SHADY GROVE

ADOPTED AND APPROVED
SECTOR PLAN
TRANSIT STATION AREA
april 1977

The Maryland-National Capital
Park & Planning Commission

SHADY GROVE TRANSIT STATION AREA SECTOR PLAN AMENDMENTS

Original Plan: April 1977

1. November 1982: This document contains the maps and supporting text for the deletion of the connection of Taunton Drive with the Eastern Arterial (M-83).

2. January 1985 Gaithersburg Vicinity Master Plan: The Plan recommends that the King Farm will be re-examined in the context of a future Master Plan Amendment. The possibility of providing a mix of residential and office uses will be explored.

   The Plan recommends the R-90/TRD Zone at a density of six units per acre for the former Muncaster Junior High School site located on Taunton Drive, west of MD 124, near Midcounty Highway.

3. July 3, 1990 - Resolution No. 11-2131
   Refer to- Gaithersburg Vicinity Master Plan
   Amendment Stage III (Shady Grove)

Price: $3.50

Publication No. 3802772506

SECTOR PLAN

FOR THE

SHADY GROVE TRANSIT STATION AREA

MONTGOMERY COUNTY, MARYLAND

An Amendment to the Master Plan for the Gaithersburg Vicinity Planning Area and the Master Plan for the Rock Creek Planning Area, Montgomery County, Maryland, being also a proposed amendment to the General Plan for the Physical Development of the Maryland-Washington Regional District in Montgomery and Prince George's Counties, Maryland.

The Maryland-National Capital Park and Planning Commission
Montgomery County Planning Board
8787 Georgia Avenue
Silver Spring, Maryland 20907
April, 1977

CERTIFICATE OF APPROVAL AND ADOPTION

This Amendment to the Master Plan
for the Gaithersburg Vicinity Planning Area and
the Master Plan for the Rock Creek Planning Area,
Montgomery County, Maryland,
being also a proposed amendment to the General Plan
for the Physical Development of the
Maryland-Washington Regional District
in Montgomery and Prince George's Counties, Maryland,
has been adopted by The Maryland-National Capital
Park and Planning Commission by Resolution No. 77-13
of May 11, 1977 after a duly advertised Public Hearing
on November 11, 1975 pursuant to the provisions of Chapter 780,
Laws of Maryland, 1959, as amended and has been approved by
the Montgomery County Council sitting as the District Council
by Resolution No. 8-1286 on April 19, 1977.

Royce Hanson, Chairman

W. C. Dutton, Jr., Vice Chairman

A. Edward Navarre, Secretary-Treasurer

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION
MONTGOMERY COUNTY PLANNING BOARD
8787 Georgia Avenue
Silver Spring, Maryland 20907

APRIL, 1977

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THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

The Maryland-National Capital Park and Planning Commission (M-NCPPC) 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 1001 square miles, while the Metropolitan District (parks) comprises 919 square miles in the two counties.

The Commission has three major functions:

- 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;

- The acquisition, development, operation, and maintenance of a public park system; and

- 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.

TITLE:	A SECTOR PLAN FOR THE SHADY GROVE TRANSIT STATION AREA, MONTGOMERY COUNTY, MARYLAND
AUTHOR:	The Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission
SUBJECT:	Land Use, Transportation, and Public Facility Plans for the Shady Grove Transit Station Area
DATE:	April, 1977
PLANNING AGENCY:	The Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission
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ABSTRACT:

This document contains maps and supporting text of a Sector Plan for the Shady Grove Transit Station Area, Montgomery County, Maryland. The sector plan amends the Master Plan for the Gaithersburg Vicinity Planning Area, adopted by the Maryland-National Capital Park and Planning Commission in January 1971, and the Master Plan for the Rock Creek Planning Area, adopted by the Maryland-National Capital Park and Planning Commission in November 1967.

The sector plan encompasses approximately 2900 acres of land along Maryland Route 355, between the City of Rockville and the City of Gaithersburg. Major public facilities, both proposed and under construction, are located in the area. These facilities include the County Service Park, the solid waste central processing facility, and the terminal Metro transit station and storage and inspection yards. The area is also the site of industrial and limited commercial development, surrounded by residential development.

The plan proposes construction of a Metro access road, extending south from the proposed outer beltway to the Metro station, thereby ensuring Metro patrons adequate access to the station. Based on a study of the impact of the proposed Metro station and planned County facilities, the sector plan confirms the basic land-use pattern recommended in the Gaithersburg and Rock Creek Master Plans. The plan includes recommendations for urban design and landscaping to visually coordinate the extensive development planned for the area and to soften its industrial image, thus minimizing the impact on surrounding neighborhoods.

SECTOR PLAN

FOR THE

SHADY GROVE TRANSIT STATION AREA

MONTGOMERY COUNTY PLANNING BOARD

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The Citizens Advisory Committee, as such, does not express general approval or disapproval of the Sector Plan. Individual members give the Montgomery County Planning Board their views on the needs and problems of the particular groups and areas they represent. The Board takes these views into consideration during its deliberations on the Plan. The fact that the names of members of the Citizens Advisory Committee are listed above does not constitute endorsement.

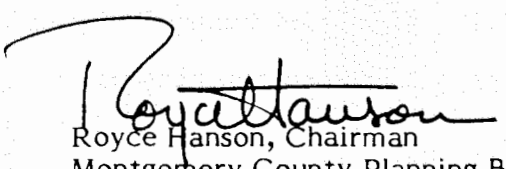
FOREWORD

This sector plan, prepared in response to a request by the Montgomery County Council to accommodate a proposed terminal Metro station in Shady Grove, is a proposed amendment to the Master Plans for the Rock Creek and Gaithersburg Planning areas, adopted in November 1967, and January 1971, respectively. The planning process included participation of area citizens and business representatives through an Advisory Committee appointed by the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission. The Advisory Committee's activities were supplemented by meetings with local civic and business groups. An Interagency Governmental Task Force also was convened to coordinate planning for the multitude of public projects.

Access to the proposed Metro station is a prime consideration for the relocation of Metro facilities from Rockville to Shady Grove. This Plan, therefore, provides for high-speed access to the station. This plan includes recommendations to accommodate the county service park and central processing facility which the county government has located in this area.

The plan establishes the framework for governmental activity and private development in Shady Grove. Successful implementation relies on interagency cooperation. The success of the cooperative effort will determine, to a great degree, the future of the Shady Grove community, both public and private.

The final draft recommendations for the Sector Plan were forwarded to the County Council on November 8, 1976. The Sector Plan was amended and approved by the County Council by Resolution No. 8-1286 of April 19, 1977 and adopted, as amended, by The Maryland-National Capital Park and Planning Commission by Resolution No. 77-13 of May 11, 1977.



Royce Hanson, Chairman
Montgomery County Planning Board

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The Maryland-National Capital
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8787 Georgia Avenue
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INTRODUCTION

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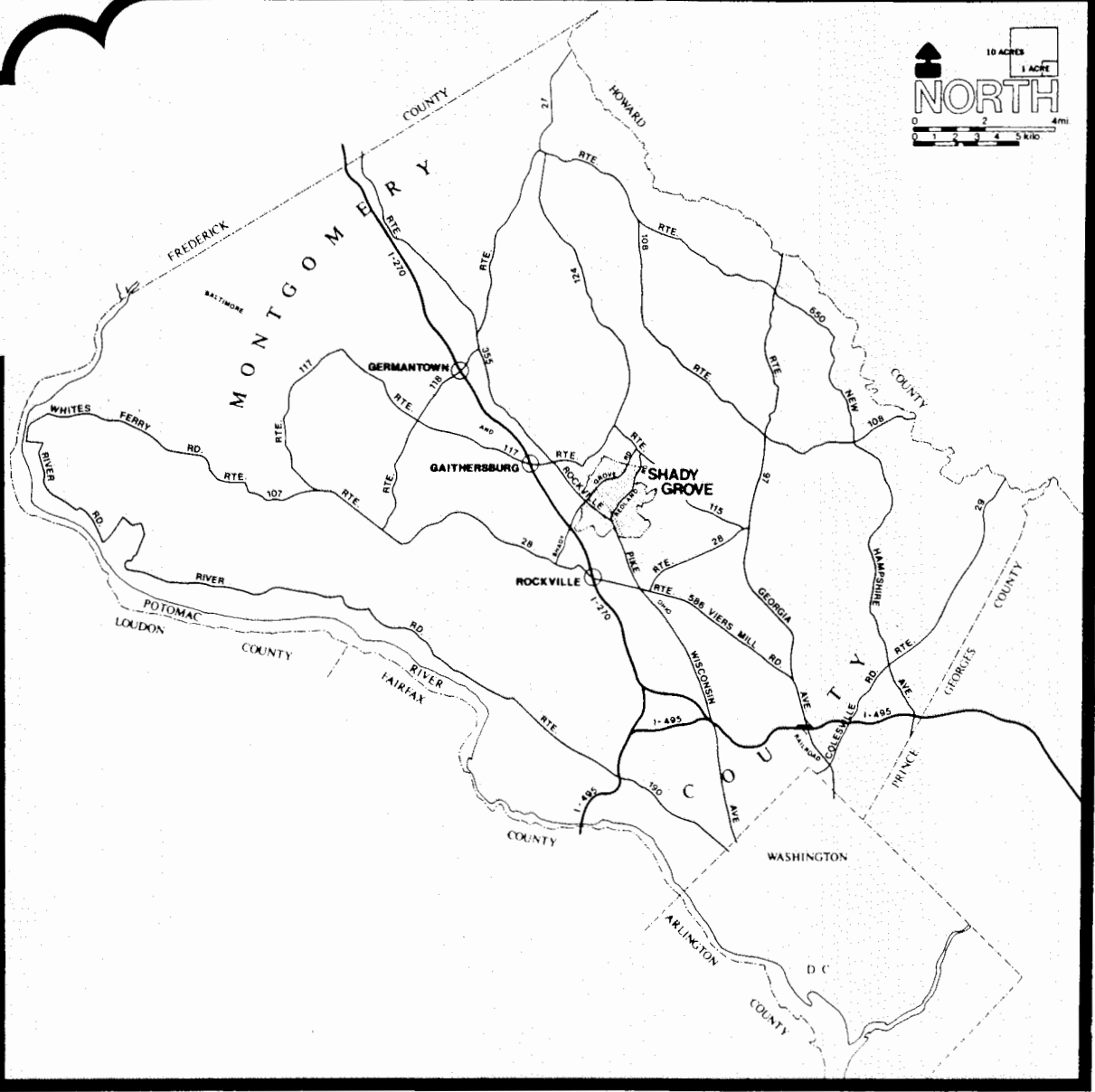
FIGURE 1



Sector Plan Area

Regional Map

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

Chapter 1

INTRODUCTION

1.1 INTRODUCTION

The Rock Creek and Gaithersburg Vicinity Master Plans, designated the Shady Grove transit station to be located southeast of the intersection of Shady Grove Road Extended and the Baltimore and Ohio Railroad. Since the station will be built as part of the Metro Rail Adopted Regional System (ARS), it became necessary to prepare a detailed sector plan for development of the area. The Montgomery County Council requested the Washington Area Metropolitan Transit Authority (WMATA) to prepare plans for a terminal station with storage and inspection yards to be located in Shady Grove. The Council also directed the Montgomery County Planning Board to prepare a detailed sector plan for the Shady Grove Transit Station Area (TSA).

1.2 THE PLAN

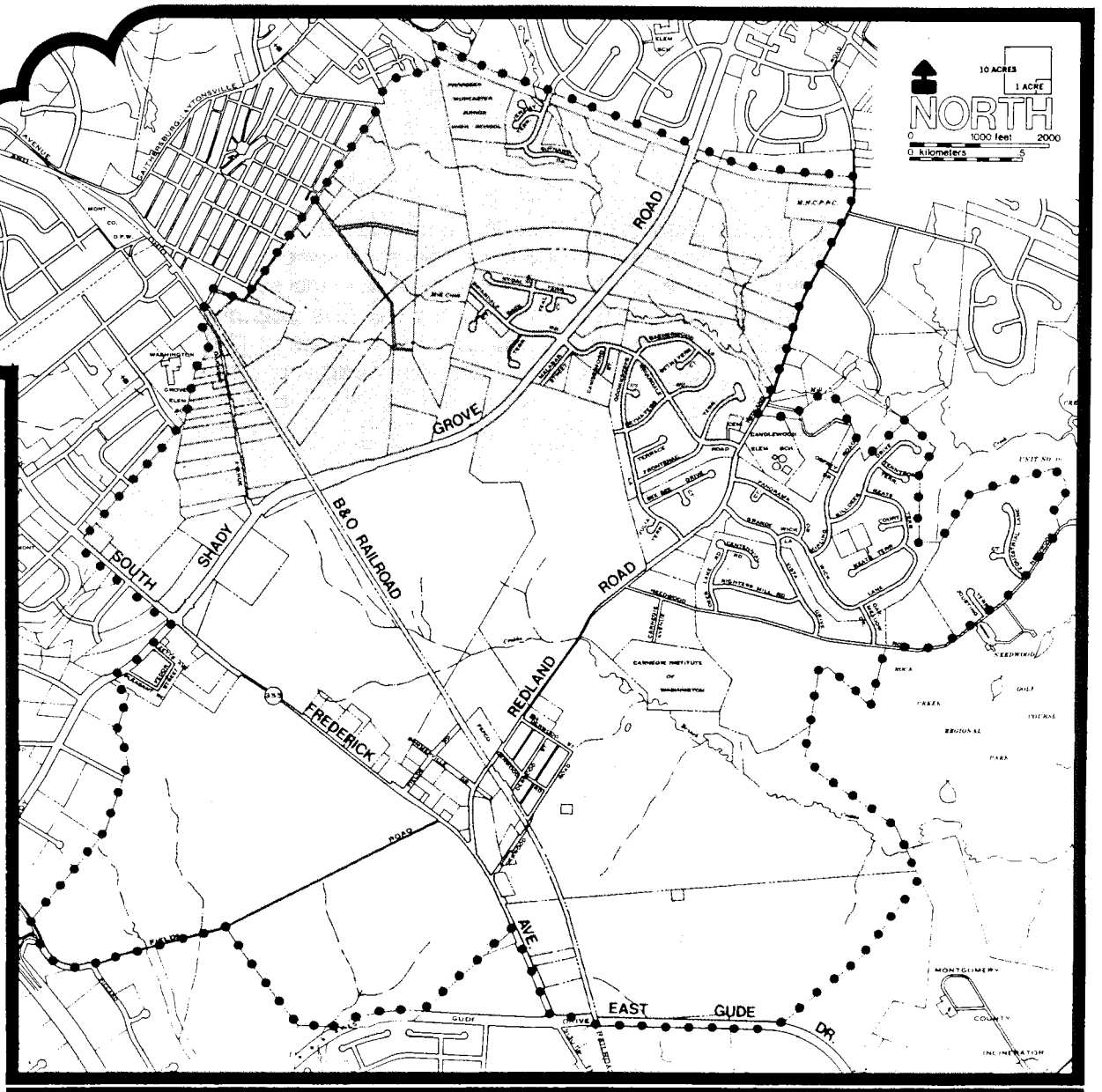
A sector plan is a detailed study of an area within a master plan that shows the location, scale, and timing of development for a central business district (CBD) or a transit station area (TSA). It is used as a basis on which to prepare comprehensive rezoning amendments, to propose public projects for funding, and generally to outline a program for implementation of the plan's recommendations.

The Shady Grove sector plan covers the area between the three corporate municipalities of Rockville, Gaithersburg and Washington Grove and extends from I-270 eastward to Mill Creek Towne. The area is bisected by the B & O Railroad and is immediately south of the Town of Washington Grove.

When approved by the Montgomery County Council and adopted by The Maryland-National Capital Park and Planning Commission, the plan will provide policy guidance for development within the Shady Grove transit station area and will amend the Gaithersburg Vicinity and Rock Creek Master Plans in this area. The master plan will continue to guide development of the land outside the sector plan area. Gaithersburg, Rockville, and Washington Grove, through their master plans, guide development within their respective municipal limits; however, the County has planning responsibility for those areas lying outside city limits and maximum expansion limits.

The decision of the County Council and the County Executive to locate regional public facilities in Shady Grove has significantly increased the area's importance to the entire county. These facilities--which will include the County Service Park, the solid waste central processing facility as well as the Metro transit station complex--are to be clustered in an area that can be considered a major public service activity center. Just as the county office building in Rockville serves office space needs, this area will serve the transportation, industrial, and warehousing needs of the county.

FIGURE 2



Sector Plan Area

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

This sector plan is designed to reduce the potential negative effects of the proposed public service activity center and the Metro station complex on the surrounding commercial and residential communities. It is also designed to provide maximum benefit to the overall area and to the county; to solidify and complement the existing residential and commercial areas; to establish a positive Shady Grove image; and to prevent a major lag in public-facilities and services. Implementation of the plan recommendations will bring about the orderly development of Shady Grove. Since the county is the largest developer of land in the area, the County Council and the County Executive will have the primary responsibility to implement this plan.

The transit station area at Shady Grove and the function of the station itself will be significantly different from those of down-county transit stations. The Shady Grove TSA encompasses 2900 acres, compared, for example, to 180 acres in Friendship Heights. Shady Grove is planned as the terminal station for the Rockville Metro line. The station will provide the first opportunity for patrons in the northern part of the county (above Rockville) to board Metro. The land immediately surrounding Shady Grove Station is largely vacant, but the land beyond this immediate area consists of single-family residences, light industry, and farming.

1.3 THE PLANNING PROCESS

The planning process for the Shady Grove TSA differs somewhat from that used in preparing sector plans for other transit stations. Rather than performing a traditional market analysis to determine the commercial potential in preparing the sector plan, an examination was made of the nature of industrial uses that will be attracted to Shady Grove, with an estimation of Shady Grove's ability to compete with other parts of the county for these uses. Since much of the TSA is undeveloped, an environmental analysis was made by computer to determine the natural constraints on development.

This sector plan provides a framework for interagency coordination of both the timing and location of these and supporting facilities.

1.4 TIME FRAME

The sector plan focuses on the 1976 to 1984 time span, based on the assumption that Metro and other public facilities will be built and operating in Shady Grove by 1981 and that, by 1984, considerable adjustment to the presence of Metro will have been made. Since this sector plan will amend both the Gaithersburg Vicinity and Rock Creek Master Plans, the ultimate Land Use Plan also is provided (folded map in back cover).

This sector plan should be updated, by 1981, or upon the completion of Metro, through a restudy of the area.

Considerable commitment has been made by the public sector prior to the preparation of this plan. The Shady Grove area was selected for the site of the County Service Park and the Central Processing Facility. In addition, two major road improvements, widening of Maryland Route 355 and the extension of Shady Grove Road, were undertaken during the preparation of this plan.

SUMMARY OF THE PLAN

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Chapter 2

SUMMARY OF THE PLAN

2.1 INTRODUCTION

Land use, transportation, and environment are the key elements of the plan. This chapter includes a summary of recommendations for each of these elements. This summary is followed by a discussion of the need for a sector plan, in light of the development activity that the Shady Grove area is experiencing. The chapter concludes with a description of issues that confront Shady Grove.

2.2 RECOMMENDATIONS

2.21 Land Use

- Confirm the basic land use patterns recommended in the Gaithersburg Vicinity and Rock Creek Master Plans.

- Modify the recommendations of the Rock Creek Master Plan concerning the Shady Grove area to reflect the master plan relationship to the sector plan proposals.

- Provide rezoning in stages, as the road system is developed, to accommodate increased traffic.

- Maintain the plan for commercial centers, rather than allowing strip commercial development.

- Maintain the plan for low-density residential areas, along with light industrial areas, around the proposed Metro station.

- Preclude the development of Shady Grove as a competing urban core between the Cities of Rockville and Gaithersburg.

- Provide a mechansim to assure unified, cohesive design and landscaping for the development of this area as a pleasing transition between Rockville, Gaithersburg, and Washington Grove, while allowing existing and future Shady Grove communities to retain their own identities.

- Schedule the construction of major public facilities (for example, sewer, water, and roads) to prevent a major lag in services and to assure their efficient development.

2.22 Transportation

- Develop all modes of transportation to the Metro station, including Metro bus service, as well as facilities for bicycles, pedestrians, and cars, and, if feasible, mini-loop bus service.

• Reduce local traffic congestion by providing a limited-access road from I-270 to the Metro station.

• Keep roads serving industrial development separate from roads serving residential areas, where possible.

• Provide a transit easement, or right-of-way, through Gaithersburg to Germantown, adjacent to the B & O Railroad, for the future expansion of Metro or other public transportation.

• Provide a system of bikeways, as shown in Figure 19.

• Modify primary and arterial roads as shown on the Highway Plan (see folded map in back cover).

2.23 Environmental

• Minimize air pollution by providing a highly accessible public transportation system.

• Provide adequate facilities to manage both the quantity and quality of storm-water runoff from the area above Redland Road and to provide protection for the remainder of the Crabb's Branch stream valley.

• Modify land use recommendations in areas of potential noise pollution, wherever possible.

• Recognize natural constraints, especially in the preparation of land use recommendations.

2.3 SHADY GROVE IN TRANSITION

Shady Grove is characterized by open farmland and low-density residential development. Dense residential or commercial development is not proposed for the area (see Figure 1, Regional Map). The development policies established in the sector plan comply in this respect with the intent of "... On Wedges and Corridors," the county's General Plan.

Migration to this area is recent. Because of the low-density and the abundance of open space, Shady Grove has been found quite desirable by families moving from down-county and other more urban areas. The migration to Shady Grove, of course, has resulted in a decrease in open space. Residents are increasingly concerned about the impact of newcomers on the area's available space and services. All are especially concerned about an adequate road system, and many are worried about the identity of their community.

The trend toward less open space can be seen in the area's zoning and development history. Farms were predominant in the area until 1950 when a rapid change to residential development began. Ninety percent of the present homes were built after 1950; and over 50 percent since 1965. It is expected that by 1984

residential development will be complete. The Shady Grove area is now beyond the halfway mark in transition from farmland to residential communities.

Change is also apparent in employment, in the environment, and in transportation. In employment, the shift is from farming and related occupations to industrial and office jobs. About nine percent of the ultimate zoning capacity of the area for commercial and industrial employment is in use at present.

Change in the environment is indicated by the increase in developed land. More intensive development affects air quality, storm-water runoff, quality of streams, community image; hence, the area's environment.

The transition from two-lane country roads to higher-capacity suburban roads has begun. The construction of Shady Grove Road Extended is one example.

Development by the private sector--residential, commercial, and industrial--has been under way for 15 to 20 years and is about 18 percent complete. By 1984, or shortly thereafter, approximately 75 percent of the area will be developed.

Public sector development, on the other hand, characterized by schools, roads, and parks, is only 14 percent complete. The result is a lag in public services. Some of the difficulties this creates, however, can be abated by the proper timing of the construction of facilities critical to the area. With Metro coming to the area, certain facilities--primarily access roads to the Metro station--become critical (see Figure 3, "Proposed Major Public Projects," and Figure 18, "Proposed Transportation Plan").

2.4 THE FUTURE: ISSUES FOR PLANNING

2.41 Introduction

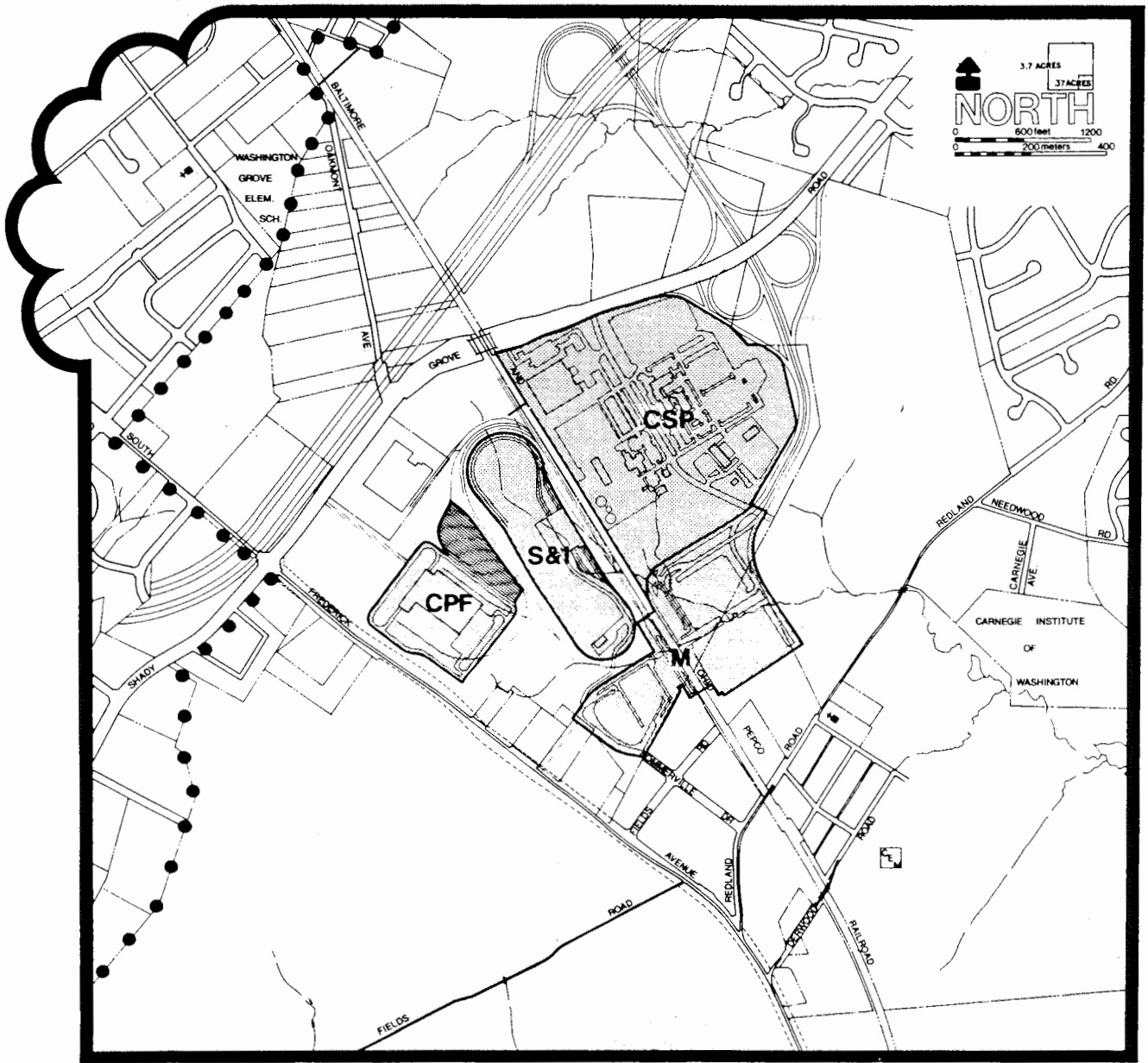
The significance of the change that will occur in the Shady Grove area requires clear identification of the issues facing the community.

Due to the presence of Metro and the proposed major road network, Shady Grove will become more accessible. This greater accessibility, along with the location of many regional and county facilities, will create enormous pressures for denser development than that which is recommended in the county's general plan.

Additionally, rapid change of an area that is presently farmland with scattered subdivision development to a low-density residential and light industrial nature may result in even greater lag in the provision of adequate public services and in a chaotic distribution of development mixed with open space. Rapid change may also bring with it potential for the loss of identity by older, established communities and for development of an amorphous "Shady Grove" community.

Pressure for light industrial development in Shady Grove is felt, as well, from the proximity of similar development along I-270 and along Shady Grove Road from I-270 to Md. 355. This pressure must be reconciled with the General Plan, which portrays Shady Grove as an area of partly industrial, partly low-density residential development. The challenge is to maintain residential integrity while meeting industrial employment needs.

FIGURE 3



Proposed Public Projects

CSP	County Service Park
CPF	Central Processing Facility
S&I	Storage & Inspection Yard
M	Metro Station
● ● ● ●	Sector Plan Boundary

Proposed Major Public Projects

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

2.42 County Service Park

Montgomery County has proposed a multi agency 130-acre development scheme along Shady Grove Road Extended, immediately east of the B & O Railroad tracks, which includes the following county facilities:

- County government liquor warehouse, including offices, warehousing, and distribution facilities;

- County government road maintenance and construction depot;

- M-NCPPC park maintenance depot serving the east-central region of the county;

- Department of Education regional transportation bus storage facility and its central transportation repair and maintenance facilities.

Issues involved in the development of this County service park are:

- Appropriate zoning for the county service park;

- Compatability with existing and proposed development;

- Impact on traffic circulation patterns;

- Control of noise pollution;

- Compliance with urban design recommendations;

- Impact on Crabb's Branch stream caused by storm-water runoff; and

- Scheduling of development to coincide with the development of other public facilities.

2.43 Metro Transit Station

A 96-acre site is proposed for a Metro transit station immediately south of the county service park. The area will also include a parking area for automobiles on both sides of the B & O Railroad and adjacent Metro storage and inspection yards west of the B & O Railroad.

Issues of concern in the development of the Metro station area are:

- Access to patrons traveling south on I-270, Md. 355, and the Eastern Arterial roadway as well as to nearby residents;

- Visual compatibility with existing commercial and residential communities;

- Impact on peak-hour traffic volume;

- Implications for development in the immediate area surrounding the station;

- Architectural characteristics of the station.

2.44 Metro Access Road/Outer Beltway

A direct Metro access road is proposed using the outer beltway right-of-way, originating at I-270 north of the existing Shady Grove Road interchange and terminating at the Metro station parking facility. The proposed roadway (I-370) will provide direct access to the Metro station without interfering with local traffic circulation patterns. An interchange with the proposed Shady Grove Road is also planned. Use of the access road may be expanded in the future for cross-county travel as part of an outer beltway.

Issues to be addressed in development of the Metro access road are:

- Scale of roadway construction;

- Effect of construction on Shady Grove traffic patterns;

- Impact of the road itself on the safety, appearance, and traffic flow in adjacent residential communities; and

- Potential for eventual expansion of the road as part of the proposed outer beltway.

2.45 Central Processing Facility

The County Executive and the County Council have choosen a site on Md. 355, in the vicinity of the Sears warehouse, for the solid waste central processing facility.

Issues of concern that emanate from the proposed facility are:

- A possible change in the character of the Shady Grove Road area from light to heavy industrial uses;

- Impact of trash trucks traveling past residential communities close to the facility;

- Visual appearance from Md. 355, adjacent residential communities, and Shady Grove Road;

- Possibility of noise pollution; and

- Design and landscaping of the facility.

2.46 Maryland Route 355

Maryland 355 is scheduled for improvement to a six-lane, divided highway in the State of Maryland Capital Improvement Program for Fiscal Years 1975-1977 and, at present, is under construction.

Issues to be addressed regarding this change in the highway's character include:

- Timing of necessary construction and its completion;
- Containment of strip commercial development;
- Construction of a bikeway system; and
- Provisions of landscaping.

2.47 Redland-Fields Roads

The Montgomery County Capital Improvements Program for Fiscal Years 1978-1983 provides for the extension of Fields Road from Md. 355 to Redland Road. Fields Road will be upgraded to include curbs, gutters, sidewalks, a bike lane and a bridge over the B & O Railroad.

Issues of interest in the Redland-Fields Road plan are:

- Impact on safety, appearance, and traffic flow in adjacent residential communities; and
- Timing of construction and completion;
- Extension of Fields Road west from its intersection with Md. 355, through the King Farm, to Piccard Drive. (See Figure 18. "Proposed Highway Plan.")

2.48 Urban Design

Shady Grove will be the scene of widely diverse types of development--from single-family residential to commercial, light industrial, and perhaps office uses--constructed by both the public and the private sector. There is great likelihood that, unless carefully planned and developed, the total area may appear discordant and "cluttered" with buildings.

Issues presented by the area's over all design include:

- Guidelines for the design of nonresidential structures in Shady Grove;
- A harmonious landscaping pattern;
- Flexibility in the expression of personal taste; and
- Maintenance of the present identify of established communities.

FRAMEWORK FOR PLANNING

3

Chapter 3

FRAMEWORK FOR PLANNING

3.1 DEVELOPMENT AND ZONING HISTORY

Shady Grove has retained a largely rural character with commercial, industrial, and residential development scattered over about 20 percent of its area. Settlement came later than it did in the eastern and southern parts of the county, with more intensive development occurring mostly in the last decade. The region was originally developed as small farms with a few villages established as trading centers; its earliest settlers were largely former tenant farmers and indentured servants.

Two historic sites are worthy of note--Jeremiah Crabb's grave on the Mobley tract near Derwood Road east of the Baltimore and Ohio Railroad and Matthew Fields' homesite on the Irvington Farm west of Md. 355. The Crabbs and the Fields were among the earliest recorded settlers in the area.

Crabb was an officer of the Fourth Battlion of the Revolutionary Army, a Brigadier General of the Maryland Militia, and a member of the Fourth Congress of the United States. Fields was sheriff and mayor of Rockville, and founded the Montgomery County Sentinel in 1855.

The B & O Railroad's Metropolitan Branch line, opened in 1873, at first brought little significant change to the area but did play an important role later in land use. The small village of Derwood grew up in the 1880's around the intersection of the railroad and Redland Road. Popular belief holds that the name Shady Grove comes from the stand of large trees that for the most part are still standing near the intersection of Shady Grove Road and Route 355.

In 1950 the Upper Montgomery County Planning Commission was created and most of the Upper County was zoned for half-acre residences (R-R--Rural Residential). A few parcels along the B & O Railroad tracks were zoned industrial including a large tract south of Washington Grove, east of the railroad; and two small pieces of land on either side of Derwood Road, east of the railroad. In 1958 the upper county was added to the Maryland-Washington Regional District, thus coming under the planning and zoning jurisdiction of The Maryland-National Capital Park and Planning Commission.

The first request for a zoning change in the area after the transfer of zoning authority in 1958 affected 11 acres of land located between the B & O tracks and Oakmont Avenue. This application for light-industrial zoning (I-1) was approved. Between September 1958 and December 1974 about 380 acres along or near the B & O Railroad were also rezoned I-1. The result was a strip of light-industrial acreage along the railroad tracks.

Residential rezoning has occurred primarily north of the proposed county service park and east of the railroad. Applications for rezoning have been made and approved for higher densities, usually from RE-1 (1 acre residential) to R-90 (one-quarter acre residential) or R-200 (one-half acre residential). More than 300 acres were rezoned to higher residential densities between June 1961 and January 1972. Between 1969 and 1974, about 40 acres were zoned for commercial use (C-1 or C-3) at or near the intersection of Shady Grove Road and Route 355.

The zoning character of Shady Grove today is light industrial and moderate-density residential, with little commercial development. Existing zoning in Shady Grove is shown in Figure 4.

3.2 POLICY GUIDELINES

Shady Grove is an area of regional importance, as indicated by the major road system and public facilities planned for it. It is also an area of individual communities--each with its own identity, shopping patterns, schools, and local transportation routes.

Planning for new growth and how that growth will affect present habits is the underlying theme of the sector plan. Policy guidelines for development in Shady Grove derive from the Gaithersburg and Rock Creek master plans, existing zoning, and the public facilities and utilities required to support development. In addition, the County has located two major County facilities in this area, the County Service Park and the Central Processing Facility, thus implementing a portion of the industrial zoning.

3.21 Montgomery County General Plan

The growth boom that occurred in Montgomery County in the mid-1960's was guided by the General Plan adopted by The Maryland-National Capital Park and Planning Commission in January, 1964. The General Plan, which is the framework for ultimate development in the county, calls for wedges of green space in the western and northeastern section of the county and for concentration of population growth along I-270 in "corridor cities."

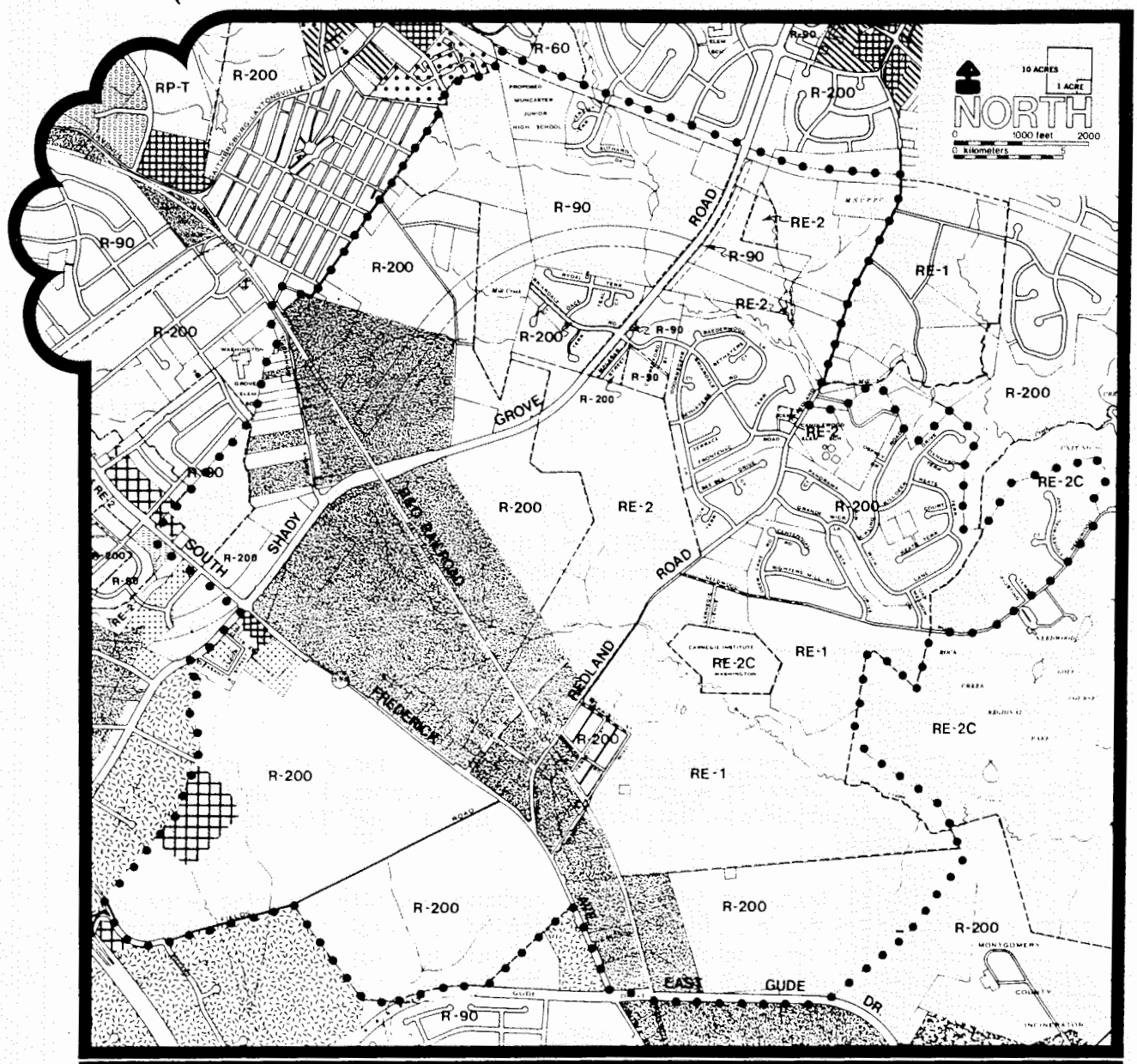
Rockville, Gaithersburg, and Germantown are now separate and partially self-contained corridor cities. These cities are to be separated by greenbelt parkland and low-density development. Shady Grove (located between Rockville and Gaithersburg) is and will remain a low-density residential area, which, because of its central geographic location, will also be the site of large, light industrial development.

