PART

2

FINAL ENVIRONMENTAL IMPACT STATEMENT

METROPOLITAN WASHINGTON REGIONAL RAPID RAIL TRANSIT SYSTEM

PROJECT DC-23-9001

U. S. DEPARTMENT OF TRANSPORTATION

URBAN MASS TRANSPORTATION ADMINISTRATION

IN COOPERATION WITH THE

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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THE U.S. DEPARTMENT OF TRANSPORTATION

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FINAL ENVIRONMENTAL IMPACT STATEMENT

FOR THE REGIONAL SYSTEM

PART II ROUTE SUMMARIES AND CRITICAL AREAS

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In order to facilitate comparison with the draft statement and to maintain consistency in page reference, the original pagination has been retained in Parts I and II of this Report. The Appendices in Part III are entirely new and are simply numbered sequentially, except for the original Appendices A and B.

Additional pages bear the number of the page they follow and are lettered sequentially; they bear the words "New Page" in the lower right margin.

Revised pages bear the words "Revised Page" in the lower right hand margin. A brief description of revisions on each revised page is set out with an asterisk on that page.

*original preface replaced

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SECTION 1:

ROUTE SUMMARIES

ROCKVILLE ROUTE (A)

Introduction

The Rockville or A Route serves Washington from the downtown core through the rapidly developing upper-income corridors of Connecticut Avenue, upper Wisconsin Avenue and Rockville Pike to the New Town Center Development of Rockville, Maryland. Beginning at Metro Center Station, the transfer point of the A, B, C, and D Routes at 12th and G Streets, the route travels west to 15th and Pennsylvania Avenue in cut-and-cover. Here, the route tunnels northwest across Lafayette Park to an alignment centered on Connecticut Avenue. The route proceeds northward to Farragut North Station and continues under Connecticut Avenue in cut-and-cover construction to a point just south of Dupont Circle Station where rock tunnel construction begins. In the vicinity of Kalorama Road the alignment gently curves to the east of Connecticut Avenue to avoid the foundations of the Taft Bridge. The alignment crosses under Rock Creek Park, in cut-and-cover construction. Once past the bridge, it shifts back to rock tunnel in line with Connecticut Avenue. The route continues along Connecticut Avenue passing the Zoological Park and Cleveland Park Stations until it reaches the area of the Washington Technical Institute and Van Ness Center Station. There, the A Route curves west past Idaho Street, and into the alignment of Yuma Street to 39th Street, N.W. There, it curves north from the Tenley Circle Station passing east of Tenley Circle where it joins the alignment of Wisconsin Avenue below Brandywine Street. Continuing in rock tunnel, the route passes Friendship Heights Station at the District/Chevy Chase line, the Bethesda Station near the intersection of East-West Highway and Wisconsin Avenue, and Medical Center Station at the entrance to the National Institutes of Health.

South of the Capital Beltway, the rock tunnel construction of A Route ends. The Beltway crossing of Metro is aerial at the interchange of Interstate 495, Interstate Route 70S, and Rockville Pike. Beyond the Beltway, the A Route continues north on aerial structure in the median of Rockville Pike and then crosses over to the Grosvenor Station located on the east side of the Pike at Montrose Road. It then proceeds north in cut-and-cover adjacent to Rockville Pike to Nicholson Lane Station where it curves to the east of Rockville Pike under Randolph Road to the Baltimore and Ohio

Railroad tracks, where it changes from cut-and-cover tunnel to an on-grade track. The route then proceeds along the west side of the railroad passing Twinbrook Station near Oak Avenue until reaching the Rockville Station and a terminal yard.

The Rockville Route will begin operations as far as Farragut North Station in December 1974 as part of Phase I. By December 1977, service will be extended to Van Ness - WTI Station (Phase IV). In December of 1978, service will be extended to Rockville Station in Phase V. Future extensions are planned to Gaithersburg and Germantown after 1980.

Rockville Route Impacts

Natural and Ecological Impacts

Since this route has the longest portion of tunnel construction in the Metro system, its most significant regional impact will be the spoil material generated from excavation and drilling operations. Basically, the spoil is of two types: soil and rock fragments from cut-and-cover and earth tunnel construction, and rock material from rock tunnel drilling. In cut-and-cover and earth tunnel excavation, a significant portion of the spoil can be constructively reused in the filling and grading necessary for creating developable land and in sanitary land fill operations. Spoil material from rock or "saprolite" (which is suitable for reuse as a compact soil material) forms a minor portion of the spoil. The remainder of the spoil material is weathered and jointed rock material which cannot be readily reused in a constructive manner. This type of "rubble fill" produces at best relatively unstable surface/subsurface conditions, making most areas filled with this material unsuitable for building construction. However, this type of spoil is less erodible and therefore not as likely to cause problems of sedimentation of local waterways.

The nature of rock spoil is important, because approximately seven miles of the Rockville Route is of rock tunnel construction. This is a greater distance in rock tunnel than in all the rest of the routes combined. Rock tunnel construction preserves the environment along the Connecticut and Wisconsin Avenue corridors under which the route passes, preventing disruption of pedestrian and vehicular surface activity along the route. On the surface only a few isolated areas are required for fan/vent shaft structures, surface station facilities, and other facilities, leaving the surface free for other uses. Therefore, spoil operations do not affect the route itself, but disposal sites in outlying areas. As described previously, WMATA construction specifications and local and state ordinances

governing spoil disposal will help insure that negative impacts are held to a minimum. With careful supervision and regulation of fill or disposal sites, severe environmental damage can be prevented.

Although a number of streams and important drainage swales pass close by or adjacent to the A Route, potential erosion and sedimentation, which would negatively affect the streams and swales, will be controlled by appropriate erosion and sedimentation regulations and contract provisions.

Due to high vehicular activity within a relatively confined area around stations, concentrations of air pollutants may result on a short-term basis during peak hours.

Metro operations will produce noise impacts in limited areas where the route passes by residential land uses. However, these impacts are not expected to be significant because H.U.D. standards of no more than eight cumulative hours of sixty-five dBA/day will be met throughout the system.

Vegetation and wildlife habitats along the A Route are of regional significance in three areas: the Connecticut Avenue area of Rock Creek Park, the National Institutes of Health property on Wisconsin Avenue, and the portion of Rock Creek Park adjacent to Wisconsin Avenue and I-495 south of Rockville. The majority of the impacts in these areas will be due to construction and of short-term duration only. At the completion of construction, vegetation lost will be replaced and the areas generally restored to their conditions prior to Metro construction. There will be short-term disruption of the Rock Creek wildlife corridor which runs from the Potomac River through the highly urban areas of Washington, D.C. out to the relatively open and natural fields and wooded lands north of Rockville. With restoration of the park grounds, the corridor will be reestablished. Wildlife habitats in the other two areas will be affected in limited areas only, and again, the disruption will be short-term.

The extent of rock and earth tunnel construction insures the preservation of a large number of semi-mature to mature trees which are individually insignificant, but collectively important to the region, especially because they are located along major arterial highways. Cut-and-cover construction in the outer part of the route does not make possible preservation of trees located along the alignment. This loss will be compensated for somewhat by the landscaping done in conjunction with Metro stations.

Visual/Physical Impacts

In general, the A Route alignment, and especially the station locations, relate well to existing urban subcenters and to neighborhood centers in residential areas. Station facilities will improve the physical appearance of these centers by introducing well-designed structures and landscaping. Metro facilities will spur further new development within the "Metro Impact Zones" as designated in local master plans. The sum of these individual improvements will represent an overall visual improvement for the Rockville Route corridor.

The only regionally important area of negative visual impact is the Connecticut Avenue crossing of Rock Creek Park. This area will experience a major short-term negative visual disruption with the introduction of the Metro staging and storage area.

The alignment across the Capital Beltway (I-495) adjacent to Rock Creek Park prevents what could otherwise have been a major negative impact had the adopted alignment been located within Rock Creek Park.

Social and Economic Impacts

The alignment of the Rockville Route forms a convenient mass transit link between outlying suburban residential areas and downtown Washington. The A Route will help strengthen both the Connecticut Avenue corridor and the upper Wisconsin/Rockville Pike Corridor. It will help implement the wedges and corridors development concept of metropolitan Washington.

As discussed under visual and physical impacts, the majority of the A Route surface facilities relate well to urban and suburban centers. The negative effect of the route upon adjacent residential communities has been minimized. Much of the route is in rock tunnel construction, minimizing the need for surface activities or construction. The outer portion of the route makes use of the existing B&O Railroad right-of way. It is an existing edge or border between residential, commercial, and light industrial areas. Although widening of the right-of-way causes some loss and damage, it is much less than would be caused by any other construction method, except possibly rock and earth tunnel. In terms of community disruption the most troublesome section of the route will be the cut-and-cover sections from the area north of Grosvenor Station to just north of Randolph Road where the A Route joins the B&O Railroad right-of-way. The impacts in this section will be short-term and of local, not regional, significance.

The Rockville Route passes close to several historic structures but does not affect them or any archeological sites, except for the historically significant

B&O Railroad Rockville Station, circa 1875. This station is adjacent to the proposed Metro Rockville Station site and directly in line with the proposed location of the inbound Metro tracks. The Rockville Station will be taken by this alignment.

Major Impact Locations

Major impact areas along the A Route are related to the sections of the route which are cut-and-cover construction. The character of impacts associated with this type of construction has been described previously in this report. A written impact description of those segments where major impacts have been determined follows.

The segment from Station 37+62 to Station 45+00 is located along Connecticut Avenue, N.W. between K and L Streets. Within this segment, the location of Farragut North Station will enhance development opportunities due to the increased access and trade generated by the station. Development potential is especially great at the Northeast corner of Connecticut Avenue and L Street, which has been cleared for Metro construction. Cut-and-cover construction in this segment will cause short-term loss of trade and traffic disruption in the Connecticut Avenue area. In addition, there will be some loss of existing street trees along the right-of-way. When considered together, all of these factors cause a major short-term impact, which will be offset by the long-term benefits generated by the Farragut North Station.

The segment from Station 45+00 to Station 56+00 is located along Connecticut Avenue, N.W. between L and 18th Streets. Impacts upon this segment during construction include increased noise levels, possible loss of trade, pedestrian and vehicular traffic disruption, erosion due to cut-and-cover construction and the loss of minor street trees. Although all of these factors cause visual disruption and, in total, constitute a major short-term negative impact in this area, they are short-term and will be offset by long-term benefits generated by the Metro system.

The area around the intersection of Connecticut Avenue with 18th and N Streets (Station 56+00 to 62+00) will be positively affected by the Dupont Circle Station which will offer major development opportunities, especially at the Metro's proposed staging area. The continuation of cut-and-cover construction in this segment will involve increased noise levels, traffic congestion, the potential loss of minor street trees due to construction activities and storage, and potential moderate erosion and sedimentation problems.

Location of the staging area in a former parking lot results in a loss of available parking in the area. Construction activities and loss of parking may produce a short-term loss of retail trade. All of these impacts result in a short-term major impact in this segment; however, the long-term benefits are expected to be more significant.

Rock tunnel construction between Station 62+00 and Station 74+50 preserves the Dupont Circle area, the area north along Connecticut Avenue, the park and its surrounding environment. It prevents what otherwise would be major impacts by minimizing construction activities upon the surface.

The segment from Station 111+00 to Station 113+50 includes the southern half of Rock Creek Park in the area of the Connecticut Avenue bridge and the Rock Creek Valley stables. Much of this area will be used as a Metro staging/storage area. This involves removal of a substantial amount of forest, tree and ground cover which could result in the flow of storm runoff and sediment into Rock Creek, especially during heavy storms. The use of this area as a spoil removal site will require careful application of WMATA erosion/sedimentation control measures to keep sedimentation of Rock Creek to a minimum. The creek valley's value as a wildlife habitat and corridor and as a visual resource will be disrupted by the temporary removal of forest cover, the potential of erosion and sedimentation and increased noise levels due to construction operations. This major short-term impact will cease upon completion of construction operations. Trees and other vegetative cover will be replaced and the area generally restored to its condition prior to construction. Although this portion of the parkland will be generally unavailable for public use, Metro has rerouted the bicycle/pedestrian path through this section of the park, thereby maintaining the continuity of the park through the staging area. The older Rock Creek Valley stable located in the staging area is temporarily unusable; however, Metro has constructed two modern stables at locations designated by the National Park Service. They are currently in operation.

Two route segments occupy parkland on either side of the Connecticut Avenue Bridge. The impact of Metro construction on the parkland in these two segments is much less than that in the vicinity of the Bridge and staging area.

The area along Wisconsin Avenue, N.W. (Station 256+41 to Station 279+32), just north of Tenley Circle, is a community commercial center surrounded by older low-to-moderate density residences. The Tenley Circle Station should greatly facilitate access for residents

and shoppers alike, thereby increasing trade and the potential for new development. These changes could make the general area a more cohesive and identifiable urban center. Only a few negative impacts are foreseen. Increased private development, indirectly related to the station development and increased access, will increase the traffic congestion in the low density residential area around Tenley Circle. A minor amount of space will be lost around the two station entraces. A few street trees will be taken during construction.

Two major areas of regional importance are the National Institutes of Health and the National Naval Medical Center complexes. The combined property of both federal organizations represents a regional resource in terms of natural topography, the stream valley, vegetation and wildlife habitat. The A alignment passes through the area in rock tunnel. The new location of the Medical Center Station minimizes the environmental impact as much as possible by being situated in a relatively flat area without significant vegetation. The plan makes possible the continuity of the stream channel as it flows through the site. Alternatives previously considered would have caused major destruction to both major mature vegetation and the stream channel.

The segment from Station 560+00 to Station 620+00 is located just north of the Grosvenor Station along Rockville Pike. The aerial structure over I-495 and in the median of Rockville Pike avoids direct impact to Rock Creek Park, but will be a visual addition to this transportation corridor. Cut-and-cover construction north of this area causes major short-term negative impact. Construction will also result in short-term traffic disruption of access roads to residential and commercial/office areas off of Rockville Pike. There also will be increased noise levels. Potential erosion/siltation could affect the intermittent stream channels adjacent to the Metro cut-and-cover operation. The proposed horizontal alignment will require the removal of 14 specimen Norway maples (30" caliper, 40' height) plus other less individually valuable shade trees along this segment. The alignment also requires the taking of five single-family homes.

The segment from Station 800+00 and Station 848+00 is located along the B&O Railroad right-of-way in the vicinity of the junction of Rockville Pike and Viers Mill Road. As discussed previously, the widening of the right-of-way of the railroad will require relocation or destruction of the historically recognized Rockville B&O Railroad Station, circa 1875.

Construction of the Rockville yard in the presently proposed ARS location would involve loss of a large area of mixed young forest and old field

vegetation. This vegetation combined with the natural drainage way constitutes a significant area of wildlife habitat. While this area is not of unique importance, its loss constitutes a further diminution of wildlife habitat within the Washington metropolitan area. However, the present zoning for the area allows high intensity development, which would cause a change in its present character. Current zoning and the prime location of the yard site seem to call for a higher and more intensive land use than the storage of mass transit cars. Air rights development over the yard site may be possible due to its depressed elevation 30 feet below surrounding grades at the north end and its proximity to the town center project.

In response to a request from the Washington Suburban Transit Commission (WSTC) (Res. 12-72), WMATA is studying alternatives to the ARS/68 Rockville Storage and Inspection Yard location, and alignment and station locations for the A Route from the Nicholson Lane Station northward. WSTC concern which brought about the resolution was based upon the request of citizens of the Twinbrook neighborhood to relocate this station, a request by the City of Rockville to study the consolidation of the Nicholson Lane and Twinbrook stations into one station, and Rockville's concern about the location of the yard area and a terminal station within the central business district. Parking facility and access requirements of a major terminal station in downtown Rockville, and the preemption of a large tract of developeable land so close to the renewed core of the city for the yard were of major concern to city officials.

New locations for the yard are being considered north of downtown Rockville in the Derwood Industrial Park (Gude Tract) adjacent to the Montgomery County Incinerator, and on either side of the B&O right-of-way near its crossing of Crabbs Branch. Of these alternatives, the site north of Gude Drive (Site A) in the industrial park would have the least adverse impact to vegetation, and the quality of surface water channels, such as Crabbs Branch.

An alternative location at Randolph Road was proposed to be studied for the combined Twinbrook - Nicholson station. An additional Metro station, at Shady Grove Road, is also under consideration to serve as a terminal outside of the Rockville CBD, in conjunction with a northerly shift of the yard area.

The study of these alternatives and their impact prior to public hearings and final adoption by the WMATA Board will involve time delays which could affect the design and construction schedule for this route.

GLENMONT ROUTE (B)

Introduction

The Glenmont Route serves the northeast section of Washington, D.C. and the north central suburban areas of Montgomery County. The route begins in downtown Washington just east of Metro Center Station at 12th and G Streets, N.W. and proceeds east in cut-and-cover construction past Gallery Place Station. Crossing F Street between 5th and 4th Streets, it continues southeast, running under Judiciary Square Station to an alignment centered on D Street, N.W. The route continues along D Street to the intersection with Louisiana Avenue, where it curves north, in the Union Station Plaza area. Passing along the west side of Union Station, the B Route changes to on-grade construction and follows a widened B&O Railroad right-of-way through northeast/north central Washington, D.C. It passes Rhode Island Avenue Station at Rhode Island Avenue, Brookland Station near Michigan Avenue, Fort Totten Station at Fort Totten Park and Takoma Station near the District line. Once outside the District line, B Route continues at-grade to Silver Spring Station at Colesville Road. At the 16th Street crossing of the B&O right-of-way, the route curves and follows a rock tunnel alignment north along 16th Street to Georgia Avenue. The route, still in rock tunnel, curves to align on Georgia Avenue passing Forest Glen, Wheaton and Glenmont Stations. The Metro tracks emerge to grade at the proposed Glenmont Yard area. There are 11 stations on the 13.7 mile B Route; seven stations are in the District, and 4 in Montgomery County.

The Glenmont Route will begin operations during Phase I by December 1974 as far north as the Rhode Island Avenue Station. There will be progressive extensions of the route until the Glenmont area is served in December of 1979 (Phase VI).

Glenmont Route Impacts

Natural and Ecological Impacts

The alignment of the B Route is particularly responsive from an ecological point of view. The route does not cross or pass close by streams of any significance, thereby preventing potential degradation of streams due to sedimentation that may result from construction. Further, the alignment causes relatively minimal impact upon regionally important vegetation.

There are two major areas of vegetation adjacent to the B Route. In Fort Totten Park the Metro tracks

make use of the existing B&O Railroad right-of-way. Though widening of the right-of-way will take a minor number of trees, the major stands of mature trees are well back from Metro construction. The park, somewhat isolated now, will be more accessible to residents of the area upon completion of Fort Totten Station and the initiation of Metro service. Provisions are planned for a pedestrian-bike connection under the railroad tracks where none now exists in Fort Totten Park.

The other area of important vegetation affected by Metro is the portion of the Glenmont Station site where numerous healthy, mature trees are of visual as well as ecological importance due to their location along Georgia Avenue, a heavily traveled thoroughfare. With careful site planning, it will be possible to preserve most of them, adding greatly to the visual environment of the station as well as retaining that of Georgia Avenue. The proposed Glenmont Yard is also located along Georgia Avenue north of the station. The yard is planned for a relatively untouched, steeply sloped small valley with significant oak, maple, and tulip poplar vegetation. The area is zoned residential and might be developed in the future. Despite the current zoning, study of alternative yard sites would be desirable in order to preserve at least a portion of the wooded valley.

Since a major portion of the route will be located on-grade making use of the existing B&O Railroad right-of-way, spoil material will be limited to the amount generated by cut-and-cover construction downtown and by tunnelling in the outer portion of the route. Tunnel construction from 16th Street in Silver Spring to the Glenmont area prevents loss of numerous trees, collectively important due to their location along major arterials, and eliminates the disruption of traffic involved in cut-and-cover construction.

Air quality should be improved all along the B Route, especially in the downtown area and in the Takoma Park/Silver Spring/Wheaton corridor.

Visual and Physical Impacts

The B Route alignment and station locations relate well to existing urban and educational sub-centers in downtown Washington and to community centers in outlying residential areas. In general, Metro stations along the B Route will improve the physical appearance and functioning of these areas. They may also spur new private development within "Metro Impact Zones" designated by the District and Montgomery County. Collectively, improvements around station areas should result in an overall visual and physical improvement for the north central/northeastern areas of metropolitan Washington.

The positive impact is especially significant for some of the areas adjacent to the B&O right-of-way. Although presently in fair condition, these areas have experienced little or no recent improvements and development.

Social and Economic Impacts

The alignment of the Glenmont Route forms a convenient mass transit link between outlying suburban residential and commercial areas, light industrial areas located along the right-of-way, and downtown Washington. This link has the potential of stabilizing and strengthening the northeast corridor of the region by increasing its economic viability and the desirability of its residential areas. Negative impacts due to construction work will be short-term and of local significance only.

As discussed under Visual and Physical Impacts, the B Route surface facilities will relate well to urban and suburban centers along the alignment. These facilities will strengthen rather than detract from surrounding communities. Negative effects upon adjacent development have been minimized by careful location of the alignment. The B&O Railroad right-of-way forms an edge or border between residential, commercial and light industrial areas. Metro's passage along this existing edge minimizes division of communities. Although widening the right-of-way causes some loss and damage, it is much less than would be caused by any other construction method except rock and earth tunnel construction. As discussed under Natural and Ecological Impacts, rock tunnel construction will be employed in the outer portion of the route, thereby preserving numerous mature trees and preventing significant disruption of traffic and community activities along Georgia Avenue.

The B Route passes close to a few historical structures and sites, but does not adversely affect any. Construction along the west side of Union Station has been carefully planned so that it will not detract from this historic landmark. Metro access to Union Station will increase its usefulness to residents of the region as well as tourists.

Major Impact Locations

Major impacts are anticipated primarily along the downtown and outer portions of the B Route. Construction downtown is of cut-and-cover type which involves a number of impacts; however, the majority of these are of short duration and are more than compensated for by the long-term benefits generated by Metro service. In the outer portion of the route, major impacts are limited by the rock tunnel construction method which

minimizes surface disturbances. However, major impacts are expected in two areas: one along part of the B&O right-of-way and the other at the end of the route where the terminal station and yard are located.

The first of these is located from Station 457+00 to Station 469+50 along the B&O right-of-way from Colesville Road to Fenwick Lane. The Falkland Apartment complex (moderate income) is located along this segment on the west side of the B&O right-of-way. This complex is proposed to be demolished for the development of a major new highrise development. Between the complex and the railroad is a slope landscaped with semi-mature and mature trees. Widening the B&O right-of-way to accommodate Metro tracks involves excavation for a retaining wall, thereby increasing the potential for erosion and sedimentation during construction and causing the loss of numerous trees buffering the apartment complex. The housing will then be very close to an 18 foot high retaining wall which will be constructed along the west side of the right-of-way. In addition, along the same segment, some commercial buildings will be acquired to provide right-of-way for the relocated eastbound B&O main track.

Major impacts occur at both the Glenmont Station and Yard located in the segment between Stations 1185+00 and 1242+10. The loss of vegetation in both areas has been discussed in the previous section. In the case of the station site, a great many mature trees can be saved. However, the yard site will require extensive grading and filling of a stream valley which will result in loss of mature woodland. There is also the potential for significant erosion; however, WMATA contract provisions should limit the impact upon downstream drainage ways. In addition to the potential of major ecological impacts, some relocation of commercial and residential uses will be necessary for construction of the Glenmont Station. Over the long-run, the development potential of the area will increase and the station could become an important sub-center for suburban areas north of Wheaton.

The segment from Station 11+50 to Station 23+00 is located along G Street from 9th Street, N.W. to 6th Street, N.W. Cut-and-cover construction will cause negative short-term impacts, which will be most pronounced around the Gallery Place Station where surface construction activity will be concentrated. There will be short-term disruption of pedestrian and vehicular movement, but most of this disruption will cease as soon as timber cover sections are in place. Where necessary, temporary walkways and entrances will be constructed. Excavation along the segment may cause sedimentation and the loss of a few street trees. However, sedimentation control measures will be applied and planting in the

station entrance areas should compensate for the loss of trees. General visual disruption will occur throughout the area. As a result of these impacts, commercial establishments along the segment may experience a short-term loss of trade. Over the long-run, the station will be a strong positive element, building upon the area's convenient downtown location and proximity to the Smithsonian Portrait Gallery. Metro will help stabilize the area and augment incentives for new development.

The segment from Station 23+00 to Station 34+00 proceeds diagonally across several blocks from the intersection of 4th and E Streets, N.W. to 6th and G Streets, N.W. Cut-and-cover construction will cause considerable short-term disruption. Excavation will introduce the potential for erosion and sedimentation. Construction machinery will increase noise levels and cause some short-term disruption of Judiciary Square Park, including removal of a few large elm trees. It will also require relocation of some older offices and apartments along 5th Street between F and G Streets, N.W. However, these short-term impacts are more than compensated for in the gains the area should experience in the form of improved access to the court buildings and the Pension Building and increased development potential.

The segment from Station 45+00 to Station 56+00 is located along D Street, N.W. from 2nd Street to Louisiana Avenue. This area will experience significant short-term negative impacts due to cut-and-cover construction. Pedestrian and traffic movements will be disrupted. Increased noise levels and storage of construction equipment will also have a short-term negative effect upon the area. Vent shafts will take a few trees and occupy a portion of the parkland at the eastern end of the segment. The proximity to Union Station and the availability of cleared land in the area indicate that this segment should experience increased development, offsetting short-term impacts.

The segment from Station 56+00 to Station 64+50 is located along Louisiana Avenue from D Street to Massachusetts Avenue. The majority of this segment is located under parkland between the U.S. Capitol and Union Station. Cut-and-cover construction will require removal of healthy, mature red oak trees. Storage of materials and equipment will cause compaction of the storage sites possibly affecting the root systems of additional trees. Storage also will disrupt the view of parkland and the Capitol. Excavation may cause potential sedimentation. The majority of these impacts will be eliminated or compensated for within a short period of time. Trees lost along the right-of-way will be replaced and the area will be generally restored to its original condition.

