

GEORGETOWN BRANCH

MASTER PLAN AMENDMENT

APPROVED AND ADOPTED
JANUARY 1990



The Maryland-National Capital Park and Planning Commission

ABSTRACT

TITLE: Georgetown Branch Master Plan Amendment

AUTHOR: The Maryland-National Capital Park and Planning Commission
Montgomery County Planning Board

SUBJECT: Georgetown Branch Master Plan Amendment

PLANNING AGENCY: The Maryland-National Capital Park and Planning Commission

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ABSTRACT: This is a comprehensive amendment to the Georgetown Branch Master Plan Amendment (November 1986). This Plan determines that the Georgetown Branch right-of-way is suitable for a combined trolley and trail. It discusses and makes recommendations for implementing a trolley and trail.

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MASTER PLAN AMENDMENT

January 1990

An Amendment to the Georgetown Branch Master Plan Amendment, 1986; the Sector Plan for the Silver Spring Central Business District and Vicinity, 1975, as amended; the Western Portion of the Silver Spring Planning Area, 1971, as amended; the Master Plan for Bethesda-Chevy Chase, Planning Area 35, 1970, as amended; the Sector Plan for the Bethesda Central Business District, 1976, as amended; the North Silver Spring Sector Plan, 1978, as amended; the Master Plan of Bikeways, 1978, as amended; the Master Plan for Historic Preservation, 1979, as amended; being also an amendment to the General Plan for the Physical Development of the Maryland-Washington Regional District, as amended; and the Master Plan of Highways within Montgomery County, as amended.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

8787 Georgia Avenue
Silver Spring, MD 20910

14741 Governor Oden Bowie Drive
Upper Marlboro, MD 20772

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

The Maryland-National Capital Park and Planning Commission is a bi-county agency created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties; the Maryland-Washington Regional District (M-NCPPC planning jurisdiction) comprises 1,001 square miles, while the Metropolitan District (parks) comprises 919 square miles, in the two Counties.

The Commission has three major functions:

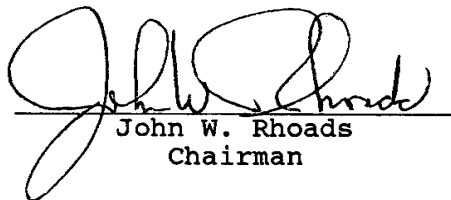
- (1) The preparation, adoption, and, from time to time, amendment or extension of the *General Plan* for the physical development of the Maryland-Washington Regional District;
- (2) The acquisition, development, operation, and maintenance of a public park system; and
- (3) In Prince George's County only, the operation of the entire County public recreation program.

The Commission operates in each county through a Planning Board appointed by and responsible to the county government. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

CERTIFICATE OF APPROVAL AND ADOPTION

This Amendment to the Georgetown Branch Master Plan Amendment, 1986; the Sector Plan for the Silver Spring Central Business District and Vicinity, 1975, as amended; the Western Portion of the Silver Spring Planning Area, 1971, as amended; the Master Plan for Bethesda-Chevy Chase, Planning Area 35, 1970, as amended; the Sector Plan for the Bethesda Central Business District, 1976, as amended; the North Silver Spring Sector Plan, 1978, as amended; the Master Plan of Bikeways, 1978, as amended; the Master Plan for Historic Preservation, 1979, as amended; being also an amendment to the General Plan for the Physical Development of the Maryland-Washington Regional District; and the Master Plan of Highways within Montgomery County, Maryland; was approved by Resolution No. 11-1737 on November 28, 1989. On November 30, 1989, Resolution No. 11-1737 was reconsidered, amended, readopted and approved. The Montgomery County Executive approved the amendment on December 8, 1989; and the Maryland-National Capital Park and Planning Commission adopted this amendment by Resolution No. 90-1 on January 17, 1990, after a duly advertised public hearing pursuant to Article No. 28 of the Annotated Code of Maryland, 1986 (1988 Supplement).

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THE MASTER PLAN AMENDMENT PROCESS

Staff Draft — This document is prepared by the Montgomery County Planning Department for presentation to the Montgomery County Planning Board. It is a working paper that identifies the major issues being addressed by the proposed amendment. Alternative courses of action and specific recommendations are presented. The public is given the opportunity to comment on the Staff Draft, often at worksessions. A Preliminary Draft Amendment is then prepared for approval by the Planning Board. The Preliminary Draft incorporates those changes to the Staff Draft which the Planning Board considers appropriate.

Preliminary Draft Amendment — This document is a formal proposal to amend an adopted master plan. It is prepared by the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission. Before proceeding to publish a Final Draft Amendment, the Planning Board must hold a public hearing. After the close of the record of this public hearing, the Planning Board holds open worksessions to review the testimony, and to determine whether to make any revisions to the Preliminary Draft.

Final Draft Amendment — This document contains the Planning Board's final recommendations. It is transmitted to the County Executive, who must review it and forward it to the County Council, with any revisions deemed appropriate. If the County Executive makes no revisions in the Planning Board's final draft, the Council may adopt the unchanged draft without holding a public hearing. If the Executive does make revisions, or if the Council wishes to consider any revisions, the Council must schedule a public hearing. After the close of record of this public hearing, the Council holds an open worksession to review the testimony, and then adopts a resolution approving, modifying, or disapproving the Final Plan Amendment.

If the Council action modifies and approves the Executive's Revised Final Draft Amendment, the Approved Amendment must be sent to the County Executive for approval or disapproval. If disapproved by the County Executive, the Council may override the disapproval of the Plan by an affirmative vote of five members.

Failure of either the County Executive or the Council to act within the prescribed time limits constitutes approval of the plan amendment as submitted to the body which fails to act.

Adopted Amendment — The amendment approved by the County Council is forwarded to The Maryland-National Capital Park and Planning Commission for adoption. Once adopted by the Commission, the amendment officially amends the various master plans cited in the Commission's adoption resolution.

NOTICE TO READERS

An area master plan, after approval by the County Council and adoption by the Maryland-National Capital Park and Planning Commission, constitutes an amendment to the General Plan for Montgomery County. As such, it provides a set of comprehensive recommendations and guidelines for the use of publicly and privately owned land within its planning area. Each area plan reflects a vision of future development that responds to the unique character of the local community within the context of a County-wide perspective.

Area master plans are intended to provide a benchmark point of reference with regard to public policy. Together with relevant County-wide functional master plans, they should be referred to by public officials and private individuals when decisions are made that affect the use of land within the plan's boundaries. It should be noted that master plan recommendations and guidelines are not intended to be specifically binding on subsequent actions, except in certain instances where an ordinance or regulation requires a specifically defined linkage to be established. The precise timing and character of public facility projects are determined annually through the Capital Improvements Program and the Operating Budget.

Master plans generally look ahead to a time horizon of about 20 years from the date of adoption, although it is intended that they be updated and revised about every ten years. It is recognized that the original circumstances at the time of plan adoption will change over time, and that the specifics of a master plan may become less relevant as time goes on. Any sketches or site plans in an adopted plan are for illustrative purposes only, and are intended to convey a general sense of desirable future character rather than any specific commitment to a particular detailed design.

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Plan Recommendations

PLAN RECOMMENDATIONS

General Recommendations

This Plan recommends:

1. The designation of the Georgetown Branch right-of-way as suitable for use as the Silver Spring & Bethesda Trolley and the Capital Crescent Trail between Silver Spring and Bethesda.
2. The designation of this use of the right-of-way with specific guidelines and recommendations to assure minimization of the potential impact of such a facility upon abutting neighborhoods.
3. The support of the recommendations and findings of the *Georgetown Branch Corridor Study* with the specific modifications concerning implementation as detailed in this Master Plan Amendment.
4. That there be no change to the existing adopted land uses of the properties within 1,000 feet either side of the Georgetown Branch right-of-way, except as already recommended by the *Bethesda-Chevy Chase Master Plan* in the Chevy Chase Lake area and in the *Silver Spring Central Business District Sector Plan*.
5. That the existing zoning of properties within 1,000 feet either side of the Georgetown Branch right-of-way from Silver Spring to the District of Columbia be reconfirmed, except as already recommended by the *Bethesda-Chevy Chase Master Plan* in the Chevy Chase Lake area.
6. That any additional new growth capacity that may be made available by the addition of the trolley facility be allocated through the appropriate future Annual Growth Policy (AGP) as adopted by the County Council, and that such allocation be to support residential developments within the Bethesda and Silver Spring Central Business Districts.

7. That five trolley stations between Bethesda and Silver Spring be designated. Four of these should be "express stations" (Bethesda Terminal, Chevy Chase Lake/Connecticut Avenue, Lyttonsville, and Silver Spring Terminal) operating at all times; the other one (Spring Street Station) should be a "local" station, operating only during non-rush-hour day, evening, and weekend hours. This Plan does not deal with the question of specific station design, but recommends that detailed designs be reviewed at appropriate subsequent stages through the mandatory referral process.
8. That three additional locations for potential future "local" stations (for a total of eight) in the vicinity of East-West Highway and Lynn Drive, Jones Mill, and Woodside (16th Street) be designated.
9. That all opportunities for reducing noise at the source be evaluated and identified. The need for noise barriers should then be assessed on a site-by-site basis, based on both the American Public Transit Association (APTA) and M-NCPPC criteria.
10. That all opportunities for stormwater management control associated with the construction of the trolley/trail, including options on the Columbia Country Club property and along Coquelin Run at Rock Creek, be undertaken during the design phase for the trolley facility. Improved stormwater management control will be needed in this area regardless of whether or not the trolley/trail is built, because only limited controls are currently in place.
11. That field examination and delineation of all wetland areas within or affected by trolley/trail uses in this right of way be undertaken to identify any wetland areas not on the National Wetlands Inventory maps. In particular, the final design and location of pedestrian and bicycle trail connections in the Coquelin Run vicinity should not occur prior to this delineation.
12. That final design and engineering provide for: the stabilization of the local storm drainage conveyance system; the provision of regional stormwater management controls; the maintenance or removal of diseased, damaged, and dead trees; the identification of specific trees and vegetation to be avoided during the construction process; the stabiliza-

tion and reforestation of reconstructed slopes within and near the right-of-way; and the field adjustment of the trail alignment to avoid significant trees. (Unless otherwise stated, this Plan supports the specific regulations of the *Georgetown Branch Corridor Study*.)

13. That every effort possible be made to ensure that existing trees along the trolley/trail route are preserved wherever possible and that replacement of trees is of a sufficient quantity and quality to preserve and enhance the environment.
14. That the trolley and trail be constructed at the same time to reduce community impact and to provide for the vitality of the trail as soon as possible.
15. That staging construction and related trolley/trail construction activities be designed to minimize disruption to adjacent communities and be coordinated with the Parks Department, especially in the crossing of Coquelin Run Parkway and Rock Creek Park.
16. That once the trolley/trail is approved, the County Executive, the Montgomery County Council, and the Montgomery County Planning Board will conduct further detailed critiques of the design and operation of the trolley/trail through the Capital Improvements Program and the mandatory referral process.

Specific Recommendations

This Plan recommends:

17. That the southern entrance to the Bethesda Metrorail Station be connected to the trolley facility to provide a convenient, direct transfer from the Bethesda Terminal Station to the Metrorail system.
18. That the Bethesda Station design include an extension of a concourse through the platform area in order to provide adequate trail width and safety.
19. That an above-grade trolley/trail crossing be designated at Connecticut Avenue.

20. That an additional "kiss-and-ride" area be designated on the east side of Connecticut Avenue.
21. That a trail and picnic area be constructed in the vicinity of the trolley crossing of the Coquelin Parkway right-of-way on a tributary of Coquelin Run. The picnic area should be oriented to the trail rather than placed near the stream.
22. That any trail constructed in the Coquelin Run area be set back from the stream at least 50 feet, wherever possible.
23. That the trail continue adjacent to the trolley from Talbot Avenue to the Spring Street Station.
24. That the proposed Lyttonsville Shop/Yard be located at the northwest side of the Lyttonsville Place Bridge on Montgomery County Department of Transportation (MCDOT) property. This may require the acquisition of a parcel currently owned by Montgomery County, Maryland.
25. That the trolley crossing of the Metropolitan Branch be a below-grade tunnel or underpass.
26. That the need for control of structure-borne noise and vibration emanating from the elevated structure east of the CSX tracks be evaluated to assure compatibility with the existing residential and office uses in close proximity.
27. That any additional right-of-way need for future possible double track configuration along the Metropolitan Branch be identified for future dedication through the subdivision process.
28. That funds available for public art through Montgomery County's Art in Public Facilities program and the State of Maryland's Art in Public Facilities program be used to enhance the architectural features and treatment of the trolley/trail facilities and amenities between Silver Spring and Bethesda.

Chapter I

Master Plan Framework

CHAPTER I. MASTER PLAN FRAMEWORK

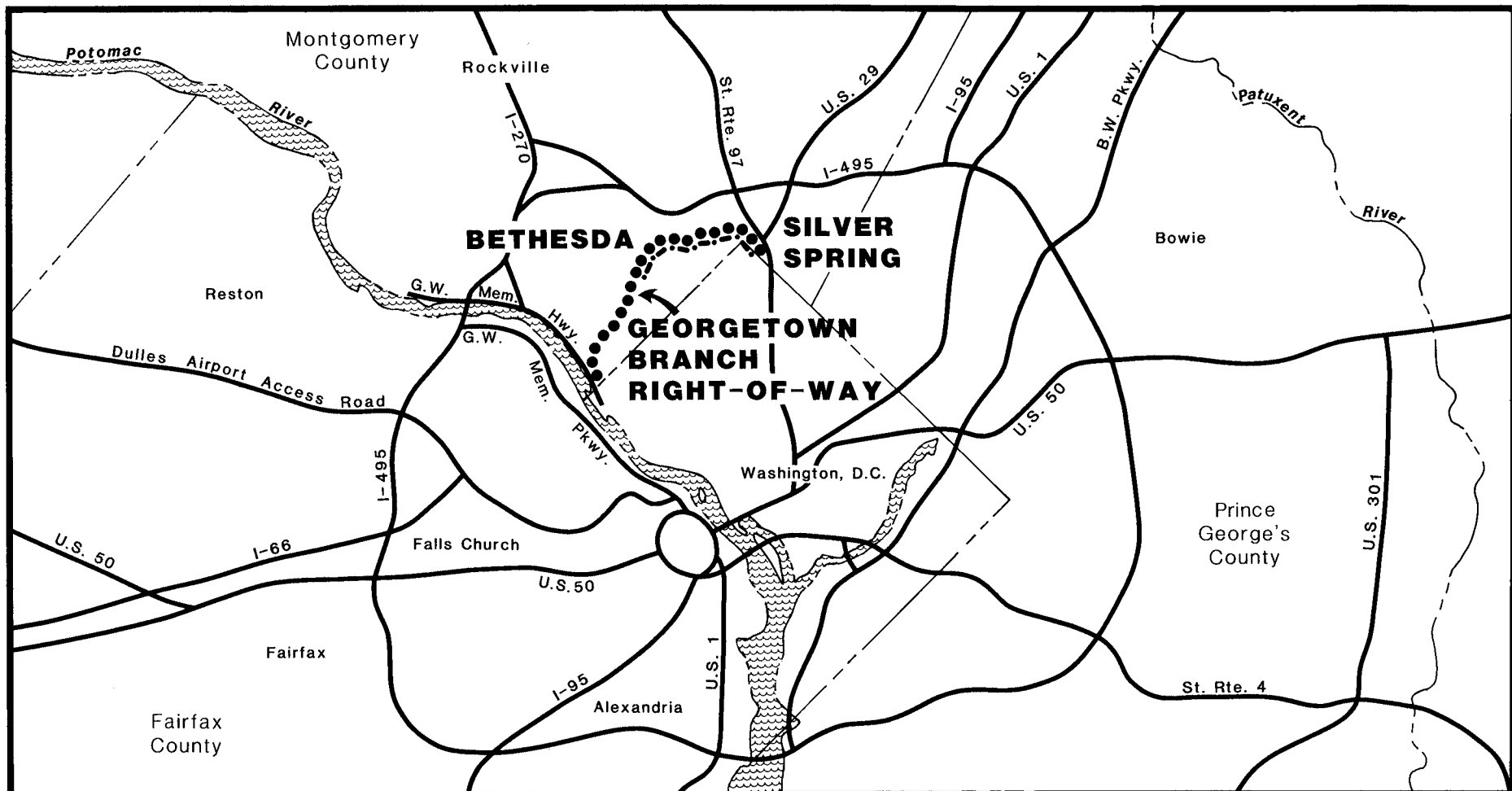
INTRODUCTION

The Georgetown Branch right-of-way, a spur freight line formerly owned by CSX Transportation, Inc. (CSX), extends for 6.76 miles from Lyttonsville, through Bethesda, to the boundary of the District of Columbia, as shown on Figure 1. The geographical area of this Plan includes the easternmost 3.3 miles of the right-of-way, plus 1.1 miles from the Georgetown junction to the Silver Spring Central Business District. The entire length of the trolley/trail between Bethesda and Silver Spring is 4.4 miles (shown on Figure 2). The right-of-way is the last remaining, undeveloped east-west corridor in lower Montgomery County. It traverses several planning areas. This Plan amends the *Georgetown Branch Master Plan Amendment* of November 1986 and focuses on the suitability of trolley/trail use for the Georgetown Branch right-of-way.

This Plan designates the Silver Spring & Bethesda Trolley and the Capital Crescent Trail as a suitable use for the 4.4-mile portion of the Georgetown Branch right-of-way between Bethesda and Silver Spring. It provides guidelines and recommendations regarding the location of trolley/trail facilities to minimize potential environmental and community impacts of such a facility upon abutting neighborhoods. The Plan addresses the impacts on traffic and development and project costs. The Plan supports the findings associated with the trolley/trail alternative of the Georgetown Branch Corridor Study, with specific modifications concerning its implementation. This Plan concludes that the use of the right-of-way for a trolley/trail meets both community and County-wide transportation and recreational goals.

BACKGROUND

The November 1986 *Georgetown Branch Master Plan Amendment* designated the right-of-way “a public right-of-way intended to be used for public purposes such as conservation, recreation, transportation, and utilities. It is not to be used for a continuous roadway.” After the CSX Transportation, Inc. (CSX), officially abandoned the right-of-way through the Interstate Commerce Commission, the Montgomery County Government purchased the Georgetown Branch pursuant to Section 8(d) of the National Trails System Act for \$10.5 million in December 1988. The

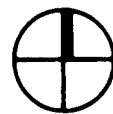


REGIONAL LOCATION

- Georgetown Branch Right-of-Way
- Trolley/Trail Segment

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

JAN. 1990



FIGURE

1

November 1986 Amendment also noted that “any use of the right-of-way for a transitway between Silver Spring and Bethesda will require a future master plan amendment.” The 1986 Master Plan Amendment refers to transit use without specifying what type of technology it would be.

The Montgomery County Department of Transportation (MCDOT), a team of consulting firms, and the Georgetown Branch Task Force have been studying various transit alternatives, including technical engineering and operational considerations, for the Georgetown Branch right-of-way. Various alternatives, including diesel buses, were examined. The predominantly single-track trolley line was selected as the best alternative because of its low noise and lack of noxious emissions, and the minimal grading and environmental disturbances to the existing right-of-way.

During the two-year study period, the firms of DeLeuw Cather/Parsons Brinkerhoff have completed the Georgetown Branch Corridor Study for the Montgomery County Department of Transportation. The study examined alternative transit modes, including trail and recreational uses of the right-of-way, including a portion of the Metropolitan Branch line connecting the Georgetown Branch spur line with the Silver Spring Metro site in downtown Silver Spring. The study also examined recreation options between Bethesda and the District of Columbia.

Throughout its preparation, a three-tiered task force has monitored and directed the study. The three groups include: (1) Technical Advisory Committee (TAC) — representing several local, regional, and State agencies, (2) Citizens Advisory Committee (CAC) — representing civic associations along the right-of-way, the Bethesda and Silver Spring business communities, and some informed citizens from elsewhere in the County, and (3) Steering Committee — composed of representatives from the Montgomery County Department of Transportation, the Montgomery County Planning Board, the Montgomery County Council, the Maryland Department of Transportation, the Citizens Advisory Committee, and the Rails-to-Trails Conservancy.

The trolley/trail project has evolved over many years due to the work of local government agencies, extensive citizen participation activities, and a variety of private sector advocacy and research groups interested in specific transit and recreational uses of the right-of-way. The diligent work of these various groups and their dedication to preserving the right-of-way for public benefit are clear. The project has been controversial, including varying trolley ridership projections, and

engendered great debate among various interest groups. The trolley/trail project meets both transit and recreational goals for the residents of the Washington Metropolitan area.

During the study of the right-of-way, several publicly and privately sponsored studies were conducted. A list of related studies is included in the Bibliography. During the preparation of the Plan, the staff has taken these studies into consideration. The *Georgetown Branch Corridor Study* (Final Report, May 1989) served as the basis for this Plan. The area of the study impact corridor is shown in Figure 2.

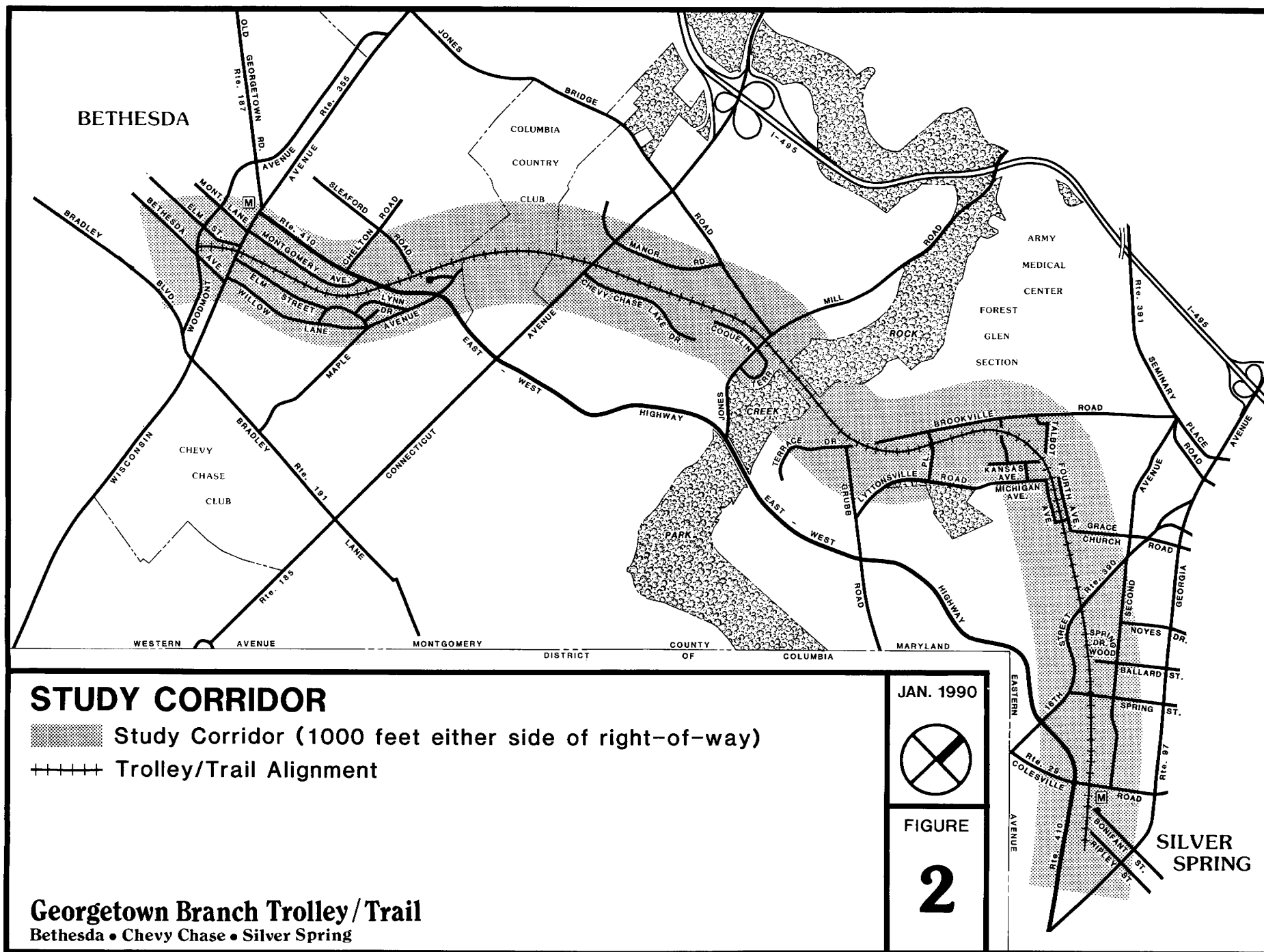
A summary of the *Georgetown Branch Corridor Study* follows:

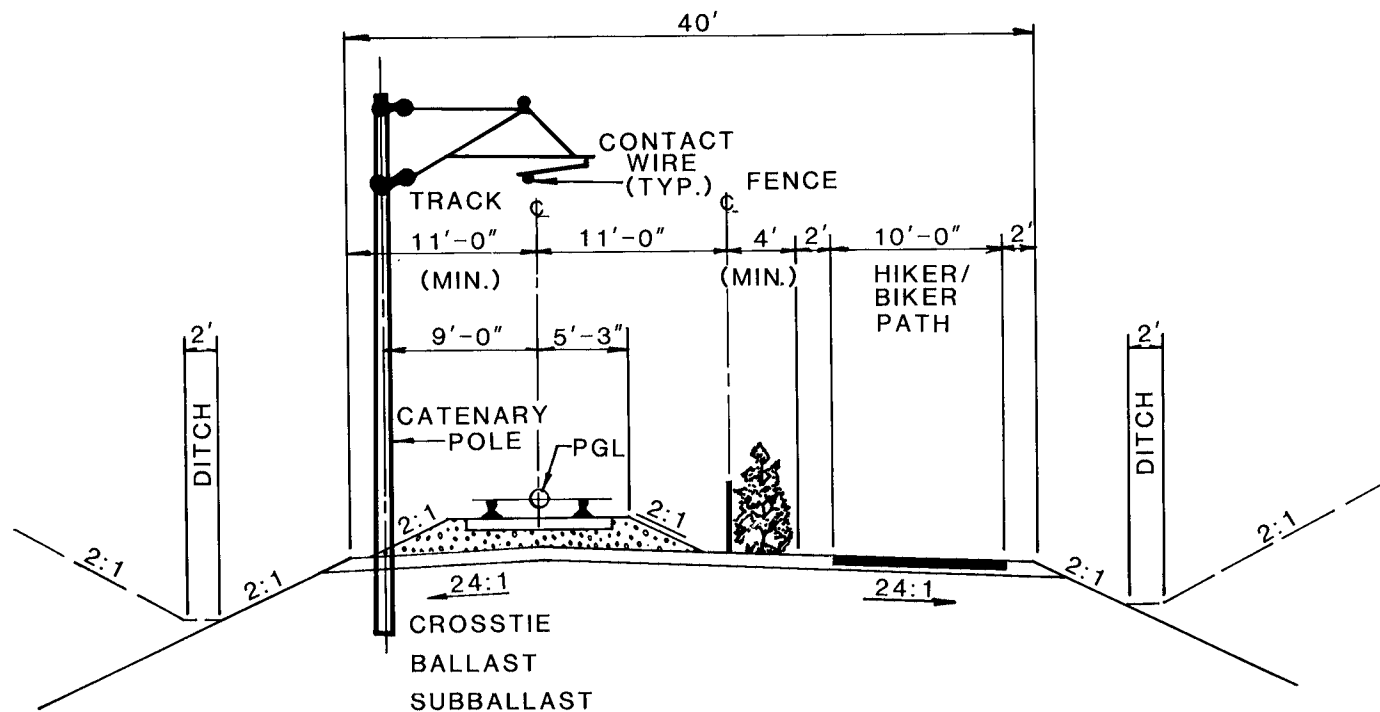
The Georgetown Branch Trolley/Trail extends from the Bethesda CBD, in the vicinity of Woodmont and Bethesda Avenues, to its proposed terminus adjacent to the Silver Spring Metrorail station, a length of 4.4 miles. The trolley is predominantly a single track operation with four double track sections. The track is a standard light rail transit gauge; the route length is approximately 22,000 feet. The double track sections are necessary to maintain peak period trolley headways of six minutes, mid-day headways of ten to twelve minutes, and weekend headways of fifteen minutes. Typical sections are shown in Figures 3 and 4 and the location of double track cross sections is shown in Figure 15A & 15B.

THE TROLLEY SYSTEM

Trolley service will be provided by electric light rail vehicles (LRV). The trolley vehicles can be coupled to form multi-car units. For the overhead power supply to the trolley, a catenary system composed of simple catenary, and double and single contact wire will be used. For a detailed description of the trolley system, see the *Georgetown Branch Corridor Study*.

The hours of operation will approximate the Metrorail schedule, 6 AM through midnight on weekdays and a somewhat reduced schedule for the weekends. Trolley stations will be located at Bethesda, East-West Highway, Chevy Chase Lake/Connecticut Avenue, Lyttonsville, Spring Street, and Silver Spring. The Bethesda and Silver Spring Terminal Stations are within walking distance to Metrorail stations and all stations will be served by existing or planned Metrobus or Ride-On bus service. A “kiss-and-ride” facility is being considered for the Chevy Chase Lake/Connec-





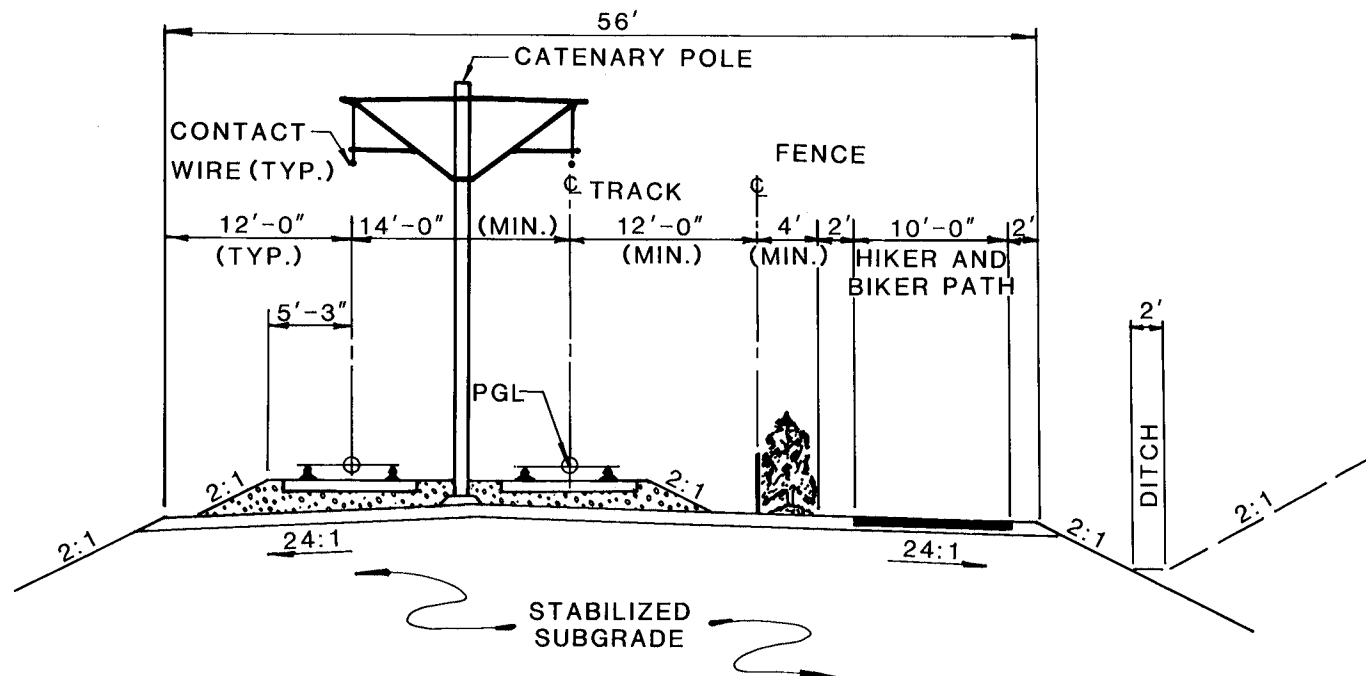
TYPICAL SECTION: SINGLE TRACK WITH HIKER/BIKER TRAIL

JAN. 1990

FIGURE

3

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring



TYPICAL SECTION: DOUBLE TRACK WITH HIKER/BIKER TRAIL

JAN. 1990

FIGURE

4

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

ticut Avenue and Lyttonsville express stations. There will be a shop and yard in Lyttonsville for the maintenance of trolley vehicles.

THE TRAIL SYSTEM

A paved 10-foot-wide combined hiker/biker trail parallels the trolley along the south side from Woodmont Avenue to Talbot Avenue, a distance of about 3.2 miles. The trolley and adjoining trail will be primarily grade-separated except for the at-grade crossings at Connecticut Avenue and Stewart Avenue in Lyttonsville. Grade separation at other points will consist primarily of tunnels, underpasses, and bridges. Public access to the trail from the north and south is provided from most cross streets, at all stations, and from trail connections located along the alignment. From the Talbot Avenue bridge, east to the Silver Spring CBD, the trail would continue as a bike route along local streets to the Silver Spring Terminal Station.

