take place at Carter Avenue (see Figure I-1). This alternate would eliminate the existing signalized "scissors" intersection by bifurcating eastbound Maryland Route 564 under Maryland Route 450, and includes a new Maryland Route 450 bridge over the Amtrak Railroad.

This alternate will have a minimum design speed of 40 MPH and would eliminate the existing intersection by dividing eastbound and westbound Maryland Route 564 into two roadways such that the eastbound roadway would pass under Maryland Route 450 at the railroad embankment and tie into existing Maryland Route 564 in the vicinity of Cipriano Road. Westbound Maryland Route 564 from Cipriano Road would approximate the alignment of existing Maryland Route 564. The plan and typical sections for Alternate 2 are shown on Figures III-3 thru III-5. Estimated roadway construction, right-of-way and relocation costs for Alternate 2 are presented on Table III-1. A detailed description by segments, is given below.

a. Maryland Route 450 -

Maryland Route 450 between Maryland Route 564 and the intersection with Greenwood Lane would be a 6-lane divided urban highway. The eastbound and westbound roadways would each

consist of 40-foot wide pavements. A 16-foot median, beginning at the intersection with Maryland Route 564, would expand to a width of 24-feet just west of the Railroad bridge and remain 24-feet to the intersection with Whitfield Chapel Road. This segment of Maryland Route 450 has a maximum degree of curvature of 4^{o}-30' and a combined horizontal and vertical design speed of 40 MPH. Left-turn storage lanes are proposed at the intersection with Greenwood Lane eastbound, and Whitfield Chapel Road westbound. A 5-foot wide paved sidewalk extending the length of this segment of Maryland Route 450 on the eastbound side would be provided.

Maryland Route 450 at the Capital Beltway overpass would consist of three thru-lanes westbound and two thru-lanes eastbound. A lane drop will take place at the "on" ramp from westbound Maryland Route 450 to northbound Capital Beltway, in order to reduce from four lanes to three. Eastbound, east of the underpass, an additional lane is provided for traffic exiting the Capital Beltway via the "off" ramp.

b. Maryland Route 450 Bridge over the Amtrak Railroad -

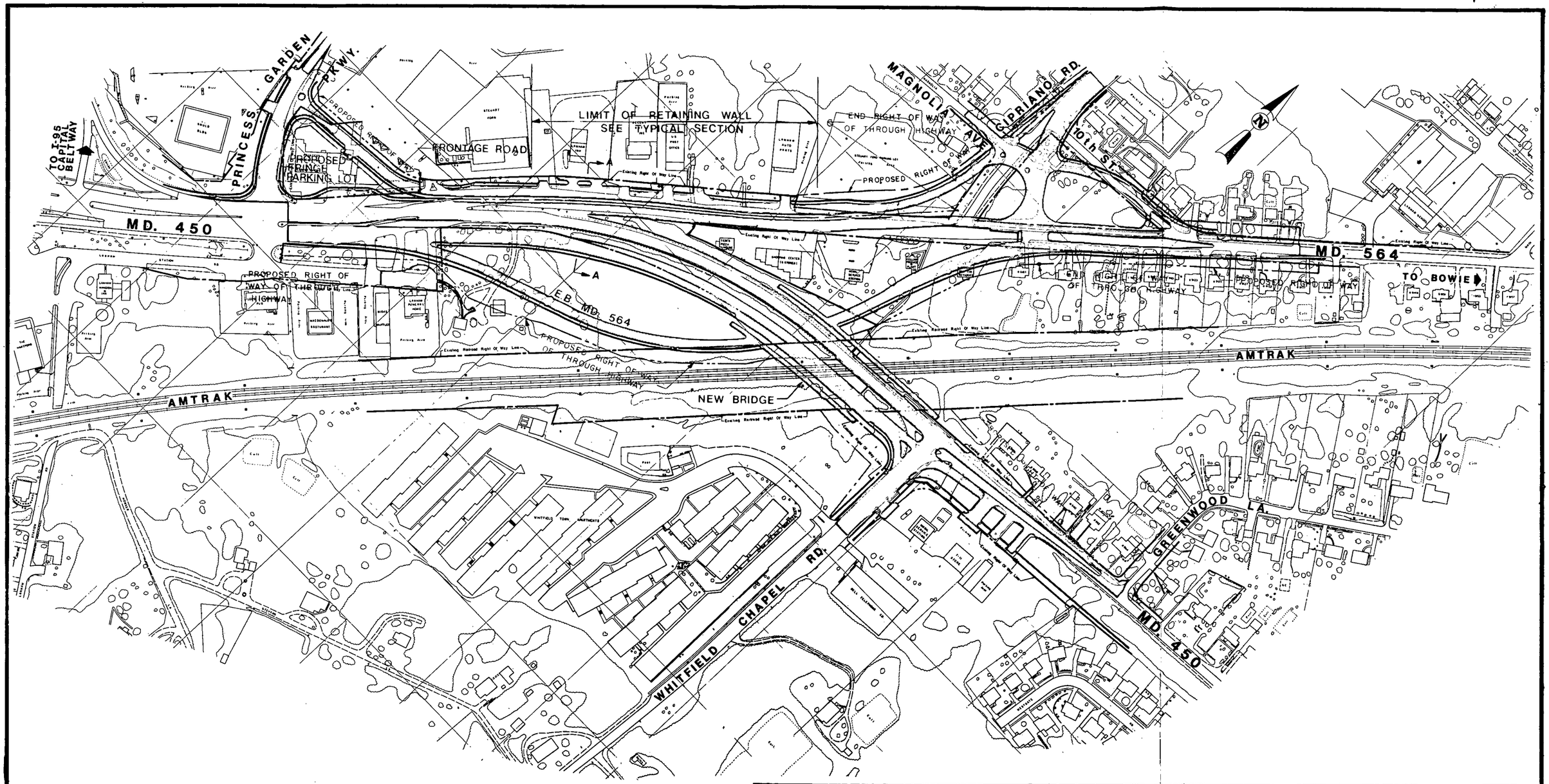
The bridge carrying Maryland Route 450 over the Amtrak Railroad would be approximately 410 feet in length and 110 feet in width. The eastbound and westbound roadways would each consist of 40-foot pavements separated by a 24-foot wide raised concrete median. Bordering the roadway surface in the westbound direction would be a barrier parapet while, in the eastbound direction, a raised sidewalk (5' wide), bordered by a barrier parapet, topped with protective fence, would be provided.

Minimum clearance between the top of rail and the lowest point of the bridge structure would not be less than 24-feet 3-inches to provide standard vertical clearance.

c. Intersection of Maryland Route 450 and Whitfield Chapel Road -

The intersection of Maryland Route 450 and Whitfield Chapel Road would be a signalized T-intersection. The Whitfield Chapel Road approach to the intersection is proposed as a two-way, 44-foot wide roadway.

The Maryland Route 450 eastbound approach to the intersection would be 40 feet wide, consisting of three 12-foot lanes. The curb lane would provide for right-turn movements; the right-turn being a channelized free movement. A small raised island would allow this right-turn to be easily recognized. The two thru-lanes would taper to one lane at Greenwood Lane.



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INTERCHANGE STUDIES

MARYLAND ROUTES 450/564

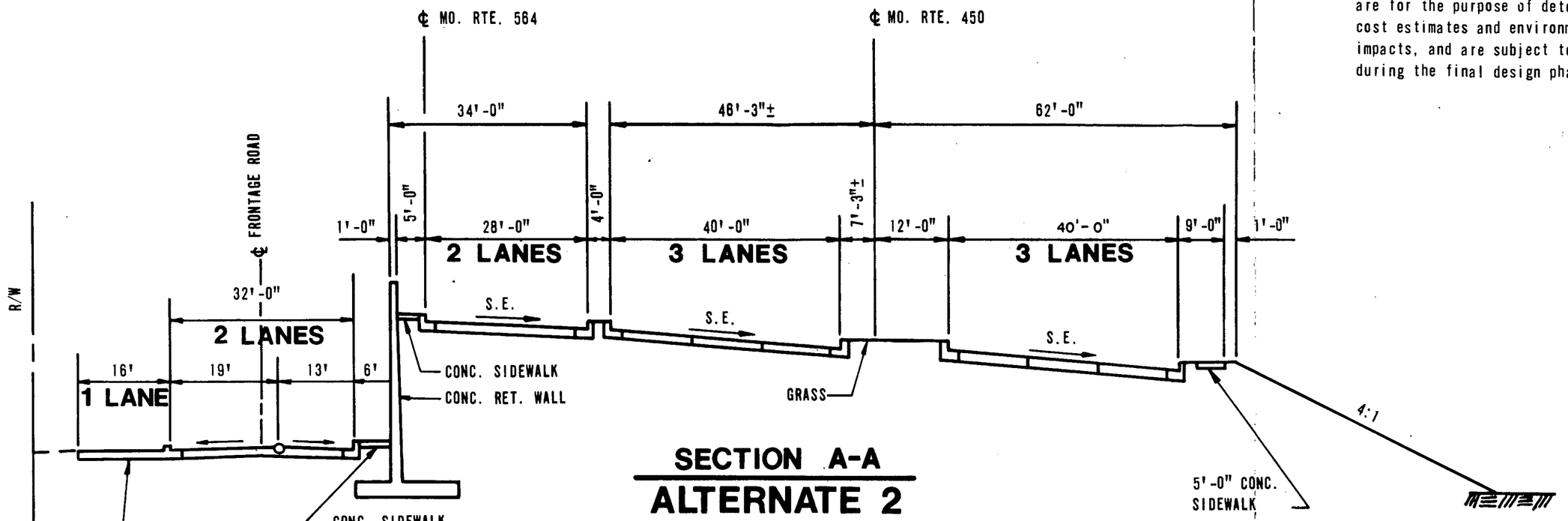
State Project No. P185-101-371

PLAN
ALTERNATE 2
GRADE SEPARATION
(EASTBOUND MD. ROUTE 564)
RAILROAD BRIDGE REPLACEMENT

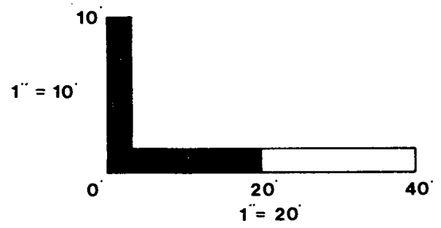
FIGURE III-3

NOTE:

Dimensions of all roadways, shoulders, medians, safety grading widths, etc. are for the purpose of determining cost estimates and environmental impacts, and are subject to change during the final design phase.



