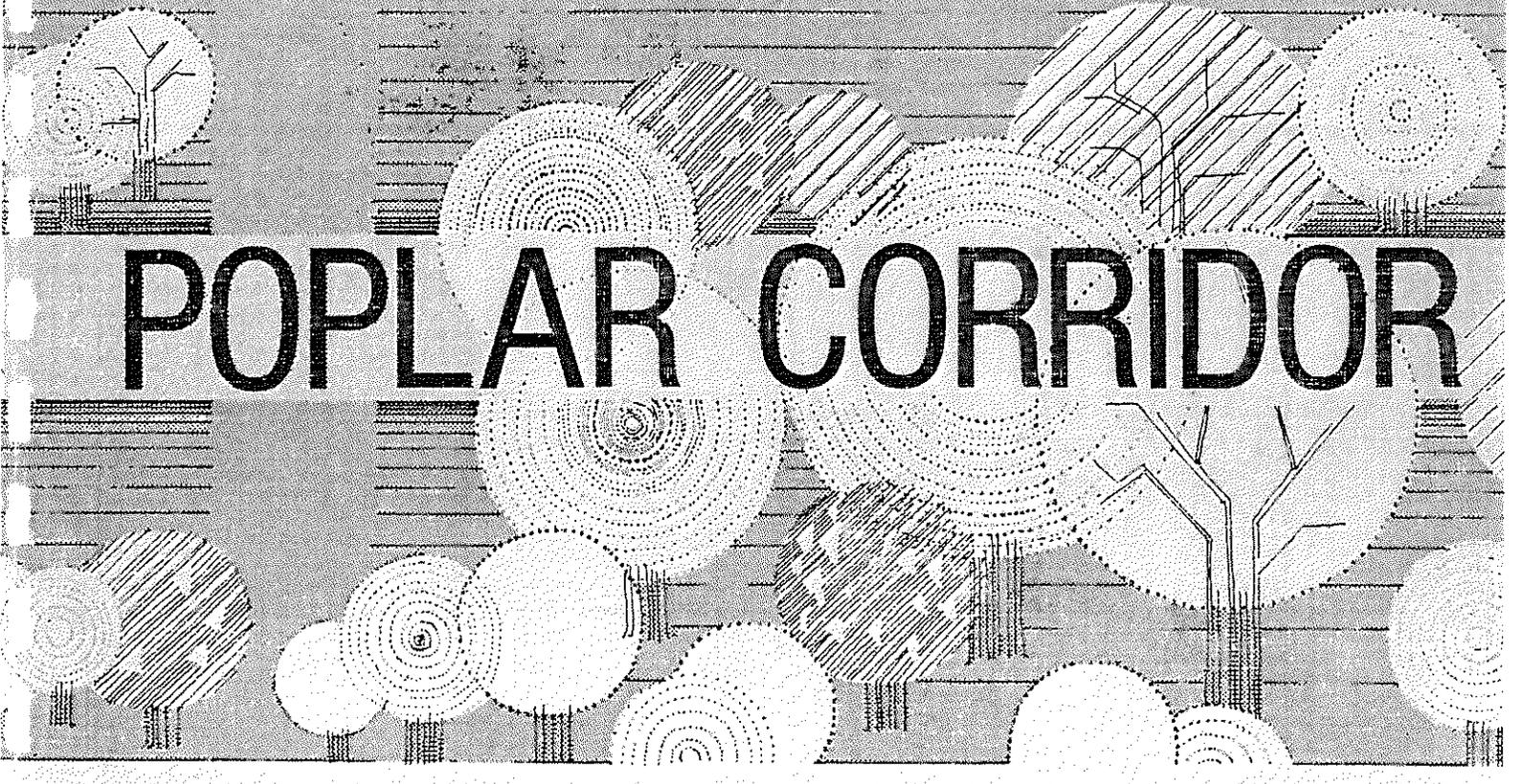
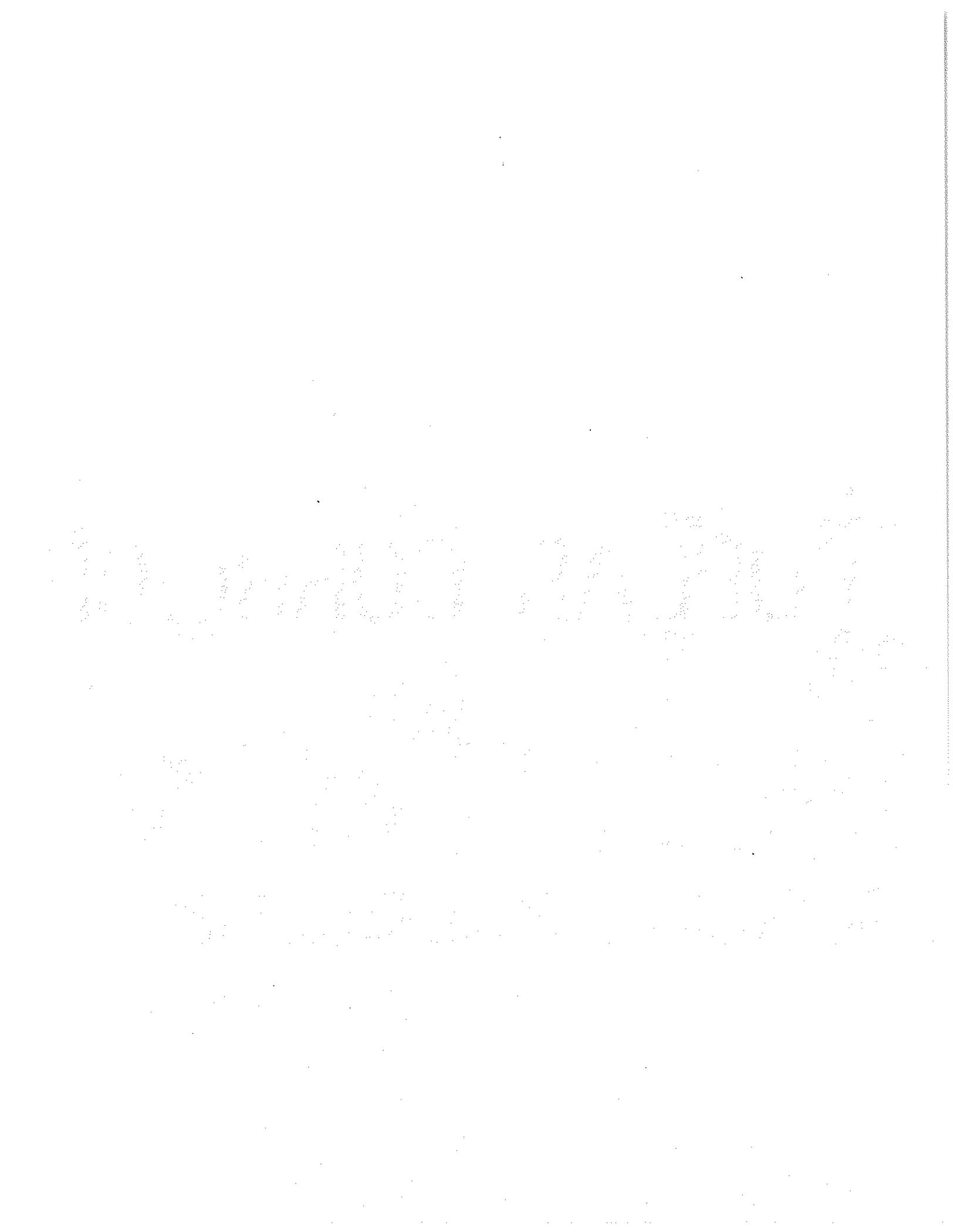


THE POPLAR CORRIDOR STUDY

The background of the central section features several stylized tree illustrations. These trees are rendered in various patterns, including solid colors, concentric circles, and diagonal hatching. They are scattered across the page, with some appearing as simple line drawings and others as more complex, textured shapes. The trees are set against a background of horizontal lines.

POPLAR CORRIDOR

1986



POPLAR CORRIDOR STUDY

Prepared by

The Memphis and Shelby County
Office of Planning and Development
and
The Memphis Department of Engineering

ADOPTED by the East Poplar Corridor Task Force
on April 17, 1986

and

RECEIVED AS THE GUIDE FOR FUTURE GROWTH IN POPLAR AREA
by the

Memphis City Council
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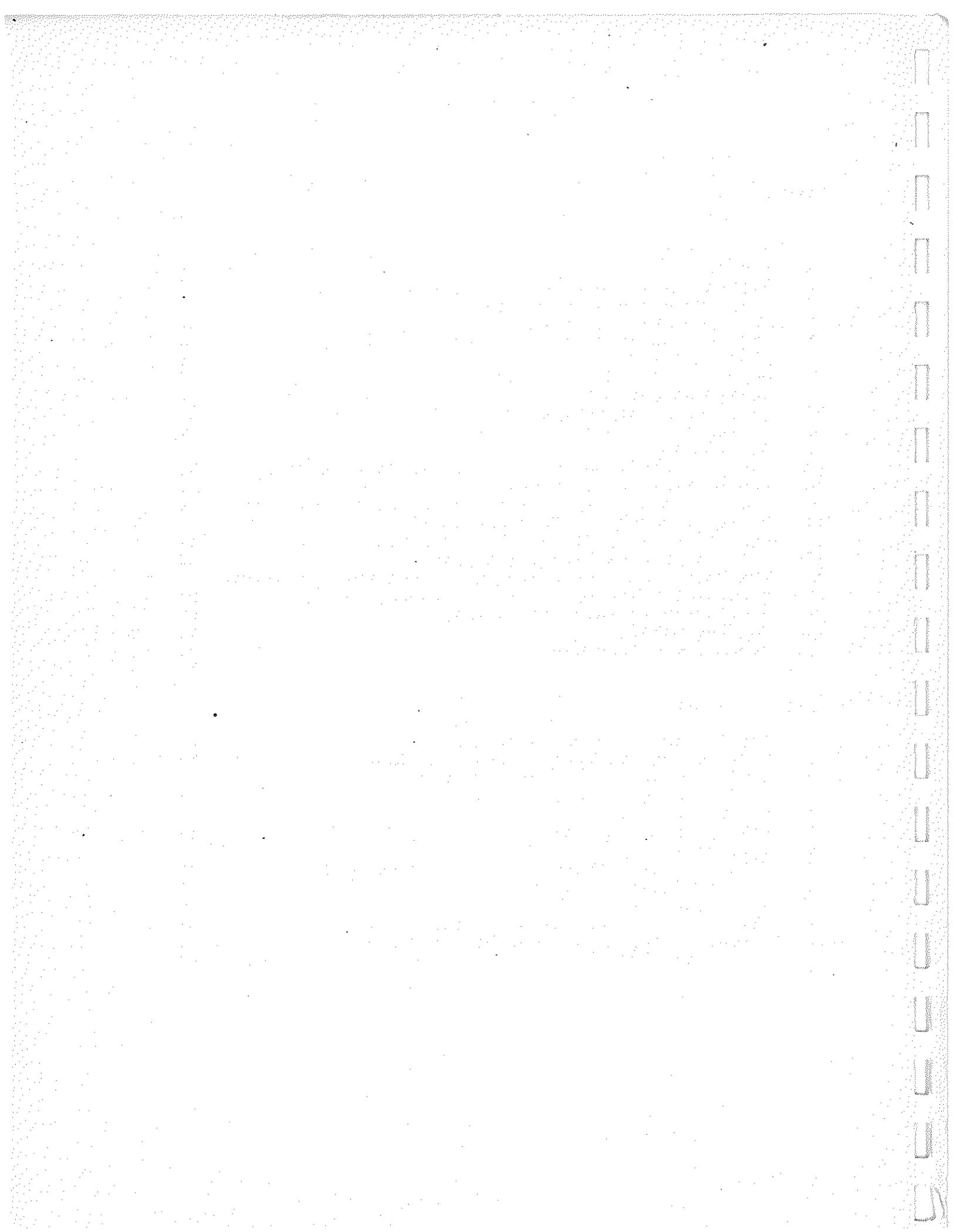
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INTRODUCTION

INTRODUCTION

In the last few years, the Poplar Corridor between I-240 and Kirby Parkway has changed from a predominantly residential area to a mixture of uses that includes major office and commercial developments. This transformation has resulted in dramatic increases in traffic, not only on major roads, but through previously isolated neighborhoods. Noise and light levels have also intensified. More importantly, the area is now much more public in character, since commercial buildings are open to the public and attract new tenants and customers. Poplar is not just an office corridor, but is now one of the three largest employment centers in Memphis.

The Poplar Corridor Study was the response to a need perceived by the residents, commuters, developers and other public and private sector groups. In April, 1985, the Poplar Avenue Task Force was created by the Memphis City Council with the explicit assignment to evaluate, plan and set policy for the growth and development of the area. A moratorium on high and medium density zoning changes and planned developments within the area was approved in May, 1985. The moratorium was adopted to give the Task Force time to adequately study conditions and develop plans and timetables for making improvements without allowing conditions to worsen. The moratorium covered 1500 feet on both sides of Poplar Avenue between Highland Street and the City of Germantown.

The primary purpose of this study is to evaluate the situation and set policies which will coordinate future land development with proposed roadway improvements. This will balance the transportation network with the needs of existing and future development. To achieve this objective, the Task Force set in motion a study to prepare a land use and transportation plan.

Land use and transportation are inextricably interrelated. Use of land requires access. The level of access needed, however, depends on the intensity of use. In preparing a plan for land use and transportation, the interrelationship is examined by testing alternative transportation and land use options, and determining which options are compatible. An evaluation of these options will indicate what is acceptable and affordable by the community.

The first step in developing this plan was to outline the goals for the study.

POPLAR CORRIDOR STUDY GOALS

1. ESTABLISH THE FUTURE FUNCTION OF THIS AREA IN THE MEMPHIS MARKET.
2. ESTABLISH THE BEST CONFIGURATION AND APPROPRIATE MIXTURE OF LAND USE TO PROVIDE FOR THE FUTURE ROLE OF THE AREA.
3. PROVIDE TRANSPORTATION SERVICE FOR THE DESIRED LAND USE WHILE MINIMIZING DISRUPTION TO THE NATURAL AND HUMAN ENVIRONMENT.

A number of public meetings were held in the Poplar Corridor area to meet with interested citizens. These meetings provided comments on specific problems experienced in the area and on the future development of the area. These meetings were productive and many of the comments have been incorporated into this study.

STUDY AREA

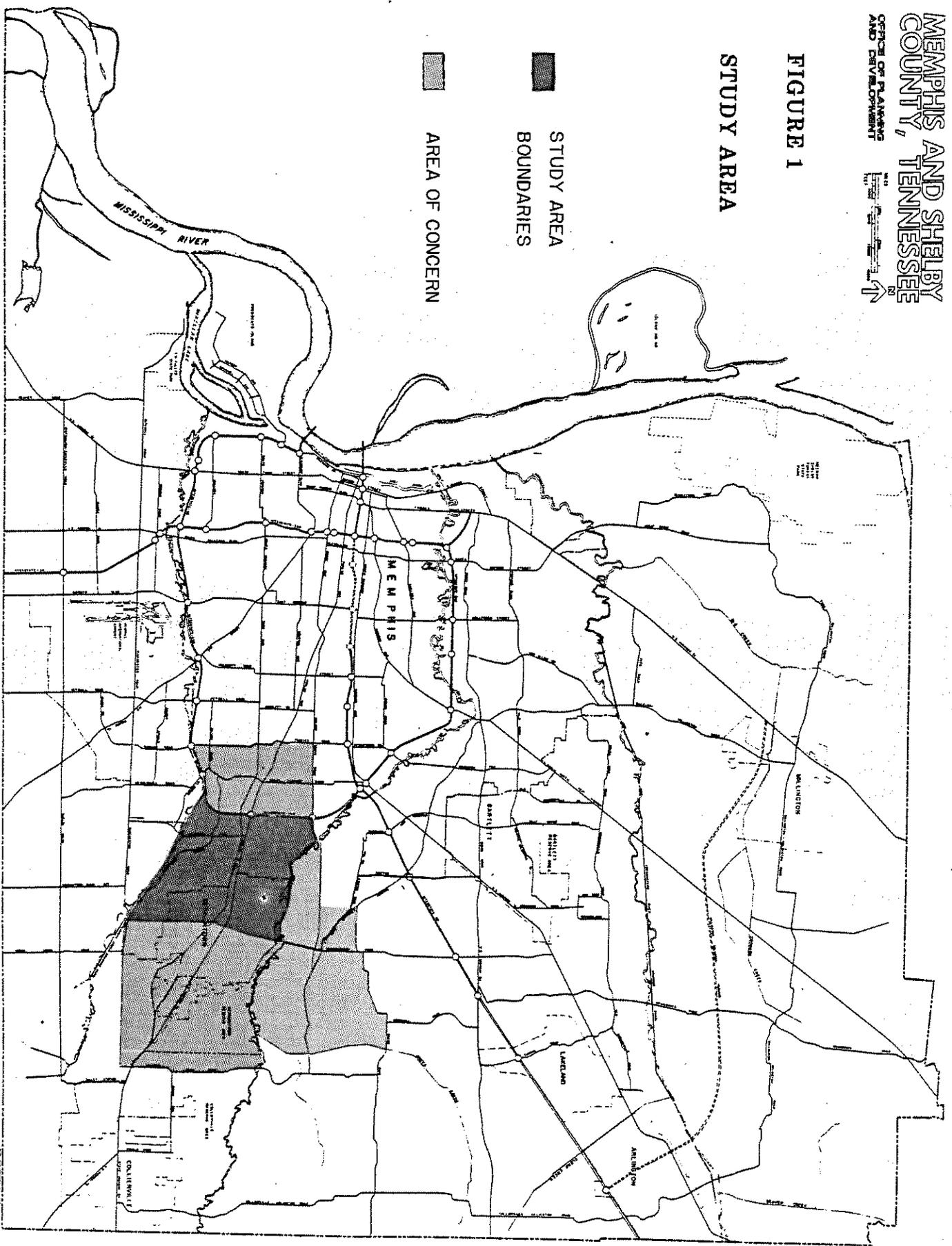
The focus of the Poplar Corridor Study is Poplar Avenue between I-240 and Kirby Parkway. This is the area which has come under such drastic changes, where traffic congestion is most acute, and where land is available for development which would aggravate existing problems. The Study Area, however, is much larger than the Poplar Corridor itself because land use patterns and transportation facilities are systems where changes in one area can cause far-reaching impacts to many areas and must be viewed from a regional perspective. Many of the solutions will come from the larger area. Figure 1 indicates the boundaries for the Poplar Corridor Study. The boundaries are I-240, the Wolf River, Germantown Road and the Nonconnah Creek. Also shown in Figure 1 is an area of concern surrounding the Study Area. This area is important in the analysis of the market and localized competition.

The Study is presented in three phases. First, in order to lend perspective to the present situation, and to identify problems and opportunities for the future, the characteristics of the area are reviewed. The history of development, existing and projected demographics, and economic conditions, as well as an evaluation of the transportation system and land use are included.

Second, the Alternative and Evaluation Section presents the approaches and assumptions used in developing the land use and transportation alternatives and a description of each. Each land use alternative is then presented with an evaluation of its costs and benefits. The last phase of the report is the Recommended Policy for land use and transportation in the Poplar Corridor.

