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# M-53

## Corridor Planning Study

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MICHIGAN DEPARTMENT OF STATE HIGHWAYS  
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PLANNING DIVISION  
NOVEMBER 1, 1967

# **M-53**

## **FREEWAY**

### **Corridor Planning Study**

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS  
OFFICE OF PLANNING PLANNING DIVISION**

**NOVEMBER 1, 1967**

Prepared in cooperation with the  
U.S. DEPARTMENT OF TRANSPORTATION  
Federal Highway Administration  
Bureau of Public Roads

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Mr. E. A. Bellenbaum  
Chief Planning Engineer  
Office of Planning

Dear Mr. Bellenbaum:

Submitted herewith is the M-53 Freeway Corridor Planning Report. The publication of the report concludes a comprehensive study lasting two years and which involved several local governmental units. Planning for the M-53 Freeway has been coordinated with the current studies being prepared by the Davison-McNichols-Conner Freeway Planning Committee.

The proposed M-53 Freeway will be an integral part of the freeway system serving the Detroit Metropolitan Area. It will provide an improved level of state highway service to an area with industrial, engineering and economic activities of regional wide influence and which is undergoing unprecedented residential expansion.

Careful consideration has been given to the broader implications that result from a freeway location and the relationship of the freeway to the orderly growth and development of the community. The recommended corridor location reflects agreement on the part of the planning representatives of the local communities involved.

Sincerely,

A handwritten signature in cursive script that reads "Robert S. Boatman".

Robert S. Boatman, Director  
Planning Division  
Office of Planning



# Acknowledgments

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# Preface

Rapid growth of industrial development, residential uses and shopping facilities in the City of Warren and Sterling Township has resulted in an accelerated increase in vehicle traffic volumes. The rate of population and economic expansion taking place here is the highest of any area within the Detroit metropolitan region. State trunkline M-53 now serving this section has recently been improved and already is operating over capacity, making it necessary for the Department of State Highways to plan for a freeway which would provide sufficient capacity for the even greater traffic volumes expected in the future. A section of the M-53 Freeway has been completed, having a southern terminus near Utica. This report will cover the remaining portion connecting the present terminus with the proposed Davison-McNichols-Conner Freeway in Detroit.

The Department of State Highways is responsible for the planning analysis and engineering study for the M-53 freeway, with this, the planning report, being the first report. In early 1966, the Davison-McNichols-Conner Planning Committee, composed of representatives of the City of Detroit, Wayne County Road Commission, Michigan Department of State Highways, and U.S. Bureau of Public Roads, was organized to coordinate and direct preparation of planning and route location studies for that route within the City of Detroit. Because the M-53 and Davison-McNichols-Conner freeways intersect and M-53 is presently planned to terminate at this freeway, coordination of the two studies is necessary.

This planning report evaluates alternative alignments for the proposed M-53 Freeway and formulates recommendations concerning its location, based upon analysis of significant planning considerations. These planning considerations include such factors as: service to major areas of traffic generation and attraction, including concentrations of population, business and industry; relationship of the proposed freeway to the regional highway system; service to present and future traffic desire patterns; effect of the route on community values, including churches, schools, school attendance areas and residential neighborhood units; and availability of right-of-way.

# Summary and Recommendations

The need for a freeway in the vicinity of the Mound Road-Van Dyke Avenue corridor has been generally accepted for many years. Several studies have recommended that a high capacity highway be located in this corridor, the most recent being the Detroit Area Traffic Study conducted in 1953. In each study the general location indicated was one in the immediate area of Mound Road or Van Dyke Avenue. During this study, every reasonable alternative location for the M-53 freeway within a six-mile wide study area was considered.