3.22 Growth Policy

Montgomery County's annual growth policy reports contain broad public policy statements which provide comprehensive guidance and coordination for all governmental activities affecting growth in the county.

In 1974, the Montgomery County Planning Board prepared and forwarded to the County Council its first annual growth policy report. The second growth policy report was released in the fall of 1975. This report recommended that the county concentrate on actions that will influence growth during the 1974-80 period and

FIGURE 4



Single Family

RE-2 R-200 RE-2C R-90 RE-1 R-60

Multi-Family

R-T R-20 RP-T R-30

Commercial

C-P C-2 C-1 C-3

Industrial

I-1 I-3 I-2

Zoning Boundary

●●●● Sector Plan Boundary

Existing Zoning

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

that will modify existing policies to encourage some of this growth to occur in selected down-county activity centers. This approach requires a concentration of the county's public transportation strategy on serving the down-county areas of high employment and residential concentration, including the development of Metro feeder and neighborhood bus systems.

The report also urged that before 1980 the county secure funding for, and begin to construct, vital transportation elements (the outer beltway and the eastern and western arterial roadways) needed to support future up-county corridor growth. The report also recommended that the central business district (CBD) and transit station area (TSA) sector plans be completed expeditiously, scaling planned density to levels that public facilities, especially transportation, can support.

In short, the growth policy report recommends encouraging some new growth in the down-county area over the next five years, while planning for substantial future growth in the up-county area.

The growth policy affects Shady Grove in two ways: (1) it recommends detailing transportation plans and obtaining funds for their implementation over the next five years, (2) its mandate for orderly growth in the county makes it necessary to have in place those facilities at present planned for the Shady Grove area--the central processing facility, the county service park, and the Metro station. The Metro station is especially important, as it reinforces the I-270 transportation corridor as the location of more intense development within the county.

3.23 Gaithersburg Vicinity Master Plan

The Gaithersburg Vicinity Master Plan, adopted in January 1971, proposed a Metro station at Shady Grove to serve the transportation needs of employees in the area; however, this station was not included in the original 1968 program for Metrorail construction.

The planning of highways for the Gaithersburg Vicinity Planning Area is inextricably linked to the broader consideration of the basic highway network needed to serve county and regional needs. An outer beltway was proposed in A Corridor Feasibility Study (November 1969) to further accommodate cross-county highway travel. This outer beltway would be regional in scope and would provide access to Virginia and Prince George's County, the county service park and other major facilities in Shady Grove, and would greatly expand corridor employment opportunities for many county residents.

The extension of Shady Grove Road east of Md. 355 runs parallel with Redland Road and intersects with Md. 115, providing east-west access in this area.

South of the Shady Grove Road area, Gude Drive would be extended west of Md. 355 across I-270 to intersect with a relocated Md. 28. Gude Drive would then link the east side of Rockville directly with the Research Boulevard area and the proposed Medical Center west of I-270. This link is necessary to prevent an increased flow of east-west traffic, especially truck traffic, through the City of Rockville. Under the Shady Grove sector plan, roads are arranged to accommodate

the movement of vehicles to and from such major sources of traffic and community shopping areas. Md. 355, which is under construction at present, provides the primary, local north-south access.

3.24 The Rock Creek Master Plan

The Rock Creek Master Plan was an attempt to propose a land use pattern sensitive to the natural environment without resorting to blanketing the area with two-acre zoning. Rather than a blanket rezoning the land use pattern recommended was based on physical characteristics of the watershed. Generally, lower density uses were established surrounding and adjacent to public open spaces in the lower portions of the Rock Creek Valley with higher densities established on land capable of accepting that level of development. What resulted was a linear pattern of higher density development along two ridges of high ground. Low density in this case was two-acre residential and higher-density R-150, 15,000 square foot lot residential.

The area in the Shady Grove sector plan within the Rock Creek Planning area is that area southeast of Redland Road. Land use recommendations for undeveloped property in this area followed the same principals as outlined in the Rock Creek Master Plan.

3.3 COMMUNITY FACILITIES AND SERVICES

3.31 Sewerage Facilities

Communities in the Mill Creek watershed are serviced by the Rock Creek trunk sewer. The area west of Frederick Avenue (Md. 355) is served by a sewer that flows into Watts Branch. The central part of the sector plan area does not now have sewerage facilities. Some homes along Redland Road have individual septic tank systems. A large, double pipe, water main crosses the sector plan area from the west, bending to the south along Crabb's Branch (see Figure 5, Existing Sewer and Water).

3.32 Schools

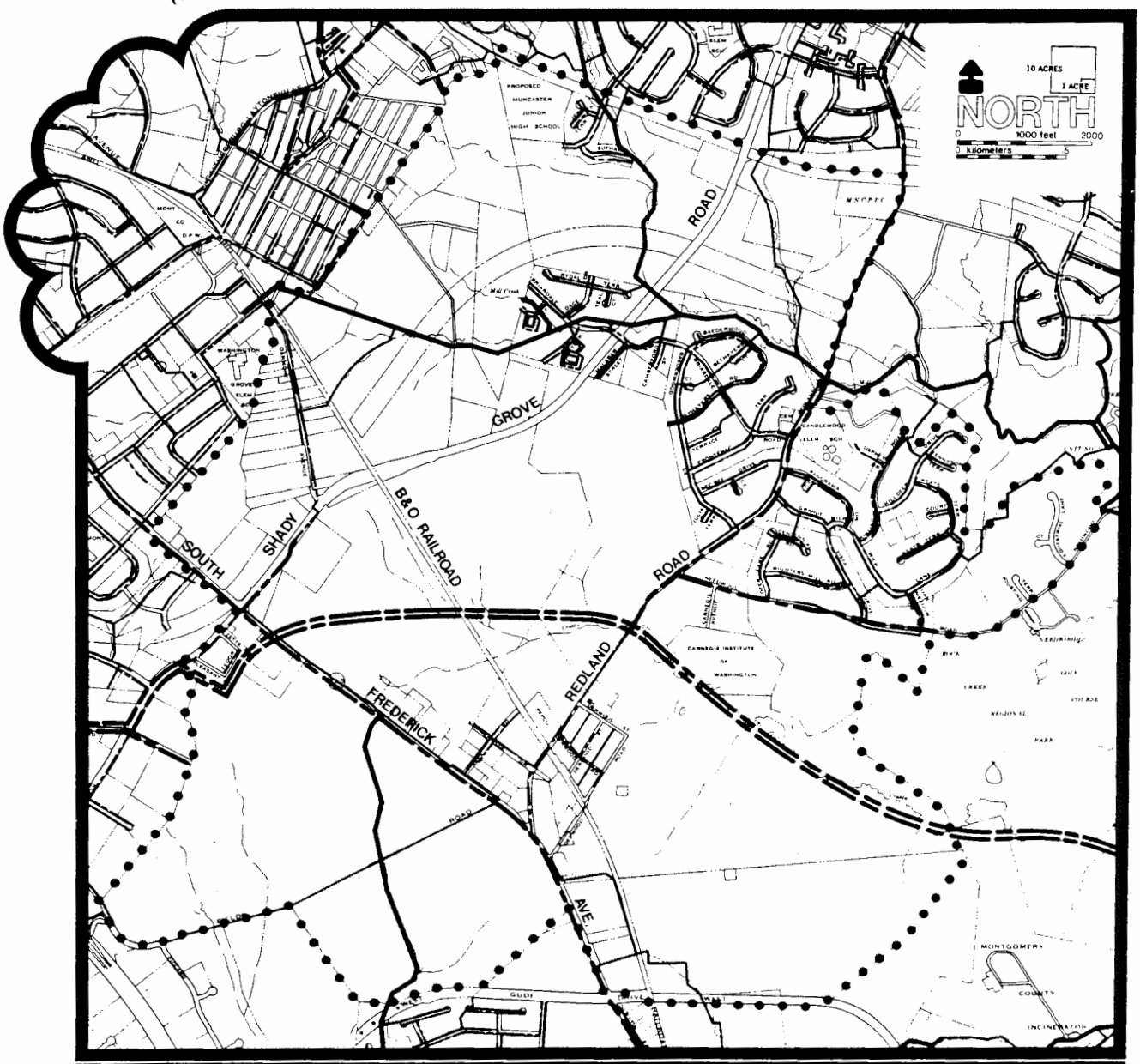
Schools now serving the area are Candlewood, Washington Grove, and Mill Creek Towne Elementary Schools, Redland and Gaithersburg Junior High Schools, and Magruder and Gaithersburg Senior High Schools.

3.4 PRIVATE DEVELOPMENT

3.41 Residential Communities

Residential communities within the sector plan area are: Redland Station, Parkside Estates, Candlewood Estates, and Derwood. Immediately adjacent are the communities of Rosemont, Walnut Hill, Mill Creek Towne, and the Town of Washington Grove, Laytonia, and Hamlet North.

FIGURE 5



Sewer Trunk Line
Sewer Lateral
Water Trunk Line
Water Lateral
Sector Plan Boundary

Existing Sewer & Water

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

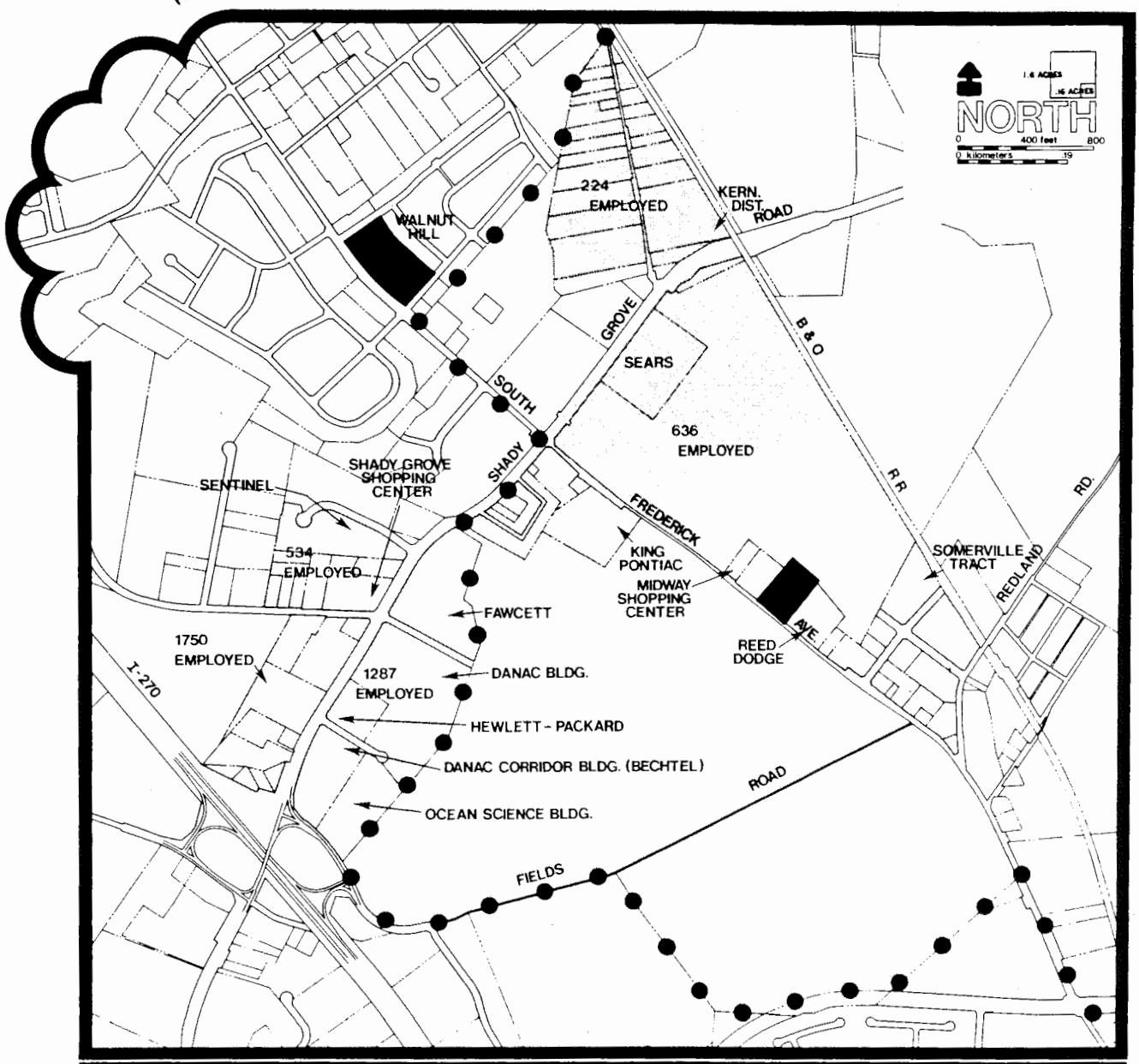
3.42 Commercial Centers

There are six commercial centers that serve the local shopping needs of Shady Grove. The largest of these are the Walnut Hill and College Gardens Shopping Centers. Smaller shopping areas are at Redland Road and Muncaster Mill Road, at the Somerville Industrial Park, and on Md. 355 between Shady Grove Road and Fields Road. A convenience grocery store is at the southwest corner of Washington Grove, and a fast food restaurant is located northeast of Md. 355 and Redland Road. Commercial areas are designated in Figure 6, "Existing Employment and Commercial Areas."

3.43 Employment Areas

Employment is centered in three locations--along Oakmont Avenue, adjacent to the B & O Railroad; along Shady Grove Road, between I-270 and Md. 355; and in the Somerville Industrial Park surrounding Fields Road, east of Md. 355 (see Figure 6).

FIGURE 6



Employment Areas

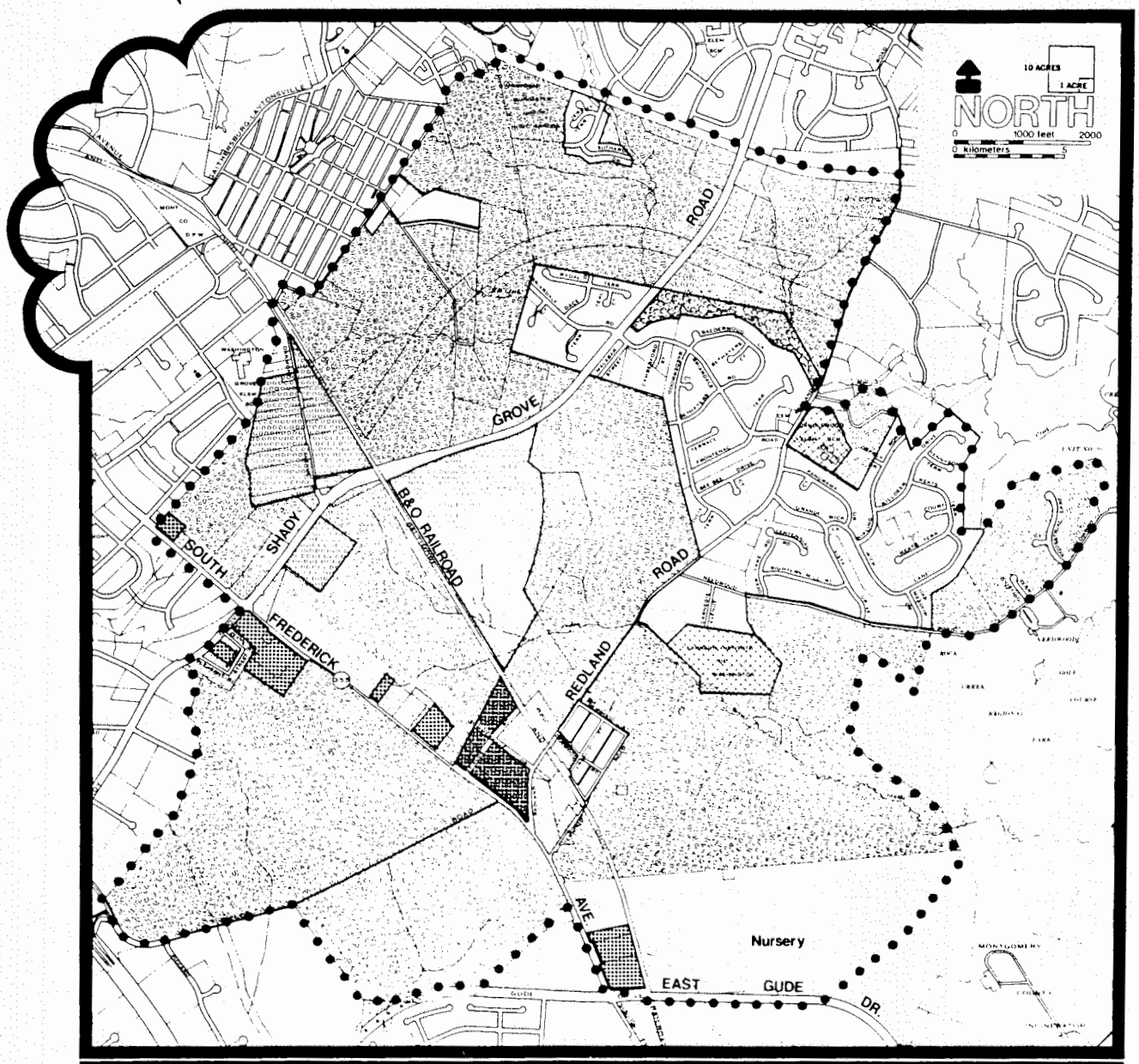
Commercial Areas

Sector Plan Boundary

Existing Employment & Commercial Areas

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 7



- Single Family
- Agricultural / Vacant
- Commercial
- Industrial
- Institution / Park School
- Stream Valley Park
- Industrial / Commercial Mixed
- Sector Plan Boundary

Existing Land Use 1976

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

REGIONAL & LOCAL COMMUNITY FACILITIES

4

Chapter 4

REGIONAL AND LOCAL COMMUNITY FACILITIES

4.1 INTRODUCTION

Shady Grove is the planned site for several large public projects that will have enormous short-term and long-term effects on the surrounding communities and on the roadway system. Several of these facilities will be regional in nature, including the county solid waste central processing plant, and the multiagency county service park, and the terminal Metro transit station on the Rockville Line with its associated storage and inspection yard accommodating 144 Metro cars.

The installation of these facilities, and the population growth expected in Shady Grove, will also require the development of smaller, locally oriented public facilities. These will include parks, bike lanes and trails, schools, and fire and rescue service facilities. The planned County Medical Center, located at Md. 28 and Shady Grove Road, is two and one-half miles from the study area, but will have a significant impact on traffic and land use adjacent to the sector plan area and, in so doing, on the Shady Grove area itself.

This chapter describes the public and private community facilities both existing and planned for the area, and makes recommendations regarding future needs.

4.2 REGIONAL PUBLIC FACILITIES

4.21 Metro Transit Station Complex

The Metro station will be located along the B & O Railroad north of a relocated Redland-Fields Road and of the Somerville Industrial Park. Parking will be provided on both sides of the tracks; approximately 2000 spaces will be provided east of the tracks, with connection to Shady Grove Road and the Metro access link to I-270, and approximately 1000 spaces west of the tracks, with access from Md. 355 and from Fields Road. Patrons will be able to walk from one side of the tracks to the other by way of pedestrian underpass.

The storage and inspection (S & I) yards will be located west of the B & O Railroad and immediately north of the station. Storage will be provided for 144 of the 556 Metro cars. A special washwater recycling system will be used. Residue from the wash water will drain into sanitary sewers.

4.22 County Service Park

Overview

The county service park will group in one area public facilities that will serve countywide needs. The site provides access to the B & O Railroad, to I-270,

eventually to an expanded and improved road system, and to adequate undeveloped acreage. With proper county planning and quality design, the county service park can be attractive, as well as operationally functional and efficient. The impact on the Shady Grove community, however, will be significant in terms of traffic generated by the county service park and the physical design of the facility itself. Stringent development guidelines must be followed by county agencies to create the best possible development on this 130-acre site.

The 130-acres set aside for the county service park, located north of Redland Road, south of Shady Grove Road Extended, and immediately east of the B & O Railroad, will include:

- County government road maintenance and construction depot;

- County liquor warehouse, including offices, warehousing, and distribution facilities;

- Board of Education Central transportation repair and maintenance, and regional bus storage facilities;

- The Maryland-National Capital Park and Planning Commission's park maintenance depot, serving the park system in the east-central region of the county.

One basic objective of the Shady Grove sector plan is to identify the specific effects of the county service park on the neighboring business and residential communities and to recommend appropriate action to assure that Shady Grove remains a pleasant, enjoyable place to live and work.

Recommendations

- No facility not programmed at present for the county service park should be added if it would generate significant amounts of additional automobile or truck traffic to cause the "level of service" at intersections adjacent to the county service park to fall below Service Level "D" (see Transportation, Chapter 5, section 5.2 for a description of Level of Service).

- Space should be provided for county service park employee services, which might include a basketball court, picnic tables, a day-care center, and a turn-off drive for a hot food truck or similar service near the buildings.

- Development guidelines for all buildings constructed within the county service park should be contained in the lease agreements made between the county and user agencies.

- The landscaping and design features of the county service park should follow the Urban Design recommendations of Chapter 9.

- Landscaped berms should be used to soften visual and noise impacts where shown on the Concept Landscape Plan.

• Shady Grove Road will provide primary access to the county service park until the outer beltway link and the Metro access road are completed. These two roads will eventually accommodate regional traffic to and from the county service park. Shady Grove Road will remain the primary access route for local traffic to and from the county service park. When the Crabb's Branch Way is extended through to Redland-Fields Road, it will provide secondary access for local county service park traffic. Crabb's Branch Way will serve county government needs within the service park. This road should be four lanes wide within a minimum right-of-way of 80 feet. Crabb's Branch Way will extend from the industrial area north of the outer beltway location, intersecting at grade with Shady Grove Road and extending through the county service park, then intersecting with Redland-Fields Road and extending through the residential and industrial area to the south, and finally terminating at Gude Drive. The road will serve both industrial and residential development. The design of Crabb's Branch Way, therefore, should reflect the fact that it will be used by residents going to and from Shady Grove and Redland-Fields Road, as well as by industrial vehicles. There should be a bike lane from Shady Grove Road to relocated Redland-Fields Road, parallel to this road.

4.23 Central Processing Facility

It is expected that, by 1995, over 926,000 tons of solid waste will be generated in the county--514,000 tons more than in 1974. Montgomery County has decided to recycle as much of this solid waste as is practical.

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In order to reuse solid wastes, it is necessary to separate them into their constituent parts. Applying a mechanical separation system is the most feasible way to handle and separate solid wastes economically and safely. The proposed central processing facility (CPF) is, in part, a physical plant that contains the necessary machinery to shred materials into small pieces and separate marketable ferrous metal from the non-ferrous glass, organic matter, and other heavier wastes. Light paper and plastics will also be separated out and possibly turned into an economical source of heat for use as a replacement for coal in electric power plants.

The physical plant itself is only one part of the processing facility. Space on the plant site is needed for queuing up, weighing, storing, and maintaining collection vehicles; storing by-products for disposal in a landfill; road and rail service to and from the facility; and screening and landscaping.

The site selected for the central processing facility is 53 acres east of Md. 355 and south of Shady Grove Road. This land is currently classified in the light industrial (I-1) zone. The central processing facility will be located immediately west of the Metro storage and inspection yards. The rail siding to the central processing facility is parallel to the siding for the Sears warehouse (see Figure 3).

The central processing facility will probably operate Monday through Saturday from 7:30 a.m. to 8 p.m. Since all major private and public trash collection services currently work a single shift, however, deliveries to the central processing facility will probably occur between the hours of 9 a.m. and 3:30 p.m. Most of the truck traffic to the processing facility will occur at off-peak hours (11 a.m. to 2 p.m.). This is less traffic impact than that ordinarily experienced from an industrial or warehouse use. Not only will the processing facility traffic be generated at off-peak hours, but the total amount of such traffic will be much less than that associated with a private development, such as the Sears warehouse.

Devices to reduce noise levels will be used inside the central processing facility building. Landscaping and building design should be attractive, with on-site operations screened wherever possible. If the site is to be used for rail transfer of solid waste, the need for screening and buffering is all the more important and these features should be in place prior to beginning rail transfer operations.

4.3 LOCAL COMMUNITY FACILITIES

4.31 Recreation

Existing Facilities

Rock Creek Regional Park, with its 3000 acres is the largest developed recreation facility in Montgomery County. Rock Creek extends throughout the eastern part of the planning area, and includes the Needwood Golf Course and the historic Needwood mansion as well as conservation areas along stream tributaries. Lying entirely within the park are Lake Needwood and Lake Frank, which are multipurpose facilities serving watershed protection, flood water retention, sediment control, and recreation functions. Lake Needwood comprises 74 acres, extending north and south from Needwood Road almost to Southlawn Lane. It provides for outdoor recreation, including fishing, boating, and ice skating. Lake Frank, a smaller 54-acre lake, is primarily dedicated to outdoor, environmental education.

Washington Square Local Park is a 5-acre facility, near Washington Grove, on Md. 124. Nearing completion, the park has lighted tennis courts, a lighted multiuse court, an athletic field, parking, and playgrounds already in use. A recreation building was recently completed.

Proposed Facilities

Local Parks

Redland Local Park (formerly called Blueberry Ridge) will be a 10-acre facility on the west side of Redland Road, south of the proposed relocation of Md. 115 (Muncaster Mill Road). Selection and planning of facilities will be done in consultation with neighboring communities and the area Recreational Advisory Board. Construction of these facilities is programmed to take place within the FY 78-83 CIP program period. The Gaithersburg Vicinity Master Plan originally designated this facility as a park and school combination, but elementary school enrollment figures show no need for a school at this location.

Blueberry Hill Local Park will be a 10-acre facility connected to an 8-acre school and located between Shady Grove Road Extended and Redland Road, west of Parkside Estates. The land will be acquired in fiscal year 1977; facilities will be constructed sometime thereafter. Planning of facilities will be done in consultation with neighboring communities and with the area Recreational Advisory Board.

Amity Drive Local Park will be a 10-acre park, located on the east side of Amity Drive, approximately one-half mile from Md. 124 (Laytonsville Road). This will be a joint facility with an elementary school to be built in conjunction with subdivision activity in the area. Facilities will be selected and planned after consultation with neighboring communities and the area Recreational Advisory Board.

Ridge Local Park is no longer planned. It was proposed originally as an 18-acre park and school facility, to be located south of Washington Grove, west of the B & O Railroad tracks. Neither the school nor the park is needed due to decreased school enrollment.

Stream Valley Parks

Crabb's Branch Stream Valley Park will extend from Redland Road northeast to Rock Creek Regional Park. Protection of the stream from encroachment by subdivision and industrial development in the headwaters, which could cause flooding and erosion, makes preservation of this land a priority issue.

The project will require 100 acres along Crabb's Branch and connecting to the Rock Creek Regional Park system. Hiking and bike trails will link Crabb's Branch to Lake Needwood and other portions of Rock Creek Park.

Crabb's Branch Stream Valley Park is particularly important for use as a visual and open space focal point for residential areas built on the Mobley-Gude tracts. It will also provide a link between the new areas of Shady Grove and existing Rock Creek Park.

Mill Creek Stream Valley Park will add 9 acres of stream valley parkland to the existing 44 acres extending along Mill Creek south of Muncaster Mill Road to its confluence with Rock Creek. This piece of land joins together two larger sections and provides a vital link in the proposed area-wide bikeway system (see Chapter 5, Transportation).

4.32 Schools

Existing Facilities

Candlewood, Mill Creek Towne, and Washington Grove Elementary Schools are the three facilities which now serve Shady Grove. However, schools immediately outside the area that are projected to have excess future capacity, such as the College Gardens and Woodley Gardens Elementary Schools in Rockville, could accept children from the Shady Grove area, especially from the Mobley and Gude tracts south of Derwood Road.

Candlewood Elementary School is located off Redland Road and Panorama Drive in the Candlewood subdivision. About 525 children from Needwood Estates, Redland Station, Roundtree, Tewksbury, Countryside, Candlewood, Field Stone Farm, and Parkside Estates attend this school. Some three percent of the children come from the Needwood Road area. Approximately 20 percent of the children walk to Candlewood School, and the remainder arrive by bus. Additonal classrooms and a new gymnasium, now being built, will increase Candlewood's capacity to 600 children.

Mill Creek Towne Elementary School is located off Fall Drive in the Mill Creek Towne subdivision. This school is a large facility, with an enrollment of over 750, and an ultimate capacity of 850. The school serves Mill Creek Towne, parts of Emory Grove, Mill Creek Towne East, Redland Estates, Redland Knolls, and Laytonia.

Washington Grove Elementary School is located off Oakmont Street, near the Walnut Hill subdivision. It now enrolls over 600 children, who either walk from Walnut Hill, Deer Park, and Washington Grove or are bused from Derwood, Laytonsville, Newport, Town Crest, Mill Creek Gardens, and Wedgewood.

Proposed Facilities

Plans for elementary schools in the 1971 Gaithersburg Vicinity Master Plan must be altered. School enrollment projections in the plan were based on a factor of 0.9 school child per dwelling unit. Today for a number of reasons, the school enrollment factor has been reduced to 0.5 elementary school child per dwelling unit. Therefore, some schools previously planned for the area have been deleted from the sector plan. Neither Ridge nor Redland School (formerly called Blueberry Ridge School) will be built, although land for the Redland Local Park (part of the previously planned combined park and school facility) has been acquired.

Blueberry Hill Elementary School will be built when subdivision construction activity warrants. There will be an ultimate capacity of 550 children serving Redland Station, part of Parkside Estates, and the future Mobley tract north of Derwood Road. It could have twenty classrooms, plus a playground area.

Amity Drive Elementary School will be built after the surrounding property has been developed and Mill Creek Towne and Blueberry Hill Elementary Schools have reached capacity. This school probably will serve 600 children.

Table 1 summarizes existing and proposed elementary school enrollment in Shady Grove.

4.33 Libraries

There are two main libraries near the area, one in Gaithersburg and another in Rockville. No new library facilities are planned for the Shady Grove sector plan area within the foreseeable future.

4.34 Fire and Rescue Services

Existing Facilities

There are two fire stations currently serving the Gaithersburg-Shady Grove area--Station 8 and Station 28.

TABLE 1

SUMMARY OF EXISTING AND PROPOSED
ELEMENTARY SCHOOL ENROLLMENT
SHADY GROVE AREA

	EXISTING*	PROPOSED (1984)
Candlewood	525	600
Mill Creek Towne	750	850
Washington Grove	580	606
Blueberry Hill	N.A.	550
Amity	N.A.	600
	1,855	3,206

*Data supplied by the Board of Education.

Station 8, located at 13 East Diamond Avenue, has been in operation since 1928. Station 8 now houses three fire trucks and two ambulances. It is old, in need of repair, and inadequate to support the currently required level of service. Because of rapid growth and the increase in multiple story buildings, the Gaithersburg area now requires the immediate availability of a 100-foot, aerial ladder truck. The present facility is not deep enough to house such a unit and cannot be remodeled because of its location next to the B & O Railroad tracks.

Station 8 serves a 49-square-mile area with a high level of population density (estimated 35,242) and extensive developments of multifamily dwellings. The area also has an increasing number of commercial and industrial facilities. An increase in growth of the service area will result in additional fire protection needs that will exceed the level of protection that Station 8 can provide. When the two fire stations at Montgomery Village and Russell Avenues and in the County Medical Center open, Station 8 will be closed.

Station 28, located at 7272 Muncaster Mill Road, was placed in service in 1968. It protects a 12-square-mile area with a population of 7,875. It houses two fire trucks and one ambulance.

Future Facilities

A fire station is planned in the vicinity of Shady Grove Road and Md. 28. This location will provide the additional protection that will be required in this area and will provide good access to major existing and proposed highways. The fire station and rescue squad will both be located at the County Medical Center.

An additional station site has been selected to serve the Gaithersburg area. This site is north of Montgomery Village Avenue and east of the proposed Russell Avenue. This station is under construction at present.

These facilities are consistent with the Final Draft Fire Station Master Plan.

TRANSPORTATION

5

Chapter 5

TRANSPORTATION

5.1 INTRODUCTION

The extension of the Rockville line of the Metrorail Adopted Regional System (ARS), which includes a Metro transit station at Shady Grove, represents the first approved addition to the 98.5-mile system. Several public service facilities have been proposed for Shady Grove. Despite the fact the area consists mainly of large tracts of undeveloped land, severe traffic problems exist at present. Nevertheless, the Shady Grove sector plan provides for a greater degree of flexibility in transportation planning than exists for any other station area on the Rockville line. The transportation analysis for Shady Grove presents in detail the transportation impacts associated with the proposed Metro station, the county service park, and other land development activities. It also provides a basis for assuring the proper scheduling and coordination of projects within the area.

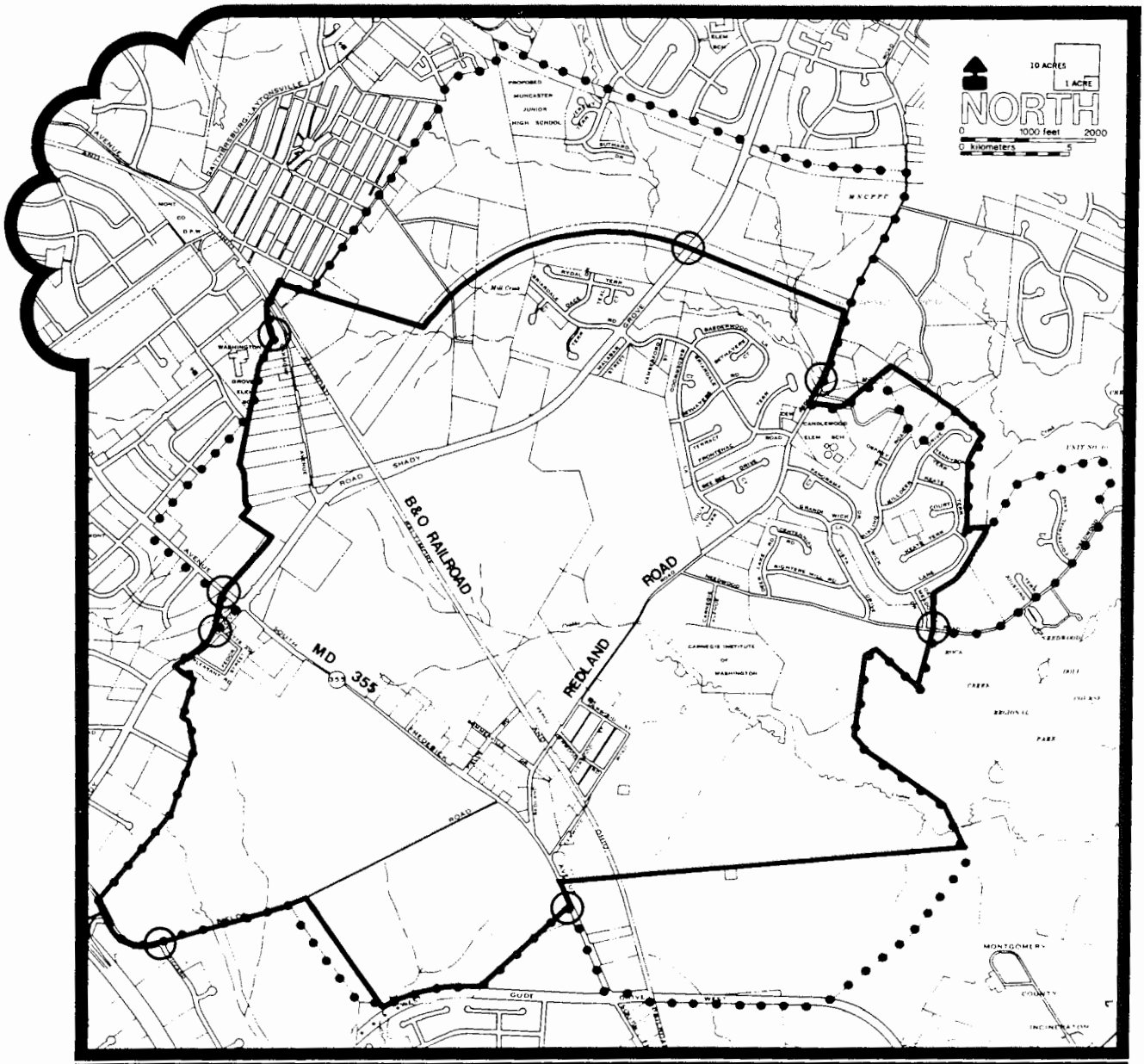
The analysis was applied to the area bounded by existing and proposed Gude Drive on the south, existing and proposed Gaither Road on the west, existing Shady Grove Road and the proposed outer beltway on the north and northeast, and Rock Creek Park on the east (See Figure 8 Transportation Analysis Area).