SECTION A-A
ALTERNATE 2



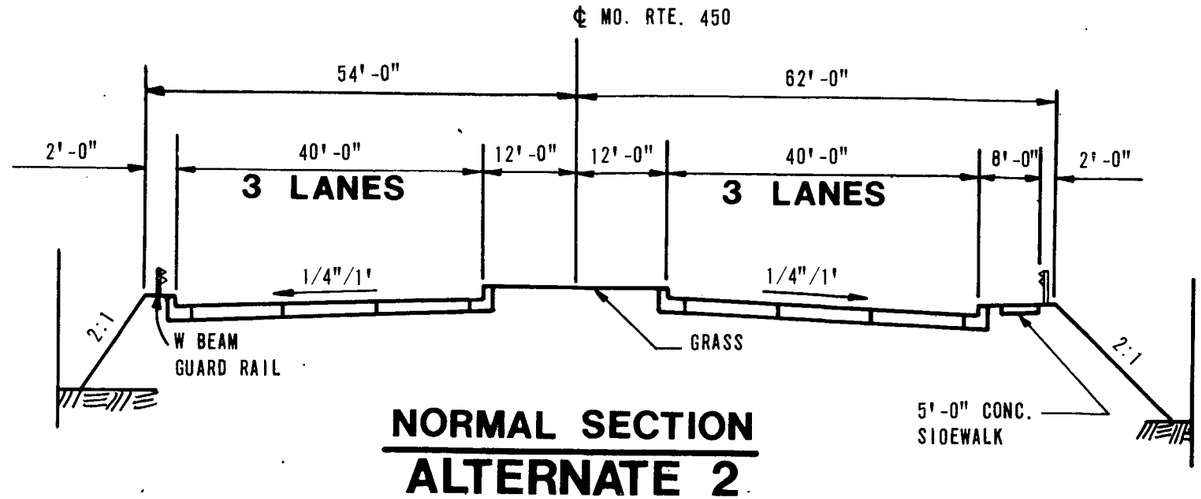
INTERCHANGE STUDIES

MARYLAND
ROUTES 450/564

State Project No. P185-101-371

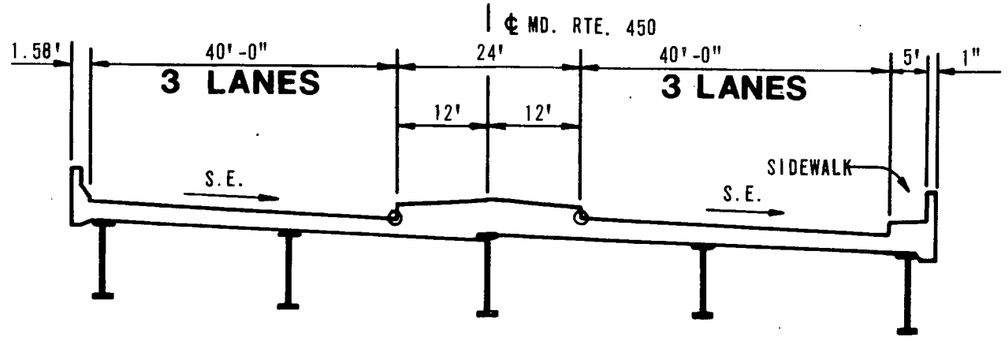
TYPICAL SECTIONS
ALTERNATE 2
MARYLAND
ROUTES 450/564

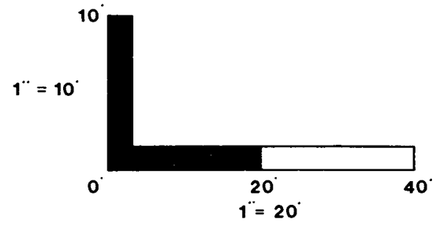
FIGURE III-4



NORMAL SECTION
ALTERNATE 2

TYPICAL BRIDGE SECTION
ALTERNATES 2





NOTE: Dimensions of all roadways, shoulders, medians, safety grading widths, etc. are for the purpose of determining cost estimates and environmental impacts, and are subject to change during the final design phase.

INTERCHANGE STUDIES

MARYLAND
ROUTES 450/564

State Project No. P185-101-371

TYPICAL SECTIONS

ALTERNATE 2
MARYLAND ROUTE 450

FIGURE III-5

The Maryland Route 450 westbound approach would taper from one lane to a pavement width of 52 feet containing three lanes and a median lane. This median lane would act as a storage lane for left-turning vehicles.

Five-foot paved sidewalks would be provided on both sides of all the approach roadways in the vicinity of the intersection.

d. Eastbound Maryland Route 564 -

Eastbound Maryland Route 564 would diverge from eastbound Maryland Route 450 east of the intersection of Maryland Route 450 and Princess Garden Parkway. Maryland Route 564 would curve easterly, passing under Maryland Route 450 in the vicinity of the Amtrak Railroad, and converge with westbound Maryland Route 564 in the vicinity of Cipriano Road.

This segment of eastbound Maryland Route 564 will consist of two travel lanes with a pavement width of 28 feet. A left-turn storage lane will be provided for the left-turn movement to Cipriano Road. A 5-foot wide paved sidewalk will also be provided.

e. Westbound Maryland Route 564 -

Westbound Maryland Route 564 between Cipriano Road and the merge with Maryland Route 450 would approximate the alignment of existing Maryland Route 564. Two (2) lanes westbound are proposed on a pavement width of 28 feet. Westbound Maryland Route 564 will merge with westbound Maryland Route 450 east of the intersection with Princess Garden Parkway. A 5-foot paved sidewalk will be provided.

f. Merge Between Maryland Routes 450 and 564 -

The merge between westbound Maryland Route 564 and westbound Maryland Route 450 is proposed to be metered with traffic signals to allow safe performance of weaving maneuvers. Westbound Maryland Route 450 between this merge area and the intersection with Princess Garden Parkway will consist of 4 lanes with a pavement width of 52 feet.

g. Intersection of Maryland Route 450 and Princess Garden Parkway /Lanham Station Road -

The intersection of Maryland Route 450 and Princess Garden Parkway/Lanham Station Road would remain a signalized

four-way intersection with access control throughout. The east bound approaches of Maryland Route 450 will consist of 4 lanes with a pavement width of 48 feet. A left-turn storage lane will be provided for movements into Princess Garden Parkway.

The westbound approach of Maryland Route 450 would consist of a pavement width of 52 feet, four lanes plus a left-turn storage lane for the movement into Lanham Station Road.

The Princess Garden Parkway approach would consist of a pavement width of 52 feet. No entrances will be permitted along the east side of Princess Garden Parkway between Maryland Route 450 and the proposed service road.

The Lanham Station Road approach would consist of a pavement width of 44 feet. Direct access from businesses to eastbound Maryland Route 450 will be terminated, and a cul-de-sac constructed at the eastern end of Lanham Station Road. Access to Maryland Route 450 will be via the Princess Garden Parkway/Lanham Station Road intersection with Maryland Route 450.

h. Frontage Road -

A two-way frontage road, 32 feet wide would be constructed to provide access for the businesses fronting westbound Maryland Route 564. The frontage road will run parallel to westbound Maryland Route 564 between Cipriano Road and Princess Garden Parkway. Because the frontage road will be constructed at a lower grade than westbound Maryland Route 564, a retaining wall will be required between the two roadways.

Access to the frontage road will be provided at three locations; 10th Street diverging from westbound Maryland Route 564 just east of Cipriano Road, Cipriano Road and Princess Garden Parkway.

As specified in the Washington Metropolitan Air Quality Plan, the Maryland Department of Transportation is committed to carry out to the maximum extent feasible those transportation improvements which will improve regional air quality. Fringe parking lots offer the potential to improve air quality in addition to relieving traffic congestion, reducing travel costs, increasing vehicular occupancy, and reducing energy consumption. A fringe parking lot containing approximately 60 spaces and two bus bays would be constructed in the northeastern corner of the Maryland Route 450/Princess Garden Parkway intersection between the frontage road and Maryland Route 450. Access to this lot would be provided along the frontage road.

3. Alternate 3: Full Highway Interchange and Railroad Bridge Replacement

Alternate 3 consists of an interchange to accommodate all traffic movements between Maryland Routes 450 and 564, including a loop ramp from westbound Maryland Route 564 to eastbound Maryland Route 450 and a right-turn ramp for return. Alternate 3, like Alternate 2, would eliminate the existing "scissors" intersection with the bifurcation of eastbound Maryland Route 564 under Maryland Route 450, and include a new Maryland Route 450 bridge over the Amtrak Railroad. The plan and typical sections for Alternate 3 are shown on Figures III-6 thru III-8. The estimated roadway construction, right-of-way, and relocation costs are presented on Table III-1 for Alternate 3.

This alternate, including the 60-space fringe parking lot, is identical to Alternate 2, except for the following:

a. Maryland Route 450 -

Because this alternate contains a loop ramp providing for the westbound Maryland Route 564 to eastbound Maryland Route 450 movement, entering the mainline on an upgrade, a 12-foot auxiliary lane will be carried across the railroad bridge to the intersection with Whitfield Chapel Road. At this point, the additional lane will be marked for "right-turn only", and dropped. The bridge carrying Maryland Route 450 over the Amtrak Railroad will be 12 feet wider than the bridge for Alternate 2 due to this lane.

b. Loop Ramp from Westbound Maryland Route 564 to Eastbound Maryland Route 450 (Ramp A) -