FIGURE 1
STUDY AREA

STUDY AREA BOUNDARIES
AREA OF CONCERN



STUDY AREA CHARACTERISTICS

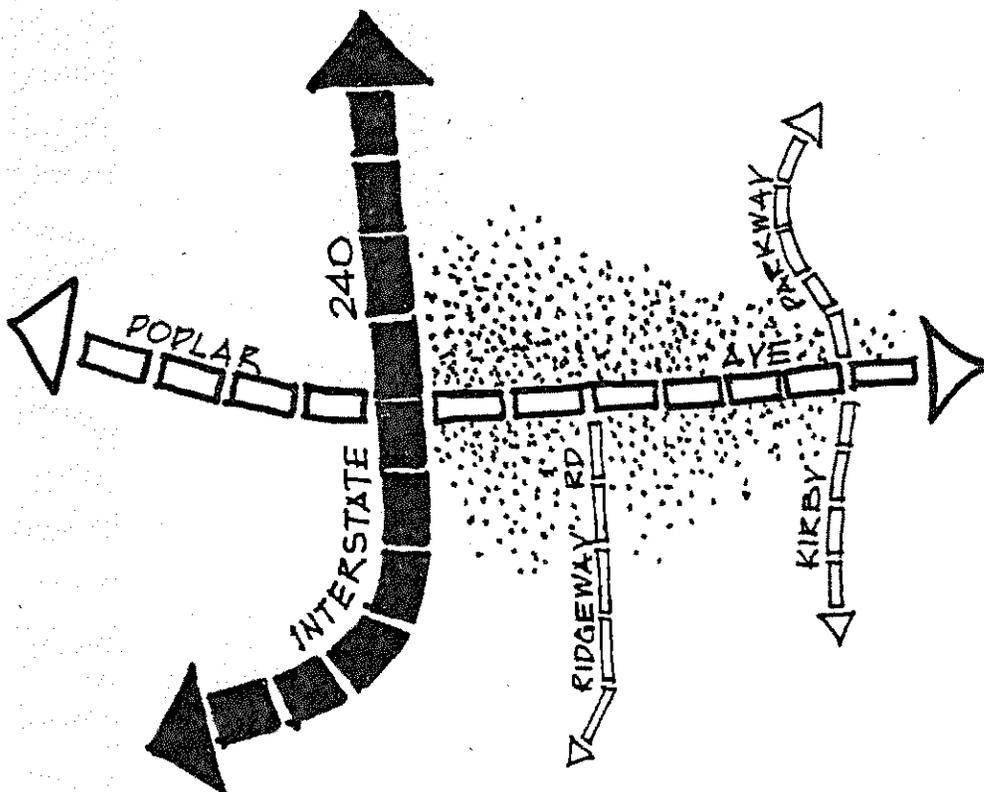
STUDY AREA CHARACTERISTICS

DEVELOPMENT HISTORY

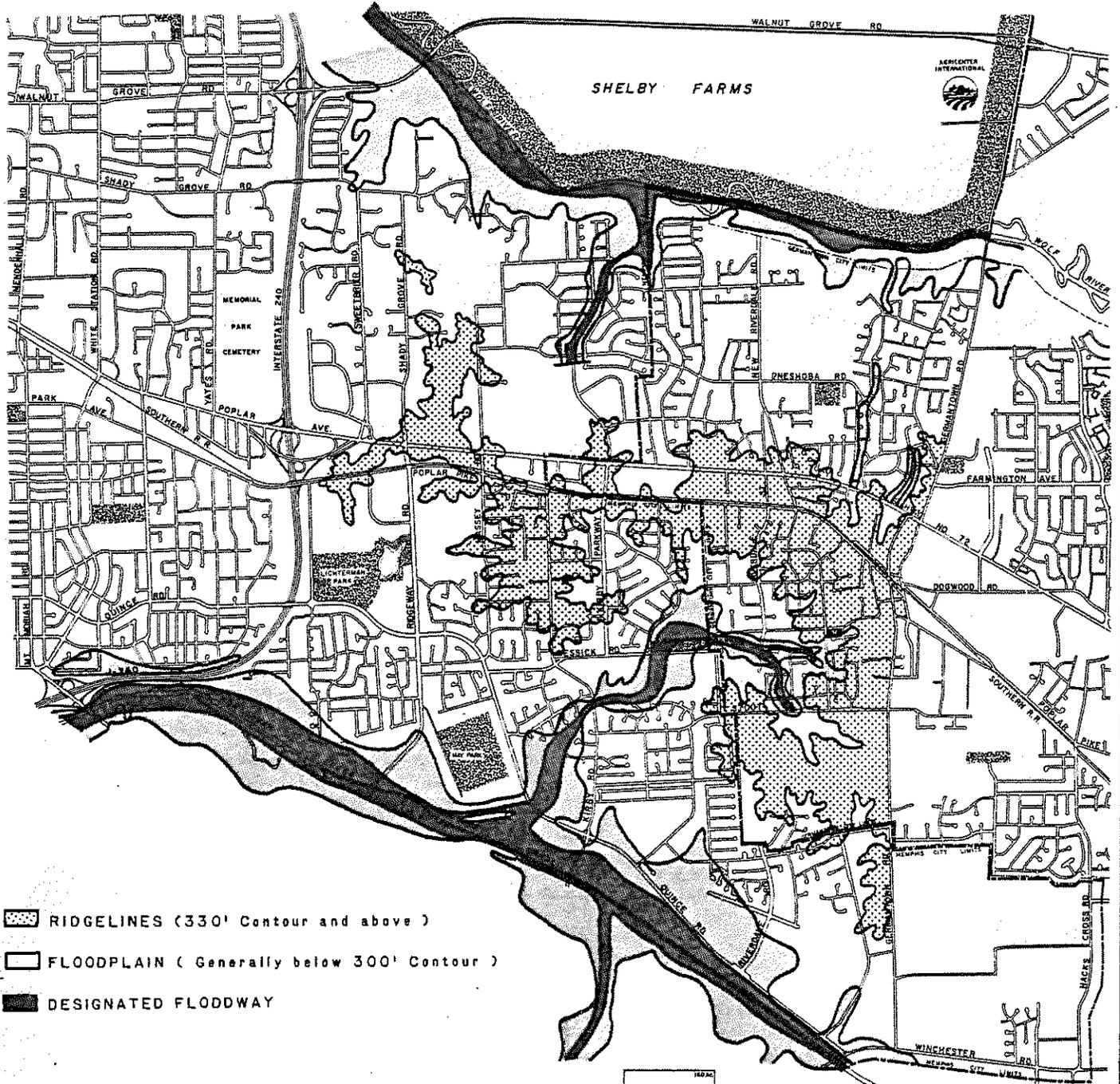
By the mid-1960's, suburban development had reached the Poplar/I-240 area, and the newly-finished southern leg of I-240 provided this area with rapid access both to the airport and to downtown. Poplar Avenue was at this time largely residential, with accompanying churches and schools. The only commercial and office activity nearby concentrated around Laurelwood and the Poplar/White Station area, dominated by the White Station Tower and Clark Tower office buildings which were constructed in the mid-1960's and early 1970's.

The construction of the Interstate system with an interchange at Poplar Avenue, the main east-west corridor in Memphis, provided this area with superior access. (See Figure 2) In addition to the excellent access, the floodplains of the Wolf River and Nonconnah Creek drainage systems also directed growth toward the more easily developed land near Poplar Avenue. Figure 3 illustrates the lowlying floodplains of these waterways and the ridgelines that generally follow Poplar. Urban development took place on the nonfloodprone areas between the waterways.

FIGURE 2: ACCESS



NATURAL CHARACTERISTICS



-  RIDGELINES (330' Contour and above)
-  FLOODPLAIN (Generally below 300' Contour)
-  DESIGNATED FLOODWAY

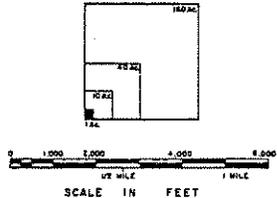
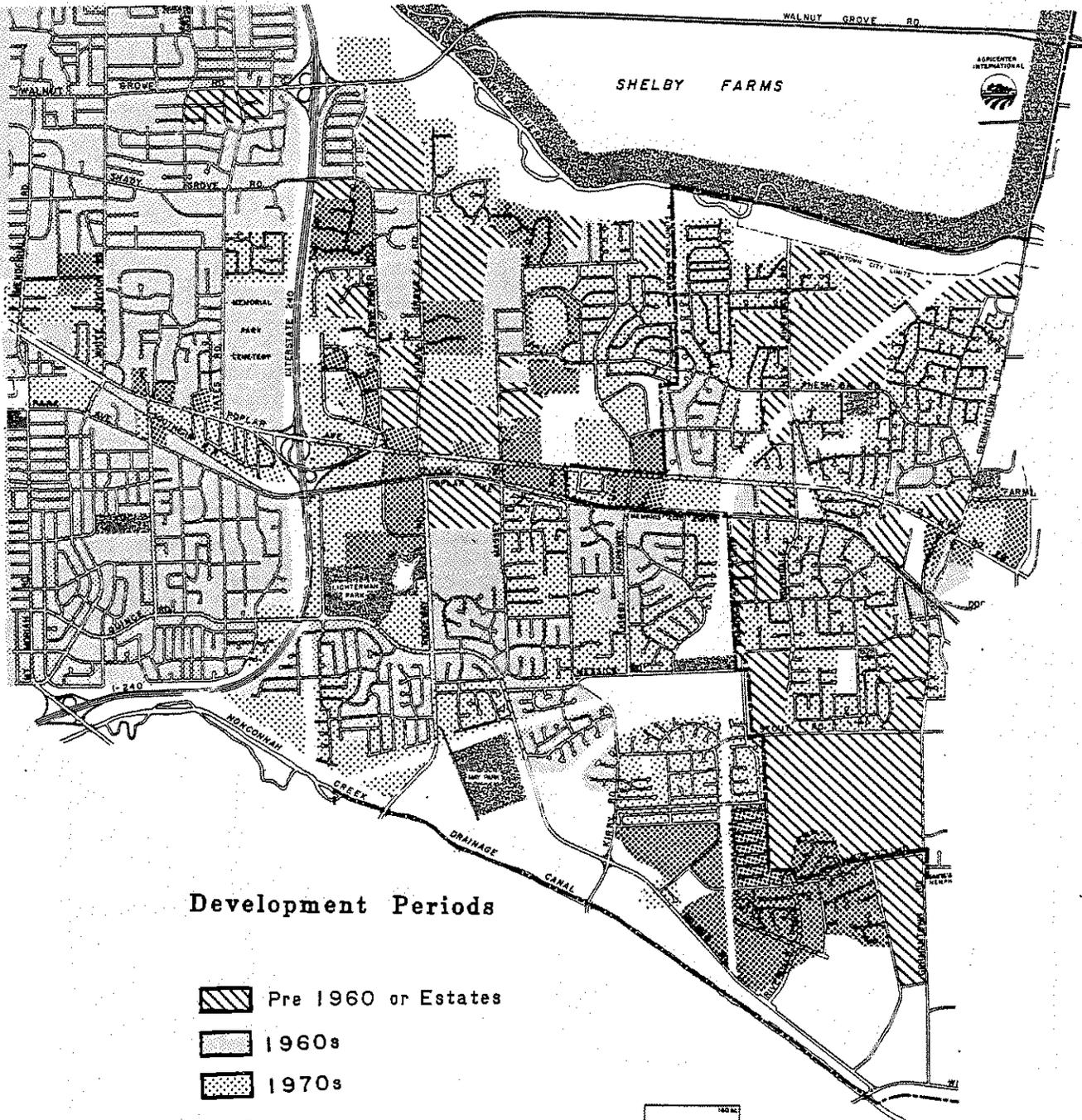


Figure 4 illustrates the most recent development of land in the Study Area over the last two decades. The majority of the area west of I-240 was last developed as residential subdivisions during the 1960s. East of I-240, many estates built before 1960 are interspersed with residential developments constructed during the 1960s and 1970s. Previous to this time, farms and estates covered much of the land area and a number of estates still remain.

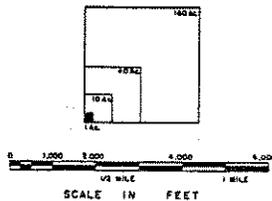
The redevelopment of Poplar Avenue east of Poplar/White Station from large lot residential uses to employment centers began with the conversion of the Ridgeway Country Club to the Ridgeway Center in the early 1970's. This medium-density mixed-use center, with the high-rise Hyatt Regency Hotel, provided the impetus for further office development fronting Poplar Avenue. Major employment uses constructed during the 1980's near the Poplar/Ridgeway intersection have contributed to the congestion in the Poplar Corridor.

URBAN DEVELOPMENT HISTORY



Development Periods

-  Pre 1960 or Estates
-  1960s
-  1970s
-  1980s
-  Vacant

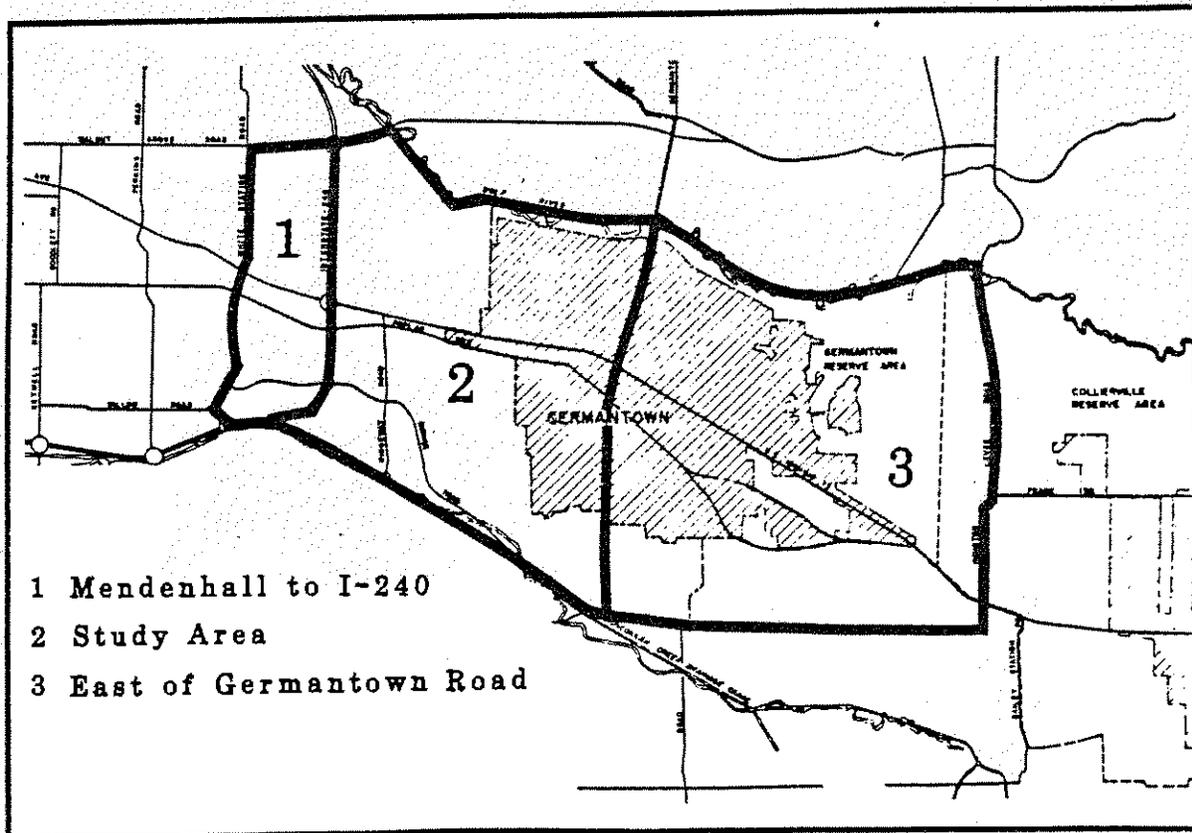


MARKET ANALYSIS

Demographic and economic figures indicate that the Study Area includes some of the highest income levels and housing values in Shelby County. In addition, the Study Area is one of the fastest growing areas with more than one-quarter of recent office construction activity in Shelby County occurring here, making the area one of three major employment centers in the County. Projections based on current trends and market demand show a continued increase in residential, commercial and office development.

Data for the Study Area, as well as east and west of the Study Area was collected and analyzed. This larger area more truly reflects the market service area of the Poplar Corridor. In addition, competition for the location of future employment uses will be from these areas. Figure 5 illustrates the three areas for which data was collected: Mendenhall to I-240, the Study Area, and the remainder of the City of Germantown, east of Germantown Road.

FIGURE 5
DATA COLLECTION AREAS



Population and Housing Trends

Table 1 shows changes in population and housing between 1960 and 1980. Overall population and housing grew rapidly during this period.

TABLE 1: POPULATION AND HOUSING TRENDS

Area	<u>Housing</u>			<u>Population</u>		
	1960	1980	Percent Change	1960	1980	Percent Change
Mendenhall to I-240	3,184	4,897	53.8	11,562	12,765	10.4
Study Area	819	10,030	112.5	3,510	27,154	673.6
East of Germantown Road	255	8,497	3,232.2	877	13,499	1,439.2
Total	4,258	23,424	450.1	15,949	53,418	234.9

In 1960, the population totalled 15,949 and housing units 4,258. By 1980, population had grown by 235 percent to 53,418 and housing units increased to 23,424, a 450 percent increase. Housing units continued to be built in all areas and population continued to grow throughout this time. The largest increases occurred in the area outside of I-240.

Housing and Population Projections

Projections for housing units and total population are based on trends in housing construction/demolition over the past 20 years and the availability of vacant land. Figure 6 shows the highest growth areas for housing development in Shelby County between 1980 and 2005. The shaded area indicates that out of the total county increase of 82,000 units, approximately 50 percent or 41,000 units are projected to be built by 2005 in the area surrounding the Poplar Corridor. Increases in housing surrounding the Corridor affect future trips through the Study Area. This effect is explained in the Poplar Corridor Technical Report.

Table 2 presents the projections for the Study Area and the two adjacent areas. Increases are split between the two eastern areas, with the area between Mendenhall and I-240 remaining fairly stable. Overall, housing units will increase by about 13,000 and population by approximately 30,000.

TABLE 2: HOUSING AND POPULATION, 1980 and 2005

Area	<u>Housing</u>			<u>Population</u>		
	1980	2005	Percent Change	1980	2005	Percent Change
Mendenhall to I-240	4,897	4,838	-1.2	12,765	11,717	-8.2
Study Area	10,047	17,184	71.0	28,584	42,594	50.3
East of Germantown Road	<u>4,257</u>	<u>9,854</u>	<u>131.4</u>	<u>11,621</u>	<u>27,117</u>	<u>133.3</u>
Total	19,201	31,876	66.0	52,970	81,428	53.7

Employment Trends

Throughout the U.S., the trend in locating new first class office space has been to locate near those neighborhoods chosen by management personnel. Memphis is no exception as can be seen by the increase in office employment in the Poplar Corridor, where a large portion of management personnel in Memphis reside.

The 1980 median housing values and incomes are, with only one exception, the highest in Shelby County. (See Table 3.) Only one census tract in Germantown, just east of the Study Area, possesses a higher median value and income. The housing values and income levels reflect the attraction of high level executives and management personnel to the area east of I-240 in Memphis and to Germantown. In fact, the 1980 Census indicates that 44 percent of the work force residing in the Study Area falls within the management and professional categories, double the County average of 22.2 percent.

TABLE 3
MEDIAN INCOME AND OWNER-OCCUPIED HOUSING VALUES, 1980
For Study Area Census tracts

Census Tract	Income	Value	Percent of County Median
213.10	27,684	117,600	305
213.20	24,857	124,200	322
213.30	33,678	76,500	196
214.10	37,207 *	91,400	237
214.20	36,752	90,900	235
214.30	30,814 *	82,000	212
Shelby Co.	15,289	36,600	100

* Some income suppressed
1980 Census of General Characteristics

Employment in the Study Area increased by 52 percent in the last five years, as shown in Table 4. In 1980, with the development of Ridgeway Center, Baptist and St. Francis Hospitals, and a few office buildings along Poplar including the Eastwood Building and Poplar Towers, total employment stood at 11,857. Current estimates indicate that in 1985, within the Poplar Corridor, approximately 18,000 workers are employed. Of these 18,000 workers, 11,000 are employed in offices, 5,500 are employed by institutions and 1,450 work in retail outlets. As can be seen from these figures, approximately 61 percent of the persons employed within the Study Area were office workers in 1985.

Since 1980, office space in the County increased by 4,429,547 square feet. Thirty-four percent, or 1.5 million square feet was built in the Shelby Farms-Germantown Planning District, which contains the Poplar Corridor Study Area. This construction activity accounts for approximately 1 million square feet increase in the Study Area from 1980 to the 1985 total of 2,873,000.

The creation of a major office center along Poplar produced very convenient employment opportunities for the East Memphis and Germantown residents. This trend shows the continuation of locating offices in suburban areas near management personnel.

TABLE 4: STUDY AREA EMPLOYMENT
by Total Employees and Square Feet

<u>YEAR</u>	<u>EMPLOYMENT</u>	<u>SQUARE FEET</u>
1980	11,857	1,787,500
1985	18,000	4,043,000
OFFICE	11,000	2,873,000
COMMERCIAL	1,450	1,170,000

Employment Projections

Employment was first projected for Shelby County and then broken out for office workers. The analysis of how much of the office employment and corresponding office space can be expected in the corridor is then summarized. Commercial space needed in the year 2005 is projected based on the future population. Office and commercial space projections are summarized in Table 7.

Shelby County employment in 2005 has been projected to be 464,300. Table 5 shows the Shelby County employment by occupation for 1970, 1980 and the 2005 projection. A shift in employment by sector has been projected to occur by the year 2005 which will increase the proportion of office workers.

TABLE 5: EMPLOYMENT BY OCCUPATION, 1970-2005

<u>Occupation</u>	<u>1970</u>	<u>1980</u>	<u>2005</u>
White Collar (professional, managerial, clerical, sales)	134,113	184,890	325,010
Blue Collar (craftsman, operatives, laborers)	89,331	91,461	92,860
Service (Household, other)	40,556	43,788	45,501
Farm	1,876	2,148	929
<hr/>			
Total	265,876	322,287	464,300
White Collar as percent of Total	50.4	57.4	70.0

Office Space

White collar workers are those most likely to work in office space. Table 5 shows the increase in white collar workers as a percent of total workers, from 50.4 percent in 1970 to 57.4 percent in 1980. This shift is expected to slow in pace and reach approximately 70 percent by 2005. In 1980, white collar occupations employed 184,890 persons in Shelby County and is projected to increase to 325,010 persons by 2005. The increase in white collar workers between 1980 and 2005 is 140,120.

While the category of white collar workers is the most likely to use office space, only about 50 percent are office workers. Therefore, the increase in workers requiring office space is 70,060. An industry standard, set by the Urban Land Institute in 1984, of 200 square feet of gross leasable area per employee was used to calculate additional office space needed between 1980 and 2005. This calculation showed that 14 million square feet of additional office space would be required in Shelby County by the year 2005. The locations of the projected office space in Shelby County in relation to the Poplar Corridor Study Area, is examined below.

Based on the trend since 1980 of 34 percent of new offices and 50 percent of all new housing units located in this general area, a maximum of 50 percent of the needed office space for 2005 employment could be expected to locate in the Study Area. Fifty percent of the total projection of 14 million is approximately 7.0 million square feet. Since 1980, almost 1,100,000 sq. ft. of office has been built in the area. The remaining 5.9 million square feet would require about 540 acres if constructed at a suburban density of .25 Floor Area Ratio (square feet of structure to total square feet of land area).

Commercial Space

Retail and associated commercial employment within the Poplar Corridor Study Area totaled 1,457 workers in 1985. Table 6 shows the projected number of commercial square feet needed to serve the 2005 population. The commercial space was calculated based on the existing ratio of commercial square feet per person and the 2005 population projection. Market area population was determined for each level of commercial service.