5.2 EXISTING TRANSPORTATION SYSTEM

The existing highway network in the study area is characterized by two-lane roadways with grades, alignments, and widths inadequate for present traffic volumes. The exception is Shady Grove Road, which is a modern, four-lane, divided highway that provides access to I-270 and to adjacent commercial and industrial developments. This route, however, is severely restricted in the vicinity of the I-270 interchange, due to the single span across I-270 and the lack of a complete, free-flowing interchange. The major roadway elements, their general cross-sectional characteristics, and the traffic signal in the study area are shown in Figure 9.

As stated above, the traffic volume generally exceeds the capacity allowed for in the design. Average daily traffic (ADT) volumes for 1976 are depicted in Figure 10; the more critical peak-hour volumes in Figure 11. As in other sector plans, a peak-hour traffic analysis was made for the Shady Grove sector plan area to determine the level of service of the roadway system. The measure, "level of service," represents the ratio of traffic volume to carrying capacity of an intersection and is expressed in an alphabetical range of "A" to "F." Level D is the lowest level considered acceptable for planning purposes. A detailed explanation of the level of service methodology appears in Appendix B-1. Existing service levels in the Shady Grove study area during peak-hour periods are shown in Figure 11. The most critical, or most overcrowded, intersection is at Md. 355 and Shady Grove Road, which is now operating at service level E to F during morning and evening peak hour. Improvements to this intersection, beyond the widening of Md. 355 now underway, are being studied by the Maryland Department of Transportation as part of their Metro Access Study.

FIGURE 8



General Extent of Traffic Analysis Area

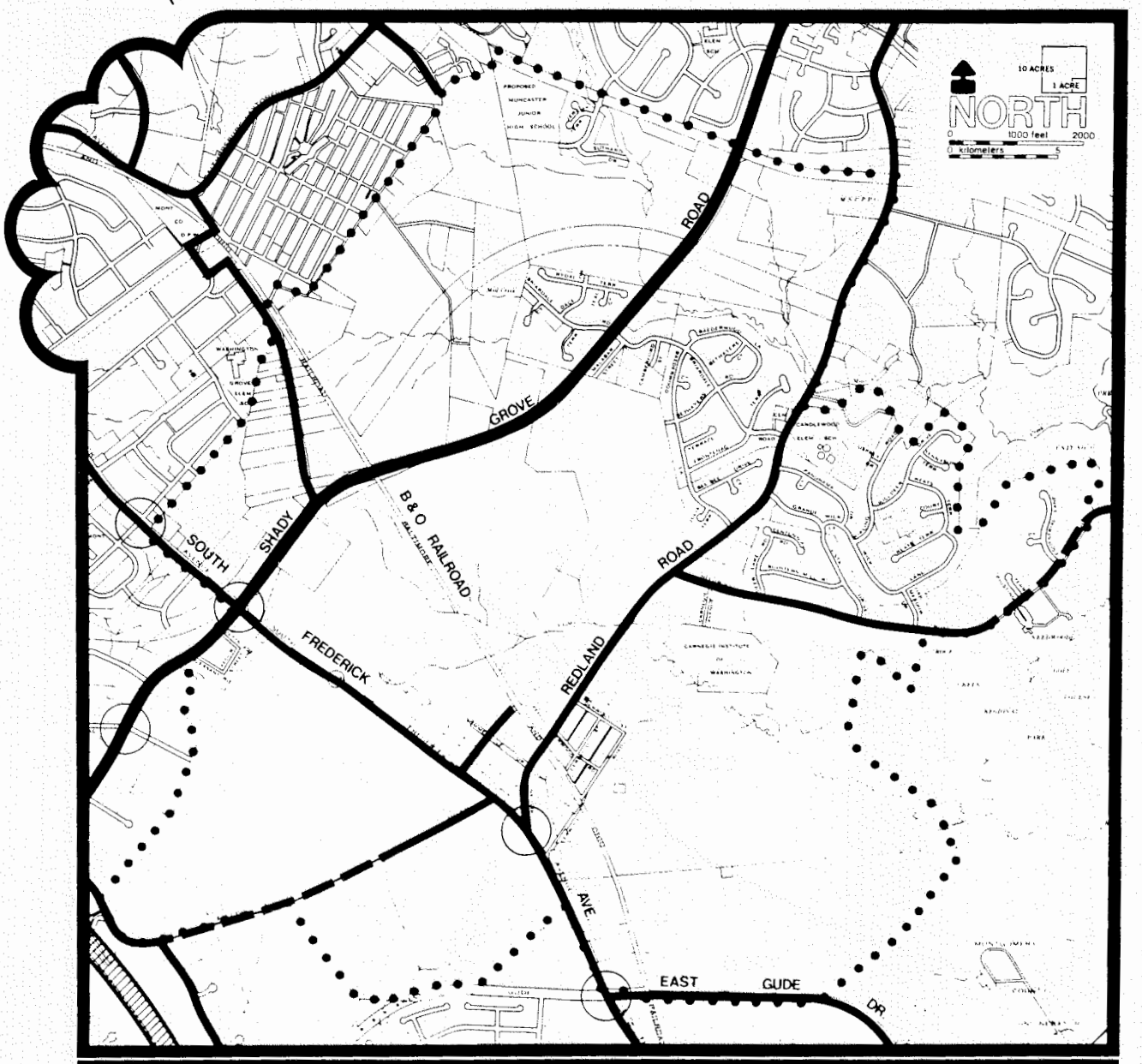
Cordon Stations / Traffic Count Stations

Sector Plan Boundary

Transportation Analysis Area

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 9



Unpaved Roadway

2-4 Lane Undivided Arterial

4-6 Lane Divided Arterial

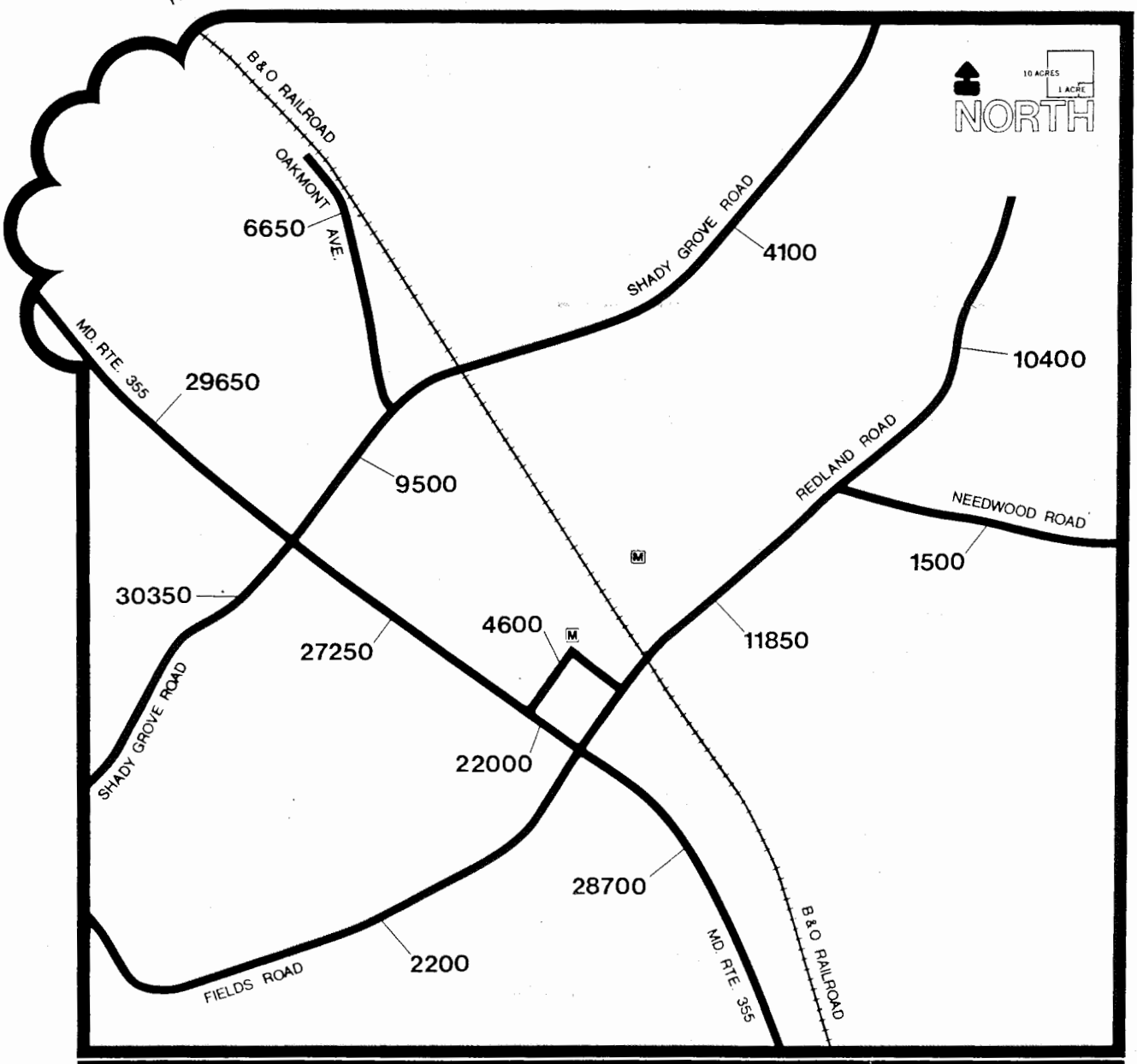
Freeway

Traffic Signal

Existing Roadway Network

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 10

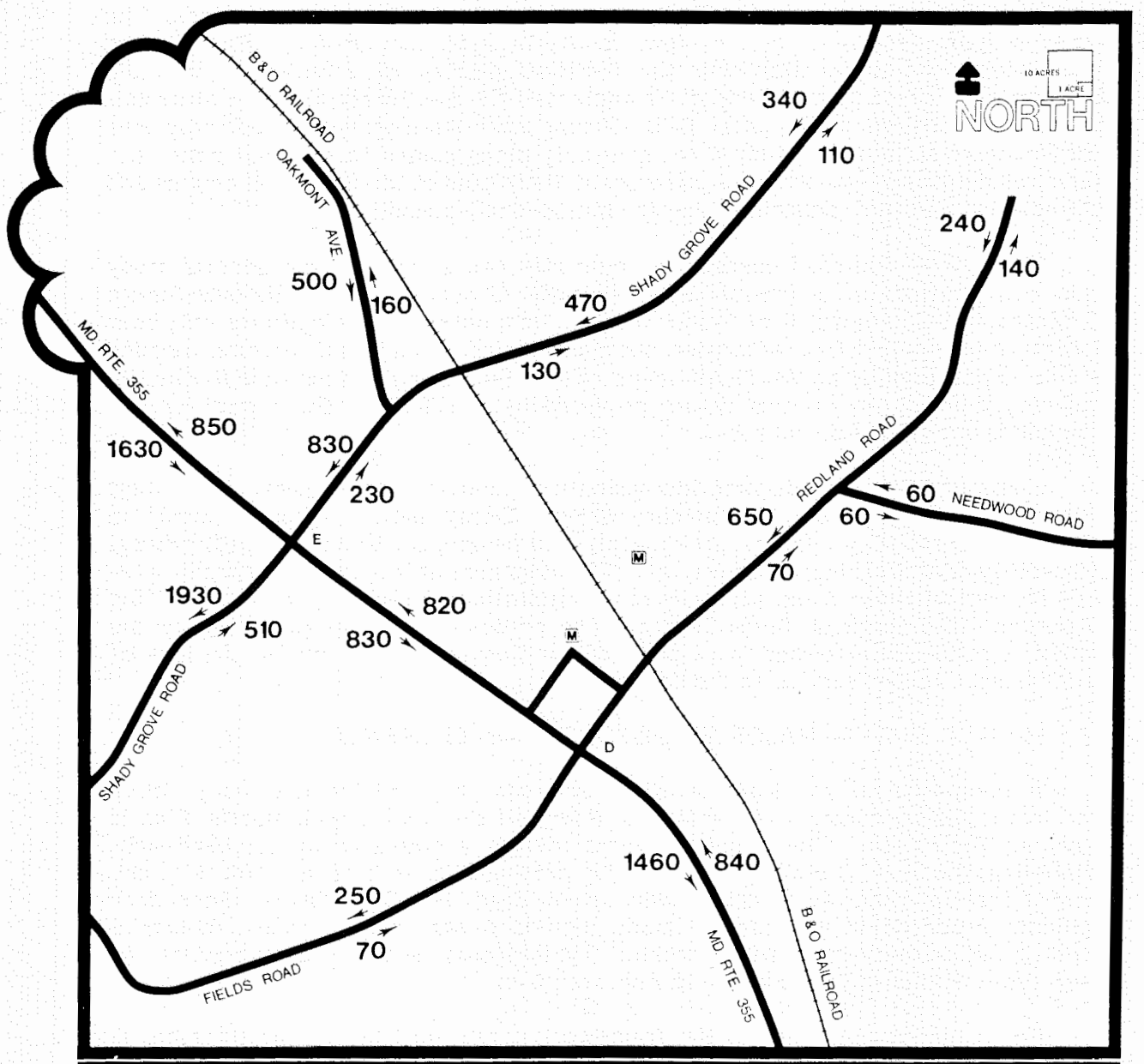


30350 Average Daily Traffic Volume (directional)

1976- Average Daily Traffic

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 11



510 ← 7-8 AM Total Traffic Volume
(Corresponding PM Peak Hour Data Included in Appendix)
D/E Existing Level of Service

1976 Total Peak Hour Traffic

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

Metrobus operations in the Shady Grove area are limited to peak periods. The routes provide service from the down-county area to the Energy, Research and Development Administration and the National Bureau of Standards and from Montgomery Village to the Federal Triangle and the Southwest Mall. A Metrobus route map is shown in Appendix B-2. During each peak travel period, only five buses operate within the study area, generally along routes that do not penetrate major residential neighborhoods. Listings of these routes, their general origins and destinations, and their schedules also are included in Appendix B-2.

The B & O Railroad operates a commuter rail service in the general study area, with stations at Gaithersburg, Washington Grove, and Rockville (see Figure 12, Metro and Commuter Rail Systems). This commuter service operates only four morning inbound and four afternoon outbound trains. Additional morning inbound service is provided by an AMTRAK train, with stops at Gaithersburg and Rockville; however, there is no evening return provided by AMTRAK. The commuter rail schedule is shown in Appendix B-3.

Commuter rail has become increasingly popular in recent years. The latest survey, conducted by the Montgomery County Department of Transportation in September 1974, shows that approximately 250 passengers board at Gaithersburg, 15 passengers at Washington Grove, and 275 passengers at Rockville. Approximately 90 percent of these passengers ride to Union Station. Nearly all of the remaining 10 percent disembark at Silver Spring. The predominant mode of access to the system is automobile (either "park-and-ride" or "kiss-and-ride"), due to the lack of direct transit feeder service to the stations.

5.3 MASTER PLANS--MAJOR TRANSPORTATION ELEMENTS

A composite of the transportation elements proposed for the Shady Grove area in the Gaithersburg Vicinity Master Plan and the Rock Creek Master Plan is shown in Figure 13. The major elements include a Metro rapid rail extension, paralleling the B & O Railroad, I-270, the proposed outer beltway, Md. 355, the eastern arterial roadway (M-83), Shady Grove Road, and Gude Drive. Secondary elements proposed in the master plans include minor arterial roads, industrial streets, and primary residential streets. Typical cross sections characteristic of these types of highways are shown in Appendix B-4.

For a number of reasons, the framework established by the master plans is closely followed in the Shady Grove Transportation Analysis:

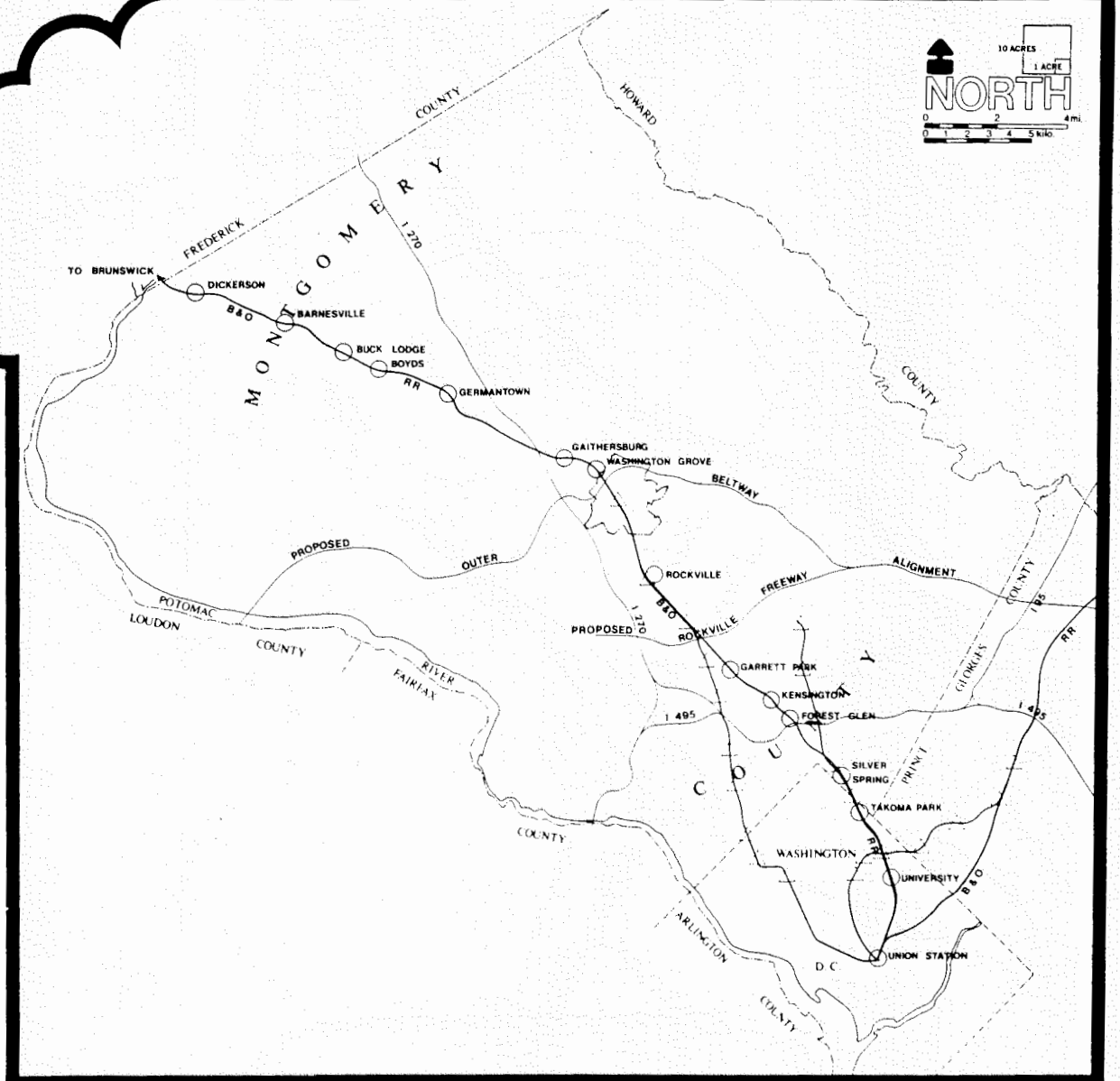
- Existing or committed development in this area has been predicted on the transportation network of the existing master plans.

- Much time and resources have been expended toward funding and implementation of the proposed transportation facilities. Foremost among these is the improvement of Md. 355 and the construction of Shady Grove Road Extended.

- Any unnecessary departures from the existing master plans would cause time delays and cost escalations.

This does not mean that the analysis was merely a reaffirmation of the existing master plans, but rather that the analysis recognized the need to develop a

FIGURE 12



Sector Plan Area

Commuter Rail

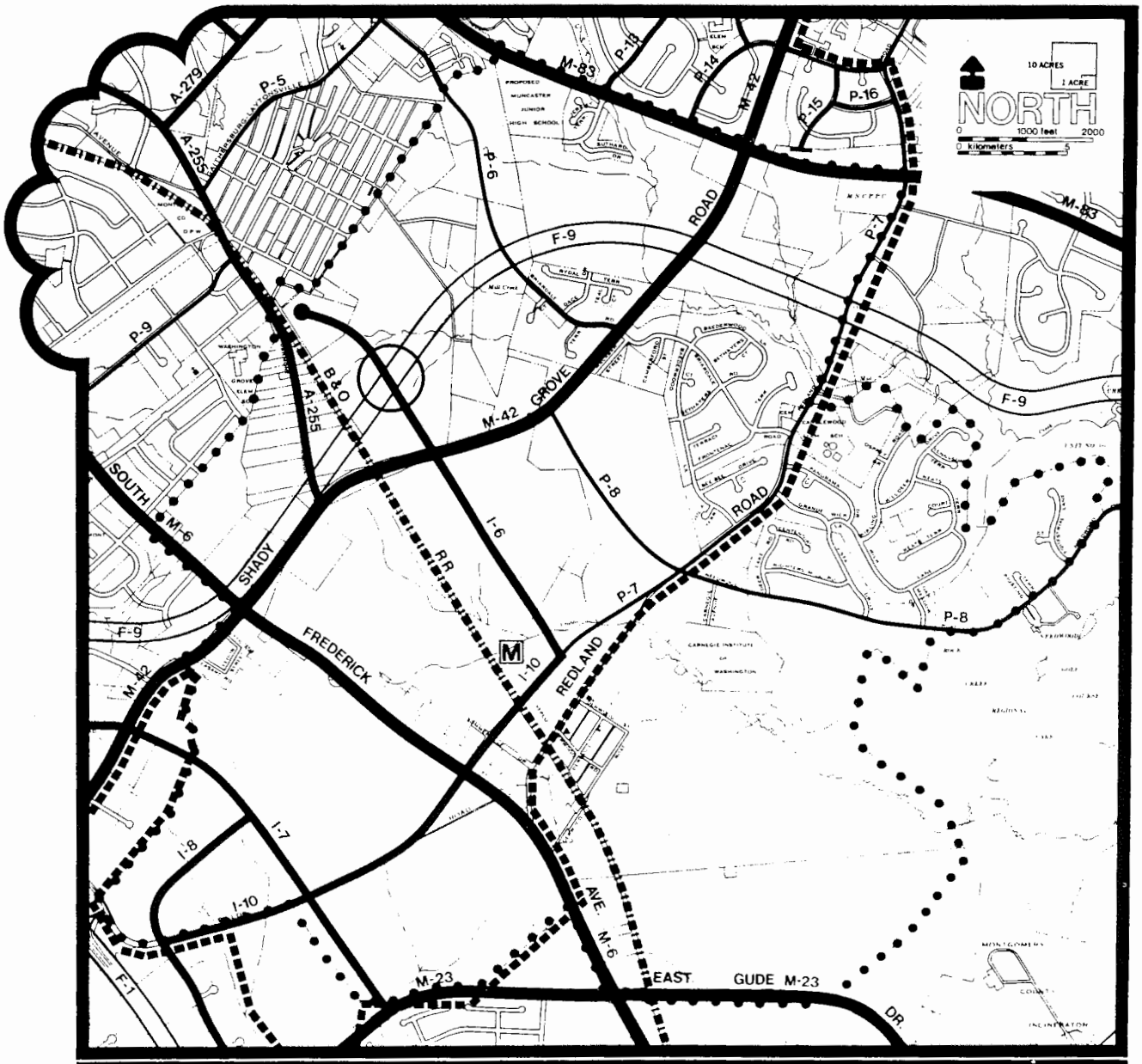
METRO

Metro and Commuter Rail Systems

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 13

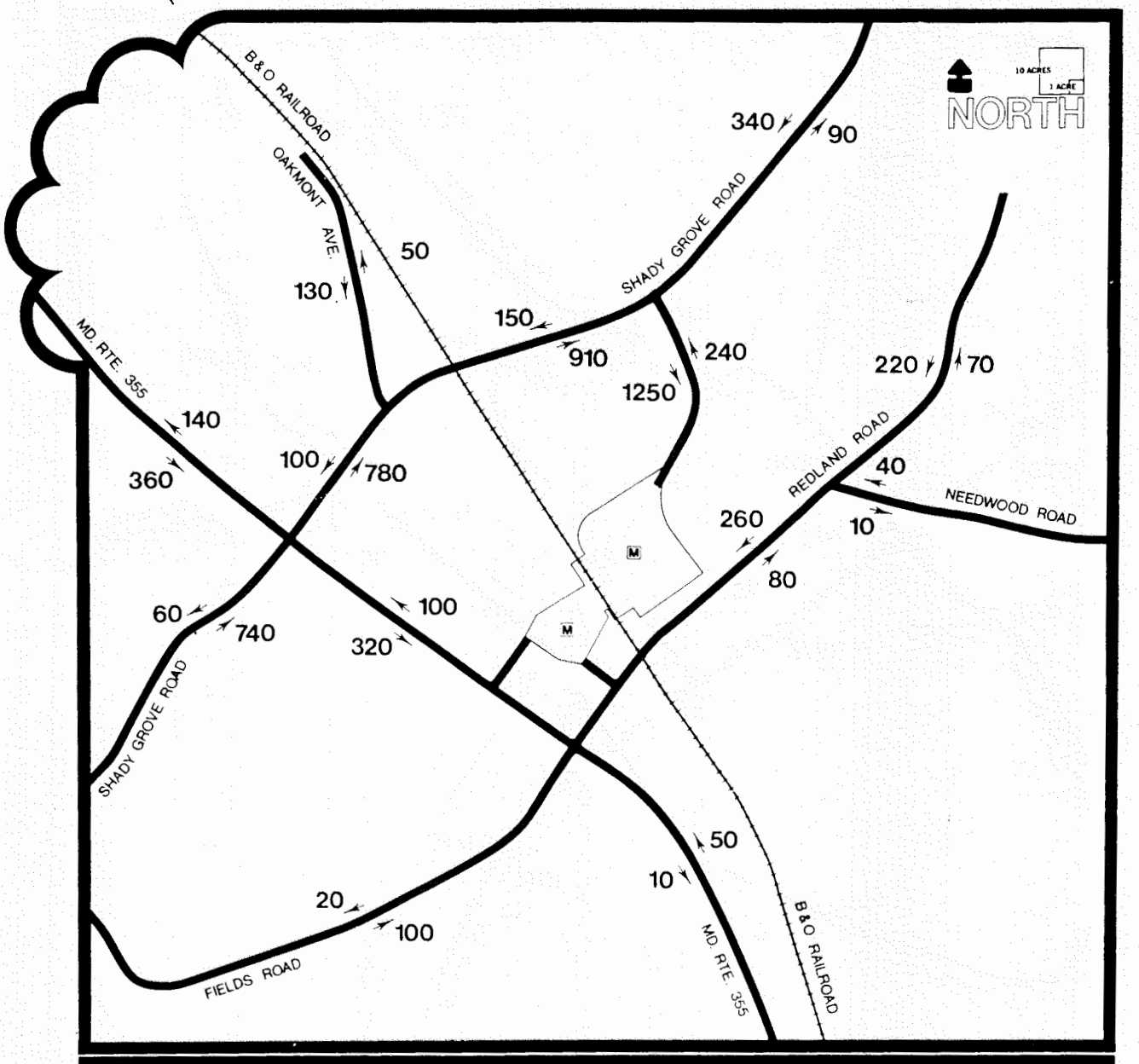


Freeway
Major Highway
Arterial / Industral Road
Primary Street
Interchange
M METRO Stop
METRO and B&O RR
Sector Plan Boundary
Gaithersburg & Rock Creek Master Plan Boundaries

Composite Gaithersburg Vicinity & Rock Creek Highway Plan

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 14



740 7-8 AM. Traffic Volumes

1984 Metro Traffic, Without - I-370 Connector Road

SHADY GROVE SECTOR PLAN

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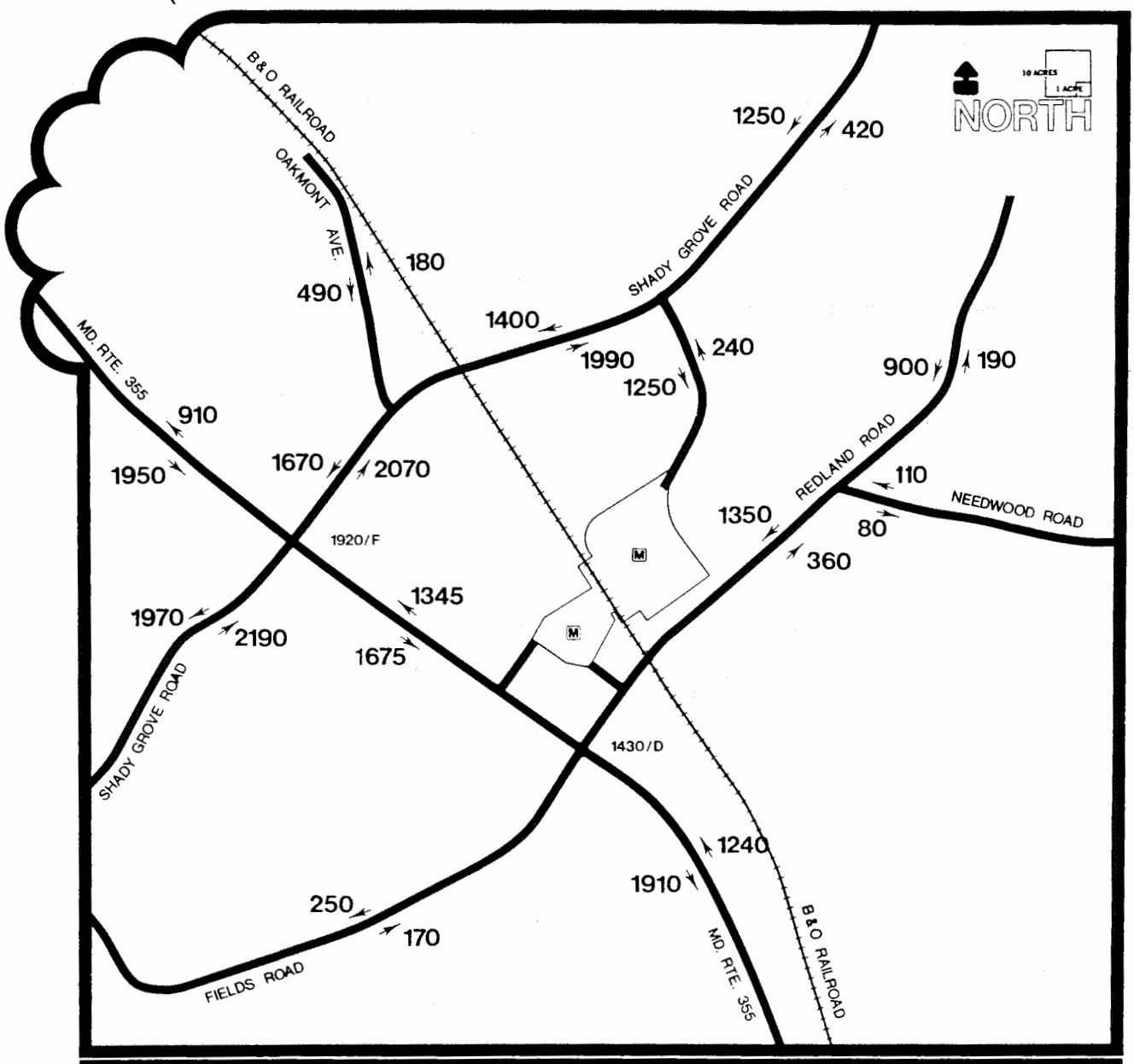
FIGURE 15



2190 7-8 AM. Traffic Volume
(Corresponding PM Peak Hour Data Included in Appendix)
1920/F Critical Lane Movements / Projected Level of Service

1984 Total Traffic, Without - I-370 Connector Road

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

sector plan based on existing and committed elements, unless there was an overriding and justifiable reason for modifying these elements.

5.4 TRANSPORTATION ANALYSIS

Due to the large amounts of undeveloped land and the differing transportation characteristics of each proposed activity within the Shady Grove transit station area, a cordon traffic analysis was undertaken prior to preparation of the sector plan. This technique, applicable to small-area analysis, identifies the specific elements of the transportation demand, aggregates the individual components of the demand, and then evaluates the impact on the overall system. A more detailed description of the cordon study process is included in Appendix B-5.

Since the planning time horizon of this analysis is 1984, future land uses and roadway networks were assumed for that date. Land uses were translated into numbers of dwelling units or employees. The associated traffic demand was then derived by applying accepted trip-generation factors to this land-use information. Initially, the 1984 roadway network was assumed to consist of the existing system plus those projects included in the State Five-Year Improvement Program for 1976-1980 and the County Capital Improvements Program for FY 76-81. Additionally, it was assumed that a Metro access road will extend from Shady Grove Road to the east parking area.

The projected Metro rider demand is based on estimates made by the staff of the Washington Metropolitan Area Transit Authority (WMATA) during preliminary analysis of the proposed Metro rail extension. It is estimated that approximately 22,000 people will use the Shady Grove station in each 24-hour period. During the morning peak hour, it is expected that 1100 people will arrive in private cars and park; about 270 people will car pool and park; 300 people will use "kiss-and-ride"; 1500 people will arrive by bus; and 20 people will walk to the station. The estimated distribution and assignment of these vehicle trips to the initial 1984 network is shown in Figure 14.

5.41 Problem Areas and Alternative Solutions

After considering all travel factors, traffic volumes were estimated for the principal roads making up the planned 1984 highway network. The traffic volumes and levels of service for the peak periods considered in the analysis are shown in Figure 15. In 1984, the Md. 355-Shady Grove intersection will still present the greatest traffic problem, primarily because of the volume of Metro-related traffic on Shady Grove Road, the only major connector to I-270. As the diagram indicates, this intersection will be extremely congested during all peak periods. The total of conflicting or critical movements for the morning peak hour alone is approximately 20 percent above capacity and 32 percent above acceptable service levels. Other intersections in the network are shown to be operating generally at acceptable levels of service. Unless relief can be provided to the intersection at Md. 355 and Shady Grove Road, delays and queuing of traffic will distrupt these intersections and lower their service levels.

A number of alternatives were considered to alleviate this problem, including some suggested by members of the Advisory Committee:

- Grade separation of the intersection at Md. 355 and Shady Grove Road;
- Development of Fields Road as a major artery to serve Metro;
- Further expansion of transit feeder service to Metro by bus and/or commuter rail; and
- Provision of a separate limited-access roadway from I-270 to the Metro station.

5.42 Md. 355-Shady Grove Road Grade Separation

This alternative provides for a full or partial interchange to eliminate many of the conflicting turning movements and the resulting traffic delays at the intersection. After considering topographical limitations, operational design, and relationship to the adopted outer beltway alignment, two interchanges were developed (schemes of these two plans are shown in Appendix B-6). Problems associated with this alternative include an estimated $12 million cost, a prolonged construction period, and restricted access to abutting properties. In addition, relief provided by this proposal would not be fully realized, since congestion would subsequently be transferred to adjacent intersections along Shady Grove Road.

5.43 Fields Road Improvements

A second alternative proposes that Fields Road be improved as a major artery connecting I-270 to Md. 355, providing an alternate route for Metro-related traffic. Problems with this scheme center in the Fields Road connection at the I-270-Shady Grove Road interchange. Providing a full, free-flowing interchange for both Shady Grove and Fields Roads at this location would require costly acquisition of large amounts of land, most of which is already developed or committed to development. Further, Fields Road is needed to serve future industrial uses planned west of Md. 355.

5.44 Expanded Transit Feeder Service to Metro

A third alternative proposes to increase bus and/or commuter rail feeder service beyond planned programs. In the development of the Metro mode-of-arrival estimates, it was projected that there would be approximately 100 peak-hour feeder buses serving this station, which represents a substantial increase over existing bus service. The relatively large demand for auto access is due to the extensive size of the service area of this station and to the low residential density of the area it serves. The further expansion of bus service would become economically prohibitive due to this low density of residential development. Therefore, it does not appear feasible to provide additional bus feeder services beyond the level now programmed.

The proposal to expand commuter rail service significantly is also limited in other respects. Due to the additional transfer time, a commuter rail feeder system

would be generally attractive only to those patrons coming from the areas north of Gaithersburg. For most commuters, it would be simpler to drive directly to the Shady Grove Metro station rather than drive to a commuter rail stop; park, board, travel to Rockville; and transfer to Metro. Additional problems include:

- Shortages of equipment;
- At-grade rail crossings with major thoroughfares;
- Lack of adequate access roads to most stations; and
- Infringement on freight-service track time.

Because of these factors, an extensive restructuring of the commuter rail system and service is not considered a feasible solution to the traffic problems in the vicinity of the Shady Grove station.