The hiker/biker trail will provide access to the regional trail system. To facilitate its use, local pedestrian and bicycle access has been designed along the entire trail alignment. Bicycle racks will be provided at all stations. The trail will include directional, safety, and information signs, including interpretive signs about the history of the area or natural features of the trail.

The trolley/trail has been designed to fully utilize the existing railroad right-of-way while minimizing the need for additional right-of-way. The minimum distance between the operating limits of the LRT and the trail is 12 feet. Where the right-of-way is exceptionally constrained and safe horizontal distance cannot be maintained, vertical separation is required. Landscaping and fencing have been proposed to deter hiker/bikers from crossing onto the trolley tracks. A detailed landscaping plan and maintenance program will be required along the trail from Woodmont Avenue in Bethesda to Third Avenue in Silver Spring.

PLANNING PROCESS

The planning process for this Plan follows the steps outlined in the Master Plan Amendment Process (see page v-vi). Following the evaluation of the *Georgetown Branch Master Plan Amendment* and the findings of related studies, the Montgomery County Council will make a final decision about the use of the right-of-way. If the trolley/trail project is implemented by the County

and/or State, then the County Executive, the Montgomery County Council, and the Montgomery County Planning Board will conduct further detailed review of the design and operation of the trolley/trail through the Capital Improvements Program and the mandatory referral process.

VISION

The Georgetown Branch right-of-way is a valuable resource suited for a variety of transportation and recreational uses. As the only remaining down-County, undeveloped east-west corridor, it provides a unique opportunity to expedite transportation between two major business districts — Bethesda and Silver Spring. By connecting these two urban and residential areas, it will also improve public transportation by linking the two north-south branches of the Metrorail line.

It also provides an important opportunity to link local and regional trails which traverse the Rock Creek and Potomac basins. Since the right-of-way extends from Lyttonsville to the District of Columbia, it also provides a continuous right-of-way for a variety of recreational, transportation, and conservation activities.

The trolley/trail will not alter the cohesion, integrity, or stability of the neighborhoods. The hiker/biker trail is designed to provide formal and safe pedestrian and bicycle access between neighborhoods. The neighborhood access points will enhance transit service and recreational opportunities associated with the trail. By making trolley service convenient, it will also increase residents' opportunities to increase their local, regional, and County mobility. If the trolley/trail is implemented, it will be a tremendous resource for the community.

Chapter II

Land Use, Zoning, and

Design Issues

CHAPTER II. LAND USE, ZONING, AND DESIGN ISSUES

OVERVIEW

This Plan recommends no change in either the land use or zoning within the 1,000-foot corridor on either side of the Georgetown Branch right-of-way. The impacts of the operation and location of trolley/trail facilities, including the shop/yard, the crossings of major roads, and the CSX Mainline, on abutting land uses are the major issues within this chapter. To construct the trolley/trail project, little additional property will be required since the trolley/trail will be constructed within the right-of-way, with the exception of central business district land in Silver Spring required for the site of the Silver Spring Station. Residential property acquisition will be minimal; less than one acre will be required for trail connections or access points to the trolley/trail.

The land use section of this chapter protects existing land uses on properties abutting the right-of-way by reconfirming the already recommended residential, commercial, industrial, and recreational land uses abutting the Georgetown Branch right-of-way. The zoning section of this chapter reconfirms existing zoning within the corridor abutting the Georgetown Branch right-of-way. Adopted master plans along this right-of-way are the *Bethesda CBD Sector Plan*, *Bethesda-Chevy Chase Master Plan*, the *Western Portion of the Silver Spring Planning Area*, the *North Silver Spring Sector Plan*, and the *Silver Spring CBD Sector Plan*. This Plan amends the land use plans of these plans to designate the right-of-way for a trolley/trail and designate station and yard facilities. This Plan also amends several trail locations. The specific amendments to these master plans are shown on Figures 5, 6, 7, 8, and 9. The maps only include the area approximately 1,000 feet either side of the right-of-way. This chapter also includes a discussion of design issues related to station design and landscaping.

LAND USE, ZONING, AND DESIGN RECOMMENDATIONS

LAND USE RECOMMENDATIONS

Maintain the recommended land uses of the properties abutting the Georgetown Branch right-of-way except as already recommended by the pending *Bethesda-Chevy Chase Master Plan*. The ex-

istence of the trolley/trail along the Georgetown Branch right-of-way should not be used to justify granting of special exceptions in this area.

ZONING RECOMMENDATIONS

Reconfirm existing zoning of properties within 1,000 feet of either side of the Georgetown Branch right-of-way by affirming the recommendations of the respective master plan or sector plan regarding zoning of specific parcels.

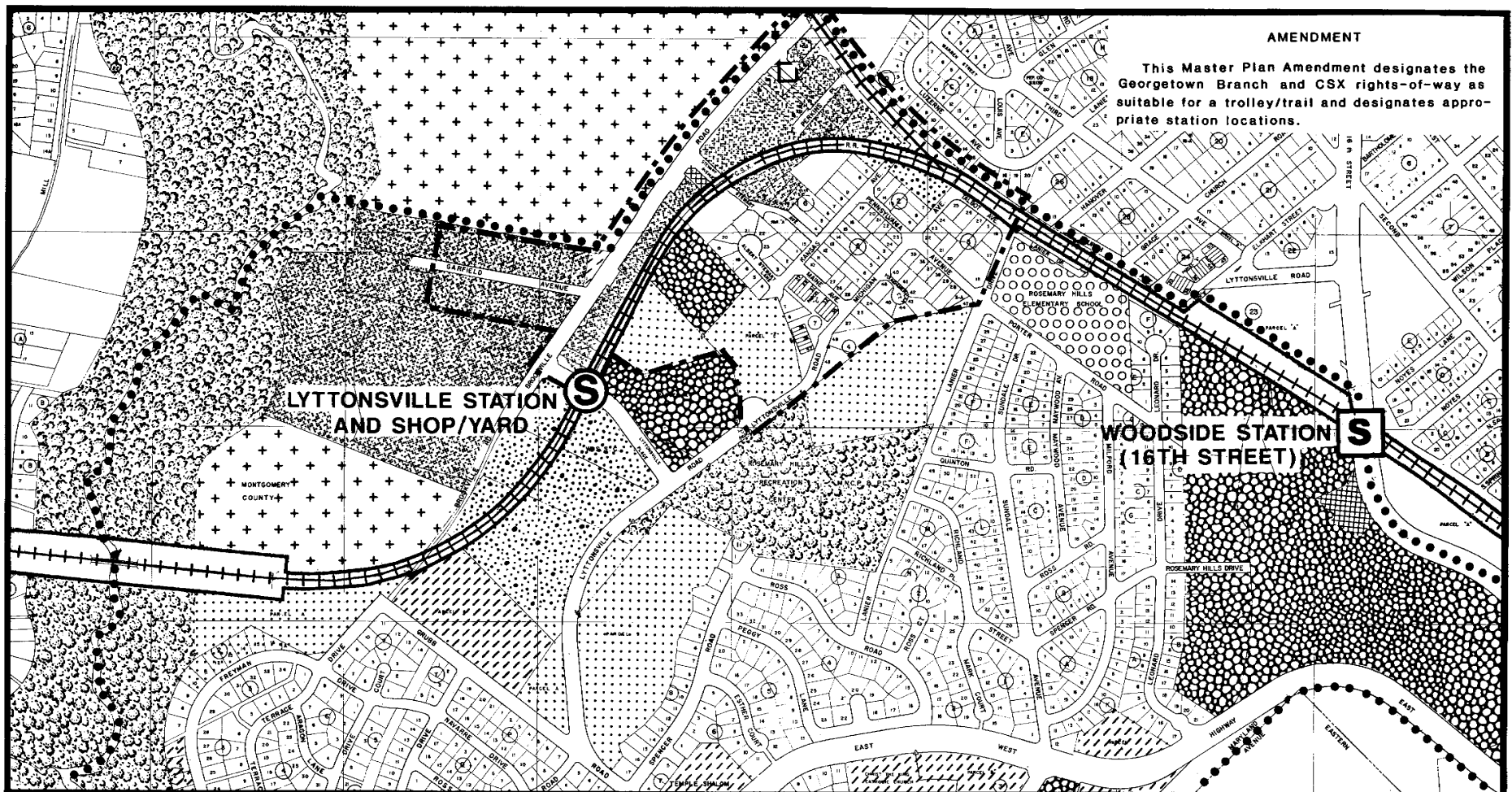
The Bethesda-Chevy Chase Master Plan and the *Silver Spring Sector Plan* are currently being revised. After these plans are adopted by the Montgomery County Council, sectional map amendments will be developed. The ultimate zoning recommendations of these plans will be put into effect through the sectional map amendment process.

DESIGN RECOMMENDATIONS

Design trolley/trail facilities, including the stations and yard/shop, to be compatible with the historical and architectural character of adjacent communities, while maintaining high visual and aesthetic standards.

DISCUSSION: LAND USE

The 1,000-foot corridor on either side of the Georgetown Branch right-of-way encompasses a wide variety of existing land uses. The land use plans for the areas immediately adjacent to the Georgetown Branch right-of-way are noted in Figures 5, 6, 7, 8, and 9. The original sources of these maps are noted on the maps. This Plan modifies the land use plans of the *Sector Plan for the Bethesda Central Business District* (1976), the *Master Plan for the Bethesda-Chevy Chase* (1970), the *Western Portion of the Silver Spring Planning Area*, (1971), the *North Silver Spring Sector Plan* (1978) and the *Sector Plan for the Silver Spring Central Business District and Vicinity* (1975) by designating the Georgetown Branch and CSX rights-of-ways as suitable for a trolley/trail and designates appropriate station locations.



AMENDMENT

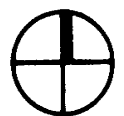
This Master Plan Amendment designates the Georgetown Branch and CSX rights-of-way as suitable for a trolley/trail and designates appropriate station locations.

LAND USE PLAN: WESTERN PORTION OF THE SILVER SPRING PLANNING AREA

- | | | |
|---|------------------------------|----------------------------------|
| Single Family Residential | General Commercial | Park and Recreation |
| Multi-Family Residential Medium Density | Industrial | Utility |
| Multi-Family Residential High Density | School (Existing Elementary) | County and Federal Government |
| Local Commercial | Church and Institution | Lyttonsville Renewal Area |
| Proposed Station Location | | Future Station Location |
| Planning Area Boundary | | Proposed Trolley/Trail Alignment |

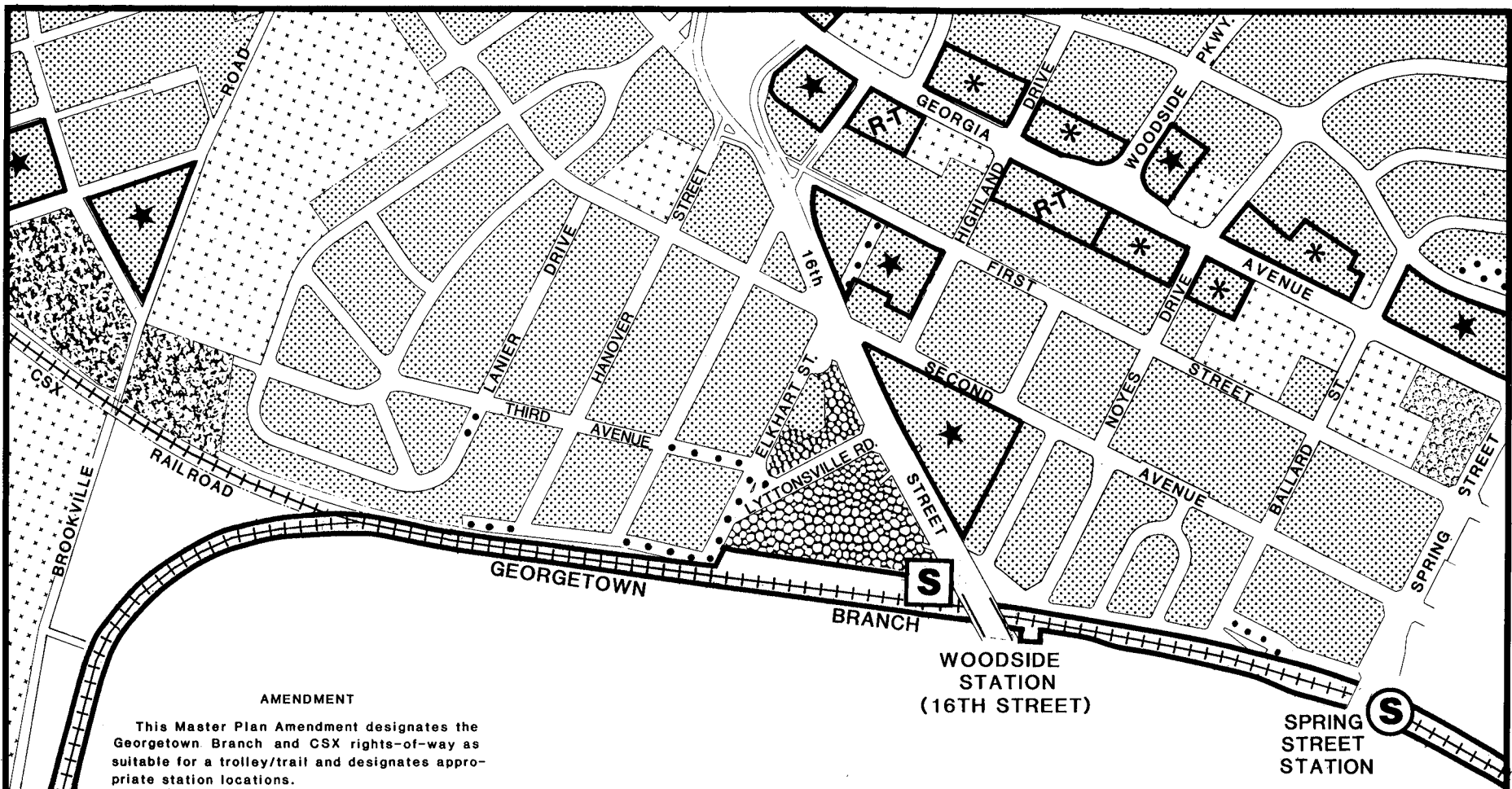
Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

JAN. 1990



FIGURE

7



LAND USE PLAN: SECTOR PLAN OF NORTH SILVER SPRING

RESIDENTIAL



Low Density



Medium Density
(85-145 DU/ACRE)



High Density
(145-435 DU/ACRE)



Suitable For R-60 Cluster



Suitable For Townhouses,
if Assembled



Suitable For Professional Offices
as a Special Exception Use

COMMERCIAL



Light Industrial



PUBLIC
Parks & Open Space



Public & Semi-Public



Proposed Trolley/
Trail Alignment



Proposed Station
Location



Future Station
Location

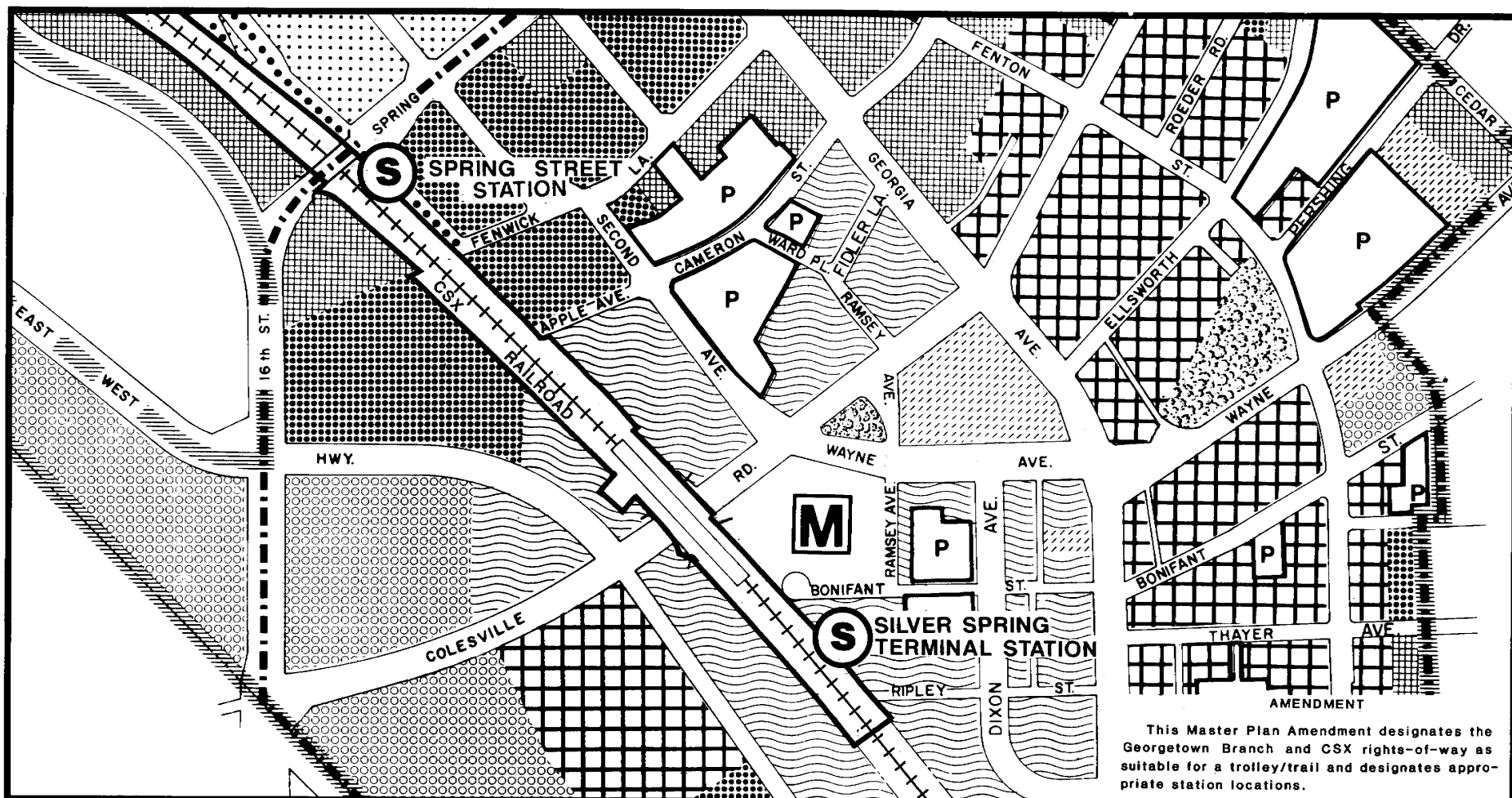
Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

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FIGURE

8



This Master Plan Amendment designates the Georgetown Branch and CSX rights-of-way as suitable for a trolley/trail and designates appropriate station locations.

LAND USE PLAN: SECTOR PLAN OF SILVER SPRING CBD & VICINITY

- | | | |
|------------------------------|------------------------|----------------------------------|
| Low Intensity Residential | Office | Public Parking |
| Medium Intensity Residential | Commercial | Proposed Trolley/Trail Alignment |
| High Intensity Residential | Public and Semi-Public | Proposed Station Location |
| Mixed Use Development | Public Park | CBD Boundary |
| | | Sector Plan Boundary |

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

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FIGURE

9

Extending from Woodmont Avenue in the Bethesda Central Business District, the trolley/trail right-of-way traverses office and commercial/retail uses, residential uses, and a large private recreational club to reach the station at Chevy Chase Lake/Connecticut Avenue. Within the station vicinity there are office, commercial, and residential uses. The right-of-way continues east through residential areas combined with a variety of community facilities to Rock Creek Park.

From Rock Creek Park, the right-of-way continues to the Lyttonsville community, a mix of industrial, commercial and residential land uses. After traversing an industrial area, the right-of-way merges with the CSX Mainline. The trolley/trail will continue within designated rights-of-way along the Metropolitan Branch, primarily through a variety of residential areas and community facilities, to a local stop at Spring Street. From the Spring Street Station the trolley/trail continues at street level to Second Avenue and on to the Silver Spring Metro Station in downtown Silver Spring, traversing residential, office, and commercial area and a variety of community facilities.

The previous *Georgetown Branch Master Plan Amendment* (November 1986) designated the right-of-way for “conservation, recreation, and transportation” within the land use plans for both the *Bethesda Central Business District Sector Plan* and the *Bethesda-Chevy Chase Master Plan*. The *Bethesda-Chevy Chase Master Plan* (Preliminary Draft, December 1988) does not recommend any change in land use based on potential transit service on the Georgetown Branch; it further recommends that the land use for the area be maintained and enhanced.

The pending *Bethesda-Chevy Chase Master Plan* (B-CC) endorses creation of a Chevy Chase Lake Community Retail Center. The area discussed in that plan includes the Chevy Chase Lake/Connecticut Avenue Station. *The Bethesda-Chevy Chase Master Plan* further recommends approval of community-oriented, moderate scale retail development of the area. The community retail center should include public use spaces, with special attention to improving the area for pedestrians. The plan notes that a potential light rail transit station will not change land use concepts for this area. A further discussion of the Parkway Cleaners’ site, abutting the platform on the west side of Connecticut Avenue, is located in the Transportation chapter of this Plan. This Georgetown Branch Master Plan only recommends the designation of a parking area, station and use of the right-of-way through this area.

Through the past, master plans — both the *Master Plan for the Western Portion of Silver Spring* and the *North Silver Spring Sector Plan* — designated the B&O Railroad and Metrorail rights-of-way as shared rights-of-way to connect the Georgetown Branch with the Silver Spring Metro Station.

The only proposed land use change recommended by this Plan to the *North Silver Spring Sector Plan* will be on the M-NCPPC Department of Parks' parcel located on the southwest side of Lytonsville Place. Currently vacant, this site was designated for the location of the trolley shop and yard facility by the *Georgetown Branch Corridor Study*. This Plan endorses that recommendation. There is a further discussion of this station and yard in the Transportation chapter of this Plan.

The pending *Silver Spring CBD Sector Plan* (Preliminary Draft, December 1988) also addresses the potential location of the Silver Spring terminal in downtown Silver Spring. The South Core District, a triangular area bounded by Bonifant Street, Georgia Avenue, and the B&O/Metro tracks, is currently a mixture of small warehouse facilities and industrial/quasi-industrial uses. This pending *Silver Spring CBD Plan* further notes that any property in the South Core which is needed for Metro service, MARC, or light rail service shall be devoted to that function.

The pending *Silver Spring CBD Plan* for the South Core recommends that this area become a residential area. Recommendations include major improvements of both the streetscaping and the creation of a pedestrian area created along the rail right-of-way. The Plan further notes that development of the area is of secondary importance to the possible requirements of MARC or light rail. The potential future development of the Silver Spring Station at the west end of Bonifant Street within the South Core should incorporate the land use guidelines for this area of the *Silver Spring Sector Plan*. The *Silver Spring Sector Plan* Draft assumes no development capacity from the use of the light rail system. Any use of the transportation capacity in Silver Spring will be regulated through an amendment to the Annual Growth Policy.

The land uses abutting the right-of-way are long established and will not experience significant change as a result of the trolley/trail use. The establishment of the trolley/trail will further solidify existing patterns of residential, commercial, and industrial uses within the immediate vicinity of the right-of-way.

DISCUSSION: ZONING

The Georgetown Branch Trolley/Trail will have minimal impacts on adjacent land uses and will not affect existing or recommended zoning of parcels within the 1,000-foot corridor on either side of the Georgetown Branch right-of-way.

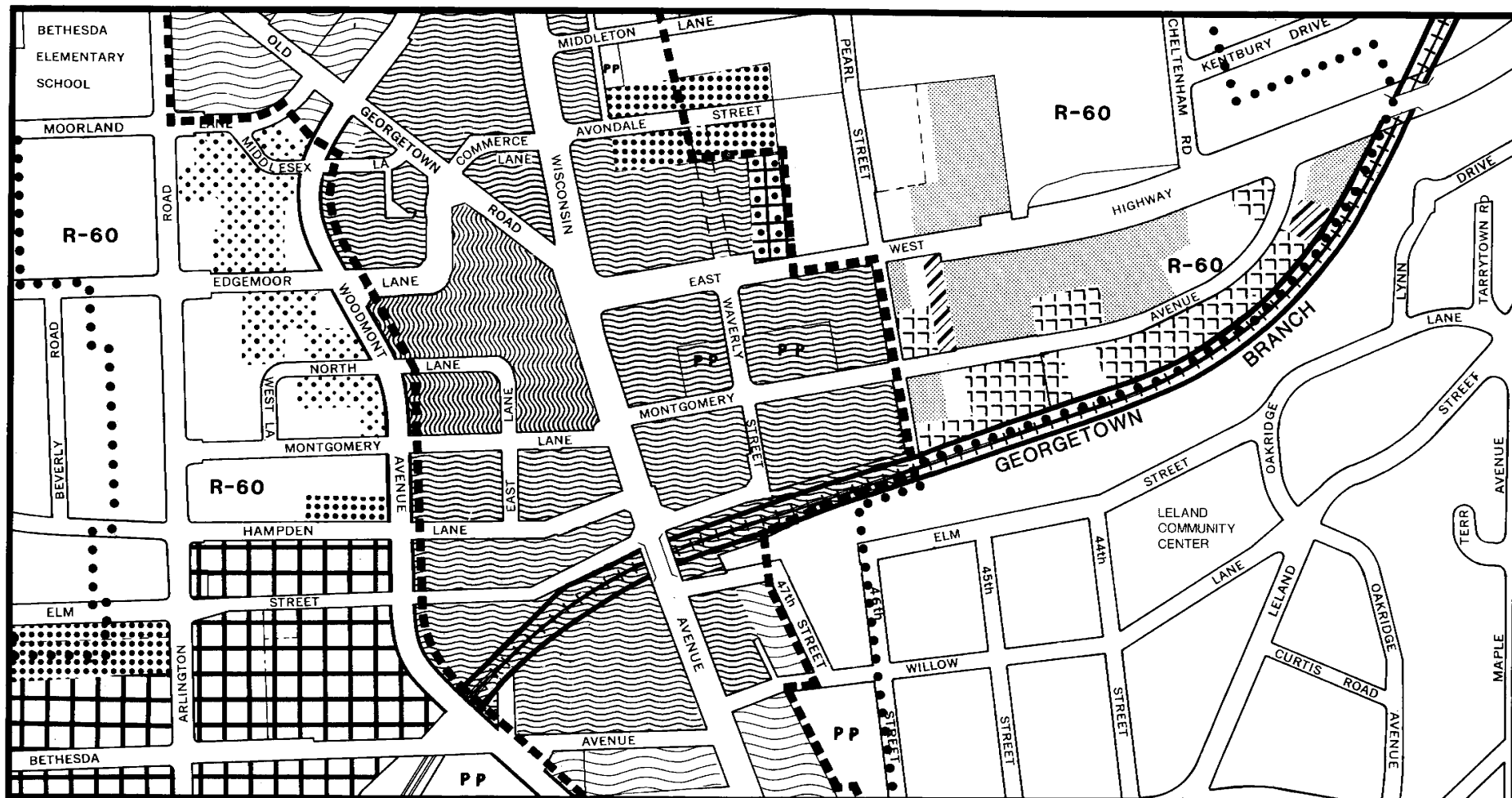
A separate sectional map amendment will be filed for the *Sector Plan for the Bethesda Central Business District*, the *Western Portion of the Silver Spring Planning Area*, and the *North Silver Spring Plan* and the *Silver Spring Sector Plan*. The zoning plans for the 1,000-foot corridor on either side of the right-of-way for these plans are shown in Figures 10, 11, 12, 13, and 14.

The pending *Bethesda-Chevy Chase Master Plan* will reconfirm the existing zoning and address recommended zoning within the remaining sections of the impact corridor of the Georgetown Branch right-of-way through the sectional map amendment process. This Plan reconfirms the existing zoning along the Georgetown Branch right-of-way.

DISCUSSION: DESIGN ISSUES

The trolley stations should be designed to be compatible with the historic and architectural character of the adjacent neighborhoods. The design of the bridges, columns, and other structural supports should also be carefully considered to establish compatibility with adjacent residential development. The Plan recommends that the Art in Public Facilities program should be utilized to enhance architectural features and treatment of trolley/trail facilities and amenities between Bethesda and Silver Spring. There should be particular attention to the design and treatment of the Bethesda Station area to ensure the vitality of the passage beneath Wisconsin Avenue. The hiker/biker trail should provide a safe and convenient connection between the District line and Silver Spring.