TABLE 6: 2005 RETAIL AND SERVICE
Square Feet Needed by 2005

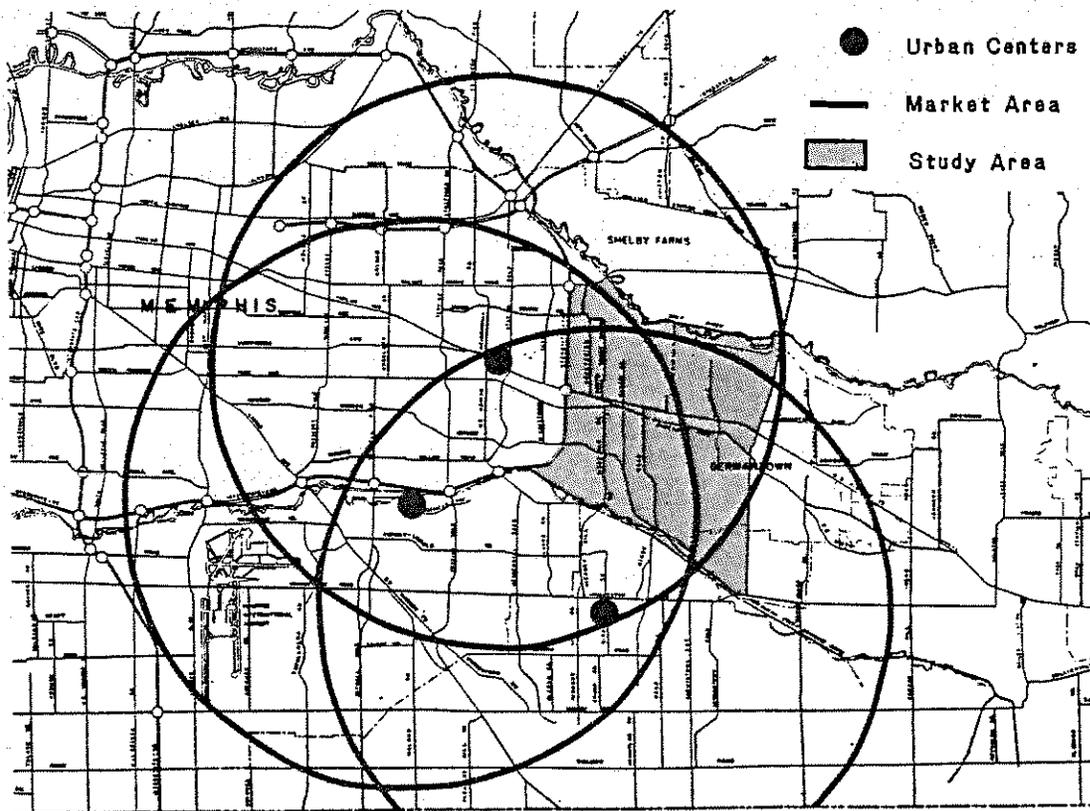
<u>Market Area</u>	<u>Total Square Feet Needed by 2005</u>
Urban	856,000
Regional	745,800
Community	476,500
Neighborhood	<u>849,400</u>
Total	2,927,700

Commercial space is divided into four categories based on its service or market area. The four categories are: Urban, Regional, Community and Neighborhood.

Urban level uses provide services to a large segment of a city. Generally in Memphis the market area is about ten miles in diameter. These uses also attract residents of smaller towns 20 to 30 miles away for major shopping trips. In the Poplar Corridor area, urban level services are already provided from three existing centers: Laurelwood/White Station, Mall of Memphis and the Hickory Ridge Mall. Figure 7 illustrates that the Study Area is well served by these three urban centers.

There is a need for commercial space in all of the other categories. Regional commercial uses which draw from a three-mile service area, will require two regional centers to cover the market area population predicted for the year 2005.

FIGURE 7
URBAN CENTERS



Community commercial uses serve an area of 1.5 miles. To meet the needs of the Community Center service population, four Community Centers will be needed in the Poplar Corridor Study Area. Neighborhood uses average a service radius of one-half mile. Because of the low density nature of some of these neighborhoods, the service area for all centers may need to be enlarged or the size of the centers decreased in order for the center to be successful.

Industrial Uses

No industrial uses were projected to occur in this area. Based on the existing trends in office/retail development and the location of high quality housing in the area, it is unlikely that industrial development would be attracted to or accepted in this area. The recent plan to convert the only industrially zoned land near the Poplar Corridor to a TPA (Tournament Players Association) golf course surrounded by an office/retail/residential community is evidence that additional industrial uses are not viable in this area.

TABLE 7: 2005 PROJECTED COMMERCIAL AND OFFICE DEMAND

	Needed to Serve 2005 Population	1985 Land Use	Additional Space Needed to Meet 2005 Demand
Office	8,773,400	2,873,400	5,900,000
Retail/Service	2,071,700	1,170,000	901,700
Industrial	<u>0</u>	<u>0</u>	<u>0</u>
Total	10,845,100	4,043,400	6,801,700

	<u>Retail/Service</u>	<u>2005</u>	
Urban	0	Outside Study Area	0
Regional	745,800	478,000	267,000
Community	476,500	675,617	0
Neighborhood	849,400	175,000	674,500

TRANSPORTATION

Long-range transportation planning in the Memphis area is carried out by a study committee known as the Metropolitan Planning Organization (MPO). The MPO represents all the local governments in the area, including Memphis and Shelby County, as well as the States of Mississippi and Tennessee. The MPO's purpose is to assure a continuing, comprehensive, and cooperative transportation planning process throughout the area.

Major Road Plan

Transportation planning covers the full range of travel modes including auto, transit, bicycling, and walking as well as trucking, railroads, air, and water transportation. To most Memphians, however, the road network is the most visible element of the transportation system. Automobiles account for over 90 percent of the personal travel in the area. In addition, the existing mass transit depends on good roads and low traffic congestion for its own successful operation. Major roads of regional significance are identified as such on the Major Road Plan. From 1960 through 1981, major road development was guided by the Memphis Urban Area Transportation Study (MUATS) Plan of 1969. In the mid-1970's an update of this plan was initiated, with eventual completion and adoption in 1981. This plan update revised the road network based on changed conditions. It deleted many proposed roads which were no longer needed or were pre-empted by current development or cost, and postponed others. It also focused attention on the remaining proposed roads and additional ones which will be needed between now and the year 2000. This 1981 Major Road Plan Update forms the basis for major road network development in the Memphis Area.

Mass Transit Studies

The Long Range Transit Plan was completed in 1979 and identified the Poplar Corridor as the most likely corridor to support a light rail transit line. After additional study, the consultant determined that the land use densities along the Poplar Corridor from the CBD to Collierville couldn't support a light rail system at that time. The Memphis Area Transit Authority is planning an update of the Long Range Transit Plan in 1986.

The Short Range Transit Development Program was completed in 1983 and recommended the continuation of the bus system which is now serving the Poplar Corridor Study Area today. MATA conducts existing ridership and market analysis studies each year to modify their transit service. One of these studies led to implementation of the Germantown to Federal Express Headquarters service.

Road Network and Volumes

The road network serving the Poplar Corridor Study Area was originally designed to meet the transportation needs of a residentially developed area. The extensive office and commercial development which has occurred over the past 20 years has led to the increasingly congested conditions on the major arterial roadways through the area. Existing major roads and the traffic volume presently being carried by these roads is shown in Figure 8. The standard major road pattern used in Memphis road planning is the 1 mile grid system. As can be seen from Figure 8, particularly on the north side of Poplar, the one mile grid is not provided. One link on the north side, Shady Grove Road, was removed from the Major Road Plan in the early 1980's. This means that the closest major north/south road is White Station, more than two and 1/2 miles west. Another deficiency is between Poplar and Walnut Grove, which are two miles apart.

Poplar Avenue, from I-240 to Kirby Parkway, carries approximately 140 percent of this section's rated traffic capacity. The remainder of Poplar from Ridgeway to Germantown road was at 82 percent of rated capacity as of the October, 1984 traffic count.

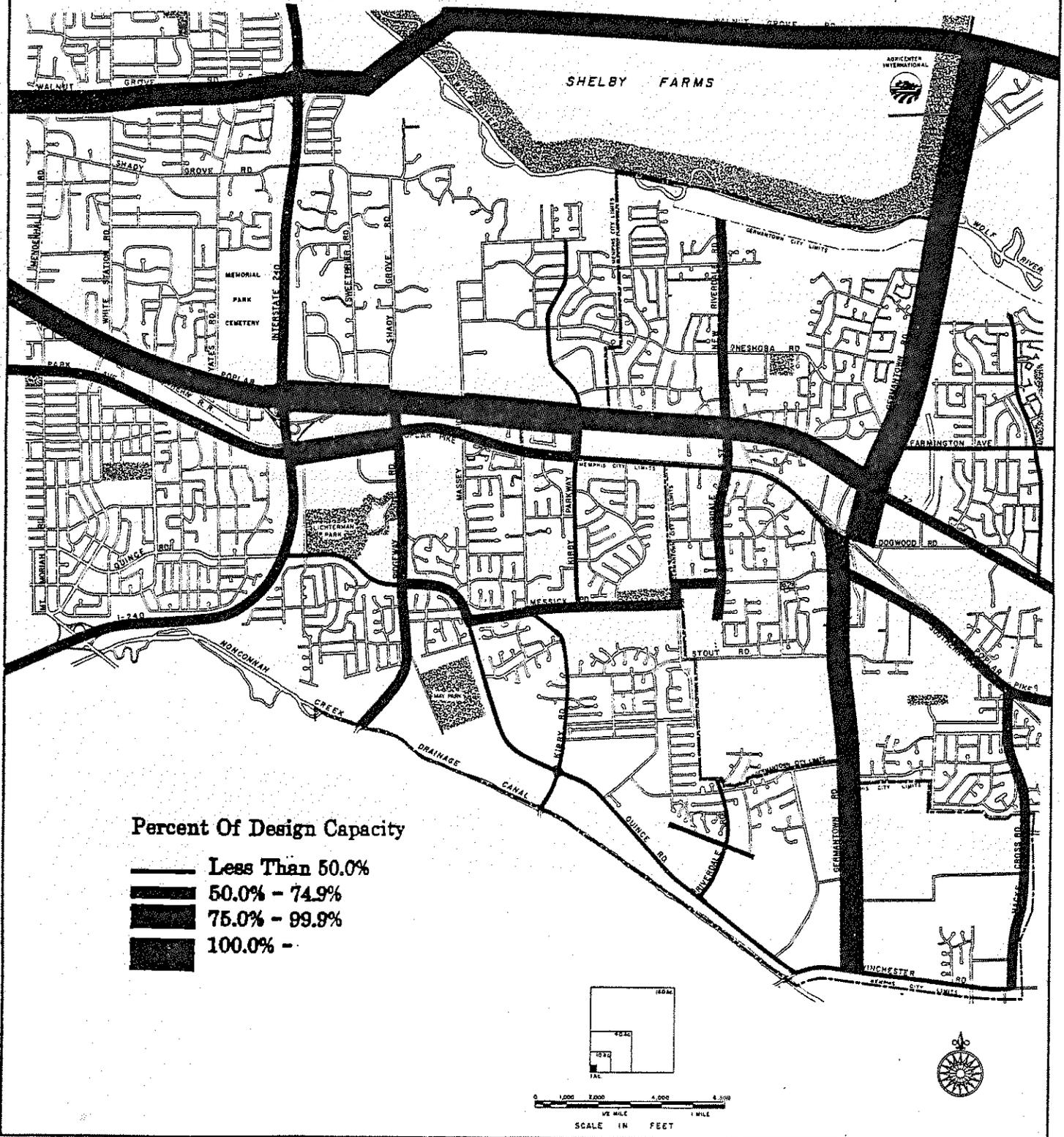
Because of the overloading of transportation facilities, traffic accidents have been increasing. In 1984, the Poplar/I-240 interchange area ranked as the 10th highest accident location in Shelby County with almost 100 accidents. Traffic capacity along a roadway section is usually limited by the capacities of signalized intersections along roadway sections. Roadways evaluated in the Poplar Corridor study are typical of this circumstance. Analysis of traffic capacities and classifications of qualities of flow in the area are defined in this study by the analysis of the Level of Service provided at the signalized intersections.

Level of Service

Level of Service is a term for the qualitative measure of traffic flow which considers a number of factors. These would include travel time, operating cost, driver comfort and driver convenience. Level of Service is differentiated into six levels: five functional levels and one failure level. Level of Service is identified as

POPLAR CORRIDOR STUDY FIGURE 8

MAJOR ROADS AND ROAD USAGE



level "A" through level "F" and explained in Table 8. Maximum efficiency occurs at Level of Service "C" when drivers may occasionally have to wait through more than one green phase to pass through a signalized intersection, but waiting through more than one cycle is infrequent. Level of Service "C" is normally associated with traffic flow in urban areas.

The present Level of Service categories at signalized intersections in the Study Area are shown on Figure 9. Of the 15 signalized intersections in the Study Area, nine currently provide capacity at Level of Service "E" during peak flow conditions. However, intersections operating at Level of Service "E" may degrade to service level "F" as a result of random factors such as weather. Failure of any one of these intersections because of residual impacts reduces the other intersections throughout the corridor to Level of Service "F". With intersections operating at Level of Service "E" motorists cannot be sure of the travel time through the corridor. Traffic flow especially during peak flow periods of the morning and afternoon may be described as inconsistent.

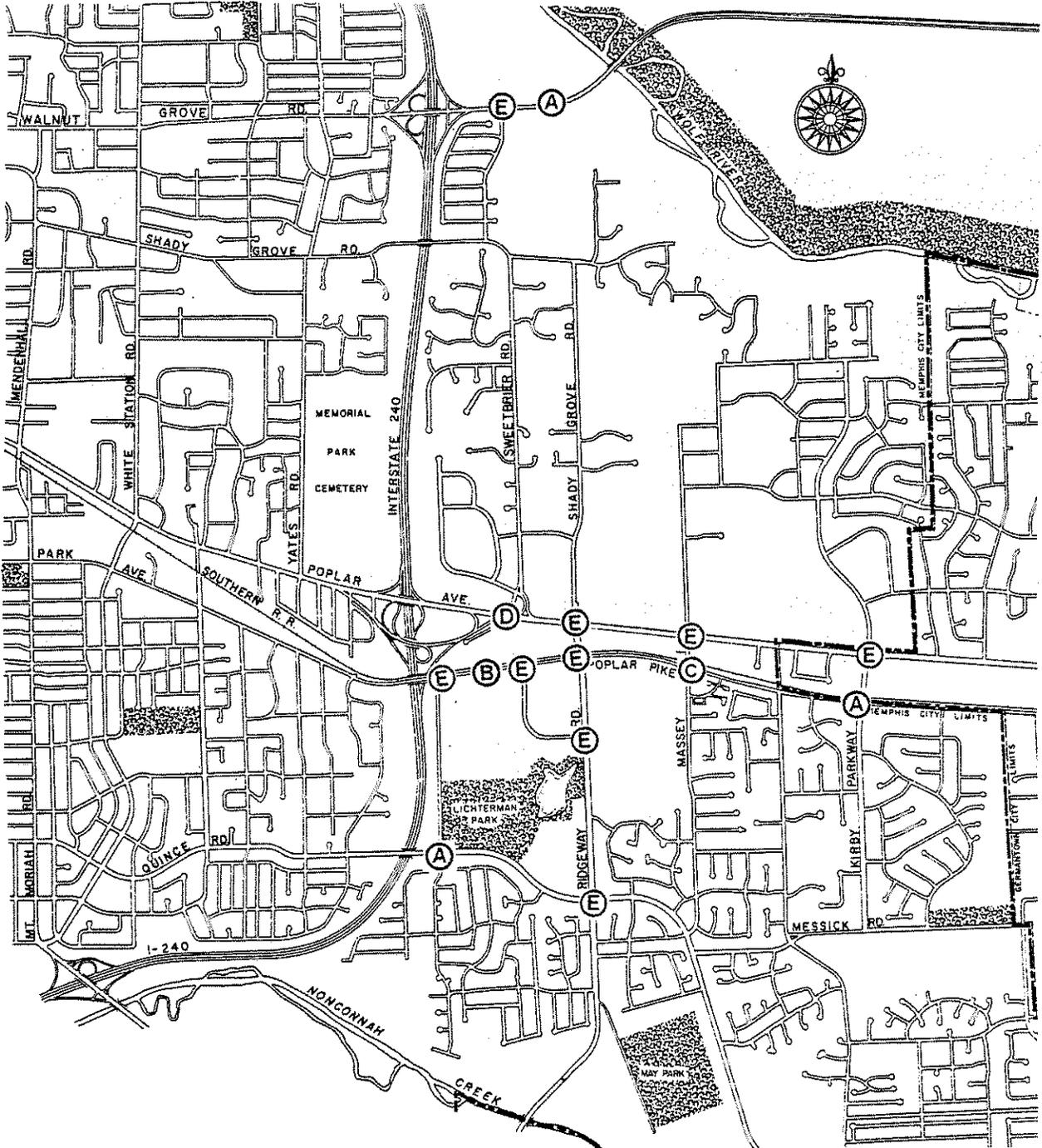
TABLE 8: TRAFFIC SERVICE LEVELS

Level of Service	Description
A.	Free flow operation, vehicle speed is not constrained by other vehicles.
B.	Stable flow; service volume approaches 50% of capacity, speeds 10% to 25% less than A.
C.	Level of maximum efficiency, only occasional need to wait through more than one traffic light cycle.
D.	Some substantial delays during peak hours, lower range of stable flow, bottlenecks begin to affect traffic flow.
E.	Maximum rate of flow, volume at or near capacity, traffic flow is sensitive to disruptions such as accidents or weather.
F.	Condition of forced flow, with backups from any bottle necks, increasing queue lengths and system failure.

POPLAR CORRIDOR STUDY

FIGURE 9

LEVELS OF SERVICE



LEGEND

Ⓐ - SIGNALIZED INTERSECTION

(For explanation of Service Levels see Table 8)

Traffic flowing along the area's road network experiences peak conditions on different roadways at differing times throughout the weekday. For example, traffic counts taken at Poplar near Mendenhall indicate a peak period between the hours of 12 noon to 2:00 p.m. Poplar near Ridgeway peaks between 7:00 and 9:00 a.m. and Poplar and Kirby west of Germantown experience peak traffic conditions between 4:00 and 6:00 p.m. These traffic counts indicate that the lunch hour traffic is concentrated west of I-240 on Poplar where most of the fast-food establishments are located.

Morning rush hour traffic is concentrated at Poplar and Ridgeway, while the evening peak occurs from homeward bound commuters farther east towards the residential areas of Germantown and Collierville.

Mass Transit

One existing alternative to the automobile is the Memphis Area Transit Authority's bus service, which currently operates five routes through the Study Area, including two routes with end-point destinations within the zone. The route designated 34BH provides commuter service for Baptist East Hospital, while a similar route is followed by 52 SF which provides commuter service to St. Francis Hospital.

Ridership, as measured by the number of boardings and deboardings at bus stops within the Poplar Corridor Study Area, totaled 1,967 during a weekday count in 1985. Bus ridership accounts for less than one percent of commuter trips. The busiest route throughout the Study Area was the 50 Poplar route with 927 on and off transfers at bus stops located along the route within the Study Area. This figure represents 47 percent of all bus transfers made during this weekday within the Study Area.

Poplar Avenue functions as a mass transit route as well as the major auto route through the Study Area, and commuters are able to utilize the transit service to get to and from destinations within the area. The Memphis Area Transit Authority will undertake a transit study of the Poplar Corridor during mid-1986, examining current ridership and future demand to modify existing routes or add new ones so that bus service remains a viable alternative to the automobile for commuting within the Poplar Corridor Study Area.

Commuter Ridesharing

In response to increased commuting costs, parking and traffic congestion, and the need to improve access to employment opportunities, cost effective ridesharing alternatives such as carpooling and vanpooling have taken on a significant role in improving transportation in the Memphis area.

The overall level of commuter ridesharing occurring in the Poplar Corridor area was estimated by examining the general commuting patterns for three distinct groups of commuters: employees who reside in and work in the Study Area, employees who reside in but work outside the Study Area, and employees who reside outside but work in the Study Area.

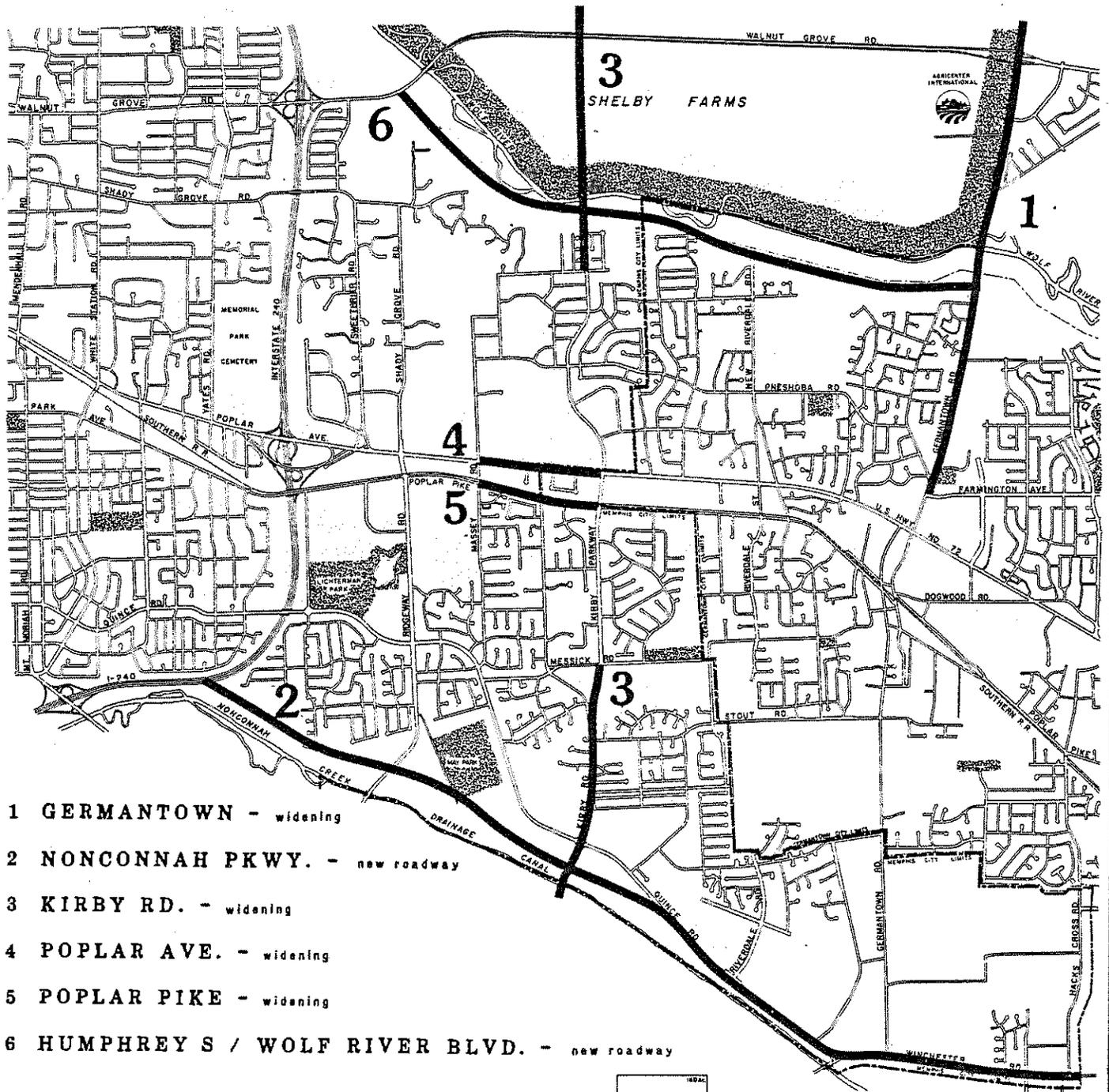
Overall, the average level of commuter ridesharing among the employees in all three groups is 17 percent. Maintenance of commuter ridesharing in the study area currently reduces peak hour vehicle trips by approximately 15,000 trips per day or 3.7 million vehicle trips per year. An increase in commuter ridesharing from 17 percent to 25 percent in the area would reduce the number of peak hour commute trips by 22,000 vehicle trips per day or 5.5 million trips per year.