The segment from Station 64+50 to 76+00 is located along the west side of Union Station, east of First Street. Disruption due to construction will affect the parkland on Massachusetts Avenue in front of Union Station with a loss of mature, healthy trees. Pedestrian and vehicular traffic will be disrupted temporarily by excavation and installation of timber cover sections. Increased sedimentation may be experienced during excavation. General visual disruption will result from construction and equipment storage. Once construction is complete, the area will be restored to its original condition.

The segment from Station 158+00 to Station 169+50 is located along the B&O right-of-way in the vicinity of the Rhode Island Avenue Bridge. A topographically prominent hill with substantial old field vegetation and potentially important views to the U.S. Capitol will be lost. Grading of the hill is necessary to locate parking and bus areas adjacent to Rhode Island Avenue and the Metro station. Grading of the relatively steep site will require erosion and sedimentation control measures. The widening of the B&O right-of-way will involve some relocation of small commercial and industrial concerns. In addition, traffic will be disrupted during construction of the aerial structure over Rhode Island Avenue. Development of the southern edge of the station site will require acquisition of portions of yards presently used for storage of scrap metal and construction material. While these marginal operations will be affected intially, the Rhode Island Station will increase the potential for new development and employment in the area.

HUNTINGTON ROUTE (C)

Introduction

The Huntington or C Route, included in the Metro system since its approval in March, 1969 (ARS 1968), extends from just north of Metro Center at 12th and Eye Streets in Washington's core to Huntington Station in Fairfax County, Virginia. Beginning at Metro Center in tunnel, the C Route serves the Eye Street office area with the McPherson Square and Farragut West Stations and the George Washington University and the Foggy Bottom residential community with the Foggy Bottom - GWU Station. From this station to the Potomac River Metro is in tunnel. It crosses the River to Virginia in tunnel in an alignment just upstream from Theodore Roosevelt Island.

In Virginia, the C Route tunnels south to serve the newer commercial/residential community of Rosslyn with Rosslyn Station. Continuing in tunnel under Arlington Boulevard and Jefferson Davis Memorial Highway, it then surfaces and proceeds in walled cut east of Jefferson Davis Memorial Highway to Arlington National Cemetery Station and passes under Memorial Drive.* It proceeds at grade to the Washington Boulevard and Jefferson Davis Highway Intersection where it becomes cut and cover again and is joined by the L'Enfant Pentagon River Crossing (L) Route just east of the Pentagon Station.* The route tunnels I-95 (the Henry G. Shirley Memorial Highway) and enters the Jefferson Davis corridor, the transportation focus of Northern Virginia traffic. It passes through the planned, yet undeveloped, Pentagon City area to be served by Pentagon City Station and also through Crystal City, a developing, commercial/apartment complex to be served by Crystal City Station. The route continues in cut-and-cover under the George Washington Memorial Parkway, then surfaces to become an aerial alignment and station, at Washington National Airport.

The route continues from the airport southward joining the RF&P Railroad right-of-way on surface tracks, proceeding through Alexandria, with stations at Braddock Road and King Street. Detailed coordination of planning with the Virginia Department of Highways will be necessary in this area at the General Plans stage to assure that there is no conflict between Metro and highway plans.* It then passes the office complex at Eisenhower Avenue before it crosses the Capital Beltway on aerial structure. An aerial station and yard is proposed but not finally approved in the vicinity of Eisenhower Avenue. The route terminates at Huntington, a surface station located in a wooded ravine on the site of Fort Lyon between Huntington Avenue and Kings Highway. A future extension is planned to Fairfield, south of Huntington, after the completion of the Adopted Regional System.

*Second and third paragraphs revised

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The Huntington Route, between the Southern Railway and King Street Stations, also serves as the beginning of the Springfield (J) Route; therefore, Metro trains serving this route and the Franconia (H) Route, which branches from the J Route, will travel along the Huntington Route alignment. The entire length of the Huntington Route is 11.7 miles. There are thirteen stations along the route; three in the District, six in Arlington, one in Fairfax County and three in Alexandria, including the station proposed at Eisenhower Avenue. In addition, there is a provision for a future station at Potomac Center.

The C Route will begin operations by Phase II in May 1976 to National Airport Station and by Phase IV in December 1977 to Huntington Station. After 1980, the C Route may be extended to Fairfield, Virginia.

Huntington Route Impacts

Subway construction throughout most of the length of the Huntington Route to Washington National Airport minimizes its long-term impact within built-up urban areas. However, where there is cut-and-cover construction, there will be considerable disruption during the construction period causing short-term traffic congestion, increased noise, dust, erosion of the excavated material and air pollution. These impacts are minimized as far as possible by controls in WMATA contracts and other measures taken as a part of cooperative agreements with each jurisdiction.

From Washington National Airport to Huntington, the route is at-grade and generally follows the existing RF&P Railroad right-of-way; therefore, the impacts are due primarily to the new facilities and the operation of Metro at the new stations.

Natural and Ecological Impacts

The tunnel portions of the route will produce spoils which must be disposed of as described in the previous section on spoils.

That part of the C Route which lies within the District of Columbia will cause no long-term impacts on physiography, surface hydrology, or soils. Impacts occurring in the Virginia portion of the route will be limited to potential minor effects on the floodplains of the Potomac River in Arlington between Rosslyn and the Pentagon, and Cameron Run alongside the Capital Beltway between Eisenhower Avenue and the Huntington Station. These impacts will be limited to potential erosion during construction in the vegetated areas of the floodplains, and minor constriction of the floodplain by new structures.

Vegetation will be affected to some extent in the urban parks in the District of Columbia, along the Eye Street right-of-way and at the fan shaft location near Rock Creek Park. In Virginia, Metro will require replacement of some nearly natural vegetation and will preempt some natural sites used for passive recreation. No forested area of significant size will be disturbed by the C Route.

The wooded area bordering the eastern bank of the Potomac River, which is a part of the George Washington Memorial Parkway at the foot of Key Bridge, will be a vent shaft site, which will cause insignificant removal of understory vegetation and small trees.

A wooded section between Jefferson Davis Highway and George Washington Memorial Parkway in the vicinity of Arlington Memorial Drive will be disrupted by the construction of Metro facilities and the train operations after construction. Although this wooded site of 24 acres is not considered a prime natural resource in the region and is isolated by major transportation arteries, it serves as a habitat for many species of songbirds and is a sheltered natural area for passive recreation and jogging.

Disruption of vegetation and open space from this area to Washington National Airport is minimal and confined to areas that are already highly disturbed. Landscaping, which WMATA will provide upon completion of Metro facilities, could in many cases be an improvement over existing conditions.

Beyond Washington National Airport, the Huntington Route avoids all vegetated areas until after it passes over the Capital Beltway (I-495). In the Cameron Run floodplain some small underbrush and tree vegetation, which perform a valuable function in holding soil and maintaining the absorption capacity of the area for storing groundwater, will be removed. In this area, Metro is on aerial structure with column footing excavations being the only disruption other than the operation of heavy equipment during its construction. Therefore, only minor disruption is expected.

South of Huntington Avenue the Huntington Station will cause the removal of several major oak trees, and understory vegetation in a steeply sloping ravine. Depending upon the final design of the parking and bus facilities on the plateau above the station, other major trees on the steeply sloping side of the plateau could be destroyed. During and after Metro construction there will be a high potential for erosion of the steeply sloping banks of the ravine and sides of the plateau due to the removal of vegetation now holding the earth in place. This portion of the route will require special effort to minimize the removal of vegetation and to

enforce WMATA contract provisions for the control of erosion.

The noise impact of Metro is limited primarily to short-term increases in noise levels due to Metro construction. There are exceptions, however, where the surface alignment passes nearby residential units and will result in long-term noise levels noticeably above the existing rail traffic along the RF&P right-of-way. The area most affected by Metro noise will be the dwellings between Cameron Street and Braddock Road, east of the RF&P right-of-way in Alexandria. Noise levels in this area (Stations 470-447) are expected to exceed HUD standards, considering the present status of design. The dwellings adversely impacted in this area will be acquired by WMATA and their occupants relocated.

Other areas may perceive the noise from Metro, but Metro noise will not exceed the existing high levels produced by the adjacent heavily traveled highway system and the Washington National Airport in Arlington, the RF&P Railroad traffic in Alexandria, and the Capital Belway in Fairfax County and at Eisenhower Avenue Station.

Visual and Physical Impacts

Short-term visual disruption due to construction methods of cut-and-cover sections are the predominant visual impact along the C Route. Only minor long-term visual impacts are expected to be attributed to the system itself. Two areas where potential impacts will be avoided are near Thompson's Boat Center on the east bank of the Potomac River, where WMATA has agreed to construct a facade similar to the Boat House and on the west bank of the river where a fan shaft will be landscaped. Replanting on the wooded area disrupted between this highway and George Washington Memorial Parkway will restore much of the original scenic resource. However, the visual character of the area will be altered due to the operation of the Arlington Cemetery Station and the surface trains.

The aerial alignment and station at National Airport have visual significance, for they will alter the visual appearance of the airport and reinforce the image of the National Airport as a major transportation center. Although the structure will receive the same architectural attention given all Metro facilities, it can only ben an additive element to the present airport complex. Although the Metro structure should not appreciably decrease the visual quality of the area, its elevation over the present three-story structures in the area assures its visual predominance.

The visual experience offered Metro riders viewing the activities of the airport complex will be one

of the more exciting in the system, and should be appreciated by the tourist as well as the daily commuter. Riders on the C Route also will be able to view the Potomac River and the Parkway south of the Airport. These are considered positive visual impacts. The visual proximity of the Metro alignment to the townhouses along the RF&P Railroad right-of-way in Alexandria between Cameron Street and Braddock Road will be less positive, although noise, as mentioned previously, will have more of an effect.

Social and Economic Impacts

The C Route will be a heavily used line serving high density commercial and residential areas. The prime role of the C Route is to serve major employment centers in the District and northern Virginia. Stations with the greatest volume are those serving well established employment centers in downtown Washington, Rosslyn, the Pentagon, Crystal City and the National Airport. Metro service is expected to have a substantial positive impact on these centers by making them more accessible to employees residing throughout the region. Development within the Jefferson Davis Corridor in Arlington is expected to account for the largest portion of employment growth along the C Route.

Relocation of about ten small businesses along the C Route will be required for Metro construction in the District of Columbia. Underpinning of other commercial structures will also be necessary. This, combined with construction related noise, dirt, and traffic detours will cause short-term inconvenience. In some cases, these inconveniences may cause a decline in retail sales, especially along Eye Street. Over the long run, however, it is expected that the growth and accessibility facilitated by Metro service will significantly outweigh the inconveniences during construction.

The C Route does not disrupt community identity or divide neighborhoods. The problem of bisecting a community with an at-grade or aerial structure is avoided. Moreover, the route passes through the non-residential sections of most communities. Over the long run, Metro service to the communities along the route could make them more desirable residential areas, particularly those new developments within the Jefferson Davis Corridor.

Access is expected to be substantially improved to cultural centers along the C Route such as Kennedy Center and George Washington University in the District of Columbia, and Arlington National Cemetery in Virginia. Most historic landmarks and archeological sites in the vicinity of the Huntington Route are avoided, although

the 19th Street Baptist Church had to be underpinned. The Huntington Station parking facilities are proposed on the location of Fort Lyon, a Civil War fort. However, private development has already substantially disrupted the site. No further adverse impact attributable to Metro is foreseen.

By diverting peak hour traffic, Metro service along the C Route will greatly expedite the flow of traffic around major employment centers in Northern Virginia and downtown Washington. Traffic congestion around C Route stations will be at a minimum due to the limitations on the size of the auto-related facilities. Facilities for park-and-ride will be provided only at the terminal station in Huntington, which is served by Kings Highway (Route 241). This facility will hold 2000 cars. In addition, kiss-and-ride facilities at Huntington, King Street and Braddock Road stations will cause limited peak hour increases in local traffic, but the overall effect will be to divert auto passengers to Metro, thereby relieving auto congestion in surrounding communities. The bus drop-off facilities at each of these stations and at Pentagon Station will add additional congestion locally, but will relieve bus traffic overall, especially between jurisdictions in the Metro corridors.

In most cases along the C Route, Metro can be expected to accelerate development. As opposed to relatively rural sections of the Washington metropolitan area, development trends along the C Route are already in process, and Metro service is expected to reinforce them, not alter their direction. In the District, there is expected to be a general intensification of land uses along Eye Street between 12th and 30th Streets, adjacent to the highly developed K Street corridor. Within this overall intensification, substantial development is anticipated in the areas around McPherson Square Station, Farragut West Station and George Washington University. In Virginia, Metro service is expected to enhance development potential at Rosslyn, Pentagon City and Crystal City, and around the stations in Alexandria and at Huntington.

Generally, the type of development along the C Route appears to conform with local plans. In many cases, the jurisdictions have actively promoted the development trends which are occurring. Metro is expected to complement these trends, making future development more accessible and relieving the traffic problems affecting existing communities.

Major Impact Locations

In the District of Columbia the major impacts of the C Route will be positive. Increased access to commerical uses and employment in downtown Washington, and its resultant benefits in terms of economic viability, convenience, and renewed development will outweigh the short-term negative impacts during the construction of the cut-and-cover tunnel and stations.

The short-term negative impacts of greatest significance along the District portion of the route are at James Monroe Park, Stations 57 to 62, where the park is being temporarily disturbed due to cut-and-cover construction and use as a construction staging and storage area. When construction is complete, James Monroe Park will be fully restored with new landscaping and should eventually achieve its former use and character. Other alternative alignments that avoided this park would have caused the removal of entire blocks of residential and commercial property, relocation of their occupants, and demolition of the historic 19th Street Baptist Church, as well as a considerable increase in cost. These structures, which are unique to this portion of downtown Washington, could not be restored to their original condition, whereas the park can over time.

The disruption of Eye Street is being minimized to the extent possible by covering over excavated portions as soon as possible, and maintaining through pedestrian and vehicular movement.

Within the Arlington portion the major impacts along the Huntington Route are related to the increased accessibility to new development areas, employment centers, the Arlington National Cemetery, and Washington National Airport on the positive side and disruption of the natural wooded area between two highways near the cemetery on the negative side.

The new development centers are Rosslyn, Stations 135 to 160, Pentagon City, Stations 282 to 320, and Crystal City, Stations 320 to 337. The market for commercial office space and other associated uses in these centers will be considerably enhanced by the Metro stations to be developed in their lower level concourses. By decreasing the reliance on the automobile, Metro should promote a more efficient utilization of the land and building area in these complexes. In addition, these centers will become more accessible to lower income workers elsewhere in the region currently unable to afford private auto transportation and parking. All of these factors will tend to enhance the development potential of the underdeveloped parcels in these centers, thereby increasing their value.

The Pentagon City area, in particular, which has the largest undeveloped portions of urban land in Arlington County under single ownership, is now in the planning process and taking Metro into consideration.

These three developing areas also represent major employment centers in the region. The Pentagon, between Arlington Cemetery and Pentagon City Stations, Station 260, is the largest single employment center along C Route. Its employees are expected to benefit from Metro through reduced dependancy on the automobile and relief of peak hour congestion of the highway network in this area. Washington National Airport is also a major employer along C Route, but the high ridership expected for this station comes primarily from those using the airport for its transportation function. The existing congestion in the vicinity of the airport should be reduced. The cost of getting to and from the airport will be made faster,easier, and cheaper for the traveler. If the existing airport is phased out, as many interest groups in the region advocate, the Metro station would further enhance the airport's redevelopment potential for other uses.

As mentioned previously, between Jefferson Davis Highway and U.S. Route 50 (Arlington Boulevard) where the C Route emerges from rock tunnel and continues at-grade (Station 170-183), there is a grassy area with patches of second growth forest and thicket with some red cedar, locust, poplar, maple, sycamore, oak, sumac and mulberry. Scrubby growth of sumac, honeysuckle and blackberry comprises the understory. Both north and south of the Memorial Drive, the woods are fairly thick and, though of not especially good quality, are unique for their natural unlandscaped character in a highly disturbed natural environment. The thick underbrush provides an excellent songbird habitat. The Metro construction area and stockpile occur primarily on the unforested sites, and the mulberry and locust will be little affected by this temporary disturbance. Although a portion of the vegetation can be left undisturbed by Metro construction, nevertheless its character will be altered. Transit train operations will tend to disturb the pastoral quality; however, replanting in conjunction with the remaining trees will provide an excellent buffer strip along the highways.

Further along the route between Station 220 and Station 250 the cut-and-cover construction in the landscapedarea near the Pentagon lagoon is expected to create the potential for erosion of the excavated site with resultant sedimentation of the Potomac. This area has been disrupted frequently by construction including construction of the Pentagon and its parking lot and construction of the George Washington Memorial Parkway as well as other highway construction.* If properly enforced, WMATA sediment control measures can prevent further degradation.

*Fourth paragraph revised REVISED

On the north side of the Pentagon, Station 250 to 255, there will be short-term disruption of highway traffic during construction. The Jefferson Davis Highway will have detour lanes and other temporary measures provided for through movement. This general area has been disrupted for several years due to highway construction in connection with I-95. Metro construction is timed to coincide with this construction so that both facilities will be completed in the same general period, thus avoiding further disruption. Similarly, the Crystal City area, the Jefferson Davis Highway through this complex, and George Washington Memorial Parkway, Stations 320 to 345, will undergo temporary traffic disruption during the construction period.

In the vicinity of the former Monroe Avenue Station, Station 428 to 440, are large areas of vacant or underutilized land adjacent to the RF&P Railroad right-of-way. These areas represent an opportunity for new industrial development that could be enhanced by Metro access. This station has recently been relocated, upon the request of Alexandria City Council. The new location is further south in the area between Braddock Road, West Street and Madison Street, near the Barker-Gray Middle School.

Beyond the Braddock Road bridge, the townhouses to the east of the railroad right-of-way as far as Cameron Street will be severely affected by the close proximity of the Metro which will result in excessive noise and visual impact. The dwellings closest to the alignment will be acquired and the occupants relocated. The extent of relocation will depend upon the final design of the alignment, and negotiations between WMATA, the Alexandria City Council and the property owners but will approximate 75 houses. The maximum relocation that is anticipated is 100 families. Such relocation will minimize the impact of Metro in this area.

King Street Station, Station 480-485, is expected to benefit the commercial and industrial area at the west side of Alexandria's business district. Although kiss-and-ride and bus drop-off facilities are expected to produce minor congestion and air pollution during peak hours, the overall impact of the station location is a positive one.

Impacts of Metro south of King Street station in Alexandria are of minor significance and relate to the visual appearance of its aerial structure and the effects of its construction on Hooff Run, a small tributary of Cameron Run. The construction of the columns of the structure and short-term erosion due to heavy equipment operation could cause sedimentation of this tributary, if uncontrolled.

In Fairfax County, south of the Capital Beltway, the preliminary design for the alignment and Huntington Station indicates more significant impacts. At the border of Fairfax County in the Cameron Run floodplain, minor impact is expected during the construction of Metro aerial structure columns due to excavation and the operation of heavy equipment. Slight erosion and sedimentation of the creek is anticipated. Also, the visual effect of the 25 foot high aerial structure over Huntington Avenue will be of moderate significance.

The Huntington Station, located in open cut in a steeply sloping natural ravine, will result in significant impacts. Mature oak trees will be removed. Erosion of the excavated, steeply sloped areas will be very difficult to control. Filling of natural drainage ways from the plateau above the station and the construction of large retaining walls at the edges of the plateau will also cause major removal of mature vegetation presently holding the soil at the steeply sloped banks. The parking lots for 2000 cars and the bus facilities on this plateau will require the removal of the Crossroads Community Building. The lower parking lot on Huntington Avenue will involve taking a few houses and removing some minor vegetation. Fort Lyon, the site of a Civil War fort in this area, has already been substantially disrupted by prior development. No further adverse impact attributable to Metro is foreseen.

Traffic during peak hours at this station could cause localized congestion on Huntington Avenue, Kings Highway, and the streets that intersect with them in the vicinity of the station. Improvements to these streets may be necessary to handle peak hour volume. The increased traffic can also be expected to cause peak-hour increases in air pollution and noise levels around the station.

Commercial development in the vicinity of the Huntington Station, both on Kings Road and on Huntington Avenue near its intersection with Kings Road, will benefit from traffic generated by Metro. The several parcels of vacant land in the vicinity of the station will increase in value and represent new opportunities for development.

The visual impact of the aerial structure 25 feet over Huntington Avenue will be significant in this residential neighborhood, especially from the Telegraph Hill Apartments. Increased access to these apartments, the nearby commercial facilities on Kings Road, and Huntington Avenue, and the surrounding residential communities will be a positive benefit of the station.

NEW CARROLLTON ROUTE (D)

Introduction

The New Carrollton route serves downtown Washington and the Mall, the southwest federal office complex, the southeast and far northeast residential communities of the District, and the industrial parks and residential areas located adjacent to the Penn Central right-of-way in Prince George's County, Maryland.

For study and engineering purposes, station points 0 to 14+50 have been included in the study of the D Route. The 11.6 mile New Carrollton Route officially begins at Metro Center Station, a 3 level transfer station with the A, B, and C Routes. The D Route proceeds in tunnel under 12th Street to Federal Triangle Station south of Pennsylvania Avenue. From its two stations under 12th Street, the D Route will serve a concentration of private and government office buildings and a mix of downtown land uses including restaurants, hotels, cultural facilities and retail stores.

The D Route proceeds south under the Washington Mall in cut-and-cover subway construction past the Museum of History and Technology to the Smithsonian Station under the south side of the Mall between the Agriculture Administration Building and the Freer Gallery of Art. Passing below D Street in tunnel through the Southwest Urban Renewal Area to Pennsylvania Avenue, the alignment traverses an area that has been redeveloped with office buildings housing the federal departments of HUD, DOT, GSA, HEW, NASA, and the U.S. Army Corps of Engineers. L'Enfant Plaza, a private office, hotel and shopping center, is part of the renewal area. Two stations serve this area: L'Enfant Plaza Station at Seventh and D Streets, S.W. and Federal Center, S.W. at D Street, S.W. between 3rd and 4th Streets.

Proceeding eastward in tunnel below D Street, S.E., the route passes under the new I-95 expressway past the covered parking garages for the House of Representatives office building to Capitol South Station. Beyond this station and Folger Park, the route proceeds up North Carolina Avenue, past the south side of Seward Square, to join the alignment of Pennsylvania Avenue below the median in earth tunnel. The route continues northeast to Eastern Market Station in front of Hine Junior High School, and then turns east at G Street, S.E. to Potomac Avenue Station at 14th Street. The route follows Potomac Avenue northeast in earth tunnel

before turning north to proceed parallel to 19th Street to the Stadium Armory Station between Burke Street and Independence Avenue. It proceeds in cut-and-cover from the south end of the station and shifts to surface and aerial construction in the stadium parking lot; it then proceeds on aerial structure over the Anacostia River, adjacent to the Benning Road Bridge and between the Penn Central and B&O Railroad rights-of-way, to a surface alignment which follows these rights-of-way northeasterly. Minnesota Avenue Station is located near Grant Street just north of where the G Route alignment branches east on Benning Road. Deanwood Station, located near Douglas Street, also serves the industrial-residential corridor along the railroad rights-of-way.

The route continues northeast along the railroad through the Beaverdam Creek floodplain with stations at Cheverly and Landover. The Landover Station serves the Ardwick Industrial Park, a major employment center. Beyond this station the route follows the railroad right-of-way under the John Hanson Highway (Route 50) to the New Carrollton Station and Metro storage yard, located in an area zoned for industrial development where the Amtrak Metroliner station is situated. The Metroliner Station is to be relocated further southwest adjacent to the New Carrollton Station.

Service on the New Carrollton Route is scheduled for May, 1976 to Stadium Armory Station and for April, 1977 to New Carrollton Station. A further extension of the route along the Penn Center Railroad tracks to Bowie is planned after the completion of the Adopted Regional System.

The New Carrollton Route will have fourteen stations with eleven in the District and three in Prince George's county.

New Carrollton Route Impacts

Natural and Ecological Impacts

Impacts in the District portion of the D Route are limited to trees and vegetation to be removed along the alignment. Parkland vegetation removed for Metro construction will be restored in accordance with agreements with the National Park Service. The Mall will experience the most substantial negative impact, and time will be required for replacement vegetation to regain the character of that removed. However, impacts of this nature are viewed as predominantly short-term.

Longer-term impacts are foreseen in the outer portion of the route, where it follows the railroad right-of-way through the floodplain and watershed of

Beaverdam Creek. The parking and access facilities for Cheverly, Landover and New Carrollton Stations will require removal of relatively large areas of woodland which serve as wildlife habitat, protect the floodplain from erosion and enable it to store groundwater. Grading, paving and construction of station facilities will disrupt these natural functions and will reduce the natural value of the area. However, the land is in private ownership and is currently zoned for industry. The type and extent of development permitted under the zoning and the comprehensive plans for Prince George's County would involve considerably more disruption than that attributable to Metro. WMATA does not have control over development adjacent to its routes and therefore cannot be held responsible for its effect upon the area. With respect to its own facilities, WMATA will design station plans to minimize negative impacts to the degree possible and will undertake erosion and sedimentation control measures to protect the floodplain and stream.

Visual and Physical Impacts

Long-term major negative visual or physical impacts are avoided by the D Route's alignment along existing streets and railroad rights-of-way. Major short-term impacts are also minimized. Those negative visual impacts that are unavoidable are primarily due to the cut-and-cover tunnel construction and its attendant visual disruption of areas such as the downtown streets and the Washington Mall. In the downtown Washington and southwest federal office areas some buildings will have to be underpinned during the construction period. This will cause only temporary physical disturbance.

Metro stations and facilities will have positive visual effects and will enhance the potential for economic development. Major new development in the vicinity of the stations at Metro Center, Federal Triangle, Federal Center Southwest, Landover, and New Carrollton will provide a focus for much of the mutli-use development in this corridor. These centers provide the opportunity for integrating Metro improvements with private developments and other public investments.

At other stations, notably Eastern Market, Stadium Armory, Minnesota Avenue, and Deanwood, Metro will provide the opportunity for upgrading marginal community commercial centers and surrounding residential neighborhoods.

Social and Economic Impacts

Increased accessibility is the greatest positive impact attributable to the New Carrollton Route, which serves areas where development of offices or industry

is taking place and where major increases in new jobs are projected. The Federal Triangle, L'Enfant Plaza, and Federal Center, S.W. Stations serve the largest concentrations of federal offices in the District of Columbia. The Landover Station serves the Ardwick Industrial Park, a major source of blue collar employment for the region. Other stations on the route will also provide access to employment, and will serve as connecting points to other routes which serve high employment corridors.