A streetscape plan, including recommendations on sidewalks, lighting, and landscaping, to improve access to the stations and hiker/biker trails, should be developed. During the design phase of the project, additional access points should be examined during the design phase to link this project to community facilities. An information system, including orientation maps, station identification, and hiker/biker trail information, should also be included in the streetscape plan to im-



ZONING PLAN: SECTOR PLAN OF BETHESDA CBD

R-60	R-60	One Family Residential		O-M	Office Building, Moderate Intensity		CBD-1	Central Business District-1.0
	R-10	High Rise Apartment		C-O	Commercial Office Building		CBD-2	Central Business District-2.0
	R-CBD	Residential-Central Business District		C-T	Commercial Transition		CBD-3	Central Business District-3.0
	TS-R	Transit Station-Residential		C-2	General Commercial			CBD Boundary

• • • • Study Area Boundary

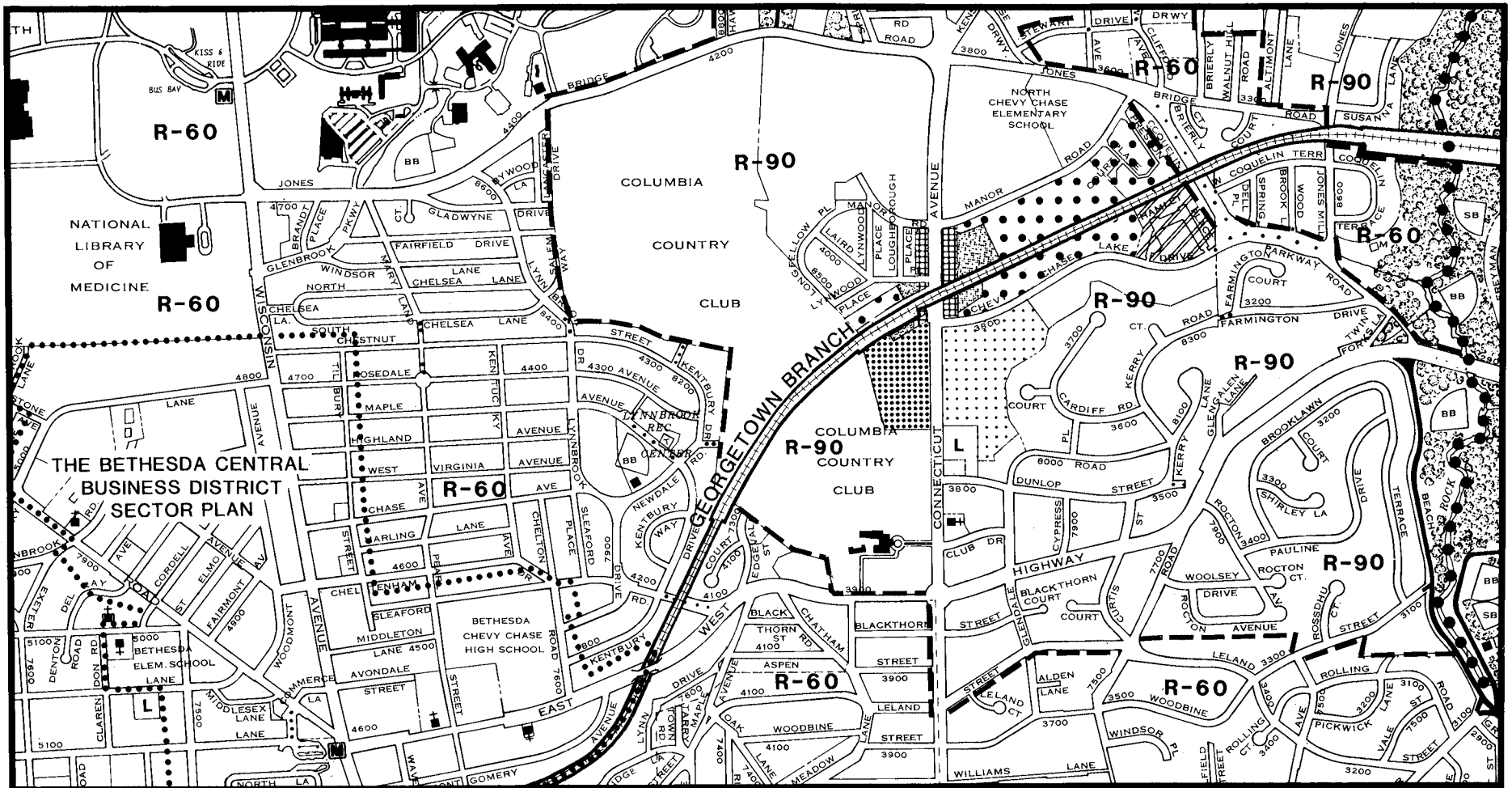
Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

JAN. 1990



FIGURE

10



ZONING PLAN: BETHESDA-CHEVY CHASE PLANNING AREA

R-90 R-90	One Family Residential	R-30	Multi-Family Low Density	C-1	Local Commercial
R-60 R-60	One Family Residential	R-20	Multi-Family Medium Density	C-2	General Commercial
RT-12.5	Town-Houses	R-10	Multi-Family High Density	I-1	Light Industrial
Planning Area Boundary Study Area Boundary					

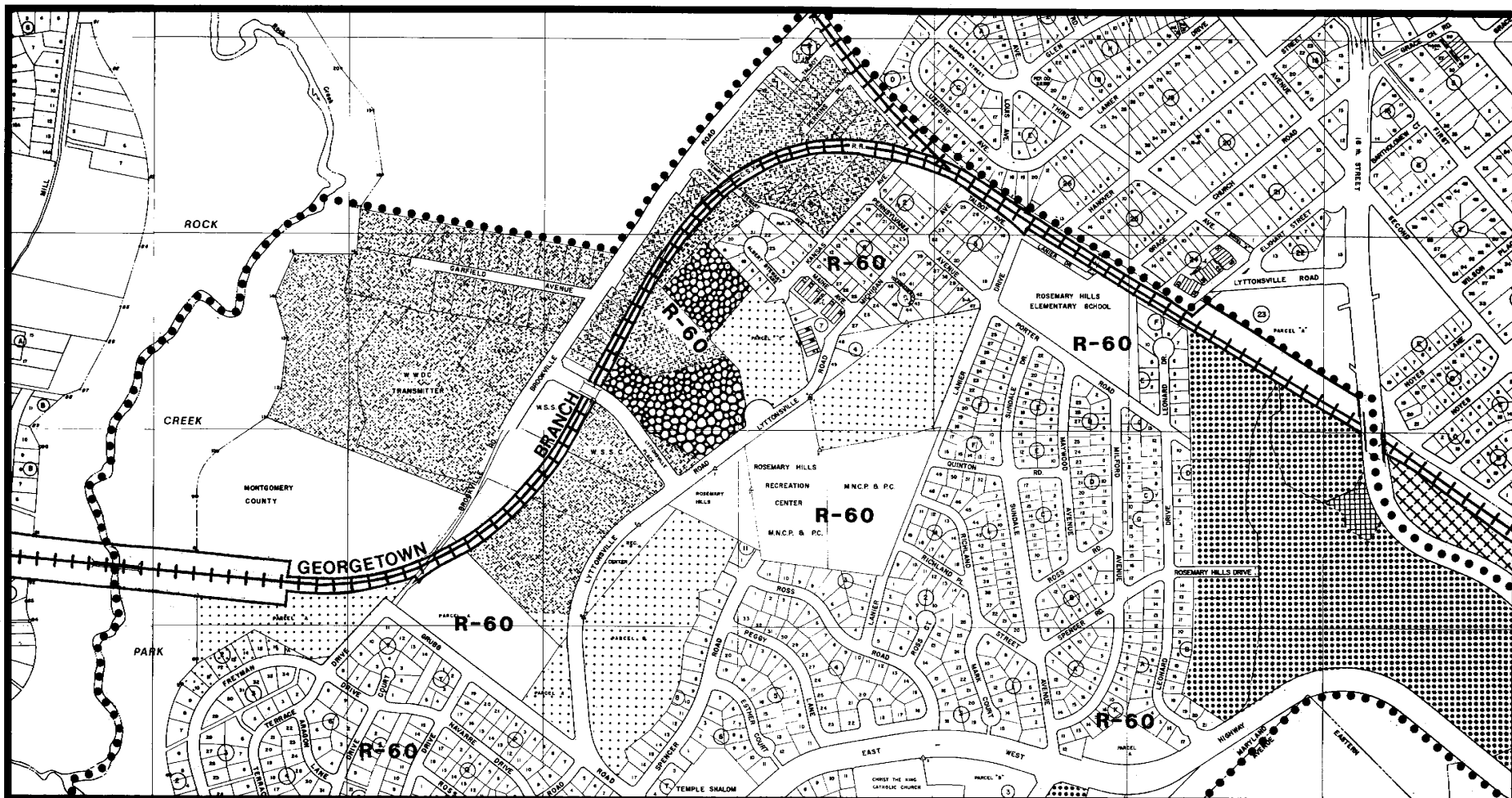
Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

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FIGURE

11



ZONING PLAN: WESTERN PORTION OF THE SILVER SPRING PLANNING AREA

R-60 R-60 One Family Residential	R-H High Rise Apartment	C-4 Limited-Intensity, Highway Commercial
R-20 Medium Density Residential	C-1 Local Commercial	I-1 Light Industrial
R-10 High Density Residential	C-2 General Commercial	Planning Area Boundary

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

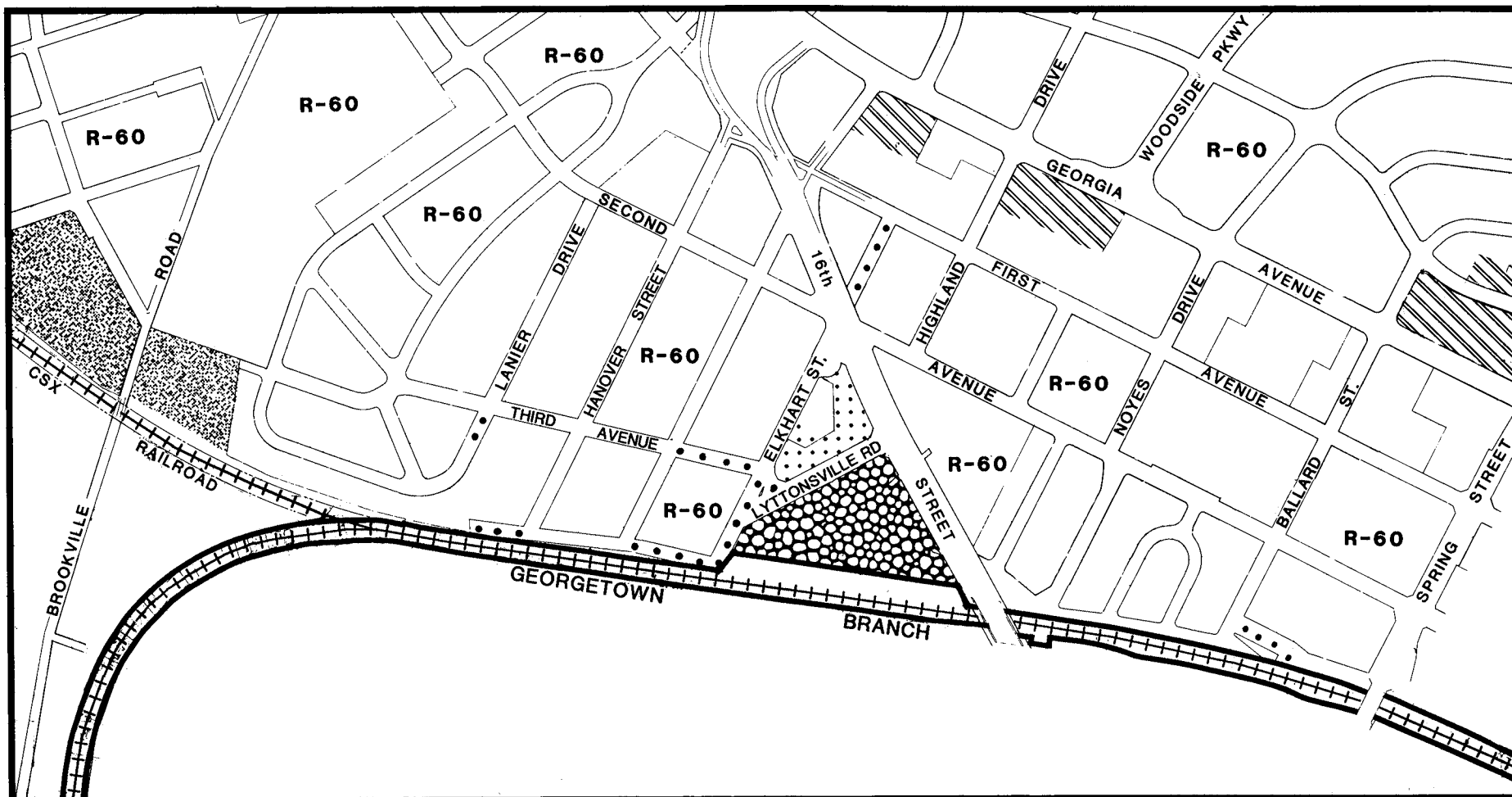
The Maryland - National Capital Park and
Planning Commission Montgomery County Planning Board

JAN. 1990



FIGURE

12

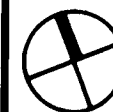


ZONING PLAN: SECTOR PLAN OF NORTH SILVER SPRING

R-60	R-60	One Family Residential		I-1 Industrial
	RT-12.5	Town-Houses		
	R-20	Medium Density Residential		
	R-H	High Rise Apartment		

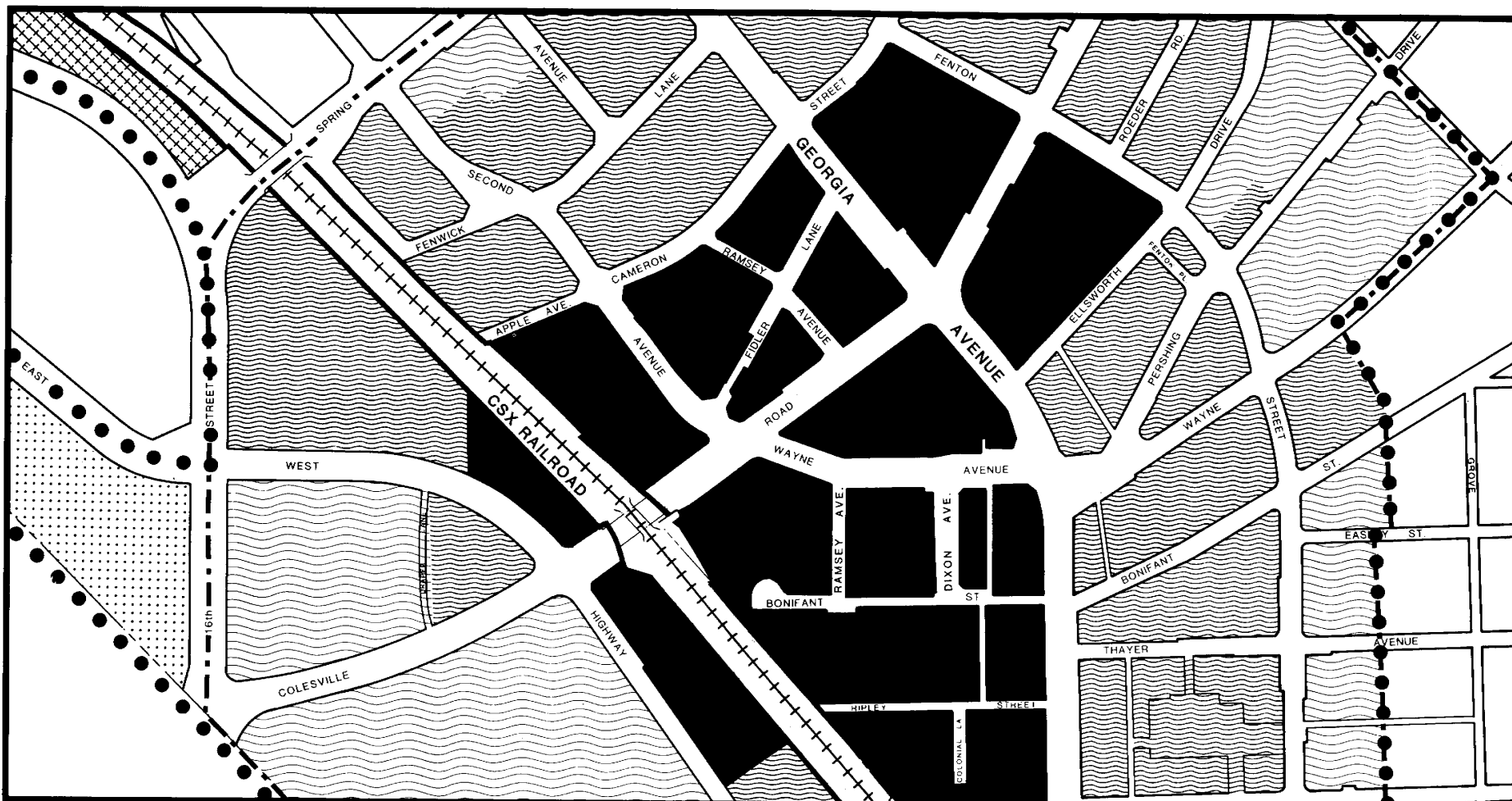
Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

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FIGURE

13



ZONING PLAN: SECTOR PLAN OF SILVER SPRING CBD & VICINITY

- | | |
|---|---|
|  R-20 Medium-Density Residential |  CBD-3 Central Business District-3.0 |
|  CBD-1 Central Business District-1.0 |  C-4 Limited-Intensity, Highway Commercial |
|  CBD-2 Central Business District-2.0 | ● ● ● Sector Plan Boundary |
| | --- CBD Boundary |

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

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FIGURE

14

prove access. The Plan recommends that County-sponsored supplemental plantings be considered if the proposed landscaping plan is insufficient to adequately buffer private residential properties. To facilitate use of both the trolley and trail, pedestrian access to both the trolley stations and the hiker/biker trail should be an important design consideration. Since the Georgetown Branch right-of-way traverses predominately residential communities, neighborhood residents have expressed concerns about the potential visual and noise impacts of both the construction and operation of the trolley/trail through predominately residential neighborhoods. An evaluation of the potential noise impacts is in the Environmental chapter of this Plan.

A selection of cross sections of the trolley/trail at various points along its route are shown in Figures 15A and 15B.

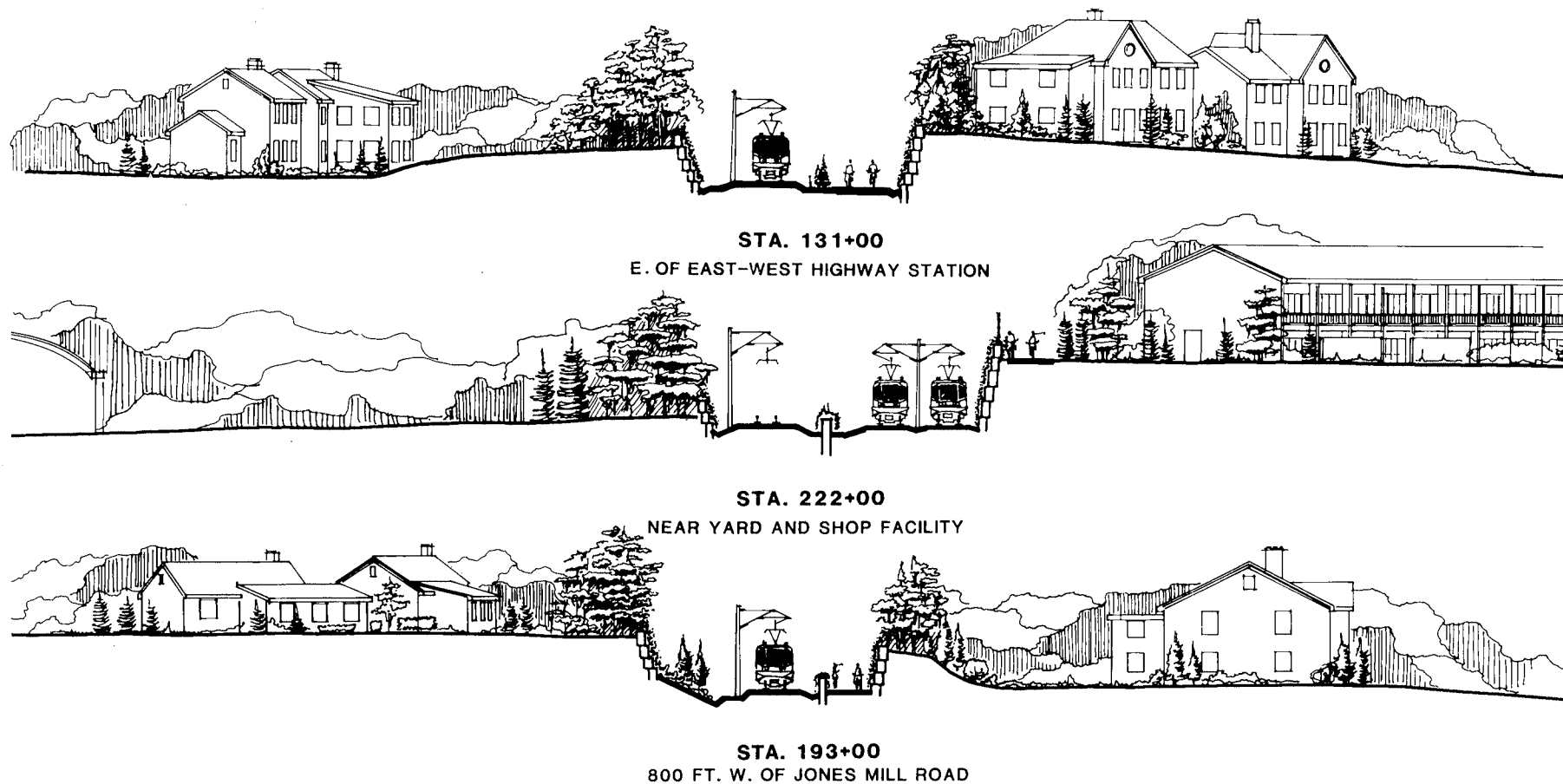
To sufficiently protect the residents and business owners located within the impact area of the trolley/trail, the project design elements should: (1) provide sufficient landscaping and screening to provide privacy and to buffer abutting residential, industrial, and commercial property owners from negative visual intrusion associated with the construction and operation of the trolley/trail, (2) maximize the safety and the security of both trolley/trail users and abutting property owners by providing formal, safe, pedestrian and bicycle access points into neighborhoods and to the trolley/trail, and (3) maintain high visual and aesthetic standards for the trolley/trail design.

Design issues and related mitigation concerns are addressed in the following segment-by-segment analysis.

BETHESDA TERMINAL STATION TO CHEVY CHASE LAKE/CONNECTICUT AVENUE STATION

The Bethesda Terminal Station does not intrude into the commercial and office activities in the immediate vicinity other than the temporary effects associated with construction of the station underneath the Embassy Plaza building. Due to the length of the tunnel from the Embassy Plaza Building and the Air Rights Building and the restricted right-of-way, special architectural treatment needs to be provided to increase safety.

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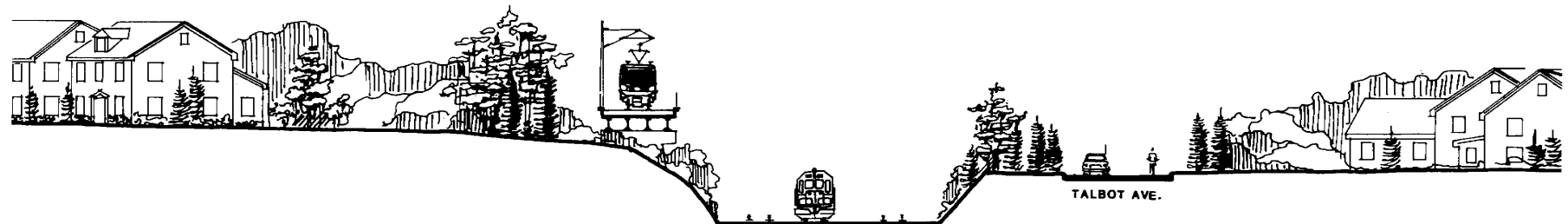
CROSS SECTIONS OF THE TROLLEY/TRAIL

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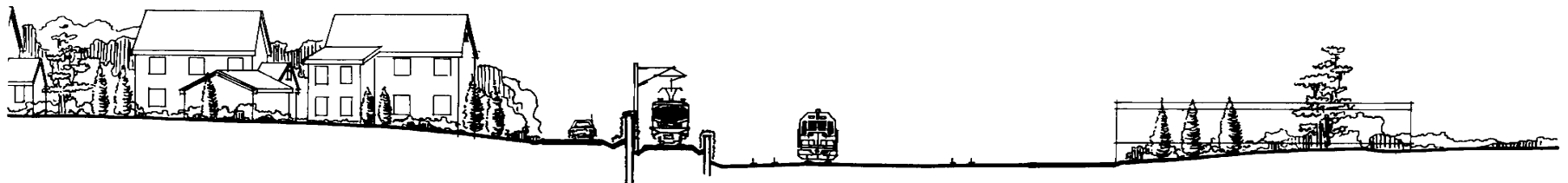
FIGURE

15
A

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring



STA. 268+00
METROPOLITAN BRANCH OVERCROSSING



STA. 294+00
S. OF 16TH STREET

CROSS SECTIONS OF THE TROLLEY/TRAIL ALTERNATIVE

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FIGURE

15
B

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

The trolley/trail proceeds along a single track to the Columbia Country Club grounds. Within the Columbia Country Club, it will be necessary to relocate existing cart and vehicle paths and to introduce two tunnels for golf carts and maintenance vehicles to provide for ongoing golf activities and operational needs of the trolley/trail. Following the implementation of the project, relandscaping of the area affected by the construction will be necessary.

The Newdale pocket park associated with the Chevy Chase Lake/Connecticut Avenue Station is a passive recreation area with picnic tables. Although its proposed location north of the trolley line is not immediately adjacent to the trail, clear directional signs and careful attention to the design of its facilities should facilitate its use by residents and workers in the vicinity. The final design of the Newdale pocket park should complement the design of the proposed T.W. Perry park associated with the Community Retail Center. (See *Bethesda-Chevy Chase Master Plan*.)

The *Bethesda-Chevy Chase Master Plan* notes that a potential light rail transit station in this area will not change the design and land use concepts for this area.

The final design of the station should be compatible with the improvements on the Parkway Cleaners site. Further discussion of this is located in the Transportation chapter of this Plan. This Plan recommends that the design and location of the pocket park and the hiker/biker trail at Chevy Chase Lake/Connecticut Avenue complement the Chevy Chase Lake Plan and Community Retail Center Plan, including the Green Corridors Policy, of the *Bethesda-Chevy Chase Master Plan*.

CHEVY CHASE LAKE/CONNECTICUT AVENUE TO LYTTONSVILLE STATION AND SHOP/YARD

The below-grade crossing of the trolley/trail at the intersection of Jones Mill Road and Jones Bridge Road will require construction of crib walls and retaining walls to minimize right-of-way acquisition. Bicycle ramps will also be constructed. Every effort should be made to minimize construction effects of these facilities on the houses in the immediate vicinity. All of the trails and the treatment of the Jones Mill Road/Jones Bridge Road intersection support elements of The Plan for Chevy Chase Lake to improve pedestrian and transit access.

The design of the bridge over Rock Creek should be compatible with the overall design theme of the trolley/trail, while minimizing the construction and operational impact on both Rock Creek and the Rock Creek trail system. A landscaping plan emphasizing extensive tree replanting and planting of additional vegetation should be developed to replicate conditions prior to bridge construction. To provide additional buffering between the trolley/trail and apartments, additional evergreens should be planted to buffer the Round Hill Apartments, located near Grubb Road and Terrace Drive.

Two sites have been considered for the location of the Lyttonsville shop and yard. This Plan recommends that the shop/yard be located at the northwest side of the Lyttonsville Place overpass. A further discussion appears in the Transportation chapter of this Plan. There will be some effects associated with the clearing and building of the Lyttonsville shop/yard and station and operation of the shop/yard, regardless of the final site selection.

Since most of the heavier maintenance activities will be conducted indoors, there should be limited noise impacts related to vehicle maintenance. The restrictions imposed by the Montgomery County Noise Ordinance would also apply to the shop/yard activities. Every effort should be made to minimize disruption to the traffic flow on Brookville Road and Lyttonsville Place and to access points to various industrial and commercial activities.

LYTTONSVILLE STATION AND SHOP/YARD TO SILVER SPRING TERMINAL STATION

One of the main issues within this segment is the visual effect of the structures required to carry the trolley over the CSX Mainline and Colesville Road to the Silver Spring Terminal Station. This segment includes a major crossing of the Metropolitan Branch, a Spring Street Station, and a Silver Spring Terminal Station.

Two proposals have been made regarding the design of the structure for the trolley to cross the CSX Mainline/Metropolitan Branch in the Lyttonsville/North Woodside communities. These are: (1) the construction of a 12-span, 865-foot-long aerial bridge visible from the single-family residences on Luzerne Avenue and Talbot Avenue and (2) the construction of an underpass immediately northwest of the CSX Mainline. The first design will also include landscaping and a solid fence to mitigate the visual impact of the structure on adjacent residences. The second design,

studied during the final phase of the report, will cost approximately \$1.75 million more than the overpass design. Although it limits visual intrusion of the trolley, it may make trolley operations and maintenance within the underpass very difficult if problems arise. The Plan recommends that the trolley crossing of the Metropolitan Branch be a below-grade tunnel. Further discussion of this is in the Grade Separations section in the Transportation chapter. The alignment of the trolley line will place the trolley/ trail close to the Woodside Mews townhouses east of the Talbot Avenue Bridge, the residences along Third Avenue between Noyes Drive and Springwood Drive South, and the office parks along Fenwick Street and Apple Avenue. There is additional discussion of this area in the Woodside Station discussion (Figure 27). Additional landscaping, including additional landscaping near the Woodside Mews townhouses and between the trolley/trail and the residences within these areas, may be necessary.

Within the CBD, the hiker/biker trail should be integrated with the streetscape system along Wayne Avenue. The Spring Street Station is located behind the existing post office, with pedestrian access from Spring Street and Fenwick Lane within the proposed right-of-way. Streetscaping along Spring Street should be included to minimize conflicts between vehicles and pedestrians in this area.

The remaining light rail station will be located in Silver Spring adjacent to the existing Metro Station. This station design offers one of the best opportunities in the region to combine several transportation systems. The new design for the WMATA/Ride-On bus area and any relocation of the existing MARC Station near Bonifant Street should be combined with this light rail station. The trolley station design should provide for commuter access to the relocated MARC rail platform.

Reducing the impact of the proposed bridge over Colesville Road on the adjacent public amenity spaces and Metro Station entrances must be an important objective for this station. The design elements for this station and bridge should be integrated with the overall design elements of the system for continuity.

Chapter III

Transportation

CHAPTER III. TRANSPORTATION

This chapter first discusses transportation-related physical improvements — stations, grade separations, and trail routes — and presents guidelines and recommendations for their location, design, and construction. The second section discusses access to the trolley/trail system, and safety considerations; and the final section of this chapter reviews the effects that a new trolley/trail will have on the transportation system and on future development.

TROLLEY/TRAIL SYSTEM COMPONENTS

TROLLEY STATIONS AND RIGHT-OF-WAY

Stations need to be conveniently located along the line to provide access. The number, locations, and type (local or express) of stations are constrained by the single track design, the anticipated need for frequent trains, and a desire to keep travel time down.

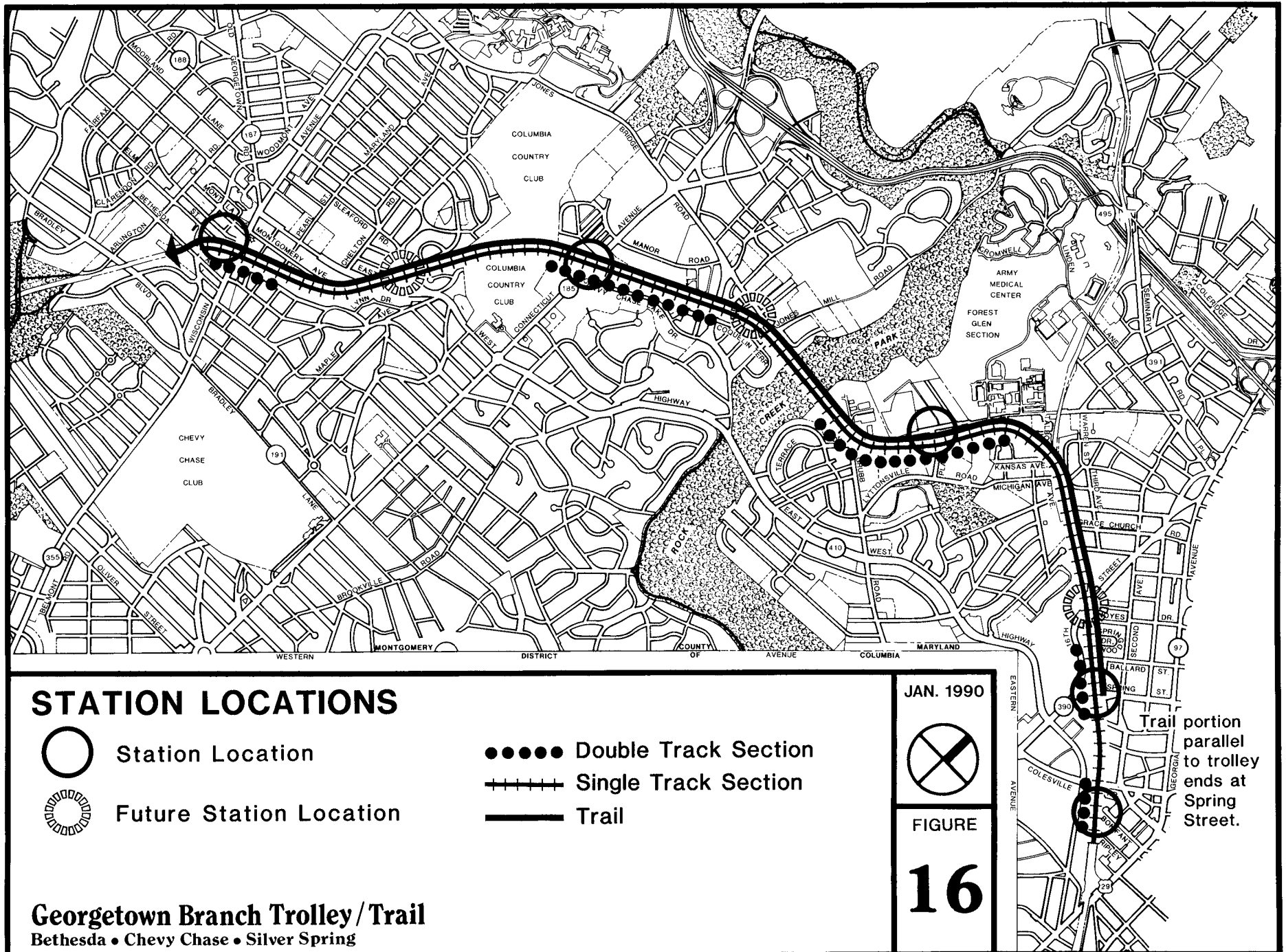
To provide a high level of transit service while supplying sufficient community access, two types of stations are used: "express" stations operating at all times, and "local" stations, operating only during non-rush-hour day, evening, and weekends. This Master Plan recommends five stations and three possible locations for future stations.

The four stations designated as express are:

- Bethesda terminal
- Chevy Chase Lake/Connecticut Avenue
- Lyttonsville
- Silver Spring terminal

The one station designated as local is:

- Spring Street



The three locations designated for future consideration are:

East-West Highway
Jones Mill
Woodside (16th Street)

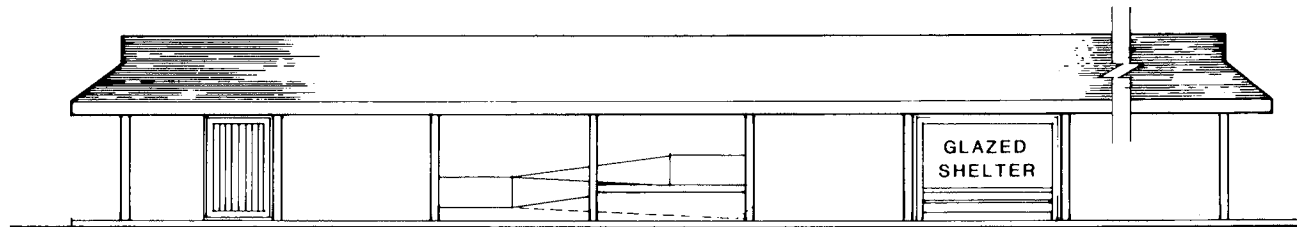
Station sites are shown in Figure 16. The approximate distances between designated and proposed future stations along the trolley line are as follows: (1) Bethesda Station to East-West Highway Station (3,150 feet), (2) East-West Highway Station to Chevy Chase Lake/Connecticut Avenue Station (3,850 feet), (3) Chevy Chase Lake/Connecticut Avenue Station to Jones Mill Station (3,400 feet), (4) Jones Mill Station to Lyttonsville Station (4,050 feet), (5) Lyttonsville Station to Woodside Station (4,750 feet), (6) Woodside Station to Spring Street Station (1,650 feet), and (7) Spring Street Station to Silver Spring Station (2,000 feet). Typical local and express station plans are shown in Figures 17 and 18.