Although increases in ridesharing can be accomplished within all three groups described above, the largest gain can be realized among employees who reside outside of, but work inside the Study Area. The concentration of this employee group in the Study Area makes the development of employer-based ridesharing through senior management support have the most potential. A program of this nature would include extensive employee origin-destination surveys for data base development which facilitates ridematching, and provision of incentives which encourage employee ridesharing, such as preferential parking.

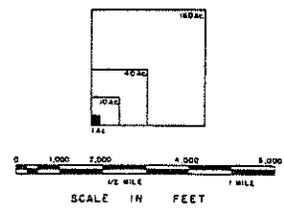
Major Road Improvements

There are five major road construction projects in the Memphis Capital Improvement Program which will improve the access and circulation in the Poplar Corridor Study Area. (Figure 10) These projects are Kirby Parkway, Germantown Parkway, Nonconnah Parkway, Poplar Avenue and Poplar Pike. Nonconnah Parkway, and to a lesser extent Germantown Parkway, linking with Walnut Grove will provide alternative routes for east/west through traffic. The widening of Poplar Avenue and Poplar Pike will occur at the two primary bottlenecks in the Study Area's street system. The Kirby Parkway project will provide improved access to Poplar Avenue by connecting at the north end to Whitten, Sycamore View and Walnut Grove and at the south end to Nonconnah Parkway and Winchester Road. The new Kirby Road access will be an alternative to Poplar Avenue for neighborhood traffic and vehicles destined for uses along Poplar Avenue.

MAJOR ROAD IMPROVEMENTS



- 1 GERMANTOWN - widening
- 2 NONCONAH PKWY. - new roadway
- 3 KIRBY RD. - widening
- 4 POPLAR AVE. - widening
- 5 POPLAR PIKE - widening
- 6 HUMPHREYS / WOLF RIVER BLVD. - new roadway



Below are brief descriptions of the five construction projects:

- 1) The widening of Germantown Parkway from Farmington Road to U.S. 64 includes a bridge over the Wolf River and has a projected cost of \$17,527,800. This proposed funding is in FY 86-89 from Interstate Substitution, Shelby County and State of Tennessee funds. The existing two lane cross-section's design volume is 7500 average daily traffic (ADT) but the road handled 16,260 ADT at the Wolf River count station in 1984. After reconstruction, the new cross-section will be a divided six lane roadway, with a grass median, partial control of access, and will handle 54,000 ADT (design volume).
- 2) The construction of Nonconnah Parkway from I-240 to Poplar Avenue east of the City of Germantown has a projected cost of \$87,975,000 with proposed funding in prior years and FY85-89 Interstate Substitution and State of Tennessee funds. The new roadway will be six lanes, limited access, and have a design volume of 81,000 ADT. Nonconnah Parkway is planned to carry the majority of future through trips between east Shelby County and I-240 which now use Poplar Avenue.
- 3) Kirby Parkway construction project extends from Split Oak to Messick on the south side and the Wolf River to U.S. 64 on the north side, and also includes the extension of Sycamore View Road. This project's estimated cost is \$21,900,000 in FY 85-89 using Interstate Substitution, Shelby County and City of Memphis funds. The existing two lane roadway south of Messick now carries 4,240 ADT. The new cross-section at the same location could carry 42,000 ADT (design volume) after construction.
- 4) A proposed widening of Poplar Avenue from Massey Road to Kirby Parkway has funding in FY86-87 of Federal-Aid Urban and City of Memphis Funds totaling \$1,170,000. It is hoped that adjacent property developments will construct portions of Poplar Avenue before the rest of the project is underway. The existing five lanes have a design volume of 30,000 ADT but the roadway is carrying 41,900 ADT in existing trips just east of Massey Road. The new cross-section will be seven lanes with a design volume of 42,000 ADT.
- 5) The widening of Poplar Pike from Massey Road to the Memphis City Limits will cost \$767,500 and is funded with Federal-Aid Urban and City of Memphis funds in FY87-88. The existing two lanes carry 13,230 ADT but have a design volume of only 7,500 ADT. The new five lane roadway will have a design volume of 30,000 ADT.

The portion of Humphreys Boulevard (formerly Wolf River Boulevard), from Walnut Grove to Kirby Parkway, which is on the Major Road Plan, but was not in the CIP, has been moved into the CIP for the current year. It was raised in priority due to donations of right-of-way from property owners which will effectively lower construction costs from \$3.4 million to \$1.8. The \$1.8 million is from City of Memphis funds.

Other planned major road construction projects which are not in the Capital Improvement Program are the widening and construction of Messick, Riverdale, Farindon and Knight Arnold. These projects would not have a significant impact on Poplar traffic, but would improve neighborhood access and circulation.

New road projects are built to improve the flow of traffic. However, new roads also induce new development. This new development may eliminate any benefits the new road originally offered. Future road projects must be tested against a land use plan to determine if the road network is adequate to safely service the future traffic demand.

Funding

All of the roads discussed above are classified as major roads, which receive rankings in the 20 year planning process and are constructed with funds from a number of sources, including city, state and federal governments. In contrast, collector and minor streets are built in a piecemeal fashion as development occurs and are funded by the developer. This system usually works adequately in residential projects where site planning is prepared for large areas. However, where small subdivisions or commercial sites are developed individually, secondary circulation systems are rarely provided. The secondary systems are particularly necessary in areas such as the Poplar Corridor where the intensity of uses need more than major road access. Collector and minor streets, however, do not receive the same funding as major roads from the state and federal governments. In addition, the City of Memphis now allocates only \$5 million annually to all road projects in the city, including accompanying drainage improvements. With impending cuts in Federal funds, a new funding source may be necessary unless a collector street plan similar to the major road plan and requirements for adjacent commercial developments to interconnect are adopted.

EXISTING LAND USE

Land use is usually categorized into five general uses: residential, commercial, industrial, institutional and open space/rural. Detailed land use for the Poplar Corridor is shown on Figure 11. The residential category is further divided into four sub-categories, because of the diversity of residential uses in this area. A number of large estates are still present north of Poplar Avenue and to the east of Kirby Parkway. Because of the concentration of offices along Poplar, the commercial category was also divided into offices and other commercial uses. The largest concentration of offices are located near Poplar between I-240 and Kirby Parkway.

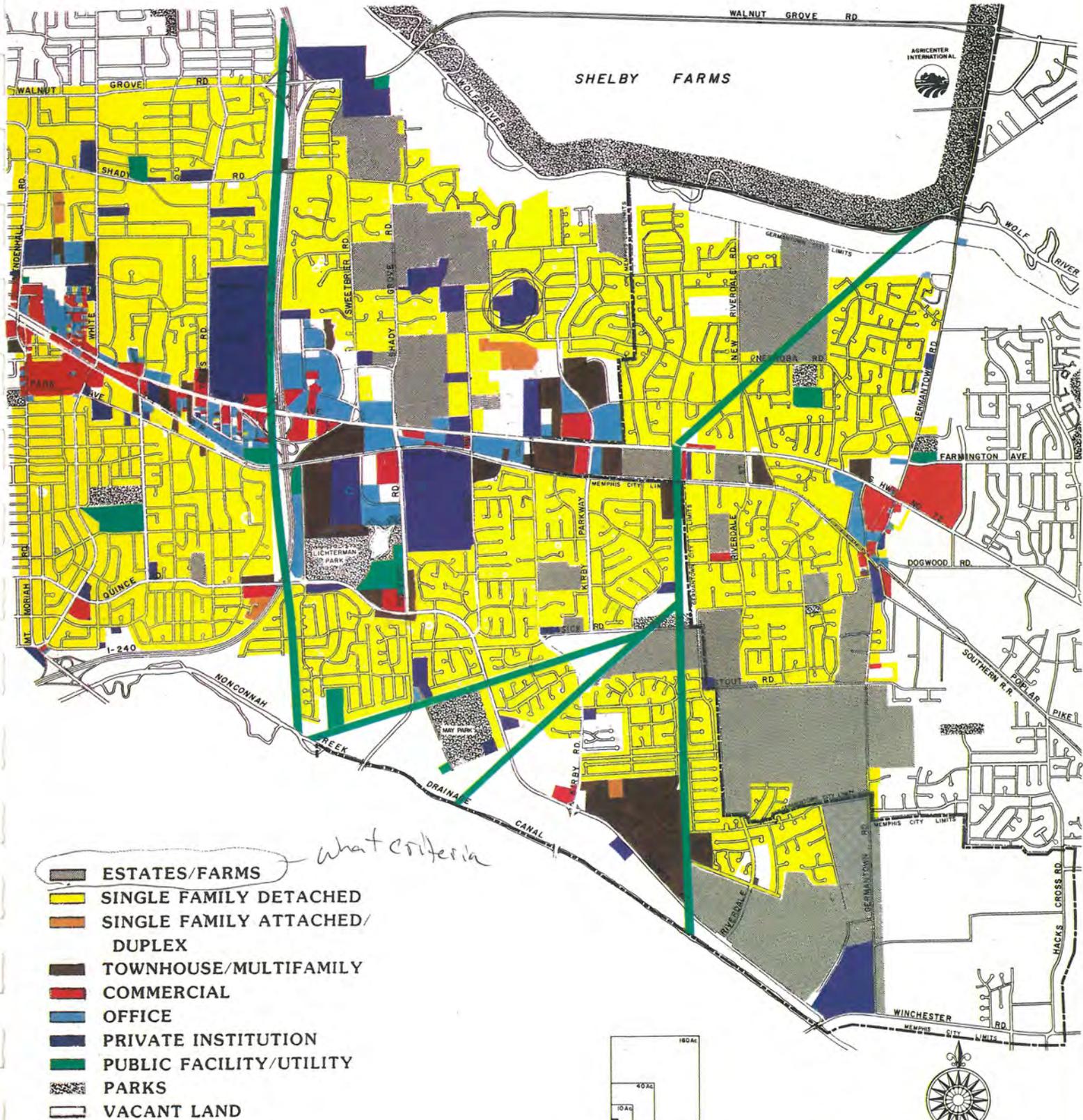
Institutional uses include schools, churches and synagogues, hospitals, recreational facilities, such as the YMCA and the Jewish Community Center and a cemetery. These uses are categorized as to public or private ownership. Parks and vacant land account for the general open space/rural uses. The industrial category will not be found on the map because there are no existing industrial uses.

There is a concentration of office, commercial, multi-family residential, and private institutions along the Poplar/Park Corridor. This concentration is quantified in Table 9. The square feet, employment or number of units in the Corridor, as opposed to the remainder of the Study Area, indicates the impact of these uses.

Table 9: 1985 LAND USE
POPLAR CORRIDOR STUDY AREA

AREA	COMMERCIAL (Sq. Ft.)	OFFICE (Sq. Ft.)	INSTITUTIONAL	RESIDENTIAL (Units)
POPLAR AVE., I-240 to Kirby Pkwy.	988,708	2,726,150	4,238 Empl. 4,157 Students	5,773
REMAINDER OF STUDY AREA	331,281	147,220	1,250 Empl. 2,952 Students	5,626
TOTAL	1,219,989	2,873,370	5,488 Empl. 7,109 Students	11,399

EXISTING LAND USE



- ESTATES/FARMS
- SINGLE FAMILY DETACHED
- SINGLE FAMILY ATTACHED/DUPLEX
- TOWNHOUSE/MULTIFAMILY
- COMMERCIAL
- OFFICE
- PRIVATE INSTITUTION
- PUBLIC FACILITY/UTILITY
- PARKS
- VACANT LAND

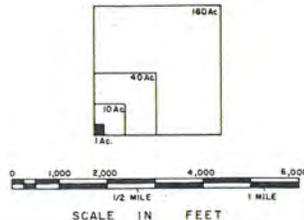




Figure 12, Conceptual Land Use, illustrates the concentrations of high density uses along Poplar and can indicate the relationship between uses. The existing land use pattern within the Poplar Corridor Study Area presently functions as large employment centers, clustered along Poplar, surrounded generally by low density residential development. Multi-family housing has been located near and within the centers and functions as a transition between these two uses. The residents in the area use the employment center for working, shopping, education and services. In fact, one-half of those employed within the corridor also live within the Study Area.

Poplar Corridor Uses

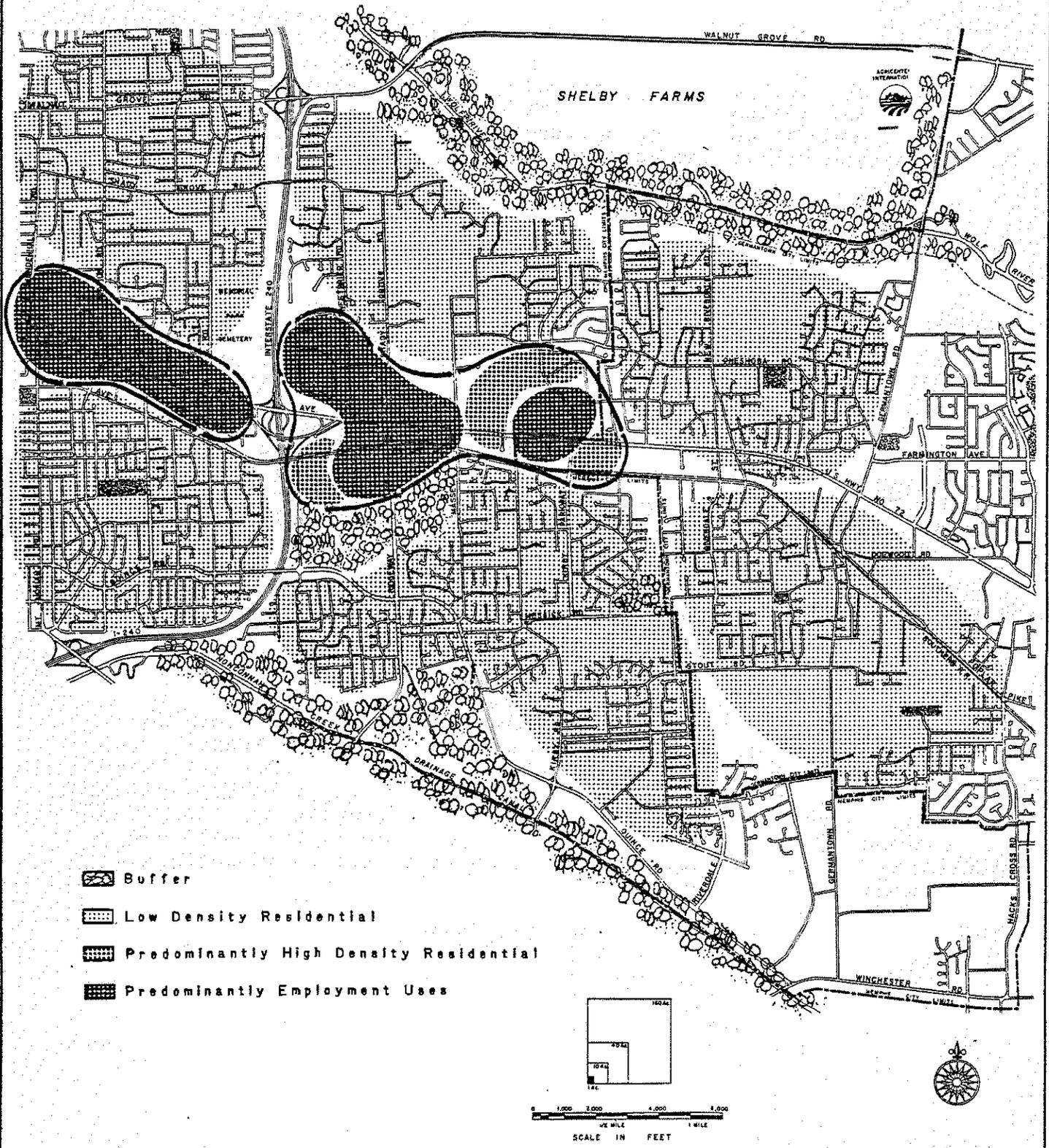
Focusing in on the Poplar Corridor itself, Figure 13 shows the specific existing uses and the building heights. Shopping centers, office buildings, hotels and a hospital are all located within the Corridor.

The majority of properties were developed independently with single purpose uses and have no relationship with any of their neighboring uses. Two exceptions are the Ridgeway Center and St. Francis Hospital, where a large land area was planned to interrelate mixed uses in one overall development scheme. The most isolated developments are the new Holiday Inn and Quality Inn at the western end of the corridor which were not only independent projects but are also effectively made an island by virtue of their location between east and west bound Poplar.

Although uses are independent, they do form clusters generally at Poplar/Ridgeway, Park/Ridgeway, Poplar/Massey and Poplar/Kirby. There may be some opportunity to connect these isolated developments through the use of interconnecting parking lots and pedestrian walkways. Some adjacent uses, such as St. Francis Hospital, Lakecrest Office Park and Park Place Mall have each been developed as completely separate entities, but would benefit with the establishment of these interconnections, keeping traffic off of major roads at the same time. Each block along Poplar could use similar techniques to provide interconnection and an identity for their block.

Building heights, shown on Figure 13, range from one to 25 stories. Setbacks also widely vary from 30 to 145 feet from Poplar. These variations in design give the area a fragmented image. One feature of good urban design has been maintained along the Poplar Corridor. The retention of vegetation, provides a linkage between virtually all of the area's land uses.

CONCEPTUAL LAND USE



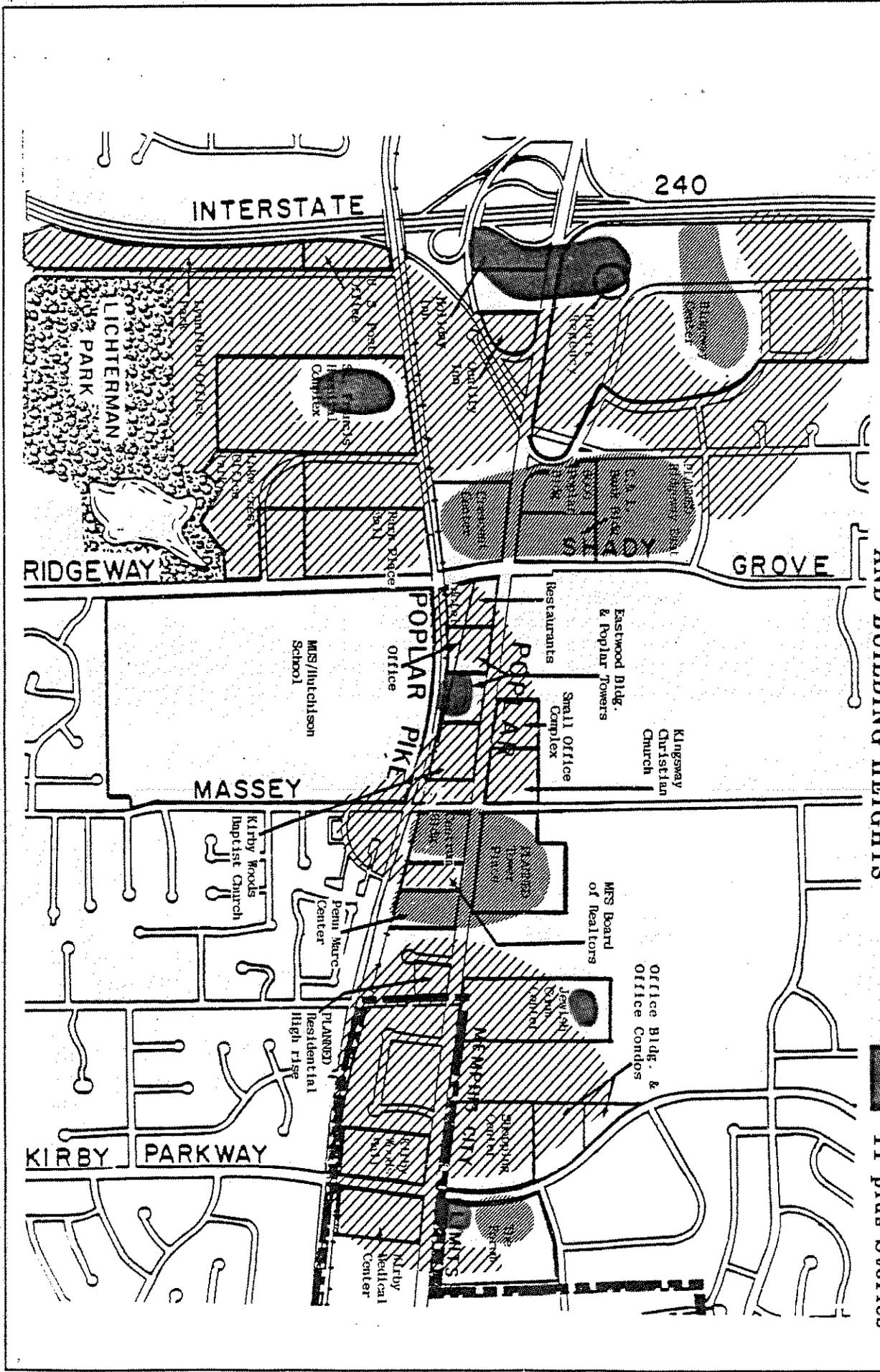
POPLAR CORRIDOR STUDY



EXISTING AND PLANNED USES AND BUILDING HEIGHTS

-  1-3 Stories
-  4-10 Stories
-  11 plus Stories

FIGURE 13:



Circulation

The type, mixture and density of land uses along and at each end of a transportation facility determines the daily volume of traffic and the traffic peaks throughout the day. Each land use type has its own unique trip characteristics. Table 10 describes the average trips per day for each land use type and the distribution of those trips throughout the day. As can be seen in the Table, residences contribute the lowest number of trips, while the highest number of trips per 1,000 square foot are generated by commercial uses. Restaurants and convenience stores account for the highest commercial generation rates. Less than 20 percent of commercial and residential trips occur during peak hours, with 80 percent scattered during other time periods. Office uses were broken out separately from commercial because their characteristics are different. Office development generates a lower number of trips than commercial, but almost 40 percent are made during peak hours.