One of the most extensive concentrations of engineering-manufacturing development within the Detroit region has taken place between Mound Road and Van Dyke Avenue north of Eight Mile Road, thereby placing heavy demands upon highways in this area. The industry is automobile oriented with all of the major auto makers having substantial manufacturing and engineering operations located in the corridor. Further industrial expansion is continuing to take place and by the year 1990, it is expected that the corridor will stretch from Eight Mile Road north through much of Sterling Township.

Population increases in the study area have been equally impressive. Between 1960 and 1966, the number of inhabitants living in the study area is estimated to have increased nearly 40 percent reaching a total of more than 309,000. Projections of growth to 1990 expect the high rate to be maintained, slowing only when the supply of vacant land is nearly exhausted.

A significant finding is that many of the people who reside in the study area commute daily to other parts of the Detroit region to work; and, conversely, many of the people working within the study area do not live there. The result is a substantial daily exchange of commuters between the study area and other parts of the Detroit region. Due to the wide dispersal of the living places of the commuters, they are highly dependent upon the private automobile.

Land use patterns within the area are undergoing a continual change due to the rapid urbanization that is occurring. Manufacturing uses tend to locate in the existing established industrial corridors while commercial growth is mainly shopping centers locating in the newly developing residential districts. Neighborhood units in general continue to follow the grid pattern of major thoroughfares spaced one mile apart. As a result, a freeway location should follow one of the existing thoroughfare locations. By 1970, it is expected that the City of Warren will be fully developed and Sterling Township will

likely reach full development by 1990.

As noted previously, the means of transportation to work for those people living or working in the study area is predominantly the private automobile. In 1960, four out of every five work trips made were by private automobile, while about one out of every ten work trips was made by bus. Bus service in the area is provided by the DSR and several smaller companies. There are no current proposals for a rapid transit system; however, a transit plan for the Detroit region is being prepared as part of the Detroit Region Transportation and Land Use Study.

The area is served by two railroads providing freight service with no active operating rail commuter lines. One motor freight terminal is in the area and many major industrial firms operate company trucking fleets. The Detroit City Airport, located in the south part of the study area, is a general aviation airport and is served by several smaller airlines.

The major traffic desire movement was shown by the DMATS to be centered along Mound Road and Van Dyke Avenue. The level of traffic desire diminishes rapidly from this peak with increasing distance in an easterly or westerly direction. Truck traffic movement desires were found to be related to the main industrial concentrations. The highest total traffic volumes in a north-south direction are being carried by M-53 (Van Dyke Avenue), Mound Road and M-97 (Groesbeck Highway). Many segments of the arterial thoroughfare system are operating at above capacity resulting in congestion and a general traffic slowdown. The problem becomes acute during the morning and evening peak hours particularly in the intensively developed areas.

Every indication points to a continued sharp increase in traffic volumes. The current levels of traffic have already outstripped the additional capacity provided by the substantial highway improvements that have been made in the area recently by road building agencies at the state, county and local levels. A freeway in this corridor would provide much of the additional traffic capacity required by 1990.

In this study, the initial narrowing down of alternatives was accomplished by concentrating on the need to serve the area of highest traffic desire and to avoid overlapping of freeway service areas. In this way, those alternatives that were beyond a two-mile band on either side of Mound Road and Van Dyke Avenue were eliminated from further



consideration. The five corridors that remained were Ryan Road, Mound Road, Van Dyke Avenue, Hoover Road and the Detroit Edison Utility Corridor.

With respect to achieving optimum freeway spacing, a location on Mound Road or Van Dyke Avenue for the M-53 freeway is most desirable. Either of these locations would also provide direct service to the major traffic attractors. In considering the relationship of the proposed freeway to local community development and future planning goals, the two alternative corridors that stand out favorably are Mound Road and Van Dyke Avenue. Both follow existing elementary school attendance boundaries and neighborhood unit boundaries. Both would function as an open space buffer between the industrial corridor and adjacent residential areas, however, this is true of Mound Road to a greater extent than Van Dyke Avenue.