Volumes and patterns of trolley riders will probably change over time. Therefore, some flexibility regarding stations is necessary. System design should allow for additional local stations and for the conversion of local stations to express stations. Any new stations or upgrading of local stations to express stations should satisfy the following criteria:

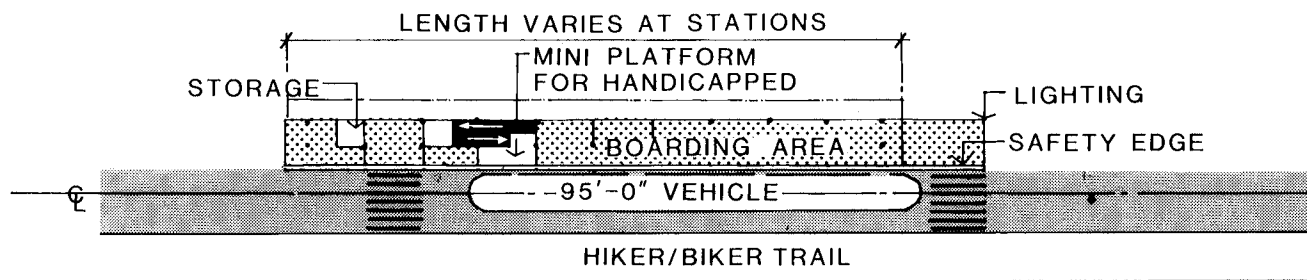
1. Expressed or apparent need for additional service (ridership pattern).
2. Physical feasibility.
3. Operational feasibility and system reliability.
4. Minimum impact on adjacent property, mitigated where necessary.

New stations added or converted in accordance with these guidelines would not require an amendment to this Plan.

The right-of-way of the Georgetown Branch would be fully utilized for the trolley/trail design with very minimal need for additional right-of-way. The single track configuration limits construc-



ELEVATION VIEW



TOP VIEW

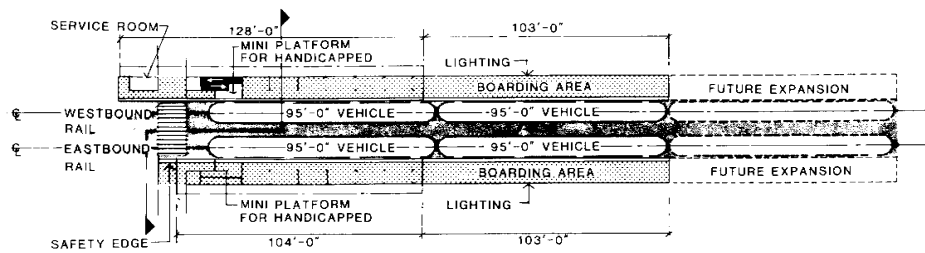
TYPICAL LOCAL STATION PLAN

JAN. 1990

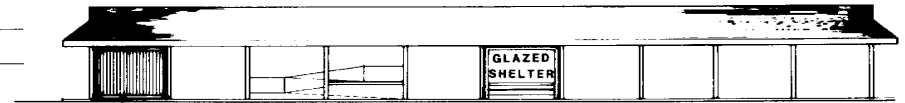
FIGURE

17

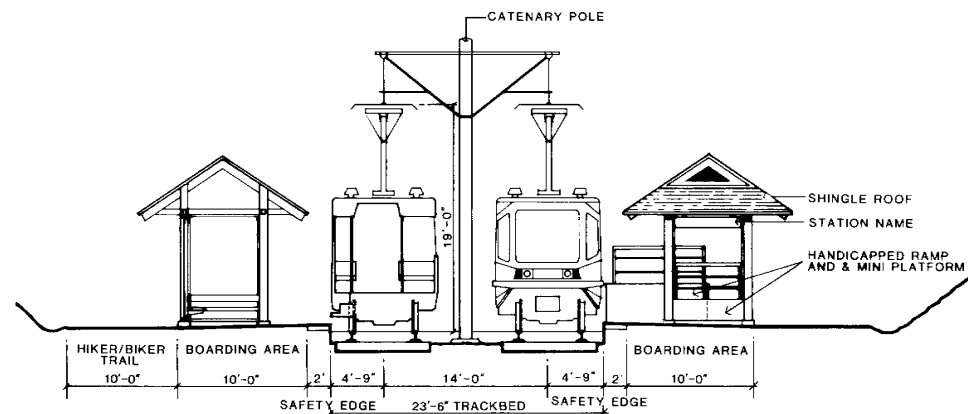
Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring



TOP VIEW



ELEVATION VIEW



SECTION VIEW

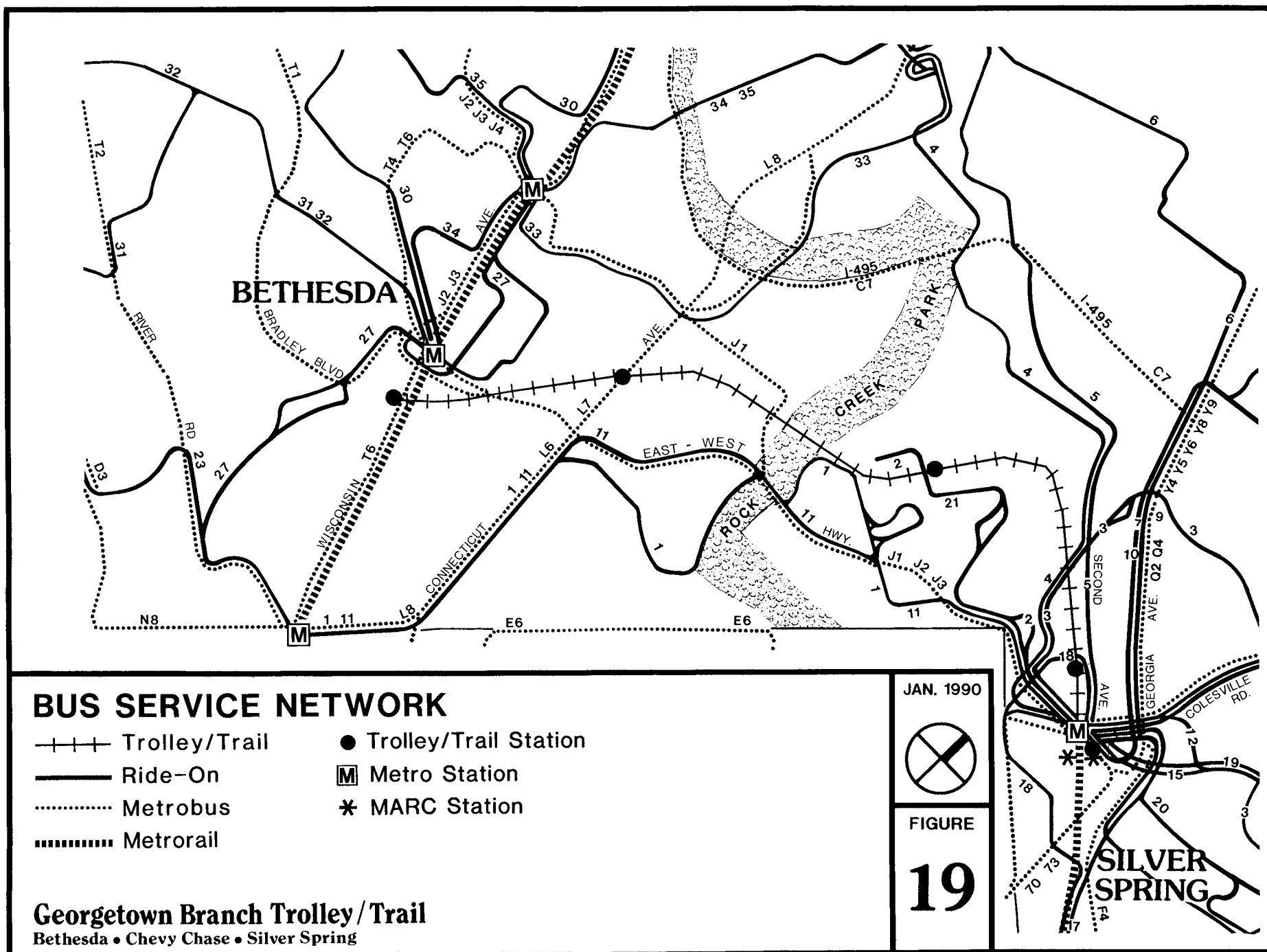
TYPICAL EXPRESS STATION PLAN

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FIGURE

18

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring



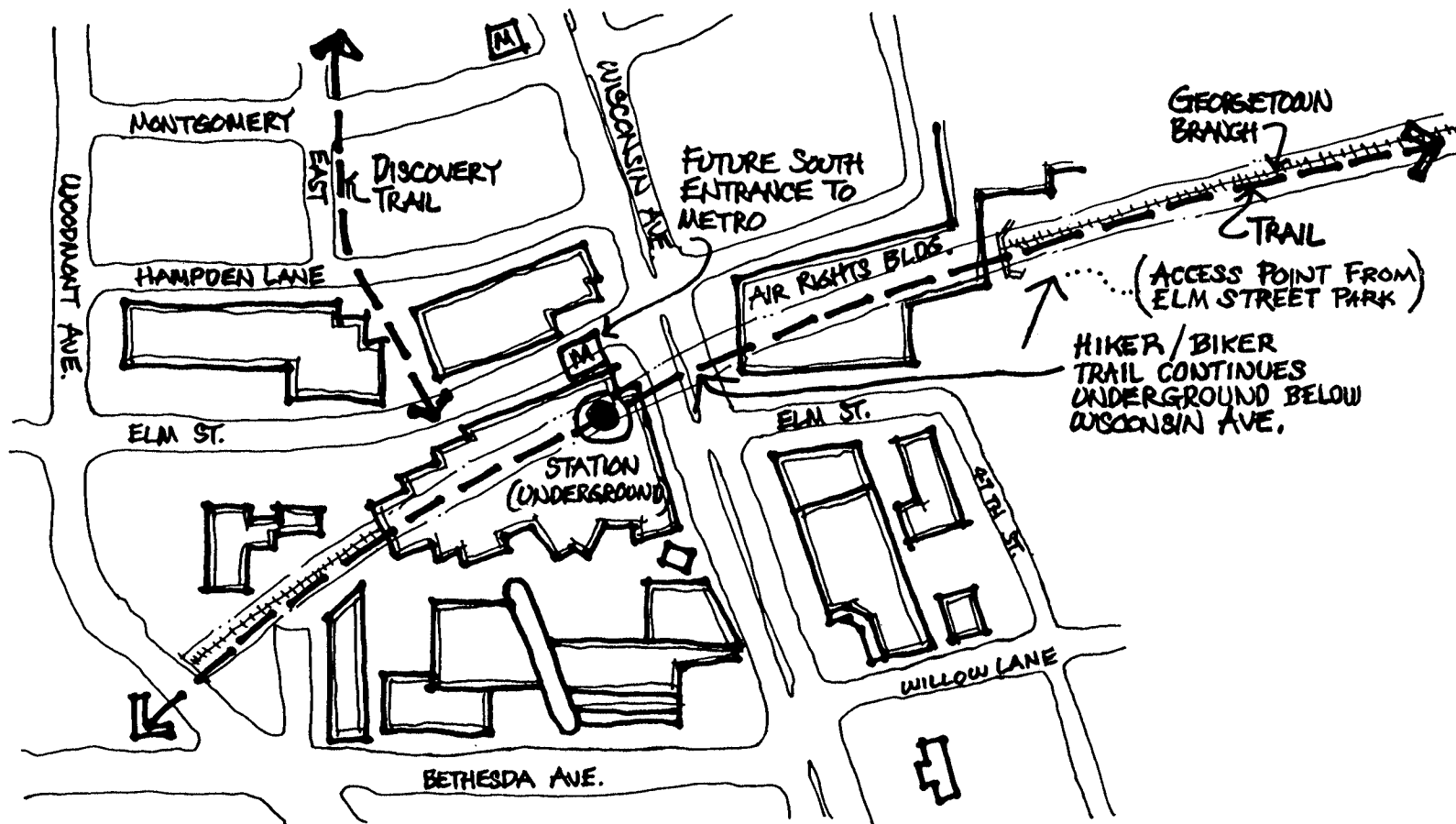
tion, grading, and slope easement impacts to a minimum. In the event that future consideration is given to implementing additional double track sections, the existing right-of-way is generally sufficient with appropriate structural treatment to accommodate the necessary typical 56-foot trolley/trail cross section (see Figure 4), except along the Metropolitan Branch section from Talbot Avenue to Silver Spring.

Along the Metropolitan Branch, it appears that additional right-of-way would be necessary for a double track. For purposes of preserving long-range transportation right-of-way needs, the Plan recommends that a future right-of-way line be established along the Metropolitan Branch section to provide sufficient space for future possible extension of an additional track while maintaining space for a trail. This should generally require approximately 14 feet in added width in some sections, but would vary according to the specific property line locations. This width will also depend upon the spacing or separation criteria imposed by CSX for their mainline operations. Vertical separation may be employed to limit width requirements.

This right-of-way would be identified in the same manner as elements in the *Master Plan of Highways*, maintained on the topographic map records of the Planning Department. The intended purpose of this requirement is to provide for the possible dedication of additional right-of-way that may be needed and could be obtained in the redevelopment or subdivision process that may proceed in the future on land adjacent to this narrow section of the right-of-way.

The following sections describe each station and bicycle/pedestrian, bus, and vehicle access. A bus service network map is shown in Figure 19.

The illustrations within the following section are conceptual designs used for the purpose of reserving the right-of-way. Further details will be refined during the design phase of the project. The specific locations for the platforms and access will be determined during the design phase. Additional Montgomery County Council, Executive, and Planning Board review will be conducted during the next phases of the planning and construction process, including the mandatory referral process required under the Regional District Act and during future Capital Improvements Programs.



BETHESDA TERMINAL STATION CONCEPT PLAN

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

JAN. 1990



FIGURE

20

Bethesda Terminal

The Bethesda Terminal is located beneath Wisconsin Avenue, within the Embassy Plaza sub-structure, and is the essential connection of the trolley to the Bethesda CBD and its Metrorail station. An illustration of the station is shown in Figure 20. The *Georgetown Branch Corridor Study* evaluated several locations and designs. A convenient, direct transfer from the Bethesda Terminal Station to the Metrorail system is imperative. Without a direct, close connection, projected ridership would be significantly reduced and the usefulness of the trolley would be clearly decreased.

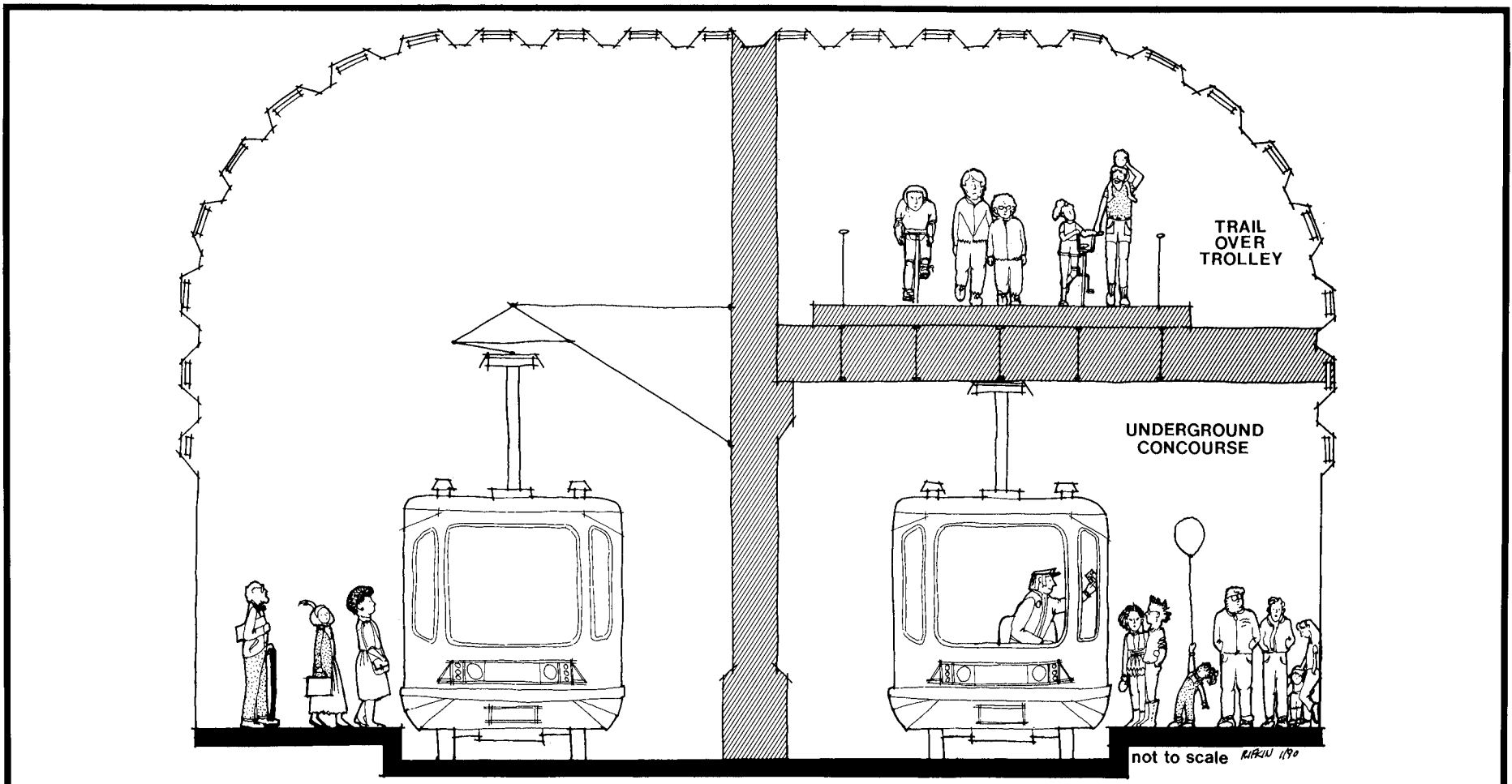
To achieve the needed direct connection to Metrorail, the terminal is located adjacent to the proposed future southern entrance to the Metrorail station. This location is also convenient to the downtown area for pedestrians. The southern entrance is essential to and an integral part of the Bethesda terminal location and design.

Pedestrian/Bicycle Access

Access to and from the station would be from the west side of Wisconsin Avenue, through the Embassy Plaza Lobby; from Elm Street down a staircase next to the “Discovery Trail”; and from the trail next to and along the trolley track from Woodmont Avenue. Bicycle access is effectively limited by the stairs and escalator, except from the west through the connection to Woodmont Avenue.

The trolley/trail passes beneath Wisconsin Avenue. The station platform is in this tunnel, beneath the Embassy Plaza building. The tunnel is not wide enough for double tracks and a platform plus a sufficiently wide trail. A mezzanine level above the tracks, through the tunnel, is included in the project design to carry the trail through this area. While the mezzanine is suitable for pedestrians, bicyclists would have to dismount and walk through the platform area to reach the ramp access to the mezzanine level. Final design of the Bethesda Terminal Station should safely meet the needs of pedestrian and bicyclist trail users and provide an uninterrupted trail.

Various hiker/biker routes and designs were considered through the vicinity of the Bethesda Terminal Station. Within this area the trolley/trail passes beneath the Embassy Plaza Building (Apex Building), Wisconsin Avenue and the Air Rights Building. The *Georgetown Branch Corridor*



BETHESDA TERMINAL WITH TROLLEY/TRAIL CONCEPT

JAN. 1990

FIGURE

21

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Study proposed a hiker/biker trail design through the station which required that a portion of the trail cross the platform area, including a very narrow trail width in a specific segment of the trail. In order to reduce user conflict and improve safety, the Planning Board staff in the Preliminary Draft Plan recommended that the bikers utilize designated bicycle lanes along Bethesda Avenue across Wisconsin Avenue to Willow Lane to 47th Street and the trail access point in Elm Street Park. The Planning Board reviewed and rejected both options because neither option provided sufficient safety and convenience for trolley patron and hiker/biker uses and appropriate and well-designed trail continuity.

In order for hikers, bikers, and trolley patrons to safely and conveniently use both the trolley platform and the hiker/biker trail within the Bethesda Station, the Plan recommends that the station design should include an extension of a concourse through the platform area in order to provide adequate trail width and safety. An illustration of this concept is shown in Figure 21. Further study of both the physical and operational elements is necessary during the design phase of the trolley/trail to determine the feasibility of the recommendation.

In order to provide better trail continuity, a sidewalk connection should be provided from the Woodmont/Bethesda intersection to the station platform and on through the tunnel for pedestrians using the trolley/trail. Adequate width exists for a sidewalk connection through the tunnel. In addition, the awkwardly designed crosswalk through the Woodmont/Bethesda intersection, proposed by the *Georgetown Branch Corridor Study*, should be redesigned to provide a more logical, direct connection between the Georgetown Branch right-of-way at Woodmont Avenue and the trolley/trail through the Bethesda Station area.

The Bethesda Terminal Station is likely to attract trolley riders who arrive by bicycle along the trolley/trail. Bicycle parking is to be provided in the station area, adjacent to the north platform.

Bus Access

The major terminal/transfer point for bus service in Bethesda is at the Metrorail station, about 1,000 feet north of the Bethesda Terminal Station platform. Metrobus and Ride-On are anticipated to extend some bus service from the Metrorail terminal to bus stops on Elm Street, adjacent to the station platform. Alternatively, a shuttle between the Metrorail bus terminal and the

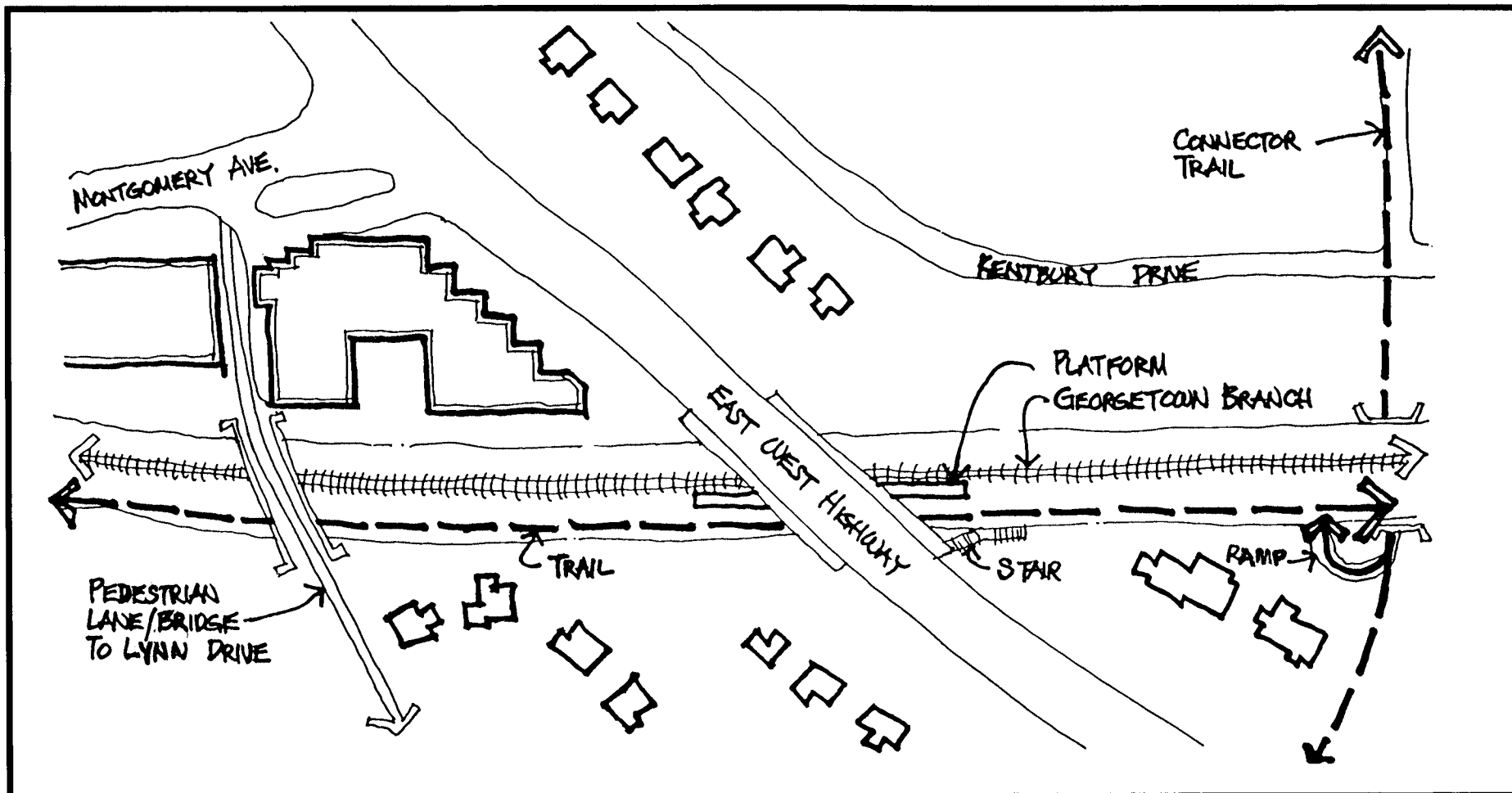
trolley, timed to meet each trolley, might be considered. Flexibility is also necessary to respond to the actual ridership and bus transfer patterns that develop.

Specific bus service modifications are normally planned and presented at public hearings about one year before implementation. 1989 Metrobus and Ride-On bus routes are shown in Figure 19.

Vehicle Access

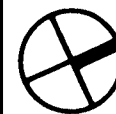
The Bethesda Terminal Station will not include any designated parking or passenger drop-off/pick-up facilities. Trolley patrons will use private and public parking facilities in the vicinity. Limited drop-off/pick-up activity will probably occur on existing streets, depending upon the availability of curbside parking and prevailing traffic conditions.

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EAST-WEST HIGHWAY STATION CONCEPT PLAN

JAN. 1990



FIGURE

22

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

East-West Highway Station (Proposed Future Station)

The East-West Highway Station is a local (off-peak) station located beneath East-West Highway. As shown in a conceptual drawing in Figure 22, the station has a single platform with access via a stairway on the north side of the highway bridge.

Pedestrian/Bicycle Access

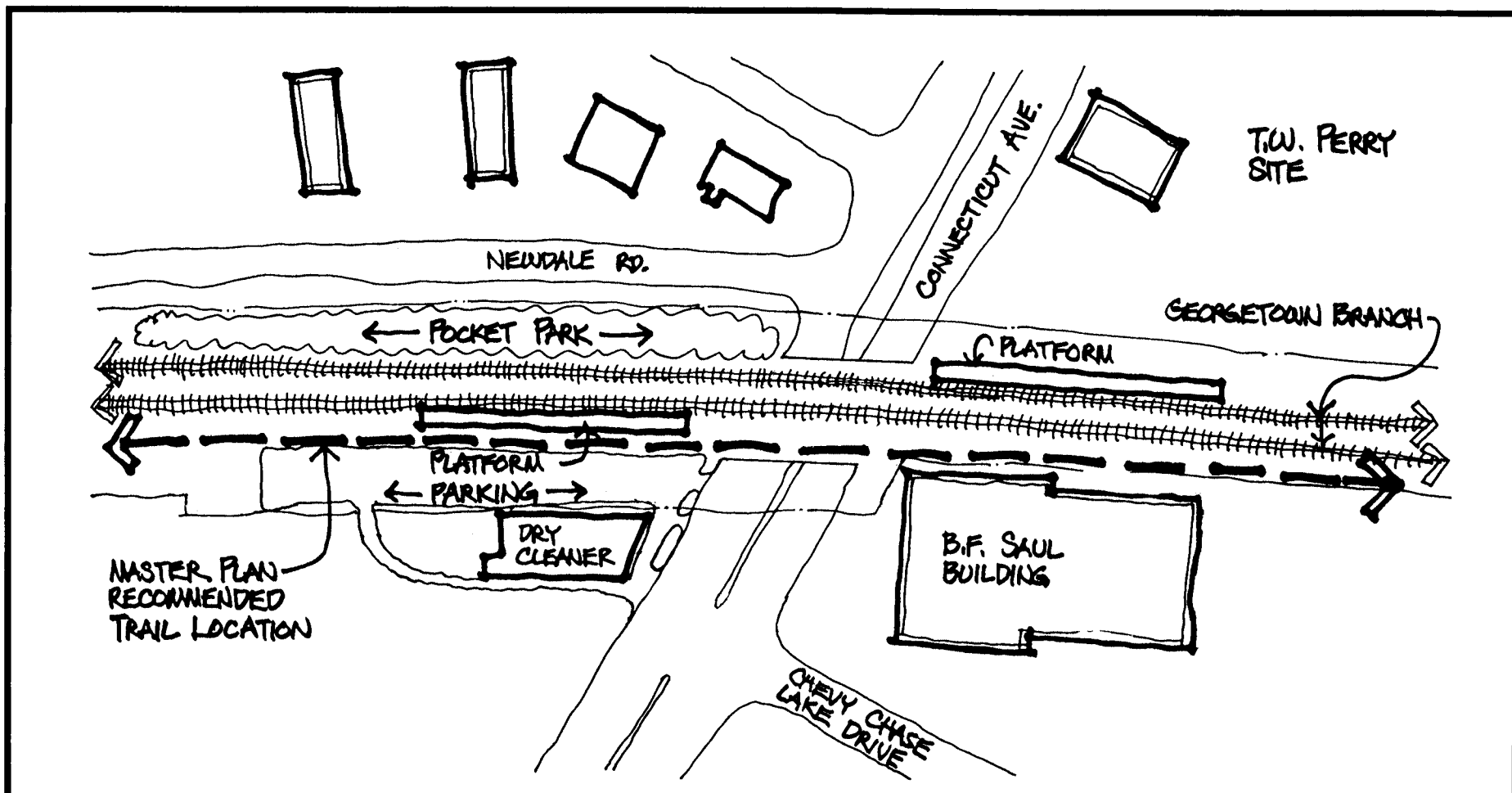
The station will be primarily used by local patrons walking or bicycling on the trail from the surrounding neighborhood. The area street layout dictates that even south of East-West Highway it would be more convenient for pedestrians to use the Lynn Drive trail access than to attempt to cross the highway to access the north side stairway. North of the highway, pedestrians would use the Sleaford Road trail access to reach the station. Therefore, the lack of a controlled crossing of East-West Highway is not a critical concern in the location of this station.

Bus Access

There are, as of this writing, no neighborhood bus stops in the immediate vicinity and none are proposed. Metrobus Routes J-2 and J-3 pass the station on East-West Highway.

Vehicle Access

There are no vehicle access facilities proposed for this station. Because there is no peak period service at this stop, there should be few persons parking in the neighborhood to ride the trolley. However, if parking occurs in the vicinity of nearby trail access points, such as Lynn Drive and Sleaford Road, a neighborhood parking restriction program could be implemented.



CHEVY CHASE LAKE/CONNECTICUT AVENUE STATION CONCEPT PLAN

JAN. 1990



FIGURE

23

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Chevy Chase Lake/Connecticut Avenue Station

The Chevy Chase Lake/Connecticut Avenue Station requires a grade crossing, which conflicts with significant volumes of cross traffic along Connecticut Avenue. The conceptual design of the station is shown in Figure 23. With this design, the trolleys would approach the intersection and stop to load and unload before proceeding to cross Connecticut Avenue, where a new interconnected signal phase would be installed. The design and operation of this trolley intersection with Connecticut Avenue would be identical to other typical signal-controlled street intersections.

The *Georgetown Branch Corridor Study* process also studied an overpass and an underpass at the Connecticut Avenue intersection. Various factors were considered, including cost and potential traffic delay, prior to selecting the at-grade station design. The evaluation process is discussed in the *Georgetown Branch Corridor Study*. The *Georgetown Branch Corridor Study* also proposed that the hiker/biker trail cross Connecticut Avenue about 200 feet south of the station at a current pedestrian crossing of Chevy Chase Lake Drive. The Planning Board rejected this option as being too dangerous for pedestrians contending with both turning vehicles and traffic on Connecticut Avenue.

The Planning Board reviewed both the at-grade and the above-grade crossing options of Connecticut Avenue prior to making its decision. This Plan recommends the above-grade trolley/trail crossing for several reasons: (1) to eliminate the potential risks associated with an at-grade trolley and trail crossing of significant volumes of cross traffic on Connecticut Avenue, (2) to maximize the safety of the trolley and trail user, (3) to provide additional trolley operational safety and efficiency for a predominantly single-track system (trolley line is double-track within this vicinity), (4) to provide trail continuity, and (5) to provide additional support for the long-term viability of the system. Additional design and engineering work needs to be completed during the design phase to ensure proper pedestrian/bicycle access to the trail and station platforms in conjunction with the overpass.

Pedestrian/Bicycle Access

A significant amount of housing and employment is located within a short distance of the Chevy Chase Lake/Connecticut Avenue Station, making the station both an origin and destination for commuters. Pedestrian and bicycle access would be from existing sidewalks along Connecticut

Avenue and the trail connecting communities along the trolley line. Both the trail intersection and the split station arrangement make the crossing of Connecticut Avenue an important circulation/access design consideration due to the roadway width and the volume of traffic.