The number and distribution of trips are determined by the land use type and the size of the development. Other factors however, can modify the basic trip generation figures. These factors include public transportation services or the proximity of other developments which may reduce vehicle trips through walking or combining trips. The concentration of any one type of land use at a high density level could overload transportation facilities at certain times during the day. Mixtures of uses with similar trip generation characteristics can also result in traffic congestion.

TABLE 10
LAND USE TRIP GENERATION CHARACTERISTICS

Land Use	Characteristics
RESIDENTIAL (per unit) Includes single family detached to high-rise units.	Range: 4.0 - 10.0 trips per day Distribution: Less than 20 percent during peak hours. The lower the density of development the higher the number of trips. Single family has the highest because usually: (1) it has more persons per units; (2) it is located farther from shopping and work; and (3) it does not have any alternative mode of transportation to the personal car.
OFFICE (Per 1,000 Gross Leasable square feet)	Average: 12.3 trips per day Distribution: Between 25 and 37 percent of the trips are evenly distributed between morning and evening peaks.

COMMERCIAL
(Per 1,000 GLSF)
Shopping Centers
includes centers
with less than
50,000 sq. ft.
to those with
over 1,250,000
sq. ft.

Range: 34.1 to 117.9 trips per day
Distribution: 85 to 90 percent occur outside
peak hours. The majority of peak hour traffic
occurs in the evening peak. The larger the
center the lower the number of trips/per sq.
ft. generated. This characteristic reflects
the few trips to large centers for major
purchases and many trips to small local centers
for one or two items.

24Hr.
Convenience Store

Average: 625 trips per day.
Distribution: 16 percent during peak hours.

High Turn Over
Sit Down
Restaurant

Average: 164 trips per day
Distribution: 36 percent during peak hours,
mainly in morning. Lunch hour accounts for 10
percent and dinner, 13 percent.

Drive-In
Restaurant

Average: 553 trips per day.
Distribution: 22 percent during peak hours.
The remaining 78 percent scattered throughout
the day.

Hotel
(Per Room)

Average: 10.5 trips per day.
Distribution: 85 percent of trips are during
non peak hours.

INSTITUTIONS
Hospitals
(Per Bed)

Average: 11.4 trips per day/bed
Distribution: 19 percent of trips during
peaks.

Elementary
Schools
(per Employee)

Average: 13.1 trips per day.
Distribution: 25 percent during peak hours.
22 percent in morning hours.

High Schools
(per student)

Average: 1.39 trips per day
Distribution: 34 percent during peak hours with
19 percent in the morning.

From Trip generation, Institute of Transportation Engineers, 1982

Correlating the uses in the Poplar Corridor with their trip generation characteristics indicates that there is a concentration of uses with similar trip characteristics which are adding to the traffic congestion. 2.7 million square feet of office space and five schools, (shown in Figure 14), with an enrollment of 5,400, which both generate high peak hour trips, are located along the Corridor. The offices account for 33,500 trips per day. School trips average 6,400 per day. Together, offices and schools generate about 11,300 trips during peak hours, split between morning and evening rush hours. The offices and schools are both either directly on or adjacent to the major roads most heavily used by commuter traffic: Poplar, Park and Ridgeway.

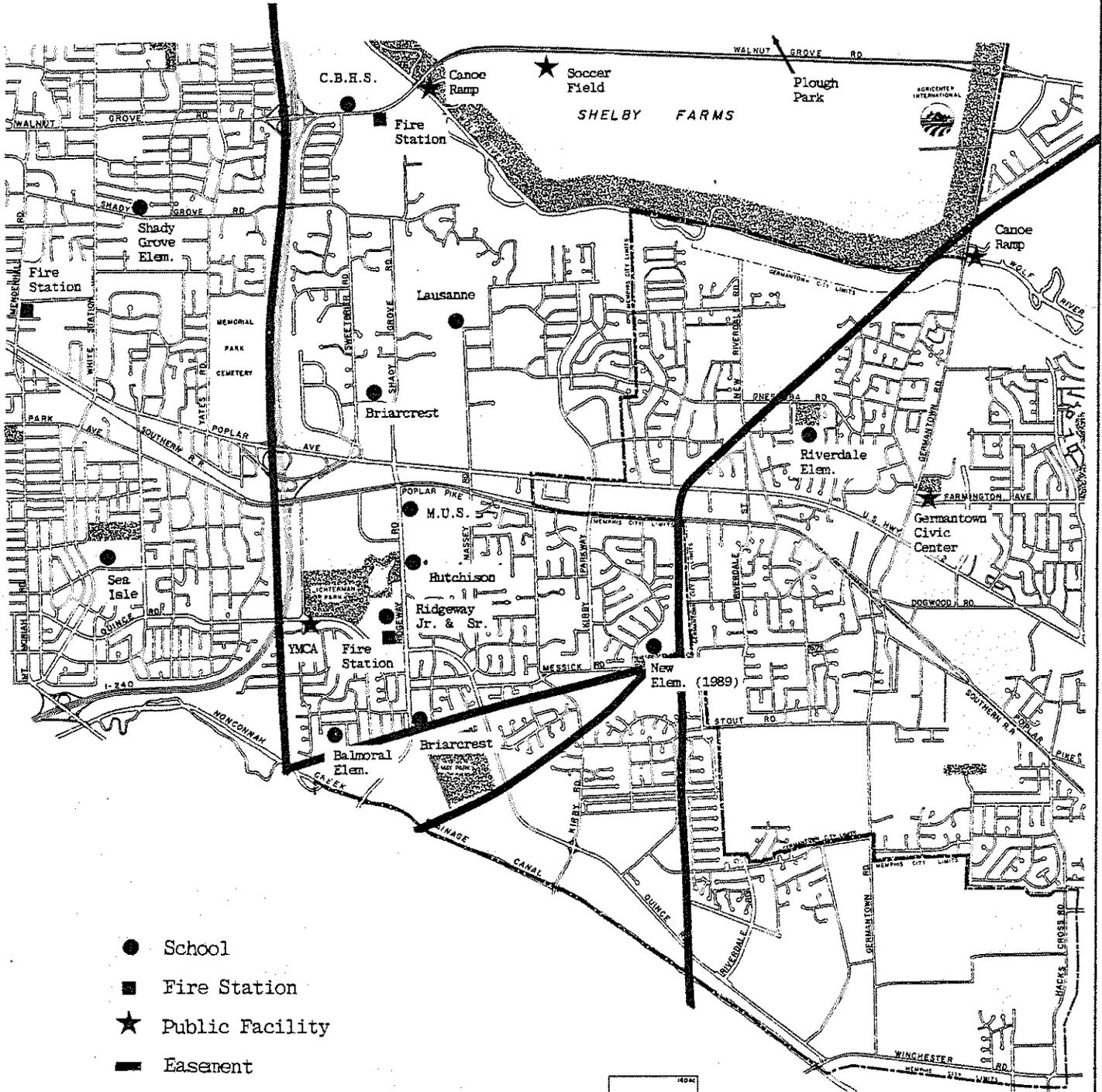
Almost 1.9 million square feet of office space is located between I-240 and Massey Rd. surrounding the Poplar/Ridgeway intersection. This concentration of office uses means that about two-thirds of the total 33,500 trips or 23,000 trips per day are using a very small section of roadway and the result is congestion.

The remaining commercial and hospital uses near Park and Ridgeway account for 30,600 trips made during the off-peak hours. Trips from these uses total 36,035 per day.

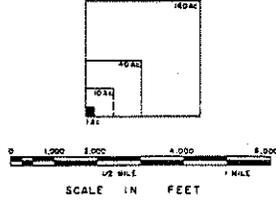
While trip generating characteristics for residential uses are much lower than for commercial uses, the effect of residential uses should not be underestimated. Because of the extensive residential development in the area, this land use could account for as many as 100,600 trips per day. These uses generate enough trips that, when added to through trips using the Poplar Corridor, most intersections are overloaded. In addition to the traffic congestion, overloading of the system has caused an increase in Fire Department response times. Fire protection service in the area is provided by stations 21, 44 and 41. Response times are generally within acceptable limits, however, rush hour traffic in the morning and evenings can increase these times by as much as 1.34 minutes. (A 3.25 minute response time can increase to 4.9 minutes from Station 44 to Poplar/Yates.)

Emergency response times on Poplar Avenue itself are generally within acceptable limits due to a traffic flow which allows emergency vehicles to cross into oncoming traffic lanes with a safety margin to avoid head-on collisions. One potential problem is responding to a major fire (2nd or 3rd alarm) by peripheral engine or truck companies if access to Poplar from other major roads is blocked with heavy through traffic. Signalization improvements to synchronize traffic lights with emergency vehicles are under consideration by the Memphis Fire Department.

PUBLIC FACILITIES / EASEMENTS



- School
- Fire Station
- ★ Public Facility
- Easement



Land Use Analysis

Each land use type has its own locational requirements and spinoff effects, both positive and negative. For example, commercial uses usually require higher levels of access than residential uses. In addition, to survive, commercial uses must locate near their market. Negative spinoff impacts can be noise and light from parking lots and loading docks, while positive effects may be placing the use within proximity and sometimes walking distance to customers.

The evaluation of land use patterns is based on minimizing conflicts and maximizing the efficiency of interactions between uses. The most effective land use configuration is one which meets the following criteria, based on locational requirements and spinoff effects:

1. Locate mutually supportive uses together.
2. Orient mutually disruptive uses away from each other, and link by transportation facilities (roads, transit, pedestrian routes).
3. Place uses within proximity to needed goods and services.
4. Use roads and other infrastructure most effectively.

Overall, the existing land use pattern meets two of the four criteria. Criteria 1 is met by the clustering of mutually supportive commercial, office and higher density residential uses along Poplar and Park. For commercial uses, clustering brings larger crowds of customers who can be attracted to more than one establishment. Concentrating commercial, office and residential provides commercial uses with nearby customers, and offices and residential uses with needed services. The existing configuration of these three uses places the most people in proximity to needed goods and services, meeting criteria 3.

To meet criteria 2, concentrations of lower density residential uses should be oriented away from the commercial/office areas to provide a sense of community and quieter atmosphere, desired by many residents. The two types of concentrations; 1) higher density residential, office and commercial uses, and 2) lower density residential uses, should be linked by transportation facilities. In most areas, this has been accomplished.

The low density residential area to the south of the Poplar/Park employment centers are buffered quite well by open space, higher density residential and the Southern Railroad. The Lichterman Nature Center and Memphis University School and Hutchison campuses offer a wide, somewhat natural open space between employment and lower density residential uses. Although the Southern Railroad is not as wide of a buffer, the difficulty in assuring access for new development provides an effective boundary between the different uses. In addition, east of I-240 commercial uses have preserved a tree line along the Railroad providing a visual barrier.

On the north side of Poplar the buffers are not quite as large or contiguous. Memorial Park Cemetery, other institutional uses and higher density residential uses surround the Ridgeway Center area. Also at Kirby Parkway, similar uses buffer residential communities from the office and commercial areas. However, between Sweetbrier and Kirby Parkway, the extremes of each type of concentration meet and major conflicts are occurring. Because the area north of Poplar contains such large lots and does not possess the extensive natural areas or institutions that could act as buffers, it is more vulnerable to a continued northward expansion of the employment center.

The fourth criteria, a pattern which uses roads and other infrastructure effectively, is also not met by the existing land use pattern. The Transportation section described existing traffic conditions as overloading many of the Poplar intersections, with the worst congestion between I-240 and Ridgeway. This congestion correlates with the concentration of office/commercial/school uses.

Conclusions can be drawn from the evaluation of the existing land use pattern:

- * A combination of through traffic and large single use developments in the Corridor has caused a degradation in the level of road service resulting in delays, traffic accidents and fire response time increases.
- * The conversion of the fringes of the neighborhoods to new employment uses have occurred without providing the needed transitional uses. This has resulted in increases in noise, light and traffic in residential areas which abut high density employment uses.
- * The clustering of uses along Poplar and Park may be valuable in reducing trips which require major roads, by providing rear access roads and pedestrian links.

LAND USE TRENDS: OPPORTUNITIES AND CONSTRAINTS

The development potential of an area is based upon an evaluation of the opportunities and constraints present which affect future land uses. The factors which determine the development potential include existing land use and zoning, current trends in development, the location of vacant and underutilized land, planned transportation improvements and future economic conditions.

Since the Study Area covers about 45 square miles, it was divided into three subareas to review localized opportunities and constraints, identifying each area's potential for development. The three subareas are the Poplar Avenue Area, the Wolf River Area, and the Nonconnah Creek Area. A fourth section, Peripheral Areas, discusses areas outside the Study Area which could provide competition for the location of projected employment uses.

Poplar Avenue Area

Poplar and Park Avenues between I-240 and Kirby Parkway have been the desired location for prestigious office development outside of downtown. Each development along the corridor has maintained high quality site design and has added to the image of the area. Once an area acquires an image, it tends to attract similar and complementary uses. The increase in property value from \$4.00 to \$5.00 per square foot in 1980 to \$10.00 to \$12.00 per square foot in 1985 reflects the area's continuing attractiveness stemming from its assets and image. While the desire to build new offices continues, the availability of land along the corridor is decreasing.

Figure 15 shows the vacant and underutilized land as of mid-1985. Underutilized land represents land which is used at an extremely low density in comparison to adjacent land usage and may have minimal resistance to change. In this case, churches, small businesses and single family homes on large lots or estates close to Poplar are considered underutilized.

Of the vacant (189 acres) and underutilized (193 acres) land in the area, about 60 acres already have office uses approved for development. Of the remaining land, only about 125 acres have direct access to Poplar Avenue or are in established office centers off of Poplar. As the area continues to be attractive, land values will increase, requiring higher densities which may induce the redevelopment of land outward from Poplar. The rise in property values will at some point offset the area's assets and developers will look for other office and commercial locations.

Existing zoning, while not a permanent land use determinant, is at least a short-term barrier to uses other than what is allowed in the designated district. Figure 16 illustrates the existing pattern of zoning districts. Zoning along Poplar reflects two distinct actions which created it.

First, along the south side generally between Ridgeway and Kirby Rd., the office district O-G was approved to implement a policy set by the Land Use control Board and City Council in the late 1970's. The office uses in this area are contiguous and share a rear access road which gives them an advantage over other office sites along Poplar.

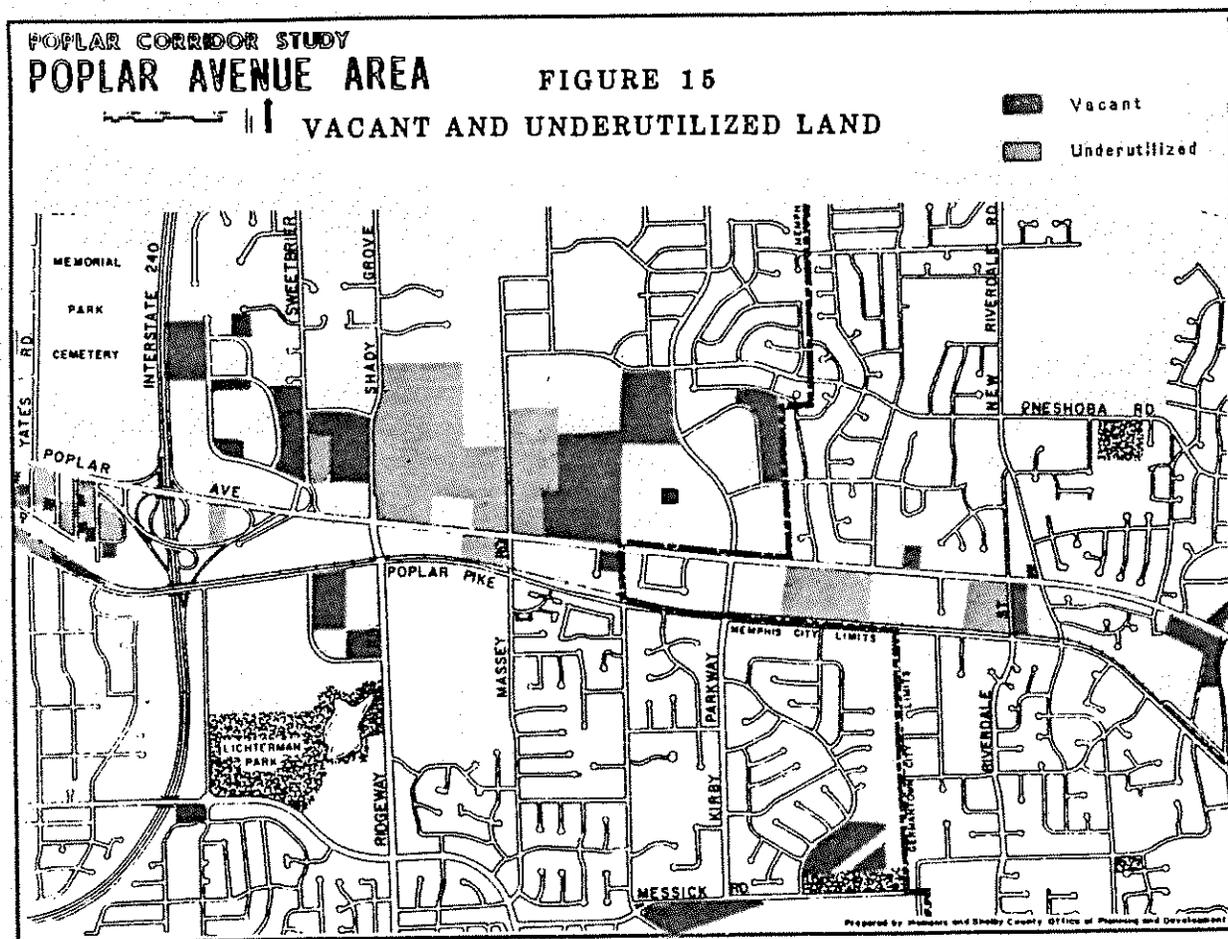
In contrast, the uses along the north side of Poplar came in separately for rezoning. Each site's characteristics and layout are sufficiently different so that it will now be difficult to provide the same advantages available south of Poplar. Any provision of a rear access road will be costly to the public.

Commercial uses in this area are regional in nature drawing the majority of customers from up to five miles away. Regional uses should locate in this center until sufficient residential development requires a new center elsewhere.

Some mixing of uses is evident, but only through use of the Planned Development (shown by the shaded areas). Mixing of uses is helpful in spreading out auto trips and reducing some trips altogether and should be encouraged.

Major road improvements planned for the area include widening of Poplar and the extension of Kirby Parkway. The Kirby Parkway improvement linking Humphreys Boulevard, Walnut Grove and Nonconnah Parkway will provide some relief to Poplar by providing an alternate route for through traffic.

However, because of the concentration of single use high trip generating destinations on Poplar, the traffic solutions for Poplar need to be more site specific. Additional collector roads, mixing of uses and linking single purpose uses holds some of the answers. The clustering of high density uses also raises the viability of intensive transit service as a transportation solution.