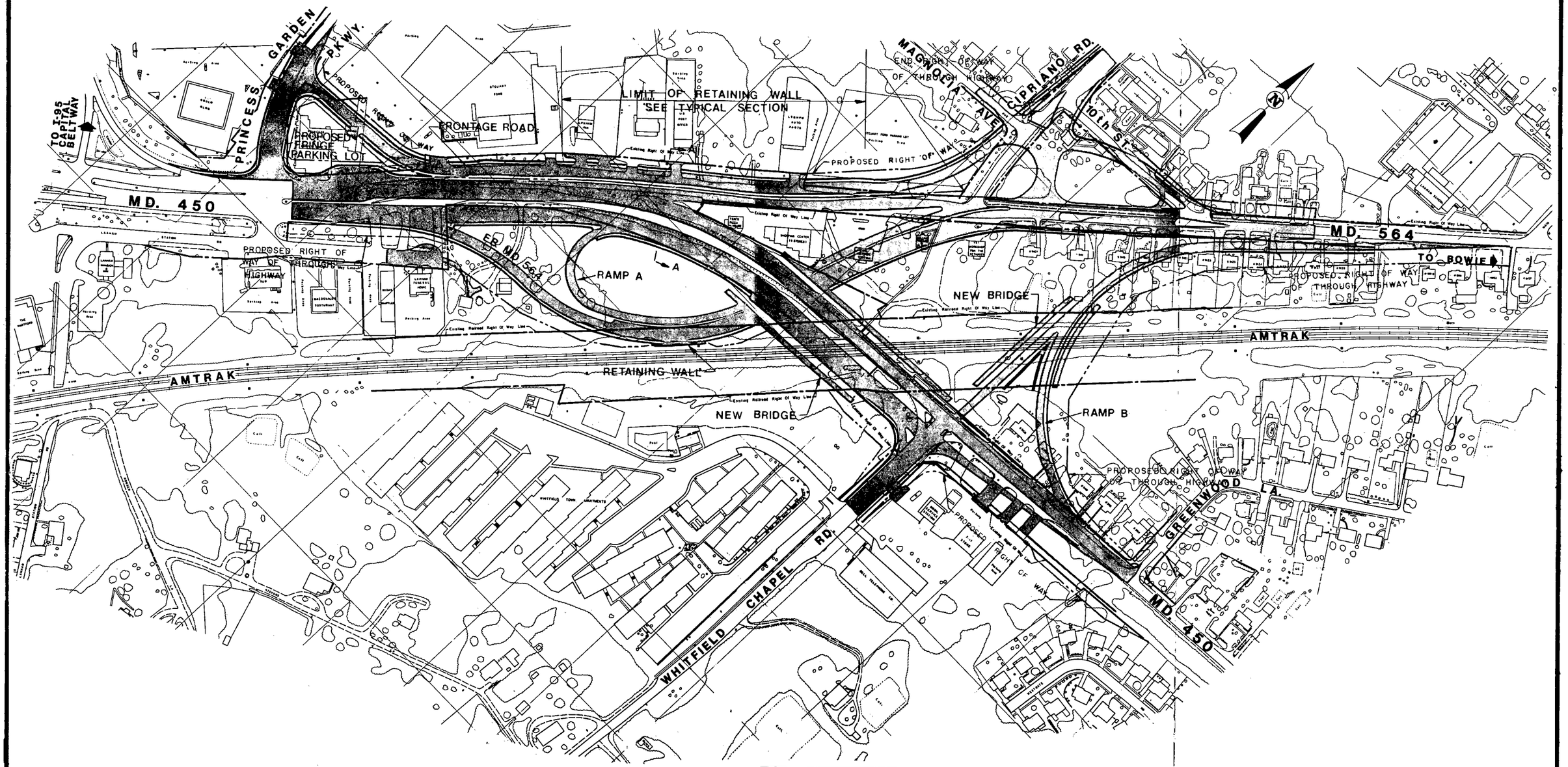
The loop ramp (Ramp A) carrying traffic from westbound Maryland Route 564 to eastbound Maryland Route 450 would consist of one lane 20 feet wide. This ramp would diverge from westbound Maryland Route 564, west of Cipriano Road, pass under Maryland Route 450, and loop to the right, with a minimum radius length of 90 feet before merging with eastbound Maryland Route 450. Because the ratio of the curves (479 foot radius to 90 foot radius) in the compound curve for Ramp A did not meet AASHTO Standards, a spiral was introduced to provide a smooth transition between the two radii in conformance with AASHTO Standards.

c. Return Ramp from Westbound Maryland Route 450 to Eastbound Maryland Route 564 (Ramp B) -

The single lane, 20-foot wide return ramp (Ramp B) from westbound Maryland Route 450 to eastbound Maryland Route

564 would diverge from westbound Maryland Route 450 west of Greenwood Lane, pass over the Amtrak Railroad while curving eastward and merge with eastbound Maryland Route 564, east of Cipriano Road. A short additional ramp section would provide access from Whitfield Chapel Road to eastbound Maryland Route 564. This 19-foot wide ramp section will be an extension of Whitfield Chapel Road and merge with the main ramp over the Amtrak Railroad. The bridge carrying Ramp B will have an approximate width of 32 feet, while the structure carrying the extension of Whitfield Chapel Road will have an approximate width of 25 feet. Both structures will have a length of approximately 200 feet.

Minimum clearance between the top of rail and the lowest point on the bridge structures will exceed 24-feet 3-inches. The railroad electrification system will have to be rearranged for the new structures.



Scale : 250 0 FEET 250 500

1/10 0 MILES .05 .10

INTERCHANGE STUDIES

MARYLAND ROUTES 450/564

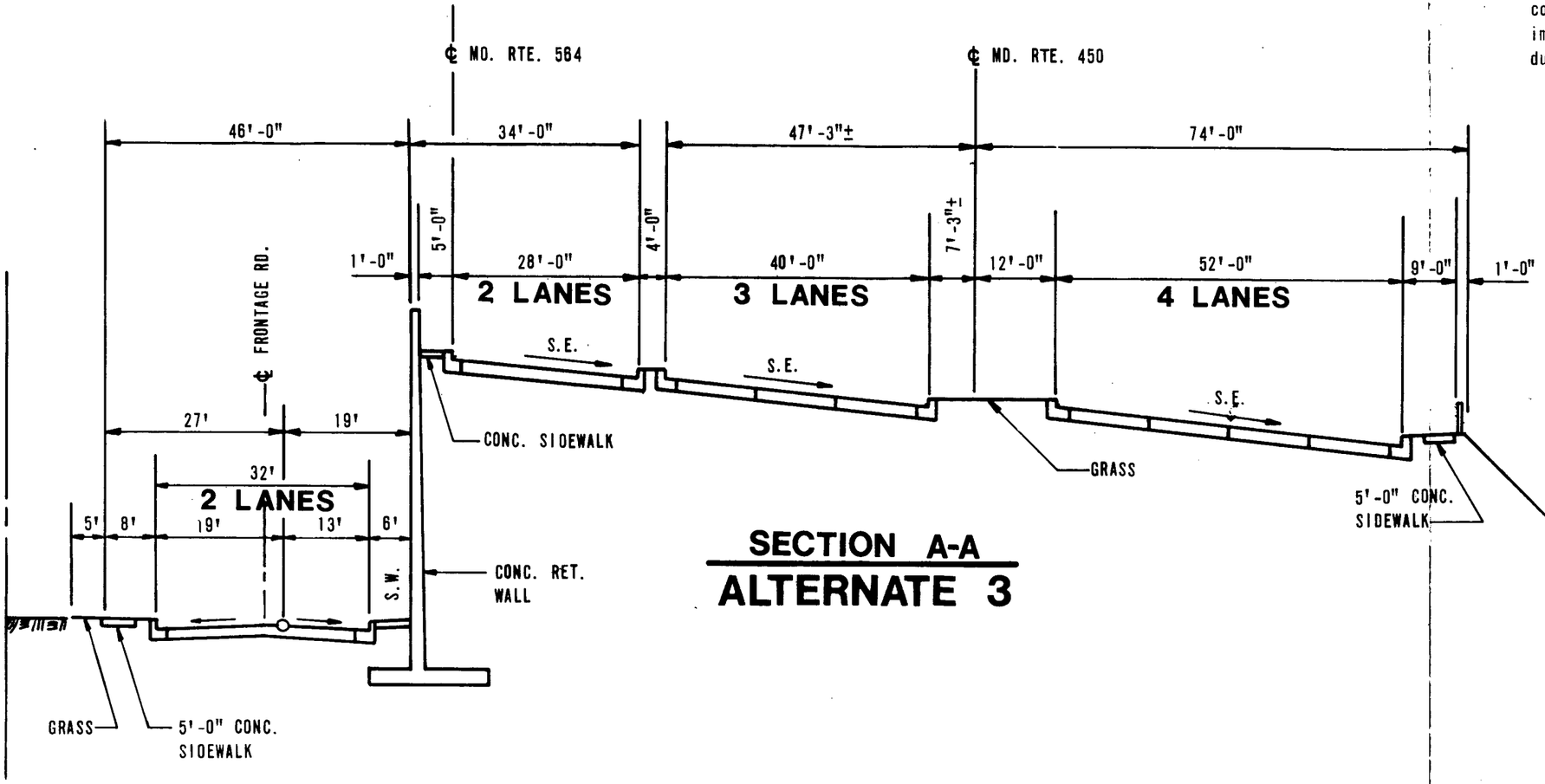
State Project No. P185-101-371

PLAN ALTERNATE 3 FULL INTERCHANGE RAILROAD BRIDGE REPLACEMENT

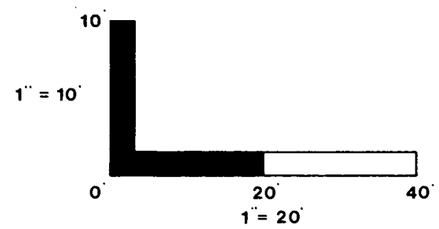
FIGURE III-6

NOTE:

Dimensions of all roadways, shoulders, medians, safety grading widths, etc. are for the purpose of determining cost estimates and environmental impacts, and are subject to change during the final design phase.



SECTION A-A
ALTERNATE 3



INTERCHANGE STUDIES

MARYLAND ROUTES 450/564

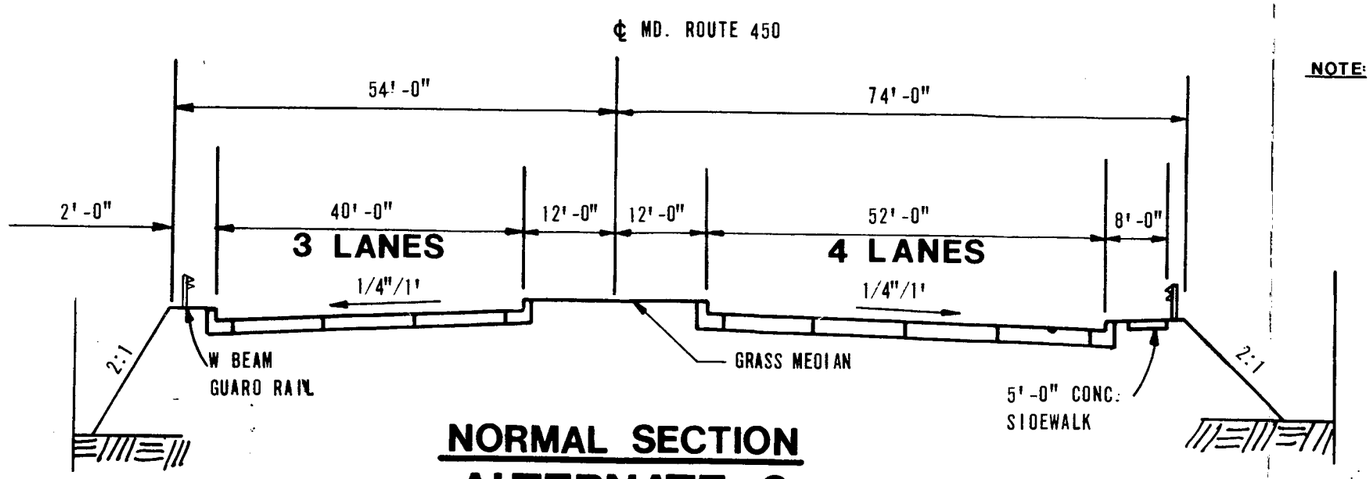
State Project No. P185-101-371

TYPICAL SECTIONS

ALTERNATE 3

MARYLAND ROUTES 450/564

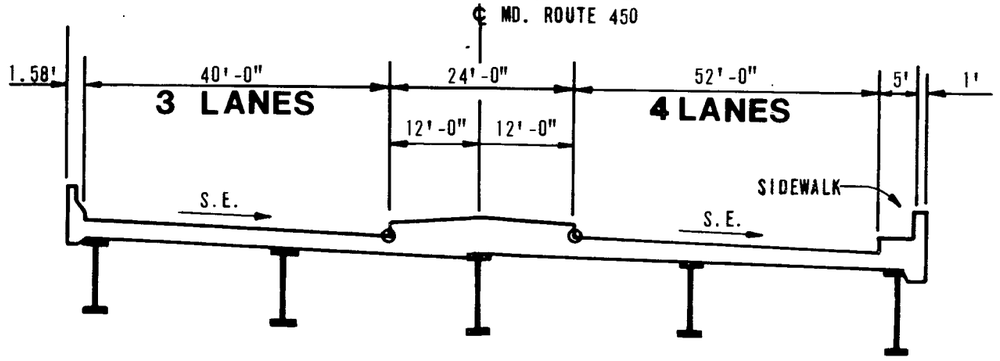
FIGURE III-7

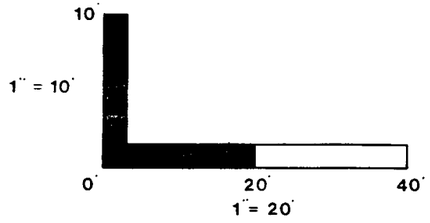


NORMAL SECTION
ALTERNATE 3

NOTE: Dimensions of all roadways, shoulders, medians, safety grading widths, etc. are for the purpose of determining cost estimates and environmental impacts, and are subject to change during the final design phase.