Bus Access

Connecticut Avenue is a main north-south route for buses between the Wheaton area and the Bethesda-Chevy Chase area (Metrobus Routes L-6, 7, 8). Currently, about 13 buses pass Chevy Chase Lake Drive each peak hour. To facilitate transit connections, bus stops will be provided on both sides of Connecticut Avenue. No additional bus handling facilities appear necessary, although this station will probably be a well-used bus/trolley transfer point.

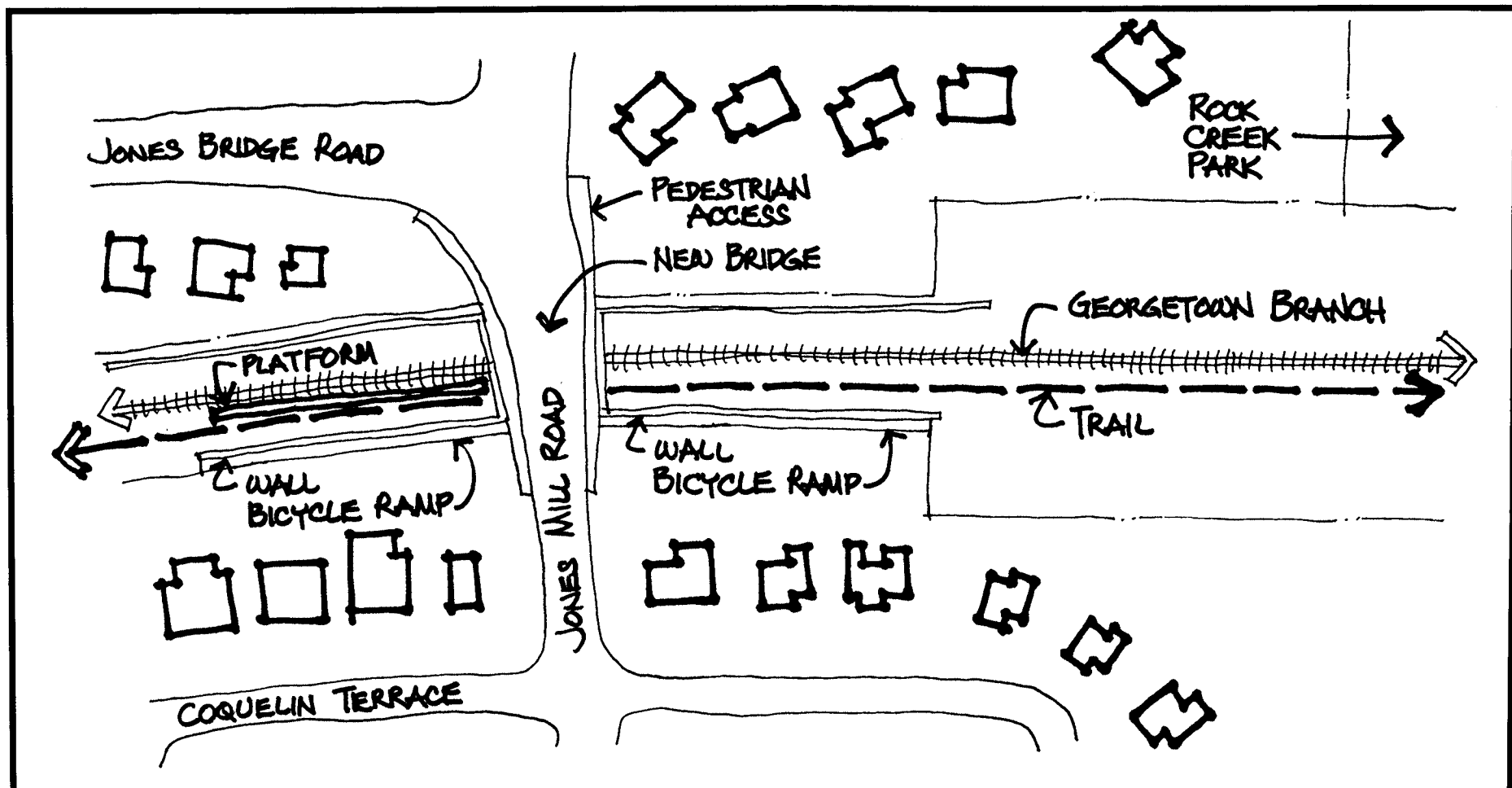
Vehicle Access

The Chevy Chase Lake/Connecticut Station has good vehicular access directly from Connecticut Avenue, a major highway. The only accommodation proposed is a small, ten-space, “kiss-and-ride” area accessed from Connecticut Avenue on the west side. The Plan recommends that the site design for the “kiss-and-ride” parking area at the Chevy Chase Lake/Connecticut Avenue Station be developed together with the adjacent dry cleaning establishment, which plans to redevelop on its site. A further discussion of the Parkway Cleaners site and its relationship to the station and the Chevy Chase Lake Plan is included in the *Bethesda-Chevy Chase Master Plan*. This Plan also recommends that an additional “kiss-and-ride” area be considered for the east side of Connecticut Avenue. This will eliminate unnecessary pedestrian crossings of Connecticut Avenue.

The Chevy Chase Lake/Connecticut Avenue Station has direct access to Connecticut Avenue and is close to the Beltway; it offers convenient transit connections to Silver Spring, Bethesda, and Metrorail. The location is also well buffered from the community. The *Bethesda-Chevy Chase Master Plan* discusses parking in this general area. Parking facilities should only be designed and implemented after parking access has been analyzed to determine their operational feasibility.

In developing the final station area plans for the Chevy Chase Lake/Connecticut Station, the Plan recommends the following guidelines:

1. Consider a joint venture with Parkway Cleaners and CSX to design a mutually beneficial site plan incorporating all recommended facilities.
2. Route the trail adjacent to the trolley line on an above-grade crossing of Connecticut Avenue.
3. Encourage concentrating all west-side vehicular access at one entrance road opposite the existing Chevy Chase Lake Drive intersection.
4. Provide “kiss-and-ride” facilities on both sides of Connecticut Avenue in the vicinity of the platforms.
5. Provide bicycle parking facilities adjacent to the platform areas on both sides of Connecticut Avenue.



JONES MILL STATION CONCEPT PLAN

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

JAN. 1990



FIGURE

24

Jones Mill Station (Proposed Future Station)

The Jones Mill Station is a local (off-peak) station located in the vicinity of the intersection of Jones Mill and Jones Bridge Road, approximately 1,400 feet east of the Chevy Chase Lake/Connecticut Avenue Station. An illustration of the Jones Mill Station is located in Figure 24. The exact location of the station platform will be determined during the design and engineering phase of the project. At this location, the trolley/trail project will include the construction of a new bridge and a below-grade trolley and trail.

The homes within this area are predominantly single-family detached units although a moderate sized townhouse development is located along Manor Drive in the vicinity of Coquelin Run Parkway, approximately 600 feet west of the station area. A nursing home is also located on the opposite side of the Jones Mill/Jones Bridge intersection.

Pedestrian/ Bicycle Access

The trail will be vertically separated from the trolley line and both pedestrian and bicycle ramps will provide convenient access to the station platform. The station is also located within a relatively short distance of the Suzanna Lane access point to the Rock Creek Trail.

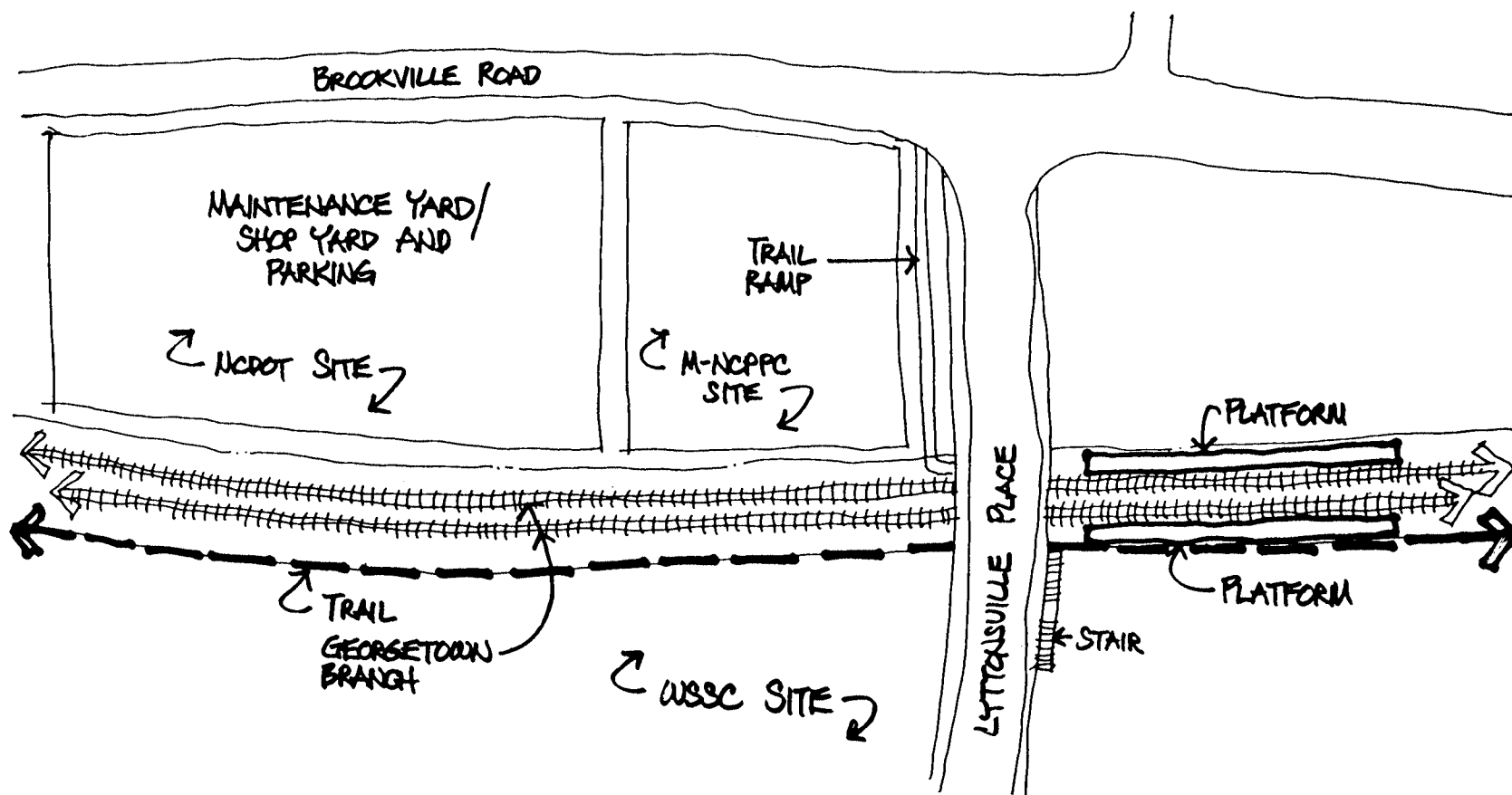
The provision of additional access points and trails within the vicinity of Coquelin Run Parkway will also facilitate pedestrian access to the Jones Mill Station.

Bus Access

Metrobus Route J-1 passes the station on Jones Mill Road.

Vehicle Access

The Jones Mill Station would not include any parking facilities.



LYTTONSVILLE STATION AND SHOP/YARD CONCEPT PLAN

JAN. 1990



FIGURE

25

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Lyttonsville Station

The Lyttonsville Station, an express station, is near the Lyttonsville Place bridge. An illustrative design is shown in Figure 25. A storage yard and maintenance shop are to be located in the vicinity of the station.

Yard and Shop Facilities

The trolley system needs a small facility for storage and maintenance of equipment, trolley cars, and fixed facilities. The yard and shop will also serve as the system communication and dispatch control center, requiring office space and basic employee facilities.

Two alternative locations are being considered for this yard and shop: (1) approximately 4.25 acres of industrial land located between Lyttonsville Place and Stewart Avenue, adjacent to the railroad right-of-way on the south, and (2) approximately 4.11 acres of County-owned land at its existing Bus and Highway Maintenance Facility, located on Brookville Road, adjacent to the railroad right-of-way on the north. The latter site currently is used for MCDOT employee parking. This location is preferred because: (1) it provides space for dual entry/exit yard tracks, (2) it requires less earthwork and minimizes train roll-outs due to its “bowl” topography, (3) the existing County Ride-On facilities adjacent to the site can accommodate shared use, and (4) the site requires no right-of-way acquisition.

Development of the preferred location as a trolley yard and shop will require the relocation of existing MCDOT employee parking and the use of some or all of the vacant land in the southwest quadrant of Brookville/Lyttonsville, which is owned by the M-NCPPC and planned to be used for the Meadowbrook maintenance yard expansion. This 1.3-acre site was acquired from WSSC in 1987 for equipment storage to relieve existing community conflicts at the Meadowbrook maintenance yard. If this site is required for trolley-related station or maintenance facilities, the Department of Parks will consider sharing the site with MCDOT until a comparable site can be found for the Meadowbrook maintenance yard expansion project.

Preliminary MCDOT plans for this preferred site indicate that a surface parking lot off Brookville Road plus decking over the yard area could provide space for about 260 vehicles. Such a park-

ing facility could accommodate the 200 spaces currently used for MCDOT parking, 20 spaces needed in the short term for M-NCPPC truck storage, a “kiss-and-ride” area, and parking for employees of the trolley service area.

For the Lyttonsville shop/yard, the Plan supports the Brookville alternative location and the development of plans for yard facilities and additional parking needs on this consolidated MCDOT/M-NCPPC site. In addition, provision should be made for future commuter parking, most likely in a structure above the site as discussed in the Vehicle Access section below.

Pedestrian/Bicycle Access

There are about 2,000 jobs within 1,500 feet of the station. Pedestrian access would be from Brookville Road and from Rosemary Hills via Lyttonsville Place or the trail adjacent to the trolley line. A ramp connects the intersection of Lyttonsville Place and Brookville Road to the platforms below.

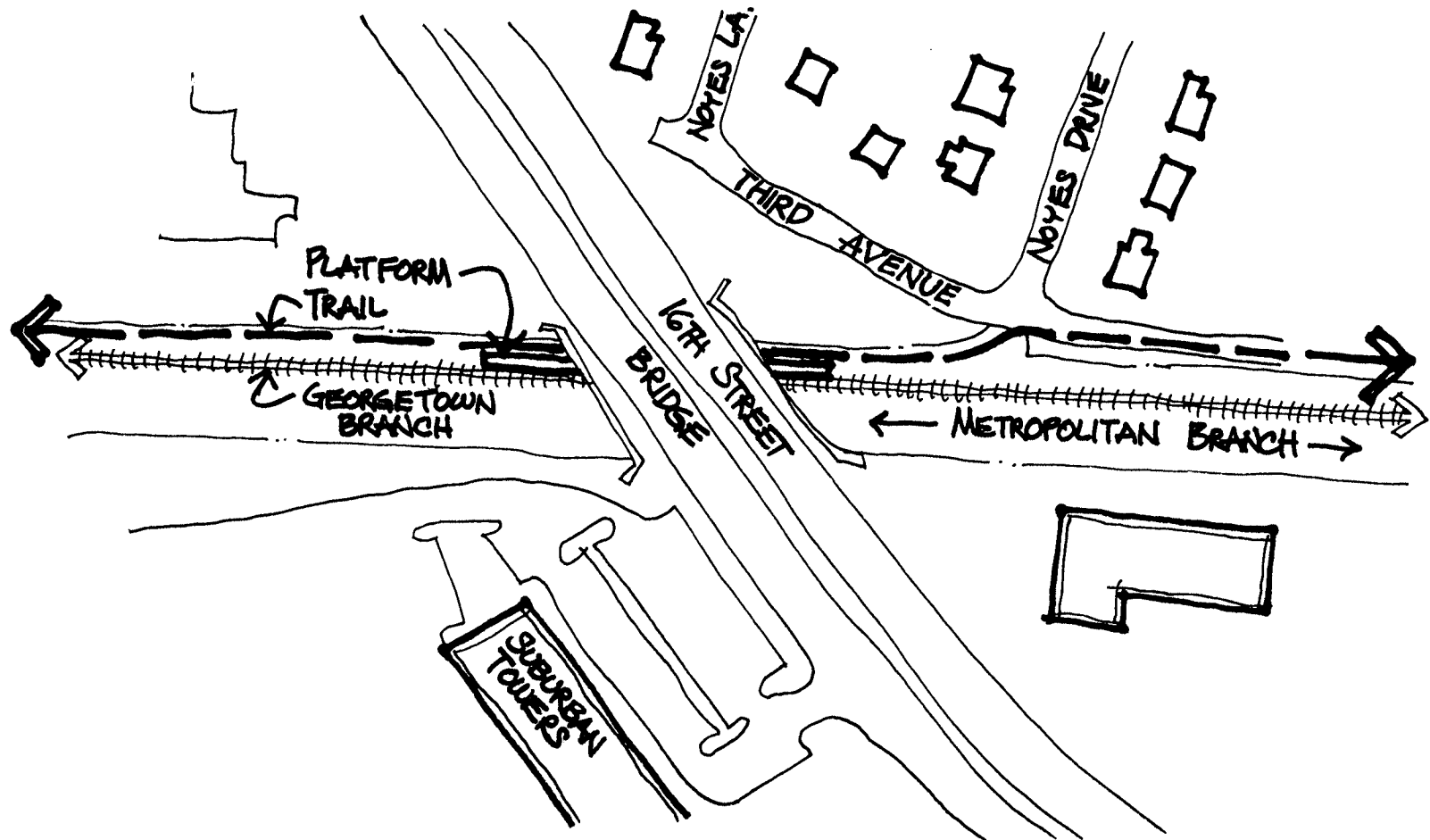
Bus Access

The only existing bus service connecting with this station is Ride-On Route 2 between Rosemary Hills and Silver Spring. There is no formal bus facility proposed aside from bus stops adjacent to the pedestrian ramp at Lyttonsville/Brookville. Minimal, additional bus access could be extended to the station, particularly from the Forest Glen area, such as the extension of Ride-On Route 10.

Vehicle Access

The Lyttonsville Station can accommodate automobile access and parking due to its proximity to adequate local roads, relatively low land cost, and adjacent vacant land. The station includes a 12-space “kiss-and-ride” area at the southwest corner of Brookville Road at Lyttonsville Place.

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WOODSIDE STATION CONCEPT PLAN (16th Street)

JAN. 1990



FIGURE

26

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Woodside Station (Proposed Future Station)

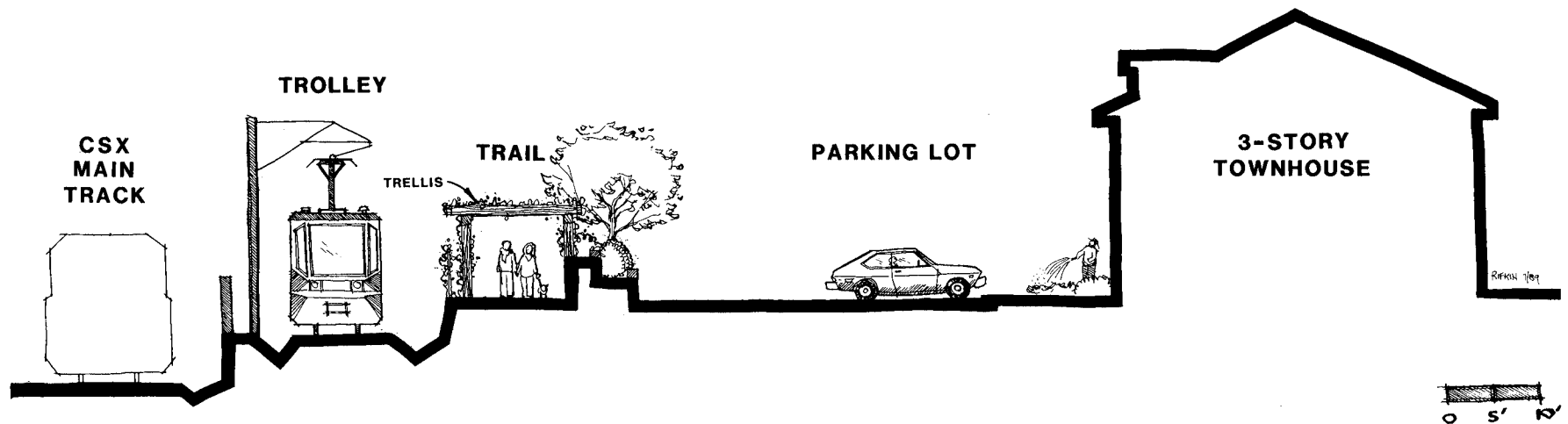
The Woodside Station is a local (off-peak) station located within the vicinity of the 16th Street overpass of the CSX Mainline and trolley line. The station area is located near vicinity of a significant number of residences, including single-family residences, townhouses, and multi-family homes in the area. The station is located approximately 1,600 feet southeast of the Talbot Avenue Bridge and approximately 1,800 feet northwest of the Spring Street Station. It is also located in close proximity to the Spring Center on 16th Street. An illustration of the Woodside Station is shown in Figure 26.

Pedestrian/Bicycle Access

The station will be primarily used by local patrons walking or bicycling on the trail from the surrounding neighborhoods. The Planning Board considered two possible trail routes between the Talbot Avenue Bridge and the Woodside and Spring Street Stations. The Plan recommends that the trail continue adjacent to the trolley from Talbot Avenue next to the Woodside Station to the Spring Street Station.

The first alternative, as included in the project design (*Georgetown Branch Corridor Study*), proposed that the trail end at Talbot Avenue and continue, mixed with traffic, on local streets from Talbot Avenue along Fourth Avenue, Grace Church Road, Third Avenue, and Elkhart Street, across 16th Street, and along Second Avenue to Spring Street. The second alternative proposed that the trail continue parallel to the trolley line from Fourth Street (after crossing the Talbot Avenue bridge) to the Spring Street Station.

The first alternative is based on a questionable assumption that there will be low trail demand between Talbot Avenue and the central business district, and that it is a possible route because the Georgetown Branch right-of-way ends just west of the intersection with the CSX Mainline. But the neighborhood streets that hikers and bikers would have to traverse are indirect, narrow, hilly, without sidewalks, and very close to abutting homes. Also, this route would require crossing 16th Street to reach both the Spring Street Station and downtown Silver Spring. The Elkhart Street crossing of 16th Street does not currently have a pedestrian signal phase.



WOODSIDE MEWS WITH TROLLEY/TRAIL CONCEPT

JAN. 1990

FIGURE

27

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

The second alternative provides local residents a direct, safe access to both the Spring Street Station and downtown Silver Spring. The right-of-way, in conjunction with County-owned land, appears to be wide enough to accommodate the proposed trail. An illustration of the passage of both the trolley and trail next to the Woodside Mews community is shown in Figure 27. The Plan recommends that the trail continue along the right-of-way from Talbot Avenue to the Spring Street Station.

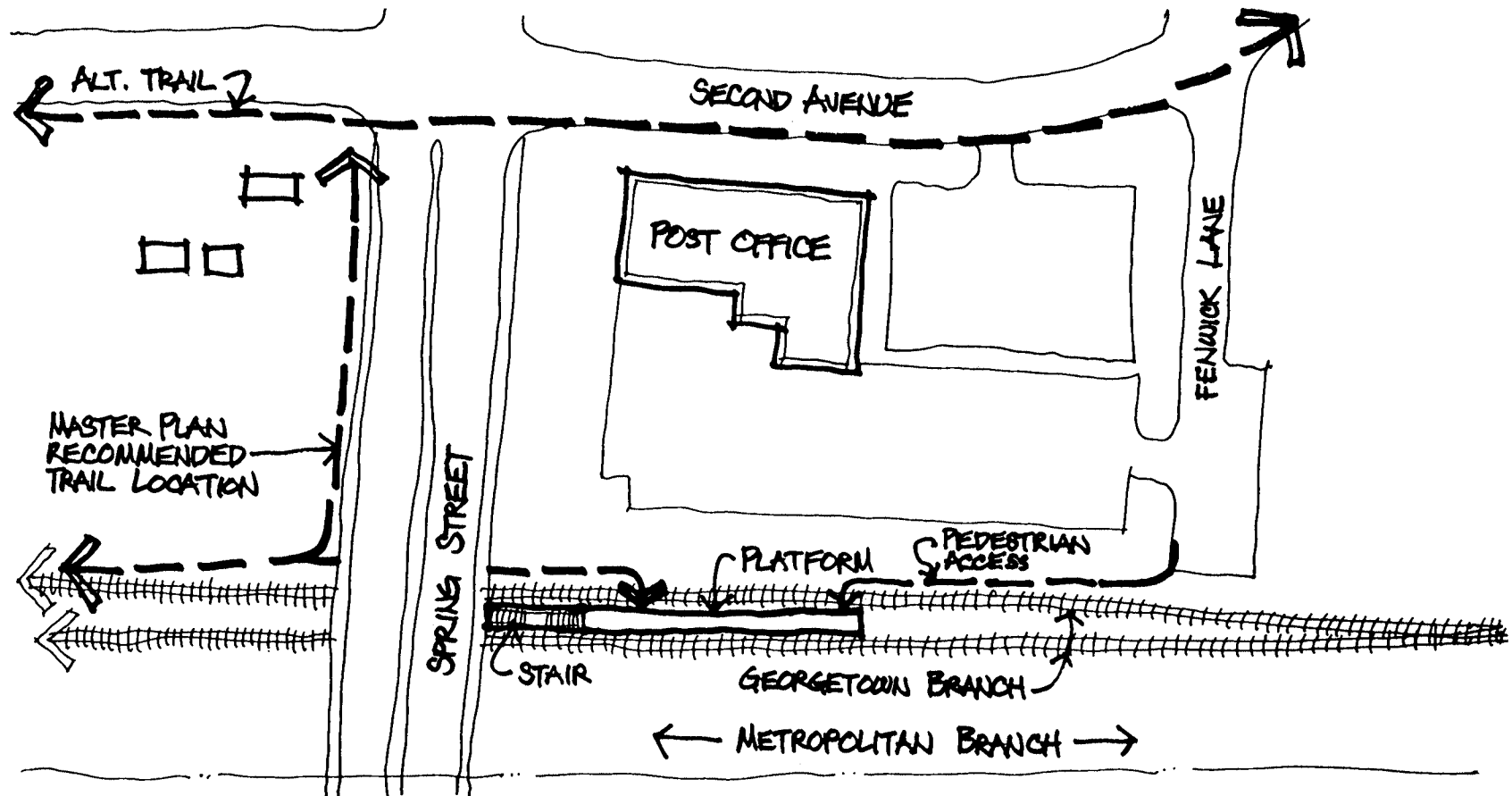
The development of sufficient pedestrian and bicycle access to the station will facilitate use of both the trolley and trail. Additional design and engineering work needs to be completed during the design phase of the project, including a careful examination of the need to improve pedestrian access from the 16th Street bridge.

Bus Access

Specific bus access to the Woodside Station is not anticipated although 16th Street is currently served by Ride-On Routes 3 and 4. Due to its location, site constraints, and proximity to residences no formal bus facility is necessary or feasible.

Vehicle Access

The Woodside Station would not include any parking facilities.



SPRING STREET STATION CONCEPT PLAN

JAN. 1990



FIGURE

28

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Spring Street Station

The Spring Street Station, as shown in Figure 28, is located on the south side of Spring Street and has a single platform between the double tracks. This location serves the northwest side of the Silver Spring CBD and provides access for the Woodside neighborhood. However, the station is local only. If ridership demand is demonstrated, the Spring Street Station may be considered for conversion for use at rush hours. To reduce community impact, the length of the double track at this station should be no longer than necessary for reliable trolley operation.

Pedestrian/Bicycle Access

Pedestrian and bicycle access to the Spring Street Station would be by both a stairway to Spring Street and a sidewalk or ramp from the station platform to the end of Fenwick Lane. While this station provides adequate access to the CBD, it is somewhat inconvenient to Woodside residents who must travel some distance on neighborhood streets, most without sidewalks, and cross Spring Street to reach the station. There are about 1,300 dwelling units within 1,500 feet of the portion of the trolley between Talbot Avenue and Spring Street. The nearby Woodside community is a relatively large, populous area that could benefit from good, direct trail access from the neighborhood. The discussion of the trail segment between the Talbot Avenue Bridge and the Spring Street Station is located in the preceding section about the Woodside Station.

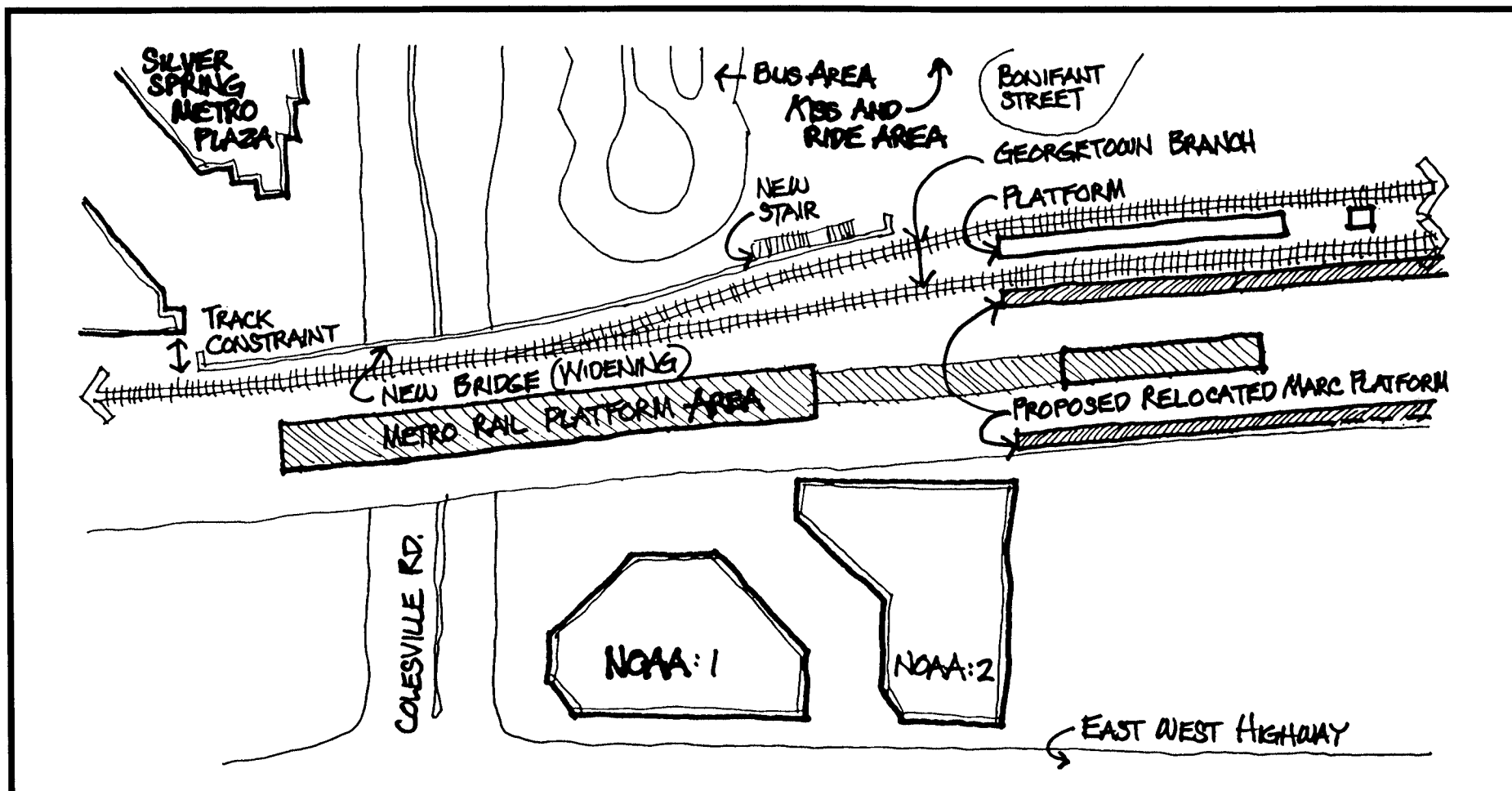
Construction of a trail through this area will require some retaining walls and screening, similar to that required along other sections of the Georgetown Branch right-of-way.

Bus Access

Bus routes in the Silver Spring area currently radiate from the bus terminal at the Silver Spring Metrorail Station. Specific bus access to the Spring Street Station is not anticipated nor critical due to its proximity to the Metrorail station and its status as a local station.

Vehicle Access

The Spring Street Station would not include any parking facilities. It is close to the Silver Spring terminal trolley station where “kiss-and-ride” and parking facilities are part of the Metrorail station facilities.



SILVER SPRING TERMINAL STATION CONCEPT PLAN

JAN. 1990



FIGURE

29

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Silver Spring Terminal

The Silver Spring Terminal, shown in Figure 29, is located parallel to the Metrorail station, just south of the Metrorail station entrance. The location of the platform immediately adjacent to Metrorail provides full and convenient access to the existing bus, “kiss-and-ride,” and parking facilities. A new stair access from the platform down to the bus and Metrorail entrance level will be provided. Otherwise, no additional or special access facilities are included or needed in the project. There is a proposal to relocate the MARC platform to abut the trolley platform, as shown in Figure 29. This proposal would be coordinated with the trolley project. A study is also under way to make some improvements or expansions of the Metrorail surface facilities, which implementation should have little, if any, impact on the trolley platform location.