5.45 Limited Access Metro Connection

This alternative proposes a limited access roadway extending from I-270 to the Metro access road, within the right-of-way of the proposed outer beltway. This proposal would not only alleviate the severe traffic-capacity problem, but would also reduce travel time to the Metro station, making the diversion from I-270 to the station more attractive. Forty percent of the patrons arriving at the station by auto are expected to use I-270; approximately 27 percent of the eastbound and southbound traffic at the critical intersection are expected to be Metro bound.

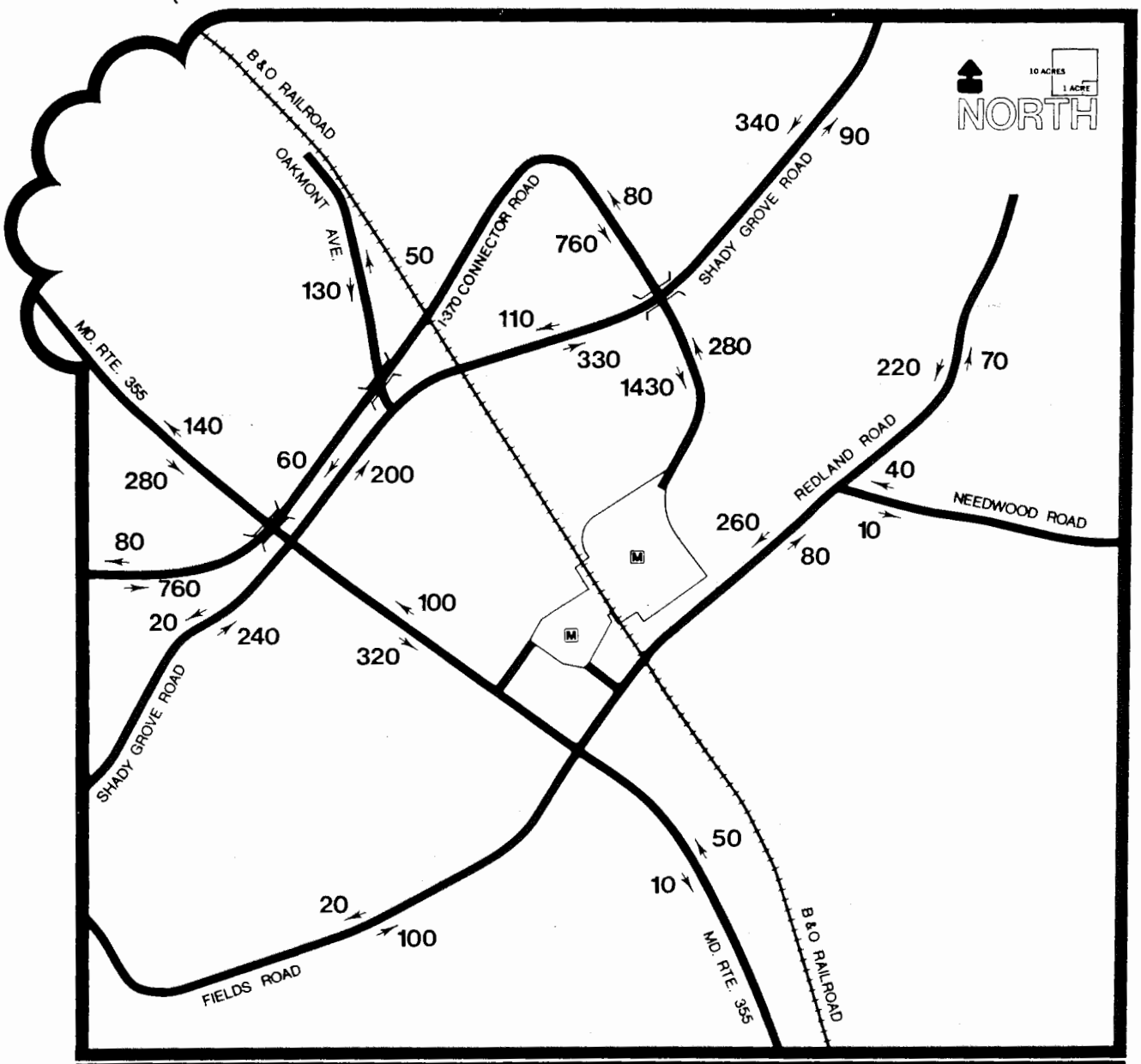
This proposal was added to the 1984 base network, and a recomputation of traffic assignments was made. The redistribution of Metro-bound traffic is shown in Figure 16, while the adjusted peak-period traffic volumes and service levels are shown in Figure 17. As the diagrams show, the addition of this proposal to the transportation system allows a significant amount of traffic to bypass the Md. 355-Shady Grove Road intersection, thereby alleviating the previous traffic problem. The direct connector, by providing reduced travel times from I-270, encourages additional auto diversion to the station and provides a rapid turn-around for feeder buses from I-270. This alternative provides the most feasible and desirable means of accommodating the projected travel demands while realizing the full advantage and potential of the Metrorail system.

5.5 PROPOSED TRANSPORTATION PLAN

5.51 Primary Highway Network

The primary highways proposed in the Shady Grove Sector Plan consist of freeways, controlled major highways, and major arterials necessary to provide the proper balance between land use development and transportation demands for the region as well as the local area (see Figure 18). The basic components of this primary network are:

FIGURE 16



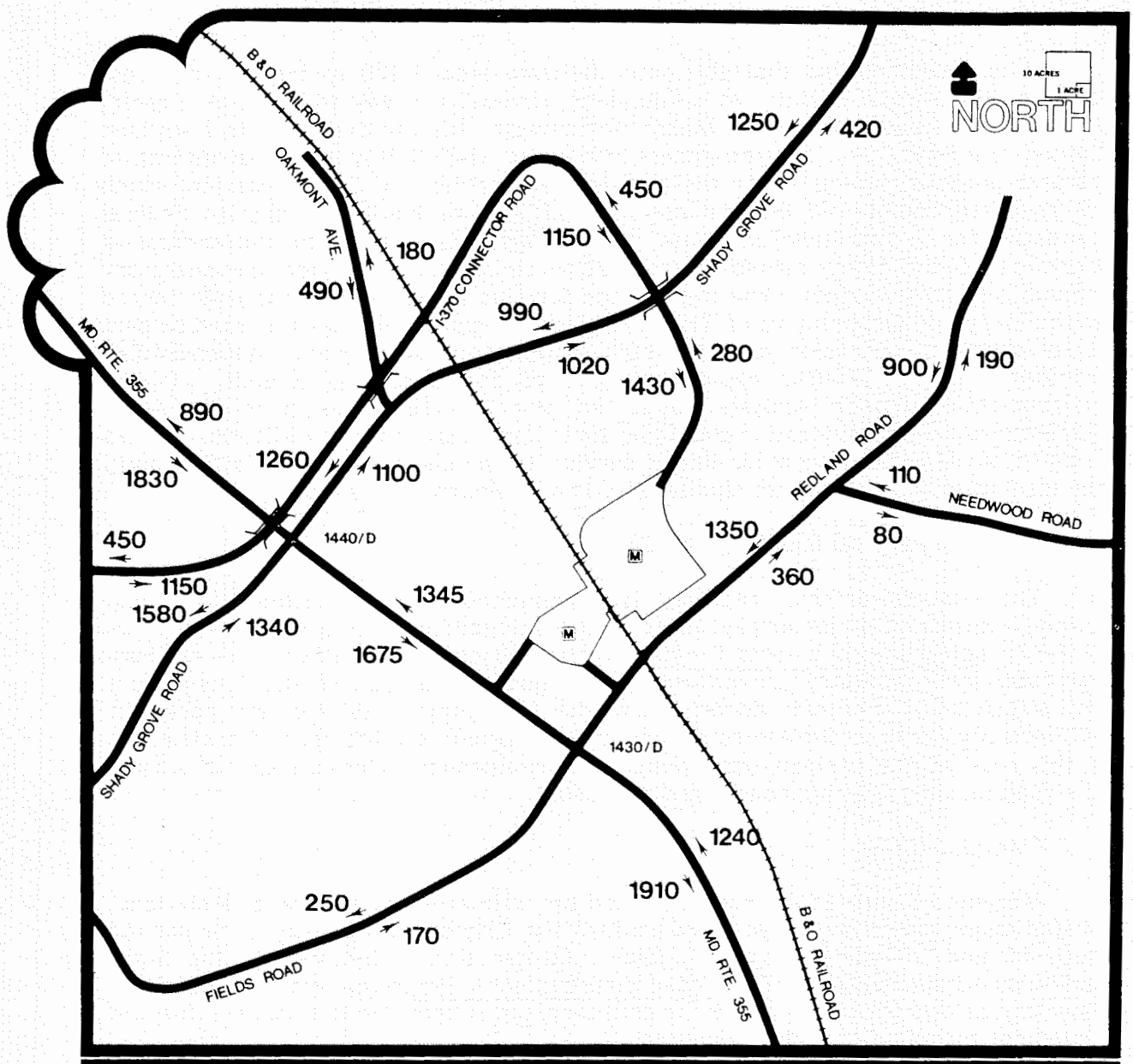
240 7-8 AM. Traffic Volume

1984 Metro Traffic, With I-370 Connector Road

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 17



1340 7-8 AM. Traffic Volume
(Corresponding PM Peak Hour Data Included in Appendix)
1440/D Critical Lane Movements/ Projected Level of Service

1984 Total Traffic, With I-370 Connector Road

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

• Outer Beltway (F-9)

It is recommended that the outer beltway from I-270 to the Metro access road be constructed initially as a four-lane, divided freeway to serve as a rapid, limited-access connector to the Metro station with ultimate expansion to a six-lane divided freeway. The limited-access connector (I-370) is part of an interstate transfer proposal submitted by the Maryland Department of Transportation, which has received conditional Federal approval. It will be built according to Federal standards for a four-lane freeway. This project is critical to the successful operation of the Shady Grove Metro station since it will provide the necessary primary vehicular access. The importance for this type of service is underscored by the Maryland Department of Transportation's requirement that this road be part of its approved extension of the Metro system to Shady Grove. Appendix B-8 provides a more detailed explanation of the status of this project. In the environmental impact analysis conducted prior to final design of the I-370 Connector Road, consideration should be given to a design that would permit access to and from Md. 355 to provide better service to the central area of Gaithersburg. The ultimate right-of-way for this facility is a minimum of 300 feet.

• Eastern Arterial Roadway (M-83)

The eastern arterial roadway is recommended as an ultimate six-lane, divided, controlled major artery. This road is included in the County's fiscal years 1977-82 Capital Improvements Program for initial construction as a two- or four-lane roadway from Shady Grove Road to Montgomery Village Avenue. This project will significantly improve access from the Montgomery Village and northeast Gaithersburg areas to the Metro station and the county service park. Construction of this road at the earliest opportunity is recommended. Construction of a two-lane road initially is being considered at present.

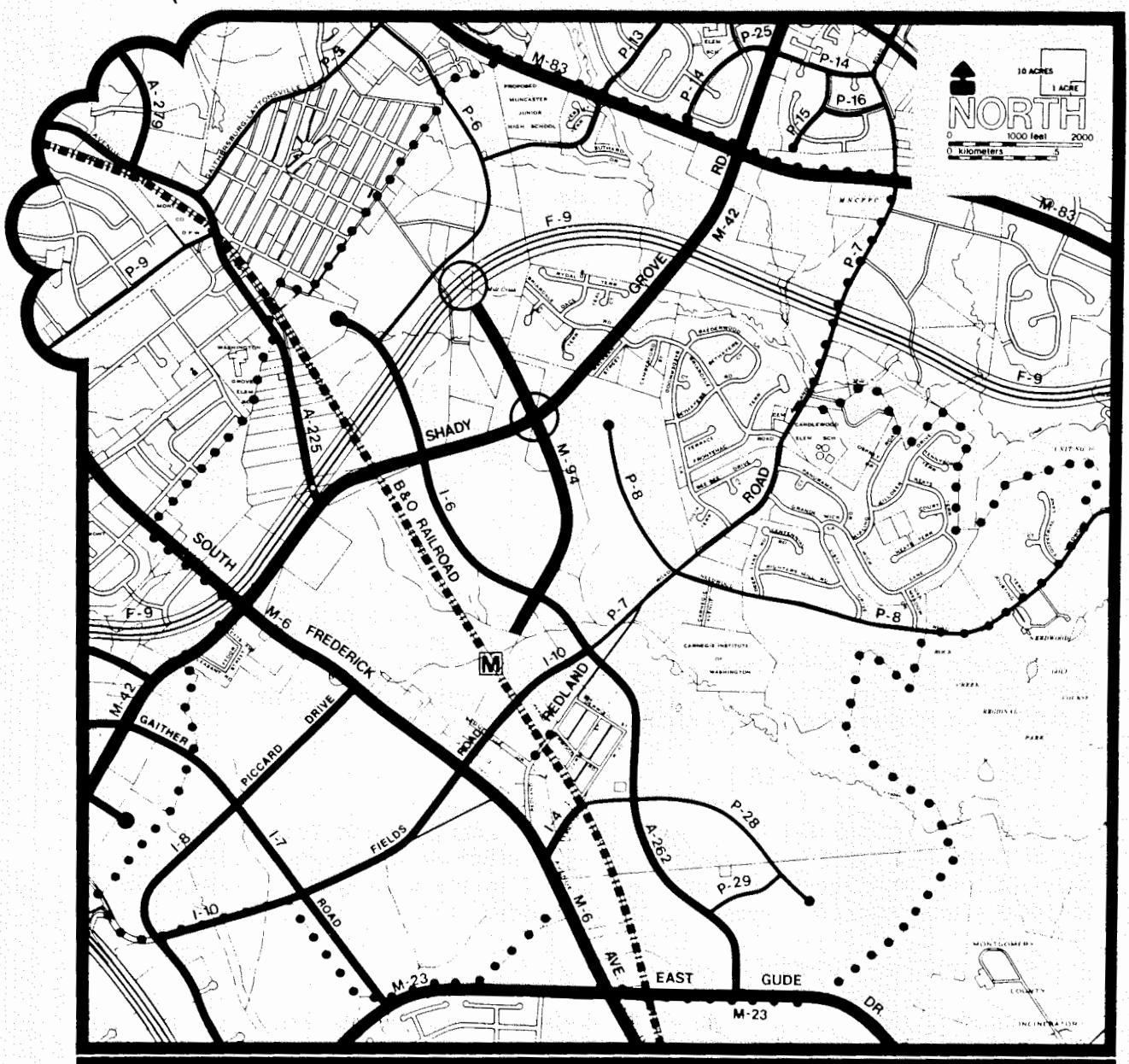
• Md. 355 (M-6)

Maryland Route 355 is recommended for ultimate construction as a six-lane, divided major artery with five lanes through the City of Gaithersburg. The portion south of and including the Shady Grove intersection is included in the State Highway Administration's Five-Year Improvement Program, with construction underway at present. This project is critical since it provides the only north-south movement through the sector plan area.

• Gude Drive (M-23)

Gude Drive is recommended for ultimate construction as a four- to six-lane divided major arterial road. The section west of Md. 355 is included in the County's Capital Improvements Program and the City of Rockville's Capital Improvements Program for initial construction as a two-lane road. The section east of Md. 355 is now a two-lane roadway. It is recommended that the West Gude Drive project be continued as planned and that a new project for the second parallel roadway along East Gude Drive be initiated in the Capital Improvements Program. This latter project is particularly critical since it may be necessary to disrupt the existing bridge over the B & O Railroad during Metro construction.

FIGURE 18



Freeway
Major Highway
Arterial / Industrial Road
Primary Street
METRO & B&O RR
Interchanges
M METRO Stop
Sector Plan Boundary

Proposed Transportion Plan

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

• Shady Grove Road (M-42)

Shady Grove Road is recommended for ultimate construction as a four-to six-lane, divided major artery. The section of this road east of Md. 355 has recently been constructed as a four-lane road. This project is important because it is the major east-west highway through the sector plan area. It is recommended that the proposed reconstruction of the interchange I-270 and Shady Grove Road be immediately programmed by the Maryland Department of Transportation.

• Metro Access Road (M-94)

The Metro access road is recommended as an ultimate four-lane, divided major artery, with grade separations. It is recommended that this roadway be constructed to link the Metro station with the proposed Metro connector road. It is further proposed that the segment north of Shady Grove Road, together with the interchange at the Metro connector road, replace the previously planned I-6 interchange as access to the outer beltway.

5.52 Secondary Highway Network

The secondary highway network consists of minor arterial roadways, industrial streets, and primary residential streets needed to provide the internal circulation and local-access requirements of the land-use plan (see Figure 18). With the exception of a few relatively minor changes, the sector plan recommendations are basically refinements of elements proposed in previous master plans. The basic components of the secondary network are:

• Oakmont Avenue (A-255)

Extending from Shady Grove Road (M-42) to East Diamond Avenue within the City of Gaithersburg, this arterial roadway and proposed new bridge spanning the B & O Railroad will serve existing development in the area and will provide an additional grade-separated crossing of the railroad.

• Proposed New Arterial Roadway (A-262)

Extending from Fields Road (I-10) to East Gude Drive (M-23), this arterial roadway, basically a southward extension of Crabb's Branch Way (I-6), will serve development within the Mobley and Gude tracts and will generally improve north-south circulation.

• Crabb's Branch Way (I-6)

Extending from approximately 1200 feet north of Shady Grove Road (M-42) to Fields Road (I-10), this industrial street will provide access and circulation for the county service park and other industrial areas east of the B & O Railroad.

Particular attention should be given in the design of residential developments abutting A-262 to ensure that they are adequately set back and screened from the

roadway. Similarly, the road should be carefully designed to mitigate its impact on residential areas. Special attention may also need to be devoted to traffic controls and operational conditions on this road.

Extending from Redland-Fields Road to Shady Grove Road, the road will provide access for approximately 20 percent of the traffic from the county service park which will be traveling south. It will also provide a travel route parallel to Md. 355.

• Gaither Road (I-7)

Extending from Shady Grove Road (M-42) to West Gude Drive (M-23), this street will provide access to the industrial areas west of Md. 355 and will generally improve north-south circulation in the area.

• Piccard Drive (I-8)

Extending from West Gude Drive (M-23) to Md. 355 (M-6), this industrial street, previously proposed to extend only to Gaither Road, will provide access to existing and future development near I-270. The additional extension is intended to provide access to development west of Md. 355 by a secondary road and, hence, to discourage development with direct access to Md. 355. The intersection with Md. 355 is shown so as to coincide with a median break planned in the improvement of this roadway.

• Fields Road (I-10)

Extending from Piccard Drive (I-8) to Crabb's Branch Way (I-6), this industrial street will provide additional access to areas west of Md. 355 and, with the new bridge over Metro and the B & O Railroad, will greatly improve east-west circulation in the area.

• Derwood Road (I-4)

Extending from Md. 355 to the new proposed arterial roadway (A-262), this road will serve the industrial development along the railroad and the residential development farther east. The existing wooden bridge over the railroad should be replaced with a two-lane bridge.

• Amity Drive (P-6)

Extending from Md. 124 to Crabb's Branch Way Extension (I-6), this primary residential street, realigned from previous plans, will provide access to residential areas north of the outer beltway. The proposed modification is intended to avoid affecting the existing residential developments through which it was previously routed. This road should be aligned as close as practical to the Outer Beltway alignment.

- Redland Road (P-7)

Extending from the eastern arterial roadway (M-83) to Crabb's Branch Way (I-6), this primary residential street will provide access to existing residential developments east of the Metro station area.

- Needwood Road (P-8)

Extending from the eastern arterial roadway (M-83) to just north of Redland Road (P-7); this primary residential street, no longer proposed to extend to Shady Grove Road, will provide access to the residential areas east of the Metro station, to Blueberry Hill School and Park, and to the Lake Needwood Park complex. Deletion of the previously proposed extension to Shady Grove Road is intended to minimize interference near the Metro access road and Shady Grove Road. Malabar Street and Bethayers Road will connect to Blueberry Hill School and Park but will not connect with Needwood Road.

- Miller Fall Road (P-13)

Miller Fall Road is a primary residential street, connecting Mill Creek Towne with Amity Drive and, thereby, to Gaithersburg-Laytonsville Road, Md. 124. Miller Fall Road and the extension of Amity Drive will be constructed by a private developer upon completion of the subdivision they will serve. There is concern that after this connection is made--which will undoubtably happen before the eastern arterial roadway (M-83) is built--Miller Fall Road will provide a shortcut from Md. 124 through Mill Creek Towne to Shady Grove Road or existing Muncaster Mill Road. Therefore, signs should be placed along Miller Fall Road indicating "No Thru Traffic," until M-83 is completed.

- Proposed New Primary Residential Streets (P-28 and P-29)

Extending eastward from the proposed new arterial roadway (A-262), these residential streets will provide access and circulation for the residential areas proposed on the Gude and Mobley Tracts.

Table 2 summarizes street and highway classifications.

5.53 Metrorail and Metrobus

The extension of the Rockville Metro line to the vicinity of Shady Grove Road is an important element of a coordinated transportation system in the up-county area. The Shady Grove transit station represents the first major component of the mass transit system needed to support development of the I-270 corridor, as envisioned in the General Plan. By providing a viable and attractive transportation alternative, it will also contribute to the realization of various energy and environmental policy goals.

In addition to the extension of the Metrorail system to Shady Grove, the sector plan also includes a proposed transit easement for future extensions north toward Germantown and Clarksburg. This proposed easement, which parallels the west side of the B & O Railroad to the Md. 355 overpass, is intended to insure a right-of-way for future development.

The Metrobus feeder system for this station, now schematic and generalized, will evolve in greater detail as the rail system nears operation. In the development

TABLE 2

STREET AND HIGHWAY CLASSIFICATIONS

Project #	Name	Limits	Right-of Way Width	Recommended # of Lanes
F-9	Outer Beltway	Maryland Route 355 (M-6) to Redland Road (P-7)	300'	6
M-83	Eastern Arterial	Maryland Route 124 (P-5) to Redland Road (P-7)	150'	4 - 6
M-6	Maryland Route 355	South Westland Drive to Gude Drive (M-23)	120'	6
M-23	Gude Drive	Gaither Road (I-7) to plan boundary	120'	4 - 6
M-42	Shady Grove Road	Comprint Court to Eastern Arterial (M-83)	120'	4 - 6
M-94	Metro Access Road	Outer Beltway (F-9) to Metro Station	150'	4
A-255	Oakmont Avenue	Shady Grove Road (M-42) to plan boundary	80'	4
A-262	New Road	Fields Road (I-10) to Gude Drive (M-23)	80'	4
I-4	Derwood Road	Maryland 355 (M-6) to New Road (A-262)	80'	4
I-6	Crabb's Branch Way	1200' North of Shady Grove Road (M-42) to Fields Road (I-10)	80'	4
I-7	Gaither Road	Gude Drive (M-23) to Shady Grove Road (M-42)	80'	4
I-8	Piccard Drive	Fields Road (I-10) to Maryland 355 (M-6)	80'	4
I-10	Fields Road	Piccard Drive (I-8) to Crabb's Branch Way (I-6)	80'	4

PRIMARY RESIDENTIAL STREETS - The alignments of primary residential streets are shown on the Zoning and Highway Plan only for illustrative purposes. At the time of subdivision review minor adjustments may be made to allow for flexibility of design. Primary residential streets have 70' rights-of-way with 24' of paving (open-section) or 36' of paving (closed section).

of this system, the sector plan recommends that two important concepts be considered:

• First, that in addition to providing service and access to the station, the feeder system should be designed to provide efficient distribution from the station to major activity centers, including the proposed medical center, the National Bureau of Standards, and commercial centers, in the corridor. This recommendation is intended to encourage reverse commuting and to promote increased use of both Metrorail and the feeder system.

• Second, that express service should be developed from the Germantown area as a forerunner to the future transit service proposed in the Germantown Master Plan. This service would use the (I-370) Connector Road to provide rapid access to the station. If demand warrants, preferential treatment along I-270 may be initiated as the next stage in development of this service.

Before the scheduled opening of the Shady Grove Metro station in 1981, it is recommended that express bus service be increased in the I-270 corridor. This service should connect with the Silver Spring and Grosvenor stations as they become operational, providing a forerunner to Metrorail service.

5.54 Commuter Rail Station

In the initial development of the County Service Park, a new commuter rail station was proposed (see Figure 12, Metro and Commuter Rail Systems). This proposal, suggested prior to discussions of the Metrorail extension to Shady Grove, represented a logical attempt to improve rail transit service in the up-county area. As discussions and plans for the Metrorail extension proceeded, however, questions arose regarding the need for a commuter rail facility at this location. At subsequent worksessions of the Maryland Department of Transportation, the Washington Metropolitan Area Transit Authority and The Maryland-National Capital Park and Planning Commission, their staffs determined that with adoption of the Metrorail extension, neither a permanent nor an interim commuter rail facility at Shady Grove will be necessary.

Rather than proceed with construction of a new commuter rail station, it is recommended that development of Metro facilities in Rockville proceed and be used as a commuter rail facility prior to Metro's becoming operational. Subsequent to the opening of Metro, this station would then serve as the major interface between the Metro system and the commuter rail, with a second interface developed at Silver Spring. The general function of the system would then be as an up-county feeder to the radial Metro system, with a secondary function as a cross-county service linking Rockville and Silver Spring.

5.55 Bikeways

Policy

While roadway activity is in its preliminary stages and land-use plans are being formulated, the development of a bikeway program in Shady Grove is most

important. The opportunity exists to incorporate bikeways into the initial land-development plans.

Montgomery County policy requires provisions for bike trails in conjunction with new road projects, where possible. Also, the state and county are in the process of developing plans for independent bike trails--trails not necessarily connected with road projects. The Maryland-National Capital Park and Planning Commission develops bike trails in its linear stream valley park system, with appropriate access to adjacent facilities. Shady Grove bike trails have been planned in accordance with these policies.

It is important that all parties involved in bikeway construction--state, county and private developers--commit themselves to a coordinated bikeway system that will serve not only the receational but also the practical commuter and shopper needs of Shady Grove residents. Bike trail recommendations in this plan, therefore, emphasize both recreational and commuter needs.

The primary employment areas are located along Shady Grove Road west of Md. 355, along Md. 355, and along Oakmont Avenue (see Figure 6). The road-related bikeway system is designed to serve these employment-activity centers.

Design

The design of bike trails and facilities, as well as proper signs, should be consistent throughout the area for safety of, and recognition by, the users. All bikeways should be located, designed, and constructed in compliance with applicable Montgomery County and/or M-NCPPC standards. It is also recommended that typical cross sections for proposed roads in new construction projects show the relative placement of bike-lanes for road-related bikeways.

Types of Bikeways

A bikeway is defined as a facility or route that is explicitly designated for bicycle travel. There exists a full range of bikeway types--from exclusive paths to shared street routes. Two classes of routes are recommended within this sector plan area:

Type 1--Bike Paths. Independent bikeways on separate rights-of-way or easements, designated for exclusive use by nonmotorized bicycles.

A bikeway of this type is proposed along the Crabb's Valley Stream Park. This will be an eight-foot-wide bikeway.

Type 2--Bike Lanes. Restricted rights-of-way, designated for the exclusive or semi-exclusive use of nonmotorized bicycles, on roadways or sidewalks. The designation is made by striped pavement marking or by a physical barrier and signs. An example of this type of bike lane is proposed along Md. 355, a nine-foot bikeway including a five-foot-wide for bicycle traffic and four-foot-wide for pedestrian use. It will consist of a nine-foot-wide sidewalk/bikeway with five feet designated for bicycle traffic.

5.56 Proposed Bikeways (see Figure 19, Proposed Bikeway Plan).

Road-Related Bike Lane Projects

There are four road-related bike lane projects in the Shady Grove area programmed at present: Md. 355, Needwood Road, Redland-Fields Road, and Crabb's Branch Way. The plan recommends that an additional county funded road-related bike lane be provided along new Shady Grove Road. This bike lane is desirable because an additional southwesterly bikeway is needed to link the core residential areas of Shady Grove to the existing and proposed industrial areas at Md. 355 and Shady Grove Road.

This project will cost approximately $100,000. The plan also recommends that a county-funded bikeway link be provided from Washington Grove and Walnut Hill communities to Md. 355.

Five of the other bike lanes proposed in the plan are not being considered for funding. Some of these will be built by developers when the roads are constructed in developing areas. These include the following:

- A bike lane parallel to the existing Muncaster Mill Road.

- A bike lane along Gaithersburg-Laytonsville Road (Md. 124), to be constructed on a portion of the existing road right-of-way when it is abandoned after the relocation of new Md. 124.

- An extension of the bike lane parallel to Crabb's Branch Way, north of Shady Grove Road, which should include an independent bike path connecting to Brown Street in Washington Grove.

- A bike lane parallel to Amity Drive.

- A bike lane running along Fields Road, west of Md. 355, and continuing northward parallel to Gaither Road, thereby connecting new Redland-Fields Road with Shady Grove Road and the adjacent employment area.

Independent Bike Path Projects

Being on separate rights-of-way, independent bike paths (in the sense of being constructed on or along road rights-of-way) are not road related. These bike paths are shown as desire lines on the bikeway map. They have not been designed or funded and their exact placement will depend on engineering feasibility, on building activity, and on the actual acquisition and development of parkland and conservation areas.

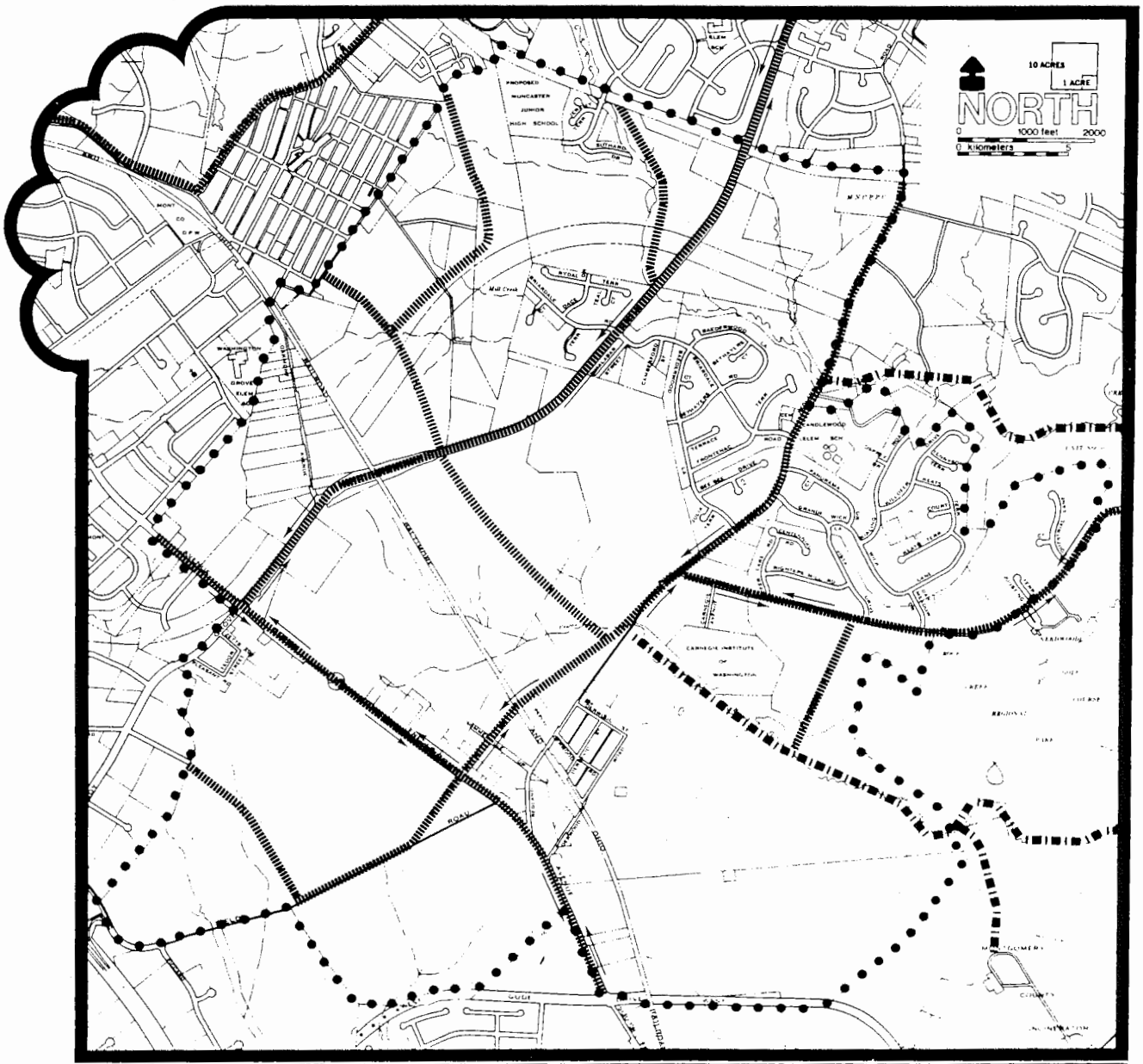
The bike paths are interconnecting and will serve community facilities, as well as existing and future residential areas where possible. They are also linked to the road-related bike lane system. The construction of these trails is the responsibility of The Maryland-National Capital Park and Planning Commission and of private developers. Three basic bike paths are proposed in this plan.

- A bike path along Mill Creek Stream Valley, connecting the Redland Road bike lane with Needwood Road at the entrance to Lake Needwood, including a proposed spur to link this bike path to Kipling Road in Candlewood Estates and thereby serving the Candlewood Elementary School.

- A bike path along Crabb's Branch Stream Valley, connecting Redland-Fields Road to the bike path proposed below Lake Needwood along Rock Creek, including a proposed spur connecting to the Gude landfill parcel, which is to be redeveloped for use for active recreation pruposes.

- A bike path, connecting Crabb's Branch bike path with Needwood Road at Vista Drive, which may be constructed as a bike lane along future roads serving the subdivision as area development takes place.

FIGURE 19



Bike Lane

Bike Path

Sector Plan Boundary

Proposed Bikeway Plan

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

ENVIRONMENT

6

Chapter 6

ENVIRONMENT

6.1 INTRODUCTION

The transition of the Shady Grove area from rural to more urban land use makes consideration of the environment an important aspect of the sector plan. Approximately 80 percent of the sector plan area is now open space and pasture land. Projections, however, indicate that the area will be 75 percent developed by 1984, or shortly thereafter.

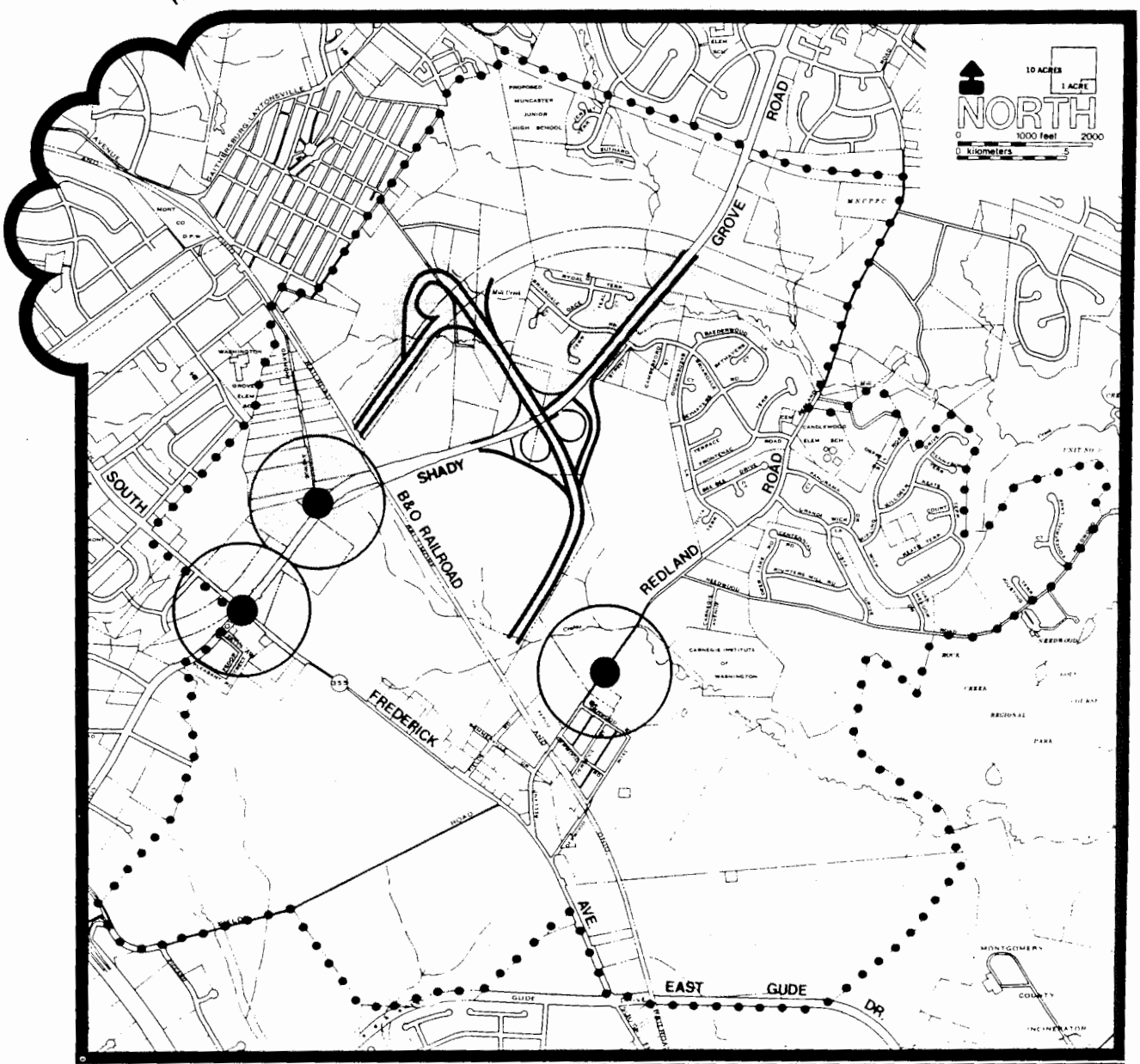
Because most of the Shady Grove sector plan area is still undeveloped, the opportunity exists to effectively integrate conservation of natural resources with the planning process. The native soils, geology, and vegetative cover provide a natural system that can help reduce environmental problems. The construction of buildings in areas of thick and well-drained soils, for example, would result in both lessened construction time and costs. Mature trees, the naturally rolling topography, and areas of exposed bedrock can be incorporated aesthetically into urban design and site development schemes. Furthermore, trees and soils form a natural storm-water management system by storing water during peak rainfall periods and then slowly releasing moisture after the storm abates. This process retards runoff and protects against flooding.