POPULAR CORRIDOR STUDY WOLF RIVER AREA

WOLF RIVER AREA MEMPHIS ZONING DISTRICTS

ZONING BOUNDARY



FIGURE 18

EXISTING ZONING

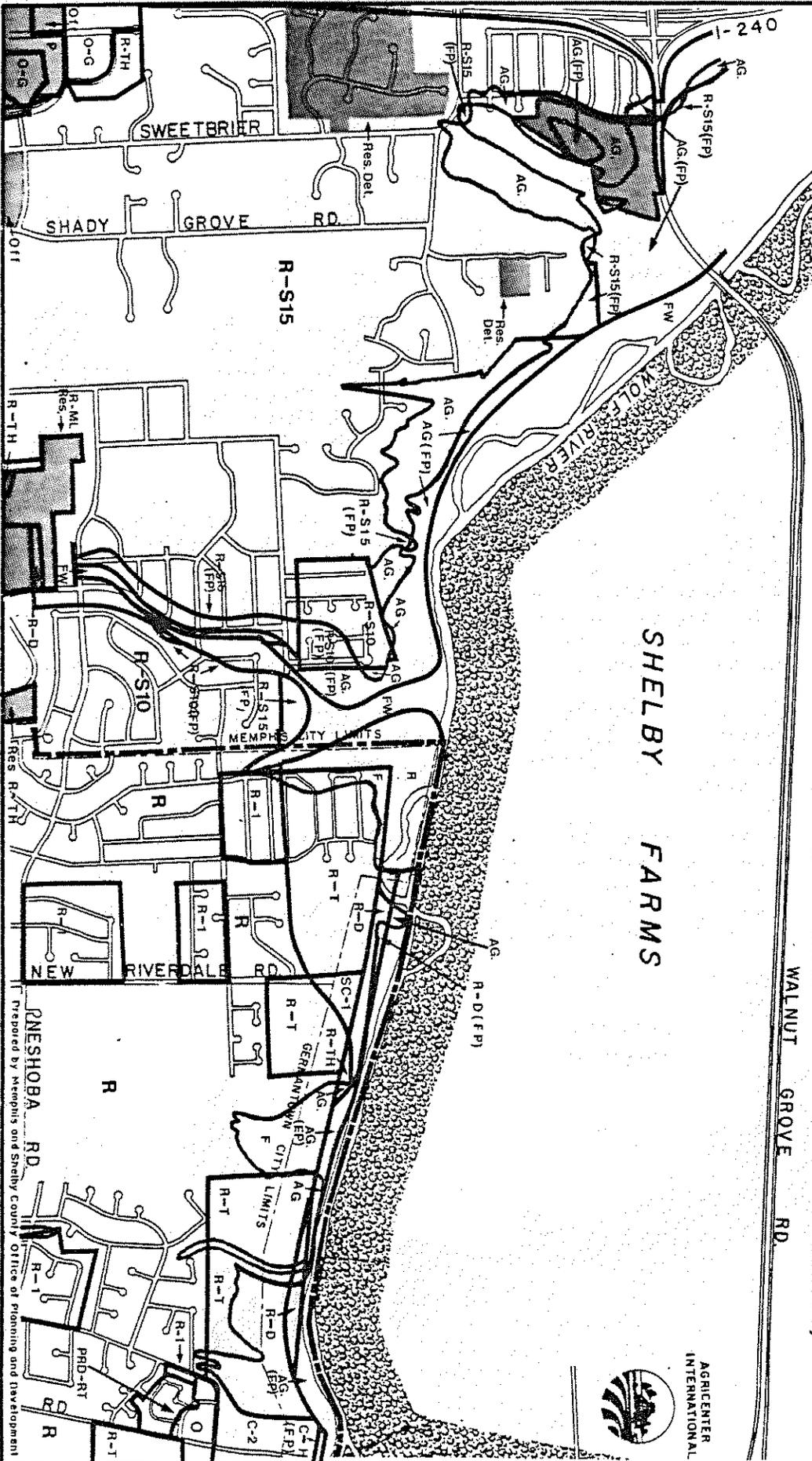
AG	Agricultural District
R-S15	Single Family Residential 15,000 sq. ft. lots minimum
R-S10	Single Family Residential 10,000 sq. ft. lots minimum
R-TH	Residential Townhouse
R-D	Duplex Residential
R-ML	Residential Multi-Family up to 15 units/acre

O-G	General Office
C-H	Highway Commercial
P	Parking
FP	Flood Plain
FW	Flood Way
RES	Planned Development
Res. Det.	Residential Detached
OFF	Office
RES	Residential

GERMANTOWN ZONING

ZONING BOUNDARY

R	Single Family Residential 15,000 sq. ft. lots minimum
R-1	Single Family Residential 12,000 sq. ft. lots minimum
R-T	Townhouse Dwelling District
PRO	Planned Residential District
O-2	Office District
SC-1	Commercial District
F	Shopping Center District Flood Zone/Floodway



Prepared by Memphis and Shelby County Office of Planning and Development

Nonconnah Creek Area

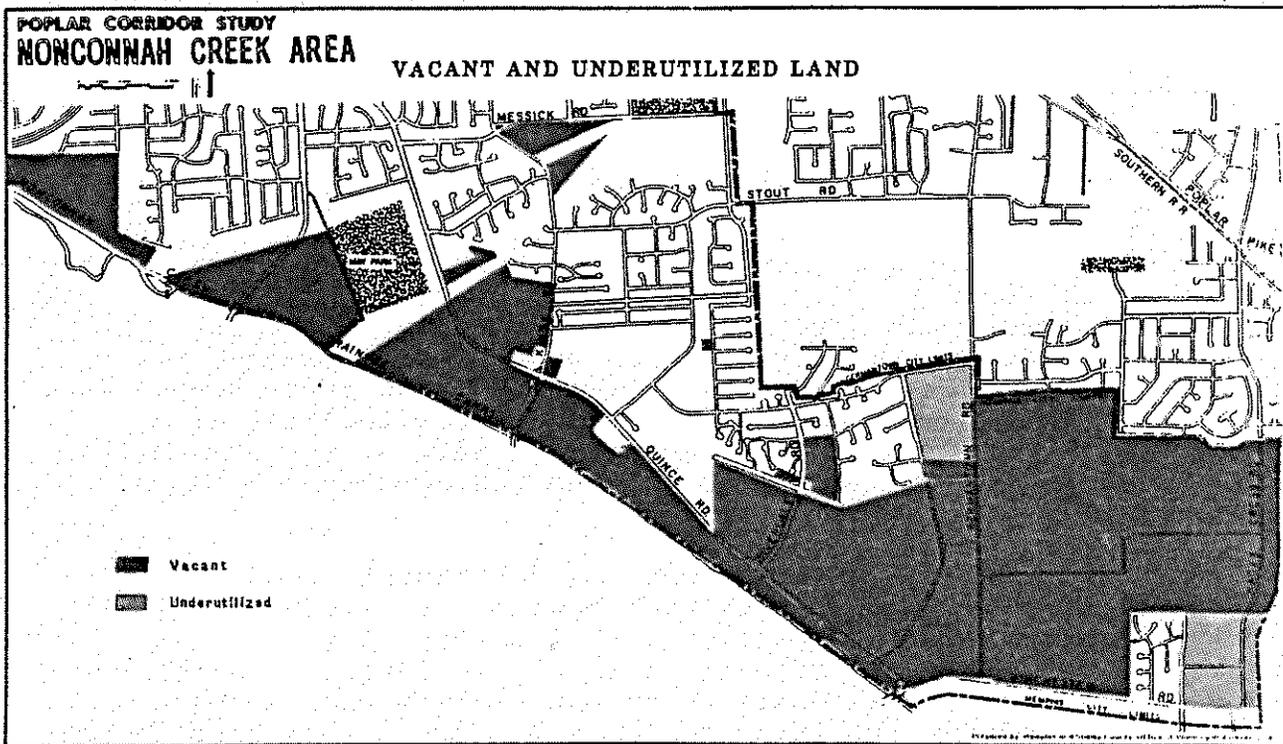
This area is somewhat similar to the Wolf River area in that it is in predominantly residential use bordering a largely vacant floodplain. Recent building trends include continued single family detached housing north of Knight Arnold Road and west of Germantown Road as well as large apartment complexes such as Watergrove along Quince east of Kirby Parkway. This area differs from the Wolf River area in that across the stream there is a rapidly developing suburban area rather than Shelby Farms and that the planned new major road, Nonconnah Parkway, is a limited access expressway. In addition to those development opportunities, the location of a prestigious TPA Golf Course and Community as well as the availability of vacant land indicate that this subarea has an extremely high growth potential.

This area contains the largest amount of developable land in the Study Area. Figure 19 indicates that most of the vacant (1,299 acres) and underutilized land (150 acres) borders the Nonconnah Creek. The underutilized land is currently in large residential estates. The completion of the Nonconnah Parkway will provide higher access and opportunities for more intense use on land at the interchanges with Ridgeway, Kirby, Riverdale, Germantown and Hacks Cross Road. Contributing to opportunities provided by the Parkway is the large market area both north and south of the road. This potential market area is part of the area described in the housing projections as one of the highest growth areas for residential development between now and 2005. Also of impact to the development of this subarea is the proposed Southwinn project at Hacks Cross Road and Nonconnah Parkway. This large, mixed-use development, including the TPA golf course, indicates the attractiveness of the subarea and could itself attract additional development to the area.

Constraints to development of the subarea include limited access which will be remedied by Nonconnah Parkway and the existence of floodway and floodplain land. Floodway areas are restricted from most development and floodplains require filling so that any buildings are higher than the 100 year flood level, which increases the cost of development. In addition to increasing costs, the floodplains also contain environmentally sensitive and beneficial wetlands which should be protected. Unfortunately, these floodplains are the very areas which will receive the best access from Nonconnah Parkway.

Another constraint to some types of growth is the market south of the Nonconnah Creek. Although the area appears to provide a larger market for commercial uses, the demand for goods in that area is already being met.

FIGURE 19



Recent land values appear to reflect the present development limitations. Large tracts with limited access and which require fill have sold for \$.20 to \$.60 a square foot, while smaller tracts with access have sold for \$2.00 to \$4.00 per square foot.

Figure 20 shows existing zoning and indicates that most of the development in the area is located in the residential (R-S10) zoning district, allowing four units per acre. Farther east, the R-S10 residential zoning gives way to the lowest density residential zone, R-S15. Closer to the Nonconnah Creek, both medium density residential districts and small commercial districts exist. The commercial districts are located on Ridgeway, Kirby, Riverdale and Hacks Cross Road, all major roads which will have interchanges with Nonconnah Parkway.

The existence of the sensitive wetlands, higher development costs and lower market availability in this general area suggests that the land around Nonconnah Parkway between I-240 to Winchester should be developed in predominantly non-employment uses. Some neighborhood commercial with accompanying office uses should be provided to serve basic needs. Existing trends support this type of development.

Existing trends also suggest that the Hacks Cross Road/Nonconnah Parkway area should become the commercial and office center providing for regional needs.



Peripheral Areas

The availability of developable land and the impetus for growth outside of the Study Area will provide competition for the location of employment uses. For this reason, the areas surrounding the Poplar Corridor may affect its potential development. These areas are shown in Figure 1 at the beginning of the report as Areas of Concern. The four areas are: Mendenhall to I-240, South of Nonconnah Creek, East of Germantown Road, and Germantown Road north of Shelby Farms.

Mendenhall to I-240

This area includes the office/commercial corridor from I-240 west to Mendenhall and the low density residential areas, north to Walnut Grove and south to I-240. The area is distinct from the Study Areas in that, it is characterized by mature urban residential and commercial uses. The commercial uses are urban in nature, drawing from a large service area from East Parkway to Germantown. A great deal of development pressure has been experienced in this area since the construction of Clark and White Station Towers. This pressure is evidenced by the lot by lot conversion of two residential coves and an entire neighborhood south of Poplar, east of Yates. The result of the conversion has been to mix commercial and residential uses on minor residential streets. Because demand for commercial space is higher than the available vacant land, a conflict is set up between neighborhoods which want to maintain their boundaries and businesses which want to expand the commercial area.

The development opportunities in this area are almost strictly limited to redevelopment of existing uses. The area south of Poplar, east of Yates, and the Brookhaven Circle area are examples of residential lot and building conversion to less than prime commercial uses. If land prices and market pressures continue to escalate, these areas would provide opportunities for redevelopment from the standpoint of good location and lower level existing use. However, assembling large tracts of land would be difficult.

One area with great potential for redevelopment is Truse-McKinney, originally a rural residential subdivision just west of Eastgate Shopping Center. Because of its location directly across Poplar from Clark Tower and the existing land use policy encouraging redevelopment of the entire area for commercial, residential improvements were never scheduled. Efforts are currently underway to sell all lots for one development. The success of that effort should indicate whether the redevelopment of the previously mentioned commercial coves may be targeted for similar treatment.

This area has provided urban level commercial uses serving a large part of Memphis for many years. But with the opening of two new urban level commercial areas to the southeast, this area may feel a reduction in pressure for urban level uses, and the commercial uses

may become more neighborhood oriented.

The residential neighborhoods to the north and south of Poplar should remain in residential uses as long as vacant and underutilized commercial land remains along the Corridor. The short term profit realized by the conversion of residential property should be balanced against the intensity of use, traffic and reduction in residential value of the mature neighborhoods. Increases in residential densities in areas which abut commercial uses can provide a beneficial transition between the different uses.

South of Nonconnah Creek

The area south of Nonconnah Creek appears to provide both a large market area and a great deal of competition to employment uses in the Poplar Corridor. South of Nonconnah Creek has been one of the highest growth areas since the early 1970's for both residential and commercial uses. Currently it contains approximately 35,000 residents. Two major shopping malls have located in the area attracting other retail and service uses as well as offices and hotels. A large amount of vacant, developable land still exists in the area, particularly along the south side of Nonconnah Creek. This area will have excellent access when Nonconnah Parkway is completed.

The Mall of Memphis and the Hickory Ridge Mall, with almost two million square feet, provide the Study Area with urban level services. The new offices and hotels in the southeast area will compete with those along the Poplar Corridor. Developments south of Nonconnah Creek are closer to the airport and have access to the Interstate. At this time, they also enjoy less congested roadways.

This area was projected to remain one of the high growth areas for residential development. With access to Nonconnah Parkway, it will probably continue to be the location of commercial and office space as well.

East of Germantown Road

The majority of the area east of Germantown Road is within the Germantown city limits or reserve area and is designated for low density single family housing. It is also shown as a high growth area for residential development in the market analysis. South of the Germantown City Limits, however, is the proposed Nonconnah Parkway which will stimulate growth in the area. This has already occurred at Hacks Cross Road and Winchester, where a large-scale office, commercial and residential community, surrounding a TPA golf course, has been planned and approved for the northeast corner of the intersection.

The TPA development covers approximately 300 acres and sets the tone for further development in the area. Continued high quality development of that nature is projected for this area.

Germantown Road, North of Shelby Farms

The focus of this area is the small community of Cordova. Recently, development of both housing and employment uses has increased along Germantown Road. Plans are being drawn to develop large tracts of land in the area for residential communities and commercial centers. A major shopping center has been approved for Germantown Road just north of Shelby Farms. This area has just become attractive to large-scale development, and will present competition to the Poplar Corridor area.

Conclusions

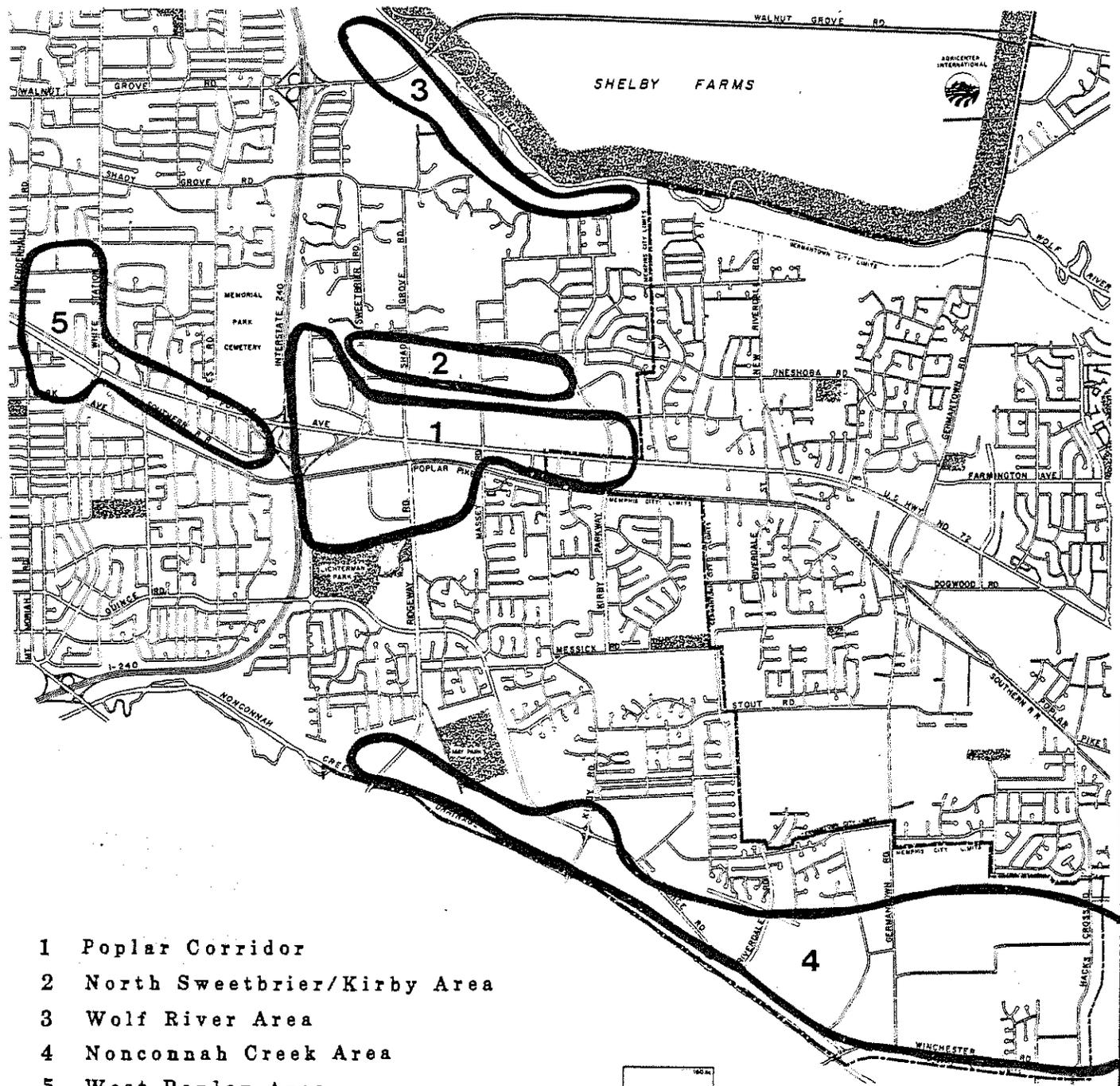
The factors which determine the development potential include existing land use and zoning, current trends in development, the location of vacant and underutilized land, planned transportation improvements and future economic conditions. These factors indicate that:

- * The development potential along Poplar is declining due to diminishing vacant land inventories, escalating prices and worsening traffic congestion.
- * Potential for development along Humphreys Boulevard and Nonconnah Parkway is higher than along Poplar. However, environmentally sensitive areas are a constraint upon the potential for development. Each of these areas also has the potential to overdevelop and negate any benefits these new roads would provide for relief of Poplar Corridor congestion.
- * The area surrounding the Study Area appears to provide opportunities for development and do not yet present the same access problems that exist in the Poplar Corridor.

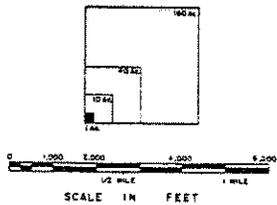
As can be seen in Figure 21, there are five areas within the study area with pressure for change to a more intensive land use than presently exists. These areas will be the focus of changes between the land use alternatives.

POPLAR CORRIDOR STUDY

FIGURE 21 AREAS WITH PRESSURE FOR CHANGE



- 1 Poplar Corridor
- 2 North Sweetbrier/Kirby Area
- 3 Wolf River Area
- 4 Nonconnah Creek Area
- 5 West Poplar Area



SUMMARY OF CHARACTERISTICS

The Poplar Corridor Study Area is and will continue to be a high growth area in Shelby County. Existing land use and transportation problems however, need to be overcome for this area to remain attractive for development and accommodate future growth. A summary of the characteristics of the Study Area are listed below.

Study Area Projections

* Growth is projected to increase population by 54 percent, from 53,000 persons in 1980 to 81,000 by 2005, and housing by 66 percent from 19,000 units in 1980 to 32,000 by 2005.

* The rise in population will demand almost one million additional square feet in both regional and neighborhood-serving uses by 2005.

* More than 25 percent of recent office construction activity in Shelby County has occurred within the Poplar Corridor, making it one of the three major employment centers in the County. This area has the image of a prestigious office center and with continued growth in population, almost 6 million sq. ft. of office uses are expected to locate in the general vicinity of the Study Area.

Transportation

* The standard for planning major roads within the city is a one mile grid. Deficiencies exist in the Study Area in an east-west direction between Poplar and Walnut Grove and in the north-south direction between Kirby Parkway and I-240.

* Poplar Avenue from I-240 to Kirby Parkway is carrying approximately 140 percent of its capacity. Many drivers have found alternate routes using minor residential streets, overloading these roads and changing the quiet character of the neighborhoods.

* During peak hours, nine out of 15 intersections on Poplar, Park and Ridgeway provide capacity at service level E. This is the lowest level of service where the system still functions.

* MATA currently runs five routes through the Study Area, two of which serve hospitals. The long range transportation study to be undertaken for MATA during 1986 will investigate the feasibility of Light Rail for Memphis.

* Commuter ridesharing currently accounts for 17 percent of commuter trips. Ridesharing holds potential for reducing peak hour trips.

* Planned road projects, including Germantown Parkway, Nonconnah Parkway, Kirby Parkway, Poplar Avenue, Poplar Pike and Wolf River/

Humphreys Boulevard, should provide alternate routes for through traffic now utilizing Poplar and neighborhood routes.

Land Use

- * Land use along the corridor is characterized by 2.7 million sq.ft. of office space and almost 900,000 sq. ft. of commercial space. The surrounding area is developed residentially, with the area north of Poplar in large single family lots and estates.
 - * There is a concentration of 1.9 million sq. ft. of office uses at high density levels near Poplar and Ridgeway. Because almost 40 percent of office trips occur during peak hours, congestion is occurring resulting in traffic delays and accidents, and increases in fire response time.
 - * An additional 3.0 million sq. ft. of employment uses are under construction or approved which will increase traffic congestion.
 - * Increases in noise, light and traffic have occurred in residential areas which abut high density employment uses.
 - * Due to development pressure and large lots sizes on the north side of Poplar, conversion of the fringes of these neighborhoods to employment uses have occurred without providing the needed transitional uses.
 - * Linking adjoining parking lots and providing rear access roads and pedestrian links between the clusters of high density uses along Poplar and Park Avenues may reduce trips from these developments along these major roads.
 - * The development potential along Poplar is declining due to diminishing vacant land inventories, escalating prices and worsening traffic.
 - * Potential for new development along Humphreys Boulevard and Nonconnah Parkway is high. However, environmentally sensitive areas hold most of the potential for development. Each of these areas also has the potential to overdevelop and negate any benefits these new roads would provide for relief of Poplar Corridor congestion.
 - * The five areas shown on Figure 21 are currently undergoing pressure for a change to a more intensive land use than presently exists. Some preliminary conclusions are summarized below.
1. Poplar Employment Center. The projected continued demand for employment uses in this corridor, based on proximity to access and management households, indicates infill along the corridor is likely. It is also reasonable from a land use compatibility standpoint that the vacant and underutilized

parcels with Poplar frontage be used for higher density commercial, office, hotel, and/or residential uses. Because of the traffic congestion caused by the concentration of office uses, it is preferable that any new development be a mixture of uses. This would spread trips out over the day, rather than continue to concentrate trips during the peak hours. The southern boundary of this employment center is fixed by the Lichterman Nature Center, MUS and the Southern Railroad. The northern boundary will be discussed in Area 2.