TYPICAL BRIDGE SECTION
ALTERNATE 3





INTERCHANGE STUDIES

MARYLAND
ROUTES 450/564

State Project No. P185-101-371

TYPICAL SECTIONS
ALTERNATE 3
MARYLAND ROUTE 450

FIGURE III - 8

CATEGORY	ALTERNATE 2	ALTERNATE 3
ROADWAY CONSTRUCTION		
MD. RTE. 450	$ 3,830,000[1]	$ 4,443,000[1]
MD. RTE. 564 W.B.R.	1,211,000	1,471,000
MD. RTE. 564 E.B.R.	609,000	816,000
FRONTAGE ROAD (INCLUDING FRINGE PARKING LOT)	497,000	497,000
PRINCESS GARDEN PARKWAY	123,000	123,000
WHITFIELD CHAPEL ROAD	162,000	162,000
CIPRIANO ROAD	124,000	124,000
10TH STREET - MAGNOLIA AVENUE	122,000	122,000
RAMP 'A' - RTE. 564 WBR TO RTE 450 EBR	-	275,000
RAMP 'B' - RTE. 450 WBR TO RTE. 564 EBR	-	1,000,000[1]
CONN. - WHITFIELD CHAPEL RD. TO RAMP 'B'		650,000[1]
SUBTOTAL ROADWAY CONSTRUCTION	$ 6,678,000	$ 9,683,000
CONTR. ENG/ADMIN/OVHD	1,736,000	2,517,000
TOTAL ROADWAY CONSTRUCTION	$ 8,414,000	$12,200,000
RIGHT OF WAY	$ 3,321,000	$ 5,626,000
RELOCATION	$ 434,000	$ 892,000
TOTAL ESTIMATED COST 1979 DOLLARS	$12,169,000	$18,718,000

1 INCLUDES BRIDGE OVER RR, ELECTRIFICATION, ETC.

INTERCHANGE STUDIES
MARYLAND
ROUTES 450/564

STATE PROJECT NO. P185-101-371

ESTIMATED
ROADWAY CONSTRUCTION,
RIGHT OF WAY
AND RELOCATION
COSTS

TABLE III - 1

IV. COMPARISON OF ALTERNATES

IV. COMPARISON OF ALTERNATES

A. SUMMARY:

The existing geometrically deficient roadway intersection of Maryland Routes 450/564 experiences extremely high-accident rates, inefficient traffic flow with congestion, and provides insufficient capacity to satisfactorily accommodate projected future traffic volumes. Although Alternate 1, the No-Build Alternate, would displace no businesses or occupied residences, it would provide no relief from these problems. Both build alternates (Alternates 2 and 3) would adequately respond to these problems, but would also require the acquisition of homes and businesses.

Implementation of either Alternate 2 or 3 would also incur substantial cost for right-of-way acquisition and construction. Alternate 1 would not require this additional cost, but does not solve the existing capacity and safety need. In addition, deck rehabilitation would require a large expenditure of maintenance funds.

Alternate 1 is not compatible with the circulation and transportation elements of the Adopted and Approved Master Plan of Glenn Dale, Seabrook, Lanham and Vicinity for Planning Area 70 (October 1977), nor the Proposed Amendment to the General Plan for the Maryland-Washington Regional District within Prince George's County (November 1977). Both were published by The Maryland-National Capital Park & Planning Commission. Build Alternates 2 and 3 are compatible with both of these plans.

Table S-1, Cost-Effectiveness Analysis shown in the Summary, presents a comparison of the benefits and impacts associated with Alternates 1, 2 and 3.

B. PRIMARY IMPACTS:

1. Social Impacts

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

Alternate 2 would acquire two residences occupied by six persons[1]. One of these dwellings is owner-occupied and one is tenant-occupied. The owner-occupants are retired and living on a fixed income.

---

1 One additional occupied residence has already been acquired by SHA.

The greatest impact would be created by Alternate 3, which would acquire 22 residences occupied by 55 persons[1]. Sixteen of these residences are owner-occupied, and tenant families reside in the other 6 homes. A large proportion of the residents that would be affected are retired, or close to retirement, and are living on a fixed income. One resident is handicapped (guadriplegic).

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

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

A survey of comparable replacement housing has been conducted by the Bureau of Relocation Assistance, Maryland SHA for the Lanham-Seabrook-New Carrollton area. Several local realtors were contacted and a study of newspaper listings made. The housing market in the study area is a fairly active one with numerous new and used homes for sale. Several new developments are under construction or have recently opened, with homes priced in the $65-$80,000 range. It is believed that all of the owner-occupants could successfully relocate within current financial limits. Housing is available to meet the needs of the handicapped individual.

The rental housing market in the Washington Metro area is more restricted. The majority of rentals available are in the $375-$500 range, and are in limited supply at the present time. This trend is expected to continue during the life of the project. Because of low tenant response, it is not known whether the tenants affected are paying economic rentals for their properties. Last resort housing could be required in the event that the tenants are paying below market rents.

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1 Ibid.

2. Economic Impacts

Both build alternates would require the displacement of twelve active businesses. These businesses employ a total of approximately 60 people, ranging from 2 to 13 persons per business. None of these businesses are believed to be owned by members of a minority group.

A recent survey of available replacement business sites conducted by the Bureau of Relocation Assistance, Maryland SHA disclosed a shortage of low rental sites in the Lanham area. Most of those sites available rent is in the $650-$850 a month range. Several of these businesses (restaurants, printer, service station) could experience relocation difficulties due to special zoning or permit requirements currently in effect in Prince George's County. All of the businesses are likely to suffer economic injury due to higher rent costs and expenses which are non-compensable under State Relocation Law.

3. Impacts to Historic Sites

The Maryland Historical Trust identified the following 14 sites of historic significance within the study area.

A House - 5610 Lanham Station Road
(Outside Map Limits)

B House - 5614 Lanham Station Road
(See Figure IV-1)

C House - 9012 Stevens Lane
(See Figure IV-1)

D House - 9020 Stevens Lane
(See Figure IV-1)

H House - 9005 Howser Lane
(Outside Map Limits)

I House - 9000 Howser Lane
(Outside Map Limits)

J Log Cabin - Top of dirt road off Lanham Station Road
(Outside Map Limits)

U House - 5516 Whitfield Chapel Road
(Outside Map Limits)

V House - 5520 Whitfield Chapel Road
(See Figure IV-1)

W	House - On driveway off Westgate Lane, east of Whitfield Chapel Road (See Figure IV-1)
BB	House - On Old Brown's Lane, east of Whitfield Chapel Road (Outside Map Limits)
Y	House - 9008 Magnolia Avenue (Outside Map Limits)
PA #70-7	Lanham Mansion - 8901 Lanham Station Road (See Figure IV-1)
PA #70-8	Whitfield Chapel Site and Cemetery Lanham Methodist Church 5512 Whitfield Chapel Road (Outside Map Limits)

Eleven of these sites are potentially eligible for the National Register of Historic Places. It has been determined by the Deputy State Historic Preservation Officer that no site eligible for the National Register would be affected by either build alternative (see Section V for documentation).

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

4. Natural Environment

As discussed in Section I-C, the original natural environment of the study area has been almost completely superseded by urban development. Some undeveloped land consisting of a narrow strip of field habitat or scrubby, immature woodland, does remain along the railroad right-of-way, but even this small tract has been much compromised and no longer supports wildlife. No known threatened or endangered species inhabit the study area, as indicated by the Maryland Department of Natural Resources and local office of the U. S. Fish and Wildlife Service.

No floodplain or wetland exists within the study area today according to information contained in the Adopted and Approved Master Plan for Glenn Dale, Seabrook, Lanham and Vicinity (The Maryland-National Capital Park & Planning Commission, 1977) and the U. S. Department of Housing & Urban Development, Federal Insurance Administration flood hazard boundary maps (July, 1976).

The proposed construction would require no modification of any stream. There could, however, be some small decrease in the quality of stormwater runoff. Since completion of the proposed action would result in the construction of additional roadway surface, the amount of deicing compounds available to stormwater runoff could increase. However, considering the state of development and overall amount of existing roadway surface and paved parking area in this study area, the small additional amount of these compounds that would be contributed by the proposed improvements would not be significant.

Vehicle deposited substances (i.e., coolants, gasoline, grease, oil, particles worn from brake and clutch linings, etc.) can also cause degradation of adjacent aquatic systems when introduced in sufficient amounts by stormwater runoff. These substances are deposited as a function of axle miles travelled (Contributions of Urban Roadway Usage to Water Pollution, EPA 1975). Since the proposed improvements would not increase traffic volumes over the No-Build Alternate (see Section III-B), selection of a build alternate would not significantly decrease the quality of runoff or receiving waters.

This project is consistent with the Coastal Zone Management Plan developed by the Maryland Department of Natural Resources.

5. Noise Impact

A detailed noise impact analysis has been completed for the proposed action. The Technical Noise Report (dated September, 1979) is available for review at the Maryland Department of Transportation, State Highway Administration, 300 West Preston Street, Baltimore, Maryland 21201.

Noise level predictions for each alternate were determined by use of the DOT-TSC-FHWA-72-1 Noise Prediction Model as required by the Federal-Aid Highway Program Manual, Volume 7, Chapter 7, Section 3 (FHPM 7-7-3). Ambient noise level measurements required for impact assessment were taken at 8 sensitive receptors in the project study area in March, 1978 (see Figure IV-1 and Table IV-1). For each site, measurements were made at ambient noise levels during early afternoon, AM and PM rush-hours.

Noise level predictions for each alternative without noise abatement measures for distances of approximately 115 feet or less from the near edge of Maryland Routes 450 and 564 were determined to exceed the Federal design noise levels of L_{10} = 70 dBA for Type "B" locations or L_{10} = 75 dBA for Type "C" locations for the worst case noise environment.

The following brief compilation of data from Table IV-1 summarizes the noise impacts predicted for Alternatives 1, 2 and 3 for the design year and year of completion.