While the development process will require the construction of some storm-water management facilities these structures can be designed to enhance the overall environmental integrity of the area. This requires systems planning and analysis of the ingredients that contribute to a quality environment.

Air and noise problems, while abated to some extent by mature trees, must be controlled chiefly by transportation and land use measures. In Montgomery County, violations of the Federal Clean Air Act result principally from automobile emissions (see Section 6.42, Air Quality). Minimizing the dependence upon private automobiles by encouraging the use of Metrorail, car pools and bicycles will help reduce emmissions of carbon monoxide. Improving roadways and traffic management to minimize congestion will also help protect air quality. As a further protective measure, the location of new residential development along or near major highways should be avoided.

Residential areas should be protected from the potential noise impact of the central processing facility, the Metro storage and inspection yards, and the Metro station parking area by the preservation of open space and the provision of buffering. These areas should also be protected from highway noise, especially that emanating from major intersections. Although no detailed study of noise impact has been made for the Shady Grove area, a study involving estimations of truck traffic volumes and road grades has been performed. This general study provides some indication of future noise levels near selected major highways. The results are shown in Figure 20.

FIGURE 20



Severe Noise Intrusion

Moderate Noise Intrusion

Sector Plan Boundary

Estimated Noise Levels Along Selected Highways

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

6.2 PHYSICAL CHARACTERISTICS OF THE AREA

The Shady Grove area is situated entirely within the piedmont province, a region of rolling upland topography with underlying metamorphic crystalline rocks. The surface elevation ranges from 300 to 500 feet above mean sea level. Large areas of bedrock in this planning sector are covered by a blanket of unconsolidated materials consisting of alluvial stream deposits, artificial fill, and saprolite, which is a product of chemical weathering of the bedrock. This unconsolidated overburden ranges in thickness from zero to more than fifty feet, although bedrock is within 20 feet or less of the surface over much of the northern half of the area.

The soils which have developed in the area are generally well drained. The tree cover is limited to small stands of oak and tulip poplars, with some evergreens, generally located within stream valleys and areas of shallow bedrock which have not been farmed or otherwise developed.

6.3 COMPUTER MAPPING PROGRAM

In a cooperative pilot project with the U.S. Geological Survey, the Environmental Planning Division of M-NCPPC employed a computer mapping system for combining environmental information to be used in support of land use decisions. The computer mapping system is used to produce maps showing optimum areas for various types of urban development, based on environmental factors. Various environmental factors were encoded and fed into the computer, using a uniform grid system, each cell, or square, of which was assigned a specific latitude and longitude. This allowed for the retrieval and analysis of data on a geographical basis and for the indentification of the most significant natural physical factors in the area.

6.31 Preliminary Assessment

This initial phase is an assessment of the basic natural environmental conditions of the area. Through the review of environmental data for the Shady Grove area, a preliminary determination has been made of the most significant natural characteristics of the area and of their physical location. Aerial photographs were utilized to determine the location and extent of tree cover.

This preliminary investigation indicates that thickness of overburden, slope, surface water, alluvial deposits, and vegetative cover are the most significant natural environmental factors in the Shady Grove sector plan area. The following is a brief description of the significance of these factors to the planning process:

Thickness of Overburden. Significant portions of the planning area (40 percent) have an overburden thickness, or depth to bedrock, of less than 20 feet. Overburden includes all unconsolidated materials from near the surface down to bedrock. A shallow depth to bedrock could make development less attractive because of increased construction costs. Extensive blasting would be needed for large structures requiring basements.

Slope. Preliminary investigation indicated that certain portions of the planning area have steep slopes. Construction on steep slopes, especially on those

over 15 percent, is unwise both economically and environmentally; the placement of structures on steep slopes is expensive both in terms of construction costs and the provision of services, including access roads and utilities. In addition, the placement of structures in these areas could create storm-water problems by disturbing the top soil and natural vegetative cover.

Surface Water and Alluvial Soils. Development near surface water and flood prone areas should be avoided in order to protect against loss of life and property. Alluvial soils, although not always within present floodplains, also should be avoided due to potential construction problems.

Vegetative Cover. Protection of the vegetative cover, especially mature trees, is a primary environmental concern for the Shady Grove area. As portions of the area have been extensively farmed and grazed, as well as urbanized, much of the natural tree cover has been lost. It is, therefore, important to protect the remaining mature tree cover in order to provide scenic beauty and to retain a buffer between residential and nonresidential land uses. Trees will aid also in protecting against air and noise pollution.

6.32 Analysis

The environmental evaluation of Shady Grove included the development of separate computer print-out maps for each of the pertinent environmental factors (overburden, slopes, surface water and alluvial soils, and vegetative cover). The variable-scale option of the mapping program was used to enlarge computer print-out maps showing thickness of overburden, surface materials, and surface water, making the maps compatible with the M-NCPPC base map (1 inch to 1,000 feet) of the area. This allowed for an easier comparison of data that previously had been transferred manually from smaller scale maps to the M-NCPPC base map.

Slope and vegetative cover source maps were also prepared and encoded. In addition, existing land use was encoded in order to include it in the analysis of the area.

Figures 21 and 22 are sample print-out maps, showing areas of shallow bedrock and mature trees in the Shady Grove area, respectively. Figure 23 shows the computer composite map, developed to indicate suitability for development based on environmental considerations. Factors included in the computerized environmental analysis are the presence of alluvium, shallow bedrock, surface water, and mature trees. Although this example does not include slope conditions, this factor was considered in later analyses. As indicated in the histogram (Figure 24) accompanying the composite map, there is a total of sixteen possible factor combinations.

There is a total of 2592 grid cells (or squares on the grid) within the 18-square-mile Shady Grove environmental analysis zone. Each cell measures 5 seconds of latitude by 5 seconds of longitude and covers about 4.5 acres. Of the total, 1364 cells (52 percent) are developed or committed, and 1228 (48 percent) are undeveloped. A dark overprint symbol has been assigned developed areas in order to exclude these cells from further consideration. Statistics for the composite analysis of the undeveloped area, discussed below, are summarized in Table 3.

Figure 21 Computer Factor Map showing Shallow Bedrock

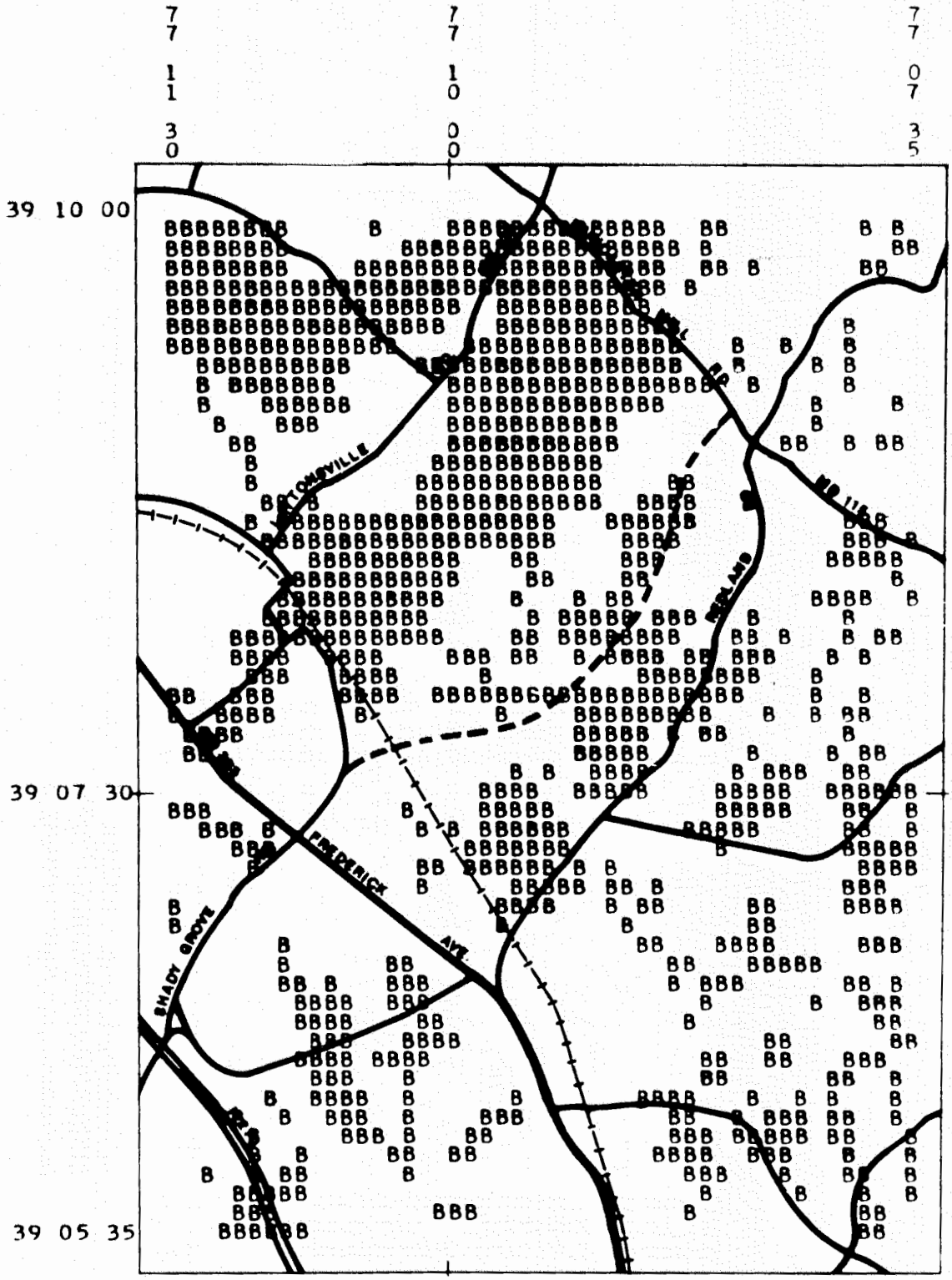
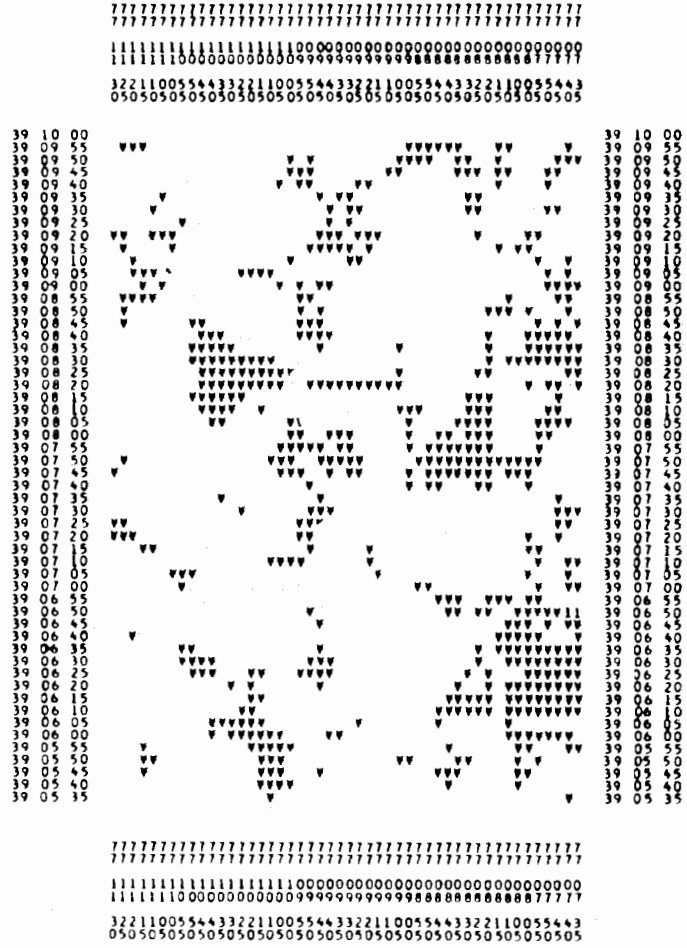


Figure 22 Computer Factor Map showing Mature Tree Cover



MATURE TREES

PERCENT OF TOTAL NUMBER OF CELLS.

FREQUENCY

0	-->	0	NO DATA
568	-->	1	VEGETATIVE COVER
2	-->	2	
0	-->	3	

Figure 23 Composite Map with Land Use Overprint

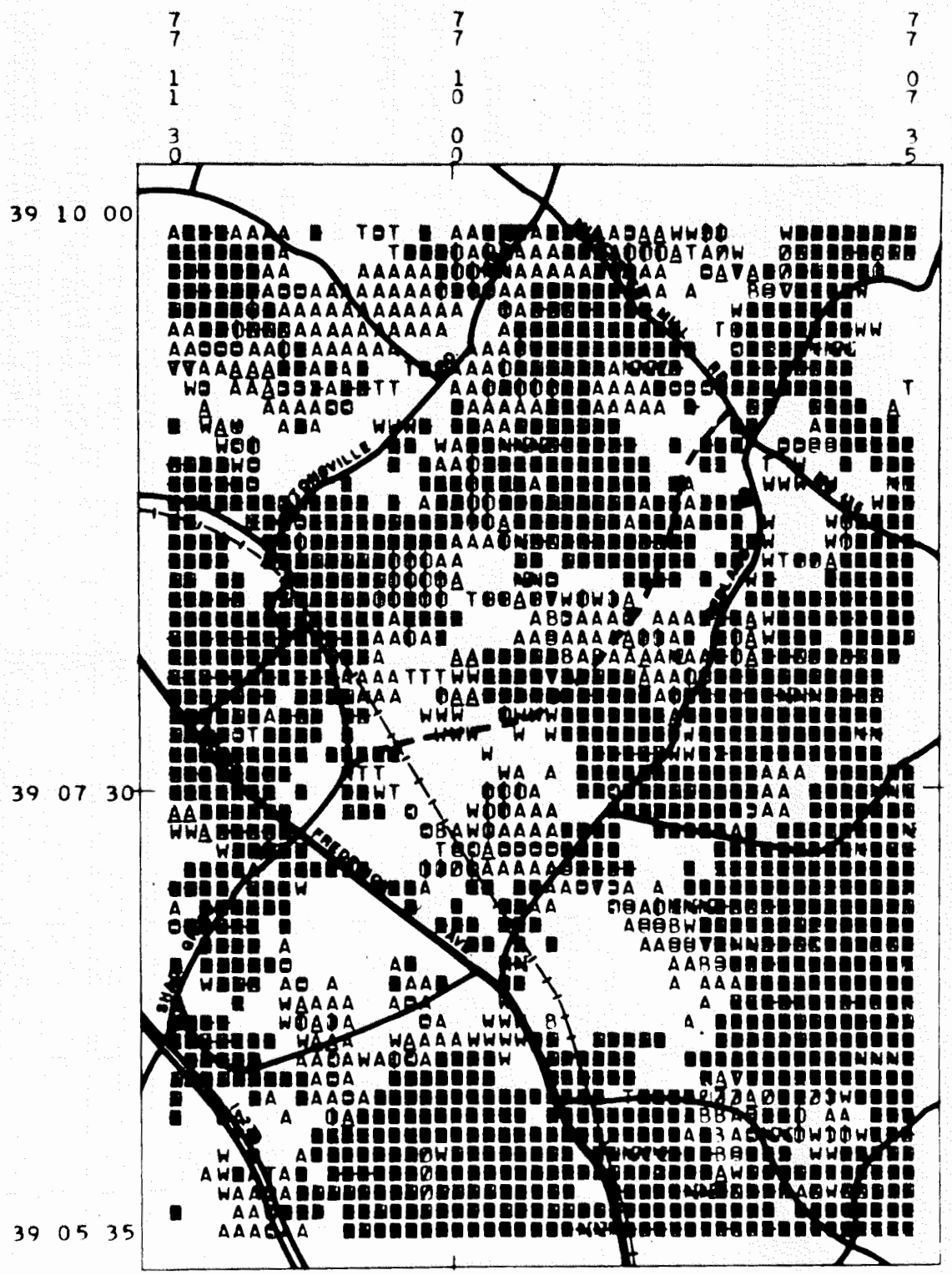


Figure 24 Composite Map Legend and Histogram

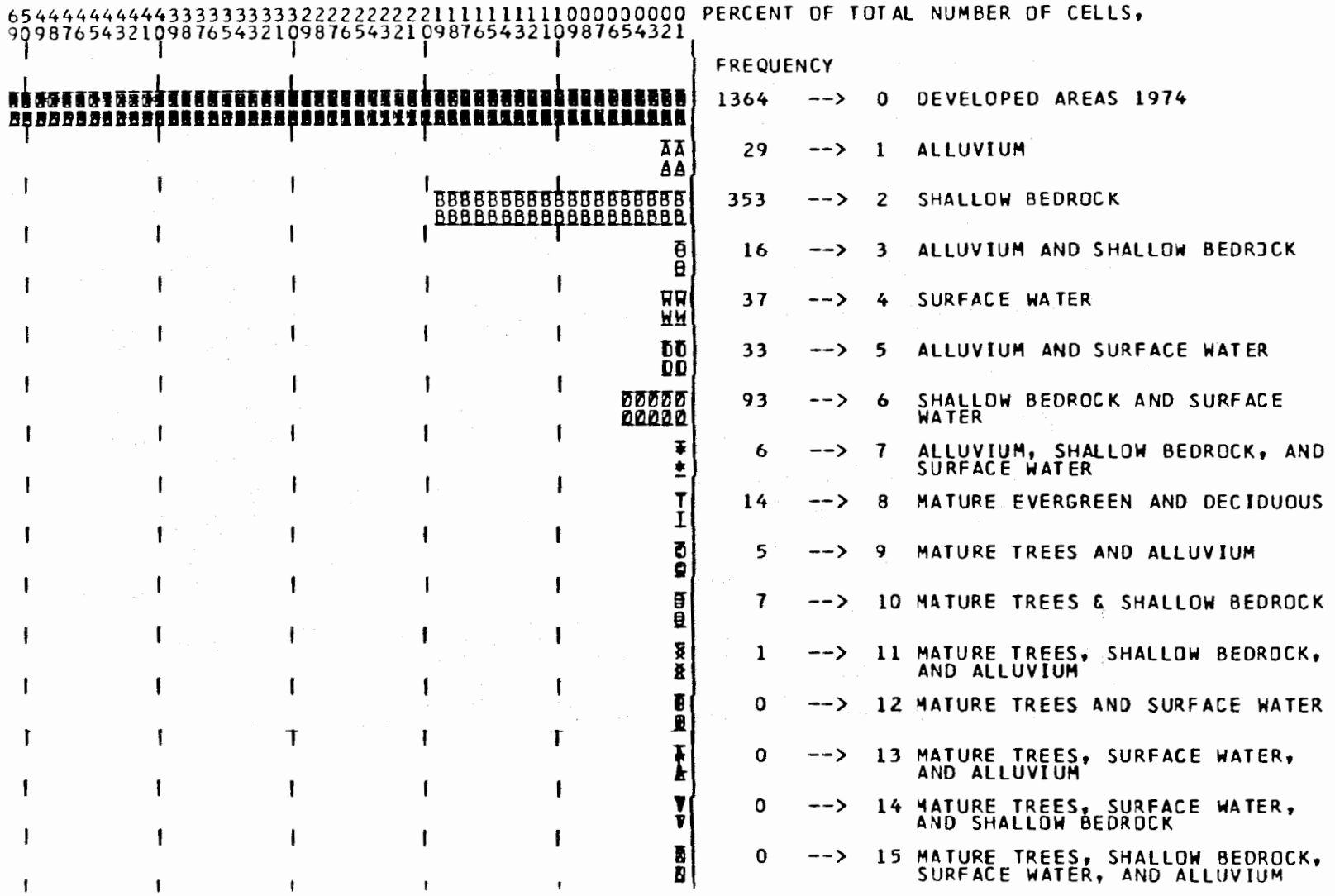


TABLE 3

COMPOSITE MAP STATISTICS, UNDEVELOPED AREA
SHADY GROVE SECTOR PLAN

SINGLE FACTOR	CELL COUNT	PERCENT
Alluvium	29	2.3
Shallow Bedrock	353	28.7
Surface Water	37	3.0
Mature Trees	14	1.0
Subtotal	433	35.0
MULTIPLE FACTORS		
Alluvium and Shallow Bedrock	16	1.3
Alluvium and Surface Water	33	2.6
Shallow Bedrock and Surface Water	93	7.6
All Others	19	1.5
Subtotal	161	13.0
No Factors (white areas on map)	634	52.0
TOTAL	1,228	100.0%

In approximately one-half of the undeveloped area (52 percent), none of the four identified environmental factors occurs. These areas are indicated as clear on the composite map. Assuming that the principal critical environmental factors have been included in the composite analysis, this indicates that one-half of the undeveloped planning area is suited for development.

For 35 percent of the undeveloped area, only one critical environmental factor occurs. By far the most common factor is shallow bedrock, which occurs as a single limiting condition in 28.7 percent of all uncommitted land. Alluvium, surface water, and mature trees occur as single limiting conditions in the remaining 6.3 percent of the undeveloped area.

Provided that other basic environmental requirements are met (for example, sewer service), the presence of only one critical factor indicates that development will have only a moderate impact upon the environment. Careful attention, however, should be given to the type of development planned for a given area. For example, the presence of shallow depth to bedrock may have no significant impact upon detached single-family dwellings without basements, but may require extensive bedrock excavation for major structures. Similarly, the presence of mature trees would favor cluster housing and low-density residential development over large commercial and industrial complexes, which usually require large areas for structures and parking lots and the destruction of any existing mature tree cover.

The remaining 13 percent of the undeveloped land has several critical environmental factors. These include alluvium combining with shallow bedrock (1.3 percent); alluvium with surface water (2.6 percent); and shallow bedrock with surface water (7.6 percent). All other possible combinations total 1.5 percent.

The occurrence of multiple critical factors indicates that development in these areas could have a moderate-to-severe impact on the environment. Development, especially to high-density, is not recommended in these environmentally sensitive areas. However, if additional development is given as an economic reality in sensitive areas, it is desirable that it be clustered on the most suitable land within a cell or group of cells.

6.33 Environmental Analysis and Area Master Plans

A multicolor, transparent master plan overlay of the Gaithersburg Vicinity and Rock Creek Master Plans was developed for the Shady Grove planning area at the scale of one inch to 1000 feet. The master plan transparency was placed over the computer composite map in order to check for agreement and/or conflict between recommended environmental concepts and existing area plans. This comparison reveals that extensive areas planned for low-density residential development are located on land having a shallow depth to bedrock. There should be no significant problems for construction of single-family dwellings without basements and septic tanks. However, where shallow depth to bedrock combines with one or more additional critical environmental factors, care should be taken to protect these areas from intensive development.

With the exception of several valleys indicated on the printout as having a shallow depth to bedrock and surface water, the major planned industrial area is generally suited for development. It is recommended that these sensitive stream valleys be preserved as conservation areas. These are the Crabb's Branch Stream and primary tributaries (see Proposed Land Use Map in backcover).

After conducting the comprehensive computer analysis of the Shady Grove area, a more detailed parcel-by-parcel analysis was made for the primary planning area. This analysis included the use of low-level aerial photography, geology maps, the Montgomery County Soil Survey, and selected site investigations.

6.4 SPECIFIC PROBLEMS

6.41 Storm-Water Management

The proposed sites for Metro development, the county service park, and the central processing facility all lie within the Crabb's Branch Watershed above Redland Road. That portion of the Crabb's Branch Watershed above Redland Road occupies about one square mile (see Figure 25). Besides the public and quasi-public uses, much of the area is planned, zoned, or developed industrially. Storm-water runoff will increase considerably as development takes place on the presently open farmland.

The County has proposed that a storm-water detention pond be built along Crabb's Branch Creek at the location of new Redland-Fields Road. The roadway fill from new Redland-Fields Road would provide the dam for this pond and the pond would act to control runoff so that the flow below Redland-Fields Road would be slightly less than presently exists. Such a facility would also provide the opportunity to develop a method of treating runnoff from the area so as to improve its quality.[1] Presently, the M-NCPPC and the Montgomery County Department of Environmental Protection are jointly studying the entire Crabb's Branch subwatershed. This study is part of a larger study by M-NCPPC of the complete Rock Creek Basin. The purpose of the Crabb's Branch joint study is to determine the nature and extent of problems related to urbanization in the Crabb's Branch Creek and to analyze viable alternative solutions, including the county proposal for an impoundment at Redland-Fields Road.

The industrial runoff impact on Crabb's Branch is important since the proposed Crabb's Branch Stream Valley Park will be located immediately downstream from Redland-Fields Road. This park will border the future residential development on the Mobley and Gude tracts. Due to the topography, orientation of slopes, and location of industrial uses on the opposite side of the parcels, the park will become the focal point of the residential communities.

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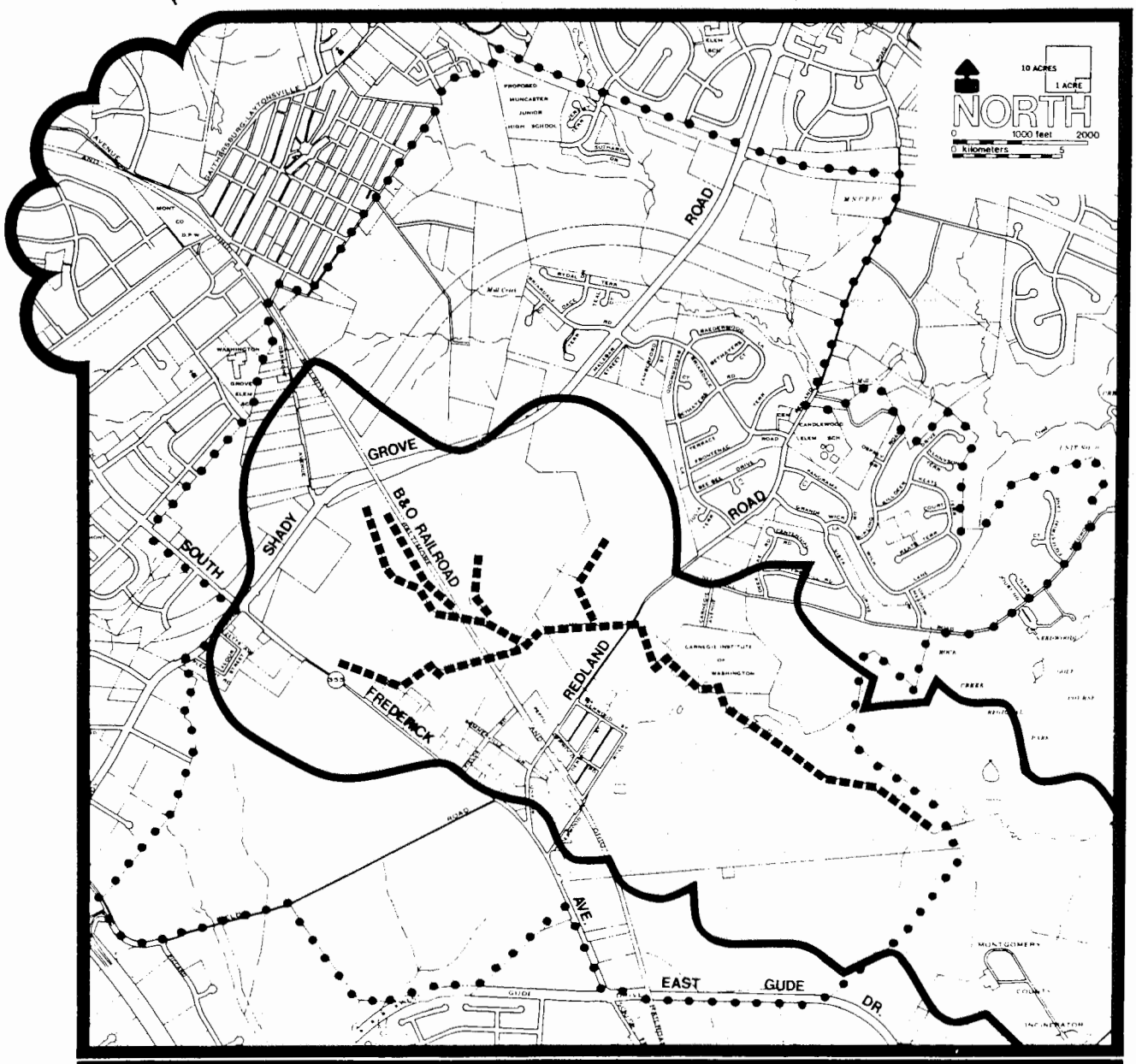
[1] Crabb's Branch Storm Water Management Study: Gannett Fleming Corddry Carpenter, Inc., Harrisburg, PA for Montgomery County Department of Environmental Protection, March, 1975.

FIGURE 25



Sub-Watershed Boundary

Stream Meander

Sector Plan Boundary

Crabbs Branch Sub - Watershed

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

It is likely that a stormwater impoundment will be constructed immediately north of Redland-Fields Road. If built, this impoundment should be made part of the County Service Park and come under the Comprehensive Maintenance Agreement. Extensive landscaping will be necessary to buffer the view of this facility.

6.42 Air Quality

The Shady Grove sector planning area is a part of the National Capital Interstate Air Quality Region. The sector plan recognizes the relationship between increased development and increases in traffic. Air pollution is largely a consequence of automobile emissions.

To deal with air pollution in urban areas and to attack the problem in a systematic manner on a nationwide basis, amendments to the Federal Clean Air Act were enacted in 1970. Federal Standards have been established for violations which would affect public health. The State of Maryland also has adopted air quality standards and is proceeding to issue periodic implementation regulations, with Environmental Protection Agency (EPA) approval whenever necessary.

When properly enforced by the Federal, State, regional, and local governments, these standards should achieve improvement in air quality. The Montgomery County Planning Board and the county government will implement regulations issued by the State of Maryland, as a part of the State's air quality implementation plan. These regulations may have a bearing upon the timing, location, and amount of development recommended in the sector plan.

Draft regulations, concerning the review of indirect sources, have been proposed by the Environmental Protection Agency. Indirect sources are buildings, facilities, major roadways, and other installations that generate considerable traffic, thus creating air pollution. The adoption of these regulations has been postponed and can only be considered in the sector plan by noting the draft status and possible future applicability of such regulations. The Montgomery County Planning Board is carefully monitoring the indirect source issue and will adhere to any regulations issued by the Federal and State regulatory agencies.

Other factors influence air quality. The increase of transit usage through the provision of speedy, inexpensive, and comfortable bus service to augment use of the Metro transit facilities will divert many commuters from auto usage. The basic strategy of the sector plan, regarding air quality, relies on an improvement in air quality due to a decrease in the total vehicular miles of travel.

The Washington Metropolitan Area Council of Governments (COG) has a car pool locator service. This encourages the "matching up" of auto commuters having common origins and destinations by computer techniques to reduce total auto trips. This will also tend to improve the air quality.

Although the increase of traffic in the Shady Grove area may adversely affect local air quality, this may be offset by reductions in regional car travel and by the more accessible location of public facilities. The planning board is implementing methods by which air quality considerations can be included as a an integral part of the planning process.

Recommendations

An environmental impact statement (EIS) should be prepared for the outer beltway connection. One of the basic EIS issues to be addressed is the effect of the interchange on the future air quality of the Shady Grove area. Investigations of this issue should include as a minimum:

1. Projection regarding air quality, particularly the amounts of carbon monoxide (CO) anticipated both with and without the outer beltway;

2. Use of analysis techniques capable of modeling the air quality complexities of the limited interchange;

3. Analysis of all major roadways and intersections affected by construction of the outer beltway, including Shady Grove Road, I-270 and Md. 355;

The jurisdiction responsible for construction of the roadway should provide the analysis under environmental impact statement requirements.

Transportation and land use strategies can be used effectively to reduce emissions of carbon monoxide. The following actions are recommended to improve air quality in the Shady Grove Sector Plan area:

1. Complete the construction and improvement of public mass transportation systems, such as the Metro rail facilities, and encourage their use, to improve regional air quality;

2. Minimize the use of private automobiles by a single person for all types of trips by emphasizing the benefits of alternative modes of transportation, such as car pools and bicycles;

3. Improve roadways and traffic management to minimize congestion;

4. Utilize open space and vegetative cover to serve as buffers between air pollution sources and those affected by it.

6.43 Noise

Throughout preparation of the plan the possible negative effects of noise upon living and working environments has been considered. Zoning and land-use recommendations are based, in part, upon noise factors.

A technical noise analysis was performed only at those locations that appeared critical or where traffic volumes were highest. The projected operating conditions of the central processing facility and the Metro station were reviewed to prepare recommendations on noise abatement.

The sector plan recommendations include use of zoning; berming, buffering, or acoustic fencing; and the appropriate siting of buildings to reduce noise impact.

Potential high-level noise generating areas analyzed in depth include the following intersections and roadways:

- Shady Grove Road and Md. 355
- Shady Grove Road and Oakmont
- Crabb's Branch Way and Fields/Redland Road
- Metro access road from Md. 355 to Shady Grove Road
- Metro access road from Shady Grove Road to the Metro station
- Shady Grove Road from Oakmont to the B & O Railroad
- Shady Grove Road from the Metro access road to Briardale Road

Noise analysis was based on noise assessment guidelines published by the U.S. Department of Housing and Urban Development in 1971. The analysis considered the worst possible situation, that is, peak traffic flows, including truck traffic as part of the flow. Noise intrusion levels are classified as severe, moderate, or acceptable.

The intersections analyzed will carry considerable truck traffic--approximately five to ten percent of the total peak-hour flow. The shifting and braking noise of truck traffic that comes from starting and stopping at intersections will result in severe noise intrusion to a distance from the roadway of between 175 and 195 feet (see Figure 20).

The roadway segments analyzed will carry significantly less truck traffic--approximately three to five percent of the total peak-hour flow. Severe noise intrusion will be experienced adjacent to the following roadway segments to the depth indicated:

- Metro access road from Md. 355 to Shady Grove Road: 10 feet from the roadway.
- Metro access road from Shady Grove Road to the Metro station: 20 feet from the roadway.
- Shady Grove Road from Oakmont to the B & O Railroad: 35 feet from the roadway.
- Shady Grove Road from the Metro access road to Briardale Road: 5 feet from the roadway.

Recommendations

The noise-level analyses conducted at intersections and along roadway segments, and projections of noise levels at the central processing facility and

Metro station, have resulted in the following recommendations regarding development and noise abatement.

Intersections

Shady Grove Road and Md. 355

- No residential uses are recommended in the immediate vicinity.

- Development on the southwest corner of Shady Grove and Md. 355 should be either sited and oriented away from Md. 355 or insulated with acoustical material on the Shady Grove Road-Md. 355 side of structures housing workers during the day.

Shady Grove and Oakmont Avenue

- No residential uses are recommended in the immediate vicinity.

Crabb's Branch Way and Fields/Redland Road

- Extensive berming and buffering is recommended because of the intersection's proximity to future residential neighborhoods.

Roadway Segments

Metro connector and access road from Md. 355 to Shady Grove Road:

- Additional right-of-way (highway impact easement area) for the roadway is recommended because of the segment's proximity to residential uses.

- Extensive landscaping and berming within the highway right-of-way and in adjacent privately developed areas are recommended.

Central Processing Facility

It is assumed that noise emanating from truck traffic and outdoor operations at central processing facility will contribute to the excessive noise levels in the Md. 355 and Shady Grove Road area. Therefore, extremely dense berming and buffering of the site, including all access roads, are recommended.

Metro Station

Berming similar to that recommended for the central processing facility is recommended for the Metro station parking areas, which will be the source of ground noise at peak hours.

OFFICE/INDUSTRIAL, EMPLOYMENT AND CONVENIENCE COMMERCIAL STUDIES

7

Chapter 7

OFFICE/INDUSTRIAL, EMPLOYMENT AND CONVENIENCE COMMERCIAL STUDIES

7.1 INTRODUCTION

Since Shady Grove will be the location of office and industrial uses serving the entire region, a study was made to determine the additional types and amounts of industry and employment that will be attracted to the area. An estimate of the ability of the Shady Grove area to compete with other Montgomery County industrial areas was also made as part of this study. A second study analyzed the convenience commercial needs of area residents and made projections for 1984 to assure that appropriate amounts of commercial land will be available.

7.2 OFFICE/INDUSTRIAL AND EMPLOYMENT STUDY

7.21 Existing Employment

The area now zoned for commercial and industrial uses amounts to approximately 16 percent of the land in the Shady Grove Sector Plan area. Some 36 acres are zoned commercial and 430 acres industrial. Business activities in Shady Grove include such large firms as Bechtel, Hewlett-Packard, Comprint, and the Sentinel Newspaper, located along I-270, and small businesses farther in from I-270 for the most part on Shady Grove Road and Md. 355. The 131 businesses in the area employ 4828 persons. The number of employees per acre is close to the average for the I-270 corridor.