The D Route will not only facilitate suburban growth but also support and accelerate the renewal of the downtown area. Its direct penetration into downtown without permanently disrupting land use patterns will preserve the existing assets of downtown and is expected to accelerate business and encourage new private investment in office buildings, hotel-motels, restaurants, shops and theaters.

The introduction of transit in the far northeast has the potential of reviving the decaying retail center in the vicinity of Benning Road and Minnesota Avenue. The proposed industrial expansion in the vicinity of Eastern Avenue will also benefit from the increased access provided by the Deanwood Station.

The major institutions along the Washington Mall, which serve as cultural resources for residents and tourists alike, are served primarily by the D Route and its stations at Federal Triangle, Smithsonian, L'Enfant Plaza, and Capitol South. These stations serve the Smithsonian Institute's museums of History and Technology, National History, and future Air and Space as well as the Main Smithsonian office building. Other cultural institutions served by the D Route are the Freer Gallery, Botanical Gardens, Library of Congress, Folger Library, and the U.S. Capitol Building. In addition the major sports and exhibit center of the Robert F. Kennedy Memorial Stadium and the D.C. Armory are located along the D Route.

Although there are several historic buildings and sites along the D Route corridor, none are adversely affected. Many of these structures and sites are public and will benefit by Metro access, which will insure increased patronage.

On the site of the PEPCO plant near the Anacostia River, the aerial Metro alignment passes an archeological site which has been listed by Bruce Powell and Graham and Prowdfit. Although PEPCO and road construction have already disrupted the Benning Archeological Site, it will not be affected further by Metro because columns of the aerial structure will create only minimal subsurface disruption.

A significant consideration in evaluating the impacts of rapid transit is the disruptive effect of

the transit alignment and service on community identity and on the distribution of community services. Since the New Carrollton Route is in subway, elevated, or in existing railroad right-of-way, no major disruptions are anticipated in residential areas. Construction of segments of the route, however, will cause temporary disruption. Rather than dividing communities, Metro will help the residential areas it serves to overcome the isolation from downtown commercial and employment opportunities.

Traffic and parking along the D Route will be temporarily disrupted in areas where the alignment follows existing street rights-of-way. The major cut-and-cover disruptions occur on 12th Street, through Constitution and Independence Avenues, at stations along D Street and Pennsylvania Avenue, and streets around the Stadium Armory area.

New opportunities for development around Metro stations will be one of the major benefits from the D Route. The proposed development in the vicinity of 12th Street and New York Avenue and the expansion of the commercial retail malls east of Metro Center Station on F Street and G Street should be stimulated by the introduction of Metro.

In the southwest federal area the D Route will reinforce recent development and accelerate growth. Development is planned to continue east along the southern edge of the Mall to South Capitol Street and around Federal Center Southwest Station. In southeast Washington the proximity of Eastern Market Station to the downtown core suggests a potential for more intensive residential development, the strengthening of the existing commercial strip, and an accelerated trend in housing rehabilitation.

The renewal of the retail area in the vicinity of Benning Road and Minnesota Avenue is proposed as the far northeast's Uptown Commercial and Community Center. The introduction of Metro and the Minnesota Avenue Station will provide a focus around which broader retail activities, more intensive residential development, and community service facilities can be established. Development in this area will help meet the needs of local consumers and will provide an alternative shopping area for regional shoppers.

Industrial renewal is anticipated adjacent to the Deanwood Station. In Prince George's County an industrial belt generally extends along the southern side of the alignment from the Maryland-District of Columbia boundary to the Capital Beltway.

The area around Cheverly Station is in the Beaverdam Creek floodplain, and access to the station is

limited. However, the improvements necessary to accommodate the Cheverly Station, such as access roads and the bridge over the right-of-way, in addition to the overall increased accessibility of the site, could significantly increase the market for development of industrial facilities in the floodplain. In most areas these forces would be considered a benefit; however, construction on an active floodplain without adequate compensatory measures to prevent flood hazards and ecological damage is considered here as a long-range disbenefit in environmental terms. The economic advantages, therefore, are not the primary concern. Control of development around stations, however, is the responsibility of the local government, not of WMATA. WMATA does not have the legal authority either to purchase more land than is required for Metro facilities or to control surrounding zoning and land use.

In the Ardwick Industrial Park, served by the Landover Station, and the Ardmore Triangle, served by the New Carrollton Station, much of the land available for development and zoned for industrial use and intensity is not within the floodplain. In these areas Metro, along with other economic developments, can create an impact dividend which would supplement projected growth. The Ardmore Triangle area presents the greatest development potential in Prince George's County due to its unique location between two major high-speed highways (I-495, Route 50) and the Penn Central Railroad right-of-way. When combined with other forces for change, represented by the Amtrak Metroliner Station, industrial zoning, and the proposed New Carrollton Metro Station, there is a good opportunity for a major multi-use development with integrated transportation facilities. This opportunity, however, will be dependent upon improved access from the highway facilities, and the adequacy of existing zoning regulations for accommodating multi-use developments.

Major Impact Location

North of Metro Center Station at the corner of 13th and Eye Streets, N.W., near the beginning of the D Route, the Conard Building will be demolished, displacing the residents of 221 apartments. The cost of underpinning this structure was considered excessive due to its age, physical condition and expected life span in an area anticipated for downtown development. Therefore, WMATA decided to acquire the building for demolition rather than underpin it. The residents of this building will be relocated and will receive relocation payments and assistance. The route is in earth tunnel beyond the Conard Building to Metro Center Station,

thus avoiding surface impact.

Metro Center Station, at 12th and G Streets, serves the D Route and its connection with the A, B, and C Routes. This station is one of the major focal points of the Metro system, upon which the District and the RLA will base much of the downtown redevelopment plans. For example, the G Street pedestrian mall and enclosed multi-level galleria have been planned in conjunction with Metro Center facilities. The long-term benefits of the station are expected to be substantial; however, there will be temporary traffic disruption due to cut-and-cover construction.

Short-term disruption at the Federal Triangle Station area (Station 13 to 20) is expected. Street trees and minor vegetation in the semicircular park east of the Post Office Department will be removed. Traffic on 12th Street and Constitution Avenue will also be disrupted.

The Washington Mall will experience more significant impacts. Cut-and-cover construction will have a negative effect on the visual appearance and continuity of the Mall. Vegetation adjacent to the Museum of History and Technology and a few major elm trees between Madison and Washington Streets and Adams and Jefferson Streets will be removed. Construction of the Smithsonian Station and use of a portion of the Mall for a staging area will also be disruptive. However, these temporary impacts will occur simultaneously with Smithsonian expansion and roadway construction. Once all of these construction activities are completed, the Mall will be restored to its original condition and will not be marred by on-surface highway and transit facilities. Federal Triangle and Smithsonian Stations both increase the accessibility of the cultural and historical institutions along the Mall, greatly enhancing its role as a cultural resource for visitors and residents.

Temporary traffic disruption is expected at the L'Enfant Plaza and Federal Center Southwest Stations, and minor street trees will be removed at Federal Center, S.W. Upon completion, these stations will have one of the greatest positive effects in terms of regional access to employment, since they serve a large concentration of federal offices and new private development. Metro service will facilitate the intensification of office development currently underway in this area.

The Capitol South Station will impact the residential block of D Street, between 1st and 2nd Streets, S.E. The removal of sycamore trees, disruption of traffic and construction operations will produce short-term negative impacts. However, the replanting of street trees, the increase in property values and the increased access which will take place after completion of this station will compensate for the short-term

inconvenience.

The south quadrant of Seward Square, where Metro joins the alignment of Pennsylvania Avenue, will be disrupted by cut-and-cover construction, a staging area and a fan shaft location on D Street. This park will be fully restored to NPS requirements upon completion.

Eastern Market Station (Station 135-141) is in cut-and-cover tunnel below the median of Pennsylvania Avenue. Traffic will be temporarily disrupted at the station entrance. The small park between South Carolina Avenue, Pennsylvania Avenue and 7th Street will be used as a temporary staging areas and will be replanted when construction is completed. This station will facilitate access to Hines Junior High School and the commercial center serving the Capitol Hill neighborhood.

Potomac Avenue Station, which is in cut-and-cover tunnel between Pennsylvania and Potomac Avenues is located in a residential neighborhood. Construction of the station entrance and bus bays will require the removal of twelve houses on the west end of the block bounded by 14th Street, Potomac Avenue, and G Street.

The Stadium-Armory Station and the cut-and-cover portion of the alignment north of the station will cause minor disruption of streets and parking lots, but the overall long-term impact of the station is positive. It will increase access to R.F. Kennedy Stadium, the D.C. Armory, the D.C. Jail and General Hospital, and will relieve traffic and parking congestion associated with these major facilities. Access to Eastern High School and the surrounding residential neighborhood also will be improved.

The Minnesota Avenue Station presents a major opportunity for upgrading a declining commercial center and its surrounding residential community. It will also improve access to Woodson Junior High School, the Benning School, and the Mayfair Housing Project in addition to other community services and the far northeast's proposed Uptown Center commercial development. The surface alignment along existing rights-of-way avoids negative impact in this section of the District of Columbia.

The Deanwood Station location offers the opportunity for renewed light industrial commercial development along the railroad right-of-way, and improves access to Roper Junior High School and the surrounding community.

Beyond Deanwood Station the alignment traverses the floodplain of Beaverdam Creek (Station 385 to 612) which has been discussed in the previous section.

The floodplain alignment and station locations are viewed necessary to serve residential and industrial development at Cheverly, Landover and New Carrollton.

GREENBELT ROUTE (E)

Introduction

The Greenbelt Route serves the north central corridor of Washington and the communities of Hyattsville and College Park in Prince George's County, Maryland. A portion of the route is designed to follow the median of the proposed I-95 alignment, which has not been finally approved. The Maryland Department of Transportation in conjunction with local citizens and government agencies is currently studying this transportation corridor as well as alternative locations for both I-95 and Metro.

Under the Adopted Regional System the alignment of the E Route begins in tunnel at the Gallery Place Station on 7th Street between H and F Streets, N.W., and runs under 7th Street northward to the Federal City College Station between L and N Streets, N.W. It continues up 7th Street to the Shaw Station at Rhode Island Avenue. Past the Shaw Station, between S and T Streets N.W., the alignment takes a relatively sharp curve westward below the alignment of U Street. The U Street Station is to be located between 10th and 11th Streets, N.W. At 13th Street, the route curves sharply to proceed northward under 14th Street, N.W., which it follows to the Columbia Heights Station between Columbia and Park Roads, N.W. At Monroe Street, N.W., the route begins a gradual turn northeasterly to Kansas Avenue. It continues up Kansas Avenue, N.W., to the intersection of Kansas and Georgia Avenues, the location of the Georgia Avenue Station. Continuing up Kansas Avenue, past a possible future station at Sherman Circle, N.W., the route gradually curves eastward on Farragut Street and crosses under Fort Totten Park in earth tunnel to Fort Totten Station located at the intersection of the B Route with the Baltimore and Ohio Railroad right-of-way.

Leaving Fort Totten Station, the route continues eastward, at-grade in park property, following parallel to Galloway Street in the alignment of future I-95 across the District line into Prince George's County. Here it begins a gradual turn following northeast in the median of the proposed I-95 and entering Chillum Station at the intersection of the alignment with Chillum Road. Continuing northeast at-grade, the alignment crosses Sligo Creek and curves gently eastward under Ager Road. The route briefly leaves Sligo Creek Park and passes through a residential area on Nicholson Street before re-entering Northwest Branch Park on aerial structure at Ager Road. The route curves gradually east-

ward up from I-95 on aerial structure beyond park property, returning to grade beyond School Road. The Prince George's Plaza Station is in retained cut near the intersection of East-West Highway and Belcrest Road. The alignment leaves the Prince George's Plaza Station and proceeds in cut-and-cover tunnel along East-West Highway turning northward under Queens Chapel Road at Woodberry Street. The route curves gradually eastward under Route 1 and passes over the B&O right-of-way on aerial structure. It then turns sharply northward to return to grade, following the B&O right-of-way northward. It enters the College Park Station at Calvert Road Station near Berwyn Road, which is adjacent to park property.

The at-grade alignment leaves the Greenbelt Station and runs northeastward along the B&O right-of-way, across Greenbelt Road, and to the yard area near a sand and gravel pit on Indian Creek.

The Greenbelt Route has 11 stations with seven in the District and four in Prince George's County.

Metro will be operating as far as Chillum Station by December 1978 (Phase V) and Greenbelt Road by December 1979 (Phase VI). A future extension to Laurel, Maryland is planned after 1980.

Greenbelt Route Impacts

Natural and Ecological Impacts

Ecological impacts along the E Route will be restricted primarily to the outer two-thirds of the route from the District line eastward in Maryland.

Mature tree vegetation will be lost in several areas along the E Route and, when taken together, the losses become significant. Numerous mature oak and maple trees will be removed in the eastern segment of Fort Totten Park. Similar trees will be taken along the alignment between the B&O right-of-way eastward to the District line. At the joint I-95/Metro crossing of parkland at the juncture of Sligo Creek and Northwest Branch in Chillum, Maryland, numerous oaks, maples, sycamores and elms will be lost. Mature woodland (primarily oak and sweetgum) will also be lost from Calvert Park, located along the B&O Railroad right-of-way in University Park. A sizeable area of young floodplain woodland will be taken for construction of the Greenbelt Road Station and parking area. Landscaping in station areas and along the right-of-way will compensate for some of the vegetation lost.

Spoil material along the E Route will be produced from earth tunnel, cut-and-cover and on-grade construction. The great bulk of this material should be reusable as backfill material on Metro construction sites

and in other building construction and land fill projects unrelated to Metro construction. Materials which must be disposed of will be done so in accordance with the local ordinances.

Several areas along the route could lead to potential erosion and sedimentation problems. This is due to the erodible nature of soils stripped of vegetative cover in areas of relatively steep slope and areas adjacent to stream channels.

The other concern of regional significance is the impact of Metro development upon floodplains. Areas along the E Route which will be affected are parkland at the junction of Sligo Creek crossing, the crossing of Paint Branch east of College Park, the Greenbelt Road Station and the Greenbelt Yard.

The crossing of Sligo Creek and the development of the Greenbelt Road Station will be the most significant due to the amount of land which will be taken out of the floodplains for right-of-way and station parking area development. Channelization of streams in the immediate area of this construction should compensate for the increased run-off and loss of absorptive areas at the expense of increased flood hazard downstream. Removal of areas of mature and semi-mature woodland and filling operations within the floodplains will disrupt wildlife habitats which follow stream channels and their floodplains.

Both the Paint Branch crossing and the proposed Greenbelt Yard will cause minimal ecological damage due to the small amount of filling which will take place in these locations.

Visual and Physical Impacts

The E Route alignment and station locations relate especially well to the inner city subcenters of north central and northeastern Washington, D.C. and to the residential and commercial centers of the adjacent suburban Maryland communities.

Especially in the District, the introduction of new station facilities and the access and service provided by the E Route will be an opportunity for major visual and physical improvement. This positive stimulus will encourage new private development which will be especially significant along the 7th and 14th Street corridors which were affected by the riots of 1968.

Along the outer portion of the route, station facilities are expected to have a positive visual impact upon the development of neighborhood and community centers and future residential areas.

Negative visual impacts are restricted primarily to loss of open space and woodland along the I-95/

Metro crossing at the junction of Sligo Creek and Northwest Branch and the eastern portion of Fort Totten Park.

Social and Economic Impacts

The Greenbelt Route alignment will form an important mass transit link between the northeastern suburban residential areas within the Capital Beltway (I-495) in Prince George's County, the north central residential areas of the District and downtown Washington. The E Route may aid redevelopment of the 7th and 14th Street corridors and help strengthen the outer Washington, D.C. and Prince George's County communities. The route should form a significant stabilizing influence upon the total corridor and encourage new development in areas adjacent to stations.

The negative effect of this route alignment upon adjacent residential areas will be minimized by construction methods and alignment location. Much of the route will be in earth tunnel, minimizing the need for surface activity or construction. The outer portion of the route will follow a widened B&O Railroad right-of-way. The most troublesome section of the route from a social standpoint will be in the Chillum area surrounding the junction of Northwest Branch and Sligo Creek. There are numerous single family twin residences and several garden apartment buildings which will be taken, requiring relocation of numerous families. Taking of these homes is required for the Chillum Station facilities and the Metro right-of-way development in this area. Additional takings will be required for the proposed I-95 development. Other than in the Chillum area, relocation is minimal.

Although the E Route passes close by a few historic buildings, the most prominent being the National Portrait Gallery, only those on the east side of the 700 block of 7th Street, N.W. are endangered by Metro construction. This is discussed in the E Route Parklands section.

Major Impact Location

The segment from Station 25-85 is located along 7th and U Streets, N.W. from M to 13th Streets, N.W. This area will benefit from indroduction of the Metro system. Residents and employees will experience increased access and convenience, for the area is served by three Metro stations which are well located in relation to community facilities. Increased trade is anticipated. Access to the Metro system and location of station facilities should stimulate this area's redevelopment.

Negative impacts will be short-term, restricted to the station sites only. There will be increased noise levels, short-term disruption of traffic and pedestrian

movement, and loss of a few buildings to provide locations for station entrances. All of these impacts are typical of other downtown impacts, and will be more than compensated for by long-term benefits.

The segment from Station 310 to 370 cuts across several roads and open parkland from Eastern Avenue to Ager Road through Chillum, Maryland. As presently proposed, Metro shares a common alignment with I-95 in this segment. The following impacts are primarily those attributable to Metro construction, however some of these impacts are the result of both I-95 and Metro. Right-of-way development will result in the loss of some parkland and the removal of healthy mature trees within parkland at the juncture of Sligo Creek and Northwest Branch. Removal of ground cover during construction may produce potential erosion and sedimentation problems, especially due to the proximity of construction operations to stream channels. The proposed right-of-way location will require the channelization of three streams. While these alternations may lessen the flood hazard in this area, they will increase the flood hazard in downstream areas. The above impacts also disrupt wildlife corridors formed by the stream channels and floodplains of Northwest Branch and Sligo Creek, which connect with the Anacostia River and outlying suburban areas surrounding Wheaton, Maryland.

Development of Chillum Station facilities and the Metro right-of-way will result in the loss of approximately 15 twin single-family units and three apartment buildings, although final property requirements have not been established.

Traffic on Chillum and Ager Roads will be disrupted temporarily during construction operations.

Positive impacts of the Chillum Station will result from increased access. In addition, development potential in the areas surrounding the station will be increased, and construction of the new station facilities should improve the appearance of the immediate area.

The segment from Station 370 to 430 is located from Ager Road to Adelphi Road on open land just south of East-West Highway. Metro right-of-way and station development should improve the land in this segment which is in disturbed condition due to adjacent development. Prince George's Plaza Station is conveniently located adjacent to the shopping center, other community facilities and residential areas. The station will provide increased access and convenience for area residents, shoppers and employees. This should result in increased trade and development potential in the vicinity.

The final section of major impact along the E Route is located along Queen's Chapel Road from Adelphi Road to

44th Avenue and east across open land to the B&O Railroad right-of-way. Impacts in this segment are principally due to cut-and-cover construction. The operation of construction machinery will increase noise levels in the area. Mature street trees along Queen's Chapel Road may be lost due to excavation and storage of construction materials along the right-of-way. Short-term disruption of traffic will occur during initial excavation and installation of timber decking sections on the roadway. Erosion and sedimentation from cut-and-cover construction should cause only minimal impact. All of the above impacts will contribute to general visual disruption during construction. Relocation will be limited to approximately three residences located near the intersection of Queen's Chapel Road and 44th Avenue, although final property requirements have not been established.

Further east where the alignment is in transitition from cut-and-cover tunnel to aerial structure, there will be the loss of many healthy mature oak and hickory trees. A small portion of parkland will be taken from Calvert Park, located adjacent to the B&O right-of-way in University Park, Maryland.

At the College Park Station negative impacts of Metro construction are restricted to loss of a few mature trees which will be compensated for by station landscaping. There is the potential of erosion and sedimentation. There will also be increased noise levels and short-term traffic disruption during construction on Calvert Road. Overall, these short-term negative impacts will be more than compensated for by the long-term positive impacts.

Indian Creek floodplain will be affected by the E Route between College Park and Greenbelt Road Stations. Although the alignment follows the railroad right-of-way, a significant number of trees will be taken for construction of the Greenbelt Road Station. This will be due primarily to the station parking areas which also require the relocation of a part of the stream channel. Control measures provided in WMATA contracts will be required to prevent erosion and sedimentation of the area and stream.

The Greenbelt Yard is located in the floodplain of Indian Creek adjacent to an area significantly altered by sand and gravel operations. The yard is not expected to further impact the area. Filling will not be required, therefore the floodplain will not be constricted by Metro facilities.

BRANCH ROUTE (F)

Introduction

The Branch Route serves federal office and cultural centers in downtown Washington, the southwest redevelopment area, residential communities in southeast Washington and the developing residential areas of suburban Prince George's County, Maryland.

The F Route begins in cut-and-cover at 7th and G Streets, N.W. at Gallery Place Station, which is a transfer station between the E,F and B Routes. From this station the route proceeds south in earth tunnel under 7th Street to cut-and-cover stations at Archives and L'Enfant Plaza. Beyond L'Enfant Plaza Station at the Southwest Freeway (I-95), the route shifts to earth tunnel and continues under 7th Street, turning sharply east under M Street S.W. and continuing east to the Waterfront Station under 4th and M Streets. A short tunnel spur from the Branch Route turns west from 7th Street to connect with the L'Enfant-Pentagon (L) Route, which crosses the Potomac River. From here the route runs eastward under M Street entering the Navy Yard Station northeast of Third Street. It then curves southeast under the Washington Navy Yard crossing under the Anacostia River in sunken tube. The route proceeds through Anacostia Park in cut-and-cover tunnel and turns eastward under Good Hope Road and the B&O Railroad. The alignment enters Anacostia Station below Good Hope Road at Minnesota Avenue. Continuing in earth tunnel under Good Hope Road, it reaches 20th Street where it begins a gradual southeasterly turn, skirting Fort Stanton Park, and entering the Alabama Avenue Station in cut- and-cover at Alabama Avenue and Naylor Road. After leaving this station, the F Route rises to a surface alignment on retained fill along Naylor Road from 30th Street to the Prince George's County line. There it curves eastward on aerial structure over Suitland Parkway to Naylor Road Station. The F Route then passes under Suitland Parkway in cut-and-cover and proceeds on-grade past the Naval Oceanographic Laboratory and into Suitland Station near the U.S. Bureau of the Census. From here, it begins a gradual curve southward through cut-and cover to an at-grade alignment parallel to Suitland Parkway. After another southward turn, the route progresses under Suitland Parklay, leaves park property, and proceeds southward on-grade to enter the Branch Avenue Station near Hanson Creek.

The Branch Route will have 9 stations, with 6 in the District and 3 in Prince George's County. The portion of the Branch Route west of the Anacostia River will be

completed and in operation in December 1977 as a part of Phase IV, while the section of the route east of the Anacostia River will be completed and service extended to the terminal station at Branch Avenue in December 1978 in Phase V. After 1980, there is a proposed extension of the route to Brandywine, Maryland.

Branch Route Impacts

Natural and Ecological Impacts

Earth tunnel construction will be used for the portions of the Branch Route within southwest and southeast Washington, D.C. Although this will minimize surface distrubance, it will generate a sizeable amount of spoil material. However, the type of spoil generated is readily reusable as backfill material.

Loss of significant vegetation and the concomitant potential for erosion and sedimentation will be significant environmental factors in the Maryland portion where the F Route alignment follows the crest of steep wooded slopes in the Suitland Parkway and traverses the wooded Hanson Creek floodplain. The route alignment along the crest of the ridgeline enclosing Suitland Parkway on the north side will cause the loss of a significant number of mature oak, maple, beech, and gum trees. Many of the above trees plus sycamore,elm, and willow make up the wooded floodplain of Hanson Creek. A large amount of these trees will be lost when a portion of the floodplain is filled for the F Route right-of-way from the parkway south to Branch Avenue. When these areas are stripped fo vegetation during construction, there will be the potential of erosion and sedimentation. WMATA contract control measures, however, should be adequate to minimize these problems.

More extensive damage to Suitland Parkway and the adjacent residential neighborhoods will be minimized by the location of the alignment along the border between the parkway and residential property. Many of the trees lost along this route will be compensated for by landscaping upon completion of construction.

Visual and Physical Impacts

The most significant visual impacts will occur along the Suitland Parkway segments of the F Route, where Metro will involve removing some visually significant mature trees and will introduce a new aerial structure crossing. Just east of the first crossing, the aerial Naylor Road Station will be prominently located at the crest of a ridge. East of the station, the alignment will require the partial filling of everal small valleys; however,carefully located landscaping will help to minimize the visual loss as

viewed from the parkway.

Along the District portion of the route, major impacts will be avoided through earth tunnel construction. The sunken tube crossing of the Anacostia River will minimize the visual interference that a fourth bridge corssing would create. In the southwest and downtown Washington areas, negative impacts upon several landmark buildings will be prevented by the use of earth tunnel construction.

Social and Economic Impacts

The Branch Route will form an important transit link between suburban and urban residential communities, light industrial areas in southwest and southeast Washington, and downtown Washington. This link will increase the stability of the corridor, offer increased travel convenience to employment and provide new opportunities for the location of employment centers.

The effect of construction upon adjacent development will be minimized by the use of the earth tunnel method. Station development in southeast Washington and suburban Maryland will require the taking of several buildings; however, wherever possible, open land or otherwise unused land has been selected for station development. Where structures will be taken, the owners and occupants will be relocated and compensated for their loss according to WMATA relocation programs.

The Branch Route passes adjacent to numerous federal and private buildings of historic and landmark significance. However, earth tunnel construction will eliminate impacts upon these buildings.

Archeological sites have been identified on both banks of the Anacostia River near the crossing of the F Route. On the west bank, the earth tunnel construction should be below any potential artifacts; the east bank will be disrupted by sunken tube and cut-and over construction. However, WMATA contract policies call for construction to stop while archeological finds are salvaged and identified.