	No. of Sites in which Predicted L_{10} Level Creates a "severe" noise impact		No. of Sites for which Predicted L_{10} Levels Exceed Federal Design Criteria	
Alternative	1985	2005	1985	2005
1 - No-Build	0	0	2	4
2 - Grade Separation	0	0	1	2
3 - Interchange	0	0	1	3

Noise barriers were considered as a noise attenuation measure in all cases where a noise sensitive area exceeded design noise levels or "severe" impact would exist. Noise barriers were determined to be infeasible due to the following:

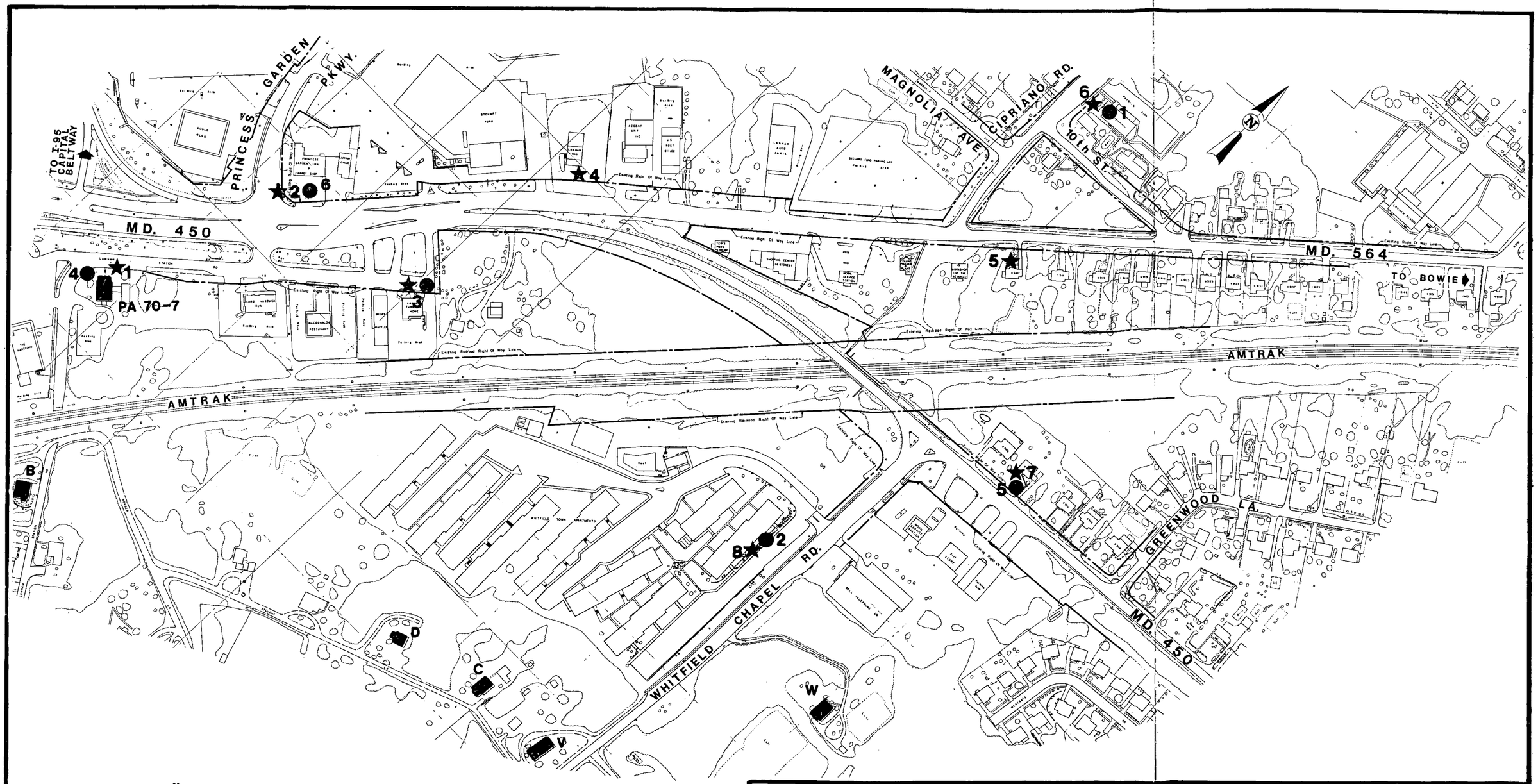
a. Barriers would have to be segmented to provide residents access to their driveways, this would reduce their effectiveness;

b. Barriers would limit the visibility of residents and would shield the view of commercial businesses from the highway;

c. Barriers would limit the sight distance for both vehicles and pedestrians approaching the intersections;

d. Barriers would reduce the quality of scenery from both the residents' point of view as well as the motorists' point of view.

Other noise attenuation measures (including partial attenuation measures), such as landscape screening, the acquistion of property rights for installation or construction of noise abatement barriers and the acquisition of real property or interests to serve as buffer zones were also found to be infeasible, because the socio-economic impacts outweigh the potential noise benefits.



HISTORIC SITE

★ LOCATION OF NOISE MONITORING SITES

● LOCATION OF AIR QUALITY SENSITIVE RECEPTORS

Scale : FEET 250 0 250 500; 1/10 0 .05 .10 MILES

INTERCHANGE STUDIES

MARYLAND ROUTES 450/564

State Project No. P185-101-371

Location of Historic Sites, Noise Monitoring Sites and Air Quality Sensitive Receptors

FIGURE IV-1

MD. ROUTES 450/564 STUDY
NOISE IMPACT ASSESSMENT

SENSITIVE RECEPTORS			[1] 1978 L_{10} dBA MEASURED AMBIENT NOISE LEVEL	[2] FEDERAL DESIGN CRITERIA L_{10} dBA	1985									2005								
					[3] 1985 L_{10} dBA PREDICTED			NOISE IMPACTS						[3] 2005 L_{10} dBA PREDICTED			NOISE IMPACTS					
								EXCEEDS FEDERAL DESIGN CRITERIA			[4] NOISE IMPACT						EXCEEDS FEDERAL DESIGN CRITERIA			[4] NOISE IMPACT		
					ALTERNATIVE			ALTERNATIVE			ALTERNATIVE			ALTERNATIVE			ALTERNATIVE			ALTERNATIVE		
SITE NO.	DESCRIPTION (SEE FIGURE IV-1 FOR SITE LOCATIONS)	DISTANCE TO NEAR EDGE OF MD. 450/564 (FT.)			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	LANHAM MANSION	105	71	70	70	66	70	NO	NO	NO	POS.	POS.	POS.	71	67	70	YES	NO	YES	NEG.	POS.	POS.
2	PRINCESS GARDEN INN	115	77	75	73	(5)	(5)	NO	(5)	(5)	POS.	(5)	(5)	74	(5)	(5)	NO	(5)	(5)	POS.	(5)	(5)
3	LANHAM FUNERAL HOME	170	61	70	70	71	70	NO	YES	NO	MIN.	MOD.	MIN.	71	72	71	YES	YES	YES	NEG.	NEG.	NEG.
4	LANHAM INN	80	71	75	72	70	69	NO	NO	NO	NEG.	POS.	POS.	73	71	71	NO	NO	NO	NEG.	NEG.	NEG.
5	RESIDENCE ON LANHAM-SEVERN RD.	65	68	70	71	(5)	(5)	YES	(5)	(5)	NEG.	(5)	(5)	73	(5)	(5)	YES	(5)	(5)	NEG.	(5)	(5)
6	CHURCH OF GOD OF PROPHECY	330	69	70	65	64	65	NO	NO	NO	POS.	POS.	POS.	66	66	66	NO	NO	NO	POS.	POS.	POS.
7	RESIDENCE ON MD. 450	60	72	70	72	70	(6)	YES	NO	(6)	NEG.	POS.	(6)	74	72	(6)	YES	YES	(6)	POS.	NEG.	(6)
8	WHITFIELD TOWNE APTS.	490	63	70	65	65	65	NO	NO	NO	NEG.	NEG.	NEG.	66	66	66	NO	NO	NO	POS.	POS.	POS.

1 EXTERIOR L_{10} NOISE LEVELS

2 SEE TABLE 2 FOR DESCRIPTION

3 PREDICTED L_{10} NOISE LEVELS REFLECT A STANDARD UNIFORM ATMOSPHERE, L.S. "C" TRAFFIC OPERATING CONDITIONS AND A CONSTANT TIME PERIOD

4 FOR DESCRIPTION OF IMPACTS SEE TEXT, SECTION I-B

POS. - POSITIVE
NEG. - NEGLIGIBLE
MIN. - MINOR
MOD - MODERATE
SEV. - SEVERE

SEE TEXT FOR DESCRIPTION

5 THIS SITE WILL BE ACQUIRED UNDER THE BUILD ALTERNATES.

6 THIS SITE WILL BE ACQUIRED UNDER ALTERNATE 3

INTERCHANGE STUDIES

MARYLAND

ROUTES 450/564

STATE PROJECT NO. P185-101-371

NOISE IMPACT ASSESSMENT

TABLE IV-1

6. Air Quality Impacts

An air quality analysis has also been completed for this project. The Technical Air Quality Report (dated July, 1979), summarized below, is available for review at the Maryland Department of Transportation, State Highway Administration, 300 West Preston Street, Baltimore, Maryland 21201. The objectives of this air quality analysis were to:

- Estimate the carbon monoxide concentrations that would be experienced at sensitive receptor sites for the Build and No-Build alternates to determine if violations of the S/NAAQS (State/National Ambient Air Quality Standards) would occur.

- Estimate and compare the total annual gross pollutant load (burden) resulting from traffic usage of the road itself for carbon-monoxide (CO), non-methane hydro-carbons (NMHC) and oxides of nitrogen (NOX).

To meet these objectives, a near-field microscale analysis of CO emission and transport was conducted for sensitive receptor (see Figure IV-1) sites for the completion (1985) and design (2005) years on a peak one-hour and maximum consecutive eight-hour traffic volume basis. The total annual gross pollutant release analysis (burden analysis) was similarly performed on a microscale basis using the projected average daily traffic volumes (ADT's) for both through-traffic flows and turning movements associated with the respective intersections. (This burden analysis is not to be construed as a regional mesoscale analysis of all highways in the area.)

CO Analysis

Estimates of carbon monoxide concentrations were made using the EPA-developed line-source dispersion model HIWAY. It should be noted that inspection/maintenance was not assumed in this analysis. However, if inspection/maintenance were to be included, the results would be typically 10 to 15 percent lower. The emission factors used in the program were derived from the most recent EPA tabulations of low altitude national vehicular estimates as stored in the EPA program MOBILE 1, May 1978 version. See Section IV-B-7 for traffic volumes.