7.22 Future Employment

Employment in Montgomery County is projected to increase 31 percent from 1976 to 1986. Employment in the I-270 corridor, which includes Shady Grove, should increase by 51 percent.

The county could potentially absorb considerably increased amounts of employment in manufacturing and wholesale trade over the next decade, considering the relatively small base of this type of employment now existing. Projections indicate a 10-year increase of 2660 manufacturing employees--approximately 28 percent more than the 1976 figures of 9350. Wholesale trade also will show a relatively high rate of increase over the 1976 figure--a 48 percent (from 6540 to 9670 employees), or a net addition of 3130 employees. The I-270 corridor will have nearly twice as much manufacturing employment and slightly more than the county average for wholesale trade. This distribution of employment suggests that the I-270 corridor is one of the more desirable locations in the county for manufacturing.

The Gaithersburg area will most likely show the second largest actual employment growth--about 12,140 employees by 1986. However, the rate of

growth (41 percent) will not be as high as those of other areas in the I-270 corridor due to Gaithersburg's already large employment base.

There are a number of projects in the Gaithersburg area, which have been proposed or are already approved and under construction. The total employment in these facilities will be some 13,000 excluding the medical center and other proposed facilities. With these proposed facilities added, employment may reach 15,000 by 1984.

There are three public sector sources of employment certain to be in place by 1984--the county service park, the central processing facility, and the Metro transit station with its related storage and inspection yards. These facilities will employ between 797 and 1695 people. The county service park and the central processing facility will employ the majority of workers in this immediate area.

7.23 Conclusions

The studies summarized here indicate that the Shady Grove sector plan area has within its boundaries both a very competitive location for office and research park development, and relatively competitive locations, in comparison with other areas in the county, for more land-intensive, light-industrial uses.

The land adjacent to and visible from I-270 should be developed with prestigious, multistory office buildings on large acreage surrounded by open space--a type of development already in place along this highway.

Access to this area of relatively large, uncommitted parcels of land provided by I-270, Shady Grove Road, Md. 355, the proposed outer beltway, and by rail contribute to Shady Grove's attractiveness for light-industry. Rail access is especially significant in estimates of the area's competitive position.

Employment generated by both types of development will be consonant with that already existing along I-270 and with that of the public sector facilities to be constructed within the area.

7.3 CONVENIENCE COMMERCIAL STUDY

Convenience shopping facilities include retail commercial uses which have a neighborhood orientation and supply necessities required frequently. These facilities are usually located to minimize travel and are usually not so large or so broad in services offered so as to attract substantial amounts of trade from outside the neighborhood.

A study of convenience commercial needs was made to determine whether or not sufficient amounts of land are appropriately zoned. Based on this study, it has been determined that, by 1984, 70,000 square feet of retail facilities, in addition to those which exist at present, will be required in the Shady Grove area. If some personal services are included in a retail center, this figure could be larger, ranging to approximately 80,000 additional square feet.

The demand for increased facilities will arise from the construction of new housing units within the sector plan area. Approximately 2720 units accommodating some 8700 persons could be built in the area by 1984.

The income level of households was estimated by assigning an average price to the dwelling units in each parcel, based on the zoning and the price ranges of other I-270 corridor developments in the same zoning category. The average income of these households was then computed through use of various mathematic processes and published sources.

In 1984, the average income for households in the study area is estimated to range from $19,400 to about $42,000 (in 1973 dollar values). The average income for the entire area is estimated at $25,921, again expressed in 1973 dollar values. Of this total income, approximately 40 percent will be spent for all retail purchases, and 13 percent for convenience goods and services. The residential development expected in this area, therefore, will generate about $9.2 million in sales of convenience goods over and above the present sales volume. This level of sales, in turn, will require about 70,000 square feet of floor area. With personal service expenditures included, the total floor area required rises to about 80,000 square feet.

Ultimately, the Shady Grove sector plan area will include full development of the Gude/Mobley tract, a very large parcel of land on which may be located as many as 780 dwelling units under Planned Development Density 2 or 1171 units under Planned Development Density 3. When fully occupied, this area could require an additional 25,000 square feet of convenience commercial space. One center for the Shady Grove area will then have an ultimate area of about 100,000 square feet. Such a center would be large enough to include a major chain grocery store and other specialty food stores, as well as a hardware store, a moderate-size drug store, and small personal services stores.

Convenience retail facilities at present exist on Md. 355, and a small complex of stores is located at the intersection of Redland and Muncaster Mill Roads. On Md. 355 at its intersection with College Road, there is the 93,000-square-foot College Plaza shopping center, which serves the Rockville area. College Plaza includes an A&P grocery store, a large Dart Drugs store, and several small shops. Another major center, serving the northern part of Shady Grove, is the 101,000-square-foot Walnut Hill Shopping Center on Md. 355 in Gaithersburg. Walnut Hill has a moderate-size Grand Union store, a Drug Fair, and a wide variety of small shops. Other centers on Md. 355 are the Holbrook Center and the Midway Center. The Redland Shopping Center, at Redland and Muncaster Mill Roads, is the newest in the area and is still leasing. It contains 23,000 square feet, including personal services and eating and drinking establishments. Commercial areas are shown on Figure 6, Existing Employment and Commercial areas.

A review of proposed commercial development in the area reveals that the convenience commercial facilities already planned will adequately satisfy immediate needs. Amity Square Shopping Center, to be located at Md. 124 and Amity Drive, will be an 80,000-square-foot, convenience center with emphasis on meeting the needs of the Emory Grove Renewal Area and on partially capturing the market

demands of future residents of the Shady Grove area. In addition, a five-acre tract of land at the southwest quadrant of Redland and Muncaster Mill Road is already zoned commercial.

A centrally located, local commercial center, providing a food store and related convenience commercial stores, will be appropriate for the Shady Grove area. Locating this commercial center off Md. 355 within the Shady Grove plan area will alleviate travel along Md. 355 to existing stores, and, thereby, reduce traffic on that road. The commercial study indicates that a sufficient market will exist shortly within the Shady Grove Sector Plan area boundaries so that the attraction of traffic from major highways into the area will not be necessary for the financial success of the commercial centers. Therefore, it is recommended that approximately 15 acres of land, located immediately northeast of Shady Grove Road and Crabb's Branch Way extended, be zoned C-1 (convenience commercial).

FUTURE LAND USE

8

Chapter 8

FUTURE LAND USE

8.1 PLANNING CONCEPTS

Recommendations for future land use in the Shady Grove Sector Plan area are grounded in the concepts discussed earlier in this report, and are summarized below. The concept plan (figure 26) illustrates these concepts.

- The existing residential communities in Shady Grove have identities that the sector plan proposes to strengthen, rather than change.

- Development surrounding the Metro station shall be of a low-intensity residential and commercial/industrial nature.

- Recommended land uses will not differ significantly from those shown in the Gaithersburg Vicinity Master Plan and Rock Creek Master Plan.

- Residential densities will not be increased significantly, and the existing character of the area will be retained.

- Moderate-density, residential (R-90) development is recommended for areas between nonresidential uses and existing low-density (RE-1 and R-200) residential uses.

- The proposed roadway projects are designed to alleviate congestion along Md. 355 and existing residential roads.

- Strip commercial development along Md. 355 is discouraged in favor of an industrial-employment image.

- The bikeway system is designed to facilitate residential, commuter, shopping, and recreational travel throughout the area.

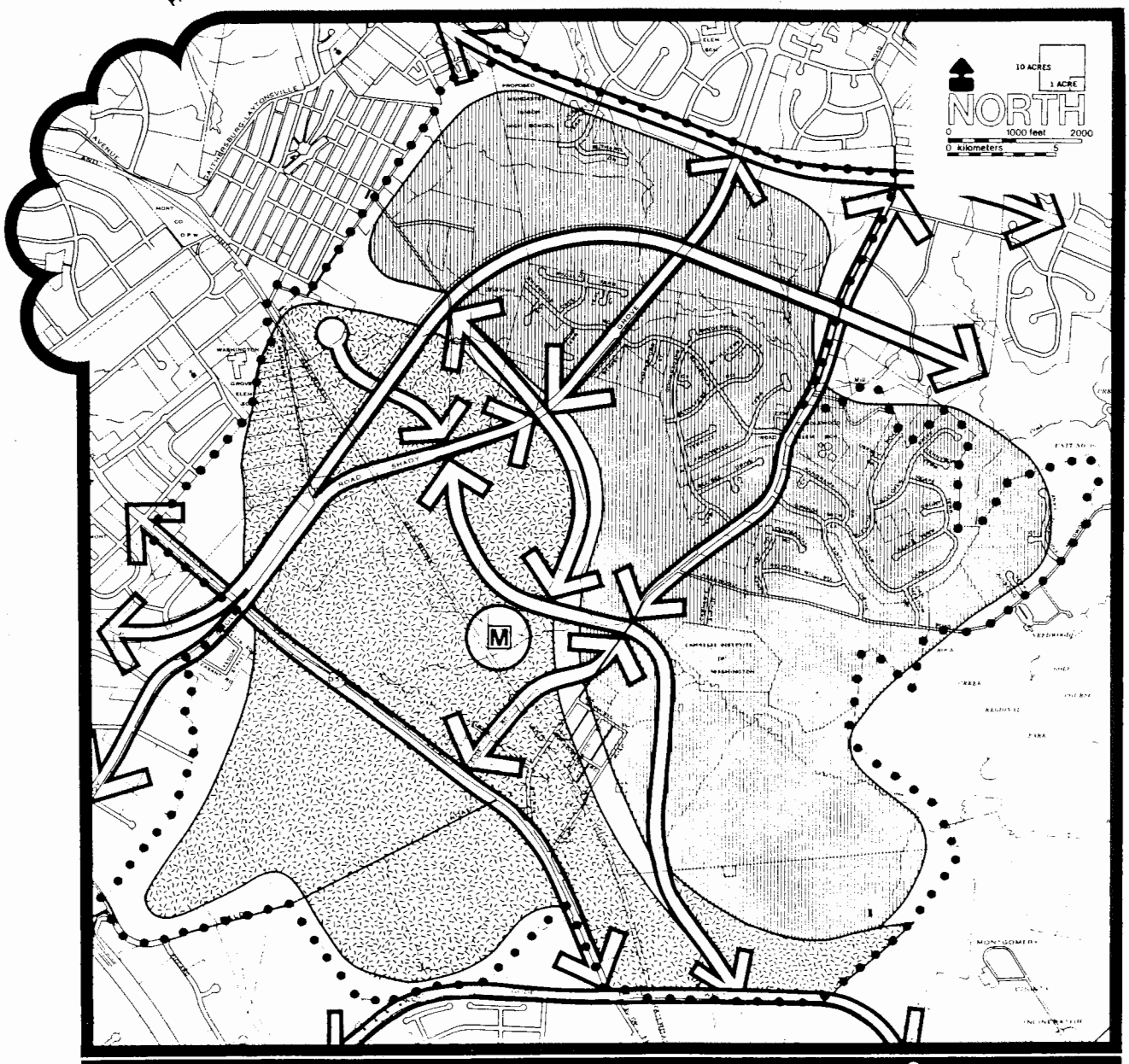
- Public and private nonresidential development should conform to a consistent, comprehensive design scheme.

- The protection of stream valleys as conservation areas will help maintain natural hydrological systems.

- Mature trees shall be protected, wherever possible, to maintain the natural beauty of the area and to provide protection against erosion and air and noise pollution.

- The existing rolling topography of Shady Grove area shall be maintained or replicated where grading is necessary.

FIGURE 26



Residential Development

Industrial Development

M Metro Station

Sector Plan Boundary

Concept Plan

SHADY GROVE
SECTOR PLAN
THE MONTGOMERY COUNTY PLANNING BOARD

8.2 BASIS FOR LAND USE RECOMMENDATIONS

A number of studies were undertaken to assure the development of a coordinated land use pattern in the Shady Grove area. The most rigorous and important of these studies concerned transportation. The study focused on access to the Metro transit station and on the capacity of the highway system to adequately accommodate anticipated traffic increases. The initial study was performed by jhk and associates, consultant traffic engineers to the Maryland Department of Transportation.

The Transportation Planning Division of the Montgomery County Planning Board expanded the study to provide detailed information for the sector plan. The transportation study and recommendations are presented in detail in Chapter 5.

An environmental analysis was conducted, with the assistance of the U.S. Geological Survey and the Montgomery Soil Conservation District (MSCD). This study indicated environmental factors affecting development and identified environmentally sensitive areas. This study, together with the elements of storm-water management, air quality, and noise, is discussed in Chapter 6.

A study was undertaken to determine the additional types and amounts of industry and employment that will be attracted to the area, and of the area's ability to compete with other areas of the county. A second study analyzed the convenience commercial shopping needs of area residents and made projections for 1984 to assure that appropriate amounts of commercial land will be available. Both studies are described in Chapter 7.

8.3 LAND USE ELEMENTS

8.31 Overview of Existing Land Uses

The 2,900-acre sector plan area is characterized by a limited number of residential subdivisions, industrial/commercial development, working farms, and fallow undeveloped land (80 percent of the total area).

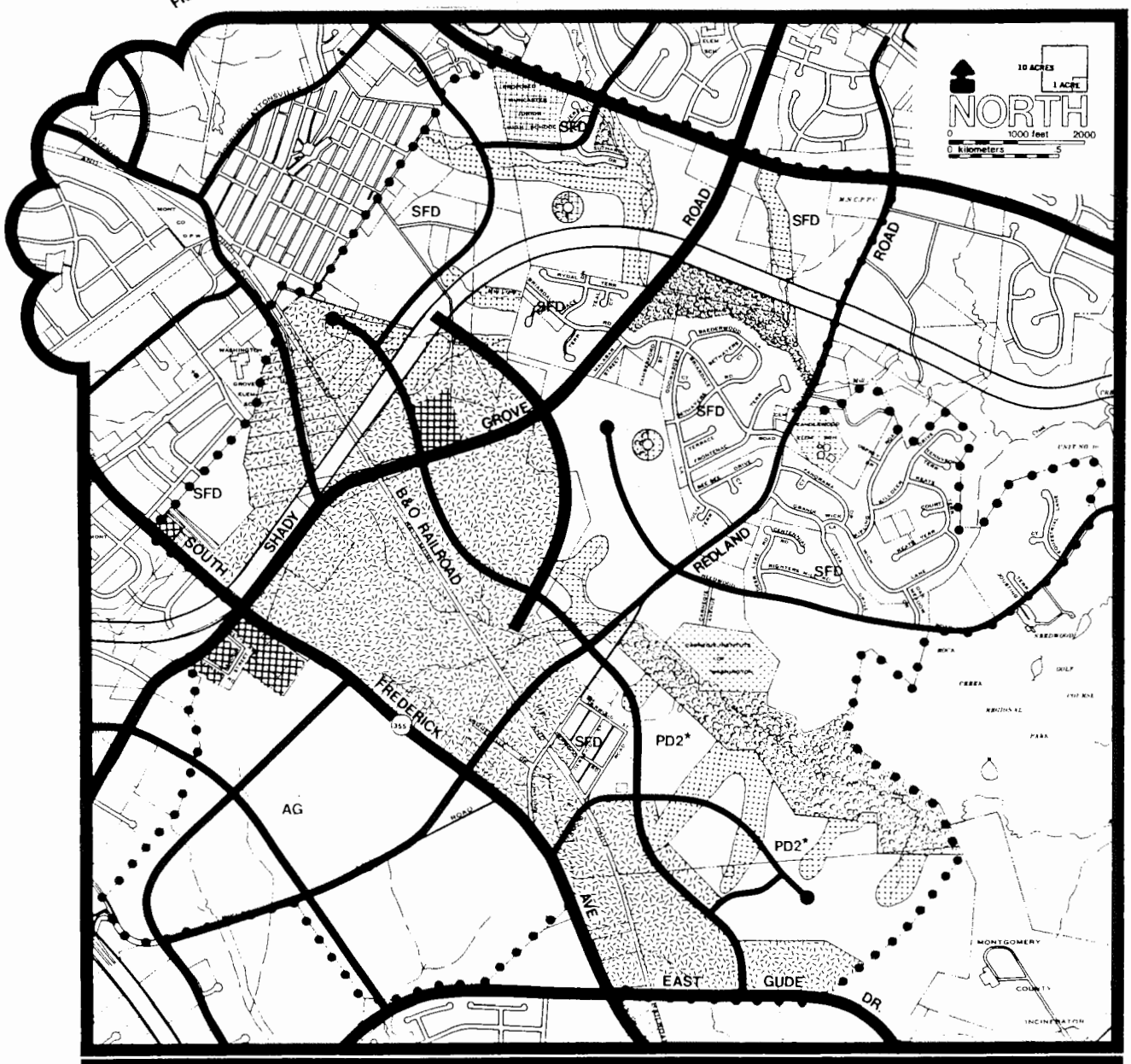
The 2,260 acres of farmland are clustered primarily in the center of the study area, and the 430 acres of existing residential uses surround the farmland. The 210 acres of commercial/industrial uses are located along major roadways and at intersections.

8.32 Factors Affecting Development

The land use recommendations are designed to complement existing commercial and residential development and to accommodate the major public service activity center--the 300-acre county service park, central processing facility, and Metro transit station complex.

The land use recommendations also are responsive to environmental conditions. Soils, geology, vegetative cover, and slopes will have significant influences on urban development.

FIGURE 27



SFD Single Family - Detached

Town House

PD Planned Development

Commercial

Industrial

Park

Conservation - Private

AG Agricultural

Park/School

Institution

Sector Plan Boundary

Proposed Land Use 1984

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

See text regarding possible PD3 in Area 24

Recognition of the interdependence among natural environmental factors and land use elements is basic to the Shady Grove Sector Plan. There are approximately 172 acres identified as private conservation areas and approximately 142 acres of existing and proposed parkland.

8.33 Land Use Recommendations

Planning analysis areas within Shady Grove are illustrated on the Planning Analysis Areas map (Figure 28). Recommendations for land use are made by analysis area.

Area 1 (165 Acres)

Area 1 extends from Shady Grove Road to Washington Grove, and from the proposed outer beltway to Mill Creek Towne. The entire area is undeveloped; the proposed zoning is R-90 single-family residential development.

Area 2 (33 Acres)

Area 2 includes both the site for the proposed Muncaster Junior High School and 47 existing homes.

Area 3 (91 Acres)

Area 3 extends from Redland Road to Shady Grove Road and the proposed outer beltway and to Mill Creek Towne. It includes the 10-acre Redland Local Park site. A portion of this area along Shady Grove Road is proposed for R-90 zoning--single-family residential use (4 acres), with the remainder zoned R-200 --single-family residential use. Approximately 13 acres is required for Stream Valley Park.

Area 4 (17 Acres)

Area 4 includes the 12 homes along Ridge Road, immediately east of Washington Grove. The proposed zoning is R-90--single-family residential use.

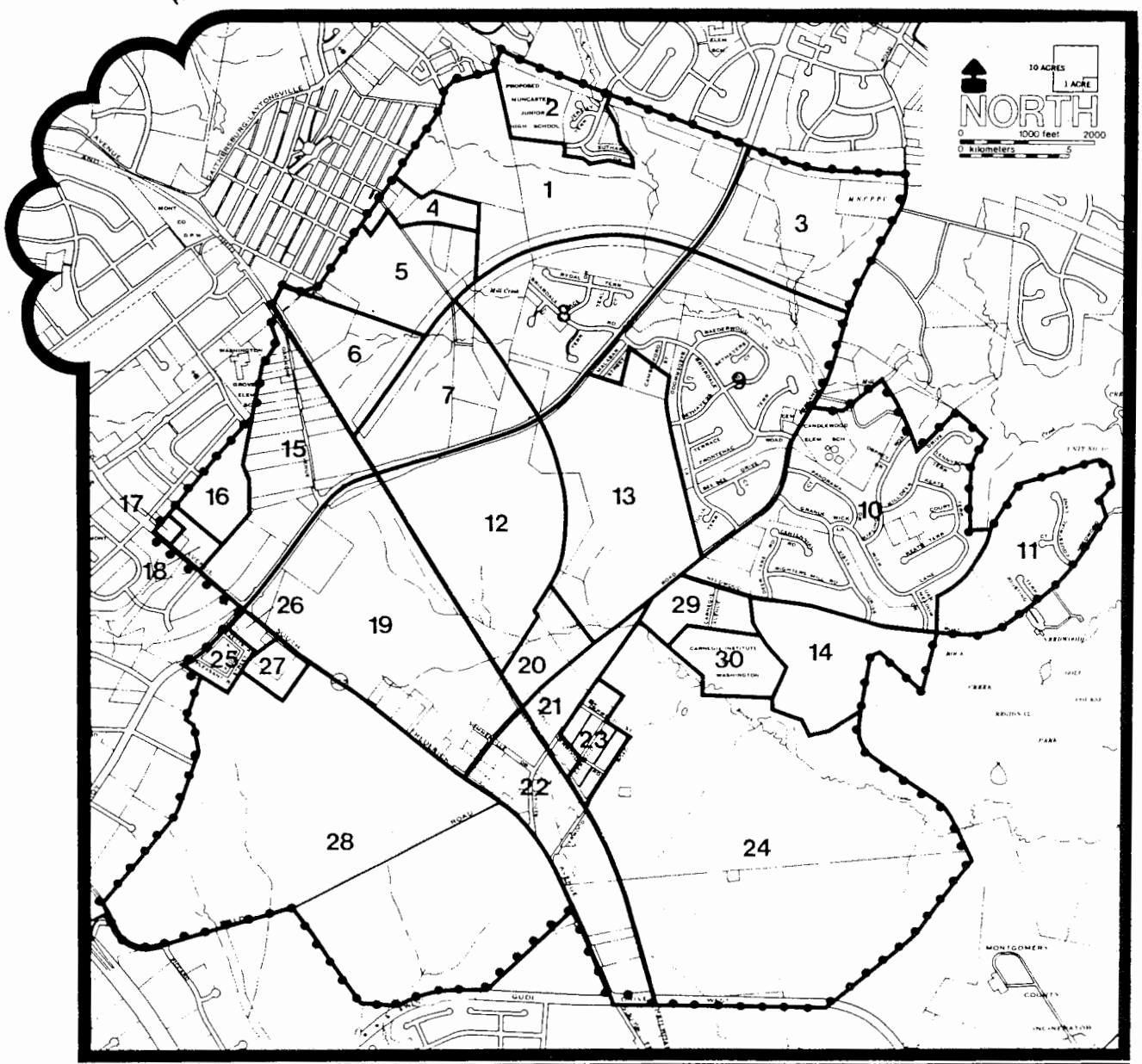
Area 5 (62 Acres)

Approximately 14 acres of Area 5 will be required for the Metro access road/outer beltway connection interchange. The proposed zoning is R-90--single-family residential development. The cluster option should be exercised so as to gain flexibility in orienting homes away from the outer beltway. The Town of Washington Grove should be consulted as development plans are approved for this area to ensure that the unique identity of that Town is retained.

Area 6 (45 Acres)

Area 6 is east of the B & O Railroad, between Washington Grove and the proposed outer beltway, and is vacant. The proposed zoning is I-1--light industrial use.

FIGURE 28



●●●●● Sector Plan Boundaries

14 Analysis Area Number

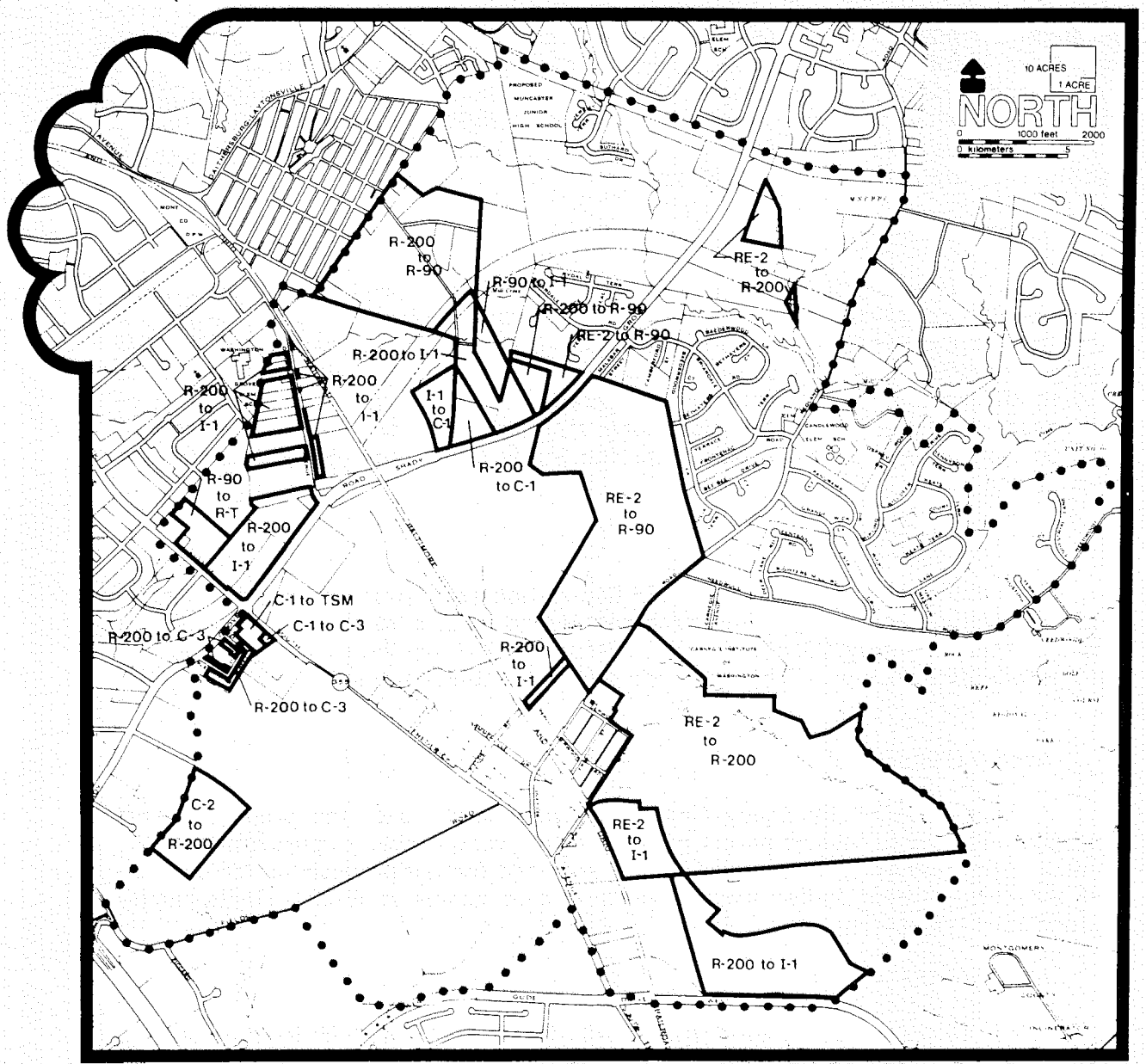
——— Analysis Area Boundary

Planning Analysis Areas

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

FIGURE 29



Area of Change Boundary

Sector Plan Boundary

Proposed Zoning Changes

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

It is recommended that, because of the proximity to Washington Grove, development plans be reviewed with the town to ensure the proper coordination of land uses prior to development. Buffering between the industrial area and Washington Grove is recommended. Existing site conditions that should be taken into account when preparing development plans include, but are not limited to, the existence of wet worsham silt loam soil; protection of the natural drainage system; and the retention and protection of mature trees.

Area 7 (79 Acres)

Area 7 is bounded by the B & O Railroad, the proposed outer beltway, the Metro access road, and Shady Grove Road. The site is bisected by the northward extension of Crabb's Branch Way. Sufficient distance, approximately 150 feet, is required between this area and the proposed outer beltway to allow for an access road to the remaining I-1 section of the area. The C-1 area delineation will be developed in further detail in the sectional map amendment. An approximately 8-acre portion of this area is required for the Shady Grove Road/Metro access road interchange.

Area 8 (114 Acres)

Area 8 includes approximately 169 homes, located within an area bounded by the proposed outer beltway, the proposed Metro access road, and Shady Grove Road. Approximately 20 acres will be required for the Metro access road and associated interchanges. The proposed zoning is R-90--single-family residential use.

Area 9 (194 Acres)

Area 9 bounded by Shady Grove Road, Redland Road, the proposed outer beltway, and a large vacant parcel of land to the west, contains approximately 264 homes. Approximately 17 acres of land is required for the proposed outer beltway and adjacent Stream Valley Park. The proposed zoning is R-200--single-family residential development.

Area 10 (184 Acres)

Area 10 east of Redland Road and north of Needwood Road, contains approximately 296 homes. It is proposed for R-200--single-family residential zoning.

Area 11 (75 Acres)

Area 11 is north of Needwood Road and immediately east of Area 10, and is vacant. The proposed zoning is RE-2--rural estate (2-acre) development.

Area 12 (138 Areas)

Area 12 is under development as the county service park. The existing zoning pattern for I-1, light industrial, and R-200, single-family residential uses, is to be retained.

Area 13 (135 Acres)

Area 13 is bounded by the Metro access road, Shady Grove Road, Redland Road, and Area 9, and is vacant. Approximately 40 acres are required for a local park, the Shady Grove Road/Metro access road interchange, the Metro access road, and the extension of Crabb's Branch Way. Additional acreage may be required for the provision of storm-water management facilities at Redland Road to serve the public uses within this watershed. Land necessary for the proposed Blueberry Hill Elementary School in this area will be obtained when construction of the school is necessary. The proposed zoning is R-90--single-family residential development. The cluster option should be exercised so as to gain flexibility to orient the homes away from the Metro access road and to facilitate the retention of natural features, such as the rock outcrop and tree stand at the southern portion of the area.

Area 14 (70 Acres)

Area 14 is immediately west of the Lake Needwood golf course south of Needwood Road, and is vacant. The proposed zoning is RE-1--rural estates (one-acre).

Area 15 (94 Acres)

Area 15 is bisected by Oakmont Avenue and is bounded by Shady Grove Road. the B & O Railroad, Md. 355, and area 16. It has six homes and a number of commercial/industrial operations, primarily warehousing. Approximately 20 acres will be required for the proposed outer beltway. Due to the proximity to the railroad and the proposed outer beltway, the recommended zoning is I-1--light industrial development.

Area 16 (28 Acres)

Area 16, immediately southeast of Walnut Hill, is vacant. The proposed zoning is R-90--single-family residential development.

Area 17 (0.5 Acres)

Area 17, fronting on Md. 355, is the location of a number of commercial uses. The proposed zoning is a continuation of the existing C-2 zoning--general commercial.

Area 18 (8 ACres)

Area 18, fronting on Md. 355, is vacant. The proposed zoning is R-T--residential town-house development.

Area 19 (182 Acres)

Area 19, bounded by Shady Grove Road, the B & O Railroad, Fields Road, and Md. 355, is the location of a number of industrial and commercial uses. Approximately 146 acres will be required for the county solid waste central

processing facility and the Metro rail station with its storage and inspection yards. The proposed zoning is I-1, light industrial use, to preempt the possibility of the construction of strip commercial development along Md. 355. I-1 is preferred since it is felt light industrial uses would be more compatible with the Central Processing Facility and Metro storage yards proposed for this area.

Area 20 (25 Acres)

Area 20 northeast of the B & O Railroad and Fields Road, is vacant. The proposed zoning for the 14 acres immediately adjacent to the B & O Railroad is I-1, light industrial; for the 11 acres adjacent to that it is R-90, single-family residential zoning. Virtually all 25 acres will be required for the Metro Transit station and the extension of Crabb's Branch Way.

Area 21 (22 Acres)

Area 21 is southeast of the B & O Railroad and Fields Road. It is the location of a Potomac Electric Power Company storage yard and power station. Approximately 5 acres will be required for the recommended relocation of Redland and Fields Road. The proposed zoning for the area adjacent to the Railroad is I-1, light industrial, and for the area east of that, R-90--single-family residential.

Area 22 (76 Acres)

Area 22 is bounded by Md. 355, Fields Road, Gude Road, and the B & O Railroad, and is bisected by Redland Road. There are four homes and a number of commercial and industrial uses in the area. This area is proposed for I-1, light industrial zoning.

Area 23 (19 Acres)

Area 23 is east of the B & O Railroad, between Redland and Derwood Roads. Area 23 is proposed for R-200, single-family residential zoning.

Area 24 (443 Acres)

Area 24 extends from Redland Road to Gude Drive, and from the B & O Railroad to Crabb's Branch Creek. It includes the Mobley tract and Gude Nursery. One hundred-eighteen acres along the B & O Railroad and Gude Drive are proposed for I-1, light industrial zoning. Moving northward from Gude Dr., the Gude property is relatively flat. Halfway to the northern property line the land falls off into rolling hills with small tributaries draining into Crabb's Branch Creek. The industrial zoning on this property extends from Gude Dr. northward toward the fall-off or ridge line. The industrial/residential zoning boundary is drawn along the flat portion of the property sufficiently set back from the fall-off to screen the view of the industrial development from the residential development. The remaining areas to the east and north are proposed for R-200, single-family residential zoning.

This area contains Crabb's Branch Creek and four tributaries cutting across the residential area and creating a series of rolling hills. It is recommended that a

residential area be constructed in Planned Development 2 (PD-2, 2 dwelling units per acre) to retain the existing topography and to create conservation areas along the tributaries to Crabb's Branch Creek. If the two tracts of land are consolidated into a unified development plan, the zoning should be PD-3 (3 dwelling units per acre).

Area 25 (11 Acres)

Area 25 fronts on Shady Grove Road, approximately 500 feet west of Md. 355. It has 12 homes and a small commercial area. The area is proposed for C-3, highway commercial zoning.

Area 26 (4 acres)

Area 26 which is located on the southwest corner of Md. 355 and Shady Grove Road is designated as a transit station development area. This corner property has a high degree of visibility and access very close to the intersection. Uses for this area should be limited to convenient commercial type of uses which would serve the area but would not attract significant traffic to the area. This area also has a stand of oak trees purported to be the original "Shady Grove." To obtain these types of uses and protect the stand of trees, Transit Station Mixed zone (TSM) is recommended for the area. TSM zone allows for convenient commercial type of uses and requires site plan review which will aid in protecting the original "Shady Grove." The Sector Plan, therefore designates this area as a Transit Station Development area for the purpose of zoning the area TSM.

Area 27 (10 Acres)

Area 27 is west of Md. 355 and south of Area 26. It is the location of an auto dealership and is proposed for C-3, highway commercial zoning.

Area 28 (461 Acres)

Area 28 is bounded by Md. 355, Shady Grove Road, I-270, and Fields Road. It is in use for a dairy farm and a number of homes. It is assumed that the area will not develop prior to 1984; therefore, the present R-200 zoning, single-family residential, should continue for the next 10 years. The ultimate zoning, however, should be for I-3, industrial park.

Area 29 (26 Acres)

Area 29, southwest of Redland and Needwood road, is developed with 16 homes. The proposed zoning is RE-1, rural estates (one acre).

Area 30 (29 Acres)

Area 30 is south of Area 29 and north of Crabb's Branch Creek. It is owned and occupied by the Carnegie Institute of Washington. The proposed classification is RE-2, rural estate (2 acre) zoning.

TABLE 4

ZONING PROFILE

ZONING CLASSIFICATION	APPROXIMATE ACREAGE EXISTING	PROPOSED
TSM Transit Station Mixed		4.0
C-1 Convenience Commercial	4.5	15.0
C-2 General Commercial	23.0	0.5
C-3 Highway Commercial	7.0	21.0
I-1 Light Industrial	519.0	679.0
I-3 Industrial Park		461.0
R-T Residential-Townhouse		8.0
R-90 Single-Family Residential	365.0	576.0
R-200 Single-Family Residential (includes Planning Development 2)	1,372.0	876.0
RE-1 Rural Estate-one acre	280.0	96.0
RE-2 Rural Estate-two acre (includes Cluster RE-2C)	270.0	104.0
TOTAL AREA	2,840.5 Ac.	2,840.5 Ac.

TABLE 5 - PLANNING ANALYSIS AREAS: SUMMARY

PLANNING AREA	TOTAL AREA (AC.)	EXISTING ZONING ZONE	EXISTING ZONING AREA (AC)	PROPOSED ZONING ZONE	PROPOSED ZONING AREA (AC)	AREA REQUIRED FOR PUBLIC USE	DEVELOPABLE AREA	ADDITIONAL DWELLING UNITS	EXISTING DWELLING UNITS	TOTAL DWELLING UNITS
# 1	165	R-90	165	R-90	165	-	165	707	-	707
# 2	33	R-90	33	R-90	33	20	-	-	47	47
# 3	91	RE-2	9	R-200	87	23	64	142	-	142
		R-200	78							
		R-90	4	R-90	4	-	4	14	-	14
# 4	17	R-200	17	R-90	17	-	-	-	12	12
# 5	62	R-200	62	R-90	62	14	48	200	-	200
# 6	45	I-1	45	I-1	45	6	39	-	-	-
# 7	79	R-200	26	I-1	69	8	61	-	-	-
		R-90	13							
		I-1	40	C-1	15		15			
# 8	114	RE-2	3	R-90	114	20	42	173	169	342
		R-200	7							
		R-90	104							
# 9	194	RE-2	1	R-200	194	17	3	6	264	270
		R-200	190							
		R-90	3							
#10	184	R-200	184	R-200	184	-	13	24	296	320
#11	75	RE-2C	75	RE-2C	75	-	75	30	-	30
		R-200	67	R-200	67	-	67	-	-	-
#12	138	I-1	71	I-1	71		71			
		RE-2	120							
#13	135	R-200	8	R-90	135	40	95	393	-	393
		R-90	7							
#14	70	RE-1	70	RE-1	70	-	-	75	-	75
		R-200	54							
#15	94	I-1	40	I-1	94	20	74	-	-	-
#16	28	R-90	28	R-90	28	-	28	117	-	117
#17	0.5	C-1	0.5	C-2	0.5	-	-	-	-	-
#18	8	R-90	8	R-T	8	-	8	112	-	112
#19	182	I-1	182	I-1	182	146	36	-	-	112
		RE-2	11	R-90	11					
#20	25	I-1	14	I-1	14	25	-	-	-	-
		RE-2	7	R-90	7	4	3			
#21	22	I-1	15	I-1	15	1	14	-	-	-
#22	76	I-1	76	I-1	76	-	49	-	4	4
#23	19	R-200	19	R-200	19	-	-	-	24	24
		RE-2C	15							
#24	443	RE-1	184	R-200	325	-	325	721	-	721
		R-200	213							
		I-1	31	I-1	118	-	118	-	-	-
		R-200	9							
#25	11	C-3	2	C-3	11	-	-	-	12	12
#26	4	C-1	4	TSM	4	-	4	-	-	-
#27	10	C-3	5							
		I-1	5	C-3	10	-	10	-	-	-
		R-200	438							
#28	461	C-2	23	I-3	461	-	461	-	3	3
#29	26	RE-1	26	RE-1	26	-	-	-	16	16
#30	29	RE-2C	29	RE-2C	29	-	29	17	-	17
TOTALS	2,840 Ac.					482 Ac.	1,976.5 Ac.	2,731 D.U.	847 D.U.	3,578 D.U.