Major Impact Location

The F Route will have a significant positive impact in most of the areas it affects. The Gallery Place and Archives Stations will increase access to the downtown and various federal office buildings, as well as to the facilities and open space located along the Mall.

The L'Enfant Plaza Station will serve a major concentration of federal and private offices and will minimize traffic and parking congestion around these facilities. The Waterfront Station will link the

intensive new residential and office development in southwest Washington more directly with the downtown and the rest of the metropolitan area. Navy Yard Station will serve employees and visitors to the Washington Navy Yard and the older established community of southeast Washington.

Across the Anacostia River, the Anacostia Station will serve the residential communities of Anacostia as well as its commercial center and will provide a vital link between this area and other areas in the greater Washington region. The Anacostia Station will also help to siimulate new development.

At the junction of Alabama Avenue and Naylor Road, Alabama Avenue Station will provide Metro service to a strong community shopping area and aid its future growth.

Other major impacts are foreseen in the outer sections of the route located along Suitland Parkway. The segment from Station 270 to 330 is located along Naylor Road and Suitland Parkway in the vicinity of the Branch Avenue underpass. The most dominant visual impact along the route will be the Metro aerial crossing of Suitland Parkway and the aerial structure of Naylor Road Station. The station, located prominently on the crest of a ridge line, will intrude upon the natural character of the parkway. The aerial crossing, the station and the continuation of the segment on the ridge line east of Branch Avenue will require removal of numerous mature and semi-mature trees, diminishing the value of these natural areas as visual and wildlife resources. Strict enforcement of WMATA construction specifications will help to prevent potential erosion and sedimentation due to the relatively steep slopes.

Other minor impacts will be short-term traffic disruption due to construction activities in the areas of the parkway and Branch Avenue. Naylor Road Station will require the relocation of a few commercial enterprises. However, the station development and operation of the route will positively affect the area, increasing access and convenience. The location of the station immediately adjacent to the commercial areas and medium density residential communities along Branch Avenue should increase the potential for new development.

West of Silver Hill Road along Suitland Parkway from Station 330 to 390, potential impacts are similar to the previous segment, although the alignment has no aerial crossing. The alignment is located along the crest of the ridge which borders the north side of the parkway. Cut-and-cover construction along the ridge to achieve the desired vertical profile will substantially alter the natural topography. It will also disrupt the

natural drainage pattern and involve the loss of a significant number of mature treees, thus diminishing the visual experience of the parkway. Suitland Station, located north of the intersection of Silver Hill Road and Suitland Parkway, will have a positive effect on this area, increasing access and development potential. A sizeable area of woodland will be lost due to station development. Some of this loss will be compensated for by landscaping planned for the station site.

Southwest of Silver Hill Road from Station 390 to 542 along a portion of Suitland Parkway and south across open land to Branch Avenue, the alignment proceeds on a profile which will disrupt the natural topography. North of the parkway, the right-of-way is in retained cut. South of the parkway, the route is located on existing grade and on fill as it crosses the floodplain woodland. A number of mature, healthy trees will be lost; the natural stream channels will be relocated; and a portion of the floodplain will be filled, altering the drainage patterns along this segment of the route. Much of the impact will be less visible to observers from the parkway than the impacts in the previous segments. Carefully located plantings of native trees will do much to minimize the impacts seen from the parkway.

Postive impacts will result from the access and travel convenience afforded by Metro and the increased development potential generated by the Branch Avenue Station.

ADDISON ROUTE (G)

Introduction

The Addison Route serves the Benning and Capitol Heights residential areas of northeast and southeast Washington, D.C. and the adjacent suburban areas of Seat Pleasant and Addison Road in Maryland. The route branches off of the New Carrollton Route west of the intersection of the Anacostia Freeway and Benning Road, N.E. In earth tunnel, the route proceeds southeast along Fort Mahon Park, parallel to Benning Road and enters the Benning Road Station at the 44th Street intersection. Leaving the station, the route curves slightly eastward following East Capitol Street and then southeastward along Central avenue in earth tunnel.The alignment enters the cut-and-cover Capitol Heights Station just east of Central Avenue and the District line. The route continues below Central Avenue in earth tunnel and leaves the road alignment at 68th Street. The G Route enters the Addison Road Station east of the portal where the alignment continues at-grade.

The Addison Route has 3 stations with one in the District and 2 in Prince George's County. Construction will be completed to and including the terminal station at Addison Road in December 1977 (Phase IV). A that time service on the route will be initiated. After 1980, there is a proposed extension of the route to Largo, Maryland, just to the east of the Beltway Interchange 33.

Addison Route Impacts

Natural and Ecological Impacts

The most significant regional impact along the Addison Route will be the spoil material generated from earth tunnel and cut-and-cover excavation. The majority of this material will be readily reusable as backfill along the route and for ther construction projects and landfill operations. The spoil material which is unusable in Metro work will be disposed of in accordance with the ordiances of the applicable local jurisiidtion.

The route alignment and station sites do not affect any areas of significant vegetation or wildlife habitat. Fort Mahon Park, a large natural area along the route, will be undisturbed because the route passes under the park in earth tunnel.

Potential erosion and sedimentation will be restricte to the station sites along the G Route. In these areas, i will be of minor significance if controlled according to WMATA specifications.

Visual and Physical Impacts

Negative visual impacts along the route are negligible due to earth tunnel construction. Major positive impacts will include the development of the station facilities. The introduction of new structures, landscaping and potential new private development stimulated by Metro will contribute toward the visual improvement of the Addison Route alignment. The alignment strengthens the Benning Road and East Capitol Street corridor, contributing toward well-planned future develomment in this area.

Social and Economic Impacts

The role of the Addison Route will be to provide convenient access to downtown Washington, D.C. from the communities along Benning Road and Central Avenue in the eastern corner of the District, and Prince George's County, Maryland. The route will serve the residents of the Benning and Capitol Heights communities within southeast Washington, D.C. In Maryland, the route will serve the communities of Seat Pleasant, Carmody Hills and Maryland Park in the Addison Road area. By providing an efficient and direct means of access to employment and by adding a stimulus to strengthen existing community centers at the stations, the G Route will have a long-term positive effect upon this corridor.

Negataive effects upon residential areas will be minimized by alignment location and a construction method which causes negligible surface disturbance. Impacts upon station sites will be more significant. However, wherever possible, open land has been selected for station development. This will result in minimal impact upon adjacent communities. Only two structures are expected to be taken along the route, although final property requirements have not been established.

Major Impact Location

All three stations along the G Route are expected to increase development potential in adjacent areas. Benning Road and Addison Road Stations will help generate increased trade in existing neighborhood shopping areas and may promote more intensive commercial and residential development. Capitol Heights Station also has the potential for increasing development; however new commercial development would have to compete with established commercial facilities a few blocks away on Central Avenue at the District line.

FRANCONIA ROUTE (H)

Introduction

The Franconia Route branches off from the Springfield (J) Route to provide service to the rapidly developing suburban community of Franconia, Virginia.

The 1.3 mile H Route departs in cut-and-cover from the J Route just west of Van Dorn Station and curves under the Capital Beltway. The Virginia Department of Highways plans to widen the Beltway at this point. Cooperation is important as soil conditions at this location may be a problem.* Following the Richmond, Fredericksburg and Potomac Railroad right-of-way southward, it rises to at grade construction just before reaching the Franconia Station.

Metro service along the H Route will begin in December 1979 as part of Phase VI.

Franconia Route Impacts

Natural and Ecological Impacts

Negative impacts along the route are minimal, for the route makes use of existing railroad right-of-way. Widening of the right-of-way will require cut operations along one section of the route, but erosion and sedimentation will be of minor significance if control measures contained in WMATA contracts are enforced.

Visual and Physical Impacts

By using an existing transportation corridor, the H Route will cause minimal visual disruption of the adjacent landscape.

The Franconia Station is conveniently located along Franconia Road which has been widened and improved. Franconia Station will be a visually positive element, contributing toward the attractive and functional development of the adjacent area.

Social and Economic Impacts

The H Route via the J and C Routes links Franconia with the light industrial, commercial and residential areas of Alexandria and also with downtown Washington. The route improves access to employment and provides new opportunities for the location of employment centers.

The route does not disturb adjacent communities. Franconia Station will provide a stimulus for both residential and commercial development.

Impact Location

Since the H Route is only 1.3 miles in length, the previous discussion of its impact is sufficiently site-specific to provide a clear understanding of all major impacts along the route.

*First paragraph revised REVISED

SPRINGFIELD ROUTE (J)

Introduction

The Springfield or J Route serves both the south side of Alexandria, a developing light industrial corridor with bordering commercial and residential areas, and the rapidly developing Springfield Area in Fairfax County. This route begins at-grade at the intersection with C Route southwest of the King Street Station where Duke Street crosses the RF&P Railroad. Curving westward, the alignment follows the Southern Railway right-of-way across Telegraph Road to a proposed station at Quaker Lane. The route continues westward along the Railway, briefly paralleling Cameron Run. A yard area (originally to be located west of Quaker Lane) and the Telegraph Road Station east of Qauker Lane have both been deleted from the adopted system. As the route curves southwestward across Cameron Run, it parallels the Fairfax County/Alexandria City line. The route continues following the RF&P right-of-way parallel to the Capital Beltway. In aerial construction from Clermont to beyond Hill Road, the route returns to grade before it enters Van Dorn Station at the intersection of Van Dorn Street. Leaving the station in aerial construction, the alignment returns to grade and crosses into Fairfax County with one segment branching southward forming the H Route. The J Route continues southwestward, gently curving west along Backlick Run, crossing Shirley Highway (I-95) at the Capital Beltway interchange (I-495), and proceeds northwest to the Springfield Station on the Southern Railway right-of-way. The Adopted Regional System includes two stations on the 6.6 mile J Route - one in Fairfax County and one in Springfield. Two additional stations may be added when needed in Alexandria.

Metro service along the J Route to the terminal station at Springfield will begin in December 1979 (Phase IV). After completion of the system in 1980, a proposed extension may be built to Burke, Virginia.

Springfield Route Impacts

Natural and Ecological Impacts

Regionally important ecological impacts along the J Route are limited to the area where the alignment and station facilities are located in the floodplain of Backlick Run. Van Dorn Station will require removal of a substantial amount of floodplain vegetation. Near Springfield Station, the alignment crosses Backlick Run Stream several times and the station is located in the floodplain. Rechannelization will be required. These two areas are discussed in more detail in the following appraisal of major impact locations.

Spoil material generated along the J Route will be negligible due to the surface alignment and the low-lying nature of the area. A portion of the excess spoils generated along other Metro routes could be constructively used along portions of the J Route which require fill. Potential negative impacts due to fill operations, erosion and sedimentation are minimized by aligning the route adjacent to existing railroad and highway right-of-way.

Visual and Physical Impacts

Station facilities along the J Route are located to provide convenient access to Metro from residential and employment areas. The stations will improve the physical appearance of adjacent areas by the introduction of attractive new station structures and landscaping. Capital improvements accompanying Metro are expected to improve access and circulation in the areas surrounding stations.

Visual intrusion into the natural areas along Cameron Run and Backlick Run have been minimized by using alignments adjacent to existing right-of-ways.

Social and Economic Impacts

The alignment of the Springfield Route will form an important mass transit link. It will connect the outlying suburban area of Springfield, Virginia, and the light industrial, commercial and residential areas of the southern part of Alexandria (via the C Route) with the commercial, office, shopping and "Old Town" residential areas of Alexandria and with downtown Washington. The routes will provide increased access to employment and new opportunities for locating employment centers.

Metro construction along the J Route will have negligible impact upon adjacent communities and light industrial areas, because the adopted alignment follows a relatively undeveloped highway and railroad corridor along the south side of Alexandria and into adjacent Fairfax County. Station locations are expected to strengthen existing and developing residential areas. Furthermore, provision has been made along the J Route for the location of two additional stations to serve areas of Alexandria as the need becomes evident.

MAJOR IMPACT LOCATIONS

The location of the J Route alignment parallel and adjacent to portions of the RF&P Railroad and Southern Railway rights-of-way minimizes negative impacts along most of the route.

The floodplain of Cameron Run is traversed by the route but there will be only minimal disturbance. Existing areas of significant floodplain vegetation along Cameron Run will not be disrupted. Furthermore,

right-of-way development does not require the taking of any buildings or other structures.

Significant floodplain vegetation is found on the Van Dorn Station site which is located along Backlick Run. While it will not be possible to preserve all trees on the site, careful site planning could retain the most important trees which would add greatly to the station environment. Industrial zoning and good transportation are facilitating rapid industrial and commercial development in this area of Alexandria; consequently, with or without Metro, it is likely that a substantial amount of floodplain vegetation will be lost in the future.

The J Route alignment will disrupt Backlick Run again in the vicinity of the Henry G. Shirley Memorial Highway between the rights-of-way of the Southern Railway and the Capital Beltway (Station 780 to 840) Construction of this segment will require reloation, channelization and piping of portions of the natural stream channel. It also will involve the loss of a considerable amount of floodplain woodland made up of semi-mature and mature maple, gum and oak trees in excellent condition. The value of this stream corridor as a wildlife habitat will be decreased. Its potential for park and recreational use will be limited and the value of the stream corridor as a visual resource also will be lessened. There is the potential for erosion/sedimentation due to the stream channels running through the area, the nature of the floodplain soils when stripped of vegetative cover, and the fill operations along part of the segment. WMATA contract provisions, however, should hold negative effects of erosion and sedimentation to a minimum. Much of the environmental disruption in this segment is unavoidable due to the limited amount of land between the Capital Beltway and the Southern Railway rights-of-way, especially in the vicinity of the Henry G. Shirley crossing of the Beltway and the railroad.

Short-term impacts due to construction operations include the possible rebuilding and regrading of the Shirley Highway Bridge structures to accommodate Metro tracks along a widened railroad right-of-way. This would cause short-term traffic disruption on Shirley Highway. There is also the possibility of short-term disruption of the Southern Railway trackage due to the construction activity necessary for installation of Metro tracks along the western half of the segment.

Presently, it is premature to estimate the form and intensity of the development that will occur around the terminal stations of the J Route. However, the Springfield Station has the potential of becoming a major positive stimulus for new development. The Springfield area is in a state of rapid residential and commercial development. If the terminal station can attract commercial shopping and office uses in

addition to a few institutional uses, an important suburban subcenter will be formed, contributing significantly toward more orderly development of this area of metropolitan Washington.

Preliminary plans of the beltway widening have been submitted to WMATA. Cooperative development is anticipated.

* New Paragraph Added

REVISED

VIENNA ROUTE (K)

Introduction

The K Route serves the central portions of Arlington and Fairfax Counties in Northern Virginia. Branching off from the C Route, the alignment for the K Route begins in rock tunnel at Rosslyn Station and follows North Lynn Street south toward Arlington Boulevard where it curves westward under North 16th Street to Court House Station. There it shifts from rock tunnel to cut-and-cover construction. Leaving Court House Station, the route continues in cut-and-cover between Court House and Clarendon Stations in a southwesterly direction parallel to Wilson Boulevard. At North Edgewood Street, it curves southward under Fairfax Drive and enters Clarendon Station. The route continues southwesterly along Fairfax Drive, passes Ballston Station at the intersection of Fairfax Drive and North Kansas Street and curves gently northward, following Fairfax Drive in cut-and-cover construction. The alignment proceeds westward under Fairfax Drive past Glebe Road Station at the intersection of North Stuart Street and continues west in the proposed I-66 right-of-way. Curving west under Patrick Henry Drive, the route shifts to at-grade construction and joins the Old Dominion Railroad right-of-way. Continuing at-grade along Four Mile Run, the route crosses North Roosevelt Street, passes the East Falls Church Station at Sycamore Street, and curves northward away from the Old Dominion Railroad right-of-way. It crosses Lee Highway and relocated Westmoreland Street and curves westward again under relocated Williamsburg Street. The route enters Fairfax County and continues in the proposed I-66 corridor along Four Mile Run. Proceeding at-grade, the route curves west past West Falls Church Station which is just past the intersection of the proposed Metro extension to Dulles Airport. The route proceeds across the Leesburg Pike in a southwesterly direction, across relocated Virginia Avenue, and follows in the median of the existing segment of I-66. The route then proceeds across the Capital Beltway (I-495), passes the Gallows Road Station, continues at-grade along the I-66 median, and curves gently west across Nutley Road to a terminal at the Vienna Station.

The Vienna Route is scheduled to begin operations to West Falls Church Station in April 1977 (Phase III). Metro service will be extended to the Vienna Station in December 1977 (Phase IV). Future extensions of the K Route are planned the Centreville, Virginia, and to Dulles Airport along the Dulles Access Road from West Falls Church. The Vienna Route has 8 stations with 3 in Fairfax County and 5 in Arlington County.

Some portions of the alignment of the K Route follow a right-of-way acquired in the 1950's and early 1960's for the proposed I-66. The acquired right-of-way would extend the highway from its eastern terminus at I-495 in Fairfax County to the Theodore Roosevelt Bridge in Arlington. This extension is the subject of controversy. Highway planners and business groups are in favor of the highway, and environmental groups are nearby home owners are opposed to it. On Arpil 5, 1972, the U.S. Court of Appeals in Richmond stopped further construction on I-66 and ordered a new environmental impact study and a series of public hearings on the proposed highway. This prevents further construction for at least one year.

Since the early 1960's, it has been proposed that a major portion of the K Route be located in the median of I-66. After the court order of April 1972, a restudy of alternative alignments of the K Route revealed that the I-66 corridor offers the best and least expensive Metro alignment serving northwestern Virginia. For this reason, WMATA proposes to adhere to the alignment along the I-66 corridor regardless of whether the highway is built or not.

Vienna Route Impacts

Natural and Ecological Impacts

Major ecological impacts along the K Route are anticipated primarily in the outer portion of the route along the stream and open space corridor of Four Mile Run and the abandoned Old Dominion Railroad. Metro construction coupled with highway construction in this corridor will involve extensive channlization of the stream, loss of vegetation and disruption of wildlife habitat. Erosion and sedimentation could also be problems, if uncontrolled. Most of this impact is attributable to the proposed I-66 highway, however.

In terms of hydrologic changes, much of the stream corridor is no longer in a natural condition. It drains a rapidly urbanizing area and has been burdened with more storm runoff than it can accommodate. Downstream flooding has resulted. The corridor has been further disturbed by dumping, filling and vehicular activities. Transportation development in the corridor represents yet another temporary disturbance, but over the long run this development should improve the disturbed stream channels, making capacities adequate to handle increased runoff imposed by intensifying urban development. Erosion and sedimentation should also be controlled more satisfactorily.

While vegetation will be negatively affected during construction, most of the vegetation to be lost

* First Paragraph Revised REVISED

is replaceable and will be restored upon completion of Metro. Furthermore, if I-66 proceeds with construction, additional landscaping will be provided to buffer adjacent areas.

In addition to Four Mile Run, natural impacts are anticipated in conjunction with the development West Falls Church Station and yard. The majority of the site is currently an undisturbed, rolling, wooded stream valley which is composed of local valleys and spur ridges with excellent oak, hickory and maple woodland vegetation. Individual trees are well established and healthy, most averaging 12 inches in diameter and 30 to 35 feet in height. There are numerous larger specimens. The area represents a relatively unique example of native Virgnia Piedmont woodland landscape in an urbanizing area. Because of the need to provide a substantial amount of parking and to accommodate a storage yard in addition to Metro trackage and service roadways, a substantial amount of woodland will be lost. Extensive regrading and cut operations will also be required due to the rolling topography of the site. Currently, the area is zoned residential.

Visual and Physical Impacts

The K Route alignment and station locations relate well to the urban areas of Rosslyn, Arlington, Falls Church and to the developing community centers in outlying suburban residential areas. The individual station developments provide logical focal points for more intensive land uses which will be attracted along the route.

Operation of the route should relieve traffic loads on Arlington streets, leading to a more pleasing physical environment and more functional local traffic networks.

Visual losses along the corridor involve the native woodland along the existing section of I-66 and at Gallows Road and Vienna Stations. But it is likely that if Metro stations were not located as planned, some other form of development would displace the woodland. In preparation of station plans there has been a concerted effort to preserve as much of the mature woodland as possible. Additionally, the joint I-66/Metro landscaping plans should compensate for a considerable part of this loss.

Social and Economic Impacts

The K and C Routes link downtown Washington with the commercial districts of Arlington and Rosslyn and the outlying residential areas of Falls Church and Vienna. This link should strengthen the economic viability of the Rosslyn-Vienna corridor and foster more orderly urban growth in the areas adjacent to it.

Negative economic impacts due to construction work will be short-term and of local significance only. Some retail areas directly adjacent to the route may experience a loss of trade due to increased congestion and the unattractive appearance of the area during Metro construction.

The route alignment has been located to minimize impact upon adjacent communities. Much of this has been accomplished by making use of both the existing and proposed portions of the I-66 right-of-way. This corridor of land has been held out of development, and assembled through right-of-way acquisition over the past ten years. As the surrounding area has become increasingly developed, the proposed I-66 right-of-way has become more important and used as lineal open space and a recreation corridor.

Environmental development plans for I-66 and the K Route reflect the recreational role the corridor has played. For example, plans for the shared right-of-way along the section of the corridor including Bon Aire Park and the Westover playfield show a hiking/bicycle trail system linking the park, the playground and adjacent residential areas. In spite of improvements like this, however, the recreational role of the corridor will be substantially reduced once Metro/I-66 construction begins. The long-term impact of Metro alone on recreation in the corridor would be substantially less significant than the combined transportation facilities. The surface alignment would form a barrier to cross movement and would require fencing to prevent accidents, but the remainder of the right-of-way would be usable for recreational purposes.

MAJOR IMPACT LOCATION

K Route impacts relate to three geographic areas: downtown Arlington and Rosslyn, the central portion of the route, and the outlying areas beyond the Beltway. In Rosslyn and downtown Arlington, development has become intensively urbanized. Introduction of Metro service will enable these two areas to function more efficiently, further increasing development potential. The impacts foreseen, while important, are not judged to reach major proportions. In the central portion of

the route, from the Ballston Station through the West Falls Church Station, Metro will stimulate significant new development. In the outer portions of the route, the use of the existing I-66 right-of-way helps avoid major impacts. However, new development is foreseen around stations and station facilities. This development will cause significant environmental disruption.

The segment from Station 250 to 310 is located along Fairfax Drive from North Lincoln Street to North Edison Drive. Ballston and Glebe Road Stations within this segment should reinforce the developing trend toward medium-rise office and professional service buildings. Metro operations should alleviate traffic congestion. Cut-and-cover operations in this segment will cause short-term disruption of traffic and trade during excavation and timber decking installation. Relocation will be limited to approximately four buildings. A few mature, healthy shade trees will be lost in the station entrance areas. Metro landscaping will compensate for trees removed. Erosion and sedimentation problems due to the excavation operations required in cut-and-cover construction may occur, though WMATA specifications insure efforts will be made to control them. Increased noise levels from construction operations will be experienced. At the western end of the segment the area of open land will be greatly reduced. Several large trees will be lost and the existing stream channel through the area will be channelized. Metro construction and I-66 and its right-of-way development will share responsibility for environmental loss in this area.

The segment from Station 310 to 370 is located upon open land just to the south of Fairfax Drive and North Four Mile Run Drive. Metro construction in this segment will involve the loss of semi-mature and mature trees along the right-of-way. In the eastern third of the segment, cut-and-cover and portal construction will temporarily disrupt a natural storm runoff retention area which contributes toward minimizing flood hazard downstream. Construction in the remainder of the segment generally temporarily disrupts the natural drainage way which must drain a relatively large area. However, when construction is complete, there will be adequate drainage capacity along the corridor. There is also a potential of erosion and sedimentation; however, WMATA controls are expected to be adequate. Construction along the stream corridor will cause partial loss of the wildlife and recreation value of this relatively narrow valley. In addition, there will be a minor disruption of traffic

* Second Paragraph Revised REVISED

on Harrison Street as a vehicular overpass is constructed over the right-of-way. Right-of-way development will require the loss of approximately six buildings and of a roadway providing access to three residences.

Approximately two-thirds of the above impacts should not be attributed directly to Metro for they are due to the amount of land required for I-66 right-of-way development. Further, the above impacts will be lessened due to the joint I-66/K Route environmental development plans which include extensive landscaping and grading to minimize intrusion of the transportation corridor upon the adjacent communities and to maintain to a degree the open space functions of the corridor.

The segment from Station 370 to 320, located along Four Mile Run and the Old Dominion Railroad right-of-way from McKinley Road west to Lee Highway, will experience impacts virtually identical to the impacts identified for the previous engineering segment (Station 310 to 370). In addition, development of East Falls Church Station will increase the development potential in the area surrounding the station site. The private development likely to take place in the vicinity of the station will displace an area of moderate income housing located south of the right-of-way. This impact, however, can be only indirectly associated with Metro. Station development sill introduce a significant increase in the impermeable surface area from which storm waters must be drained by Four Mile Run. WMATA will make every effort to cooperate with county and local agencies to minimize this impact. Much of the station site is covered with young second growth woodland of fair quality which will be removed during construction of station facilities. Landscaping of the station area and right-of-way will minimize much of the vegetation loss. The segment east of the station site will require a substantial amount of fill to achieve the desired vertical profile. This will make the transportaion corridor obtrusive from adjacent areas. Fill operations could lead to potentially substantial erosion/sedimentation of Four Mile Run. WMATA control measures should minimize this impact.

The segment from Station 490 to 550 is located on open land extending from Great Falls Road to Leesburg Pike (Rte. 7). The segment includes the West Falls Church Station and storage and inspection yard. The steeply rolling topography of the site will require extensive grading and cut and fill operations to accommodate the proposed facilities. There will be a substantial loss of native oak, maple and hickory woodland. This loss of vegetative cover and the introduction of impervious paving will greatly increase the storm runoff. Visually, an exemplary area of wooded Virginia landscape

will be lost. Metro development and operations in the station and yard areas will require screening to minimize impact upon the adjacent George Mason High School and the adjacent residential areas. Development of the transportation corridor through this segment will represent a significant disruption and loss of open space. The land taken by the West Falls Church Station, however, is privately owned, planned and zoned for high density rsidential development which would cause similar environmental disruption. Major apartment development in the vicinity of the station is also expected to disrupt the natural environment. The storage and inspection yard is in an area zoned for single-family development.