2. Sweetbrier to Kirby Area. This area is currently in low density residential use and also contains a great deal of vacant land. Higher density office and residential development have been moving northward toward this area. It is also the location of the proposed Quail Hollow Road. The road is intended to provide an alternative route for employees of the businesses on the north side of Poplar. However, the road has other implications. New roads provide improved access and usually attract additional development. Therefore, although the road is needed to provide additional east-west access, it will most likely also encourage conversion of low density residential neighborhoods. A transition area, buffering the high density employment uses from the low density residential areas, is needed. A new road bisecting this area from east to west would provide a boundary for the transition area.
3. Wolf River Area. This area will likely receive pressure for change because of a new road: Humphreys Boulevard. Any new development should incorporate the theme and character of the Shelby Farms and Wolf River amenities. Market projections indicate a need for a small neighborhood/community commercial center including office uses. The remainder of the area should be developed residentially to take advantage of the natural setting on the north side of Humphreys Boulevard.
4. Nonconnah Creek Area. This area is likely to become another employment corridor because of the excellent access to be provided by Nonconnah Parkway. However, environmental considerations may be constraints on development of this area.
5. West Poplar Area. This is one of the peripheral areas outside of the official Study Area. No land use projections were forecast, however the area will continue to be a location of development pressure. There are a few locations left for development and some redevelopment of older existing commercial buildings should occur along Poplar and Park. The area south of Poplar just west of I-240 and the Truse-McKinney area could be improved by redevelopment into large scale projects.

STUDY OBJECTIVES

From the study findings, the following Objectives were developed.

Land Use

- (1) Provide for reasonable growth in employment uses, considering the road capacities and impact on surrounding neighborhoods.
- (2) Provide transitional uses between high density employment and low density residential uses.
- (3) Encourage a mixture of uses in the employment areas to spread out peak hour trip generation.

Transportation

- (1) Provide additional roads which reroute traffic around the Poplar Center for traffic not destined for the employment center.
- (2) Provide alternate routes for traffic destined for the Poplar center.

The existing conditions, problems, opportunities and constraints set the framework for the future land use and transportation plan. The objectives give direction to developing approaches to possible solutions. The land use and transportation alternatives tested a number of different approaches to accomplishing these objectives. Those alternatives and their evaluation are presented in the next section.

ALTERNATIVES AND EVALUATION

ALTERNATIVES AND EVALUATION

As a result of research and problem identification, land use and transportation alternatives were developed. These alternatives were tested to determine the best way to meet the study goals of establishing the best configuration and appropriate mixture of land uses and to provide transportation service for the desired land use.

TRANSPORTATION ALTERNATIVES

The alternatives for transportation were based on the overall study goal of providing a transportation system which adequately serves future land use needs. More specifically, the problems identified earlier in the report suggest two approaches to supplement the existing system. The first approach is to enhance the circulation system for high density land uses clustered along Poplar. The second deals with providing alternate routes for through traffic not destined for the Poplar employment center.

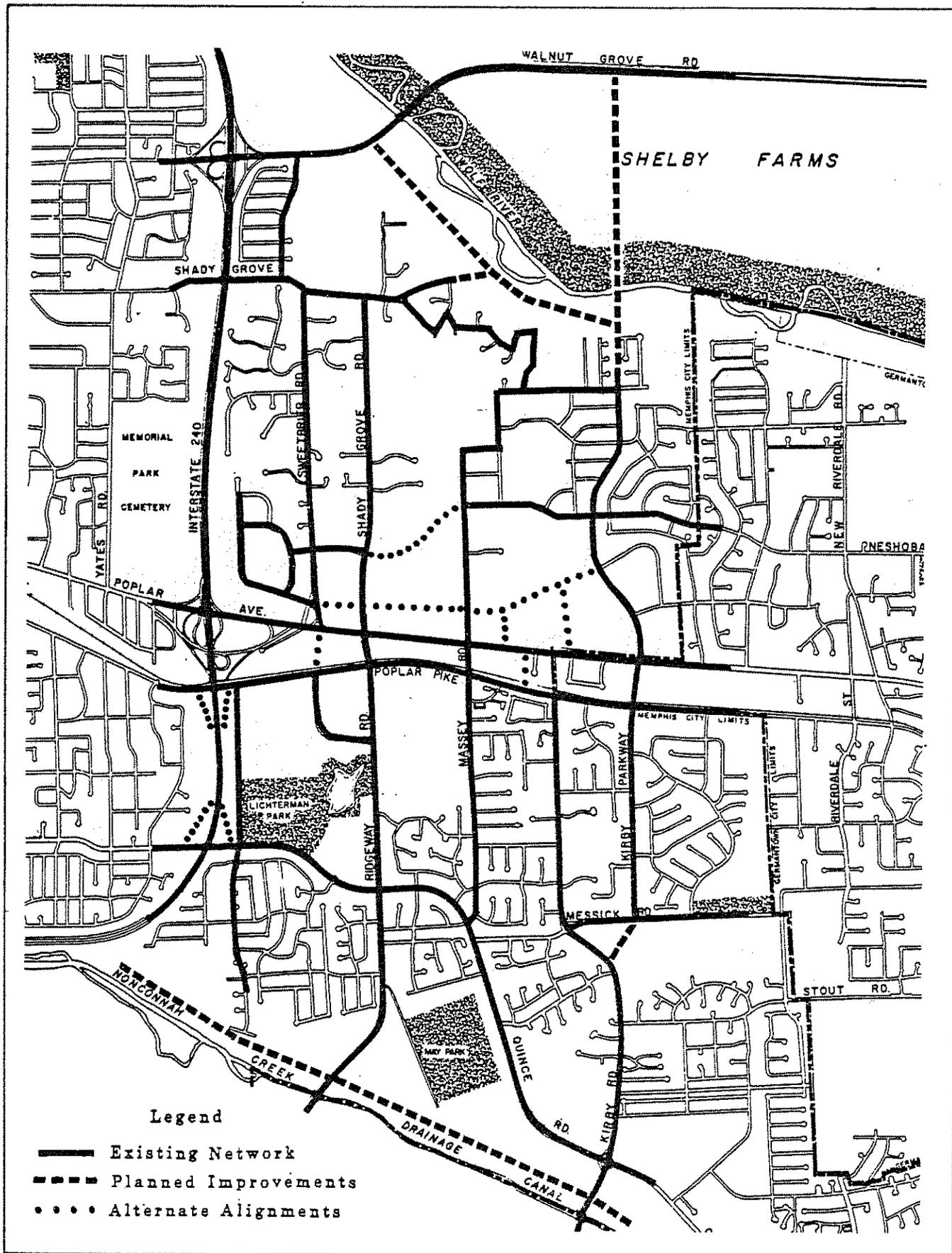
Figure 22 illustrates the road network that was tested. The dotted lines indicate new road links that could be of assistance in relieving existing congestion and serving future trips.

To supplement the circulation system along Poplar, two general areas of improvement were tested. Improvements are needed to handle east-west traffic in the Corridor. A new east-west road, being called Quail Hollow, and the extension of Cottingham west to Shady Grove is intended to test the demand in that area. Another link for east-west traffic is the extension of Sweetbrier south to Park Avenue and the construction of two half-interchanges on I-240 at Park Avenue and Quince Road. Examining these links will probe the need for additional entrances onto the Interstate for east-west traffic now using the Poplar interchange.

The other new links in the network are already contained in the Major Road Plan and would serve more regional transportation demands. For the Poplar Corridor, these roads could divert through traffic not destined for Poplar away from the congested area. These roadway links are Nonconnah Parkway, Humphreys Boulevard and Kirby Parkway.

Four basic alternative roadway systems were evaluated. These alternatives are called the Existing and Committed Roadway System, North-South Emphasis, Poplar Augmentation and Enhanced Land Service. An earlier alternative, East-West Emphasis, included as its principal element Humphreys Boulevard. Poplar Corridor Task Force approval of this facility rendered the evaluation of this system element inappropriate. Humphreys Boulevard was incorporated into the existing and committed network, and included as a committed improvement in the other alternatives. The exact roadway alternatives along with a summary of how the transportation analysis was conducted appears in the Poplar Corridor Technical Report.

FIGURE 22
ROADWAY NETWORK



LAND USE ALTERNATIVES

Initially, four land use alternatives were developed for the year 2005. The fifth alternative was added during the evaluation where a lower growth option was needed for comparison. All four alternatives projected the need for additional commercial growth and the attraction of office uses to the area. However, the configuration of these employment uses differed.

Three of the alternatives, Multiple Centers, Large Suburban Center, and Mass Transit, tested the establishment of a different size center on Poplar. The variables that made these centers different were land area, density and mixture of uses within the center. After determining the size of the center on Poplar, other centers were distributed if required by market projections. The land use pattern of each alternative was then based on the individual land use locational requirements and desirable relationships as detailed in the land use criteria.

Land Use Criteria

1. Locate mutually supportive uses together.
2. Orient mutually disruptive uses away from each other, and link by transportation facilities (roads, transit, pedestrian routes).
3. Place uses within proximity to needed goods and services.
4. Use roads and other infrastructure most effectively.

The fourth alternative, Dispersed Employment, did not test centers within the Study Area. Instead, it tested all known proposals from developers of the area.

The last alternative that was formulated was called Existing and Approved. This land use alternative did not project any growth in addition to that which is currently allowed by existing zoning in the Study Area.

All alternatives assumed Germantown zoning reflects future land use in that area and that the existing residential subdivisions would remain. 2005 growth was assumed for all areas outside the Study Area based on current trend analysis.

Table 11 shows the characteristics of each alternative and for comparison purposes, indicates those of the existing land use. A description of each land use alternative is given in the next section along with the evaluation of the alternative.

TABLE 11:

POPLAR CENTER EMPLOYMENT USES
FOR EACH ALTERNATIVE
(These numbers are for the Poplar Center only,
not for the entire Study Area)

Alternative	Employment Uses (Square Feet)	Commercial/ Office Ratio	Density Level (Floor Area Ratio)
Existing - 1985	3,614,858	24.5/75.5	Variable
2005 Existing and Approved	6,531,108	25.7/74.3	
Multiple Centers	7,503,966	28.7/71.3	.25-.5
Large Suburban	10,259,352	30.7/69.3	.5 -.75
Mass Transit	14,270,545	22.8/77.2	.75+
Dispersed Employment	9,776,106	26.6/73.4	.25-.75

EVALUATION OF THE ALTERNATIVES

An evaluation of each of the land use alternatives was conducted. The evaluation was based on how well the alternative meet the following criteria:

1. The Study Goals and Objectives
2. Land Use Criteria
3. Economic Projections
4. Transportation Standards
5. Affordability and Acceptance by Community

First, each land use alternative was tested to determine the road system needed to serve that level and configuration of uses. Then the cost and effect of the road improvements, as well as the land use impacts of the alternative were analyzed based on the above criteria to identify the best alternative.

Commonalities of the Alternatives

When all of the land use alternatives were tested there were some results which were common to the roadway systems for all alternatives:

- * Interstate 240 would need an additional lane in each direction from I-40 to Nonconnah Parkway.
- * Walnut Grove, from I-240 to Humphreys Boulevard; volumes require a 6 lane fully access-controlled facility (Freeway design). This would mean that uses on both sides would be unable to maintain acceptable access directly to Walnut Grove. Alternative land service roads will be required to provide acceptable access to existing or future land uses.
- * Humphreys Boulevard is adequate on all alternatives.
- * Demand along the Kirby Parkway alignment requires either an expressway or freeway design north of Park, to provide adequate system capacity. South of Park, 7 lanes are required.
- * Poplar would still need to be improved between I-240 and Shady Grove to Freeway design. Uses on both sides would not have direct access to Poplar. Provision for alternate access to existing land use required.

- * Quail Hollow (renamed Briarcrest) would be required at a 5 lane cross-section in the four 2005 growth alternatives.
- * Park Avenue needs to be 5 lanes east of Kirby Parkway and 7 lanes west of I-240.
- * Shady Grove needs to be improved to either a 4 or 5 lane cross section both east-west, through the Study Area, and north-south, from Brierview to Shady Grove.
- * Cottingham, east of Kirby Parkway, requires 4 lanes.
- * Massey Road, south of Poplar Avenue, needs either 4 or 5 lanes to adequately serve traffic.
- * Lynnfield Road projected traffic volumes would require a 4 lane cross-section.

Additionally, the land use alternatives, when tested against any roadway alternative including the half-interchanges at Park and Quince shared common results:

- * The presence of the interchanges significantly overloaded Park and Quince to a level where accommodation of demand proved impractical.
- * The demand on the interchange ramps was determined to be beyond that which could be accommodated by a simple interchange. A much more sophisticated and costly interchange is required than that originally envisioned.
- * More importantly, the provision of these half-interchanges did not significantly change the level of improvement required elsewhere in the Study Area.

Although traffic was distributed to Nonconnah Parkway, it was not in the traffic analysis area. Therefore, the effect of the land use alternatives on Nonconnah Parkway or its interchanges has not been quantified as a part of this evaluation. Traffic accommodation is presumed as final design has not yet commenced.

Alternative 1: Existing and Approved - This configuration of land uses is based on the inclusion of the existing land use plus the development of current zoning and approved planned developments. This land use indicates the level of development that could occur without any additional decisions by the city. The examination of this configuration seeks to determine whether adequate service can be rendered at least to those developments already approved. Only planned major roads were tested against this alternative. This does not include Quail Hollow or the extension of Sweetbrier.

LAND USE

- * There would be no buffer between the Poplar employment center and the extremely low density residential uses to the north.
- * New office development is placed outside of the Poplar corridor at Nonconnah Parkway.
- * There would be low density residential zoning left along the Poplar frontage which is now not appropriate.

TRANSPORTATION

- * Kirby Parkway, north of Park and Poplar Avenue, between Yates and Shady Grove, only require expressway cross-sections.
- * Shady Grove, south of Brierview would require only 5 lanes.
- * Park Avenue, between I-240 and Massey requires only 5 lanes.
- * Quince Road, east of Ridgeway requires only 5 lanes.
- * Quail Hollow, north of Poplar Ave. would not be required.
- * COST OF TRANSPORTATION IMPROVEMENTS: \$47,729,000

Of all the 2005 land use alternatives, Existing and Approved requires the least road improvements. This is however, a no growth land use alternative, except for development already approved. Continuing conflicts between employment uses and low density residential would result.

Alternative 2: Multiple Centers - In this alternative, the Poplar Center is smaller than any of the alternatives, in terms of density and land area. It includes 7.5 million sq. ft. of employment uses at a density of .25 to .5 Floor Area Ratio. The mixture of uses is 28 percent commercial to 72 percent office. New employment uses would continue to fill in vacant land with frontage on Poplar, at a depth equal to existing adjacent uses. North of the proposed Quail Hollow Road, only medium density residential uses would provide a transition to low density residential uses farther north.

Of the remaining projected employment uses, about one-half were distributed to two centers: Walnut Grove/Humphreys Boulevard and Hacks Cross Road/Nonconnah Parkway. The center at Walnut Grove accounts for 550,000 sq. ft. of employment uses at a 27/73 commercial/office split. The Hacks Cross Road Center was configured as a larger center due to a larger service area and available land. It was established at 1.6 million sq. ft. of employment uses. The remaining employment uses projected for the area were placed in the two centers in Germantown or in the five neighborhood centers. The neighborhood centers were allocated between 50,000 to 300,000 sq. ft. at a ratio of 33/66 commercial and office.

LAND USE

- * The location of other employment centers provides goods and services in closer proximity to residents.
- * Low density residential areas north of Poplar are buffered from employment uses by higher density residential.
- * Residential development along the Wolf River and Nonconnah Parkway would be sensitive to those environments.
- * The land uses designated in this alternative closely reflect the 2005 demographic and land use projections.

TRANSPORTATION

- * Poplar Ave., between Yates and Shady Grove, and Kirby Parkway, north of Park, require a 6 lane freeway design.
- * Sweetbrier, Brierview to Poplar Avenue, requires 5 lanes with a full interchange at Poplar Avenue. South of Poplar Avenue, Sweetbrier needs 7 lanes.
- * Quail Hollow is required at 5 lanes and Cottingham extended to Shady Grove requires 4 lanes.
- * Shady Grove, between Brierview and Park, Park Avenue, between I-240 and Massey, and Quince, between Lynnfield and Ridgeway all require 7 lanes.
- * COST OF TRANSPORTATION IMPROVEMENTS: \$67,580,000

Alternative 3: Large Suburban Center - This Alternative places all major employment uses in the Poplar Center. The centers in Germantown and the neighborhood centers still account for a small portion of community and neighborhood serving uses. The Poplar Center accommodates 10.6 million sq. ft. of employment uses, more than 3 million sq. ft. more than the Multiple Centers Alternative. Of the 10.6 million sq. ft., the commercial and office uses were mixed 30 to 70 percent.

A density level of .75 Floor Area Ratio was used for all new developments projected in the Poplar Center. Although this density is higher than that used in the Multiple Centers Alternative, the Large Suburban Center allocated more land area for employment uses in the Corridor. Employment uses would fill in vacant and underutilized parcels along Poplar and north of Poplar generally to a line even with Briercrest Road. Medium density residential uses would be placed between the employment uses and Cottingham Road, the start of low density residential. A residential corridor would flank both the Nonconnah Creek and Wolf River. Neighborhood centers would be interspersed to provide needed services in proximity.

LAND USE

- * The concentration of all major employment uses in the Poplar Center reinforces the image and vitality of this center.
- * Expansion of the employment uses north from Poplar to include the north side of Quail Hollow Road, at the density level of .75 FAR would increase the impact on surrounding neighborhoods.
- * The land uses designated in this alternative closely reflect the 2005 demographic and land use projections.

TRANSPORTATION

- * This alternative places higher traffic volumes on Poplar Avenue, Park Avenue and Quail Hollow. However, the accommodation of these volumes still fall within the same roadway cross-sections as Multiple Centers, with one exception:.
- * Quince Road would require 5 lanes.
- * COST OF TRANSPORTATION IMPROVEMENTS: \$67,859,000

Alternative 4: Mass Transit - This alternative is based upon a commitment to a Poplar Corridor transit system which would provide enough transportation capacity to significantly affect densities along this corridor. Transition uses and density gradients would be used to buffer surrounding neighborhoods. In this alternative, the Poplar Corridor would capture an increased share of county employment and be a major factor in overall county development.

The Mass Transit alternative assumes that high density development will be concentrated at transit stop locations along a light rail route built within the right of way of Poplar Avenue. Six stops were proposed within the Study Area, five of which are associated with high-density office-commercial-residential development, while the easternmost stop is foreseen as a residentially-oriented park-and-ride location for commuters. The supposition of a light-rail transit system allowed the land use projections supporting the highest density of development proposed for the study area, with 15.2 million square feet of office and retail uses. Transit ridership was estimated at approximately 23,000. See the Technical Report for the methodology used for the estimate and distribution.

In order to determine the development of individual parcels of land adjacent to the transit stops along Poplar, rings of decreasing development densities were drawn around the transit stops at 500 ft. and 1,320 ft. (1/4 mile) intervals. No FAR maximum was assigned for developments within the 500 ft. radius. An FAR of .75 was configured for the new developments and redevelopments within the 500-1320 foot radius.

This alternative generally has the same boundary as the Large Suburban Center Alternative for employment uses north of Poplar. However, because of the attracting force of the light rail system, a portion of the Memphis University School property was included in the center. On the north side of the Poplar employment center, medium density housing appears between higher and lower intensity uses. Also, medium density residential takes advantage of the natural areas along the Nonconnah Creek and Wolf River.

LAND USE

- * This is the highest land use density of all the alternatives and does not reflect the 2005 projections for the Study Area. It assumes a higher proportion of all county growth will occur in the area.
- * All employment uses were placed on the Poplar Corridor, except neighborhood commercial centers.
- * Land uses surrounding the Study Area were still shown based on current development trends. With the location of a mass transit line, development may be more inclined to

concentrate along the line rather than disperse throughout the county.

TRANSPORTATION

- * Includes a light rail transportation system as part of the alternative.
- * Requires the same road system as Multiple Centers.
- * Requires more improvements to the network serving the higher density along Poplar. Sweetbrier would need to be a freeway design from Poplar to Briercrest.
- * COST OF TRANSPORTATION IMPROVEMENTS: \$325,205,000
ROADS: \$65,205,000

Alternative 5: Dispersed Employment - This alternative, unlike the others, does not focus on the Poplar Center, but is meant to test the effects of distributing employment based on current plans of area developers. To formulate this land use alternative, all known development proposals from area developers were included, as were the assumed commercialization of several roadways. The proposals do not necessarily reflect market demand in the area.

A total of 9.4 million square feet of office and commercial uses are placed within the Poplar Center alone. A total of 22.2 million sq. ft. was allocated by development proposals and the extension of those projects in the Study Area. This alternative contains the least mixture of uses, 77 percent office and 23 percent commercial. The density of development for this alternative varies from an assigned .25 FAR for new employment-generating uses to .75 FAR for some of the developer proposals. A small amount of land is designated for medium density residential north of the Poplar Center. Both the Nonconnah Creek and Wolf River are commercial/office corridors.

LAND USE

- * This alternative does not reflect the 2005 projections by proposing more development in this area than is forecast for all of Shelby County by 2005.
- * Spreading out employment uses does not provide central locations for a variety of uses and has a higher impact on a large number of neighborhoods.
- * Overbuilding can result in bankruptcy or vacant land and buildings which present an unsuccessful image. A concentration of a reasonable amount of employment uses demanded by the market allows mutual support between businesses and a more positive image.