GRADE SEPARATIONS

The trolley/trail intersects numerous existing and planned streets, and existing and proposed trails. These intersections have been carefully studied to determine the need and desirability of grade separations and access connections. Most of the Georgetown Branch right-of-way is grade separated and does not directly connect with roads. The major exceptions are Connecticut Avenue and Jones Mill Road. As directed in the 1986 *Georgetown Master Plan Amendment*, the following identifies and addresses each grade separation and intersection with the trolley or the parallel trail, and alternatives, if any, recommended in this Plan. The trolley/trail grade separations and structures are shown in Figure 30. All trail and platform access stairs or ramps are shown in Figure 31.

Wisconsin Avenue

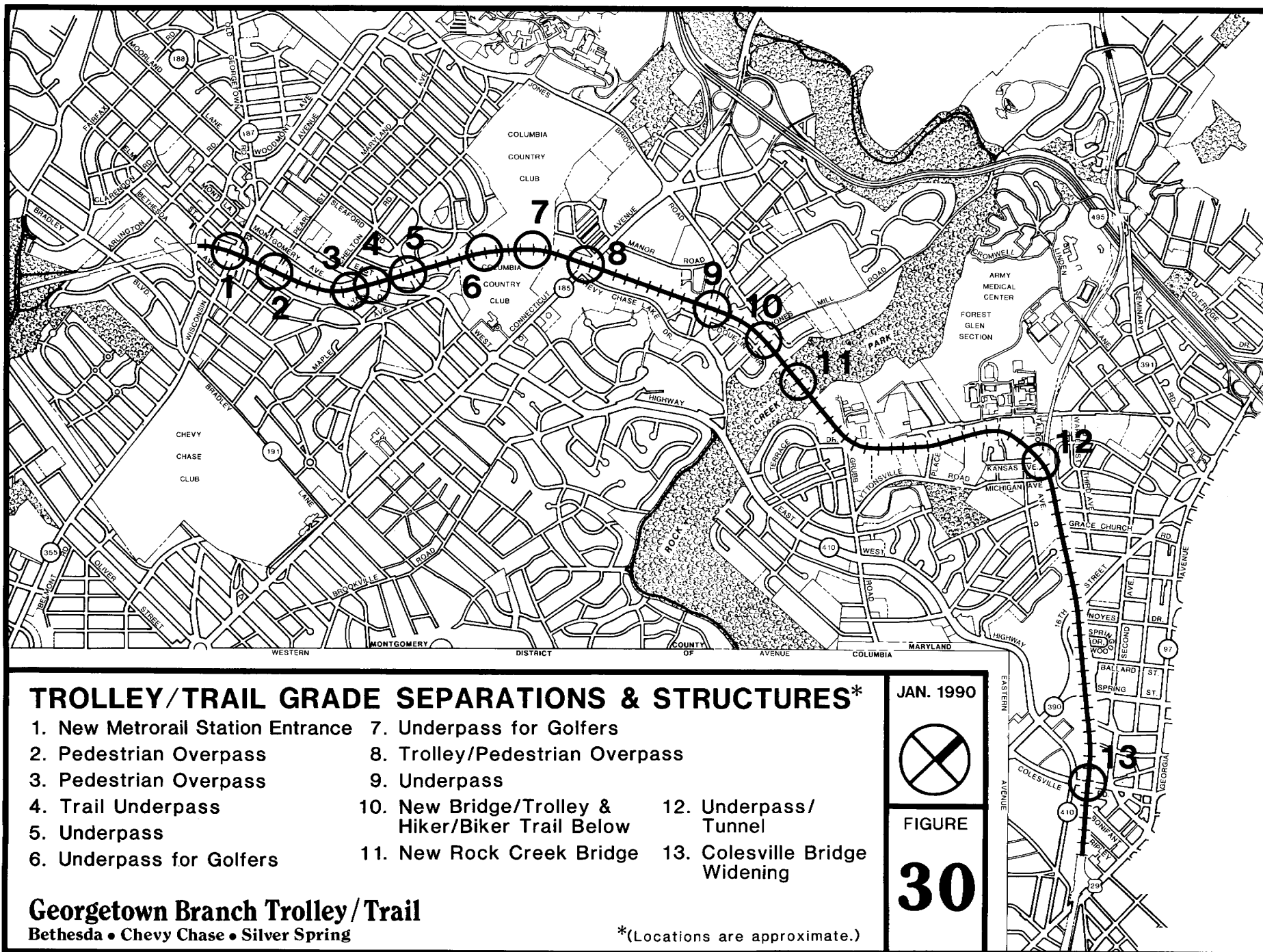
The Georgetown Branch passes beneath, grade separated from, Wisconsin Avenue. The Bethesda terminal station section of this chapter includes a description, evaluation, and recommendations concerning the right-of-way's connections with the Woodmont/Bethesda intersection, Discovery Trail, Wisconsin Avenue, Elm Street Park, and Metrorail station.

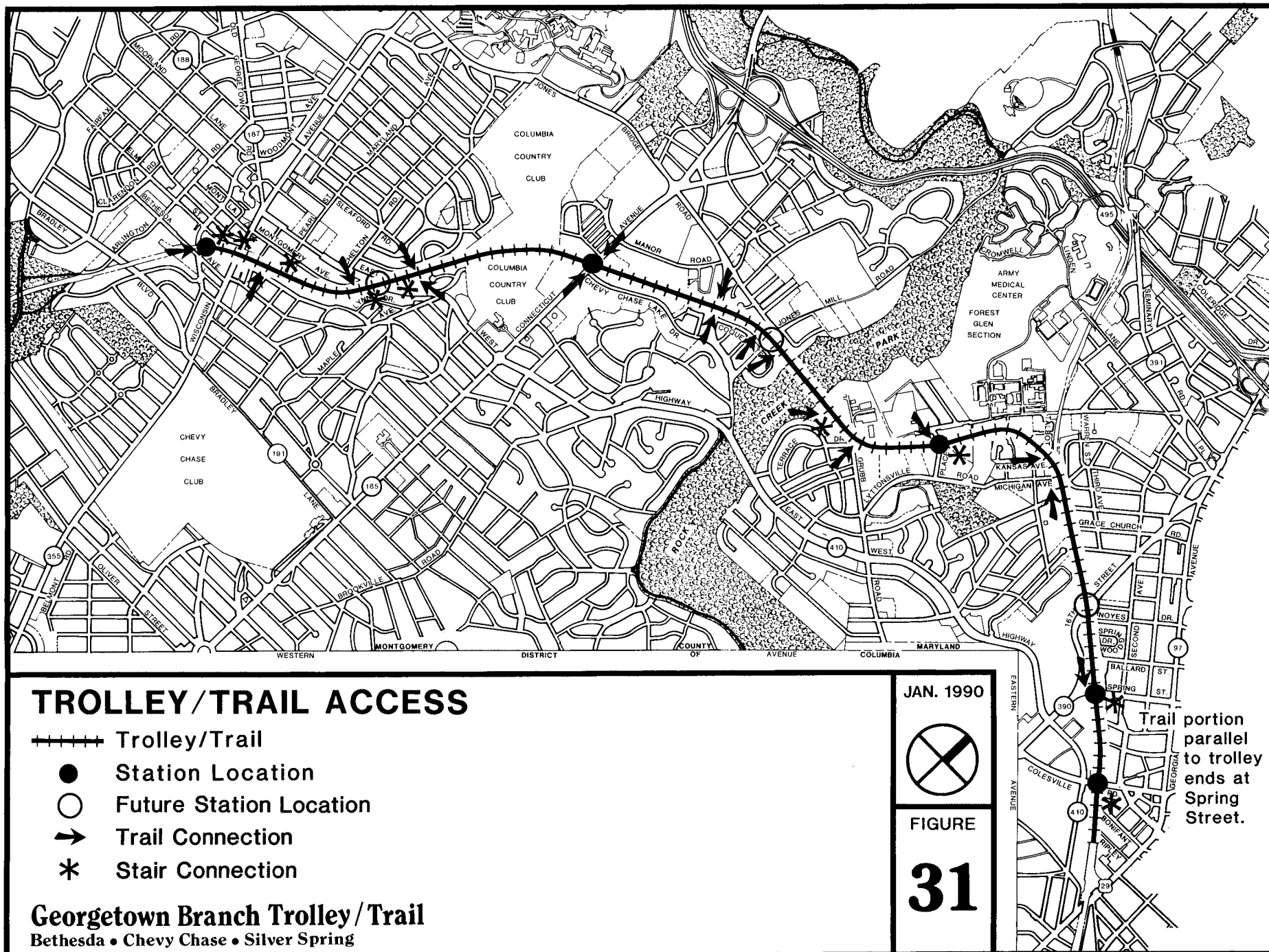
Pearl Street

A bridge will cross the Georgetown Branch right-of-way to connect the trail with Pearl Street. This is consistent with an Amendment to the *Master Plan of Bikeways* and the *Bethesda CBD Sector Plan* which identified a connection across the Georgetown Branch right-of-way at Pearl Street to provide for pedestrian/bicycle movement through the eastern side of the CBD. The proposed bridge would substantially implement this needed connection. However, if feasible, the bridge should provide a ramp to the trail alongside the trolley.

Lynn Drive

A bridge will connect an existing, informal, and widely used pedestrian crossing of the Georgetown Branch right-of-way from Lynn Drive to Montgomery Avenue. The pedestrian passageway is only a few feet wide because of the location of a new building on Montgomery Avenue next to the Riviera condominiums. The Plan recommends that the pedestrian path from the Georgetown





Branch to Montgomery Avenue be designated, acquired, and improved, if at all feasible, to complete the connection of the proposed bridge across the Georgetown Branch right-of-way to Montgomery Avenue.

East-West Highway

East-West Highway crosses the existing track bed on a bridge. Stairs will provide access to the north side of East-West Highway. This is sufficient because various other trail connections proposed in the area provide access to the station.

Sleaford Road

A dedicated but unimproved right-of-way exists between East-West Highway and Kentbury Drive. An underpass and trail connection will be constructed with a south side ramp access up to the trail adjacent to the trolley line. To minimize the impact on the residents near the southern access, the ramp up to the trolley/trail at Sleaford Road should be constructed closely parallel to the right-of-way on about an 8 to 10 percent grade.

Columbia Country Club Golf Course

The trolley/trail passes through the Columbia Country Club but is not designed to provide public access to the Club. Several improvements are necessary to accommodate Country Club maintenance and golfing activities without interfering with the operation of the trolley/trail. These improvements are noted in the Land Use and Zoning chapter.

Connecticut Avenue

Both at-grade and above-grade crossings of Connecticut Avenue were considered. The Plan recommends an above-grade trolley/trail crossing of Connecticut Avenue. This intersection is more fully discussed within the Chevy Chase/Connecticut Avenue Station section of this chapter.

Perry Lumber Site

The T.W. Perry site is adjacent to the north side of the right-of-way, east of Connecticut Avenue. The property can be accessed directly from the right-of-way. An existing bridge will be replaced to accommodate the trolley, but not vehicle or pedestrian crossings. Pedestrians can cross at the nearby platform. The Plan recommends that a pedestrian connection be provided from the Perry site to the station platform and that future commuter parking facilities be developed in conjunction with the Perry site redevelopment.

Jones Mill Road

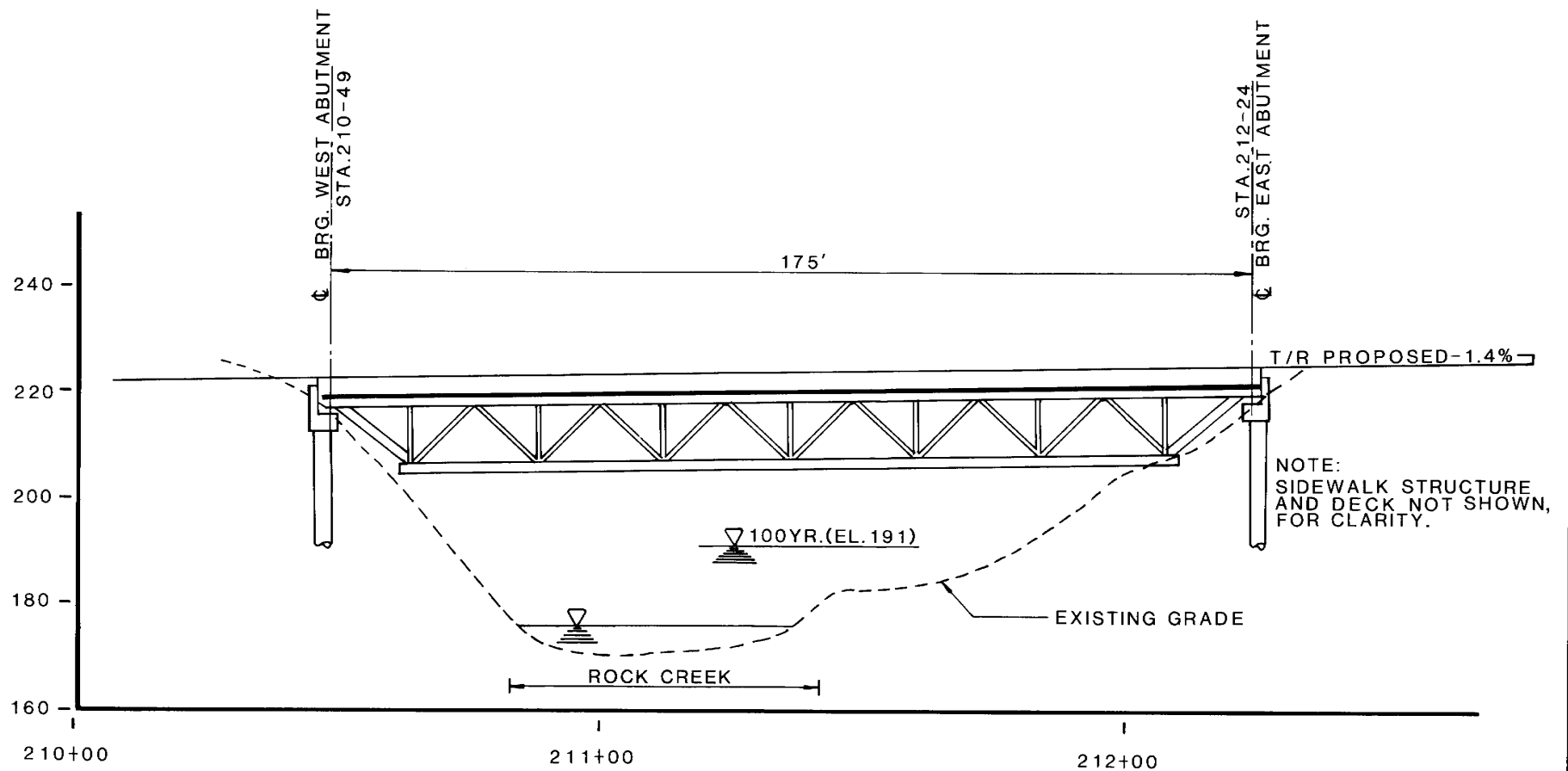
Both at-grade and below-grade crossings at Jones Mill Road were considered. An at-grade crossing would cause significant traffic delay and a safety problem due to limited visibility for a pedestrian crossing. The Plan recommends below-grade crossing for the trolley and trail. The trail would connect with Jones Mill Road by ramps on both sides of the road. It would be desirable to have sidewalks added and improved between Jones Bridge Road and East-West Highway to link with the trail access and existing bicycle accommodations on Jones Bridge Road.

Rock Creek Park

The existing Rock Creek Bridge must be replaced by a new bridge for the trolley/trail crossing. Several designs were evaluated and a twin truss bridge over Rock Creek was selected, with the trolley track and trail at the same elevation. The profile and cross section of the design are shown in Figures 32 and 33. A stairway and switchback ramp for use by hikers and bikers for trail-to-trail access on the east side will be required. A more detailed discussion of the bridge alternatives and related factors is found in the *Georgetown Branch Corridor Study*.

Grubb Road

An access trail connection is proposed from Grubb Road/Terrace Drive which will give direct, convenient connection to the Rock Creek Forest neighborhood.



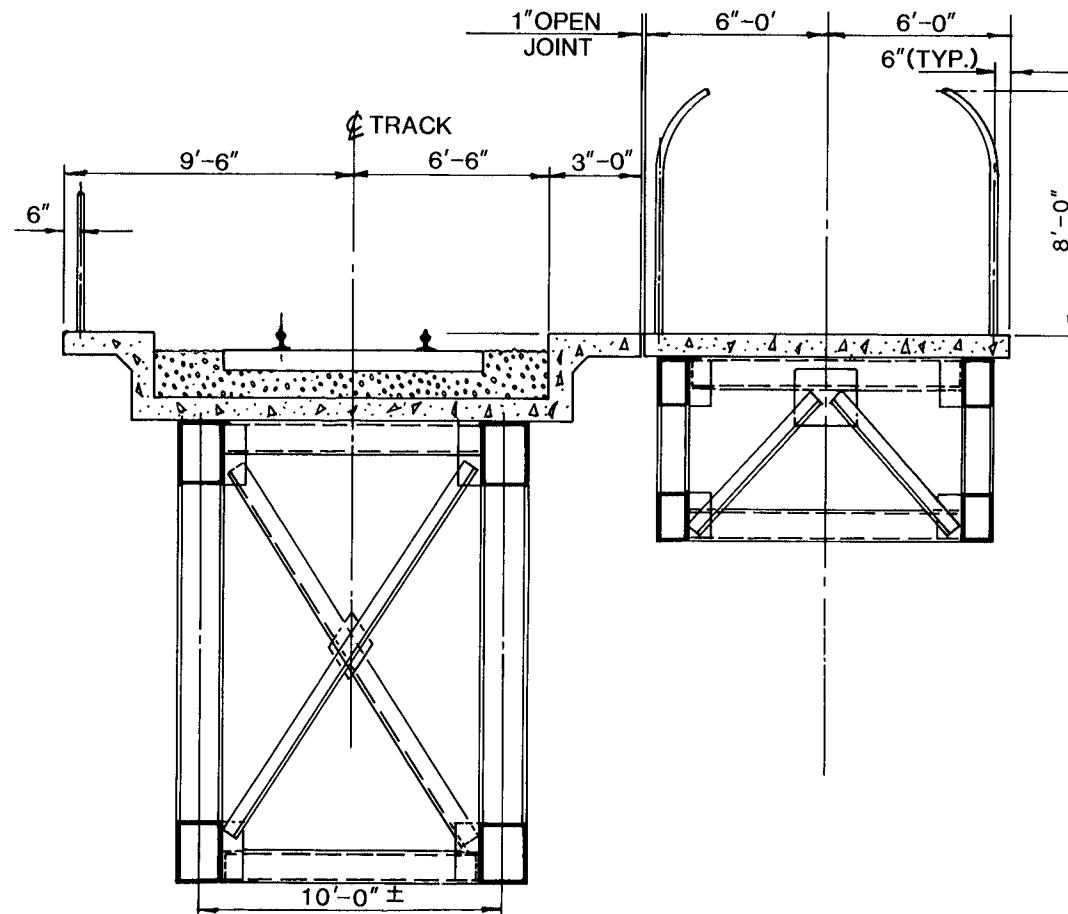
ROCK CREEK BRIDGE PROFILE CONCEPT

JAN. 1990

FIGURE

32

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring



ROCK CREEK BRIDGE CROSS STATION CONCEPT

JAN. 1990

FIGURE

33

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Lyttonsville Place

Lyttonsville Place crosses the track bed on a bridge. A ramp from Brookville Road at Lyttonsville Place will provide access down to the station and trail below the bridge.

Tow Lot

A private drive connecting Brookville Road to a towed car storage lot will be maintained at grade across the Georgetown Branch right-of-way. A gate-controlled barrier is proposed at this location.

Stewart Avenue

The Georgetown Branch right-of-way crosses Stewart Avenue at grade. This road ends in a cul-de-sac south of the right-of-way; it provides access to the businesses thereon. A gate-controlled crossing will be provided. Pedestrian access to Stewart Avenue from the adjacent neighborhood has been precluded by area residential development; otherwise, this would be a logical point for a trail connector to the trail along the trolley line. Although there is no apparent alternative place for a pedestrian connection, there should be further effort to locate an accessway.

Kansas Avenue

A trail connection would be provided at the end of Kansas Avenue to connect the neighborhood to the trail along the trolley line.

Talbot Avenue

The trail along the trolley line will end at Talbot Avenue. Signs will direct bicyclists to a Class III (on-road) bike route into the Silver Spring CBD. The Plan recommends an alternative which would use Talbot Avenue and its bridge crossing of the CSX Mainline, but continue as a separate trail along the trolley line from the Talbot Avenue bridge to Spring Street.

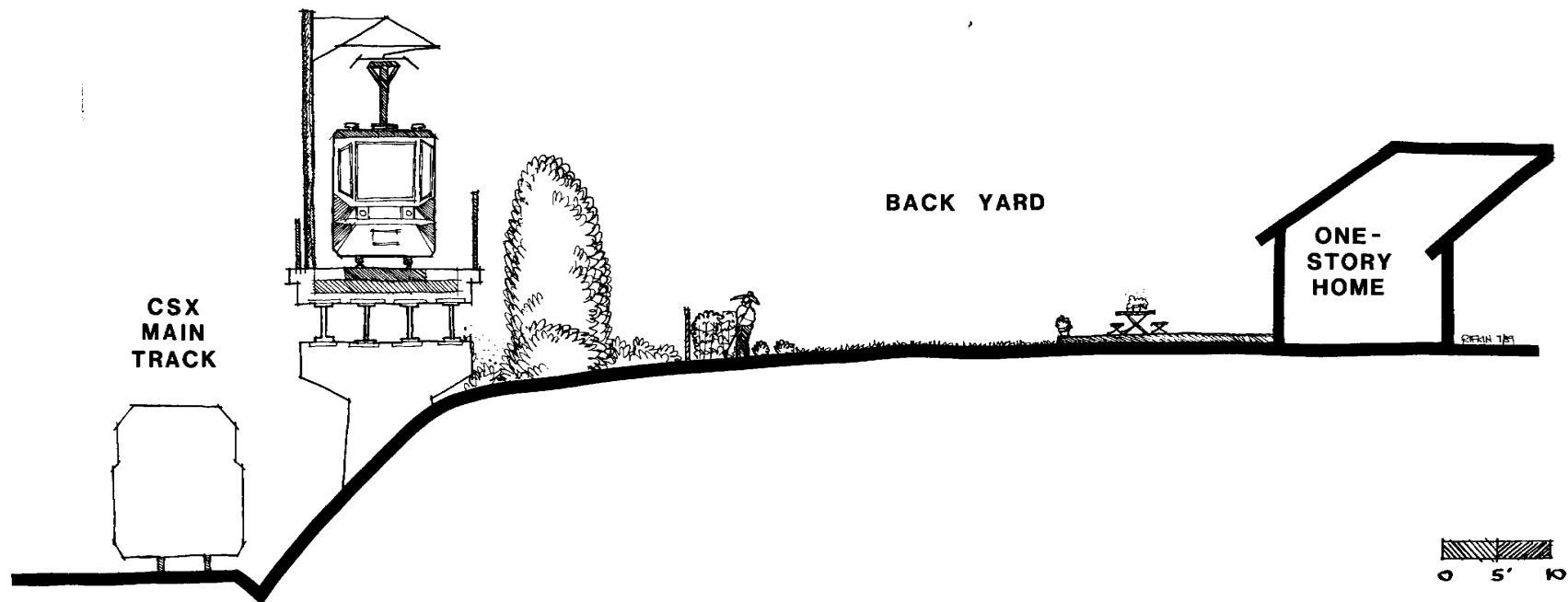
Metropolitan Branch Crossing

The Georgetown Branch right-of-way ends at its junction with the Metropolitan Branch (CSX Mainline). To connect the proposed trolley into Silver Spring, the line must intersect the CSX Mainline and follow it along the existing inactive siding track on the eastern edge of the mainline right-of-way. The crossing must be grade separated. Two proposals were considered regarding the design of the structure for the trolley to cross the CSX Mainline in the Lyttonsville/North Woodside communities. They are: (1) a 12-span, 865-foot-long aerial bridge visible from the houses on Luzerne Avenue and Talbot Avenue, and (2) an underpass immediately northwest of the CSX Mainline. The first design will also include landscaping and a solid fence to mitigate the visual impact of the structure on adjacent residences. An illustration of the overpass option is shown in Figure 34. The second design, studied during the final phase of the report, will cost approximately \$1.75 million more than the overpass design. Although it limits visual intrusion of the trolley, it may make trolley operations and maintenance within the underpass more difficult if problems arise.

The crossing of the CSX Mainline was identified as one of the most problematic design and engineering challenges of the entire line. During the preparation of the Plan both crossing options were reviewed. The overpass option was deemed the most intrusive of the impacts created by the trolley line. The Plan recommends the underpass option. It was selected to minimize the noise and visual intrusion of the trolley crossing on the property owners abutting this segment of the right-of-way and to support the long-term viability and design compatibility of the trolley line with the neighborhoods in the immediate vicinity. The Plan recommends that the trolley line cross the CSX Mainline through an underpass. Additional engineering and design details should be conducted during the design phase of the project.

Spring Street/Fenwick Lane

The Spring Street Station will connect with Spring Street by stairway and with Fenwick Lane by a ramp. Pedestrians would have to cross the east track, which would be inactive during off-peak periods. If the trail along the trolley is extended to the Spring Street Station from the Talbot Avenue bridge, the location of the platform, cross track connections, and the access to Spring Street will need to be carefully designed to ensure safe pedestrian and bicycle access.



**METROPOLITAN BRANCH CROSSING: OVERPASS NEAR
EXISTING HOMES
CONCEPT (Not Recommended)**

JAN. 1990

FIGURE

34

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

Colesville Road/Silver Spring Terminal

The CSX Mainline and proposed trolley line are grade separated from Colesville Road by the existing bridge crossing. Due to horizontal clearance constraints, the bridge would be widened a variable amount to maintain a 24-foot separation, measured from the centerline of one active track to the centerline of the other active track. If this same minimum clearance is applied to the section northward to the Talbot Street bridge, there should be enough room to design an adjacent trail in conjunction with available County right-of-way.

NETWORK ACCESS

The trolley and trail project presents a multitude of access improvement opportunities for transit, bicycle, and pedestrian traffic. Improvements would enhance both recreation and transportation. The trolley/trail improves transit service in the corridor and its connections with bikeways in the community are particularly important. Beyond obvious recreational benefits, the trail significantly improves community pedestrian circulation by facilitating access to community facilities and directly accessing the trolley service. All access stair or ramp improvements are shown in Figure 31.

TRANSIT INTERFACE

The down-County area is served by an extensive network of Ride-On and Metrobus routes and the two radial extensions of Metrorail's Red Line. Almost all Metrobus service, which in the past radiated from the District of Columbia into the County, has been reoriented to access Metrorail stations in the County. Ride-On, with its smaller buses, was implemented to better serve neighborhoods and improve the level of bus feeder service for access to Metrorail. All three transit services are coordinated to work together in providing a relatively high level of transit service in the area. The existing system of public transit is shown in Figure 19.

Bethesda and Silver Spring have traditionally been the hubs of the down-County transit system. This has been reinforced with the construction and opening of the Metrorail system and its related bus terminal facilities. A strong market exists for east-west travel between these two business centers. The County has incrementally increased Ride-On and Metrobus service in the east-west

corridor in response to ridership growth. The increased use of transit into the CBDs has been observed through "before and after" studies of Metrorail's impact. Growth in ridership is expected to continue and to require further improvements to service in response to ridership demand. In the past five years, total bus ridership in the corridor has increased 37 percent, which is almost equal to the increase in transit service over the same period. The percentage of use for commuter trips into the Bethesda and Silver Spring CBDs is currently about 17 percent and 19 percent, respectively. Those figures are expected to increase further as already approved development continues to be built and occupied.

The advent of Metrorail itself has significantly increased transit use into these areas. The trolley service, operating on an exclusive right-of-way and offering a high standard of service, is anticipated to stimulate transit use in a circumferential or cross-County direction, similar to the effect generated by Metrorail in the radial direction.

The connection of the trolley and Metrorail systems in the CBD areas is an important aspect of the transit network system. It will provide convenient pedestrian access and direct transfer between lines, which reinforces transit usage. These direct connections are important since the ridership projections from the *Georgetown Branch Corridor Study* indicate that most trips on the line would be from one end to the other.

While the implementation of a trolley would significantly improve transit service in the corridor, there would be some concurrent reductions and modifications to existing, parallel bus services. Routes operating in the corridor include Metrobus J-1, 2, 3, and Ride-On Routes 1/11 and 2/21. The ridership study indicates about 40 percent of the trolley patrons would be diverted from existing bus and Metrorail services. A detailed plan of bus service changes or reductions would normally not be developed until a year or two prior to rail service initiation. However, some assumptions regarding bus service were made in the course of the study, based on logical service changes.

The primary assumed change in corridor bus service would be a reduction in the Metrobus J-2 and J-3 service between Silver Spring and Bethesda to about half the current frequency. The diversion of bus ridership and the likely reduction of bus service will result in bus subsidy savings to Montgomery County. This savings could be on the order of \$0.5 million per year in operating costs.

However, the cost and service impacts are highly variable and must be treated in a conservative fashion in making assumptions related to the project proposal.

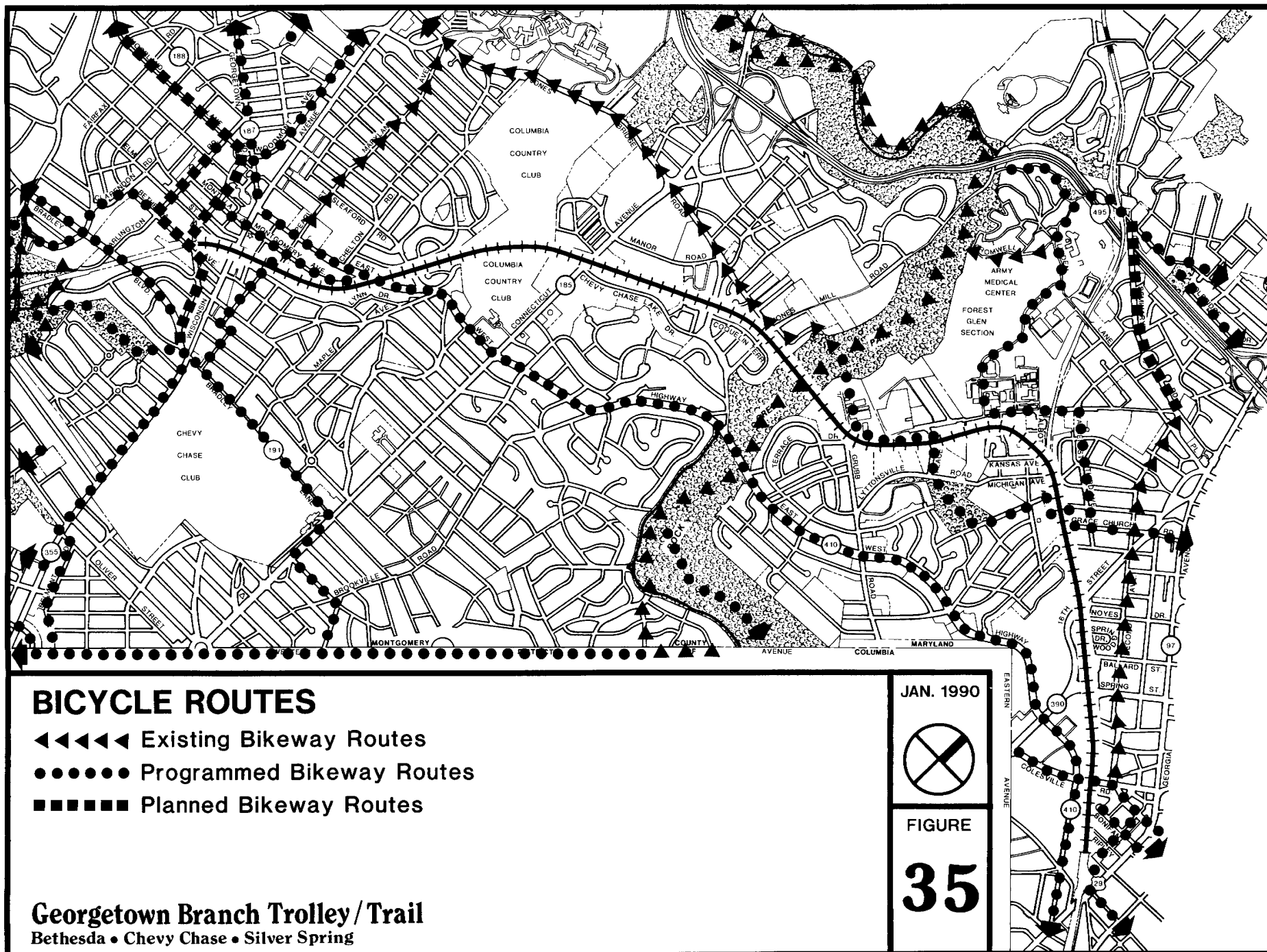
Most of the intervening local and express stations would interface with existing bus services, which will act as feeders to the stations. These interfaces are discussed separately by station. Additional bus services may be added at individual stations.