Beyond the West Falls Church Station, two areas of significant impact are the Gallows Road and Vienna Station sites. Station development at Gallows Road will displace the new facilities of the Northern Virginia Tennis Club. This will require relocation of club facilities and will cause short-term inconvenience to members. The larger portion of this site consits of hardwood forest of excellent quality. This vegetation will be lost due to construction of station parking facilities. Removal of the forest cover will significantly increase the potential of erosion during construction and cause the loss of wildlife habitats. In addition, residents of the area and motorists travelling on I-66 will experience the visual loss of this area of mature woodland.

Positive impacts of the station include increased development potential in the surrounding area and increased accessibility.

Development of the Vienna Station on both sides of I-66 will involve topographic changes to accommodate parking facilities and will negatively affect the rural, rolling landscape. This is an important visual resource. The natural drainage system of the site will be altered by relocation and channelization of the stream channel and drainage swales. Topographic alterations will also cause the loss of a large amount of mature woodland located on both sides of I-66. The visual and ecological importance of this loss is similar to that at Gallows Road Station. However, at the Vienna site, the loss is of more concern since both sides of I-66 will be affected. The sloping nature of this site increases the potential for visual impacts and erosion and sedimentation.

Nutley Road Station at a major junction of I-66 will stimulate development and encourage well-planned growth.

L'ENFANT-PENTAGON ROUTE (L)

Introduction

The L'Enfant-Pentagon River Crossing or L Route is a 1.7 mile connecting link between the Branch (F) Route in Southwest Washington and the Huntington (C) Route near the Pentagon in Northern Virginia. The route was initially proposed in the Alternative Test Systems A and B in 1967, but was eliminated in the Proposed Regional System. The Adopted Regional System of 1968 included the route to provide better service to Virginia, including the Pentagon, the increased development in the Jefferson Davis Corridor, the Airport, Alexandria and other communities along the Huntington, Backlick Road and Franconia Routes. An increased level of service is facilitated by this second river crossing, which allows for a reduction in the number of branches from Virginia routes.

The L Route begins in Southwest Washington Redevelopment Area, just south of the L'Enfant Plaza Station in earth tunnel and passes below 9th Street and Maine Street near the Jefferson Recreation Center. It tunnels through the Redevelopment Land Agency's (RLA) Park No. 2 between Hogate's Seafood Restaurant and Flagship Restaurant, and proceeds under the Washington Channel in sunken tube to East Potomac Park. The alignment, as it crosses East Potomac Park, is in cut-and-cover through the park's former tennis courts, passing along the south side of I-95 to a portal and retained cut beyond the Penn Central Railroad tracks. An aerial structure over Ohio Drive approaches the new bridge structure over the Potomac River, approximately parallel and 200 feet northwest of the existing Penn Central Railroad Bridge. At its maximum elevation, the Metro Bridge will be approximately forty feet above mean sea level (the level of the Potomac River) or about seven feet above the existing railroad bridge. On the Virginia side, after passing over George Washington Memorial Parkway, the route turns west prior to the Marriott Motor Hotel and enters a subway portal. The subway proceeds in cut-and-cover double box construction under I-95 and adjacent to the Pentagon Lagoon to connect with the Huntington (C) Route just north of the Pentagon Station.

Service is scheduled to begin on the L Route in December, 1977, in Phase IV.

L'Enfant-Pentagon Route Impacts

The only significant negative impacts along the L Route are due to the cut-and-cover construction of the

subway tunnel in the Southwest Renewal Area, East Potomac Park, and near the Pentagon Park Lagoon in Virginia. This disruption will be of short duration and will take place during the same period of disruption related to other construction activities. Construction in the southwest Washington waterfront, related to RLA's renewal of the roads, bulkheads and other public facilities, will contribute to the general disruption of the area. In Virginia, metro construction and the highway construction for I-95 and Henry Shirley Memorial Highway, including their interchanges with Jefferson Davis Highway and George Washington Memorial Parkway will be underway at the same time.

On the positive side, the L Route will greatly improve access between Washington, D.C. and Northern Virginia, especially between L'Enfant Plaza Station, which serves the new southwest federal office concentration, and the Pentagon among other centers along the Huntington Route.

Natural and Ecological Impacts

Vegetation in the L Route's path is limited to the few newly planted trees in the RLA Park No. 2 in the southwest waterfront, a few right-of-way oak trees and other scattered small trees in East Potomac Park, and some small trees on the west bank of the Potomac River in the George Washington Memorial Parkway. Cut-and-cover tunnel and aerial structure will require the removal of some of these trees, but none of them are considered to be individually significant. Furthermore, these trees will be replaced upon completion of the route construction, and the disrupted areas will be restored through landscaping.

Roaches Run Waterfowl Sanctuary has been avoided in the current alignment of the L Route. Previous alternatives would have disrupted this natural area in Virginia.

If not controlled, erosion of excavated cut-and-cover segments of the route could cause increased sedimentation of the Pentagon Lagoon, the Potomac River, and the Washington Channel. However, WMATA contract provisions can prevent this negative short-term impact, if they are adequately enforced.

As a part of the regional Metro System, the L Route can be expected to contribute to the overall positive impact on air quality. The lack of stations or parking facilities ensures that the L Route will result in no new emissions at the local level. Metro will also not increase the noise level produced along the route. The alignment is on or above surface only as it approaches and crosses the Potomac River Bridge. Trains travelling at a speed of 50-60 mph will be above ground for about one minute. The noise of existing traffic and aircraft will produce a cumulative level that will tend to drown out the Metro noise.

* First Paragraph Revised REVISED

Visual and Physical Impacts

The area of visual influence will be limited to that where the Metro leaves its portal in East Potomac Park and crosses the Potomac River on aerial structure to Virginia where it again goes underground. For a distance of approximately 3500 feet or 50-60 seconds, the passengers of the elevated Metro will have a view of the area up and down the Potomac River, the parklands on both banks, and the skyline of the National Capital and Arlington, Virginia. The design of Metro cars and the bridge structure will be such that vision will not be obstructed.

The area surrounding the L Route river crossing is presently highly developed and busy, and it contains many other transportation related structures and facilities. The present Penn Central Railroad steel plate bridge cates prior to World War II. This bridge has been redesigned and upgraded in recent years to improve its safety; however, it is still a visually obtrusive structure. Two concrete and masonry highway bridges with no superstructure, the Rochambeau Memorial Bridge and the George Mason Memorial Bridge also cross the Potomac in close proximity. The visual appearance of the proposed Metro Bridge will be reviewed by the Fine Arts Commission to ensure that it will not add to the already busy visual setting of this area.

On the Virginia side, a visual consideration is the outcropping of the subway box for a distance of about 400 feet near the Pentagon Park Lagoon. This raised portion of the subway is necessary to avoid difficult groundwater conditions. Landscaped treatment or architectural design will minimize this section's impact on the Pentagon Park and the Lagoon.

Short-term visual disruption related to the construction of the L Route will be evident, but not any more significant than other construction activities in the same general area, except in East Potomac Park where cut-and-cover will disrupt the area temporarily.

Social and Economic Impacts

Short-term disruption of land use and activities represent the only impacts that can be directly attributed to the L Route, since the alignment includes no stations. On the Washington side, parking and access for Hogate's Seafood Restaurant will be temporarily disrupted, which will cause some inconvenience to the patrons and owner. Disruption of the RLA Park No. 2 near Hogate's was anticipated by RLA in advance of its decision to proceed with the completion of the park. Traffic and pedestrian movement in the southwest will be made more difficult during this period. However, WMATA will assure continuous

access through the area and to all businesses. Minimal traffic and on-street parking will be disrupted in East Potomac Park. Tennis courts in the path of the alignment will be relocated prior to WMATA construction.

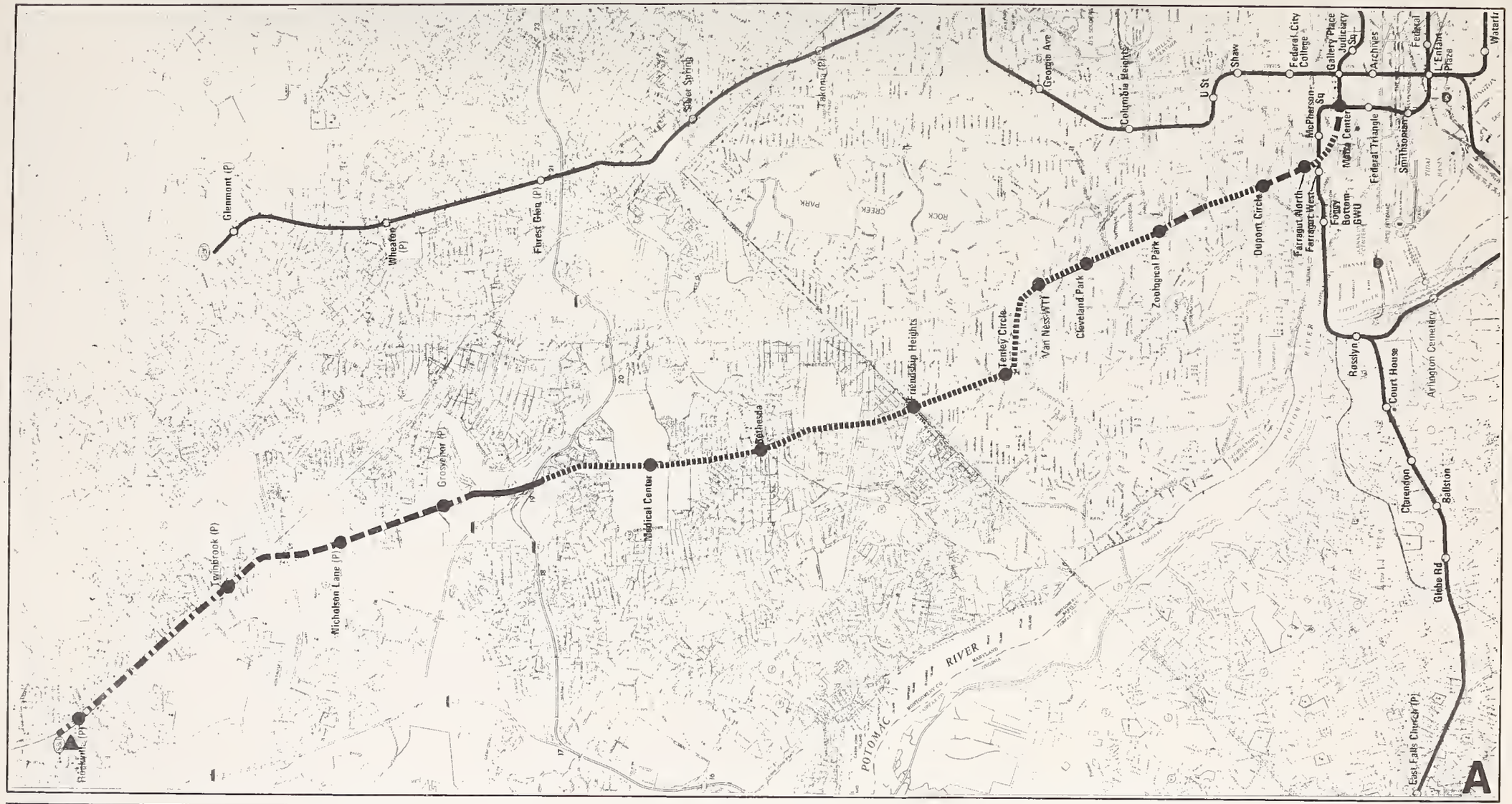
In Virginia, as a result of Metro construction, two ramps will be relocated and other improvements made to the I-95 interchange with George Washington Memorial Parkway. The alignment is such that cut-and-cover construction will be essentially perpendicular to the major highways, and therefore traffic disruption usually attributed to this construction method will be minimized. Travel along all of the transportation routes in this area will be kept moving at all times.

Prior to Metro, mass transit in Washington has relied primarily on highways and buses. In Northern Virginia, the routing and scheduling of bus lines has been oriented toward peak-hour work commuters to and from the Pentagon area. Weekend and off-hour schedules are infrequent. An experimental bus service, the "Shirley Express Service", operating in exclusive bus lanes, began service in June 1971. With Metro, many of the Virginia-Washington bus transit links will be unnecessary, and their related problems considerably relieved.

Future development in the Jefferson Davis Corridor and other areas served by the Huntington (C) Route will be enhanced by the improved service provided by the second river crossing.

Impact Location

Since the L Route is only 1.7 miles in length, one of the shortest in the system, the previous discussion of its impact is sufficiently site-specific to provide a clear understanding of the locations of all major impacts along the route.