TRANSPORTATION

- * Basically the same transportation requirements as the Multiple Centers alternative with more traffic on Quail Hollow and in the Nonconnah Creek area.
- * COST OF TRANSPORTATION IMPROVEMENTS: \$67,580,000

Conclusions

It is clear from the analysis of the alternatives that even if no additional employment uses are approved for the area, the required road improvements are massive. The roadways are needed because 6.5 million square feet of employment uses (the amount that is currently allowed under present zoning), at an average density higher than .25 FAR require a more intensive street network than the standard one mile grid system. In the Corridor, through changes in the Major Road Plan, there is not even a one mile grid system planned. Along the Corridor, where the highest density areas require the most intensive road network, both north-south and east-west roads are needed at one-half mile to 500 foot intervals for any of the alternatives.

The objective of continued growth in the Poplar Employment Center, however requires the selection of one of the growth alternatives. Multiple Centers and Large Suburban Center are the two growth alternatives which indicate growth in the Poplar Center and also reflect the 2005 Study projection.

Multiple Centers also reflects present trends and land use policies through its location of employment centers convenient to residents. The Large Suburban Center Alternative however, created a more vital employment center on Poplar. The road system needed for these alternatives were quite similar, although the traffic volumes were higher around the Poplar Center in the Suburban Center Alternative.

The recommended land use alternative is a cross between the Multiple Centers and the Large Suburban Center Alternatives, configured to include the advantages of each. A further analysis and testing of variations of these alternatives resulted in the exact recommendations which are presented in the next section.

RECOMMENDATIONS

RECOMMENDATIONS

Adoption and Guidelines for Revisions of the General Plan

The land use and transportation plan will function as a general guide for development in the area. Area covered: I-240 to Germantown City Limits, Wolf River to Messick Road.

The Plan is not permanent and should be revised and updated periodically. Reasons for updating include new issues not evaluated during plan preparation, or changes in the basic assumptions used in the plan. The plan can be reviewed at any time, but after a maximum of 10 years, the plan should be reviewed and updated.

The City Council or the City Administration can initiate a review of the plan. The review must consider changes that have occurred since plan adoption and any new issues. After review, the staff shall recommend either modifications, to reflect changes in policy, or maintain the formerly adopted policy. Modifications are subject to adoption by the City Council as in the initial plan.

LAND USE RECOMMENDATIONS

(See Figure 23)

Poplar Employment Center, shown in red on the map

- Continued development of the following uses: office, hotel, retail, hospital and residential.
- Development of 100% office space shall not exceed a 0.5 Floor Area Ratio (FAR)
- Developments (with mixed uses encouraged) may exceed the maximum 0.5 FAR provided that the number of vehicular trips generated in the peak hour does not exceed the number of peak hour trips of office use at 0.5 FAR as established by the Trip Generation manual of the Institute of Transportation Engineers.

Quail Hollow Area, residential density north of Quail Hollow is based on level of access.

- * Along the north frontage of Quail Hollow, as shown in pink, residential uses are allowed at a maximum of 15 units per acre or lower density.
- * Parcels with direct access to Massey, shown in yellow, are recommended to develop in low density residential use, 3-4 units per acre.
- * Land with indirect access to Kirby Parkway or Shady Grove, shown in light brown, are recommended to develop in medium density residential use, 5-12 units per acre.
- * Land with direct access to Kirby Parkway or Shady Grove, shown in dark brown, are recommended to have residential uses at a maximum of 22 units per acre.

Wolf River Area

Based on the population in 2005, a mixed use employment center consisting of retail, hotel and office use can be designated at Humphreys Boulevard and Walnut Grove shown in light purple, encompassing approximately 45 acres at a density of .3 Floor Area Ratio.

Vacant land along the remainder of Humphreys Boulevard is designated for low to medium density residential to take advantage of the open space/greenbelt area. Density levels averaging 12 units per acre, not to exceed 22 units per acre are recommended only on the south side of Humphreys Boulevard.

Nonconnah Corridor

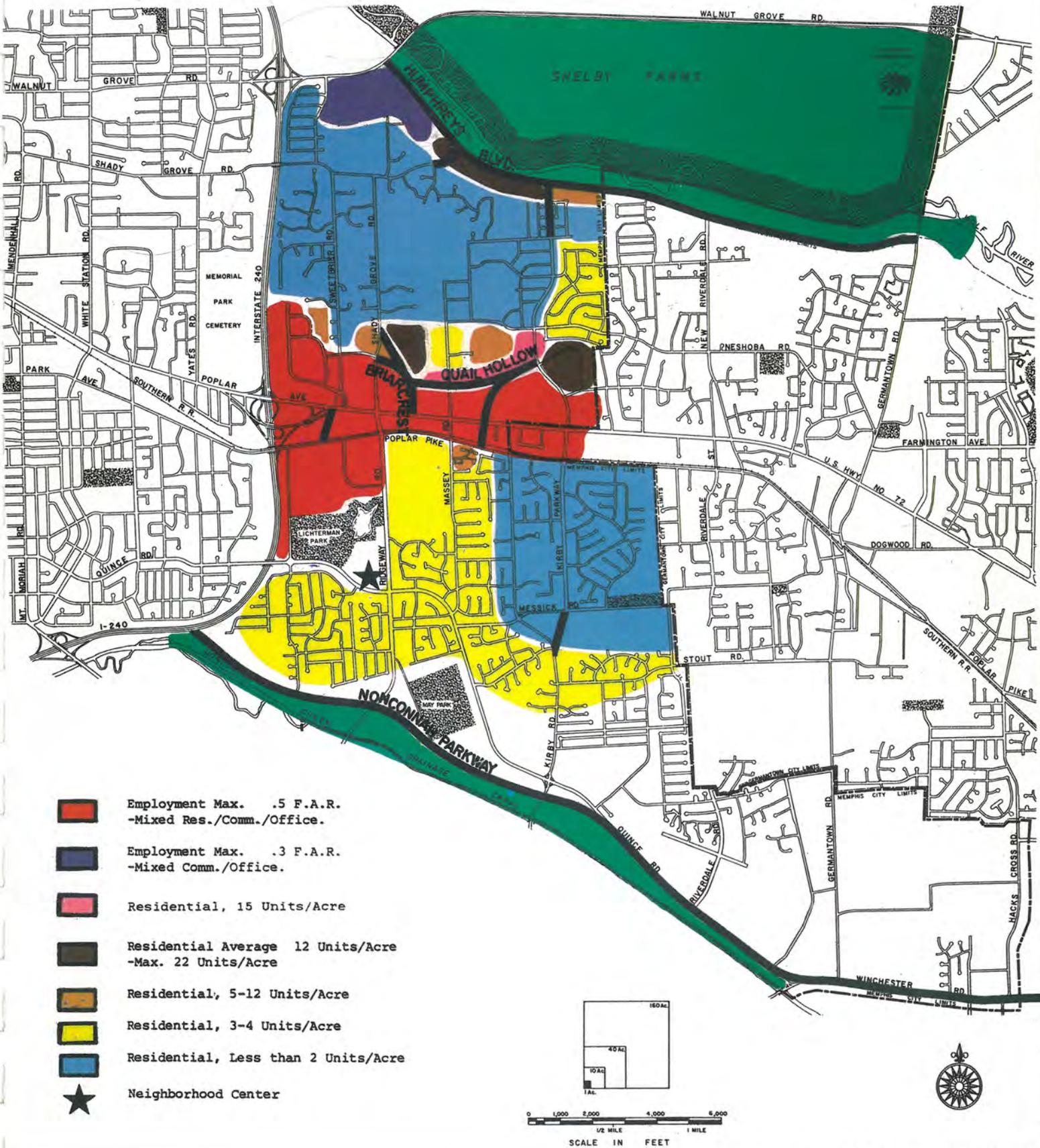
Nonconnah Parkway was not included in the traffic analysis area. Land uses were only tested on their effects on roadways in the Poplar Corridor. No volumes could be established for Nonconnah Parkway, therefore, the land use south of Messick could not be calculated based on road capacities.

General Guidelines

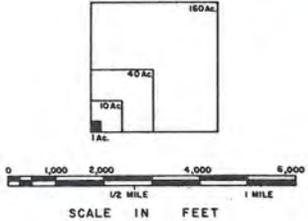
To assist in limiting congestion along the roadways, the following guidelines are established to promote pedestrian access and movement, reduce auto trips, and to deemphasize Poplar Avenue as the main functional access point:

- * All proposed land use changes should use the Planned Development process.
- * On site automobile access should be provided between developments. (non-dedicated roadways linking developments)
- * Pedestrian links shall be required between mutually supportive uses.
- * Amenities such as plazas, fountains or other open space should be provided in accordance with the scale of development.
- * Garage parking is encouraged to place employees closer to buildings and to provide more open space and landscaping.
- * For all new employment uses and multi family developments, establish a 15 foot minimum landscaped area adjoining all major roads within the Study Area. Parking lots adjoining the landscaped area must screen the cars from view with hedges or other landscape material.
- * Timing of developments are encouraged to coincide with road improvements.

FUTURE LAND USE



- Employment Max. .5 F.A.R.
-Mixed Res./Comm./Office.
- Employment Max. .3 F.A.R.
-Mixed Comm./Office.
- Residential, 15 Units/Acre
- Residential Average 12 Units/Acre
-Max. 22 Units/Acre
- Residential, 5-12 Units/Acre
- Residential, 3-4 Units/Acre
- Residential, Less than 2 Units/Acre
- Neighborhood Center





RECOMMENDED ROADWAY SYSTEM

1. Addition of two lanes on I-240 from Nonconnah Parkway to I-40.
2. Convert Lynnfield between Park and Quince from two lanes to four lanes.
3. Construct Sweetbrier interchange from Hyatt Ridgeway Parkway to Park.
4. Disassociate the southern end of Sweetbrier from the proposed Sweetbrier interchange.
5. Convert Shady Grove N-S from Briarcrest to Shady Grove E-W from two lanes to four lanes, realigning the southernmost section to the east, and cul-de-sacing Shady Grove just north of Briarcrest.
6. Convert Shady Grove N-S from Poplar to Briarcrest to a five lane cross section.
7. Convert Quince Road from Massey to Ridgeway Road Extension from two lanes to five lanes.
8. Extend Ridgeway Road from Mt. Moriah to Quince at a five lane cross section.
9. Convert Massey Road from Park to Quail Hollow to a four lane cross section.
10. Construct a new road from Park to Quail Hollow at a four lane cross section between Massey and Kirby Parkway.
11. Convert Kirby Parkway from Humphreys to Messick Road to a seven lane cross section.
12. Convert Walnut Grove Road between I-240 and Humphreys Boulevard from a four lane cross section to a six lane facility.
13. Convert Walnut Grove Road from Humphreys Boulevard to Germantown Parkway from a four lane expressway to a six lane expressway.
14. Convert Neshoba from Kirby Parkway to City Limits from two lanes to four lanes in conjunction with Neshoba's expansion by the City of Germantown.
15. Construct Quail Hollow at a five lane cross section between Briarcrest and Kirby Parkway, and simultaneously or as soon as Humphreys Boulevard is operative between Walnut Grove and Kirby Parkway, whichever comes first, cul-de-sac Massey Road in its existing condition approximately 300 feet north of Quail Hollow and add fire access if needed.

16. Convert Poplar Avenue between Yates and Sweetbrier to a six lane facility.
17. Convert Poplar Pike between Lynnfield and Kirby Parkway to a six lane cross section.
18. Convert Poplar Pike from Kirby Parkway to City Limits to a five lane cross section.
19. Disassociate Brierview Road from Walnut Grove Road.
20. Disassociate Sweetbrier Road from Briarcrest Road, so as to prevent Sweetbrier from being used as a major north-south route.
21. Closure of Sweetbrier Road between Hyatt Ridgeway Parkway and Briarcrest Road.
22. Closure of Meadowgrove Road, north of River Grove Road.
23. Cul-de-sac River Grove Road at its existing eastward limit.
24. Discourage through travel on Haddington Road.
25. Cul-de-sac Kirby south of Messick, north of the TVA easement as part of the Kirby Parkway improvement.
26. Review access points along major arteries to develop designs that will result in optimum level of service for both the adjacent properties and the roadways.
27. No existing roads will be improved until the need is proven and ample opportunity is given to property owners and neighborhoods for input. Any improvements beyond the scope of these recommendations which appear necessary at a later date shall also be studied with a similar opportunity for input.
28. All recommended disassociations or cul-de-sacs will not be created until the major roads associated with the closure are completed.
29. Extend Briarcrest Road in an east and southward direction to intersect with Poplar approximately halfway between Ridgeway and Massey Road.

These roadway improvements maximize the service of the system in the context of the goals of this study. Capacity deficiencies remain in the roadway system in the east-west and north-south directions. Resolution of these deficiencies must be sought elsewhere in the roadway system.

ADDITIONAL TRANSPORTATION RECOMMENDATIONS

Roadway Landscape

- * Landscape all major roads connecting the Nonconnah Creek and Wolf River including Kirby Parkway, Shady Grove/Ridgeway and Massey/Quince/Ridgeway requiring medians and/or landscaping on both sides. This landscaping would be designed to cushion the burden of additional traffic coming through neighborhoods.

Transportation System Management

Traditional solutions to alleviate traffic congestion problems in areas such as the Poplar Corridor focus primarily on new road construction. But new road construction can provide only partial solutions to traffic problems in the Poplar Corridor.

Recently, urban areas have adopted an alternative approach which views traffic congestion as a management problem. This approach concentrates on the development and implementation of short-and long-term transportation management strategies to alleviate traffic congestion. Transportation management strategies include traffic mitigation techniques such as carpool/vanpool programs, transit shuttles, employee flex-time programs, parking/zoning policies, traffic signalization, and other transportation demand management techniques. Transportation management strategies, coupled with new road construction alternatives, provide a comprehensive approach in dealing with traffic congestion in the Poplar Corridor.

The Poplar Corridor Task Force and the Office of Planning and Development have already been working toward implementing transportation management strategies in the Corridor. The following outlines those steps:

- * The Memphis and Shelby County Metropolitan Planning Organization and the Federal Highway Administration have authorized \$45,000 in Federal-Aid Urban System Funds to the Office of Planning and Development to conduct a transportation management-commuter rideshare project in the Poplar Corridor area.
- * A subcommittee of the Poplar Corridor Task Force was formed in November, 1985 to study the application of transportation management strategies in the Poplar Corridor and to provide direction for implementing these strategies through the development of a Transportation Management Association.
- * To strengthen the development and implementation of transportation management strategies in the Poplar Corridor, the formation of a transportation management association (TMA) will be pursued during 1986. TMA's are composed of public and private

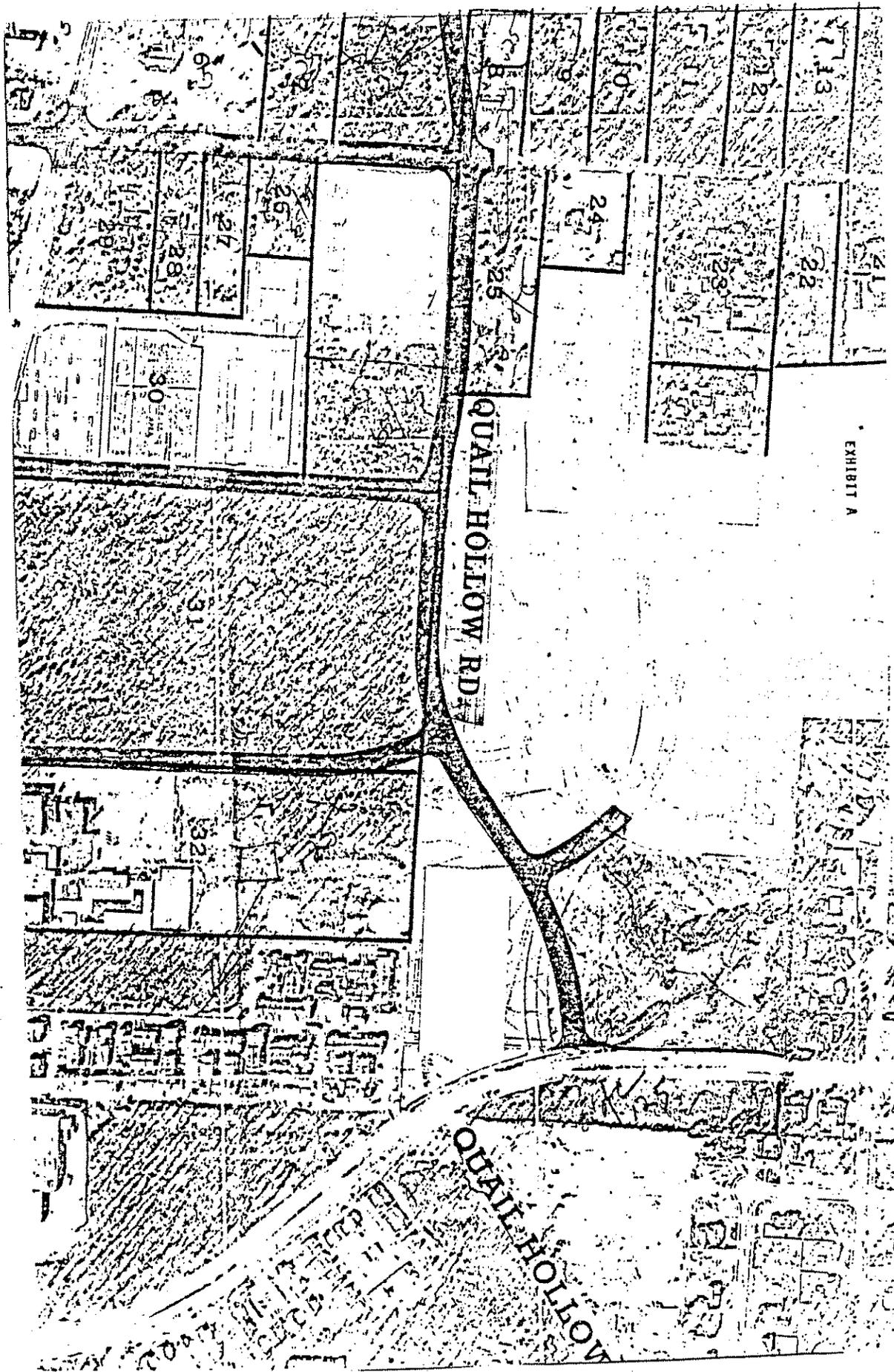
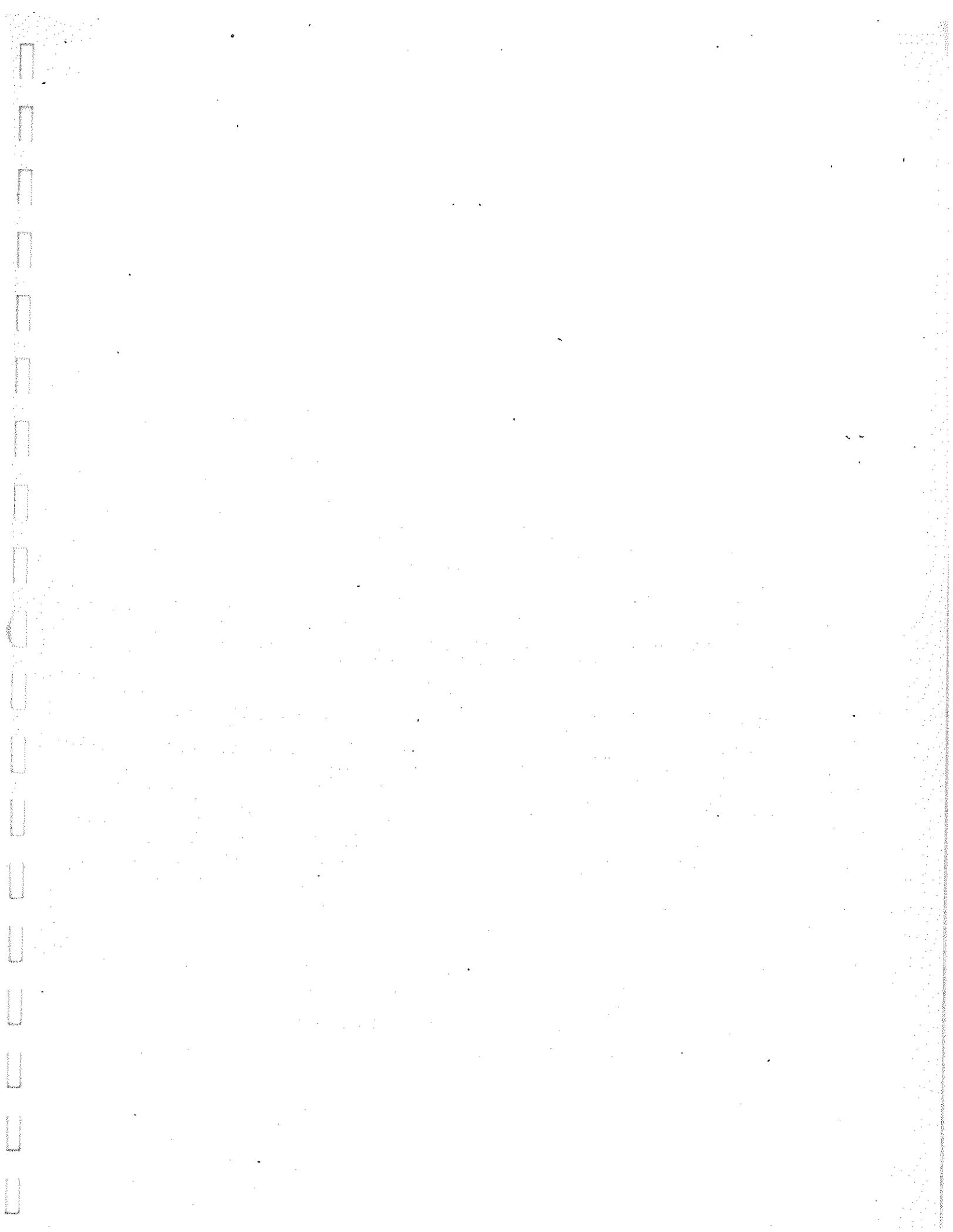


EXHIBIT A



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