Receptor sites were selected on the basis of proximity to roadway sections carrying high traffic volumes, future probability of existence, and likelihood of usage by groups of people. Accordingly, five sites were chosen, plus one uninhabited edge-of-right-of-way site near the eastern terminus of the study area. The

six sites are shown on Figure IV-1 and briefly described as follows:

Site 1 - The Church of God of Prophecy on Cipriano Road near 10th Street;

Site 2 - Whitfield Towne Apartments on Whitfield Chapel Road, a set of three-story apartment buildings near the intersection of Whitfield Chapel Road and Maryland Route 450;

Site 3 - The Lanham (Beall) Funeral Home on Lanham Station Road;

Site 4 - The Lanham Mansion on Annapolis Road, on the western side of the study area. The Capital Beltway (I-95) contributions to air quality at this site were not considered;

Site 5 - The edge of right-of-way of each alternate approximately 300 feet east of the Whitfield Chapel Road intersection on Maryland Route 450;

Site 6 - A commercial establishment, the Princess Garden Inn, at the corner of Princess Garden Parkway and the Maryland Route 450/564 Interchange, a one-story edifice located 61 feet from the near edge of Maryland Route 450.

The results of the analysis are presented in Table IV-2. These results are CO concentration values comprised of background, free-flow and, if appropriate, stopped-flow mode components. All dispersion projections were performed on the basis of "worst case", conditions; i.e., pollutant buildup-enhancing meteorology using the Hanna-Gifford procedure. The contributions of intersecting roads, such as Cipriano Road and Princess Garden Parkway, were calculated as well. Wind directions were "rotated" automatically by the computer program to locate the worst-case angles, thus producing CO concentration maxima.

A comparison of the values presented in Table IV-2 with the State and National Standards (S/NAAQS) of 35 ppm maximum one-hour concentration and 9 ppm maximum average eight-hour concentration, show that no violations of these standards will occur due to traffic flowing on the Build alternates; violations will occur due to traffic on the No-Build Alternate.

The maximum levels expected are due to the No-Build alternate in 2005 at site No. 5, with 47.2 ppm and 22.0 ppm one-hour and eight-hour average concentrations, respectively. The 47.2 value is in excess of the hourly NAAQS by 12.2 ppm, the 22.0 ppm value is in excess of the eight-hour standard by 13 ppm. At Site 6, an additional violation of the maximum average eight-hour concentration would occur under the No-Build Alternate in 2005. Alternates

CO CONCENTRATIONS AT EACH SITE
(MARYLAND ROUTES 450/564 STUDY)

SITE NO.	DESCRIPTION	TOTAL CO, ppm											
		MAXIMUM ONE-HOUR [1]						EIGHT HOUR AVERAGE [2]					
		ALTERNATE 1		ALTERNATE 2		ALTERNATE 3		ALTERNATE 1		ALTERNATE 2		ALTERNATE 3	
		1985	2005	1985	2005	1985	2005	1985	2005	1985	2005	1985	2005
1	Church Of God Of Prophecy	9.4	7.6	7.9	9.8	7.9	10.2	4.6	4.6	3.4	4.7	3.6	4.9
2	Whitfield Towne Apartments	7.2	12.5	7.0	6.6	7.0	7.7	2.8	5.3	2.4	3.3	2.8	3.1
3	The Lanham Funeral Home	6.9	11.1	4.3	5.2	5.7	7.0	2.8	5.1	1.6	1.6	2.3	3.0
4	The Lanham Mansion	3.7	4.0	3.7	4.0	3.7	4.0	1.1	1.2	1.2	1.3	1.2	1.3
5	Edge Of Right-Of-Way East Of Whitfield Chapel Road	13.4	47.2	7.2	8.6	(3)	(3)	5.8	22.0	3.2	4.0	(3)	(3)
6	The Princess Garden Inn	25.6	16.0	(4)	(4)	(4)	(4)	15.1	9.4	(4)	(4)	(4)	(4)

1) MAXIMUM ONE-HOUR CONCENTRATION - 35 ppm

2) MAXIMUM AVERAGE EIGHT-HOUR CONCENTRATION - 9 ppm

3) THIS SITE IS ACQUIRED UNDER ALTERNATE 3

4) THIS SITE IS ACQUIRED UNDER BOTH BUILD ALTERNATES

TABLE IV-2

2 and 3 (Build) have no violations of either standard in the design year.

In summary, the Build Alternates are shown to be consistent with Maryland State Implementation Plan for Air Quality in terms of compliance with the NAAQS for CO, and it should be noted that the region of the study area is priority I for all pollutants and is located in a non-attainment region.

Pollutant Burden Analysis

A microscale pollutant burden analysis was performed for each alternate. The results of the burden analysis are shown in the following table:

ANNUAL POLLUTANT BURDEN (TONS/YEAR)

Year/Alternate	Carbon Monoxide	Non-Methane Hydrocarbons	Nitrogen Oxides
1985:			
Alt. 1 No-Build	220.0	19.1	18.8
Alt. 2	220.0	19.1	18.8
Alt. 3	180.0	18.8	19.7
2005:			
Alt. 1 No-Build	233.0	23.0	18.9
Alt. 2	195.0	18.8	20.0
Alt. 3	199.0	19.1	21.7

The results show minimal differences between the alternates. Since traffic volume projections were identical for Alternates 1 and 2 within the confines of the study area, the burden results for these two alternates are identical for the 1985 year of projection. In 2005, running speeds between these alternates vary, thus the results for the two Build Alternates differ. Decreased running speeds on Alternate 1 increase CO and NMHC emissions beyond offsetting vehicular pollution controls, whereas Alternates 2 and 3 are expected to not cause diminishment in running speeds to the same extent. Thus the increase in emissions due to greater traffic volumes is offset by the action of more stringent vehicular pollution controls.

Conclusions & Air Quality Consistency

The maximum one-hour and eight-hour concentrations will occur at Site 5, (uninhabited area at the edge of right-of-way of each alternate) with the No-Build Alternate expected to generate levels of CO of 47.2 ppm (maximum one-hour) and 22.0 ppm (highest consecutive eight-hour) in 2005.* The No-Build Alternate will produce higher levels of CO than the build alternates in general.

The burden analysis shows that the No-Build Alternate may produce slightly greater quantities of CO and hydrocarbons than the Build Alternates, and comparable quantities of nitrogen oxides.

The air quality analysis indicates that no violation of State and National Ambient Air Quality Standards would occur if either Build Alternate is selected. However, violations would occur if the No-Build Alternate is selected.

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

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

   1) The Transportation Plan for the urban area;

---

* The standards are:
Maximum one-hour CO concentration = 35 ppm
Maximum eight-hour consecutive hour CO concentration = 9 ppm

2) The Transportation Improvement Program which identifies projects for implementation;

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

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

B. Through the urban transportation planning requirement of Title 23, United States Code, Section 134, as implemented by the COG forum, the same state and local agencies responsible for planning transportation projects in the urbanized area are also responsible from a transportation control plan perspective for assuring attainment of Air quality Standards.

C. This project is included in the regional transportation plan and Transportation Improvement Program for the urbanized area and is programmed for Federal-Aid Highway Funding. Thus, it is subjected to this Federal review and project development process. Therefore, the regional consistency of this project is addressed prior to undertaking the final project planning studies presented in this environmental document.

Based on our analysis of microscale, mesoscale, regional, and construction, air quality and coordination with the Environmental Protection Agency and the Maryland Department of Health and Mental Hygiene, it was found that the Build Alternates are consistent with the State Implementation Plan.

The U. S. Environmental Protection Agency has reviewed the air quality report and has "no objections to the project" (reference Section V, letter of September 12, 1979).

7. Traffic Service

Traffic volumes (Average Daily Traffic, ADT), Levels of Service (L/S), and Queue lengths have been developed for the No-Build and the two Build Alternates for the expected year of completion (1985) and the design year (2005). These data are summarized on Figure IV-2, and as described by alternates as follows:

ADT	
1985	2005
16000	20100

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1985	2005	1985	2005
1	D	E	120	160
2	C	D	115	160
3	C	D	115	160

MAINLINE				
ALT	ADT		L/S	
	1985	2005	1985	2005
1	21100	26000	C	E
2	21100	26000	C	C
3	21100	26000	C	C

ADT	
1985	2005
9600	15100

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1985	2005	1985	2005
1	N/A	D	N/A	70
2	C	C	15	40
3	C	C	15	40

MAINLINE				
ALT	ADT		L/S	
	1985	2005	1985	2005
1	48200	55100	C	C
2	48200	55100	C	C
3	48200	55100	C	C

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1985	2005	1985	2005
1	D	E	40	60
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A

INTERSECTION				
ALT	L/S		TOTAL QUEUE	
	1985	2005	1985	2005
1	D	E	25	80
2	C	D	30	70
3	C	D	30	70

MAINLINE				
ALT	ADT		L/S	
	1985	2005	1985	2005
1	15000	24900	C	D
2	15000	24900	C	C
3	15600	23400	C	C

MAINLINE				
ALT	ADT		L/S	
	1985	2005	1985	2005
1	22600	32000	C	F
2	22600	32000	C	C
3	22600	32000	C	C

ADT	
1985	2005
12200	15300

MAINLINE				
ALT	ADT		L/S	
	1985	2005	1985	2005
1	20500	30900	C	F
2	20700	30900	C	C
3	21200	31600	C	C

MD. 450

PRINCESS GARDEN PKWY.

CIPRIANO RD.

MD. 564

WHITFIELD CHAPEL RD.

MD. 450

N

KEY

ALT. ALTERNATIVE

ADT AVERAGE DAILY TRAFFIC, BOTH DIRECTIONS

L'S LEVEL OF SERVICE RANGE FROM A (FREE FLOW) TO D (MINIMUM DESIRABLE) TO E (CAPACITY) AND F (BREAKDOWN)

TOTAL QUEUE TOTAL NUMBER OF VEHICLES IN QUEUE, FOR ALL APPROACHES

N/A NOT APPLICABLE

INTERCHANGE STUDIES

MARYLAND ROUTES 450/564

State Project No. P185-101-371

PROJECTED 1985 / 2005 AVERAGE DAILY TRAFFIC VOLUMES LEVELS OF SERVICE AND VEHICLE QUEUE LENGTH

FIGURE IV - 2

a. Alternate 1 - No-Build -

As is shown on Figure IV-2, traffic volumes along the mainline of both Maryland Routes 450 and 564 will significantly increase between 1985 and the design year of 2005. Increased traffic volumes within the study area are independent of the alternate selected. These increases result from the expected increases in both residential and commercial development within and surrounding the study area.

Alternate 1, the No-Build Alternate, will provide no relief for the poor operating conditions that are expected to exist in both 1985 and 2005. Presently, major delays occur at both the Maryland Route 450 and Princess Garden Parkway intersection and the Maryland Route 450/564 intersection. Delays at these intersections are caused by insufficient roadway capacities, high-traffic volumes, and insufficient green time. These intersections are also labeled as "high-accident intersections" (see Section II-C). Heavy thru-traffic combined with weaving and turning movements, and numerous commercial driveway entrances are contributing to the factors of many accidents at these two locations.

These intersections presently operate at a "D" Level of Service during peak hours and by 2005, if this alternate is selected, these same two intersections are expected to operate at an "E" to "F" Level of Service (approximately forced flow conditions).