URBAN DESIGN

9

Chapter 9

URBAN DESIGN

9.1 INTRODUCTION

The urban design recommendations made for the Shady Grove Transit Station Area are intended to assure the harmonious integration of public facilities with the area's commercial, industrial, and residential development as well as with its natural environment. A primary goal of the recommendations is to support and promote a positive sense of identity and character independent of that of Rockville and Gaithersburg.

A sense of visual harmony will be achieved through the use of compatible and coordinated landscaping, building color, signs, lighting, and the design of related amenities, which includes walkways, parking areas, recreational centers, and the like. The recommendations of this chapter offer guidance for development that is based on the highest standards of architecture and overall design.

It is also intended that this plan in no way restrict fresh, innovative approaches to design problem-solving, nor hinder flexibility of permitted uses. On the contrary, it is hoped that because of this plan, designers will bring to Shady Grove the full measure of new visual experiences.

9.2 GENERAL RECOMMENDATIONS

The various developments in Shady Grove should be planned in such a way as to minimize the exposure of visually undesirable features of the development, such as loading docks and trash pickup-and-deposit areas.

Barrier-free movement for pedestrians, especially for the handicapped, should be ensured throughout the planning area.

Because there are no site plan review requirements for the C-1 zone and for the I-1 zone below 3 stories, and in view of the level of industrial and commercial development recommended by this plan, developers are urged to work with the commission staff to assure that their development plans are consistent with urban design recommendations.

Exterior signs and advertising should be designed and located so as to be attractive and effective without competing in size, color, brightness, shape, etc., with neighboring signs.

Every effort should be made to coordinate the design, size, and location of outdoor lighting fixtures and lighting color so that a unified and orderly appearance is created throughout the area and so that safety and protection of individuals and

property is promoted without adversely affecting nearby properties. Utility lines for lighting should be installed underground. The following have been identified in the plan as elements for which lighting should be most carefully considered:

- driveways and roads;
- parking areas;
- pedestrian walkways;
- areas where security or special aesthetic effects are required after dark;

Public and private amenities for the safety, convenience, relaxation, and recreation of area employees, residents, and visitors should be provided appropriate to their numbers and location.

The natural topography and significant existing landscape features should be retained and incorporated into all proposed development.

Every opportunity to soften, reinforce, or enhance the environment should be taken in building design and landscaping.

The effects of visual, noise, and air pollution should be held to a minimum.

Design treatments for specific conditions not covered by the urban design plan should be determined in consultation with the Commission's staff.

Earth colors should be used for industrial and commercial buildings.

9.3 GENERAL DESIGN CRITERIA

9.31 Overview

The sensitive design and treatment of buildings and their surroundings can be of great importance in creating for Shady Grove an identity and a visual character it presently lacks. Although building designs, colors and textures will vary reflecting the choices of individual architects, it is important to consider the following to assure design unity within the area:

However large or small the overall development, the proportions of the various elements of the design should be consonant with the natural landscape of any given site. Natural colors (white, beige, sand, red-brown, deep brown, etc.) should be used in building materials, although certain elements in each design might be of contrasting colors, textures, or materials. In buildings where sunlight and solar heat are problems, specially treated, tinted glass should be used to control light and heat intensity.

The visually satisfying use of space depends on the careful balance of buildings and landscape. The balance, when not predominantly in the direction of either element, can result in a positive and satisfying environment. However, if

there are too many buildings too closely clustered together or if buildings are too loosely grouped to contain space, a negative visual impact results. Organizing space in a positive way, then, is the key to a visually pleasing environment.

Figures 32 through 36 illustrates how the appearance of existing businesses and roadways can be improved through the application of these general design criteria.

9.32 Landscaping and Screening

Landscaping is one of the elements of urban design most capable of tying together the multitude of projects, of softening their visual and audible impact and of assuring an identifiable character for Shady Grove.

Landscaping should be varied and made interesting by using an undulating pattern of tree planting wherever feasible, and by leaving small open spaces where such items as rocks, trees, grass, and/or ground cover can be placed. This approach will achieve a more natural appearance.

General Considerations

- Evergreens, rather than deciduous trees, should be used for screening.

- Earth berms with evergreens and occasional deciduous trees provide the most effective means of noise control and should be used extensively.

- Mature trees should be saved, wherever possible, following the method outlined in Section 9.33.

- Although grading should not exceed a 3:1 slope, a 2:1 slope is acceptable and should not be exceeded except under occasional unavoidable circumstances or when special screening or buffering is required within a limited space. Lawn areas should have a minimum grade of 2 percent to achieve adequate water runoff.

- The use of ground cover other than grass is suggested for areas where lawn maintenance would be difficult and on slopes where erosion control is of importance.

Space-defining trees should be used along roadways to provide overhead canopy and to direct the line of automobile movement. Shade trees should be used in parking lots to relieve the monotony of large, paved masses. Red oak trees are excellent for roadways and sidewalk planting.

- Plant materials should be of the quality recommended in the current edition of the USA Standard for Nursery Stock, published by the American Association of Nurserymen; plant materials should be chosen from the Plant Materials List on the reverse side of the illustrative Landscape Plan.

- Where control of exposure to public view is of primary concern, such as loading docks and parking lots, plant materials should be larger than those

recommended for general use on the Plant Materials List.

• Entrance and exit points should be appropriately landscaped and the use of accent landscaping or directional plantings should be used to mark or indicate critical areas of movement.

• Major existing natural features or amenities, such as adjacent open spaces, large trees, or streams, should be identified and used to advantage.

• The careful use of landscaping along access roads and interchanges is important to the landscape concept. Access roads to Metro, and especially the interchange, have two design problems--noise and visual pollution. Heavy buffering along the roads and around the interchanges should be employed to minimize visual and noise impact on surrounding areas. Plantings inside the interchanges should aid the motorist by creating visual variation, thus minimizing any negative impact upon the motoring experience.

• Landscaping along roadways other than access roads is intended to serve the dual purpose of:

- providing light buffering in some areas, as well as directing motorists' visual line; and

- screening or "berming" for control of noise and visual pollution.

Intersections and median breaks should have low-lying shrubs and/or rocks to create a visual point of reference, as well as an attractive break for motorists.

• As a general rule, trees should not be lined in a row, but clustered at varying distances from the frontage line. The use of a variety of planting materials, rather than one or two varieties, is preferred. It is important to create a complete design plan. The location and design of the man-made green areas should reflect overall treatment of the area, rather than consideration of each part separately. Buffered areas should be shown, with accent areas--perhaps with a theme of rocks and/or specific plants spotted at critical points--to link together the whole concept.

• Mounded and planted islands should be provided in and around parking areas; plantings should be chosen from the Plant Materials List on the reverse side of the Illustrative Landscape Plan.

• Paving grade across large areas should not exceed five percent; grade changes can be taken up in planting islands. Lawn areas, as indicated previously, should have no less than two-percent slope.

• Parking areas should be separated from buildings by planting zones and pedestrian walkways.

• Pedestrian walkways should be surfaced with concrete, brick unit pavers, exposed aggregate, flagstone, or other safe and attractive materials. They should

be separated from vehicle traffic by elevation, distance, landscaping, or a combination of these methods.

• Truck loading areas should be screened from view from major public roads or adjacent residential or public areas. This can be accomplished in several ways, important among them being:

- careful positioning of docks in relationship to such viewing points;

- use of landscaping devices, such as planting mounds, opaque fencing, or other screening techniques.

- placement of loading area so that screening can be an extension of the building walls.

Chain-link security fences should be painted black or covered by black vinyl to minimize their visual impact, and made of galvanized metal.

Trash recepticles should be part of a commonly shared area when possible. Either a shared or an individual trash area should be screened or enclosed in a structure similar in color and materials as the main building and designed to prevent the trash from being blown about.

9.33 Environmental Considerations

Site analysis should take into consideration hydrology, flooding, ponding, storm-water runoff patterns, geology, erosion, slope stability, support of plantings, rockfall areas, as well as vegetation to be preserved, enhanced, or removed. Positive and negative features should be identified, and protective or corrective measures applied.

Existing vegetative growth should be identified as to type, condition, diseases, natural associations, erosion control, reestablishment or replacement potentials, and preservation. Potential for noise, air, and light pollution as well as potential for litter, deterioration, and hazardous areas should be minimized: and measures should be taken to protect surrounding lands.

9.34 Lighting and Illumination

The coordination of light fixtures and light color will contribute toward the creation of a unified appearance in Shady Grove. Lighting should be functional, informational, and, where appropriate, decorative.

The use of artificial lighting and illumination can provide improved visibility; greater safety and security for people and property; serve aesthetic needs; and provide individuals with adequate orientation.

It is imperative that certain private as well as public areas have adequate artificial illumination so that their functions can be continued after dark. Adequate lighting of certain private and public areas is necessary for the safety of

users as well as for security from vandalism and crime. Care should be exercised to choose lighting that will not spill over into adjacent areas.

It may be determined that certain architectural or landscape elements, or certain areas be artifically lit to provide specific aesthetic effects.

It may also be necessary or desirable to illuminate certain architectural or other elements within an area in order to orient the viewer after dark.

Private as well as the public developers should make a careful study of illumination needs based on the above considerations as well as the following criteria, and take steps to provide the necessary lighting to best achieve stated objectives.

To promote a coordinated design approach to exterior lighting in Shady Grove, the following design criteria are necessary.

- Use of lighting fixtures similar if not the same in material, color, and design to those proposed for use in the county service park complex and along Shady Grove Road (see Figure 30).

- Creation of visual distinction between vehicle and pedestrian zones through use of different color lighting. Cool, color-corrected mercury vapor lighting might be used along roadways and in parking lots, while warm, incandescent lighting might be used to light pedestrian networks, building facades, entrances etc.

- Plantings should be lighted by recessed or concealed light sources. Special plant material or courtyard features should be accented, rather than generally illuminated. Lighting of buildings, except to emphasize special architectural points or entrances, is discouraged. Casting shadows from plant material onto wall surfaces or backlighting plantings adjacent to building is acceptable.

9.35 Signs and Graphics

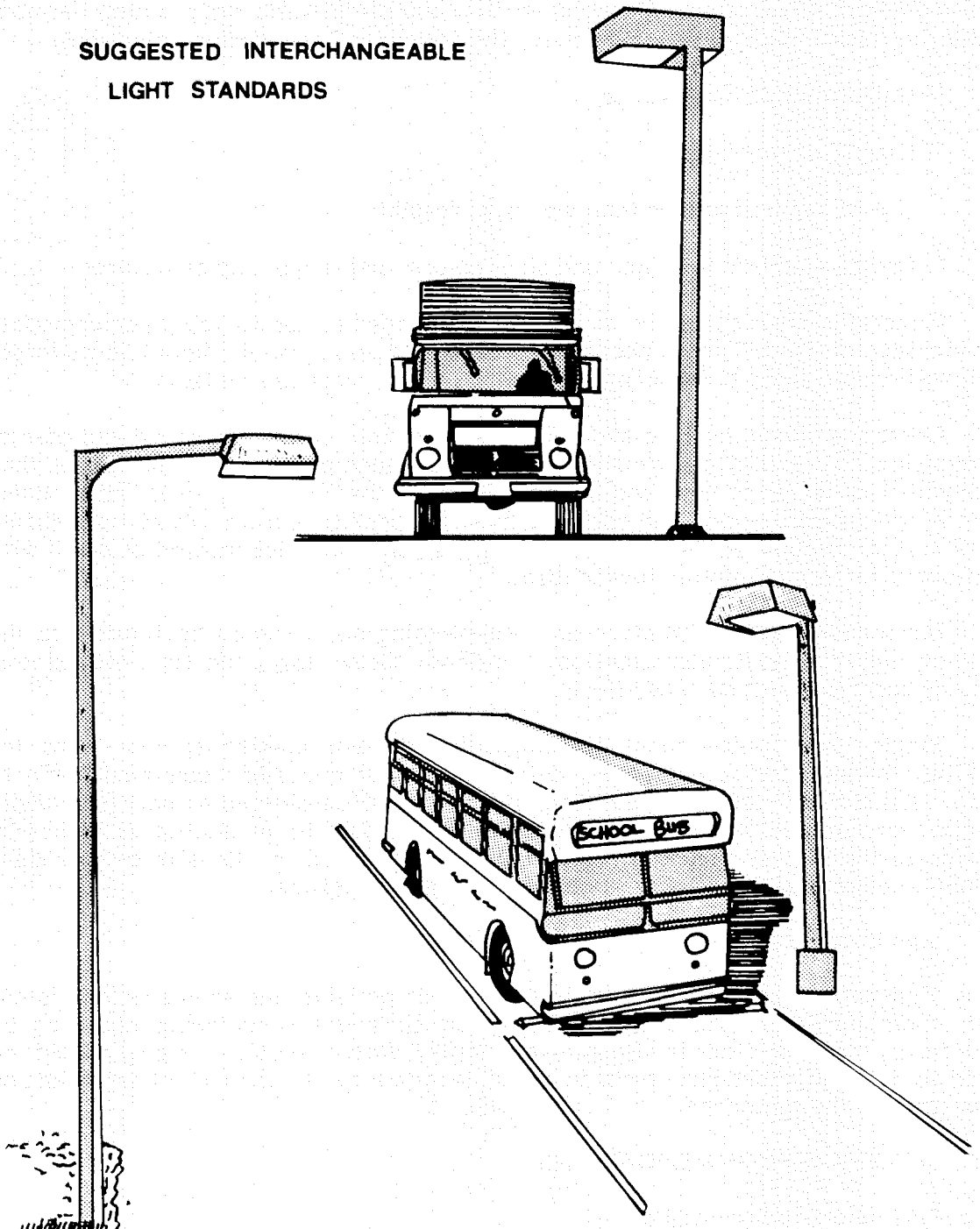
An additional means of enhancing and unifying development within Shady Grove is the use of a coordinated graphics system. Developers and architects should familiarize themselves with the provision of the Montgomery County Zoning Ordinance, Article V, "Signs and Advertising Structures," which regulates signs for all development in the county and takes precedence over the specific recommendations in this sector plan, should any conflict arise.

- The Shady Grove Logo

A graphic symbol or logo, to represent Shady Grove has been designed so that businesses and other activities can show a visual tie with the area. The Shady Grove logo and illustrative examples of its use appear in Figure 31. It is recommended that this logo be included on all new and replacement signs.

FIGURE 30

SUGGESTED INTERCHANGEABLE LIGHT STANDARDS



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Design

The function of a sign is to communicate information, and its design should ensure instant recognition. To achieve this objective while maintaining harmony with other elements, signs should satisfy the following basic design objectives:

- Uniformity of appearance
- Clarity of message
- Use of symbols rather than words, if feasible
- Use of standard typeface and size; colors; and supporting structures

Generally, signs should be no larger than needed to comfortably accommodate the message or symbol to be portrayed. Lettering and symbols should be no larger than will enable them to be seen clearly from the appropriate distance.

Lettering should be bold and generally of simple design for speed and ease of recognition. To effect design uniformity, background colors should be darker than the symbol or lettering used and lighting, if other than internal, should be provided from a concealed source. The edges, back and supporting structures of signs should be of the same color as the background. Signs should be constructed of wood with routed out letters to minimize vandalism.

Messages or printed matter on free-standing signs should be limited to the building and/or tenant identification, the Shady Grove logo, the type of business, and any special event, such as sales.

Single- and multi-tenant buildings should have on-site service signs for parking, loading docks, entrances, exits, and other necessary communication to users. All service signs on a building site should be considered as part of a whole system, common to the building; and each sign should be evaluated as to how it relates to the sign system in use in the rest of the building. On-site service signs should be alike in size, materials, color, finish, and typeface.

Sign Location

Signs should be grouped together whenever possible and whenever consistent with their purpose. Care should be taken to avoid signs being obscured by structures, trees, or other landscaping elements. Where possible signs should be fixed to walls or other structures in order to minimize the number of freestanding structures in the landscape.

9.4 SPECIFIC RECOMMENDATIONS

9.41 County Service Park

The county service park is a primary focal point in Shady Grove. It is most important, therefore, that it be attractively landscaped with appropriate signs and

lighting, and a coordinated maintenance program. The following recommendations will help create a high standard of design for area.

Berms

"Berming" should be used where specifically recommended in the Landscape Plan. (A berm is a mound of earth that screens or buffers one area from another; berming is shown on the reverse side of the Illustrative Landscape Plan.) The berm should be varied in shape to create an undulating and natural appearance, and should not be located flat against the roadway. Evergreens, such as Canadian hemlock, should predominate as screening material on the berms and wherever else tree screening is needed. Evergreen trees should be interspered with flowering and other deciduous trees to create a varied landscape.

Trees and Vegetation

Vegetative material in the county service park should be predominantly evergreen. Unlike deciduous plant materials, evergreens will provide year-round screening and will retain their lush foilage. Evergreens should be interspersed with deciduous and flowering trees; and, at points where vegetative material leaves a bare open space, with rocks, grass, low-lying plants, and ground cover. Size of plant material is specified on reverse side of Illustrative Landscape Plan.

Fencing

Fencing also should be used for screening unsightly activities. Fences should be constructed of attractive wood or other natural-looking material or an extension of the building wall for screening purposes. When chainlink fencing is required for security, it should be painted with black rust-proof paint or covered with black vinyl to make it less noticeable.

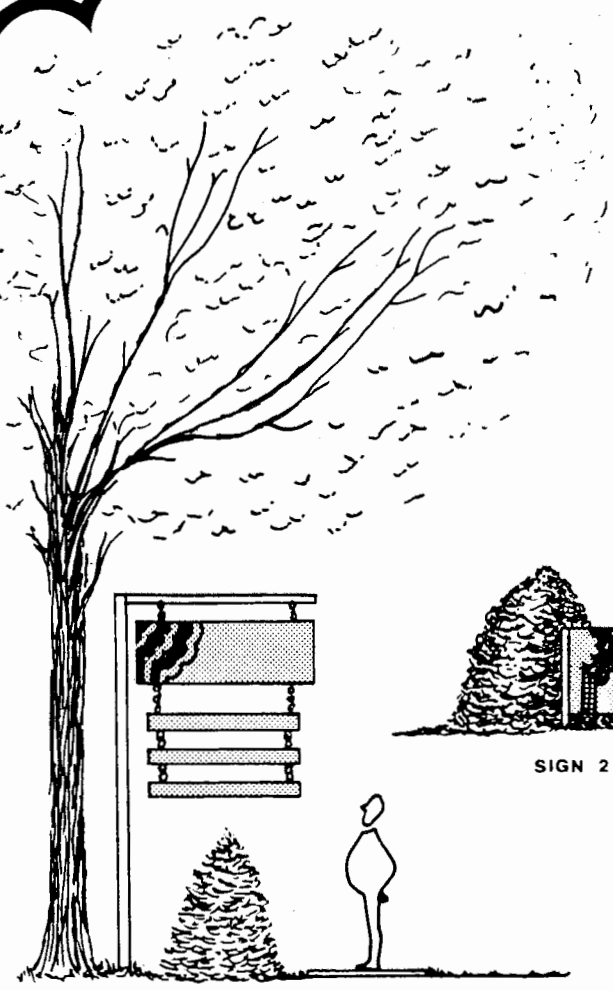
Lighting

Lighting fixtures should be similar to the illustrations in Figure 30. These are similar to the types used at the County Service Park. Similar fixtures should also be used on Crabb's Branch way in the County Service Park area.

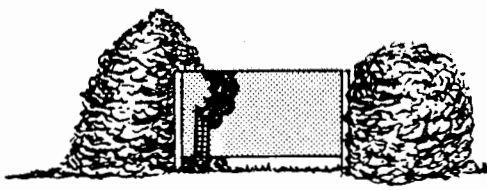
Maintenance

The county service park, as well as the central processing facility and Metro transit station and related facilities, will be the predominant development in Shady Grove. It is, therefore, extremely important that these facilities--the structures, landscaping, and accessory features--be attractively designed. The maintenance of these facilities, also, will determine the ability of Shady Grove to remain economically viable and aesthetically attractive. The Maryland-National Capital Park and Planning Commission will be a tenant in the county service park, with its central park maintenance facility located there. The plan recommends that the M-NCPPC undertake the responsibility for landscape maintenance in the county service park, with the cost of maintenance to be shared by each tenant in a manner to be agreed to either in the terms of a lease or by covenant arrangements.

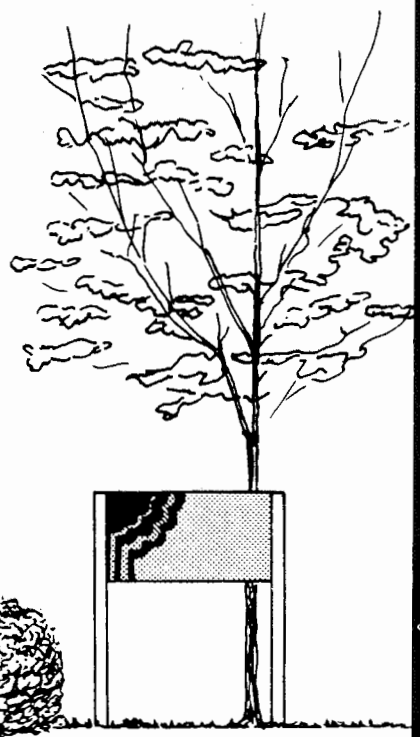
FIGURE 31



SIGN 1 - Multiple listing.

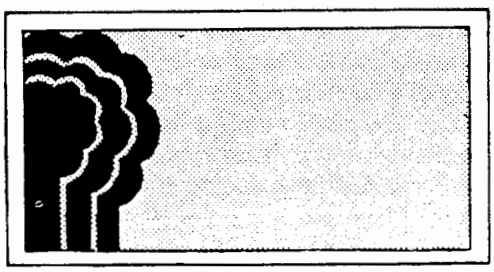


SIGN 2 - Low profile.



SIGN 3 - U-Frame.

The above illustrates different ways signs for Shady Grove may be used. Sign 1 can be built so that the individual tenant placques are interchangeable. Sign 2 shows landscape treatment around a low-lying sign such as an entrance accent. Sign 3 is an example of a taller sign accented with a tree. Sign 4 illustrates the inclusion of the Shady Grove Logo, which is a stylized Oak tree.



SIGN 4 - SHADY GROVE logo.

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Signs

Examples of the sign system recommended appear in Figure 31. Signs should reflect the logo and be designed and constructed to minimize vandalism. The main sign identifying the CSP at the entrance to Crabb's Branch way should be large enough to be clearly visible from the roadway and designed in a coordinated manner to include the Shady Grove Logo. The CSP tenant identification signs should be of the same material, color, and shape as the main sign.

9.42 Central Processing Facility

Of all the activities in Shady Grove, the central processing facility creates the greatest concern among residents and business interests in the area. The sector plan strongly recommends that the facility be designed with the greatest of care.

Landscaping

Berming and extensive landscaping along Md. 355 are necessary to reduce noise and visual pollution. The berm should run north and south along the property lines on Md. 355. Berms should have a dense planting of evergreens interspersed with deciduous shade trees, flowering trees, rocks, andora junipers, low-lying plants, and other ground cover. The berm should not be straight and flat along the roadway but should be undulating, in order to create a dense natural appearance with interesting landscape areas. Evergreens interspersed with deciduous trees should line the driveway entrance. The depth of the berm on Md. 355 should be between 40 and 80 feet, at a height of about 15 to 20 feet. The depth of trees along the driveways should be 20 feet. The trees should be mature enough when planted to withstand the impact of the trucks and to create an "instant" buffer.

Design

The architectural design of the central processing facility building should be innovative and attractive. Although extensive berming and screening are recommended, this does not preclude the need for quality architecture. The building should incoporate as much of the activities as possible using best screening methods possible to shield the trucks queuing up for dumping, screen any outdoor equipment needed to run the plant, outdoor storage and trash areas.

Lighting

Lighting should be appropriate to the particular building design and consistent with the recommendations of Section 9.35. The type of light fixtures should be similar to those in figure 30 due to the CPF's close proximity to the County Service Park.

Signs

Signs should be in conformance with the recommendations of Section 9.36.

Maintenance

Maintenance should be a continuous operation and should consist of careful landscaping, structure and sidewalk, and litter control.

9.43 Metro Transit Facilities

The Metro station and storage and inspection yards should conform to the Shady Grove urban design guidelines:

The Metro station should be extensively landscaped using the plant materials listed on the reverse of the Illustrative Landscape Plan. The trees should be of a size that give the appearance of a mature landscape. The entire parking lot, as well as the entrance to the station, should be landscaped.

The S & I Yards should be "bermed" and landscaped. The Illustrative Landscape Plan indicates areas recommended for berms. These berms should be at least 15 feet high and heavily planted with 12-foot high evergreens interspersed with deciduous shade and flowering trees. The S & I Yards should be heavily hydraseeded with evergreens to soften the view of the yards from the Metro station platform, the CPF and CSP. All of this landscaping should not preclude good architectural design of whatever buildings are needed in the yards as well as lighting and signing. Trash and wash areas should be so placed as to be least obtrusive, considering the nature of the operation. Any entrances or driveways to the yard should receive the same careful landscape treatment as a public-use driveway.

9.44 General Roadways

Rarely is visual design given much thought, in the widening of an existing stop-and-go commercial strip or in the building of an industrial road. There are alternative possibilities to the sometime chaotic, and potentially "junky," roadways, which are all too numerous.

The economic viability of any area depends on the ability of its businesses to attract potential customers from among the motoring public. Motorists must be able to see a business and the sign and entryway soon enough to make an intelligent decision to change lanes, signal, and turn in. When the roadway is cluttered with utility poles, wires, and too many signs, motorists can become confused--either causing a hazardous situation by making abrupt lane changes, stops, or dangerous turns or they may not bother to stop at all, but go on until a more convenient place is found.

Motorists, as potential consumers for businesses located along a roadway, have a right to expect safety, convenience, and aesthetics when looking for a carpet shop, an ice cream store, or an automobile dealership. It is to these ends that proposals are made for specific improvements to roadways in Shady Grove.

The location of entry and exit points should be chosen carefully to provide proper access to businesses and other properties along the highways, and a safe,

easy flow of traffic on the highways. Adequate landscaping should be provided to protect the aesthetic quality of the roadways and adjacent lands.

Where lighting fixtures are to be used, the light fixture illustrated in Figure 30A is recommended. All telephone and utility lines should be placed underground on all future roads and road improvements.

Maryland 355

Md. 355 is the principal road in Shady Grove, with the majority of motorists traveling through the area using this route. There are approximately 40 commercial businesses located along Md. 355, between Gude Drive in Rockville and Shady Grove Road. There will also be considerable industrial development built on Md. 355 in the next 10 years. Businesses, trying to capture motorists' attention, tend to add more and bigger advertising signs, which creates visual chaos and unsafe conditions.

The following recommendations are made to overcome the visual, safety, and potentially poor economic situations along Md. 355:

Two to three inch caliper red oak or willow oak trees should be planted along both sides of Md. Rte. 355 every 40 feet on center. These oaks are recommended because their root and branch structure are compatible with sidewalk uses. The more mature the tree planted, the better chance it has to withstand weather extremes, pollution, and physical abuse. The trees should be planted in 4 feet x 5 feet at-grade planters covered by brick set in sand so air and water can penetrate. Low-lying shrubs should be planted in the median strip. The two bicycle paths on either side of the highway are nine feet wide; the trees would narrow the path to five feet every 40 feet. Bicyclists would have no trouble seeing pedestrians, as the trees would be far enough apart to allow good, safe vision.

Industrial development along Md. 355 should be heavily screened and densely landscaped. This would add immeasurably to the "parkway" appearance.

- Mast arms, instead of wires, should be used to hold traffic signals.

- If light fixtures are used, they should be similar to those on Shady Grove Road or in Figure 30.

Oakmont Avenue

A chaotic situation similar to that along Md. 355 exists along Oakmont Avenue. The following recommendations are made to alleviate the problems:

- Oakmont Avenue should be repaved as soon as possible.

- Some existing oak trees along Oakmont Avenue will probably have to be removed when the road is improved. A comprehensive relandscaping operation, using the same type of vegetation that now exists, should take place along the roadway immediately after the widening.

Shady Grove Road

Shady Grove Road is to be a new roadway extending from Md. 355 to Muncaster Mill Road. As the first road to be built under the recommendations of the sector plan, Shady Grove Road will set the tone and character for future roads. The following recommendations, therefore, are especially important:

• Landscaping should be extensive, with plant materials varied and plentiful, along the entire length of the road. Extensive use should be made of deciduous shade and flowering trees; low-lying shrubs, such as juniper and similar types; rocks; and grass in the median strip.

• At median breaks, a juniper and attractive rock formation should be used where appropriate and possible.

Redland/Fields Road and Needwood Road

The recommended relocation and improvements of these roads should follow the same principles as those cited for Shady Grove Road (see Illustrative Landscape Plan).

Metro Access Road and Interchanges

The Metro access road and its interchanges must be extensively and densely landscaped.

- The Metro access road should be "bermed" and landscaped as shown on the Illustrative Landscape Plan. The road as planned will cut through existing tree stands. A portion of these existing trees have been cut down. Any mature trees which have been cut should be replaced with like species of trees. This is especially important around existing subdivisions and on the outskirts of the County Service Park.

- The interchanges associated with the access road need special design attention. As shown on the Illustrative Landscape Plan extensive berms have been recommended. These berms should be approximately 15 to 20 feet high and heavily planted with evergreens interspersed with deciduous flowering trees. The inside of the interchange loops should be landscaped with evergreen and flowering trees.

- The access road at its ingress to the Metro station needs special landscape treatment. Trees should not be lined up straight in a row hugging the road. Trees should vary in distance from the edge of the roadway so that the motorist sees an open roadway, then a road closer about him, than an open roadway again. Rocks, flowering trees and ground cover should be interspersed with evergreen screening. Monotomy of landscape can be just as devastating as no landscape.

Since limited natural landscape features exist in the area of the access road interchanges, a natural-looking, man-made landscape must be created. These roads and interchanges must be considered from the viewpoints of both internal and external harmony. What mature trees do exist should be retained. The use of

buffers, berms, screening, and accent planting, is strongly recommended. The motorist should have a pleasant, safe driving experience without intruding on the well-being and aesthetic considerations of the residents and business interests in the area.

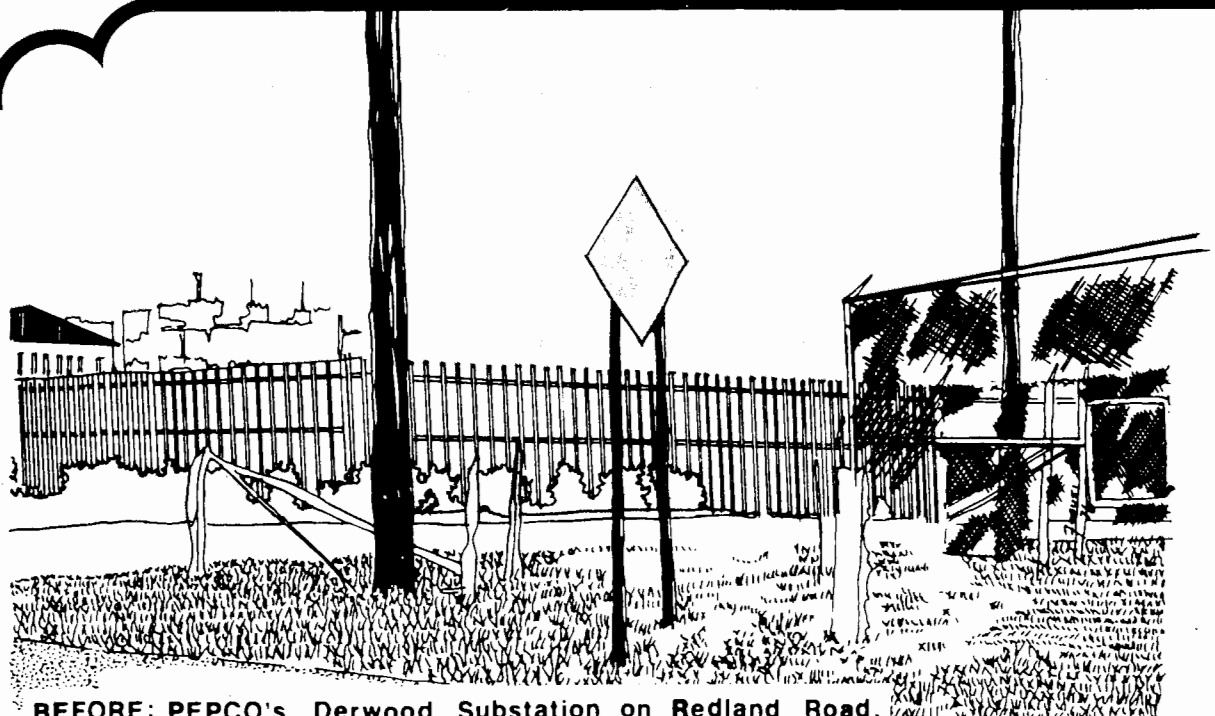
9.45 Existing Commercial Development

Owners of commercial developments should attempt, through the careful design and landscaping of their facilities, to relate them harmoniously with neighboring developments and with the surrounding natural landscape without compromising their visibility and identity.

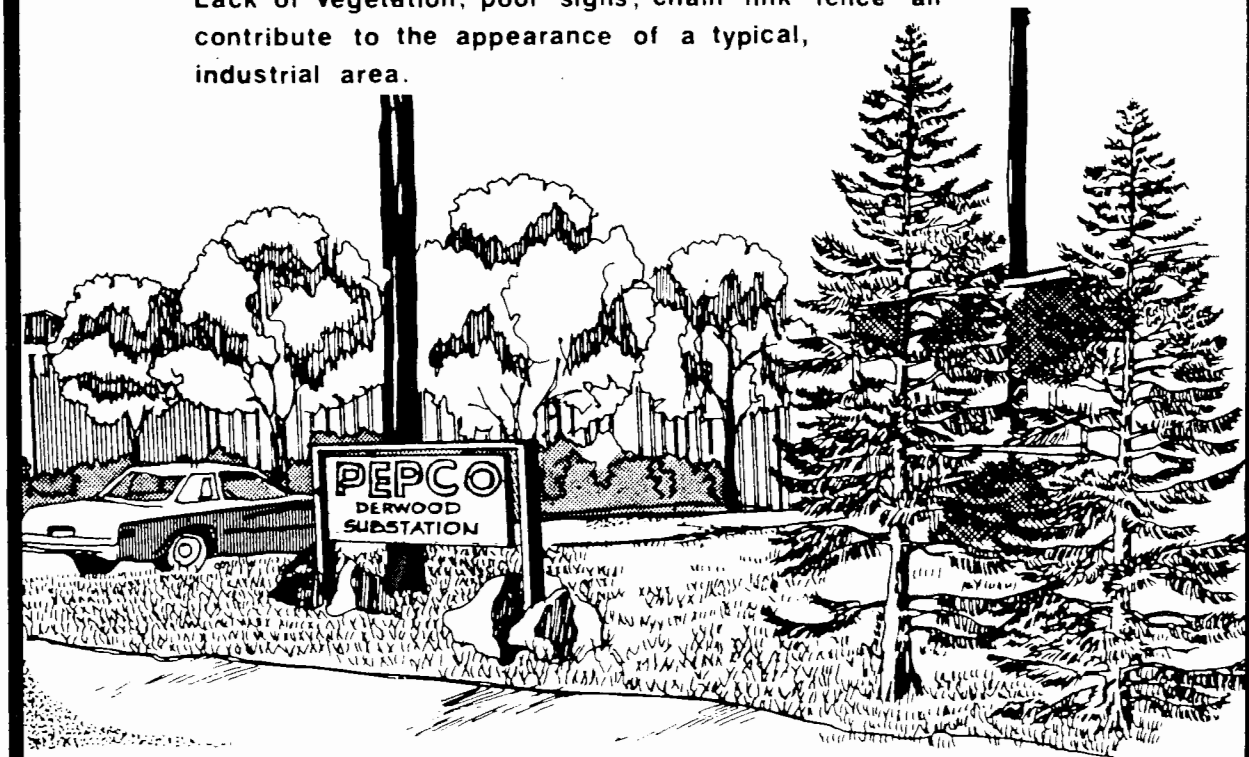
Businesses should be mindful of the recommendations dealing with signs and graphics in Section 9.36. All sign plans should be reviewed with the Licensing and Inspection Division of the Montgomery County Department of Environmental Protection (DEP) prior to installation. Businesses should also adhere to the general suggestions on lighting and illumination in Section 9.35.