Aerial

At grade

Cut and cover

Earth-tunnel

Sunken tube

Station

Storage and inspection

ALIGNMENT DESCRIPTION

WMATA SYSTEM IMPACT STATEMENT

ROUTE A

½ 0 1 Mile

metro

Aerial

At grade

Cut and cover

Earth tunnel

Sunken tube

Station

Storage and inspection

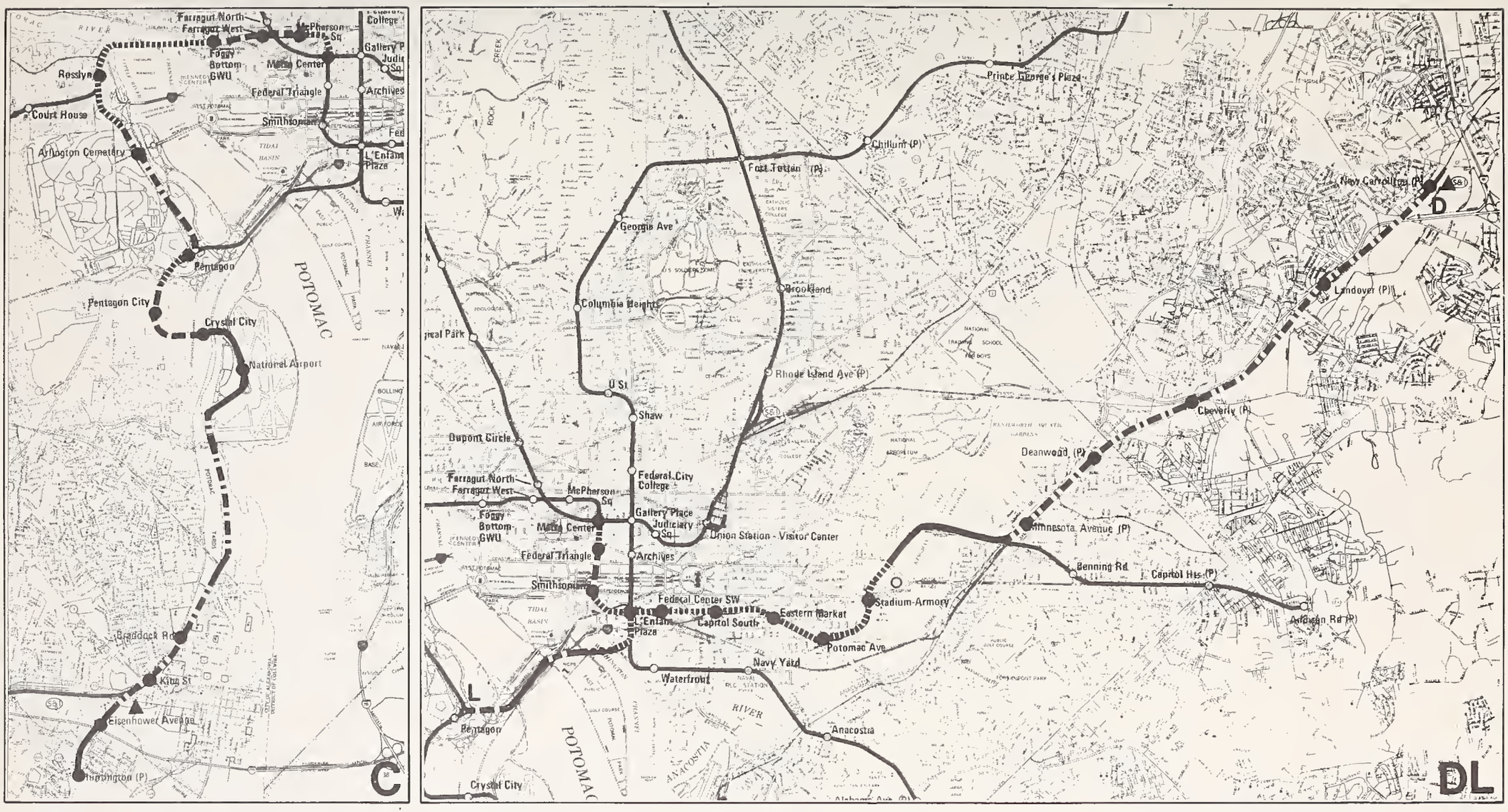
ALIGNMENT DESCRIPTION

WMATA SYSTEM IMPACT STATEMENT

ROUTE B

½ 0 1 Mile

metro



Aerial

At grade

Cut and cover

Earth tunnel

Sunken tube

Station

Storage and inspection

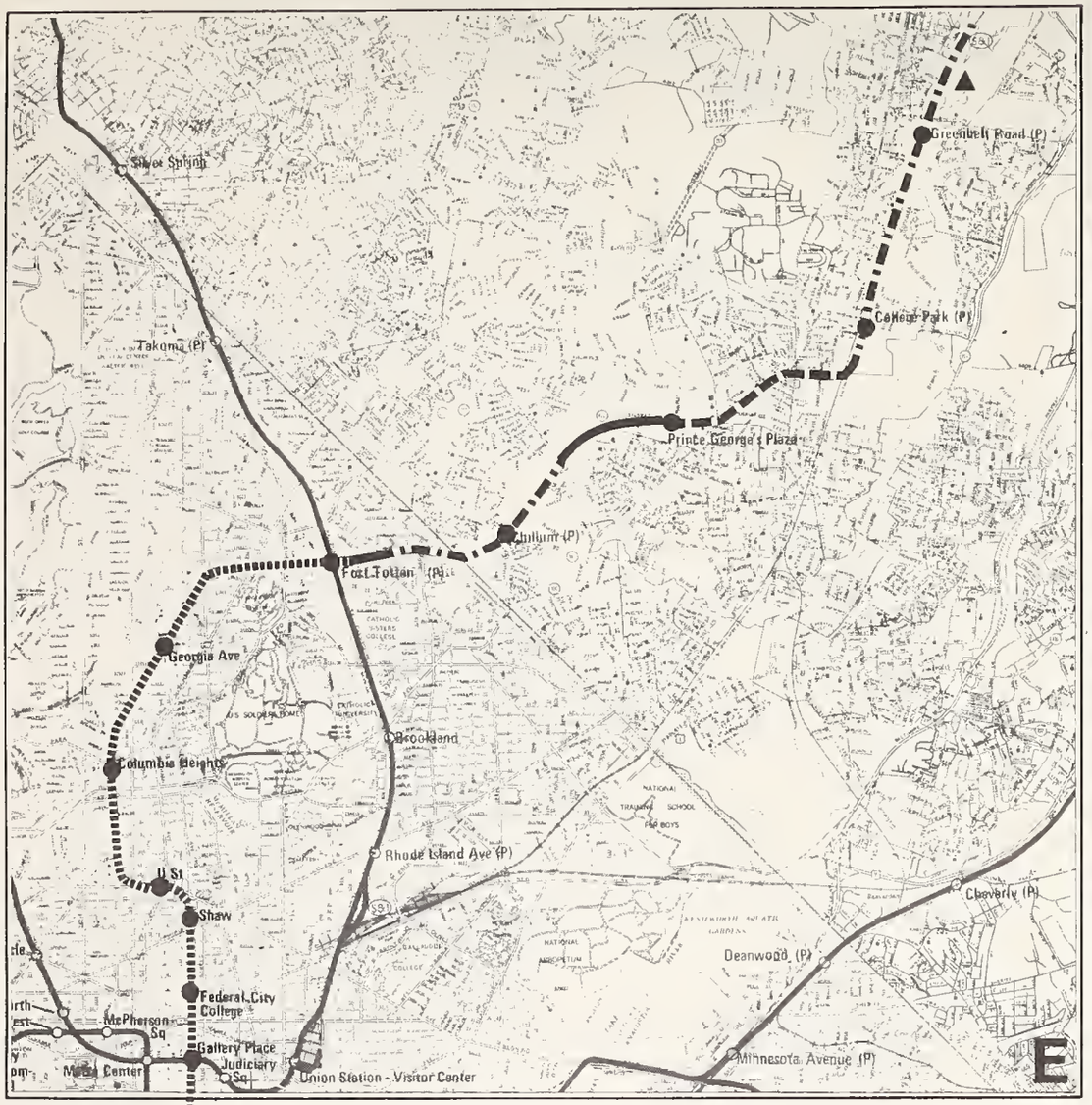
ALIGNMENT DESCRIPTION

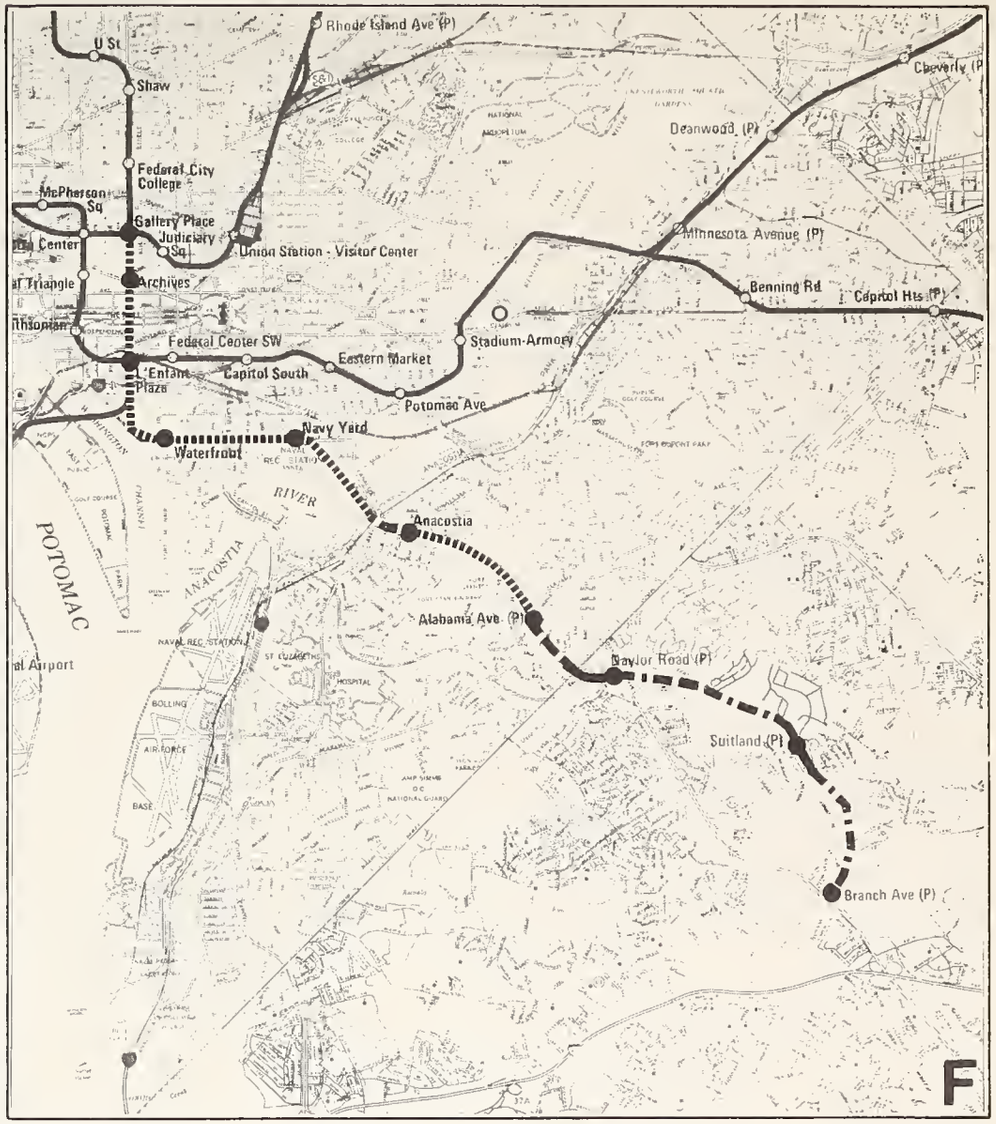
WMATA SYSTEM IMPACT STATEMENT

ROUTES C-D-L

½ 0 1 Mile

metro





Aerial

At grade

Cut and cover

Earth tunnel

Sunken tube

Station

Storage and inspection

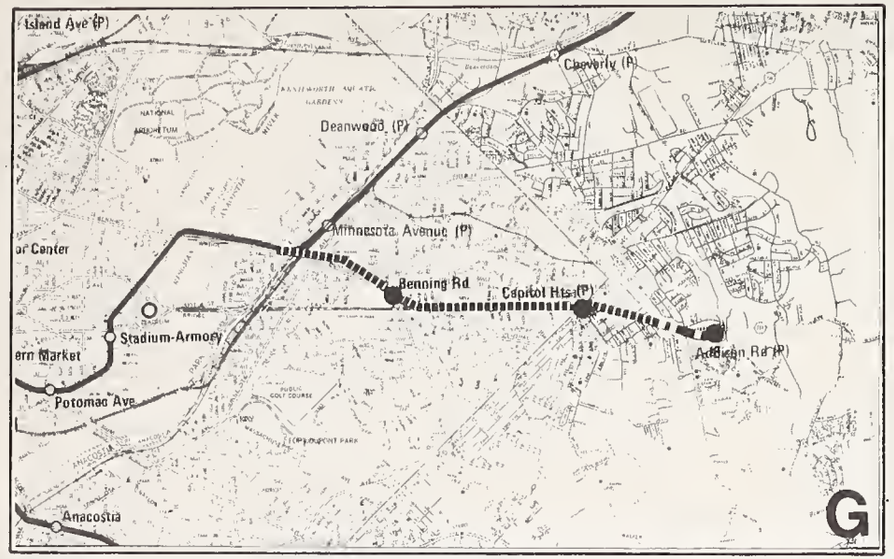
ALIGNMENT DESCRIPTION

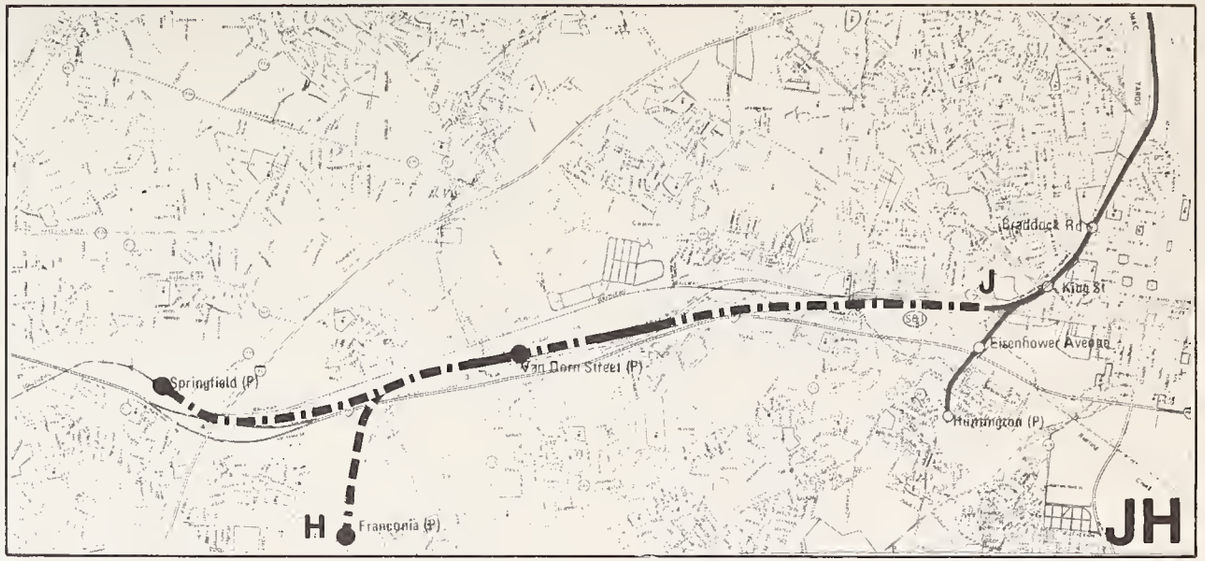
WMATA SYSTEM IMPACT STATEMENT

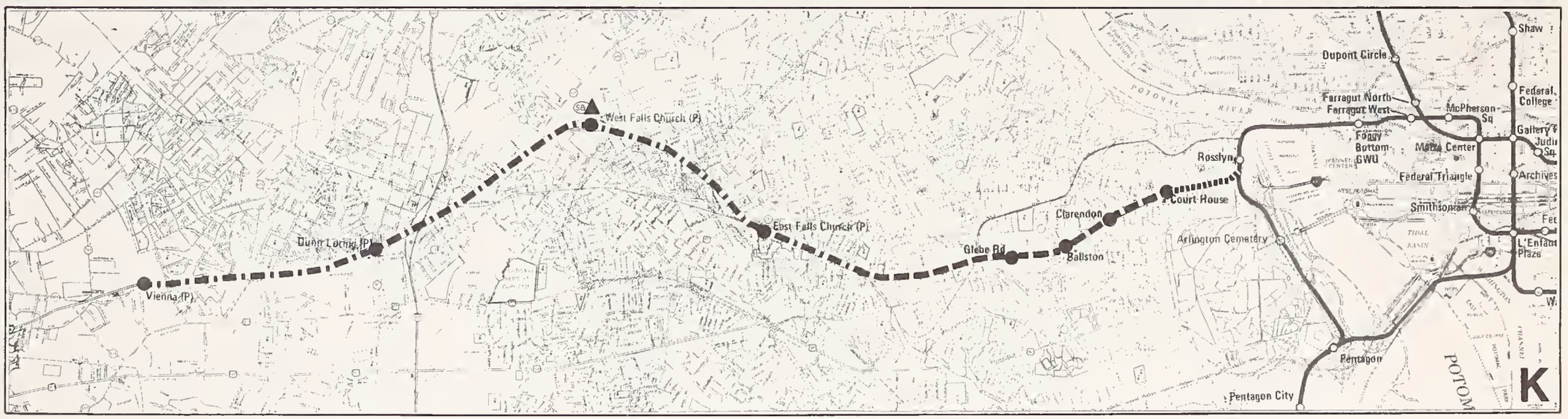
ROUTES E-F

½ 0 1 Mile

metro







Aerial
At grade
Cut and cover
Earth tunnel
Sunken tube
Station
Storage and inspection

ALIGNMENT DESCRIPTION

WMATA SYSTEM IMPACT STATEMENT
ROUTES G-H-J-K

½ 0 1 Mile

metro

SECTION 2: CRITICAL AREAS IDENTIFICATION

In an evaluation of region-wide impact of the Metro rapid transit system, it is not possible or appropriate to examine in detail impacts that are primarily of local concern. Part I of this report identified, described and evaluated region-wide natural and ecological impacts, visual and physical impacts and social and economic impacts. Section I of Part II presented a summary description of each route and its environment.

This section presents a summary of potential impacts of local concern that will require study in environmental studies for individual routes and/or particular attention during the development of general plans for each alignment. While these areas are not critical in regional terms individually, they are identified here as being potentially critical in local terms.

Like regional impacts, local critical area factors are divided into general categories of natural and ecological impacts (geology, hydrology, soils, vegetation and wildlife, noise and air), socio-economic and cultural impacts (traffic and parking, community and residential areas, business, employment, cultural and institutional areas and future development potential) and visual and physical impacts (views, vistas, scenic resources and design). In addition a distinction is made between impacts resulting from Metro operation or the Metro system that are essentially long-term impacts and impacts resulting from Metro construction that are essentially short-term impacts.

Potential areas of local critical concern are indicated on maps illustrating each of the system's routes in this section. Factors in identification of critical areas have been grouped into the following categories for purposes of identification:

Potential Natural and Ecological Impacts of Local Concern

Increased Noise and Vibration
Air Pollution
Disruption of Vegetation and/or Wildlife
Impingement Upon Floodplains or Stream Valleys
Impingement Upon Parkland
Erosion and Sedimentation

NEW

Potential Socio-Economic and Cultural Impacts of Local Concern

Traffic congestion and/or access disruption
Community or neighborhood disruption
Improved access to commercial and/or employment centers
Improved access to major institutional, cultural or governmental uses
Historic or archaeological sites
Increased development potential

Potential Visual and Physical Impacts of Local Concern

Design or redesign opportunity from Metro construction
Visual distraction or disruption

A brief discussion of each of these factors and of the criteria used in their identification is presented below.

It should be emphasized that the purpose of this critical area identification is to call attention to areas that should be studied in detail either in Environmental Studies prepared for each Metro route, or in the process of preparation of general plans.

Increased Noise and Vibration

The subsection in Part I, Section 2 of this Report that deals with natural and ecological impacts presents an analysis of the types of noise that will be generated both by Metro construction and by Metro operation. As indicated in that section, such impacts will be negligible in many areas, particularly in those areas where the route is underground. Criteria for determination of acceptable noise levels as recommended by Wilson, Ihrig and Associates, Acoustical Consultants, are presented in that section.

Areas in which noise levels may be of potential critical local concern are those areas where routes are either at-grade or aerial, where routes are not following existing railroad rights-of-way, and where residences, certain types of institutional uses such as schools and hospitals, and cultural uses such as concert halls, are located adjacent to the proposed route.

Standards for noise levels as related to existing environments are set out below. These criteria are excerpted from studies prepared for WMATA by their acoustical consultants, Wilson, Ihrig and Associates, Inc.

COMMUNITY CATEGORY AREAS USED IN ESTABLISHING METRO SYSTEM NOISE LEVEL CRITERIA

Area Category	Description	Typical Ambient Noise Levels at Night
I	Quiet urban residential, and suburban residential areas	35-40 dBA
II	Average urban residential areas, apartments and hotels in quiet areas, open space recreational areas	40-45 dBA
III	Noisy urban residential or average semi-residential/commercial areas	45-55 dBA
IV	Commercial areas with office buildings, retail stores, etc., with primarily daytime occupancy. Open space parks and suburban areas near highways or high speed boulevards with distant residential buildings	Over 55 dBA
V	Industrial or Freeway and Highway Corridors with either residential or commercial areas adjacent	Over 60 dBA

CRITERIA FOR THE MAXIMUM PASSBY NOISE
FOR ABOVE GROUND METRO TRAIN OPERATIONS

Community Area Category		Maximum Single Event Passby Noise Level Criteria
I	Quiet Residential	70 dBA
II	Average Urban Residential	75 dBA
III	Semi-Residential/Commercial	80 dBA
IV	Commercial	85 dBA
V	Industrial and Highway Corridor	85-90 dBA

CRITERIA FOR ACCEPTABLE LEVELS FOR
THE RUMBLING NOISE WHICH CAN OCCUR IN
RESIDENTIAL BUILDINGS NEAR TUNNELS AS
TRANSIT TRAINS PASS BY

Type of Building or Space	Area Category	Maximum Acceptable Noise Level
Sleeping Rooms in Private Residences	I	NC-25
	II	NC-30
Apartments [in Residential Units]	I	NC-30
	II	NC-35
	III or IV	NC-40
Hotels [in Residential Units]	II	NC-35
	III or IV	NC-40

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DESIGN CRITERIA FOR MAXIMUM LEVELS
FOR THE RUMBLING NOISE WHICH CAN OCCUR
IN OCCUPIED SPACES OF BUILDINGS NEAR
TUNNELS AS TRANSIT TRAINS PASS BY

Type of Building or Space	Recommended Maximum Noise Level
Auditoria and Concert Halls	NC-20
Churches and Theatres	NC-25
Music Rooms and TV Studios	NC-25
Hospital Sleeping Rooms	NC-30
Courtrooms	NC-30
Schools	NC-30
University Buildings	NC-35
Offices	NC-35
Commercial Buildings	NC-40

MAXIMUM ACCEPTABLE NOISE LEVEL FROM
FAN AND VENT SHAFT OPENINGS LOCATED
IN BUILT-UP URBAN AREAS

Area Category	Maximum Acceptable Noise Level at 30 ft	
	Fan Shafts	Vent Shafts
I	40 dBA	45 dBA
II	45	50
III	50	55
IV	55	60

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Air Pollution

While on a region-wide basis, the WMATA system will reduce air pollution, local adverse impacts upon air quality can be anticipated where Metro stations will generate substantial numbers of automobiles and bus trips and where such trips will conflict with already existing patterns of traffic congestion on nearby major roads.

In accordance with adopted and proposed standards for the National Capital Air Quality Control Region, all Metro stations that are anticipated to attract 250 or more vehicles over the one hour period during which the maximum number of vehicles is anticipated or more than 625 vehicles during the continuous eight hour period during which the maximum number of vehicles is expected and/or all Metro stations with a parking capacity of 250 or more spaces are indicated in this section as potential critical areas in terms of air pollution.

Agencies primarily responsible for regulation of air quality in the region are listed below:

Local Agencies

Government of the District of Columbia Department of Health Administration
Bureau of Air and Water Quality Control
25 K Street, N.E.
Washington, D.C. 20001
(202) 629-2568

Maryland Bureau of Air Quality Control
610 N. Howard
Baltimore, Maryland 21201
(301) 383-2779

Virginia State Air Pollution Control Board
7115 Leesburg Pike
Falls Church, Virginia 22046
(703) 534-0067

Other Important Agencies to Contact

Metropolitan Washington Council of Governments
1225 Connecticut Avenue, N.W.
Washington, D.C. 20036

U.S. Environmental Protection Agency
Regional Administrator--Region III
Curtis Building, 6th & Walnut Streets
Philadelphia, Penna. 19106
(215) 597-9801

or

Director, Office of Federal Activities
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460
(202) 755-0777

Disruption of Vegetation and/or Wildlife

At a regional scale, the identification of areas of vegetation and wildlife that would potentially be disrupted by the Metro system is limited to major stands of trees and other vegetation of five or more contiguous acres; single trees are not indicated in this report unless they are particularly noteworthy because of age or size. The identification of these areas is based upon the findings of surveys of the immediate environment of all of the system's routes prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal, and upon data assembled for Natural Features of the Washington Metropolitan Area: An Ecological Reconnaissance prepared in 1968 by the Metropolitan Washington Council of Governments. Local laws protecting mature vegetation and wildlife and agencies administering them are discussed in the Ordinance Study in the Appendix to this Report.

Impingement upon Floodplain or Stream Valley

Areas in which the Metro system will impinge directly upon a floodplain or stream valley have been identified on the basis of surveys of the immediate environment of all of the system's routes prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal, and upon data assembled for Natural Features of the Washington Metropolitan Area: An Ecological Reconnaissance prepared in 1968 by the Metropolitan Washington Council of Governments. While any disruption of vegetation or soil will have some impact on the region's natural drainage system, the impacts areas identified as potentially critical in this report are those in which either an alignment or a station is located directly within the hundred year floodplain, where this has been

NEW

identified on a municipal or county-wide basis, or within the floodplain as determined from soils data where the hundred year floodplain has not been identified. See also the Geology and Watersheds Study and the Ordinance Study presented in these Appendices.

Agencies primarily responsible for setting and enforcing standards in the region regulating the use of floodplains, measuring and delineating floodplain areas and advising in their management and use are set out below.

Setting and Enforcement of Standards and Regulations

Director
Office of Environmental Quality
Office of the Assistant Secretary for Environment, Safety and Consumer Affairs
Department of Transportation
Washington, D.C. 20590
(202) 426-4357

Maryland State Department of Natural Resources
Regional Service Center
517 Main Street
Laurel, Maryland 20810
(301) 792-7863

or

Regional Service Center
103 N. Main Street
Bel Air, Maryland 21014
(301) 879-2494

U.S. Department of Agriculture - Soil Conservation Service - County Listings:

Fairfax County
3945 Chain Bridge Road
Fairfax, Virginia 22030
(703) 591-6660

Montgomery County
6110 Executive Boulevard
Rockville, Maryland 20852
(301) 770-0416

Prince George's County
15209 Main Street
Upper Marlboro, Maryland 20870
(301) 627-3438

U.S. Department of the Interior-Geological Survey
National Headquarters Building
Sunrise Valley Drive
Reston, Virginia 22070
(703) 860-6167

Measurement and Delineation of Floodplains

U.S. Army Corps of Engineers
Executive Director of Civil Works
Office of the Chief of Engineers
Washington, D.C. 20314
(202) 693-7168

Advisory

Council on Environmental Quality
722 Jackson Place, N.W.
Washington, D.C.
(202) 382-1415

Environmental Improvement Commission
Citizens Commission
4628 23rd Road, North
Arlington, Virginia 22207
(703) 528-1247

Washington Ecology Center
2000 'P' Street, N.W.
Room 612
Washington, D.C. 20036
(202) 833-1778

Maryland State Department of Natural Resources Regional Service Centers at these locations:

517 Main Street
Laurel, Maryland 20810
(301) 792-7863

or

103 N. Main Street
Bel Air, Maryland 21014
(301) 879-2494

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Impingement upon Parkland

All potential locations of alignments and stations on public parkland are identified in this portion of this study. Not included here, however, are the triangles and circles in the District's street system although these are administered as public open space by the National Capital Planning Commission. These areas are included in inventories of potential parkland impacts in the environmental impact studies of the individual routes. Sources for this identification include the Department of the Interior, National Park Service, Reservation List: National Capital Parks, the Maryland-National Capital Park and Planning Commission, Guide to Parks in Montgomery and Prince George's Counties and the Northern Virginia Planning District Commission.

The following agencies are primarily responsible for the management and preservation of parkland in the region.

Maryland-National Capital Park and Planning Commission
Regional Headquarters Building, Park Planning Division
8787 Georgia Avenue
Silver Spring, Maryland 20907
(301) 589-1480

National Capital Planning Commission
1325 G Street, N.W.
Washington, D.C. 20576
(202) 382-1160

Park and Recreation Commission (Citizen's Commission)
Ms. Sarah Anderson, Chairman
3111 First Place, North
Arlington, Virginia 22201

Planning Director
Public Facilities Branch
Office of Comprehensive Planning
Fairfax County, Virginia 22030
(703) 691-3403

U.S. National Park Service
Department of the Interior
Interior Building
Washington, D.C. 20240
(202) 343-3891

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Erosion and Sedimentation

Like floodplain and other natural drainage system impacts, erosion and sedimentation problems occur wherever vegetation or soil is disturbed. In this sense, whenever a station or alignment is to be constructed, some degree of erosion and sedimentation of some portion of the regional natural drainage system will occur. In many portions of the system, this impact can be expected to be very slight. In fact, the most serious sedimentation problems that might result from Metro construction are associated with spoils disposal from Metro excavation. Spoils disposal is discussed in some detail in the Geology and Watershed Study,in the Appendices to this Report. Critical area identification in terms of erosion and sedimentation is based primarily upon the findings of surveys of the immediate environment, of all the systems routes prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal, and upon the Spoils Disposal Study.

Agencies primarily responsible for regulation and control of erosion and sedimentation in the region are set out below:

Setting and Enforcement of Standards and Regulations

U.S. Department of Agriculture - Soil Conservation Service
County Listings:

Fairfax County
3945 Chain Bridge Road
Fairfax, Virginia 22030
(703) 591-6660

Montgomery County
6110 Executive Boulevard
Rockville, Maryland 20852
(301) 770-0416

Prince George's County
15209 Main Street
Upper Marlboro, Maryland 20870
(301) 627-3438

Measurement and Advisory

Maryland Department of Natural Resources Regional Service Centers located at these places:

517 Main Street
Laurel, Maryland 20810
(301) 792-7863

or

103 N. Main Street
Bel Air, Maryland 21014
(301) 879-2494

U.S. Department of Agriculture - Soil Conservation Service - County Listings:

Fairfax County
3945 Chain Bridge Road
Fairfax, Virginia 22030
(703) 591-6660

Montgomery County
6110 Executive Boulevard
Rockville, Maryland 20852
(301) 770-0416

Prince George's County
15209 Main Street
Upper Marlboro, Maryland 20870
(301) 627-3438

Metropolitan Washington Council of Governments
1225 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 223-6800

Traffic Congestion and Access Disruption

Two measures are considered here in identifying critical areas for traffic impact. One of these is existing traffic congestion within a quarter of a mile of a proposed Metro station and the other is projected access disruption by either proposed alignments or proposed stations.

Traffic congestion is identified on the basis of the findings of surveys of the immediate environment of the systems routes prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal, and of data available from the Virginia Department of Highways, the District of Columbia Division of Traffic Planning and Design, the Maryland Department of Transportation, the Montgomery County Maryland Traffic Engineering Department, and in studies prepared for WMATA by Barton Aschmann Associates and for the Maryland Department of Transportation by JHK Associates.

Access disruption is based upon preliminary plans of the Adopted Regional System prepared by DeLeuw, Cather and Company and WMATA.

Community or Neighborhood Disruption

Community or neighborhood disruption is identified in this section as a potential disruption where an alignment or station is planned in any but tunnel construction in a vertical location that bisects a residential area, with no buffer of non-residential use, major highway or substantial open space buffer. Information for this evaluation was obtained from existing land use information as available in the most current land use plans for each jurisdiction.

While community and neighborhood disruption by a Metro station or alignment has many other aspects, such other aspects tend to be very specific and as such are evaluated in impact studies for individual Metro alignments. Where such disruption occurs in an area that has undergone urban renewal, it may be less adverse than otherwise if redevelopment is just beginning, or more adverse than otherwise if redevelopment is completed.

Any potential dislocation by Metro construction is considered to be of critical local concern. The construction of Metro alignments and stations will require the taking of some structures. The exact number of structures to be taken will only be possible to determine when final engineering plans have been completed. At the present time, it is possible only to estimate potential dislocation.

Potential dislocationof residences, businesses, and other uses by the WMATA stations and alignments, as indicated here, was identified by the WMATA Office of Real Estate.

Improved Access to Commercial and/or Employment Centers

One of the major benefits of system service and of specific stations is improved regional accessibility of commercial and employment centers. In this study the identification of commercial and employment centers was based upon information concerning existing and proposed land use configurations as set out in the most current master plan for each jurisdiction.

Major commercial and/or employment centers within a radius of eight blocks of each proposed Metro station are identified. It is considered that this is generally the distance within which most people would walk from the Metro station. With changes to other modes of travel, commercial and employment centers beyond the one quarter-mile radius from stations will also become somewhat more regionally accessible as a result of the construction of the Metro system. As travel time increases and travel mode changes become necessary, however, accessibility benefits of stations decline.

Increased regional accessibility of major commercial and employment centers strengthens the economic viability of these uses and increases opportunities to shop or work to large numbers of people in the District; secondarily, such increase in accessibility is likely to stimulate the value of residential areas that have been made more accessible to shopping and employment centers and strengthen the region's attraction for new commerce and industry.

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Improved Access to Major Institutional, Cultural or Governmental Uses

Greater regional accessibility of major institutional, cultural and governmental uses is another major benefit of system and station service. The identification of those major institutions, cultural and governmental uses that will be most directly affected in this manner is based upon information concerning existing and proposed land use configurations as set out in the most current master plan for each jurisdiction.

Major institutional, cultural and governmental uses within a radius of one-quarter mile of each proposed Metro station are identified. The same accessibility constraints that apply to commercial and employment centers also apply to major institutional, cultural and governmental uses. While the economic benefits of increased accessibility of these uses are not as apparent as are those for increased accessibility of commercial or employment centers, benefits in terms of availability of health care, education and recreation are substantial.

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Historic or Archaeological Sites

Historic and archaeological sites can be impacted by a Metro alignment in two ways; first, they may be directly impacted in construction, second they may have increased regional accessibility as a result of location near a Metro station. Sources for identification of historic and archaeological sites in this study include the following: Maryland-National Capital Park and Planning Commission's Historic Sites Identification Map: A Proposed Amendment to the General Plan, April, 1969, Northern Virginia Regional Planning and Economic Development Commission, Historic Northern Virginia Buildings and Places, August, 1966, the U.S. Department of Interior, Landmarks of the National Capital, the National Historic Register, and surveys of the immediate environment of all of the system's routes prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal.

The purpose of this portion of this study is simply to identify potentially impacted historic and archaeological sites; environmental studies for individual alignments describe in detail any adverse impacts anticipated, WMATA's plans to mitigate these affects, a review of alternatives that would remove any adverse affects upon each National Register property, and a review of alternatives that would mitigate any such adverse affects.

Agencies and officials primarily concerned with identification and preservations of historic and archaeological sites and structures are listed below:

Historic Preservation Officers

Virginia--

Dr. Junius R. Fishburne, Jr.
Executive Director
Virginia Historic Landmarks Commission
221 Govenor Street
Richmond, Virginia 23219

Maryland--

Mr. Orlando Ridout, IV, Director
Maryland Historic Trust
21 State Circle
Annapolis, Maryland 21404
(301) 267-1212

District of Columbia--

Mr. James G. Banks
Room 112A, District Building
14th & E Streets, N.W.
Washington, D.C. 20004

NEW

Advisory

Advisory Council on Historic Preservation
C Street between 18th and 19th Streets, NW
Washington, D.C. 20006
(202) 254-3974

Ludwell Lee Montague
Arlington County Historic Commission

Maryland-National Capital Park and Planning Commission
Park Historian
Regional Headquarters Building
8787 Georgia Avenue
Silver Spring, Maryland 20907
(301) 589-1480

National Capital Planning Commission
1325 G Street, N.W.
Washington, D.C. 20576
(202) 382-1160

Transportation and Environmental Services
Director
City Hall
Alexandria, Virginia 22314
(703) 750-6451

Dr. Charles McNett
Department of Anthropology
American University
Massachusetts and Nebraska Avenues, N.W.
Washington, D.C. 20016
(202) 686-2182

Tyler Bastian, State Archaeologist
Maryland State Geological Survey
Johns Hopkins University
Baltimore, Maryland 21218
(301) 235-0771

NEW

Development Potential

Land immediately adjacent to Metro stations and within a surrounding secondary impact area can be expected to experience one or another degree of development or redevelopment pressure because of its marked increase in regional accessibility. Other factors including existing use and zoning of these areas will determine the degree of such pressure in each such area.

Increased development potential is indicated in this study only in terms of major areas of potential development. These areas all have been identified on the basis of surveys of the immediate environment of all of the system's routes prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal, and of a comparison of existing recommendations of the current master plans and transit impact studies (where these are available) with existing land use configurations. In addition to current master plans and transit impact studies, reference was made to Larry Smith and Company's Metro Property Utilization, 1968 and 1969, Gladstone Associates' Development Potential at Metro Stations prepared for the Northern Virginia Planning District Commission, June 1974, and drafts of Metro station impact studies in preparation for Prince George's County for the Maryland National Parks and Planning Commission by Team Four and Development Research Associates.

Design or Redesign Opportunity from Metro Construction

Design or redesign opportunities from Metro construction are associated primarily with station construction. Typically, such an opportunity might provide the focus for private redevelopment of a deteriorating commercial area, or for the development of a new higher density commerce office and residential center.

Identification of design and redesign opportunities in this study is based primarily upon Metro station impact studies in preparation throughout the region (see Bibliography) and upon surveys of the immediate environment of the system prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal, and transit impact studies where these are available.

Visual Distraction or Disruption

Wherever Metro is above ground, it will be visible. In some above-ground areas, it will be a considerably greater visual distraction or disruption than in others. In areas of scenic value, Metro may disrupt an existing vista; in areas of dense urban development, Metro may disrupt a visual community fabric.