The intersections of Maryland Route 564/Cipriano Road and Maryland Route 450/Whitfield Chapel Road, located west of the intersection of Maryland Route 450/564 presently operate at a "D" Level of Service during the peak hours. By 2005, these intersections are expected to operate at an "E" Level of Service (forced flow). Traffic volumes in the design year are expected to exceed the roadway capacities along Princess Garden Parkway, Whitfield Chapel Road and Cipriano Road.

b. Alternate 2 - Grade Separation -

Alternate 2, grade separation, consists of the elimination of the existing Maryland Routes 450/564 intersection by constructing a grade separation between the two roadways (see Section III-B-2). This alternate would provide a more free-flowing condition on both Maryland Routes 450 and 564 within the study area, while at the same time, reducing accident potential.

Mainline traffic volumes under Alternate 2 are identical to those described for Alternate 1. Because Alternate 2 contains several features, such as the widening of the mainline roadways, increased intersection capacity, left-turn bays, reduction of unnecessary weaving maneuvers, and a frontage road which removes roadside friction, operating conditions are expected to be significantly improved. Operating conditions are expected to be at a "C" to "D" Level of Service in both 1985 and 2005.

Although the Maryland Route 450 approaches to the intersection with Princess Garden Parkway would be widened by one lane in each direction, traffic volumes will gradually approach the intersections capacity. In 1985, this intersection is expected to operate at a "C" Level of Service; while in 2005 the intersection is expected to operate at a "D" Level of Service.

The approach roadways to the intersections of Maryland Route 450/Whitfield Chapel Road and Maryland Route 564/Cipriano Road would be widened in order to improve traffic circulation at these intersections. By the design year of 2005, these two intersections are predicted to operate at a "D" Level of Service. Operating conditions on Princess Garden Parkway, Whitfield/Chapel Road and Cipriano Road would also be improved with Alternate 2.

c. Alternate 3 - Interchange -

Alternate 3, like Alternate 2, would eliminate the existing intersection of Maryland Routes 450 and 564, and provide a loop

ramp and return for traffic movements between the two roadways (see Section III-B-3).

Traffic volumes along the mainlines of Maryland Routes 450 and 564 are the same as those described in Alternate 2.

Traffic conditions at the intersections of Maryland Route 450/Princess Garden Parkway, Maryland Route 450/Whitfield Chapel Road and Maryland Route 564/Cipriano Road are also the same as described in Alternate 2.

8. Highway Safety -

As was noted in Section II-C of this document, the existing intersections of Maryland Route 450/Maryland Route 564, Maryland Route 450/Princess Garden Parkway and Maryland Route 450/Whitfield Chapel Road have been designated as "High Accident Intersections". If Alternate 1 were selected, these intersections would be expected to remain as "High-Accident Intersections". As traffic volumes increase within the vicinity of the intersection, the potential for accidents would increase and accident rates would continue to surpass statewide accident rates for similar facilities by a wide margin.

The accident potential of Alternates 2 and 3 are similar. Both Build Alternates contain several design features which reduce the potential for accidents. These design features include: wider roadway surfaces, increased capacity, the elimination of the Maryland Route 450/564 intersection (where many con-flicts occur), improved bridge structure carrying Maryland Route 450 over the Amtrak Railroad, increased horizontal and vertical sight distances, and construction of a frontage road north of Maryland Route 564 which provides access to commercial businesses without interference with traffic on the thru roadways. Pedestrian and bicycle access would also be safer with the construction of sidewalks.

9. Railway Safety -

The existing bridge that carries Maryland Route 450 over the Amtrak Railroad does not provide the prescribed horizontal and vertical clearance for the safe operation of this high-speed rail traffic, nor is a crash wall provided (see Section II-B). If Alternate 1 is selected, this substandard and functionally inadequate crossing would remain. However, selection of either Alternate 2 or 3 would provide an improved bridge crossing that would allow safer passage of rail traffic through this area.

10. Access -

a) Alternate 1 - If the No-Build Alternate were to be selected, no changes in access within the study area would occur. All movements that are now possible, would remain as they now exist.

b) Alternates 2 & 3 - Access to the commercial businesses located along the north side of Maryland Route 450, if either of the Build Alternates is selected, would be limited throughout interchange limits. Access would be severed and replaced by a frontage road running parallel to westbound Maryland Route 564 with access connections at Cipriano Road to the east and Princess Garden Parkway to the west (See Figures III-4 & 7). Under existing conditions, these businesses have direct access to Maryland Route 564, creating a signficant accident potential.

Commercial businesses located south of Maryland Route 450, which are directly adjacent to the intersection with Maryland Route 564 on Lanham Station Road, currently have direct access to the roadway. If either Build Alternate were selected, this access would be eliminated and access would then be provided solely from Lanham Station Road. A turn-around will be provided on Lanham Station Road directly adjacent to the Lanham Funeral Home. Access at all other locations would remain as it presently exists.

11. Maintenance of Traffic -

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

Build Alternates No. 2 or 3 - If either Alternates 2 or 3 were selected, major construction activities would be necessary. Details of construction scheduling and temporary traffic routing to maintain traffic would be worked out during final design of this project, in cooperation with the District Engineer.

Because of the importance of the Amtrak rail route, and the large numbers of trains which use this Northeast Corridor, rail traffic must be maintained. This would be accomplished by the use of temporary construction shields beside and over all adjacent bridge and roadway demolition and construction sites. These construction shields would protect and allow rail traffic full use of the existing tracks through this site during construction.

Highway traffic on Maryland Route 450 and on Maryland Route 564, together with access to all business and residential properties which are to remain along these routes would be maintained throughout the construction period. With the aid of

temporary traffic barriers and traffic controls to protect motorists and adjacent properties from construction activities, traffic would be maintained on the existing Maryland Route 450 roadway and bridge over the railroad until adjacent, parallel portions of the proposed improvements are in place. Traffic would then be routed over the newly completed portions during demolition and reconstruction of the existing bridge over the railroad and connecting roadways.

The new frontage road paralleling the north side of the existing roadway, and the new eastbound Maryland Route 564 would be constructed while traffic is being maintained on the existing pavement. Traffic would then be directed to these new roadways to allow construction of the remaining roadways in the project area.

Because the proposed new construction would require raising the elevation of the new roadway in the vicinity of the intersection of Maryland Route 450 and Whitfield Chapel Road, it may be necessary to detour local Whitfield Road traffic through the adjacent local community for access to Maryland Route 450 just east of this location for short periods during reconstruction of this intersection.

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

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

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

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

12. Construction Impacts -

If either of the "Build Alternates" are selected, the immediate project area would experience temporary inconveniences due to construction activities. These inconveniences would result from slowing of traffic through construction zones, temporary property accesses, and the noise, dirt and visual impacts of and construction activities in relatively close proximity to adjacent improved properties.

Noise impacts at construction sites are potential problems. Noise conditions in this project area are unique, in that ambient background levels are relatively high , due to the adjacent Capital Beltway and the Railroad. At some sensitive receptor locations, the maximum "Federal Design Noise Level" is now exceeded.

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

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

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

- In order to prevent introduction of additional sediment loads into receiving waters or local stormwater drainage systems, bare earth areas would be promptly seeded and stabilized.

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

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

13. Cost -

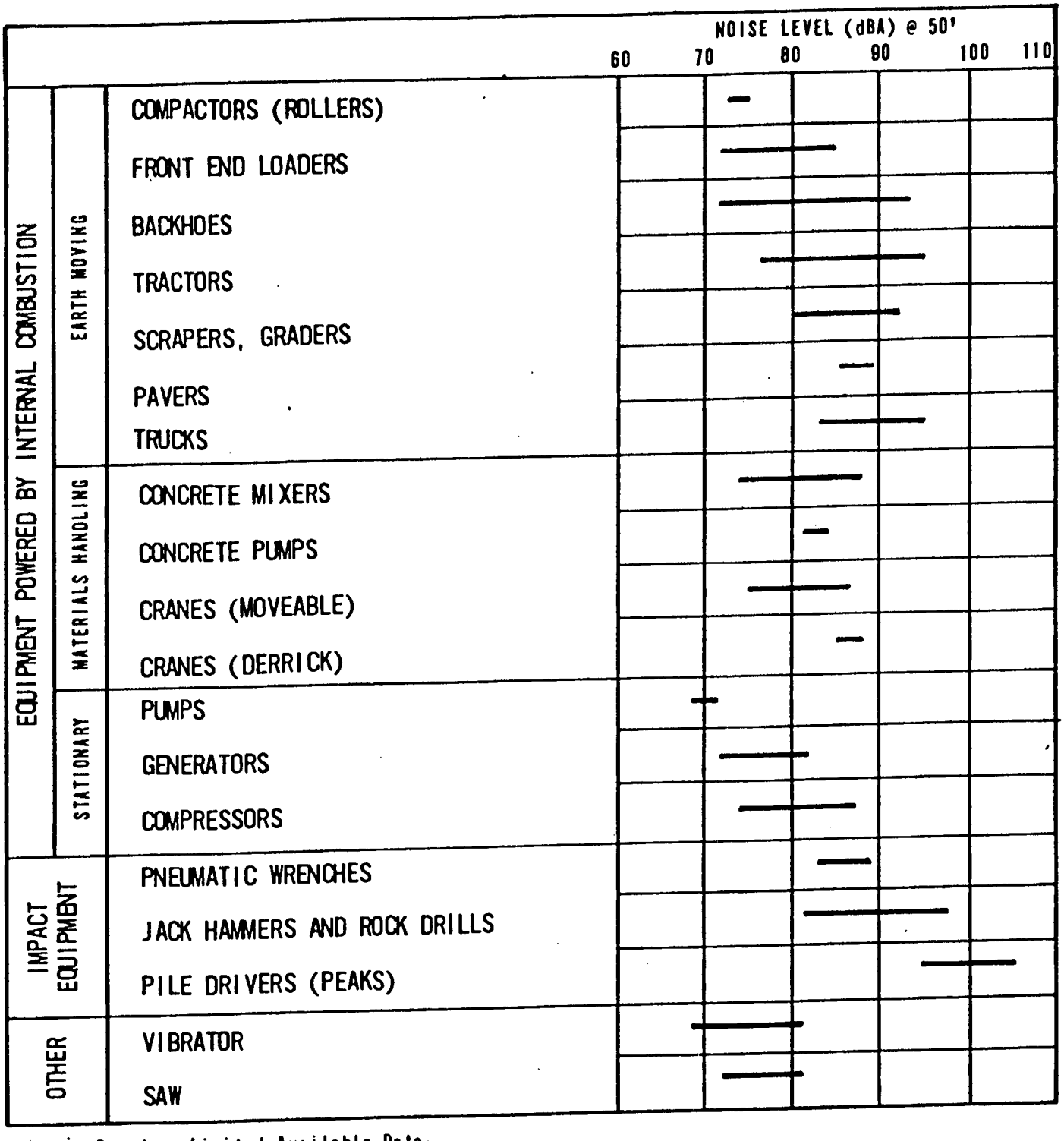
Alternate 1, the No-Build Alternate, would require no expenditure for construction or right-of-way acquisition. The approximate total cost of Alternates 2 and 3 are given in Table III-1.