BICYCLE/PEDESTRIAN INTERFACE

The existing down-County network of bikeways and trails is somewhat fragmented due to the limited opportunities for bikeway construction in this relatively fully developed area. Elements of the *Master Plan of Bikeways* and CIP for the down-County area are shown in Figure 35, together with existing facilities.

The two main trails of interest are the Rock Creek trail and Little Falls trail. Both are mostly completed in this area and are heavily used. The Rock Creek trail begins at East-West Highway and extends north to Rockville. It is crossed by the Georgetown Branch tracks about 2,000 feet north of the highway by a trestle bridge. The bridge is proposed to be replaced and the trail connected by a ramp and stairway on the east side. The Little Falls trail is only partially complete, but the park boundaries end well short of the CBD and Bethesda terminal of the trolley. The availability of the Georgetown Branch right-of-way provides a significant opportunity to extend the Little Falls trail directly into the Bethesda CBD and the Bethesda terminal trolley station. In general, the proposed trail along the trolley line significantly enhances the regional and local use and utility of these trails by extending and connecting the regional trail system. An additional consideration of the Plan is that the implementation of the trail along the trolley line should be followed with action to complete the Little Falls trail (rail right-of-way and/or park location) and the critical missing segment of the Rock Creek trail south of East-West Highway into and through the District of Columbia (National Park Service jurisdiction).

Of major concern throughout the bikeway system is convenient, direct, and safe access from neighborhoods to the trail system. The proposed amount of connector trails for the trolley/trail appears to offer better neighborhood access than is provided on any other part of the County's trail system. If all of the recommended access points are implemented, the trail system will be sig-



nificantly improved for both transportation and recreation use. Each eliminated access trail will restrict the safety and level of use by cyclists and pedestrians. Therefore, all proposed connectors should be implemented, if at all possible. Each of the proposed access or connector trails that intersect the right-of-way and related recommendations is discussed separately under the Grade Separation section of this chapter, and is shown in Figure 30.

The desirable width for a two-directional, combined hiker/biker trail is 10 feet. The Plan recommends that, where feasible, the trail should be 10 feet wide. Narrowing the trail to 8 feet may be considered in selected areas where the trail is constrained by topography or other limiting factors. Hiker/biker trails should not be separated in the areas that are wide enough. A consistent trail design throughout the project is preferable. A minimum 2-foot graded area should be maintained adjacent to both sides of the trail. A minimum of 8 feet vertical clearance is necessary, with a 10-foot minimum for tunnels, in accordance with the 1981 *Guide for the Development of New Bicycle Facilities* developed by the American Association of State Highway and Transportation Officials (AASHTO). Facilities should be handicapped-accessible to the fullest extent possible.

For safety, the trail is physically separated from the trolley tracks in all places. Intervening fencing and vegetative screening should be provided along the entire right-of-way. Where possible, the trail should have a horizontal separation of 12 feet, or a vertical separation of 10 feet, from the tracks. Any barriers should be at least 4.5 feet high and designed to prevent trail users from crossing the tracks except at designated platform access points. Vegetative screening should also be considered between the trail and adjacent properties.

Where the trail continues on an overpass, the overpasses should have 8-foot-high fences on both sides. The fence tops should curve in toward the center of the bridge to protect trail users, as well as preventing objects from being thrown from the bridge. Where the trail passes through underpasses and tunnels, security lighting should be provided during hours the trail is open.

Parking is generally not provided at trolley stations, so the trail will be a primary means of access to the line. The Plan recommends that consideration be given to providing security lighting along sections of the trail used for trolley access during its evening hours of operation.

VEHICLE ACCESS

Facilities for automobile interface with the trolley are to be provided only at the express, peak-period stations at Lyttonsville Place and Connecticut Avenue. Existing CBD parking and Metrorail facilities will be used at the Silver Spring and Bethesda Terminal Stations. These provisions and related Plan recommendations are discussed in the sections concerning those stations earlier in this chapter.

COMMUNITY FACILITY ACCESS

The trolley/trail provides points of access within neighborhoods to a wide variety of community facilities, including schools, religious institutions, fire stations, libraries, post offices, child care centers, numerous public and private recreational facilities, and parks, including Elm Street Park, Leland Park, Lynnbrook Park, East-West Highway Park (Neighborhood Conservation Area), Zimmerman Brothers Park (Town of Chevy Chase), Columbia Country Club, Rock Creek Park, Rock Creek Pool, Rosemary Hills Park, Woodside Park, Kramer Park, and Metro Park. The trolley/trail will enhance access to community facilities, including parks and recreational areas.

SAFETY

Throughout the process of developing the trolley/trail alternative, the issue of safety has been carefully considered in the specification of facilities and operational design. Safety encompasses a number of areas of concern: trolley operations, trail safety, traffic safety, and community security. They are reviewed in the following sections.

TROLLEY OPERATIONS

The design and equipment of the trolley facilities and operations incorporate accepted standards and provisions for safety and security. The particular areas of concern for this project are the single track configuration and the proximity of the trail and the CSX Mainline operations along the Metropolitan Branch section of the line. Other aspects of the design and operation are essentially standard to the accepted design practice associated with trolley equipment and systems.

The single track operation requires special detection, signalization, and communication features, as well as operating procedures, to ensure that trains in opposite directions never occupy the same section of single track. These features are included in the trolley system and are reviewed in detail in the *Georgetown Branch Corridor Study*, pages 61-63.

The common corridor shared by CSX and the trolley on the Metropolitan Branch requires minimum separation standards and intrusion warning devices, as well as special operating procedures. These features are detailed in the *Georgetown Branch Corridor Study* on pages 63-65. Awareness of the problems derailment in common corridors can cause has been heightened by recent local derailments in the corridor shared by Metrorail and CSX. As a result, new detection equipment and operating procedures have been implemented in that corridor. This experience and information have been used in the design of the shared trolley corridor, which includes intrusion detection fencing and other warning mechanisms that are tied into the trolley and CSX signal systems and provision of vertical separation between the two alignments.

TRAIL SAFETY

Trail safety encompasses a number of concerns common to all trail environments. These include conflicts between users, criminal acts, and elements of design for safe operations on the trail. In response to these concerns, the trail along the trolley line is being designed to meet and exceed accepted physical design standards. A particular safety concern with the trolley/trail is the trail's proximity to the rail line.

Numerous trails have been constructed along rail lines across the country. However, little formal information exists on their characteristics and operations. Definitive standards have not been developed for these situations beyond the application of logical, prudent design judgment. Recently, the Rails to Trails Conservancy released the results of a survey concerning trail projects along rail lines. The results reflect a range of design treatments and a very favorable operating experience. Based on the survey results, the trolley/trail appears to be adequately within the range of design parameters on similar projects. The only major apparent differences are the higher frequency of trolley traffic than reported in other projects and the provision of a continuous fence/barrier along the trolley/trail, which is not commonly found in other systems.

The separation between the trolley and trail is designed to provide a minimum 12-foot spacing. This guideline is met or exceeded over about 65 percent of the project's length. The remaining sections have spacing of no closer than 10 feet; in these sections, a vertical separation is provided as well. Along the entire length, a fence with continuous planting will be installed between the trolley and trail. These provisions should keep trail users from straying into track areas except at designated crossings. Other specific aspects of the design that relate to safety are reviewed under the discussion of individual stations and trail access sections.

Other aspects of trail safety and operations are similar to conditions found throughout the County's existing trail network. Routine police patrolling of the trail will be required. The width of the trail at 10 feet exceeds the prevailing 8-foot width typical of park trails. The additional width is clearly a safety enhancement for users, who will experience less friction and conflict than would otherwise exist on a narrower trail.

TRAFFIC SAFETY

The trolley/trail has little direct bearing on traffic safety except at Connecticut Avenue where the trolley will cross at the current at-grade crossing of the Georgetown Branch. A traffic signal will control traffic as at any controlled intersection. The fact that trolleys will stop before crossing Connecticut Avenue assures maximum safety. Gate controls are not proposed, practical, or necessary at this location.

The trolley will have a generally favorable influence on traffic safety by virtue of the reduction in vehicle-miles of automobile travel from diverting trips to the safer trolley.

COMMUNITY SECURITY

Community security is a frequently expressed concern related to trail development. This is of particular concern to residents abutting trail projects. Experience in both the County and other locations suggests that trail-related crime and trespassing are not problems for adjacent residents. Routine police patrolling is provided on trail systems. Security lighting is provided in tunnels and other poorly lighted areas. The Plan recommends that consideration also be given to lighting sections used routinely for pedestrian commuter access to trolley stations.

TRANSPORTATION SYSTEM IMPLICATIONS

Trolley service along the Georgetown Branch right-of-way will increase the level of transit service and transit ridership and contribute to the overall transportation capacity in the down-County area. The implications of a trolley line on existing and future transit services in the corridor are discussed in the Transit Interface section of this chapter. The following sections discuss ridership and the impact of the trolley line on traffic and development capacity.

RIDERSHIP

As part of their initial feasibility study, the Montgomery County Department of Transportation (MCDOT) prepared a detailed projection of ridership on the trolley. Ridership projection is, at times, a difficult venture due to the need to extrapolate various fixed assumptions, including human behavior. This introduces many judgments into the ridership projections. Because of controversies surrounding the judgmental assumptions in the initial feasibility study, the Montgomery County Council decided to retain an independent consultant to review, evaluate, and make recommendations regarding ridership projections to be used during subsequent deliberations about the use of the Georgetown Branch right-of-way. Projected ridership figures from the consultant's (Schimpeler Corradino) report, *Independent Ridership Forecast for Proposed Georgetown Branch Trolley Line Between Bethesda and Silver Spring, Maryland*, are being used to evaluate the project. The report documents various conflicting opinions regarding the factors necessary to determine ridership projections.

The report findings and results were also used in the planning process that developed this Amendment, as the basis for transit ridership and traffic diversion figures. The projected ridership figures appear to be very conservative, especially the estimate that there will be virtually no increase in ridership during the period from 1995 to 2010.

The study projects total daily ridership of about 13,300 daily trolley boardings when the line opens in 1995 and about 13,700 in 2010. The most significant assumptions made in the development of these figures are:

1. COG "Round 4" land use and population forecasts for 1995 and "Round 3.5" for 2010.
2. The southern entrance to the Bethesda Metrorail Station will be built.
3. A \$2.00 per day future parking cost increase for MCDOT operated parking in the Silver Spring and Bethesda CBDs.
4. The incorporation of a "rail bias" factor into the traffic demand modeling process.
5. Trolleys will run every 6 minutes during rush hour.

As in any projection, future deviation from the assumptions has a direct bearing on how well actual future ridership matches the forecast.

IMPACT ON TRAFFIC AND DEVELOPMENT

The *Georgetown Branch Master Plan Amendment* of November 1986 stated that the future Master Plan Amendment should address several items, including the impact of the use of the right-of-way for a transitway on traffic and development. The ridership projection report estimates the number of vehicular trips that would be removed from highways in the area by a trolley line. These vehicular trip diversions may be used to represent the impact of the trolley line on traffic and to provide the basis for estimating the impact of the trolley line on development.

Impact on Traffic and Travel

A trolley line on the Georgetown Branch will significantly improve the level of transit service in the corridor. It will have the two most important attributes necessary for attracting high transit ridership: (1) service reliability and (2) travel time savings. Existing bus service in the corridor must operate in the prevailing congestion of the highway system. It is projected that there will be some further increases in highway and on-street bus travel time delays in the corridor. This situation will affect the absolute travel time from one end of a trip to another as well as the relative travel time differences between modes. Reliable or on-time service, which is very important to commuters, is hindered by congestion-related delays. Reliability aside, travel time itself is a critical

factor in the decision to ride transit. Current travel time scheduled for bus transit trips between Bethesda and Silver Spring is around 20 minutes. The trolley schedule for the same trip will be 9 to 10 minutes, a 50 percent savings for those persons who divert from existing bus services. Even more significant is the fact that trolley travel time will remain constant, unaffected by delays caused by street traffic. These time savings and the inherent reliability of the trolley service operating on an exclusive right-of-way will significantly increase the desirability of this additional transit opportunity, translating into newly induced transit trips and shifts from automobile use.

The ridership report estimates the number of cars that would be removed from the highways daily by the trolley line. Separate estimates were provided for 1995 and 2010. For 1995, the ridership report estimated that 4,360 auto trips per day would be diverted from the highways. The corresponding estimate for 2010 is 5,200 auto trips per day.

The projected decrease in auto trips for 1995 amounts to a reduction of about three million daily vehicle miles of travel, for which there would also be a corresponding decrease in gasoline consumption, emissions, and accident potential. While these aggregate and daily factors are of interest, the peak periods are the time of greatest concern for evaluating traffic conditions.

The ridership report gives daily transit volumes and daily automobile trip diversion or removals due to the trolley service. To convert these daily figures into peak hour auto diversions, this Plan assumes that the ratio of daily auto trips diversions to daily transit trips applies to the peak hour. This Plan also assumes that about 75 percent of this transit travel is in the peak direction. With these assumptions, there would be a total figure of about 850 peak hour auto trips removed from the road system.

The diversion of about 850 automobile trips, of which about 650 are in the peak direction, amounts to somewhat more than the capacity of one-half of an additional lane of arterial highway in this part of the County. The primary impact of this diversion will be to remove trips from East-West Highway. However, trips initially diverted from East-West Highway would likely be replaced by other trips from other nearby roadways. These replacement trips are generally trips passing through the area which may follow a number of alternative routes. The removal of trips from East-West Highway will accommodate more of these through trips, lessening the use of nearby less major roadways. The net effect is an increase in total available corridor transportation capacity in

the peak hour on the combined automobile and transit systems due to the substitution of transit usage for auto usage.

In conclusion, the impacts on traffic and travel are that the trolley service: (1) will permanently increase corridor transportation capacity and enhance transit quality, (2) will primarily relieve congestion on the less major east-west roadways, and (3) will provide marginal improvement in peak hour conditions on East-West Highway.

Localized traffic impacts from the trolley/trail project will be limited to the immediate vicinity of stations, the yard, and access links to the parallel trail. These locations are discussed individually for each station and access point under the Trolley Stations and Grade Separations sections.

Impact on Development

The *Georgetown Branch Master Plan Amendment* (1986) addresses the potential impact of the transitway improvement stating that:

“No traffic capacity from any proposed improvement in a future master plan amendment will be counted for development approvals or rezoning until the precise mode and carrying capacity is determined, the improvement is approved, budgeted, and imminent; and master plan staging recommendations are revised through amendments of master plans and/or through the annual growth policy.”

This Plan does not amend area sector or master plans with respect to zoned development levels or the Annual Growth Policy (AGP) with respect to the annual staging ceilings. This Plan recommends: (1) that any additional new growth capacity that may be available by the addition of the trolley facility be allocated through the appropriate future Annual Growth Policy (AGP) and (2) that changing the existing zoning or ultimate development potential not be considered until it is studied further in subsequent revisions to the *Bethesda CBD Sector Plan* and the *Silver Spring CBD Sector Plan*.

Currently, the Bethesda-Chevy Chase and Silver Spring policy area staging ceilings in the AGP are reviewed annually, as are those of every other area of the County, to take account of changes

in observed traffic conditions and the programming status of transportation facilities. Under the AGP, a transportation facility can be used in setting new staging ceilings when the newly adopted State or County programs show that 100 percent of the construction expenditures are scheduled to occur within the first four years of the program. The potential for additional staging ceiling that might be adopted as part of a future Annual Growth Policy can be estimated based on the ridership and diversion projections presented in the Schimpeler Corradino ridership report. These projections, as discussed previously, indicate about 850 auto trips would be removed from the highway system in peak and non-peak directions. A direct application of the appropriate trip rates for development yields about 2,000 dwelling units if residential uses were to be staged or about 3,000 jobs if employment uses were to be staged. This is an order-of-magnitude level of development that might be accommodated by the operating of trolley service, assuming the ridership diversion values are correct and the trip rate can be applied generally in the corridor area. However, this Plan notes that it is difficult to forecast ridership.

This Plan recommends that the new staging ceiling created by the programming of the trolley project be allocated to residential use. This is consistent with previous policy decisions concerning the need to strengthen and increase the residential component of the CBD areas. The peak directionality of transit use indicates that the majority of the residential use could be identified for the Silver Spring area. However, the exact allocation and location should be made as part of the AGP process.

Chapter IV

Environment

CHAPTER IV. ENVIRONMENT

This chapter analyzes the major environmental issues associated with making a decision on this project and establishes guidelines and gives direction for its implementation.

Environmental considerations for the trolley/trail focus on two aspects: construction impacts of the transit facility and operational impacts during its proposed use. Construction impacts involve land disturbance, such as grading and tree removal. The major operational impact with a trolley system is expected to be the noise impact upon abutting homes. Other impacts of the operation of the system are discussed in the community impacts section of the Plan. The Regional Water Supply Alternative is identified. Technical terminology is defined in the glossary.

ENVIRONMENTAL RECOMMENDATIONS

GENERAL

Focus noise mitigation efforts on protection of residential uses. The function of active recreational uses (such as hiker/biker trails and golfing, for example) is not considered to be significantly impaired by the passby of trolleys.

Before detailed design is commenced, evaluate and identify all opportunities for reducing noise at the source, then assess the need for noise barriers — on a site-by-site basis — based on both American Public Transit Association and M-NCPPC/MCDOT criteria.

Encourage earliest consideration of all options for stormwater management control, including options on the Columbia Country Club property and along Coquelin Run at Rock Creek. Regional stormwater management control measures are necessary, regardless of whether or not the trolley is built, since no quantity and few quality control stormwater management measures now exist in this watershed.

Perform field examination and delineation of wetland areas (focusing on wet areas in the Coquelin Run watershed) as soon as an alternative is chosen to identify any wetland areas not on the National Wetlands Inventory maps.

Provide proper delineation and protective measures for trees to be avoided during the construction process.

Final design and engineering shall provide for: incorporation of noise reduction at the source (for instance, use of resilient rail fasteners and noise damping structural components in elevated sections); the stabilization of the local storm drainage conveyance system; the provision of regional stormwater management controls; the maintenance or removal of diseased, damaged and dead trees; the stabilization and reforestation of reconstructed slopes within and near the right-of-way; and the field adjustment of the trail alignment to avoid significant trees.

In addition, every effort possible should be made to ensure that existing trees along the trolley/trail route are preserved wherever possible and that replacement of trees is of a sufficient quantity and quality to preserve and enhance the environment.

Connecticut Avenue to Lyttonsville

Construct a trail and picnic area in the vicinity of the trolley crossing of Coquelin Parkway right-of-way on a tributary of Coquelin Run. The trail should be set back from the stream at least 50 feet wherever possible. The picnic area should be oriented to the trail, rather than placed near the stream.

Lyttonsville to Silver Spring

Evaluate the need for control of structure-borne noise and vibration emanating from the elevated structure east of the CSX tracks to assure compatibility with the existing residential and office uses in close proximity.

Provide comparable visual screening and noise mitigation for the Woodside Mews townhouses if disturbance of existing landscaped berm is necessary.

DISCUSSION

GENERAL

This section identifies potential environmental impacts associated with this project and possible techniques for mitigating these impacts.

Construction impacts can be reduced through designs which minimize ground disturbance and tree loss and through use of sediment control techniques in areas that must be graded. Aside from the use of retaining and "crib walls," few techniques exist to greatly reduce the area of disturbance.

With the exception of the main stem Rock Creek crossing, the Georgetown Branch right-of-way does not affect any officially designated floodplains or wetlands, as delineated in the M-NCPPC Floodplain Maps and the National Wetland Inventory (NWI) maps of the U.S. Fish and Wildlife Service. Some of the pedestrian and bicycle trail connections, and other off-right-of-way improvements, however, may infringe into floodplain and/or wetland areas. Field examination and delineation of wetland areas should be performed (focusing on wet areas in the Coquelin Run watershed) as soon as an alternative is chosen to identify any wetland areas not on the NWI maps.

The potential for noise impacts has been reduced by the County's selection of a quieter vehicle type (electric versus diesel engine). To assure minimal noise effects, all design and engineering methods for noise mitigation should be evaluated for implementation. Specifically, all options for controlling noise at the source, including use of resilient rail fasteners, noise damping structural components in elevated sections, and stringent standards for maintenance (including wheel truing) should be implemented.

The selection of an electric powered vehicle also improves the potential for cost-effective barrier-type noise mitigation, since the primary source of noise from the trolley will be low on the vehicle (wheel/rail interaction) as opposed to the diesel alternative, where exhaust noise would be higher and thus demand a higher barrier for mitigation.

The primary focus of noise impact analysis should be on the effect on adjoining residential properties. Although lower noise levels for trail users would certainly be a benefit, the intermittent

nature and short duration of the passing of the trolley should not significantly interfere with the use, enjoyment, and function of active recreational uses such as hiking and biking. Similarly, the golfing use on the Columbia Country Club property should not be considered noise sensitive, particularly since existing roadway related noise already results in high ambient noise levels.

AMBIENT AND PREDICTED TROLLEY NOISE LEVELS AT NOISE SENSITIVE SITES

Site	Location	Distance*	Ambient Ldn	+	Trolley Ldn**	=	Total Ldn***	SENEL#
1	Riviera Apts.	30'	60.0		53.1		60.8	58.1
2	4300 Kentbury	55'	53.0		51.8		55.5	61.8
3	Columbia CC	60'	61.7		61.7		64.7	67.3
4	CC Lake Dr.	70'	51.4		46.3		52.6	55.4
5	Round Hill Apts.	50'	56.3		47.8		56.9	54.8
6	Rosemary H ES	160'	58.5		42.0		58.6	52.8
7	1614 3rd Ave.	50'	52.9		50.4		54.8	59.7
1B	4505 Elm St.	105'	61.4		53.0		62.0	63.8
2B	B.F. Saul Bldg.	50'	63.4		58.7		64.7	66.3
3B	Rock Creek Park	30'	52.3		56.9		58.2	59.3
4B	Park Sutton Apts.	50'	65.5		47.7		65.6	52.2
AVERAGE dBA			57.9				59.2	59.2

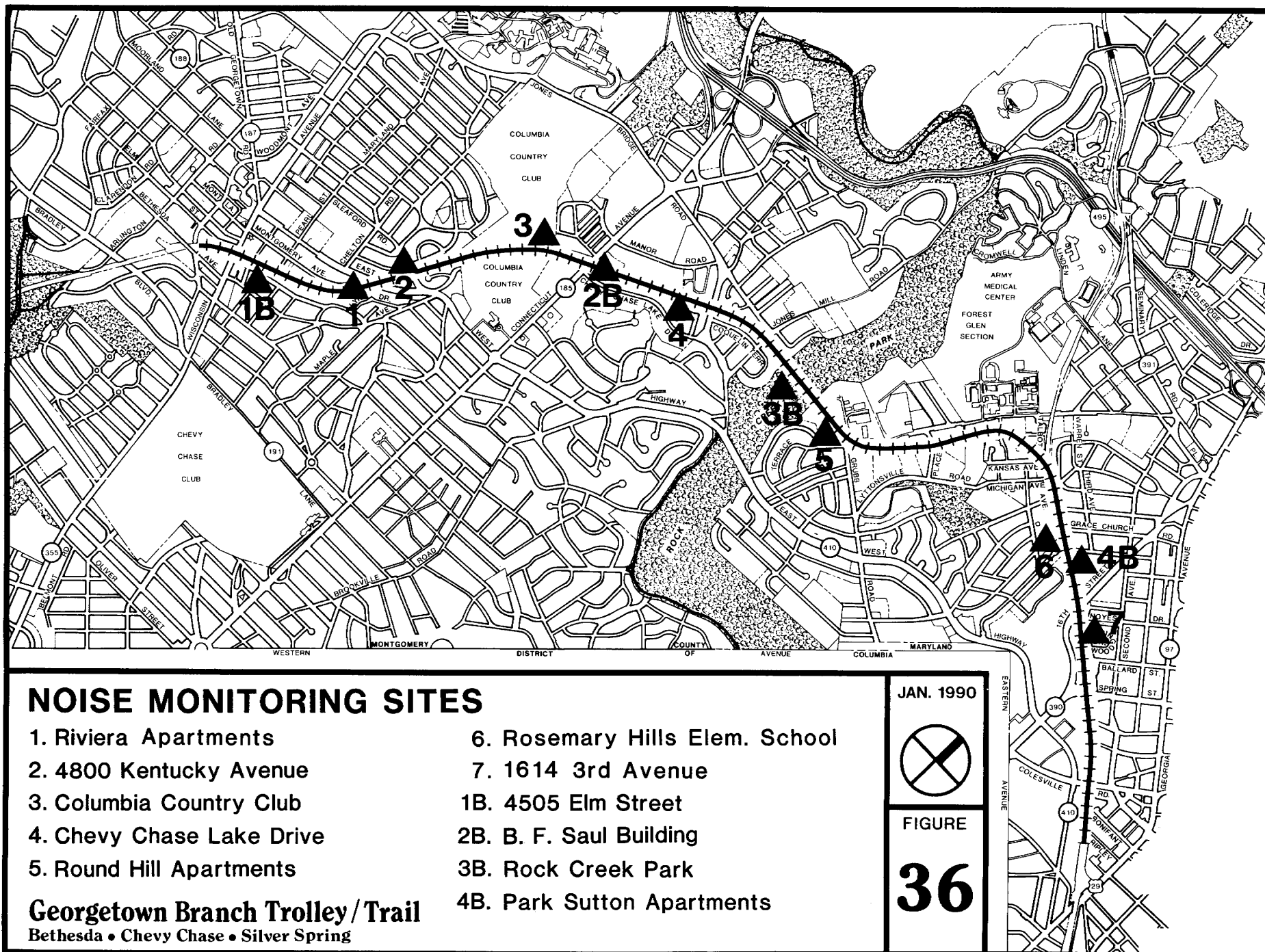
* Distance from track centerline (varies due to right-of-way width and location/proximity of sensitive noise receptor)

** Trolley Ldn and SENEL noise analyses are based on modeling efforts rather than monitored results. All future noise analysis shall be based on documented monitored data.

*** Total Ldn is based on the logarithmic addition of ambient and trolley noise levels.

SENEL (single event noise exposure level): the noise exposure level of a single event measured over the time interval between the initial and final times for which the sound level of the single event exceeds the background noise level. Regardless of the actual time interval, this descriptor assumes a reference duration of one second.

(See Figure 36 for locations of the corresponding noise monitoring sites referenced in above table.)



For the most part, noise levels at adjoining properties during trolley operation are expected to be comparable to existing ambient noise levels in these neighborhoods. The *Georgetown Branch Corridor Study* included a comparison of ambient levels to trolley levels, showing the post-construction increases in the ambient levels. The previous table provides the results of that analysis.

When evaluated on the basis of the day-night average sound level, or Ldn, the sound levels created by the trolley alone are from 1.2 to 16.5 dBA lower than neighborhood ambient levels are today. The one exception is in Rock Creek Park, where the trolley sound levels exceed existing park sound levels by 3.6 dBA, possibly because they were measured from a receptor located only 30 feet away. Neighborhood ambient levels with an operational trolley will increase from 0.1 to 5.9 dBA. However, when excluding Rock Creek Park, the greatest increase at any sensitive receptor is only 2.5 dBA.

The *Georgetown Branch Corridor Study* uses two noise standards for determining impact: (1) the maximum noise level criterion suggested by the American Public Transit Association (APTA) of 70 dBA SENEL (single event noise exposure level), and (2) the M-NCPPC/MCDOT criteria of 60 dBA Ldn. The APTA criterion, although stringent, does not consider the number of operations and time of day effects as do time-integrated descriptors such as Ldn or Leq. However, SENEL has been translated into Ldn in the chart to allow direct comparison.

It should be noted that the recommended 60 dBA Ldn standard is five decibels more stringent than the typical standard used to review private development applications in this portion of the County. The reason for using this standard is to assure, insofar as possible, no significant deterioration of the ambient environment to the affected neighborhoods.

It is recommended that a detailed study be performed at the engineering phase which will identify all design options for reduction of noise and vibration effects at the source, with associated costs and incremental noise reduction. Also, specific maintenance requirements will be established that will assure no noise increase over time. Then, the study should determine how many homes or units are subject to noise levels above the standards (or map noise contours) and evaluate the need for noise barriers based on both the APTA and M-NCPPC criteria. Variances between the previous and current noise analyses in the trolley levels should also be reconciled.

Existing County noise regulations will control other sources of noise within the right-of-way. Substation transmitter noise and construction-related noise must meet the requirements of the Montgomery County Noise Ordinance. Nuisance type noise from people using the trail could probably be controlled by the Montgomery County Police. Possible vibration impacts should also be addressed, as recommended in the *Georgetown Branch Corridor Study*.

These potential local negative impacts can at least be partially offset by a number of beneficial improvements within and near the right-of-way. These improvements should include the stabilization of the local storm drainage conveyance system, provision of offsetting stormwater management controls, maintenance and selective pruning of diseased, damaged, and dead trees, and stabilization of the reconstructed slopes existing along the current tracks. In addition to physical improvements, a clear but difficult to quantify benefit in regional air quality always occurs when vehicle trips are reduced through mass transit. However, the noise benefit cited in the study is likely to be negligible for those persons living along the main traffic arteries. Some quantification should be provided on the noise benefit attributed to reduced vehicle miles.

Bethesda Station to Chevy Chase Lake/Connecticut Avenue

Three major County projects and one possible WSSC project affect this segment of the Georgetown Branch right-of-way. These projects should not only be coordinated, but should be constructed concurrently to minimize environmental and community disruption. These projects include the possible construction of a regional stormwater management facility, construction of County storm drainage/stream valley improvements (County CIP PDF 11-39), and construction of the Georgetown Branch trolley/trail project.

Before any detailed engineering on these projects can occur, a field evaluation of wetland areas should be completed. In particular, a pond on the Columbia Country Club site is within a designated wetland on the National Wetland Inventory maps. Once the wetland issue is resolved, the engineering phase of the trolley study can proceed.

It should be noted that stormwater management is needed for this area regardless of whether the trolley/trail proposal is implemented.

The trolley project should provide full stormwater management control for the area of the right-of-way. It should also provide water quality control. Given the lack of nearby undeveloped areas available for stormwater management use and the narrow width of the right-of-way, stormwater management control will probably need to be provided in a regional facility. An opportunity exists to satisfy both the stormwater management needs of this project and those of this developed watershed. There are few other stormwater management options in this area. The loss of any options for stormwater management in this location would send a high volume of urban pollution into this tributary. MCDOT, in cooperation with Montgomery County Department of Environmental Protection, should immediately commence efforts to investigate and implement feasible stormwater management alternatives, including but not limited to a regional pond, and provide appropriate funding for construction and continuing maintenance.

Storm drainage improvements to the upper Coquelin Run stream valley, which generally parallels the right-of-way to the south of Montgomery Avenue in Bethesda, are proposed to stabilize an area between the Air Rights Building and East-West Highway with a long history of flooding and severe stream bank erosion. Portions of the existing track/embankment are currently threatened by erosion at a storm drain outfall south of Montgomery Avenue. Hydraulic improvements to this drainage network will likely increase the need for stormwater management controls in this currently uncontrolled watershed.

Connecticut Avenue to Lyttonsville

Minimizing the environmental disruption to the Rock Creek/Coquelin Run stream valley during construction of the new bridge structure is a primary environmental objective in this segment. The demolition of the existing bridge, removal of 30 vertical feet of fill on the berm within the stream valley, and the difficulty in stabilizing the very steep side slopes on the bridge approaches demand careful planning and management to control sediment during and after construction. The bridge structure should be designed to avoid placement of any abutments within the stream and floodplain area. Extensive coordination shall be required with the M-NCPPC Parks Department for any disturbance within M-NCPPC parks.

A recommendation has been made by MCDOT, as part of the consultant's study, to construct a trail and picnic area in the vicinity of the trolley crossing of Coquelin Parkway right-of-way on a

tributary of Coquelin Run. This area is now unmaintained and is a repository for community debris (lawn clippings, etc.). This area offers another opportunity to provide an improvement to the community adjacent to the Georgetown Branch right-of-way and should be sensitively improved in consultation with the nearby homeowners.

Another, less preferred, alternative for a stormwater management facility exists along this segment. If the Columbia Country Club option is not feasible, the flat open area along Coquelin Run near its confluence with Rock Creek could be considered for stormwater management with the concurrence of the M-NCPPC Parks Department.

Lyttonsville Station Alternatives

The possible location of a vehicle maintenance yard southeast of the Lyttonsville Road crossing creates potential compatibility problems with the existing and proposed high density residential areas south of the tracks. Noise from such an operation may be subject to the controls of the Montgomery County Noise Ordinance. This could result in significant constraints to the maintenance of vehicles, particularly during the nighttime hours. It is strongly recommended that the well-buffered site south of the crossing (MCDOT parking area) be used for the maintenance yard.