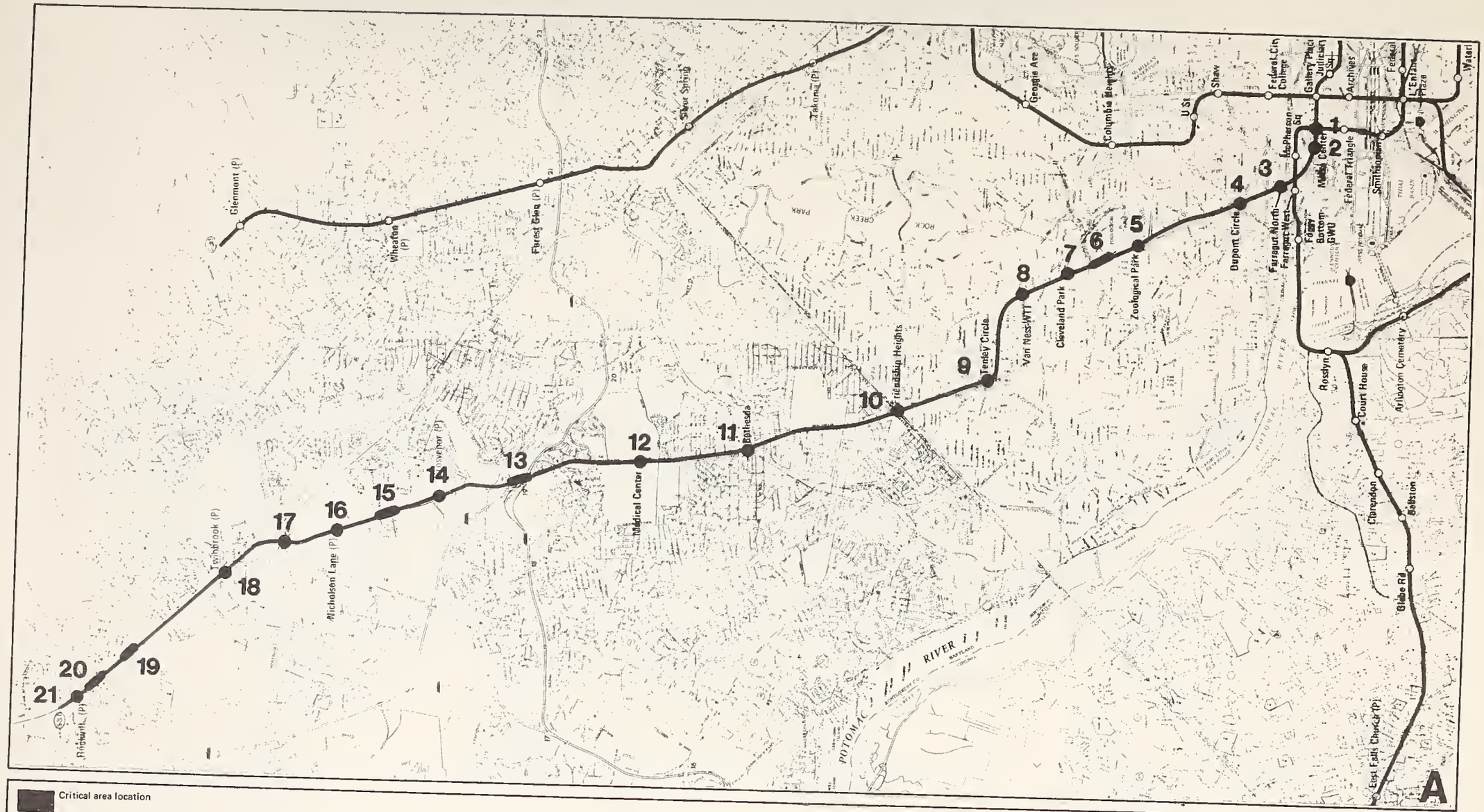
The primary basis for the identification of potential instances of visual distraction or disruption is the survey of the immediate environment of the system prepared by Wallace, McHarg, Roberts and Todd in the System Appraisal, and impact studies for the individual routes.

NEW

A ROUTE CRITICAL AREAS

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
A1		a. Increased regional accessibility of the inner city cultural area b. Potential conflict or coordination with the Downtown Urban Renewal Area c. Increased local development potential d. Increased access to local commercial and employment centers	a. Potential design and redesign opportunity associated with station construction
A2		a. Potential impacts upon historic sites: Epiphany Church, Colorado Building, Riggs National Bank/American Security and Trust Company, U.S. Treasury Department, National Savings and Trust Co., the Folger Building, the Play House Theater, St. John's Parish House, Benjamin Ogle Taylor House, Blair Lee House, Dolly Madison House, St. John's Church, Renwick Gallery, Decatur House, Lafayette Square	
A3	a. Potential parkland impact, Farragut Square b. Potential disruption of street trees	a. Increased regional accessibility of George Washington University and Hospital, Doctors Hospital and Columbia Hospital b. Potential dislocation of businesses	
A4		a. Potential impact upon historic sites: Washington Club, Wadsworth House, Mayflower Hotel b. Potential dislocation of businesses c. Increased access to commercial and employment centers d. Increased local development potential	a. Potential visual disruption
A5		a. Potential additional traffic hazards to students walking to Oyster Elementary School and Maret School from Zoological Park Station peak hour access traffic b. Increased access by public transportation to so some students at Maret School c. Increased regional accessibility of the National Zoo d. Potential impacts upon historic sites: Rock Creek Park, Taft Bridge, National Zoological Park	
A6	a. Potential impingement upon floodplains b. Potential erosion and sedimentation problems associated with Metro construction		a. Visual impingement on open space and buffer areas
A7		a. Increased regional accessibility of various embassies b. Potential impacts upon historic site, Rose Hill Quarry	a. Visual enhancement of the area associated with station construction
A8	a. Potential disruption of parkland	a. Increased regional accessibility of various embassies, Dunbarton College b. Increased local development potential	a. Visual impingement upon open space and buffer areas
A9		a. Potential additional traffic hazards to students walking to Sheridan School, Janney Elementary School, Deal Junior High School, and Wilson High School from Tenley Circle Station access traffic b. Increased access by public transportation for some students to Sheridan School, Deal Junior High School and Wilson High School c. Increased regional accessibility of Immaculata Junior College d. Increased access to local commercial and employment centers e. Increased local development potential	a. Design or redesign opportunity associated with station construction

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
A10		a. Potential additional traffic congestion from station peak hour access traffic b. Increased local development potential	a. Design and redesign opportunity associated with station construction
A11		a. Potential additional traffic hazards to students walking to Leland Junior High School, Our Lady of Lourdes School, Bethesda School, Bethesda Chevy Chase High School, and Sidwell Friends School from peak hour Bethesda Station access traffic b. Potential dislocation of residences and businesses c. Potential additional traffic congestion associated with station peak hour access traffic d. Increased local development potential	
A12		a. Increased regional accessibility of the National Institute of Health and the Naval Medical Center b. Potential impact on historic site: Temple Hill Baptist Church c. Increased access to local commercial and employment centers d. Potential additional traffic congestion associated with station peak hour access traffic	a. Redesign opportunity associated with station construction
A13	a. Potential erosion and sedimentation problems		a. Potential impingement upon open space and buffer areas
A14	a. Potential local air quality problems associated with peak hour Grosvenor Station access traffic congestion b. Potential disruption of vegetation and wildlife c. Potential erosion and sedimentation problems	a. Potential additional traffic hazards to students walking to Holy Cross Academy and Georgetown Preparatory School from Grosvenor Station access traffic b. Increased access by public transportation for some students to Holy Cross Academy and Georgetown Preparatory School c. Increased local development potential	a. Visual enhancement of area anticipated in association with Metro construction
A15		a. Potential dislocation of existing uses	
A16	a. Potential local air quality problems associated with peak hour Nicholson Lane Station access traffic congestion b. Potential impingement upon floodplains	a. Increased regional accessibility of Christ Church Hospital b. Potential dislocation of residences and businesses c. Increased local development potential d. Improved access to local commercial and employment centers	a. Potential visual impingement upon open space and buffer areas
A17		a. Potential dislocation of existing uses	
A18	a. Potential local air quality problems associated with peak hour Twinbrook Station access traffic congestion b. Potential impingement upon floodplains	a. Potential dislocation of businesses b. Increased access to local commercial and employment centers, HEW c. Increased local development potential	a. Visual enhancement of area anticipated in association with station construction
A19		a. Potential dislocation of existing uses	
A20			a. Design and redesign opportunities associated with Metro construction
A21	a. Potential local air quality problems associated with peak hour Rockville Station access traffic congestion b. Potential disruption of vegetation and wildlife c. Potential impingement upon floodplains	a. Potential additional traffic hazards to students walking to Park Street School and St. Mary's School from Rockville Station access traffic b. Increased access by public transportation to Park Street School and St. Mary's School c. Potential impacts upon historic sites: the Rockville Station of the B & O Railroad and St. Mary's Church d. Potential dislocation of businesses	a. Potential visual impingement upon open space and buffer area



Critical area location

*Description on facing page

CRITICAL AREAS*

WMATA SYSTEM IMPACT STATEMENT

ROUTE A

½ 0 1 Mile

M metro

B ROUTE CRITICAL AREAS

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
B1		a. Increased regional accessibility of the inner city cultural area b. Potential impacts upon historic sites: St. Patricks, The National Portrait Gallery c. Potential for conflict or coordination with the Downtown Urban Renewal Area d. Potential dislocation of businesses	a. Potential visual enhancement of area associated with station construction
B2	a. Potential disruption of street trees b. Potential disruption of parkland, Judiciary Square	a. Potential additional traffic hazards to students walking to Seaton Elementary School from Judiciary Square Station access traffic b. Increased regional accessibility of the Courts and Municipal Center c. Potential impacts upon historic sites: Adas Israel Synagogue, the Pension Building, St. Mary's Church, Old City Hall d. Potential conflict or coordination with the Downtown Urban Renewal Area e. Dislocation of businesses and residences	a. Potential design and redesign opportunity in association with station construction
B3	a. Potential disruption of street trees	a. Potential for conflict or coordination with the Downtown Urban Renewal Area	
B4	a. Potential disruption of parkland, Union Station Plaza	a. Potential additional traffic hazards to students walking to Logan Elementary School, Stuart Junior High School, Gonzaga High School and Terrell Junior High School from peak hour Union Station access traffic b. Increased access by public transportation for some students to the above high schools c. Increased regional accessibility of the Senate Office Buildings and the Washington Coliseum d. Potential impacts upon historic sites: City Post Office, Government Printing Office, Union Station e. Potential conflict or coordination with the Northeast Urban Renewal Area No. 1	a. Potential visual enhancement of area anticipated in association with metro construction
B5	a. Potential disruption of street trees		
B6	a. Potential disruption of street trees		a. Potential visual enhancement anticipated associated with metro construction
B7	a. Potential local air quality problems associated with peak hour Rhode Island Station access traffic congestion b. Potential disruption of street trees	a. Potential additional traffic hazards to students walking to Noyes Elementary School and to St. Vincent's School from Rhode Island Avenue Station access traffic b. Increased access by public transportation to St. Vincent's School c. Increased regional accessibility of Gallaudet College and Trinity College	a. Potential visual disruption
B8	a. Potential acoustical impacts from at-grade operation of metro	a. Potential dislocation of businesses	
B9	a. Potential taking of street trees	a. Potential additional traffic hazards to students walking to Brookland Elementary School and St. Anthony's High School from Brookland Station peak hour access traffic b. Increased access by public transportation for some students to St. Anthony's High School c. Increased regional accessibility Trinity College, Catholic University and the U.S. Soldiers Home d. Potential dislocation of businesses and residences e. Increased local development potential	a. Potential design and redesign opportunity associated with station construction

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
B10	a. Potential acoustical impacts from at-grade Metro operation		
B11	a. Potential local air quality problems associated with peak hour Fort Totten Station access traffic congestion b. Potential disruption of parkland, Fort Totten Park c. Potential disruption of vegetation and wildlife	a. Potential additional traffic hazards to students walking to Backus Junior High School from Fort Totten Station access traffic b. Increased access by public transportation for some students to Backus Junior High School c. Increased regional accessibility of the Catholic Sisters College d. Potential dislocation of existing uses e. Increased local development potential	a. Potential visual enhancement of the station area associated with Metro construction
B12	a. Potential acoustical problems from at-grade Metro operation	a. Potential dislocation of existing uses	a. Potential visual enhancement of area anticipated in association with Metro construction
B13		a. Potential dislocation of existing uses	a. Potential visual impingement on open space and buffer area
B14	a. Potential acoustical impacts from at-grade operation of Metro	a. Potential additional traffic hazards to students walking to Takoma Elementary School, Peter Pan School and Coolidge High School from Takoma Station peak hour access traffic b. Increased access by public transportation to Coolidge High School c. Increased regional accessibility of Walter Reed Army Medical Center and Montgomery College d. Potential dislocation of residences	a. Potential visual impingement upon open space and buffer area
B15		a. Potential impact upon historic sites: Benjamin Gilbert House	
B16	a. Potential parkland impact, Jessup Blair Park	a. Potential impact upon historic sites: Jessup Blair House, Montgomery Community College b. Potential dislocation of existing uses	
B17	a. Potential sedimentation and erosion problems associated with Metro construction b. Potential disruption of street trees c. Potential acoustical problems associated with at-grade Metro operation	a. Potential additional traffic hazards to students walking to St. Michael's School and Woodside School from Silver Spring Station peak hour access traffic b. Increased access by public transportation to St. Michael's School and Woodside School c. Potential impact upon historic site: Silver Spring d. Potential dislocation of businesses	a. Potential visual enhancement of area anticipated in association with Metro construction
B18	a. Potential local air quality problems associated with peak hour Forest Glen Station access traffic congestion	a. Potential additional traffic hazards to students walking to Forest Grove School and St. John's School from Forest Glen Station peak hour access traffic b. Increased access by public transportation for some students to Forest Grove School and St. John's School c. Increased regional accessibility of Holy Cross Hospital d. Potential dislocation of residences	a. Potential visual impingement upon open space and buffer area
B19	a. Potential local air quality problems associated with peak hour Wheaton Station access traffic congestion	a. Potential additional traffic hazards to students walking to Stephen Knolls School b. Increased access by public transportation for some students to Stephen Knolls School c. Potential dislocation of businesses	a. Potential design and redesign opportunity associated with station construction
B20	a. Potential local air quality problems associated with peak hour Glenmont Station access traffic congestion b. Potential disruption of street trees c. Potential erosion and sedimentation problems associated with Metro construction	a. Potential additional traffic hazards to students walking to the Glenmont School from peak hour Glenmont Station access traffic b. Increased access by public transportation for some students to the Glenmont School c. Potential dislocation of businesses	

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
B21	a. Potential disruption of vegetation and wildlife b. Potential erosion and sedimentation problems associated with Metro construction c. Potential impingement upon flood-plains		

Critical area location

*Description on facing page

CRITICAL AREAS*

WMATA SYSTEM IMPACT STATEMENT

ROUTE B

½ 0 1 Mile

metro

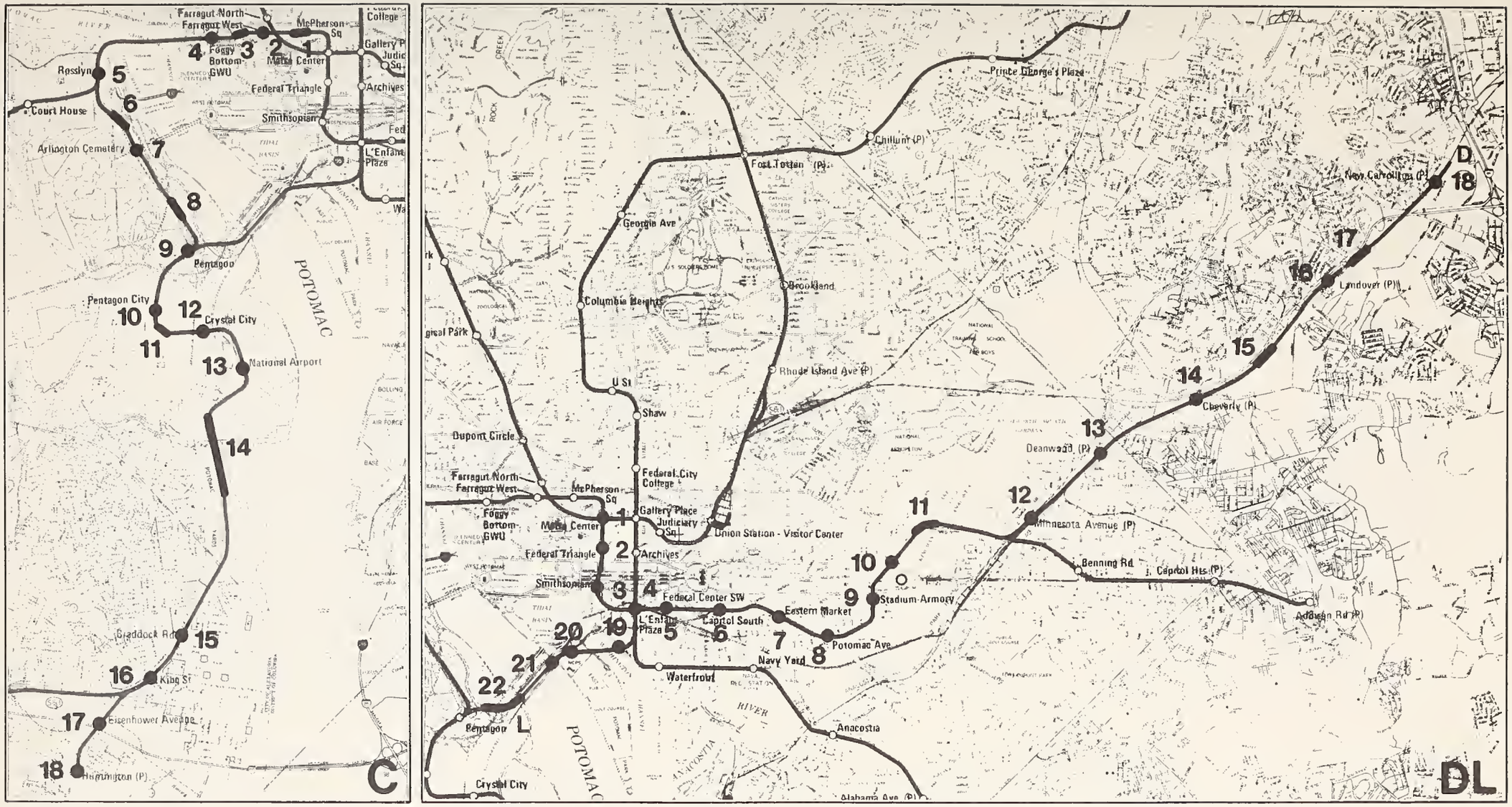
C-D-L ROUTE CRITICAL AREAS

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
C1		a. Increased regional accessibility of inner city cultural area b. Potential coordination or conflict with the Downtown Urban Renewal Area; potential dislocation of businesses c. Design and redesign opportunity and potential visual enhancement of area from station construction	
C2		a. Increased regional accessibility of inner city cultural area b. Potential impact upon historic sites: 19th Street Baptist Church, James Monroe House and the Arts Club of Washington c. Potential dislocation of businesses d. Increased local development potential	a. Impact upon pre-war office structure for construction of connection track
C3	a. Potential parkland impact: Farragut Square		
C4	a. Potential disruption of James Monroe Park during construction	a. Major development opportunity associated with Metro service b. Potential additional traffic hazards to students walking to Stevens Elementary School and Grant Elementary School c. Increased regional accessibility of iner city cultural area and George Washington University and Hospital d. Improved regional access to local commercial and employment centers	
C5	a. Potential erosion and sedimentation problems during Metro construction	a. Increased regional accessibility of Iwo Jima Memorial b. Potential dislocation of businesses c. Increased local development potential	a. Design and redesign opportunity and potential visual enhancement of area from station construction
C6		a. Potential impact upon historic site: Arlington National Cemetery	
C7	a. Potential impact upon parkland	a. Increased regional accessibility of Arlington National Cemetery	
C8			a. Design and redesign opportunity and potential visual enhancement of area from alignment construction
C9		a. Increased regional accessibility of the Pentagon b. Potential dislocation of businesses	
C10		a. Increased regional accessibility of the Hume Museum b. Increased local development potential c. Improved regional access to local commercial and employment centers	
C11	a. Potential disruption of wildlife and vegetation		
C12		a. Potential dislocation of residences b. Improved regional access to local commercial and employment centers c. Increased local development potential	a. Potential visual disruption
C13		a. Improved regional access to local commercial and employment centers b. Increased local development potential	a. Design and redesign opportunity and potential visual enhancement of area from station construction
C14			a. Potential visual enhancement of area associated with construction of Metro alignment b. Visual impingement on open space or buffer

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
C15		a. Potential additional traffic hazards to students walking to Parker-Gray High School, Houston Elementary School and Jefferson Junior High School b. Increased access by public transportation for some students at Parker-Gray High School c. Increased regional accessibility of the Eugene Simpson Memorial Stadium d. Potential dislocation of residences	
C16	a. Potential acoustical impact from at-grade Metro operation	a. Potential additional traffic hazards to students walking to Maury Elementary School from King Street Station access traffic b. Increased regional accessibility of the George Washington Masonic National Memorial c. Potential impact on historic site, George Washington Masonic Temple d. Improved regional access to local commercial and employment centers	
C17	a. Potential acoustical impacts from at-grade Metro operation	a. Increased local development potential	a. Potential visual disruption b. Potential visual enhancement of area associated with construction of station
C18	a. Potential local air quality problems associated with peak hour station access traffic congestion	a. Potential dislocation of residences b. Increased local development potential c. Improved regional access to local commercial and employment centers d. Potential additional traffic congestion problems associated with Huntington Station peak hour access traffic	
DL1	a. Potential impact on parklands, the Post Office Park, the Mall	a. Potential dislocation existing uses b. Improved regional accessibility of commercial and employment centers c. Potential conflict or coordination with the Downtown Urban Renewal Area d. Potential impact on historic sites, Woodward and Lothrop/Old Evening Star Building	a. Potential visual distraction or disruption
DL2	a. Potential disruption of street trees	a. Improved regional accessibility of major institutional cultural and governmental centers and to commercial and employment centers b. Increased regional accessibility of inner city cultural areas c. Potential impact upon historic sites, Franklin Square and the Old Naval Hospital	
DL3	a. Potential disruption of street trees	a. Increased regional accessibility of inner city major institutional, cultural and governmental uses b. Potential impacts upon historic sites including Woodward and Lothrop/ Old Evening Star Building, Old Post Office and Clock Tower, Smithsonian Institution and Freer Gallery, Capitol Mall, Department of Agriculture and St. Dominic's Church	a. Potential visual distraction associated with Smithsonian Metro Station
DL4		a. Increased regional accessibility of major institutional, cultural and governmental uses and major commercial and employment centers b. Potential conflict or coordination with the Southwest Urban Renewal Area	
DL5		a. Increased local development potential b. Potential conflict or coordination with the Southwest Urban Renewal Area	a. Design opportunity and potential visual enhancement of area associated with Federal Center Southwest Station construction
DL6		a. Increased accessibility of major institutional, cultural and governmental centers including the Library of Congress b. Increased local development potential	

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
DL7	a. Potential disruption of vegetation and wildlife	a. Increased accessibility of major commercial and employment centers b. Potential additional traffic hazards to students walking to Hine Junior High School, Tyler Elementary School and Watkins Elementary from peak hour Eastern Market Station access traffic c. Increased access by public transportation for some students to Hine Junior High School	a. Potential visual distraction from Eastern Market Metro station
DL8		a. Potential dislocation of existing uses b. Increased local development potential c. Increased accessibility of major institutional, cultural or governmental uses d. Potential additional traffic hazards to students walking to Buchanan Elementary School, Payne Elementary School and Bryan Elementary School e. Increased access by public transportation to Chamberlain Vocational High School	a. Potential visual distraction
DL9		a. Increased regional accessibility to major institutional, cultural and governmental uses b. Increased local development potential c. Potential additional traffic hazards to students walking to Holy Comforter School, Eastern High School and Eliot Junior High School d. Increased access by public transportation to the above schools e. Increased regional accessibility of D.C. General Hospital, D.C. Stadium and Armory and Congressional Cemetery f. Potential impact upon historic site, Congressional Cemetery	
DL10			a. Potential visual disruption
DL11	a. Potential disruption of vegetation b. Potential erosion and sedimentation problems	a. Aerial alignment passes near historic site	a. Potential visual enhancement of the area anticipated in association with construction of Metro facilities b. Potential visual disruption
DL12	a. Potential local air quality problems associated with peak hour Minnesota Station access traffic congestion	a. Increased regional accessibility of major commercial and employment centers b. Increased local development potential c. Potential additional traffic hazards to students walking to Benning Elementary School and Woodson Junior High School d. Increased access by public transportation to some students at Woodson Junior High School e. Potential impact upon archaeological site of Indian Campsite	
DL13	a. Potential erosion and sedimentation problems associated with Metro construction b. Potential local air quality problems associated with peak hour Deanwood Station access traffic congestion	a. Potential dislocation of existing uses b. Increased local development potential	a. Potential design opportunity and visual enhancement of area associated with Metro Station construction
DL14	a. Potential disruption of vegetation and wildlife b. Potential impingement on floodplain c. Potential erosion and sedimentation problems associated with Metro construction d. Potential adverse local air quality impact associated with peak hour station access traffic e. Potential local air quality problems associated with peak hour Cheverly Station access traffic congestion	a. Increased accessibility to commercial and employment centers b. Increased local development potential	a. Potential visual disruption

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
DL15	a. Potential disruption of vegetation and wildlife b. Potential impingement on floodplain c. Potential erosion and sedimentation problems d. Potential acoustical impact from at-grade operation		
DL16	a. Potential disruption of vegetation and wildlife b. Potential impingement upon floodplains	a. Increased accessibility of commercial and employment centers b. Increased local development potential	
DL17	a. Potential local air quality problems associated with peak hour Landover Station access traffic congestion		a. Potential visual impingement upon open space and buffer areas
DL18	a. Potential disruption of vegetation and wildlife b. Potential erosion and sedimentation problems c. Potential local air quality problems associated with peak hour New Carrollton Station access traffic congestion	a. Increased local development potential b. Potential additional traffic hazards to students walking to West Lanham Hills School c. Increased access by public transportation to some students at West Lanham Hills School d. Increased access by public transportation to Prince George's Retarded Day Care Center	a. Potential visual impact upon open space and buffer area b. Potential visual disruption
DL19	a. Potential impingement upon parklands	a. Potential for conflict or coordination with Southwest Urban Renewal Area	
DL20	a. Potential disruption of vegetation and wildlife b. Potential erosion and sedimentation associated with Metro construction		
DL21			a. Potential visual enhancement of area associated with Metro construction
DL22			a. Potential visual impingement upon open space or buffer areas