C. SECONDARY IMPACTS:

In addition to impacts directly attributable to this project, it is also necessary to consider adverse impacts caused by additional growth or usage generated by the project. Although the proposed action would improve the safety, efficiency and dependability of the study area roadways, it would not render the area more accessible or desirable than it is today. Considering this, and the fact that the study area is already urbanized, it is not anticipated that completion of the project would generate or accelerate development within the study area or elsewhere in the region.

Alternate 1 is not compatible with the circulation and transportation elements of the Adopted and Approved Master Plan of Glenn Dale, Seabrook, Lanham and Vicinity for Planning Area 70 (October 1977), nor the Proposed Amendment to the General Plan for the Maryland-Washington Regional District within Prince George's County (November 1977). Both were published by The Maryland-National Capital Park & Planning Commission. Build Alternates 2 and 3 are compatible with both of these plans.

CONSTRUCTION EQUIPMENT NOISE RANGES



Note: Based on Limited Available Data.

Reference: Highway Noise Report For U.S. Department of Transportation, Federal Highway Administration and Maryland Department of Transportation, State Highway Administration for Arundal Expressway, Md. Rte. 648 to Md. Rte. 100 and Alternate Connections to Md. Rte. 2, Regnenl Associates, Inc. 1975

TABLE IV-3

V. COMMENTS AND COORDINATION

V. COMMENTS AND COORDINATION

INTRODUCTION:

The following lists reference pertinent coordination by the State Highway Administration with Federal, State and Local agencies and community organizations during the development of the Maryland Route 450/564 Intersection Study.

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

A. Public Meetings
B. Environmental
C. Archeological & Historic

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

A. PUBLIC MEETINGS:

Date	Meeting
November 21, 1978	Alternates Public Meeting Princess Garden Special Education School 6016 Princess Garden Parkway Lanham, Maryland

B. ENVIRONMENTAL:

September 21, 1978	Letter from Maryland Water Resources Administration noting that, since this project has returned to planning phase, previously issued Sediment and Pollution Control Approval will no longer apply. Approval must be sought again after updated plans are prepared.
September 4, 1979*	Letter from Department of Health and Mental Hygiene, Maryland Environmental Health Administration, finding air quality analysis consistent with their programs plans and objectives.

Date	Meeting
September 12, 1979 *	Letter from EIS & Wetlands Review Section, U.S. Environmental Protection Agency following their review of Draft Air Quality Analysis. EPA had no objections to this project with regard to air quality impacts.

C. ARCHEOLOGICAL & HISTORIC:

July 26, 1977	Preliminary reconnaissance report from Maryland Historical Trust identifying historical resources in the study corridor.
July 28, 1977	Letter from Maryland Historical Trust transmitting copy of their Prince George's County survey map showing location of historic properties near proposed interchange.
February 27, 1978	Letter from Maryland Historical Trust transmitting Map of historical boundaries for potential 4(f) properties possibly affected by Route 450/564 interchange.
March 17, 1978	Letter from Maryland Historical Trust providing additional information on possible impacts.
April 25, 1978 *	Letter from Deputy State Historic Preservation Officer documenting determination of "no effect" for properties potentially eligible for the National Register of Historic Places.
May 12, 1978	Archeological reconnaissance of Maryland Routes 450/564 intersection submitted by Division of Archeology, Maryland Geologic Survey. Report concludes that no known archeological sites would be impacted by this project.

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Date	Meeting
June 27, 1978 *	Letter from State Historic Preservation Officer, giving determination of no effect on archeological resources by this project.

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Maryland Historical Trust

April 25, 1978

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

P 185

Dear Mr. Camponeschi:

Pursuant to my letter to you of March 17, 1978 concerning project # 185-033-371, the Maryland Routes 450/564 interchange, following consultation between our staffs, I have come to a determination of no effect for properties potentially eligible for the National Register of Historic Places within the project area, provided there is no construction in the Stevens Lane area, which is between the Amtrack right of way and Whitfield Chapel Road, south of the Whitfield Town Apartments, 5604 Whitfield Chapel Road.

The following sites are considered to be historically significant. This list supercedes all earlier correspondence.

A	House 5610 Lanham Station Road	NRE
B	House 5614 Lanham Station Road	NRE
C	House 9012 Stevens Lane	NRE
D	House 9020 Stevens Lane	NRE
H	House 9005 Howser Lane	NRE
I	House 9000 Howser Lane	NRE
J	Log Cabin Top of dirt road off Lanham Station	NRE

* THERE IS NO PROPOSED CONSTRUCTION IN THE STEVENS LANE AREA WHICH IS BETWEEN THE AMTRAK RIGHT OF WAY AND WHITFIELD CHAPEL ROAD, SOUTH OF THE WHITFIELD TOWNE APARTMENTS.

RECEIVED
APR 26 1978
COUNSEL, HUPPER & EARL

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U	House 5516 Whitfield Chapel Road	NRE
V	House 5520 Whitfield Chapel Road	NRE
W	House On driveway off Westgate Lane east of Whitfield Chapel Road	NRE
BB	House Old Brown's Lane east of Whitfield Chapel Road	NRE
Y	House 9008 Magnolia Avenue	4(f) boundaries: lot lines
PA #70-7	Lanham Mansion 8901 Lanham Station Road	4(f) boundaries: structure itse
PA #70-8	Whitfield Chapel Site and Cemetery Lanham Methodist Church 5512 Whitfield Chapel Road	4(f)

Sincerely,

Nancy A. Miller
Historian/Deputy State Historic
Preservation Officer

NAM/ptw

83

Maryland Historical Trust

June 27, 1978

JUL 5 AM 10 56

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

RE: Maryland 450/564 Interchange
Archeological Report

Dear Mr. Camponeschi:

Our staff archeologist has reviewed the archeological report by Dennis Curry. Since no sites were found and because the expected presence of sites is low, we concur with the findings of no effect on archeological resources for this project.

Sincerely yours,

John N. Pearce

John N. Pearce
State Historic
Preservation Officer

JNP:LG:mms

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

ACTION 1 INFO SUSPENSE FILE

Camponeschi — Curtis — Hopkins
— — Janata
— — Keller
— — Williamson
— — L. Ballard

State of Maryland

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DEPARTMENT OF HEALTH AND MENTAL HYGIENE
ENVIRONMENTAL HEALTH ADMINISTRATION
P.O. BOX 13387
201 WEST PRESTON STREET
BALTIMORE, MARYLAND 21203
PHONE • 301-383-3245

CHARLES R. BUCK, Jr., Sc.D.
SECRETARY

Max Eisenberg, Ph.D.
Acting Director

September 4, 1979

Mr. Andy Brooks
Bureau of Landscape Architecture
2323 West Joppa Road
Brooklandville, Maryland 21022

Dear Andy,

RE: Air Quality Analysis, Md. Rte. 450/564 Interchange

We have reviewed the Air Quality Analysis prepared for the above subject project and have found that it is consistent with the Program's plans and objectives.

Thank you for the opportunity to review this analysis.

Sincerely yours,

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

WKB:bab

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

SEP 12 1979

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

Re: Draft Air Quality Analysis, Maryland Routes 450/564 Interchange, at Lanham, Prince Georges County

Dear Mr. Anderson:

Thank you for sending us a copy of the air quality analysis for the proposed project referenced above. We have reviewed the analysis and have no objections to the project with respect to air quality impacts. If you have any questions, or if we can be of further assistance, please contact Mr. Eric Johnson of my staff at 215-597-4388.

Sincerely yours,

John R. Pomponio, Chief
EIS & Wetlands Review Section

RECEIVED
SEP 24 1979
RUMMEL, KLEPPER & KAHL

RECEIVED
SEP 14 1979
C. R. ANDERSON

- APPENDICES -

APPENDIX A

GLOSSARY OF TERMS

- GLOSSARY OF TERMS -

(These terms may appear either in the EIS or as noted on the drawings)

Arterial Highway : A highway primarily for thru-traffic, usually on a continuous route.

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

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

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

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

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

Design Speed : A speed selected for purposes of design and correlation of those geometric features of a highway, such as curvature and sight distance, upon which safe vehicle operations is dependent.

Expressway (Md.) : A divided arterial highway for thru-traffic with full control of access and with grade separations at major highways.

Freeway (AASHTO) : An expressway with full control of access, grade separations at all roadway crossings. Access is permitted only at interchanges. (Same as Md. definition of Expressway.)

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

4(f) : See Section 4(f).

Grade Separation : Bridge structure such as an underpass or overpass that vertically separates two or more intersecting roadways or railways, thus permitting traffic to cross without interference.

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

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

Level A - free flow, no 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 traffic volumes; signal backups almost to the previous light.

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

Major Highway : An arterial highway with intersections at-grade and direct access to abutting property, and on which geometric design and traffic control measures are used to expedite the safe movement of thru-traffic.

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

Section 6(f) : The Land and Water Conservation Fund Act provides grant-in-aid assistance to states for the acquisition of oudoor recreation or open space land. Section 6(f) of this Act requires that no property purchased or developed with these funds can be converted to other than public outdoor recreation uses without approval from the Secretary, Department of the Interior. Approval for conversion will be given only if it is in accordance with the existing comprehensive statewide outdoor recreation plan and if substitution is made of other recreational properties of "at least fair market value and of reasonably equivalent usefulness and location". Generally, approval also

requires that a final Section 4(f) Statement has been approved by the Department of Transportation.

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

Initial - To be constructed initially
Ultimate - The configuration subsequent to the future construction.

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

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

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

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

APPENDIX B

SUMMARY OF THE RELOCATION ASSISTANCE PROGRAM OF THE STATE HIGHWAY ADMINISTRATION

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

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

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

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

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

In addition to the actual moving expenses mentioned above, the displaced business is entitled to receive a payment for the actual direct losses of tangible personal property that the business is entitled to relocate but elects not to move. These payments may only be made after an effort by the owner to sell the personal property involved. The costs of the sale are also reimbursable moving expenses. If the business is to be re-established, and personal property is not moved, but is replaced at the new location, the payment would be the lesser of the replacement costs minus the net proceeds of the sale or the estimated cost of moving the item. If the business is being discontinued or the item is not to be replaced in the re-established business, the payment will be the lesser of the difference between the depreciated value of the item in place and the net proceeds of the sale or the estimated cost of moving the item.

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

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

In lieu of the payments described above, the owner of a displaced business is eligible to receive a payment equal to the average annual net earnings of the business. Such payment shall not be less than $2,500 nor more than $10,000. In order to be entitled to this payment, the State must determine that the business cannot be relocated without a substantial loss of its existing patronage, the business is not part of a commercial enterprise having at least one other 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 a displaced farm may be paid a minimum of $2,500 to a maximum of $10,000 based upon the net income of the farm, provided that the farm cannot be established in the area or cannot operate as an economic unit. A non-profit organization is eligible to receive "in lieu of" actual moving cost payments, in the amount of $2,500.

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