Lyttonsville to Silver Spring

Noise and vibration emanating from the elevated structures east of the CSX tracks should be technically evaluated to maximize compatibility with the existing residential and office uses in close proximity. Structural changes made without consideration of the acoustical implications could have serious consequences. Structural design of the bridge will be very important in reducing the noise potential for a trolley on a raised platform. A landscaped raised berm for recently completed residential construction should be replaced with a comparable visual and noise barrier protecting these townhouses in a manner acceptable to the residents affected.

WSSC REGIONAL WATER SUPPLY ALTERNATIVE FOR GEORGETOWN BRANCH RIGHT-OF-WAY

One of the purposes of this master plan is to identify other projects potentially designated for the Georgetown Branch right-of-way corridor in order to minimize community disruption and to assure the compatibility of both projects.

The Washington Suburban Sanitary Commission (WSSC) is conducting a facility planning study for water supply, transmission, and storage facilities within the Montgomery and Prince George's counties "Main Zone" service area. The study will identify existing and projected system constraints and alternative facility improvements to address these constraints. These alternatives will be evaluated using criteria such as present worth, feasibility, and operational benefits. One such operational benefit is the level of redundancy provided to the water system.

The alternatives include supply and transmission of water from either the Potomac or Dalecarlia water filtration plants. The study considers five alternative alignments for the transmission line, one of which includes a segment of the Georgetown Branch right-of-way. As illustrated in Figure 37, the four remaining alignments include the Interstate 270, Wheaton, Northern Potomac, and Southern Potomac pipelines.

The water line will likely begin construction in 1991-92 and will take approximately 2-3 years to complete. Due to public opposition of the transportation and environmental impacts that would result from trenching, the WSSC intends to tunnel the new transmission line. Therefore, if the right-of-way is selected as the transmission alignment, the trolley can be constructed prior to or following tunneling of the water line. The WSSC will need to consider the trolley and trail in selecting access points for construction and maintenance of the tunnel. Although the WSSC may select another transmission alignment (e.g., from the Potomac WFP to the Beltway), the agency may desire to utilize the project area in the future.

Chapter V

Historic Preservation

CHAPTER V. HISTORIC PRESERVATION

The purpose of this chapter is to identify those historic sites and areas that should be preserved and protected. The *Master Plan for Historic Preservation* and the Historic Preservation Ordinance protect and preserve Montgomery County's historic and architectural heritage. Protection of historic sites and districts highlights the values that are important in maintaining the individual character of the County and its communities.

HISTORIC PRESERVATION RECOMMENDATION

The stone foundation of B&O Railroad Bridge #3 should be retained and renovated, if possible. The bridge crosses over a dry streambed which empties into Rock Creek via Coquelin Run. It is located approximately 350 feet east of Connecticut Avenue.

DISCUSSION

The Georgetown Branch right-of-way is adjacent to or in the vicinity of the following historic resources:

Master Plan Site	#35/10	Hayes Manor
Master Plan Site	#35/14-1	Bethesda Farm Women's Market
Master Plan Site	#35/14-2	Madonna of the Trails Statue
Master Plan Site	#35/14-5	Bethesda Post Office
Master Plan Site	#35/14-7	Bethesda Community Paint & Hardware
Locational Atlas Resource	#36/2	Linden Historic District
Locational Atlas Resource	#36/4	Woodside Historic District
Master Plan Site	#36/5	The Silver Spring/Acorn Park
Master Plan Site	#36/6	Jessup Blair House

An additional historic resource, the Chevy Chase Lake Trolley Station, Master Plan Site #35/11, was previously located near the Georgetown Branch but has been moved to Frederick County.

Master Plan Site numbers are the reference numbers used in Montgomery County's *Master Plan for Historic Preservation*. When a historic resource is officially adopted as part of the Master Plan, the adoption action designates the property as a historic site or historic district and protects it under the Historic Preservation Ordinance. Locational Atlas Resource numbers are in the same numbering system. They refer to properties that were included in the County's initial effort to identify historic places, the 1976 *Locational Atlas and Index of Historic Sites in Montgomery County*, but have not been evaluated yet to determine whether they should be included in the Master Plan.

Three properties that are not included in either document but may be of historic or architectural significance are:

- Rock Creek Trestle
- B&O Railroad Bridge #3
- Columbia Country Club

Because of the locations of most of the historic resources listed above, it is unlikely that the development of the Georgetown Branch right-of-way will have a major impact on them. One exception is B&O Railroad Bridge #3. If possible, the stone foundation of this structure, which was built in 1919, should be retained and renovated. Another exception is the Rock Creek Trestle, which is proposed to be replaced.

No archaeological resources are known to exist within or along the right-of-way. However, the portion of the right-of-way from the junction of the Georgetown Branch and the Metropolitan Branch to the end of the line in Silver Spring has not been field surveyed. Neither has the Third Avenue right-of-way between Grace Church Road and Elkhart Avenue, where the trail will be constructed. Field surveys may be required in these two areas and in the areas of the stations and the shop/yard.

If potential archaeological resources are uncovered during the trolley/trail construction, construction should be stopped while eligibility for the National Register of Historic Sites, State or County lists is assessed and while any mitigation warranted is carried out.

Chapter VI

Cost Effectiveness

CHAPTER VI. COST EFFECTIVENESS

The 1986 *Georgetown Branch Amendment* directed that cost effectiveness be addressed in considering the use of the right-of-way for transit. Final estimated project costs, by category, are included in the *Georgetown Branch Corridor Study*. In the course of the *Georgetown Branch Corridor Study*'s evaluation of alternative transit modes, cost was one of several factors taken into consideration in the selection of the trolley alternative. The two alternatives carried through the study process were the light-rail transit trolley and a guided bus.

The guided bus system was significantly better from a capital cost standpoint but about equivalent in annual operating costs. However, other factors favored the trolley alternative, primarily due to its ability to operate on a single track configuration. This configuration with light rail permits less frequent operation of longer trains. As a result, the trolley alternative has more favorable noise characteristics, less grading, and fewer construction impacts, due to the narrower right-of-way needs. The light rail was also viewed as a more proven technology than the guided bus alternative. Therefore, the slightly higher cost of the light rail trolley alternative was outweighed by its more desirable operating and physical requirements when compared to the guided bus alternative.

The final cost estimates for the project from the *Georgetown Branch Corridor Study* indicate the trolley project should cost about \$64 million exclusive of land, trail costs, and the cost of the southern entrance for the Bethesda Metrorail station. These added costs of the trolley/trail project should only be partially assessed against the trolley's cost effectiveness. The trail will cost \$8 to \$10 million to construct and is essentially independent of the trolley line. The southern entrance to the Bethesda Metrorail station, which will cost \$15 million, benefits Metrorail and the CBD in addition to the trolley terminal. This entrance was anticipated in the *Bethesda CBD Sector Plan* as a future add-on to Metrorail to avoid future station overcrowding and improve CBD access and circulation. Some, but not all, of its cost should be access and circulation attributed to the trolley. Land costs for the trolley/trail (aside from the \$10.5 million acquisition of the right-of-way) are not included in the final cost estimate for the project. Since these costs are subject to negotiation, their estimate is

confidential at this time. Also, some of this additional land will provide space for unrelated transportation facilities in Silver Spring.

Using the basic cost estimate for the trolley project and an additional range for added costs, the trolley's estimated costs are about \$16 to \$18 million per mile (the line is 4.4 miles long). Recent light rail transit projects around the County have ranged in cost from a low of about \$10 million per mile to over \$20 million per mile. The Georgetown Branch trolley fits well within this range. The availability of the right-of-way and use of the single track configuration will contribute to keeping costs within a reasonable range. The additional features, which are still under consideration, would probably add about \$5 million to the total project cost (including an undercrossing at the Metropolitan Branch and an overcrossing at Connecticut Avenue).

Light rail transit has, in recent history, become a more popular option or mode of choice due to its flexibility and lower implementation costs. Flexibility refers to street/off-street operation and train size. Numerous urban areas across the country are implementing light rail in lieu of more expensive, heavy or third rail systems like Metrorail. By way of comparison, Metrorail-type systems cost an average \$90 million per mile to construct, inclusive of vehicles and right-of-way (comparative light rail figures are \$10 to \$28 million per mile). Operating costs are also less for light rail, averaging \$4 per car mile for small systems versus about \$7 to \$9 for Metrorail.

Level of service and ridership are, of course, different for each system type. Metrorail's capacity and ridership are much greater (two to three times) than light rail's. These factors and others such as land use, station spacing, speed, and fare structure must be taken into consideration when comparing systems. However, setting aside these functional differences, a simple comparison of capital cost by productivity (average trips per route mile) indicates the relative investment cost differential between systems. Metrorail has a capital cost of about \$35 to \$40 per trip over a year versus a lower \$20 to \$25 for light rail. These relative costs are not adjusted for any differences in service life, which might be somewhat longer for Metrorail, and do not account for fare revenue differentials. However, from an initial investment standpoint, light rail appears to be a less expensive trip.

Projected ridership for the project, which would amount to over 3,000 daily trips per route-mile, are well within the range of figures for other systems. The strategic location of the trolley service places it in a very strong transit market that should produce ridership at or above other operating systems. As noted in the **'Ridership'** section of this chapter, **the projected ridership appears conservative and actual usage should quickly reach forecast levels and exceed the longer run projection.**

The cost effectiveness of the trolley should be similar to other operating systems. The light rail technology was selected, at somewhat greater capital cost, to lessen potential related land use impacts. Operating costs, on the other hand, were similar to other alternatives and are projected at \$2.6 million annually. This cost is expected to be covered 75 percent by patron fares. This level of cost recovery is equivalent to current experience on Metrorail, which is the highest among similar systems in this country. A cost recovery on light rail of 50 to 75 percent is a reasonable range of expectation for light rail.

Another important consideration is that the trolley system provides the ability to expand service and thus capacity in the future, if necessary, to accommodate ridership growth. This is beneficial in the long term as more cars may be added to trains without further construction or disturbance to carry larger numbers of people. The full capacity of the system could accommodate on the order of 5,000 - 6,000 persons per hour. The initial proposed service would only be carrying about one-third of this number.

The selection of the trolley technology for the Georgetown Branch is a cost effective choice compared to other systems and the impacts associated with other alternatives. It improves transit service, enhances accessibility, has an indirect but positive effect on gasoline conservation and air quality, and increases transportation capacity with minimal impact on land use or the environment.

Glossary

GLOSSARY

Articulated Vehicle: An extra-long transit car that has the rear section or sections flexibly but permanently connected to the forward section.

Above-Grade Crossing: Passing over an intersection street, railroad, or path, etc.

At-Grade Crossing: The intersection of transportation facilities in the same plane at ground level.

Below-Grade Crossing: Passing under an intersecting street, railroad, path, etc.

Capital Improvements Program (CIP): The tool through which locally funded public facilities such as sewers, local roads, storm drains, schools, libraries, and parks can be scheduled and built in coordination with the location and timing recommended by the General Plan and Area Master Plans. The Planning Board reviews the CIP annually to assure that such proposed projects conform to adopted plans.

Centerline: A line locating the center of a linear roadway.

Class I Bikeway: A separate path or trail constructed for the exclusive use of bicycles or shared use with pedestrians.

Class II Bikeway: A designated lane on a roadway for the exclusive use of bicycles.

Class III Bikeway: A bike route along a roadway which shares the same space with automobile traffic.

Crib Wall: A landscaped, non-vertical retaining wall.

Cross-Traffic: Traffic which passes across the path of other traffic, usually referring to a minor flow of traffic crossing a major flow of traffic.

Day/Night Noise Levels (Ldn): An average sound pressure level, reflecting the variations in noise over time, including a weighting for nighttime (10 PM - 7 AM) levels to account for the greater degree of distraction experienced at night while trying to sleep. This description is currently being used by the U.S. Environmental Protection Agency and the State of Maryland for their noise standards.

Decibel (dBA): The standard expression for units of sound, with a weighting to account for the sensitivity of the human ear.

Express (Service): Transit service which operates at all times service is open.

Grade Separated Crossing: The intersection of transportation facilities on different planes such that movements do not conflict.

Light Rail Transit (LRT): An urban transportation system that uses electrically powered rail cars operating singly or in short trains on fixed guideways. It may be grade separated, and it loads passengers from low or medium-height platforms.

Local (Service): Transit service which operates only during off peak (midday, evening and weekend) times.

Mandatory Referral: The requirement that operating agencies submit project design plans to the Planning Board for review and comment prior to implementation.

MARC: The Maryland Commuter Rail Service operated by the MdDOT, in Montgomery County on the Brunswick Line from West Virginia to Union Station.

Mode Split: The percentage of trips made by transit for a given travel market.

Rail Bias: A factor in transit ridership projection to account for the greater propensity of people to use rail than to use an equivalent bus service.

SENEL: Single Event Noise Exposure Level. The noise exposure level of a single event measured over a time interval between the initial and final times for which the sound level of the single

event exceeds the background noise level. Regardless of the time interval, this level uses a reference duration of one second.

Stormwater Management: The application of various techniques for mitigating the adverse effects of stormwater runoff.

Total Ldn: The logarithmic addition of ambient and trolley noise levels.

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Resolutions

Resolution No. 11-1737
Introduced: November 28, 1989
Adopted: November 28, 1989
Reconsidered, Amended, &
Readopted: November 30, 1989

COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND
SITTING AS THE DISTRICT COUNCIL FOR THAT PORTION
OF THE MARYLAND-WASHINGTON REGIONAL DISTRICT
WITHIN MONTGOMERY COUNTY, MARYLAND

By: District Council

Subject: Final Draft Georgetown Branch Master Plan Amendment

Background

1. On August 3, 1989, the Montgomery County Planning Board transmitted to the County Executive the Final Draft Georgetown Branch Master Plan Amendment.
2. On September 6, 1989, the Montgomery County Executive transmitted to the Council a revised Final Draft Georgetown Branch Master Plan Amendment indicating Executive modifications to the Final Draft Plan.
3. On October 17 and 19, 1989, the Montgomery County Council held a public hearing regarding the Final Draft Georgetown Branch Master Plan Amendment.
4. On November 7, 9, and 17, 1989, the Council conducted worksessions on the Final Draft Georgetown Branch Master Plan Amendment, at which time, careful consideration was given to the public hearing testimony and correspondence, and the recommendations of the Montgomery County Planning Board and the County Executive.
5. This Plan is an amendment to the Georgetown Branch Master Plan Amendment,

1986; the Sector Plan for the Silver Spring Central Business District and Vicinity, 1975, as amended; the Western Portion of the Silver Spring Planning Area, 1971, as amended; the Master Plan for Bethesda-Chevy Chase, Planning Area 35, 1970, as amended; the Sector Plan for the Bethesda Central Business District, 1976, as amended; the North Silver Spring Sector Plan, 1978, as amended; the Master Plan of Bikeways, 1978, as amended; the Master Plan for Historic Preservation, 1979, as amended; being also an amendment to the General Plan for the Physical Development of the Maryland-Washington Regional District, as amended; and the Master Plan of Highways within Montgomery County, as amended.

Action

The County Council for Montgomery County, Maryland, sitting as the District Council for that portion of the Development Regional District in Montgomery County, Maryland, approves the following resolution:

The Final Draft Georgetown Branch Master Plan Amendment, as prepared by the Montgomery County Planning Board and revised by the County Executive, is approved with the modifications listed below:

GENERAL CHANGES AND NOTATIONS:

1. Delete Planning Board and Executive cover letters from final printing of the Master Plan.
2. On page xvii, change points 4 and 5 to add the underscored text and delete the bracketed text as indicated below:
 - "4. That there be no change to the existing adopted land uses of the properties [abutting] within 1,000 feet of either side of the Georgetown Branch right-of-way, except as already recommended by the Bethesda-Chevy Chase Master Plan in the Chevy Chase Lake area [and in the Silver Spring Central Business District Sector Plan]."
 - "5. That the existing zoning of properties [abutting] within 1,000 feet of either side of the Georgetown Branch right-of-way from Silver Spring to the District of Columbia be reconfirmed, except

as already recommended by the Bethesda-Chevy Chase Master Plan in the Chevy Chase Lake area [and in the Silver Spring Central Business District Sector Plan]."

3. On page xix, add a new point 13 (and renumber remaining points):

"13. That every effort possible be made to ensure that existing trees along the trolley/trail route are preserved wherever possible and that replacement of trees is of a sufficient quantity and quality to preserve and enhance the environment."

4. On page xix, delete the Executive's point 18 regarding an at-grade crossing at Connecticut Avenue and add back the Planning Board's original language regarding an above-grade crossing.

5. On page xx, insert the underscored text and delete the text bracketed below:

"22. That the trail continue adjacent to the trolley from Talbot Avenue to the Spring Street Station [subject to the final determination that sufficient space exists to meet safety and buffering requirements] subject to safety considerations and including the taking of additional land, excluding dwellings, as necessary to make that possible."

6. On page xx, delete the Executive's point 24 (regarding a bridge to carry the trolley across the Metropolitan Branch) and replace it with the Planning Board's original language regarding a below-grade tunnel or underpass.
7. On page 23, first paragraph, first sentence, delete the words "and the pending Silver Spring Central Business District Business Sector Plan".
8. On page 23, second paragraph, replace the word "abutting" with "within 1,000 feet of either side of".
9. Change the titles of Figures 10, 11, 12, and 13 from "Existing Zoning: ..." to "Zoning Plan: ..."
10. Add a new Figure 11 to display the Zoning Plan for the Bethesda-Chevy

Chase Planning Area and renumber existing Figures 11 through 37 accordingly.

11. On page 27, change the second paragraph, second sentence to add the underscored text and delete the bracketed text as indicated below:

"The [existing] zoning plans for the 1,000 foot corridor on either side of the right-of-way for these plans are shown in Figures 10, 11, 12, [and] 13, and 14."

12. On page 38, revise third sentence of the first paragraph to add the underscored text and delete the bracketed text as indicated below:

"The Plan recommends that the trolley crossing of the Metropolitan Branch be a below-grade tunnel [bridge]."

13. On page 57, delete the last two paragraphs on this page (which continue onto page 58) as revised by the Executive regarding the Connecticut Avenue crossing and replace with the original Planning Board language.

14. On page 67, second paragraph, last sentence, delete the bracketed text added by the Executive regarding the trail from Talbot Avenue to Spring Street as indicated below:

["This recommendation is subject to further study to finalize a trail layout and design which adequately meets safety and buffering requirements."]

15. On page 68, second paragraph, last sentence, insert the underscored text and delete the bracketed text as indicated below:

"The Plan recommends that the trail continue along the right-of-way from Talbot Avenue to the Spring Street station [pending final determination that the right-of-way (including County-owned land) is of sufficient width to meet safety and buffering requirements adequately], subject to safety considerations and including the taking of additional land, excluding dwelling, as necessary to make that possible."

16. On page 79, delete the paragraph beginning "Connecticut Avenue -" as

revised by the Executive and replace with the original Planning Board language regarding an above-grade crossing.

17. On page 85, delete the first full paragraph, as revised by the County Executive, regarding crossing of the CSX Mainline and replace with the original paragraph in the Planning Board's Final Draft.
18. On page 100, insert the following paragraph prior to the last paragraph on that page:

"Additional help should be given to East-West Highway, especially at the Connecticut Avenue intersection, for the benefit of the large number of automobiles and trucks moving in this corridor every day. Every effort should be made to provide improvements in the frequency and quality of the bus service on East-West Highway, for the benefit of all transit riders during the period in which the trolley line is being planned and constructed and to provide quality service in the long-term for the benefit of persons making trips that are not served by the trolley. The buses should be expedited through congested sections of the highway by special traffic-control arrangements."
19. On page 105, third paragraph, second sentence, delete the bracketed words as indicated below:

"The function of active recreational uses (such as hiker/biker trails and golfing, for example) is not considered to be [as] significantly impaired by the [occasional] passby of trolleys."
20. On page 106, prior to the section titled "Connecticut Avenue to Lyttonsville" add the following sentence:

"In addition, every effort possible should be made to ensure that existing trees along the trolley/trail are preserved wherever possible and that replacement of trees is of a sufficient quantity and quality to preserve and enhance the environment."
21. On the chart which appears on page 109, change "4800 Kentucky" to "4300 Kentbury".
22. On page 117, replace the existing Figure 36 with the figure attached to

this resolution.

23. On page 125, last paragraph, first sentence, change the cost estimate to reflect the District Council's decisions regarding the Connecticut Avenue and CSX crossings as indicated by the underscored and bracketed text below:

"The final cost estimates for the project from the Georgetown Branch Corridor Study indicate the trolley project should cost about \$64 [\$59] million exclusive of land, trail costs, and the cost of the southern entrance for the Bethesda Metrorail station."

24. On page 126, second paragraph, first sentence, change the cost estimates as indicated by the underscored and bracketed text below:

"Using the basic cost estimate for the trolley project and an additional range for added costs, the trolley's estimated costs are about \$16 to \$18 [\$15 to \$17] million per mile (i.e., 4.4 miles total)."

25. The name of the trail and trolley as referenced throughout the Plan should be indicated as "The Capital Crescent Trail" and the "Silver Spring & Bethesda Trolley".
26. All figures, tables, appendices, and maps are to be revised where appropriate to reflect District Council revisions to the Final Draft Georgetown Branch Master Plan Amendment. The text is to be edited as necessary to achieve clarity and consistency, to update factual information, and to convey the actions of the District Council.

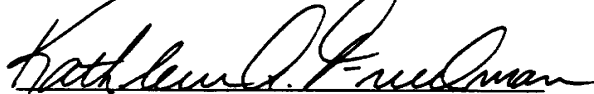
In addition to those changes noted above, the District Council directs the County Department of Transportation and the Montgomery County Planning Board to make every effort possible to ensure that existing trees along the route of the trolley/trail are preserved wherever possible and that replacement of trees is of a sufficient quantity and quality to preserve and enhance the environment. The District Council specifically directs the Planning Board to review the number, size, type and quality of trees recommended for planting as soon as possible to determine whether the projected budget is sufficient for this effort.

During implementation of the trolley/trail project, both the Montgomery

County Department of Transportation and the Montgomery County Planning Board should conduct further detailed review of the design and operation of the trolley/trail through the Capital Improvements Program and the mandatory referral process.

The District Council also directs the Planning Board and Executive to reflect the Council's decision not to count transportation capacity from the trolley in the FY91 Annual Growth Policy.

This is a correct copy of Council action.



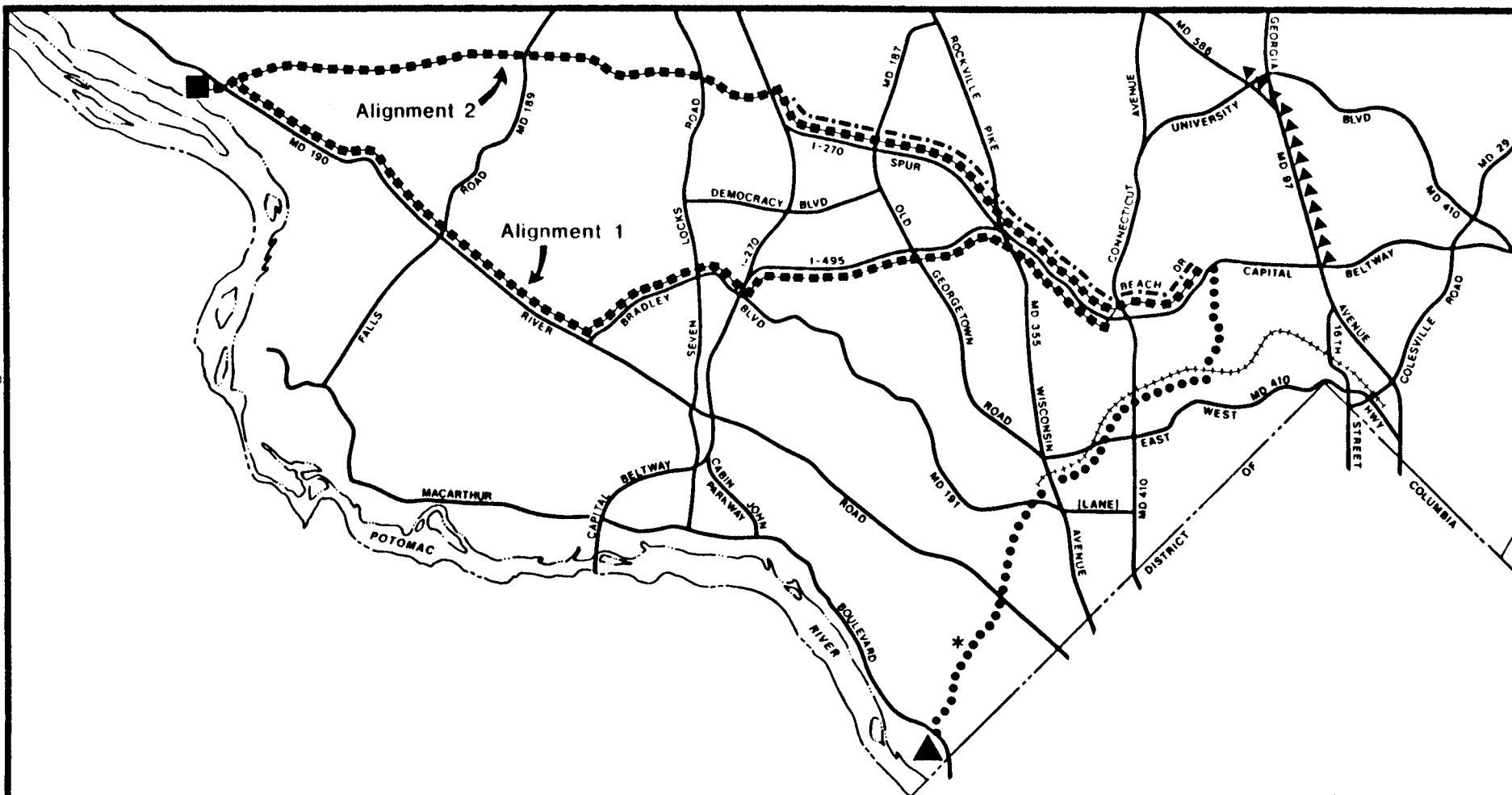
Kathleen A. Freedman, CMC
Secretary of the Council

APPROVED:



Sidney Kramer, County Executive

BUD405/38-42



ALTERNATIVE WATER SUPPLY AND TRANSMISSION ALIGNMENTS

- Trolley/Trail Alignment
- Interstate 270 Connection
- Potomac Connections (Alignments 1 and 2)

Georgetown Branch Trolley/Trail
Bethesda • Chevy Chase • Silver Spring

- ◀◀◀◀ Wheaton Connection
- 63 MGD Connection (Alignment 1)*
- Potomac Water Filtration Plant
- ▲ New 63 MGD Dalecarlia Pumping Station

* Route follows the existing Georgetown Branch right-of-way between Bethesda and the District of Columbia.

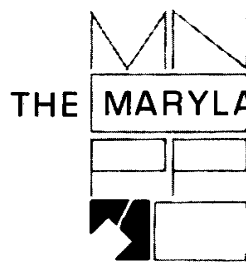
*ADOPTED VERSION IS FIGURE 37.

AUG. 1989



FIGURE

36



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

8787 Georgia Avenue • Silver Spring, Maryland 20910-3760

MCPB NO. 89-36
M-NCPPC NO. 90-1

RESOLUTION

WHEREAS, The Maryland-National Capital Park and Planning Commission, by virtue of Article 28 of the Annotated Code of Maryland, is authorized and empowered, from time to time, to make and adopt, amend, extend, and add to a General Plan for the Physical Development of the Maryland-Washington Regional District; and

WHEREAS, The Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission, pursuant to said law, held a duly advertised public hearing on June 26 and June 27, 1989, on the proposed amendment to the Georgetown Branch Master Plan Amendment, 1986, which is also an amendment to the Sector Plan for the Silver Spring Central Business District and Vicinity, 1975, as amended; the Western Portion of the Silver Spring Planning Area, 1971, as amended; the Master Plan for Bethesda-Chevy Chase, Planning Area 35, 1970, as amended; the Sector Plan for the Bethesda Central Business District, 1976, as amended; the North Silver Spring Sector Plan, 1978, as amended; the Master Plan of Bikeways, 1978, as amended; the Master Plan for Historic Preservation, 1979, as amended; being also an amendment to the General Plan for the Physical Development of the Maryland-Washington Regional District, as amended; and the Master Plan of Highways within Montgomery County, as amended, and

WHEREAS, the Montgomery County Planning Board, after said public hearing and due deliberation and consideration, on August 3, 1989, approved the amendment, and recommended that it be approved by the Montgomery County Executive to forward to the Montgomery County Council for their approval; and

WHEREAS, the Montgomery County Executive reviewed and made recommendations on the Georgetown Branch Master Plan Amendment and forwarded those recommendations to the Montgomery County Council on September 6, 1989; and

WHEREAS, the Montgomery County Council, sitting as the District Council for that portion of the Maryland-Washington Regional District lying within Montgomery County, held a public hearing on October 17 and October 19, 1989, wherein testimony was received concerning the proposed amendment; and

WHEREAS, the Montgomery County Council, at worksessions held on November 7, 9 and 17, 1989, reviewed the amendment and the issues raised at the public hearing with the Montgomery County Planning Board, the Montgomery County Executive staff and interested parties; and

WHEREAS, the Montgomery County Council, sitting as the District Council for that portion of the Maryland-Washington Regional District lying within Montgomery County on November 28, 1989, approved the amendment, and on November 30, 1989, reconsidered, amended, readopted and approved the amendment, subject to modifications and revisions by Resolution 11-1737; and

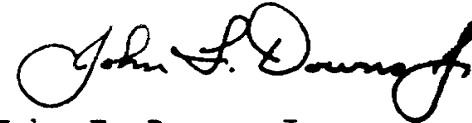
WHEREAS, the Montgomery County Executive approved the amendment to the Georgetown Branch Master Plan on December 8, 1989;

NOW, THEREFORE, BE IT RESOLVED, that the Montgomery County Planning Board and the Maryland-National Capital Park and Planning Commission do hereby adopt said amendment to the Georgetown Branch Master Plan, 1986, with the General Plan for the Physical Development of the Maryland-Washington Regional District as approved by the Montgomery County Council in the attached Resolution 11-1737; and

BE IT FURTHER RESOLVED, that as to Resolution 11-1737, this adoption be effective January 17, 1990;

BE IT FURTHER RESOLVED, that copies of said Amendment shall be certified by the Maryland-National Capital Park and Planning Commission and filed with the Clerk of the Circuit Court of each of Montgomery and Prince George's Counties, as required by law.

This is to certify that the foregoing is a true and correct copy of a resolution adopted by the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission on motion of Commissioner Floreen, seconded by Commissioner Bauman, with Commissioners Henry, Hewitt, Keeney, Floreen, and Bauman voting in favor of the motion at its regular meeting held on Thursday December 21, 1989, in Silver Spring, Maryland.



John F. Downs, Jr.
Executive Director

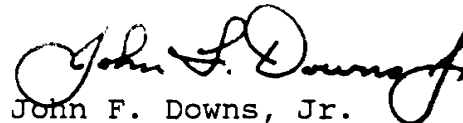
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This is to certify that the foregoing is a true and correct copy of a resolution adopted by the Maryland-National Capital Park and Planning Commission on motion by Commissioner Floreen, seconded by Commissioner Bauman, with Commissioners Botts, Hewitt, Rhoads, Dabney, Wootten, Yewell, Floreen, and Bauman voting in favor of the motion, with Commissioners Henry and Keeney being absent at its regular meeting held on Wednesday, January 17, 1990, in Landover, Maryland.



John F. Downs, Jr.
Executive Director

In addition to the Planning Department staff listed below, contributions were made to this Master Plan by the staff of the Montgomery County Council, and the Montgomery County Government (Department of Transportation and the Office of Planning Policies). Significant contributions were also made by advisory groups, citizens, and civic associations.

STAFF ACKNOWLEDGMENTS

STAFF MEMBERS HAVING PRIMARY RESPONSIBILITY FOR THE PLAN:

Supervision:	Richard E. Tustian, Planning Director Perry Berman, Chief Community Planning South
Planner-in-Charge:	Gail A. Price, Community Planning South
Primary Planning Team:	Joe Anderson, Transportation John Carter, Urban Design Bill Gries, Park Planning Stephen Federline, AICP, Environment Marsha Kadesch, Community Planning South Faye Smith, Mapping and Graphics

STAFF MEMBERS WHO MADE SIGNIFICANT CONTRIBUTIONS TO THE PLAN:

Community Planning South Bill Barron Denise Boswell Michelle Crewe Don Downing Gloria White Jeff Zyontz	Urban Design Doug Alexander Gwen Marcus Karen Kumm Morris Margaret Rifkin Planning Director's Office Lael Holland Karen Laco Park Planning Phyllis McDonough Community Relations Pat Plunkett	Mapping and Graphics Marie Elaine Lanza Romesch Puri Vince Scott Word Processing Sheila Sampson Marie Steingrebe Editing Norah Bland Mary Goodman Administrative Services Charles Coleman Brandt Hare
Transportation Planning Robert Winick Kathy Woodworth		
Environmental Planning Nazir Baig Brian McMahon		



The Maryland-National Capital Park and Planning Commission