Critical area location

*Description on facing page

CRITICAL AREAS*

WMATA SYSTEM IMPACT STATEMENT

ROUTES C-D-L

½ 0 1 Mile

metro

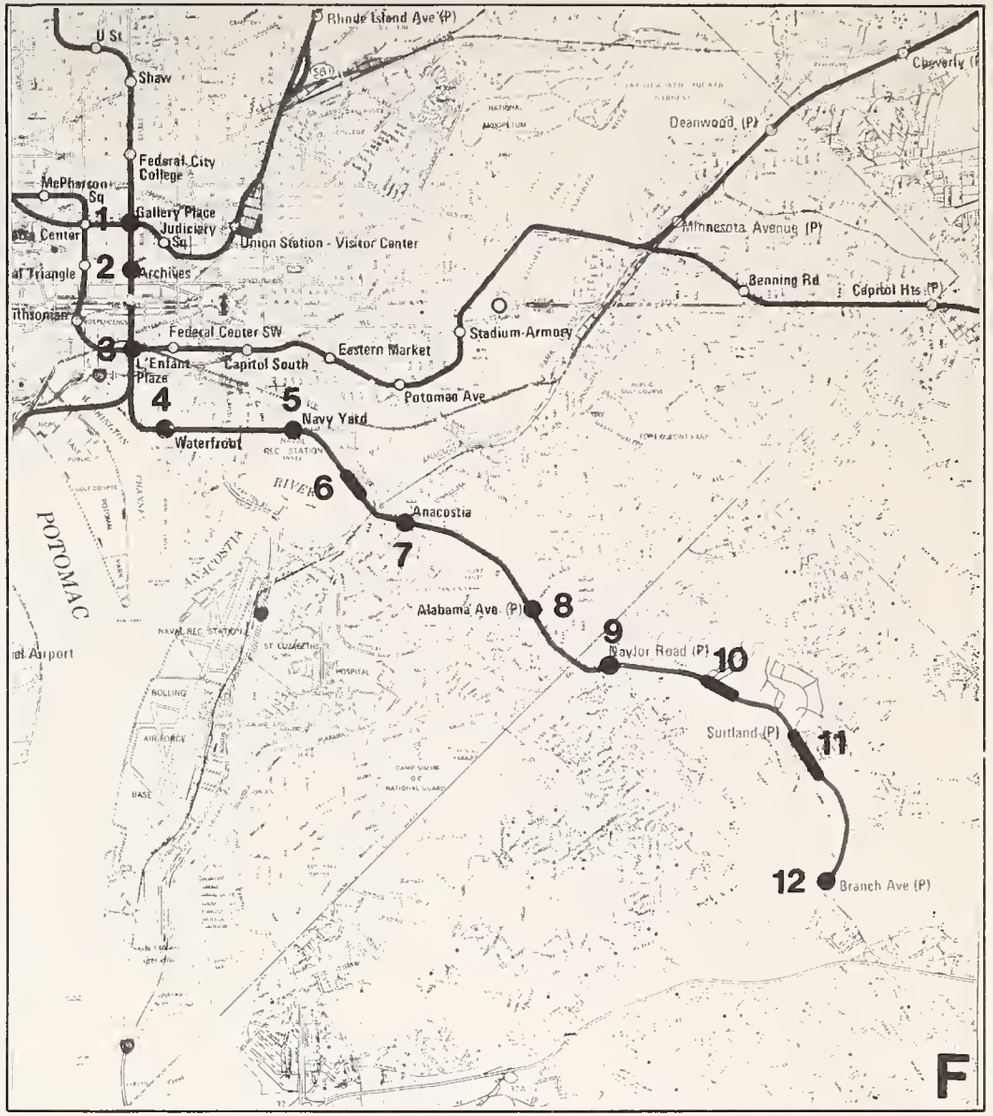
E-F ROUTE CRITICAL AREAS

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
E1		a. Increased regional accessibility of inner city cultural area b. Potential impact upon historic site: a special block including 19 National Landmark category III buildings c. Potential conflict or coordination with the Downtown Urban Renewal Area d. Potential dislocation of businesses e. Increased local development potential	
E2		a. Potential additional traffic hazards to students walking to the Bundy Elementary School, the Seaton Elementary School and Terrell Junior High School b. Increased access by public transportation for some students to the Terrell Junior High School c. Potential conflict or coordination with Downtown Urban Renewal Area and Shaw Urban Renewal Area d. Potential dislocation of existing uses	a. Visual enhancement of area anticipated in association with Metro construction
E3		a. Potential additional traffic hazards to students walking to Montgomery Elementary School and the Morse School b. Increased access by public transportation to some students at the Morse School c. Increased regional accessibility of Howard University d. Potential impact upon historic site, Public Library e. Potential conflict or coordination with Shaw Urban Renewal Area f. Potential dislocation of existing uses	a. Visual enhancement of area anticipated in association with Metro construction b. Design and redesign opportunities in association with station construction
E4		a. Potential additional traffic hazards to students walking to Cleveland Elementary School, Garrison Elementary School, Grimke Elementary School and Garnet-Patterson Junior High School b. Potential conflict or coordination with the Shaw Urban Renewal Area c. Improved access to local commercial and employment centers	
E5		a. Potential additional traffic hazards to students walking to Morse Elementary School and Bruce Elementary School b. Increased access by public transportation to Bell Vocational High School c. Increased regional accessibility of Washington Hospital Center d. Potential conflict or coordination with the 14th Street Urban Renewal Area e. Potential dislocation of existing uses f. Increased local development potential g. Improved access to local commercial and employment centers	a. Design and redesign opportunity in association with station construction
E6	a. Potential disruption of street trees	a. Potential additional traffic hazards to students walking to Petworth Elementary School, Powell Elementary School, Barnard Elementary School, St. Gabriel's School and MacFarland Junior High School b. Increased access by public transportation for some students to St. Gabriel's School, MacFarland Junior High School and Burdick Vocational High School c. Increased regional accessibility of U.S. Soldier's House and Rock Creek Cemetery d. Potential dislocation of businesses	

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
E7	a. Potential disruption of vegetation and wildlife	a. Potential additional traffic hazards to students walking to Backus Junior High School from Fort Totten Station access traffic b. Increased regional accessibility of Catholic Sisters College	a. Visual enhancement of station area anticipated in association with Metro construction
E8	a. Potential disruption of Fort Circle Park b. Potential disruption of vegetation and wildlife		a. Potential visual impingement upon open space and buffer area
E9	a. Potential local air quality problems associated with peak hour Chillum Station access traffic congestion b. Potential disruption of Northwest Branch Park c. Potential disruption of vegetation and wildlife d. Potential impingement upon flood-plain e. Potential acoustical impacts associated with at-grade Metro operation	a. Potential additional traffic hazards to students walking to Chillum School from Chillum Station access traffic b. Increased regional accessibility of De LaSalle College and Carroll Manor House for the Aged c. Potential impact upon historic site: site of potential archaeological interest d. Potential dislocation of residences	a. Potential visual impingement upon open space and buffer area
E10	a. Potential disruption of vegetation and wildlife		
E11		a. Potential additional traffic hazards to students walking to Orem Junior High School from Prince George's Plaza Station access traffic b. Increased access by public transportation for some students to Orem Junior High School c. Potential impact upon historic site: Deakins Hall and cemetery	a. Potential visual enhancement of area anticipated in association with station construction
E12	a. Potential disruption of street trees	a. Potential dislocation of residences	
E13		a. Potential dislocation of residences	
E14	a. Potential impact on parkland; Calvert Park b. Potential disruption of vegetation and wildlife		
E15	a. Potential local air quality problems associated with peak hour College Park Stati on access traffic congestion b. Potential disruption of vegetation and wildlife c. Potential disruption of parkland	a. Potential additional traffic hazards to students walking to College Park School from College Park Station access traffic b. Increased regional accessibility of University of Maryland Laboratories and the University of Maryland c. Potential impact upon historic site: College Park Airport d. Potential dislocation of residences	
E16	a. Potential local air quality problems associated with peak hour Greenbelt Station access traffic congestion b. Potential disruption of vegetation and wildlife c. Potential impingement on flood-plains	a. Potential conflict or coordination with the Lakeland Urban Renewal Area b. Potential dislocation of residences and businesses c. Increased local development potential	a. Potential visual enhancement of area anticipated in association with Metro construction
E17	a. Potential erosion and sedimentation problems in association with Metro construction	a. Potential for dislocation of businesses and residences	
F1		a. Potential conflict or coordination with the Downtown Urban Renewal Area	
F2	a. Potential disruption of street trees	a. Increased regional accessibility of inner city cultural area b. Potential impact upon historic site, National Archives c. Potential conflict or coordination with the Downtown Urban Renewal Area d. Improved regional access to commercial and employment centers e. Increased local development potential	a. Potential visual enhancement of area associated with construction of station

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
F3		a. Increased regional accessibility of inner city cultural area b. Increased regional accessibility of major commercial and employment center c. Potential conflict or coordination with the Southwest Urban Renewal Area	a. Potential visual enhancement of area associated with construction of station
F4		a. Potential additional traffic hazards to students walking to Hawthorne High School, Jefferson Junior High School, Amidon Elementary School, Rowen School and Randall Junior High School from Waterfront Station peak hour access traffic b. Increased access by public transportation for some students to Hawthorne High School, Jefferson Junior High School, Randall Junior High School and Rowen School c. Potential impact upon historic site, Wheat Row d. Potential conflict or coordination with the Southwest Urban Renewal Area	
F5		a. Potential additional traffic hazards to students walking to Van Ness Elementary School from Navy Yard Station access traffic b. Increased regional accessibility of Washington Naval Yard	
F6	a. Potential impact upon Anacostia Park	a. Potential impact upon historic sites, archaeological sites of Indian Campsites	
F7		a. Potential additional traffic hazards to students walking to St. Theresa School, Ketcham Elementary School, Anacostia High School and Kramer Junior High School from Anacostia Station peak hour access traffic b. Increased access by public transportation for some students to St. Theresa School, Kramer Junior High School and Anacostia High School c. Increased regional accessibility of Anacostia Naval Station d. Potential relocation of businesses	a. Potential visual enhancement of area associated with construction of station
F8	a. Potential local air quality problems associated with peak hour Alabama Avenue Station access traffic congestion	a. Potential additional traffic hazards to students walking to Stanton Elementary School from Alabama Avenue Station access traffic b. Increased local development potential c. Improved regional access to local commercial and employment centers	a. Potential visual enhancement of area associated with construction of station
F9	a. Potential disruption of vegetation and wildlife b. Potential disruption of floodplains	a. Increased regional accessibility of Lincoln Memorial Cemetery, Washington National Cemetery and the Federal Records Center b. Potential relocation of businesses and residences c. Increased accessibility of local commercial and employment centers d. Increased development potential	a. Potential visual disruption
F10	a. Potential disruption of parkland, Fort Stanton Park		a. Potential visual disruption
F11	a. Potential parkland impact, Suitland Parkway b. Potential disruption of vegetation and wildlife c. Potential impingement upon floodplains d. Potential parkland impact, Naval Oceanographic Complex	a. Potential additional traffic hazards to students walking to the Suitland School from peak hour Suitland Station access traffic b. Increased regional accessibility of the U.S.N. Hydrographic Office and the U.S. Bureau of the Census c. Increased local development potential d. Improved access to local commercial and employment centers	a. Potential visual disruption

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
F12	a. Potential impingement upon floodplains b. Potential erosion and sedimentation problems associated with Metro construction	a. Increased local development potential b. Improved access to local commercial and employment centers	



Critical area location

*Description on facing page

CRITICAL AREAS*

WMATA SYSTEM IMPACT STATEMENT

ROUTES E-F

½ 0 1 Mile

metro

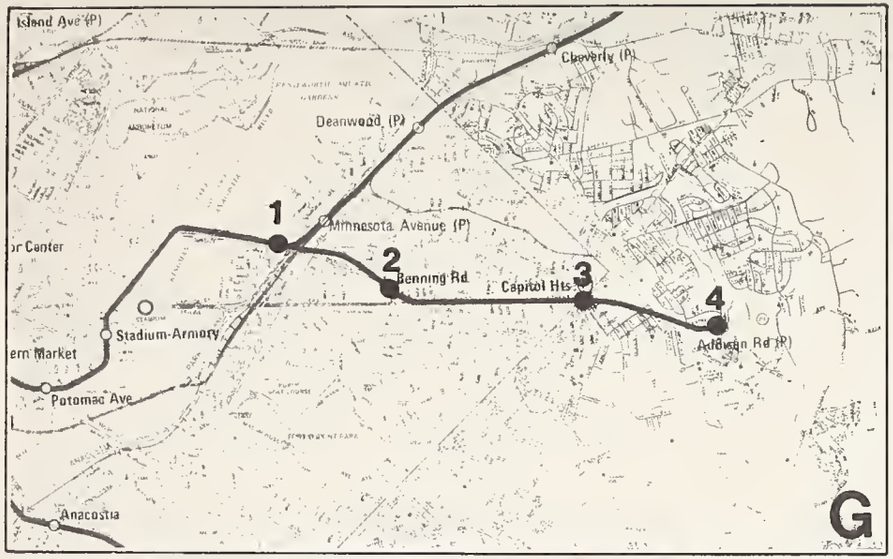
G-H-J-K ROUTE CRITICAL AREAS

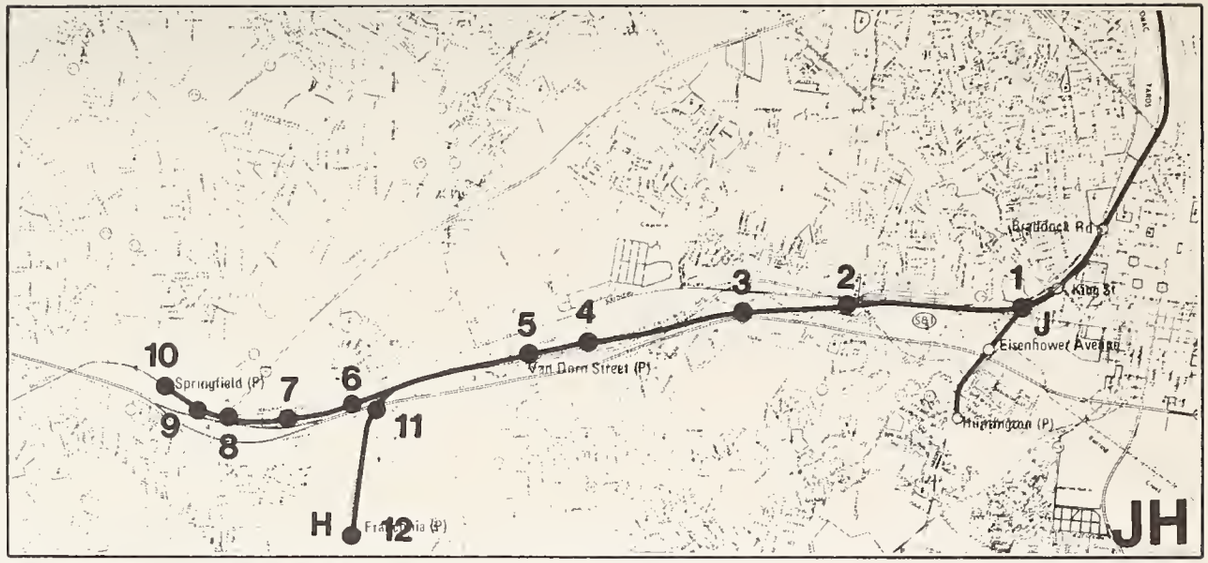
Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
G1	a. Potential impact upon vegetation and wildlife in Fort Mahan Park	a. Potential disruption of parkland function of Fort Mahan Park	
G2	a. Potential disruption of vegetation during construction b. Potential erosion and sedimentation problems from station construction	a. Potential displacement of businesses near Benning Road Station b. Potential additional traffic congestion from station access traffic at peak hour. Potential increase in traffic hazards for any students walking to Plummer School, Smothers School and Kelly Miller Junior High School associated with peak hour station access traffic c. Increased local development potential	a. Potential visual enhancement of area associated with construction of Benning Road Station
G3	a. Potential disruption of vegetation and wildlife associated with station construction b. Potential local air quality problems associated with peak hour Capitol Heights Station access traffic congestion	a. Potential residential displacement near Capitol Heights Station b. Potential for either coordination or conflict between station development and Maryland Park federally assisted code enforcement project number MDE-6 c. Improved regional access to local commercial and employment centers d. Increased local development potential. e. Potential additional traffic congestion from station access traffic at peak hour. f. Potential increase in traffic hazards for any students walking to Evans Junior High School, Capitol Heights School and Maryland Park Junior High School associated from peak hour station access traffic	a. Potential visual enhancement of area associated with construction of station
G4	a. Potential disruption of vegetation and wildlife along Cabin Branch Creek b. Potential local air quality problems associated with peak hour Addison Road Station access traffic congestion	a. Increased local development potential b. Potential additional traffic congestion from station access traffic at peak hour c. Potential increase in traffic hazards for any students walking to Lyndon Hill School and St. Margaret's School from peak hour station access traffic d. Improved regional access to commercial and employment centers	a. Design and redesign opportunity and potential visual enhancement of area from Addison Road Station construction
JH1	a. Potential erosion and sedimentation problems during metro construction	a. Potential traffic disruption during metro construction	
JH2	a. Potential impingement upon Holme's Run floodplain b. Potential disruption of vegetation and wildlife c. Potential erosion and sedimentation problems during metro construction	a. Increased local development potential b. Potential increased traffic congestion during construction	
JH3	a. Potential disruption of vegetation and wildlife b. Potential impingement upon Holme's Run floodplain c. Potential erosion and sedimentation problems during metro construction		
JH4	a. Potential disruption of vegetation and wildlife b. Potential erosion and sedimentation problems from metro construction	a. Potential traffic congestion problems during metro construction	
JH5	a. Potential disruption of vegetation and wildlife b. Potential local air quality problems associated with peak hour Van Dorn Street Station access traffic congestion	a. Potential dislocation b. Increased local development potential c. Potential increased traffic congestion associated with metro construction and station access traffic d. Potential additional traffic hazards to students walking to Holly Hill School from pak hour Van Dorn Street Station access traffic e. Increased regional accessibility by public transportation to the U.S. Army Cameron Station	

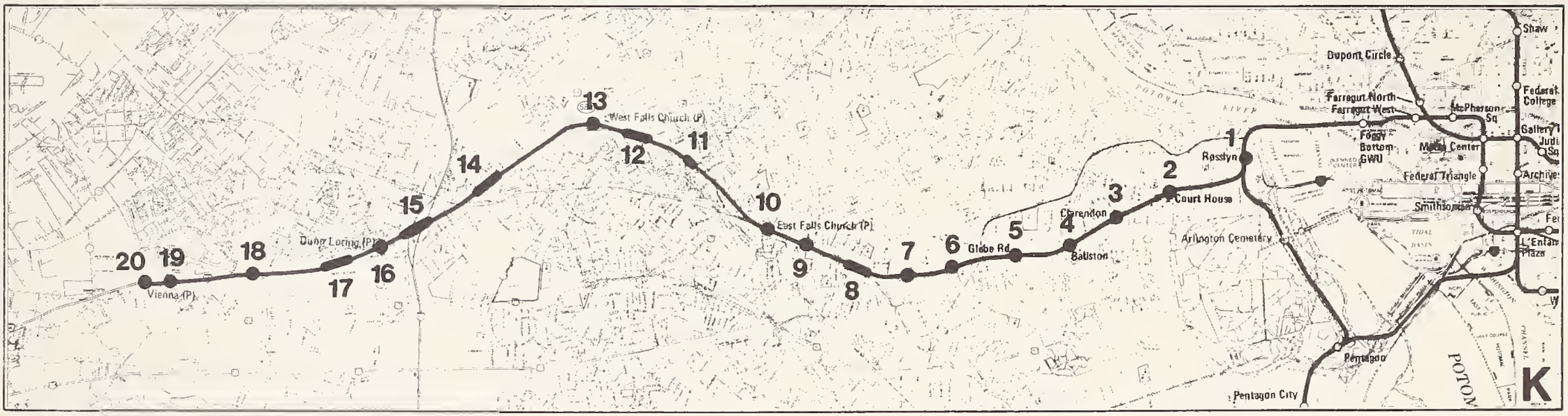
Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
JH6	a. Potential impingement upon floodplains b. Potential disruption of vegetation and wildlife c. Potential erosion and sedimentation problems associated with metro construction d. Potential local air quality problems associated with peak hour Springfield Station access traffic congestion		
JH7	a. Potential impingement upon floodplains b. Potential erosion and sedimentation impact associated with metro construction		a. Potential visual and physical impingement upon open space and buffer area by metro
JH8		a. Potential increase in traffic congestion on Shirley Highway access roads associated with metro construction	
JH9	a. Potential erosion and sedimentation problems associated with metro construction b. Potential disruption of vegetation and wildlife		
JH10	a. Potential impingement upon floodplains	a. Increased local development potential b. Potential additional traffic hazards to students walking to Lynbrook School and Edsall Park School from peak hour access traffic to Springfield Station	
JH11	a. Potential disruption of vegetation and wildlife in Mount Hebron Park associated with metro construction b. Potential erosion and sedimentation problems associated with metro construction	a. Potential traffic congestion problems associated with metro construction	
JH12	a. Potential disruption of vegetation and wildlife b. Potential erosion and sedimentation problems associated with metro construction c. Potential local air quality problems associated with peak hour Franconia Station access traffic congestion	a. Increased local development potential b. Potential additional traffic hazards to students walking to Franconia School, Springfield Estates School, Lee High School and Forestdale School from peak hour Franconia Station access traffic c. Potential increase in accessibility by mass transportation for some students to Lee High School	
K1		a. Improved regional access to major commercial and employment center by means of public transportation b. Potential increase in local traffic congestion from peak hour Rosslyn Station access traffic	
K2		a. Potential displacement of business and residences b. Potential increase in local traffic congestion from peak hour Courthouse Station access traffic c. Increased regional access to Arlington National Cemetery d. Potential additional traffic hazards to students walking to Monroe elementary school from peak hour Courthouse Station access traffic	a. Potential visual enhancement of area anticipated from construction of metro station and facilities
K3	a. Potential erosion and sedimentation problems associated with metro construction	a. Increased local development potential b. Potential increase in local traffic congestion from peak hour Clarendon Station access traffic	
K4		a. Potential displacement of existing uses b. Improved regional access to commercial and employment center by means of public transportation	a. Visual enhancement of area anticipated from construction of metro station and facilities

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
		c. Potential local increase in traffic congestion from peak hour Ballston Station access traffic d. Potential additional traffic hazards to students walking to Maury elementary school, to St. Charles' School and Page School from peak hour Ballston Station access traffic	
K5	a. Potential disruption of vegetation and wildlife b. Potential erosion and sedimentation associated with metro construction	a. Increased local development potential near Glebe Road Station b. Potential increased traffic congestion associated with peak hour Glebe Road Station access traffic c. Potential additional traffic hazards to students walking to Washington-Lee High School from peak hour Glebe Road Station access traffic d. Potential increase in accessibility by mass transportation for some students to Washington-Lee High School	
K6	a. Potential disruption of vegetation and wildlife b. Potential impingement on Lubber Run floodplain c. Potential erosion and sedimentation associated with metro construction		
K7		a. Potential dislocation of existing uses	a. Potential visual impingement by metro upon open space and buffer areas
K8	a. Potential disruption of vegetation and wildlife b. Potential impingement upon floodplain of Four Mile Run c. Potential erosion and sedimentation problems associated with metro construction		a. Potential impingement by metro upon open space and buffer areas
K9	a. Potential disruption of vegetation and wildlife b. Potential impingement upon floodplain of Four Mile Run c. Potential erosion and sedimentation problems associated with metro construction		
K10	a. Potential disruption of vegetation and wildlife b. Potential impingement upon floodplain of Four Mile Run c. Potential erosion and sedimentation problems associated with metro construction	a. Potential dislocation of one or more residences b. Potential increased traffic congestion associated with peak hour East Falls Church Station access traffic c. Improved regional access to commercial and employment centers d. Potential additional traffic hazards to students walking to Tuckahoe School, Stewart School and Madison School	a. Design opportunity and potential visual enhancement of area associated with metro construction
K11	a. Potential impingement upon floodplain of Four Mile Run	a. Potential impact upon historic site, Original Cornerstone, Falls Church	a. Potential visual impingement upon open space or buffer areas by metro
K12	a. Potential disruption of vegetation and wildlife b. Potential impingement upon floodplain of Four Mile Run c. Potential impingement upon parkland d. Potential erosion and sedimentation problems associated with metro construction	a. Increased local development potential	
K13	a. Potential impingement upon floodplain b. Potential local air quality problems associated with peak hour West Falls Church Station access traffic congestion	a. Potential increased traffic congestion from peak hour West Falls Church Station access traffic b. Potential additional traffic hazards to students walking to George Mason High School from peak hour West Falls Church Station access traffic c. Potential increase in accessibility by mass transportation for some students to George Mason High School	a. Potential visual impingement upon open space or buffer areas by metro

Location Number	NATURAL AND ECOLOGICAL IMPACTS	SOCIO-ECONOMIC AND CULTURAL IMPACTS	VISUAL AND DESIGN IMPACTS
K14	a. Potential impingement upon parkland b. Potential erosion and sedimentation problems associated with metro construction	a. Potential impact upon two historic sites, Hollywood Farms and Highland Views, in and near Falls Church	
K15	a. Potential erosion and sedimentation problems associated with metro construction	a. Potential additional traffic congestion from peak hour Dunn Loring Station access traffic on highway access roads	
K16	a. Potential erosion and sedimentation problems associated with metro construction b. Potential disruption of vegetation and wildlife c. Potential local air quality problems associated with peak hour Gallows Road Station access traffic congestion	a. Potential dislocation of existing uses b. Potential additional traffic hazards to students walking to Stemwood School from peak hour Dunn Loring Station access traffic c. Potential impact upon historic site, the Mount and Falls Hill	
K17	a. Potential erosion and sedimentation associated with metro construction		
K18	a. Potential impingement upon Long Branch floodplains b. Potential impingement upon parkland		
K19	a. Potential erosion and sedimentation problems associated with metro construction		
K20	a. Potential disruption of vegetation and wildlife b. Potential impingement upon floodplain c. Potential erosion and sedimentation problems associated with metro construction d. Potential local air quality problems associated with peak hour Vienna Station access traffic congestion	a. Increased local development potential	a. Potential visual impingement upon open space or buffer areas by metro







Critical area location

*Description on facing page

CRITICAL AREAS*

WMATA SYSTEM IMPACT STATEMENT

ROUTES G-H-J-K

½ 0 1 Mile

metro

August 1975