The staff of the Montgomery County Planning Board of the M-NCPPC will be available to make suggestions and recommendations to businesses in the area in connection with specific design and landscaping issues.

FIGURE 32



BEFORE: PEPCO's Derwood Substation on Redland Road. Lack of vegetation, poor signs, chain-link fence all contribute to the appearance of a typical, industrial area.



AFTER: Evergreen and deciduous trees, and new signs give the substation a nonindustrial look that fits in well with the Derwood neighborhood.

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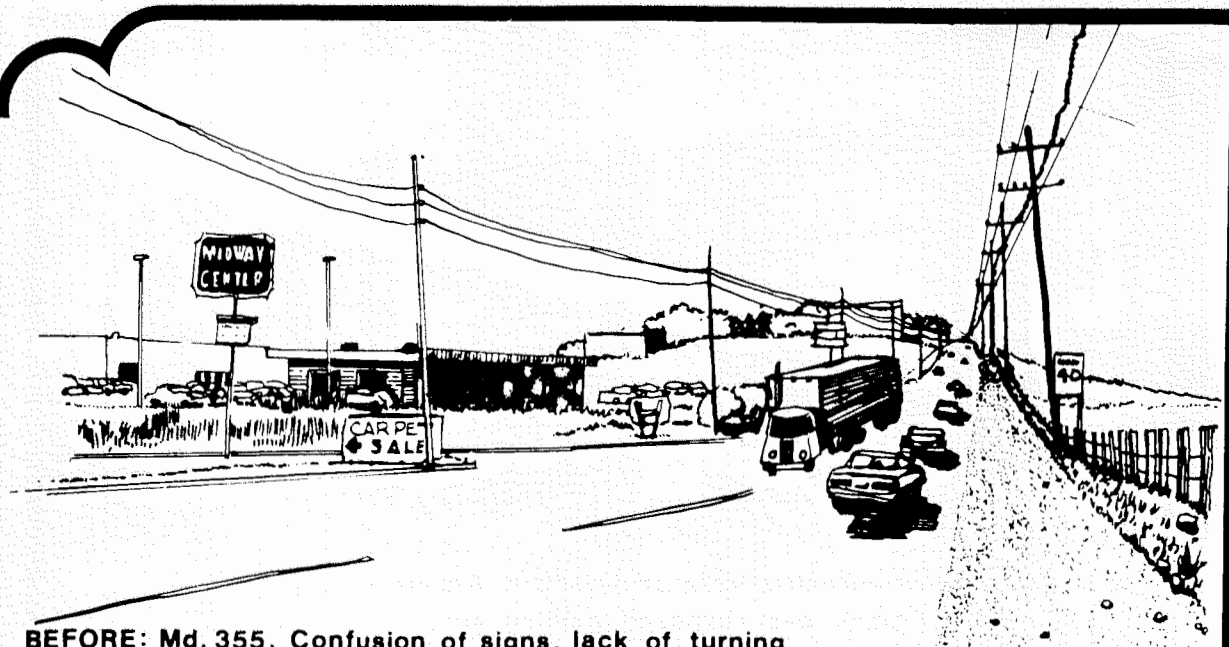
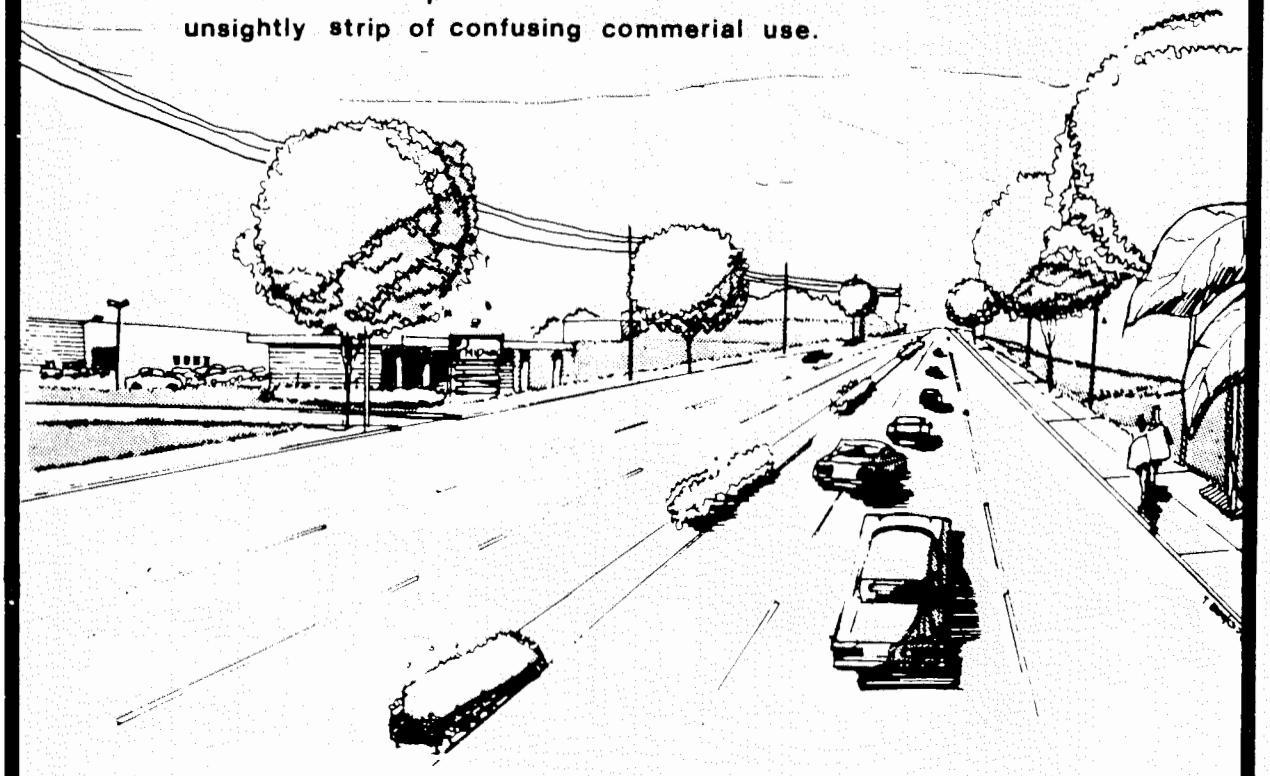
FIGURE 33



BEFORE: Md. 355. Confusion of signs, lack of turning lanes, wires and poles make Md. 355 an unsightly strip of confusing commerial use.



AFTER: A new roadway with median strip, sidewalks, and trees plus the addition of new signs for commercial enterprises will make it easies for the potential customer to identify a business and turn into it, thus making motoring a more pleasant experience.

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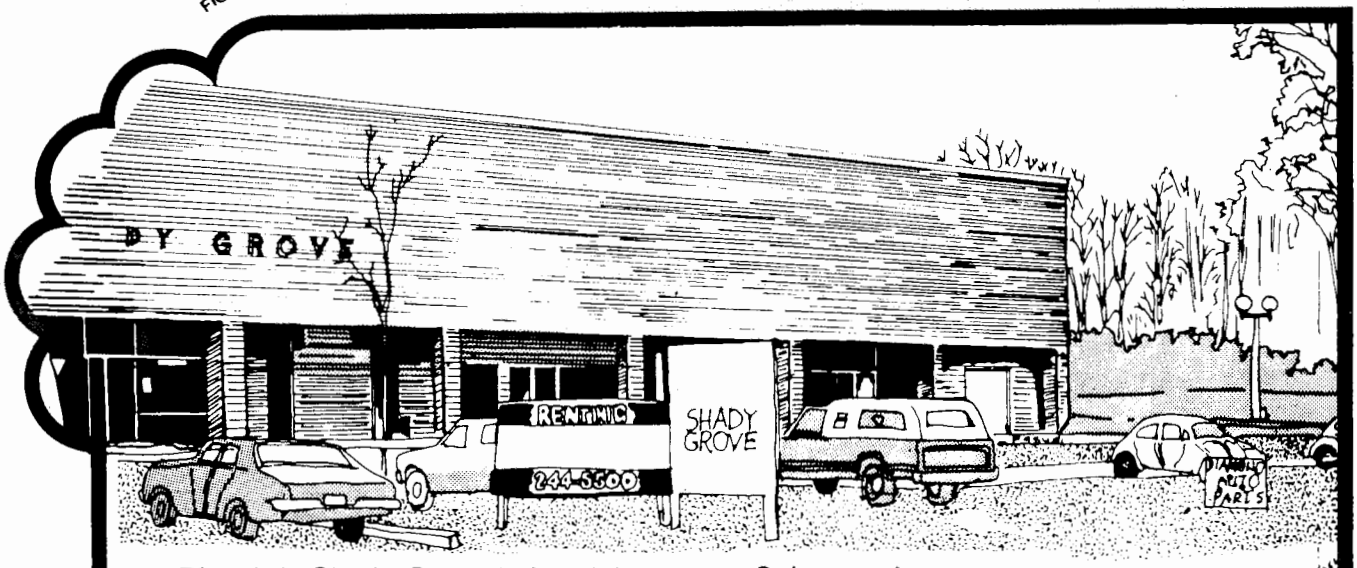
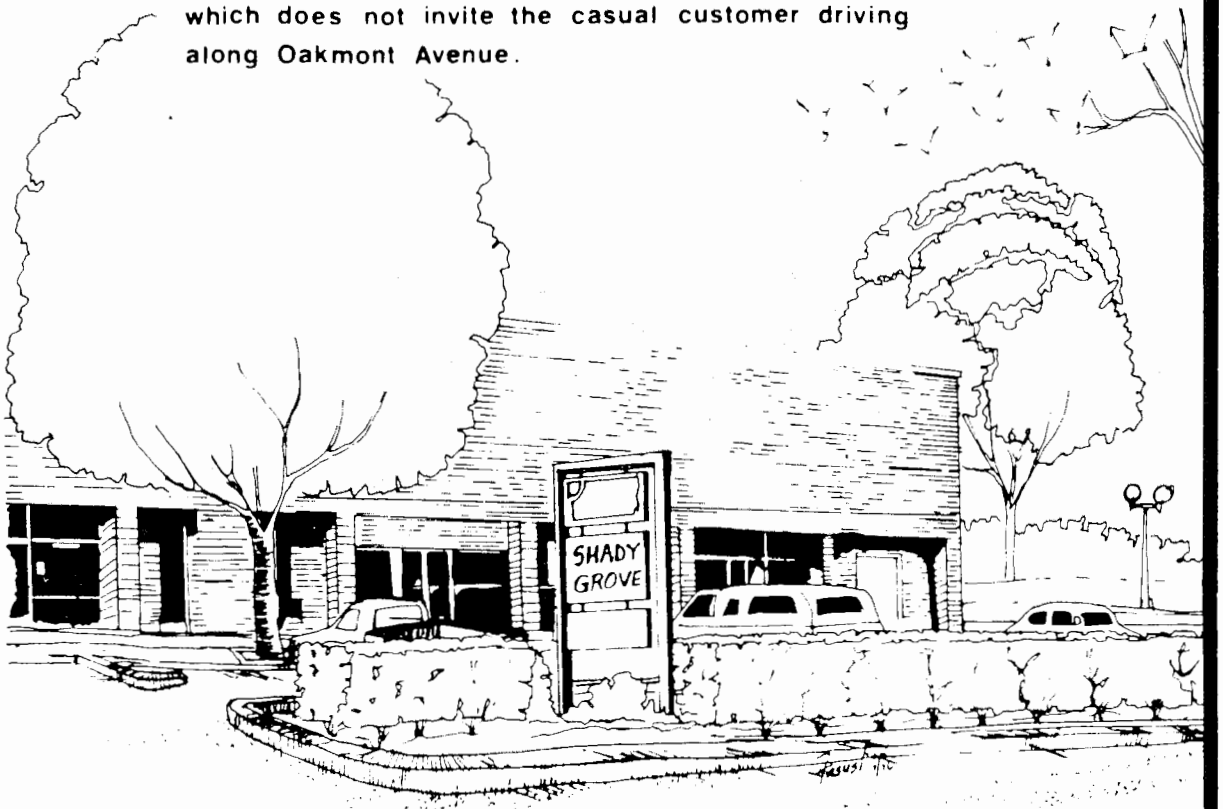
FIGURE 34



BEFORE: Shady Grove industrial area on Oakmont Avenue. Jumble of signs, over-exposed parking area, and lack of vegetation creates a look of confusion, which does not invite the casual customer driving along Oakmont Avenue.



AFTER: Screening of parking lot, added vegetation, and new signing gives the area a more defined and orderly appearance.

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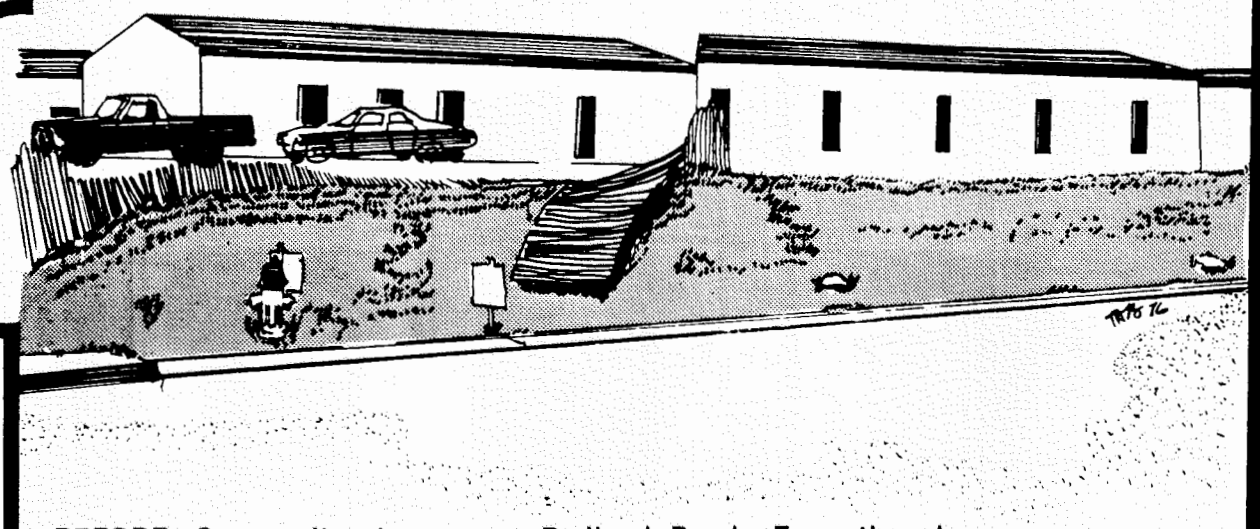
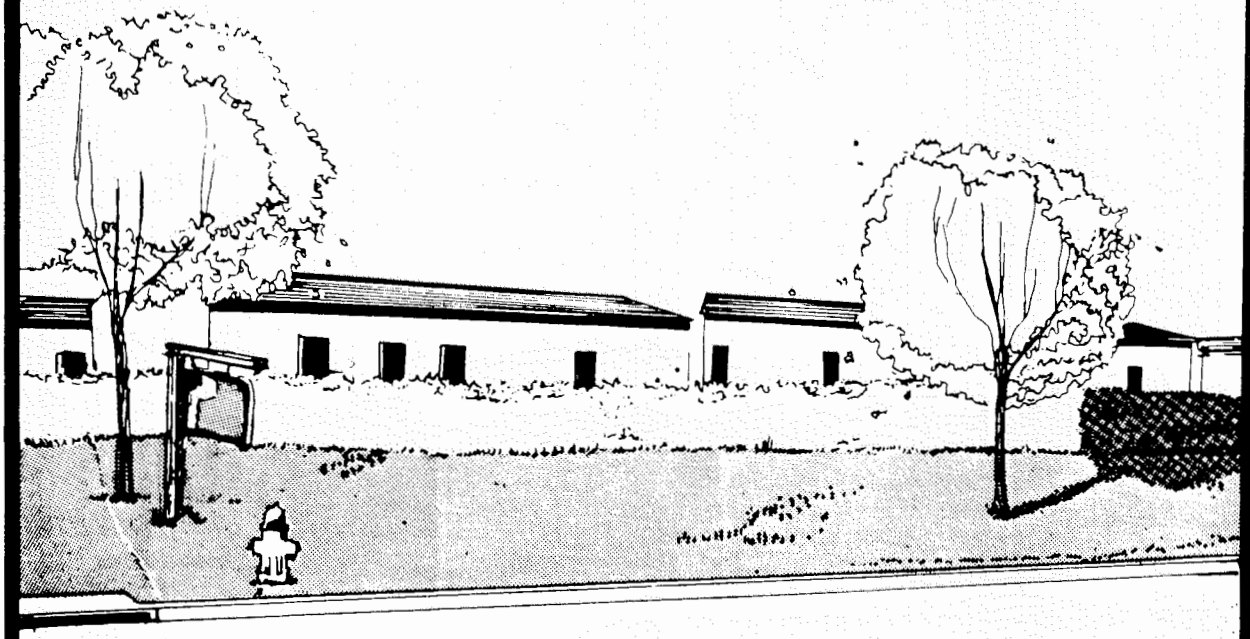
FIGURE 35



BEFORE: Community storage on Redland Road. Even though the business is new it looks old and run-down. No vegetation, broken fences, and an undefined parking area make this establisment aesthetically uninviting.



AFTER: New signs, screened parking, and new hedge and trees improve the appearance of this business and make it a welcome addition to the Shady Grove industrial area.

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FIGURE 36

BEFORE: The existing commercial development presents no significant landscaping or coordinated sign system. This situation presents a bland shopping area with visually confusing advertising.

AFTER: The presence of mature trees and landscaping establishes a soft and complementary accent. To the existing building and the establishment of a coordinated system of signs allows the viewing public to concentrate on one focal point for advertising.

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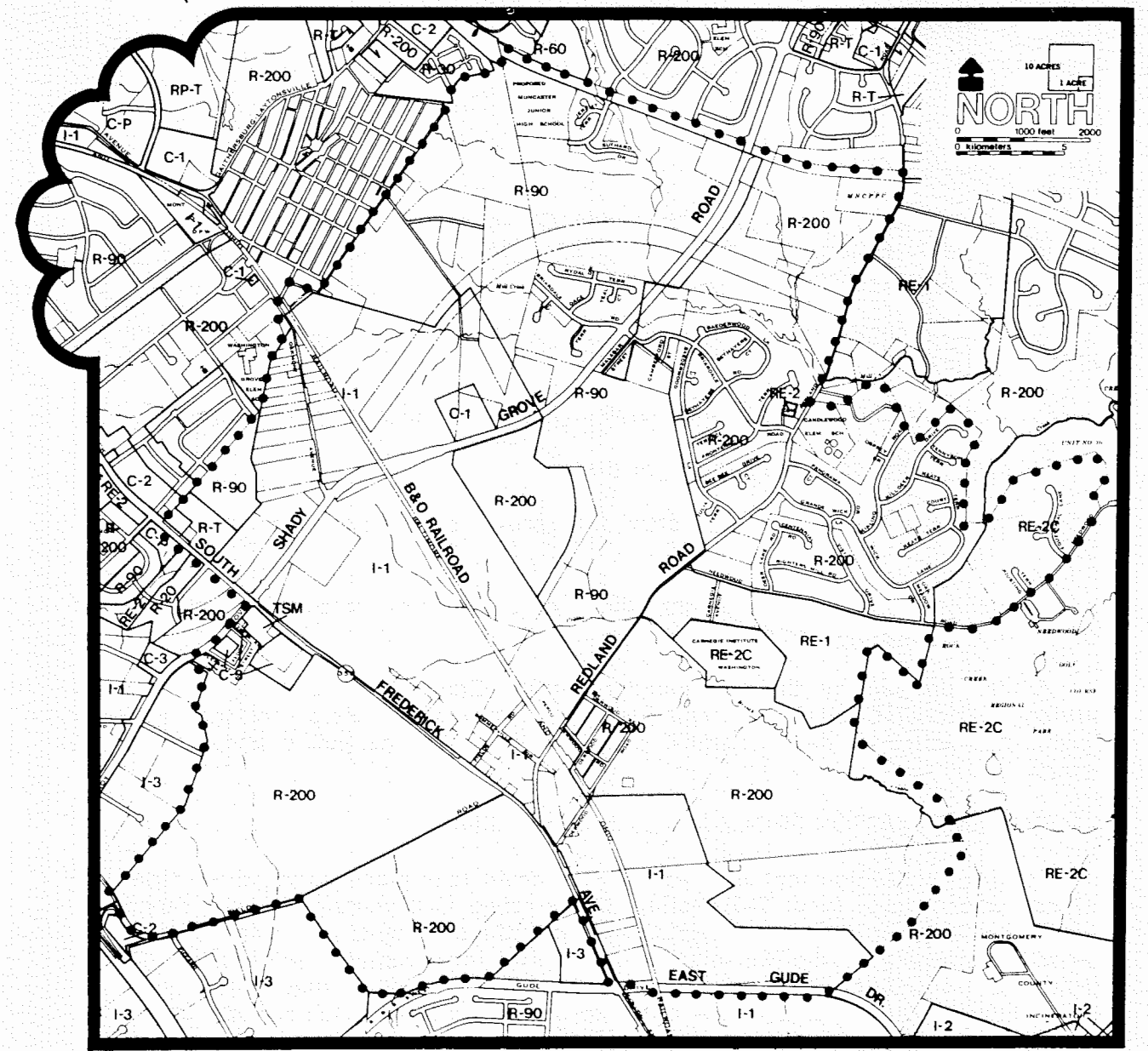
IMPLEMENTATION

10

FIGURE 37



Single Family	Commercial
RE-2	C-P
RE-2C	C-1
RE-1	C-2
R-200	C-3
R-90	
R-60	
Multi Family	**Industrial**
R-T	I-1
RP-T	I-2
R-30	I-3
R-20	

●●●●● Sector Plan Boundary

Proposed Sectional Map Amendment

SHADY GROVE SECTOR PLAN

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Chapter 10

IMPLEMENTATION

10.1 INTRODUCTION

The facilities proposed for the Shady Grove sector plan area will serve commuters, area employees, and the needs of local and regional populations. Implementation guidelines are designed to:

- Establish compatible relationships between the various land uses that serve these diverse populations;

- Define a positive relationship between land-uses and circulation patterns;

- Improve the visual appearance of the area;

- Develop a transportation system that provides easy access to the Metro station.

- Promote coordination among the public agencies responsible for the projects to be located in the sector plan area.

After approval by the Montgomery County Council and adoption by the Maryland-National Capital Park and Planning Commission, this sector plan will become the policy guide for future decisions made by the public and private sectors.

10.2 IMPLEMENTATION PROCEDURES AND STAGING

Staging of development in Shady Grove should take place during three time periods: short range (next 2-3 years), middle range (3-8 years), and long range (beyond 8 years). In the short range time frame the staging of public facilities is tied to the opening of the Metro station. Capital improvements are required to provide access and sewerage service to Metro. In the middle range time frame, private development is tied to the construction of Crabb's Branch sewer and the provision of sewerage for this subwatershed.

Although sewerage service will be provided during the middle range time frame the entire sector plan area should not be developed during this period. The King farm, the large expanse of property proposed for Industrial Park (I-3) zoning (planning analysis area 28, see Figure 28), should not develop until sufficient transportation facilities are in place. Thus, during the short and middle range time frames the King farm is proposed to be kept in the present R-200, residential zone. When the transportation facilities outlined below are in place, rezoning to I-3 would be appropriate if all other appropriate planning criteria are met.

The staging mechanisms available to the County, i.e., the Capital Improvement Program, sewer service categories, and sectional map amendment, should be modified to implement the staging recommendations of this Plan.

10.21 Capital Improvement Program

Transportation improvements are the most important capital improvements in the short and middle range time frame. The Metro station is scheduled to open early in the middle time range, September 1981. The successful functioning of the Shady Grove area will depend in large part on the timely construction of roads and bridges necessary to provide access to Metro and to carry traffic through the area. The list below itemizes those projects of highest priority. The list does not include projects already underway, such as the widening of Md. 355 to Shady Grove Road. A complete list of all Capital Improvement projects programmed for the Shady Grove Area is contained in Table 6, Capital Improvement Program Recommendations. The timing of these high priority projects fall into three categories:

1. Construction completion required during construction of Metro.
2. Construction completion required just prior to opening of Metro.
3. Construction completion after opening of Metro.

TABLE 6

HIGH PRIORITY CAPITAL IMPROVEMENT PROJECTS

Project	Completion Date
(Completion during Metro Construction)	
1. East Gude Drive Bridge	Jan. '79
2. Fields-Redland Road bridge and relocation	June '79
3. Derwood Road Bridge	June '80
(Completion prior to Metro opening)	
4. Eastern Arterial (Montgomery Village to Shady Grove Road	Jan. '81
5. I-370 Metro Connector	Sept. '81
6. Md. 355 - Shady Grove Road intersection improvements	Sept. '81
7. Crabb's Branch Way Extension to Fields-Redland Road	Sept. '81
8. Metro Access Road (Md. 355 to west parking lot)	Sept. '81
(Completion after Metro opening)	
9. I-270 - Shady Grove Road Interchange	June '82
10. Md. 355 (Shady Grove Road to Montgomery Village Avenue)	June ' 83

10.22 Sewer Service

Figure 38 indicates the sewer service categories in and around the Shady Grove Sector Plan area. About one-half the area has sewerage service at present. This includes the Mill Creek subwatershed and its tributaries. The Crabb's Branch subwatershed does not have sewerage, except for the county service park site. Sewer service for the county service park will be provided by a pumping station which will pump sewage into the Watts Branch sewerage system.

The Crabb's Branch trunk sewer service area was placed in the S-3 category in July 1976, indicating service within two years. The placement of this area in the S-3 category is endorsed, and, since Redland-Fields Road, the Metro station, and storm-water management plans are now being developed, adequate funds should be provided this fiscal year (FY-77) for the Washington Suburban Sanitary Commission to design the sewer in conjunction with the design of these other projects.

As soon as additional sewerage service capacity is available for the Rock Creek basin, service should be provided to the public facilities in the Crabb's Branch subwatershed. These facilities include the county service park, Metro station and storage and inspection yard, and the proposed central processing facility. As sewer service is provided via the Crabb's Branch sewer, use of the pump over in the Watts Basin should be discontinued.

Private development in the Crabb's Branch subwatershed should be provided sewer service as soon as capacity is generally available in the Rock Creek Basin. The provision of sewer service to private development in this area should be subject, however, to County policy allocating sewer service throughout the Rock Creek Basin. This should not preclude private developers' obtaining sewer service through use of a private consortium sewage plant or by any other means.

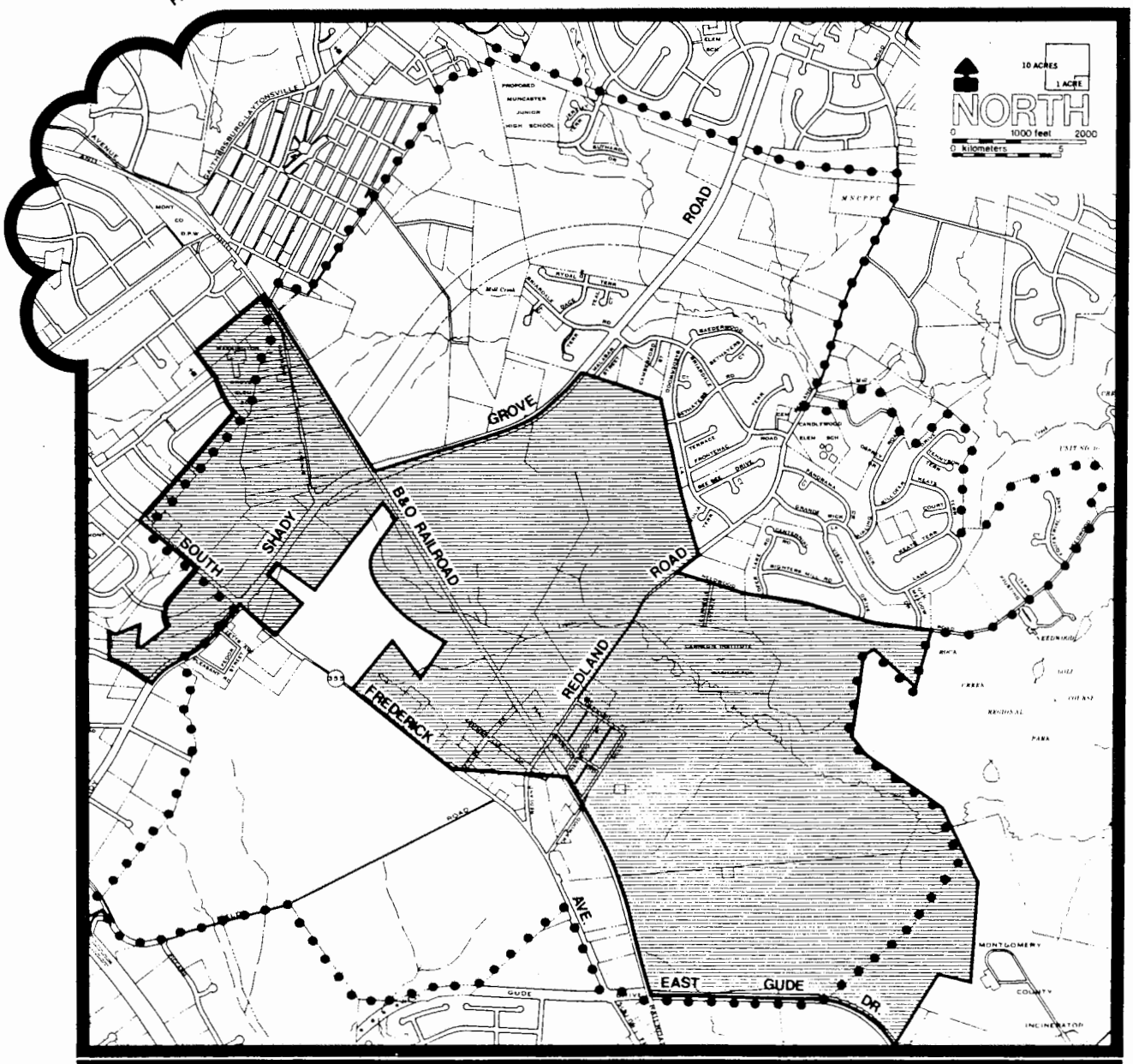
10.23 Sectional Map Amendment

The proposed Land Use Plan (inserted map) describes the recommended ultimate land use pattern. The proposed zoning and highway plan designates the recommended ultimate zoning pattern and highway plan. The zoning pattern shown in Figure 37 indicates the zoning pattern desired by 1984. After approval and adoption of the sector plan, a sectional map amendment will be prepared by the Montgomery County Planning Board of M-NCPPC, reflecting this zoning pattern and affecting the comprehensive rezoning of the area in accordance with the sector plans. As previously mentioned this comprehensive sectional map amendment includes rezoning all the sector plan area to the ultimate zoning pattern analysis area 28. This area is proposed to be maintained in its present R-200 zoning. Rezoning to I-3 on the King farm would be appropriate only after the projects listed in the "High Priority Improvements Projects" listing and the extension of West Gude Drive from Md. 355 to Research Boulevard are in place. A large amount of traffic is anticipated to be generated by I-3 development on this property, and these transportation facilities will be essential to the successful functioning of this area.

10.3 IMPLEMENTATION RECOMMENDATIONS

- Facilities located in the County Service Park should meet the urban design guidelines indicated in Chapter 9, so as to enhance and not jeopardize the existing

FIGURE 38



S-3 Sewer Service Area

S-1 Sewer Service Area

●●●●● Sector Plan Boundary

10-Year Sewer Service Area

SHADY GROVE SECTOR PLAN

THE MONTGOMERY COUNTY PLANNING BOARD

and future image of the Shady Grove area.

• An area for day-care facilities should be provided within the County Service Park and in privately developed facilities wherever possible, to serve individuals working in this area. Coordination of this facility should occur through the Montgomery County Department of Social Services Day Care Unit. The provision of employer-sponsored day-care facilities is encouraged.

• Proposed residential development should be oriented away from the proposed outer beltway and other arterial roadways.

• Proposed residential development should be oriented toward conservation and parkland areas, where possible.

• All development, public and private, should conform to the urban design and landscaping guidelines indicated in Chapter 9.

• The development of land along Md. 355 should occur on larger parcels with uses grouped to front on access roads, thus avoiding a strip development image.

• State Highway officials are encouraged to:

- modernize and coordinate traffic signals; and

- use mast arms or other aesthetically pleasing structures, rather than suspension wires, to accommodate signal lights.

• Landscaping of the proposed Metro station access road should be so designed that major alteration will not be required when the outer beltway is constructed.

• Identification and preservation of conservation areas should be made by area developers in accordance with conservation area delineations in this sector plan.

• In the light of increased roadway construction, pedestrian crossings should receive special attention throughout the area; the pedestrian flow should not be inhibited.

• The Shady Grove Technical Coordinating Committee should continue to meet as necessary, until projects are built, to ensure continued cooperation among government agencies developing facilities in the area.

• Moderately priced dwelling units (MPDU's) will be constructed in accordance with County legislation.

• Transit easements in the Gaithersburg Vicinity Master Plan area should reflect the changes needed to implement the transportation recommendations expressed in this sector plan.

TABLE 7

CAPITAL IMPROVEMENTS PROGRAM RECOMMENDATIONS

PROJECT	CURRENT PROPOSAL	RECOMMENDATIONS
County Service Park	Under construction	No change
County Service Park Landscaping**	Unprogrammed as separate item	FY 77
Resource Recovery - Central Processing Facility	FY 79	No change
ROADS		
Shady Grove Road (MD 355/Muncaster Mill)	Under construction	No change
Crabb's Branch Way (Service Park Drive)	Under construction	No change
Service Park Drive South Extension (Service Park/Redland/Fields)	Unprogrammed	FY 81
Eastern Arterial (Montgomery Village Avenue/Shady Grove Road)	Beyond 6 years	FY 81
Redland-Fields (Needwood Road/ Fields Road)	FY 79	FY 79
Needwood Road (Park/Redland Road)	Beyond 6 years	FY 77-78
Derwood Bridge	Unprogrammed*	FY 80
West Gude Drive (MD 355/ Research Boulevard)	FY 81	No change
East Gude Drive Bridge	FY 81	FY 79
East Gude Drive (2-lane addition)	Unprogrammed	FY 80-81
PARK-SCHOOLS		
Amity Drive School (South Mill Creek Towne School)	Unprogrammed	At time of sub-division development
Amity Drive Park	Beyond 6 years	No change
Blueberry Hill School	Unprogrammed	At time of sub-division development
Blueberry Hill Park	FY 79	No change
Redland Park (Development)	FY 79	FY 77-79
Crabb's Branch Park	Beyond 6 years	No change
Mill Creek Stream Valley Park	Beyond 6 years	No change
BIKE TRAILS		
Needwood Road Bike Trail (Park-Fields/Redland)	Beyond 6 years	No change
Redland/Fields Road Bike Trail (MD 355/Needwood)	FY 79	FY 78-80
Crabb's Branch Way Bike Trail (Fields/Redland/Shady Grove through CSP)	Under construction	No change
Redland Road Bike Trail (Needwood/Relocated Muncaster Mill)	Unprogrammed	FY 80-81
Washington Grove/Service Park Drive Bike Trail (Ridge Road/ Service Park Drive)	Unprogrammed	FY 82-84
Mill Creek Bike Trail (Redland/Rock Creek Park)	Unprogrammed	No change
Kipling Road Spur (Mill Creek/Candlewood Subdivision)	Unprogrammed	No change

*Possible County Participation

**Includes berming, berm modeling, mature trees, railroad tie slope retaining walls as required for entire CSP parcel.

TABLE 7 (Cont.)

CAPITAL IMPROVEMENTS PROGRAM RECOMMENDATIONS

PROJECT	CURRENT PROPOSAL	RECOMMENDATIONS
Crabb's Branch (Fields/Rock Creek Park)	Unprogrammed	No change
Landfill Spur (Crabb's Branch/Southlawn)	Unprogrammed	No change
Muncaster Pool	FY 79	FY 79
SEWERS		
Crabb's Branch Sewer	FY 83	FY 77-82

CAPITAL IMPROVEMENTS PROGRAM RECOMMENDATIONS
NON-COUNTY

PROJECT	CURRENT PROPOSAL	AGENCY	RECOMMENDATIONS
Metro (begins operation in September '81)	Fund construction FY 78	WMATA	No change
Route 355 (Mannakee St./ Shady Grove Road)	Under construction	MD SHA	No change
Route 355 (Shady Grove Road/ Montgomery Village Avenue)	Unprogrammed	MD SHA	FY 81
I-270 Interchange (Shady Grove)	Unprogrammed	MD SHA	FY 82
Metro Access East (Metro Station to I-270)	Unprogrammed	MD SHA/WMATA	FY 81
Metro Access West (Metro Parking Lot Access)	Unprogrammed	WMATA	FY 81
Outer Beltway (East of Metro Access Road)	Unprogrammed	MD SHA	No change
Fields Road (I-8/MD 355)		Private developer	Subject to private development
Gaither Road (Fields/Shady Grove Road)		Private developer	Subject to private development
Piccard Drive (I-8) (Fields Road/ MD 355)		Private developer	Subject to private development
Amity Drive (Laytonsville Road/ County Service Park Drive Park Drive North Extension)		Private developer	Subject to private development
Service Park Drive North Extension (Vess Property/Shady Grove Rd.)		Private developer	Subject to private development
Needwood Road Extension (Blueberry Hill Park/Redland/ Fields Road)		Private developer	Subject to private development