Mound Road has the advantage of being designated by the City of Warren and the Macomb County Planning Commission as the location for a future freeway. Another important advantage on Mound Road is the 204 feet wide right-of-way. Van Dyke Avenue has considerably less right-of-way and it has extensive commercial development that would have to be taken for right-of-way.

Mound Road is also consistent with preliminary planning and route location studies for the Davison-McNichols-Conner Freeway within the City of Detroit, being conducted by the Detroit Freeway Planning Committee.

Because of its numerous advantages, Mound Road is the preferred alternative for the M-53 freeway and is the recommendation of the Department of State Highways. The precise location of the freeway and other route engineering details will be determined by the engineering route location study which will be completed in the near future.

# Introduction

Michigan Department of State Highways policy requires the preparation of a highway planning study prior to any significant highway improvement or construction project in urban areas. This policy was formulated to encourage the participation of local planning agencies and governing bodies in the preparation of highway plans for urban areas and to insure that highway projects will adequately serve state highway needs and be compatible with community plans and development objectives.

Preparation of comprehensive highway plans is also encouraged by Federal legislation. The Federal-Aid Highway Act of 1962 specifies that after July 1, 1965, no Federal-aid highway projects will be approved in urban areas of more than 50,000 population unless they are based upon a continuing comprehensive planning process carried on cooperatively by states and local communities. The Detroit Transportation and Land Use Study (TALUS) being carried out in southeastern Michigan will result in a transportation plan and process that will meet requirements of this act. This study has been coordinated with the TALUS program and uses data from the Detroit Area Traffic Study (DATS), which was prepared in 1955 and updated in 1963.

## Benefits of Freeways

The existing system of arterial streets in the Detroit metropolitan area is proving inadequate to handle expanding traffic volumes. These streets must provide for a wide variety of uses, including local circulating and through automobile traffic movements, truck transport, transit operations and pedestrian movement. This problem is especially acute in those areas that are developing rapidly such as the M-53 study area.

Two important functions performed by freeways in urban areas are the rapid efficient movement of large volumes of traffic and the reduction of congestion on surface streets by removing through traffic from them.

The single most important characteristic of freeway design is its controlled access feature. Ingress/egress ramps allow vehicles to enter or leave the freeway at certain points and grade separation structures eliminate atgrade intersections. Median strips divide opposing lanes of traffic and all pedestrian traffic and vehicle parking is prohibited.

Properly planned freeways provide numerous benefits to an urban area by distributing traffic more efficiently,

providing convenient access to centers of urban activity, reducing traffic accidents and stimulating business and industry. Vehicle operating cost savings realized by freeway users and improved transportation economies for business and industry have been measured by special studies that show freeways provide the greatest benefits of any type of highway.

A freeway provides about three times the capacity of a conventional highway, depending upon the type of traffic and frequency of interchanges. The freeway is capable of efficiently handling 1,200 to 1,500 vehicles per hour per lane, while a comparable major arterial will carry 400 to 600 vehicles per lane.

Within metropolitan areas, freeways promote residential development, increase employment opportunities and improve mobility. Planned properly, they encourage orderly development by defining basic land use and transportation patterns, and have a beneficial effect on land use, land values and employment.

## Freeway Planning Objectives

In planning the M-53 Freeway, consideration was given to integrating the location with existing community development and future planning goals. In doing this the following objectives were established:

1. Encourage urban growth in accordance with community plans and overall development objectives.
2. Keep the removal of productive land uses to a minimum.
3. Avoid disruption of established residential neighborhoods, school sites, churches and places of cultural and civic importance as much as possible.
4. Provide adequate highway service for the anticipated long-range growth and development of the area.
5. Improve local traffic circulation by removing through trips from the local street system.
6. Improve accessibility to areas of intensive development and areas planned for intensive use in the future.

## Past Studies

One of the first studies that attempted to provide a solution to the traffic problem on a regional basis was the "Super Highway Report", prepared in 1925 by the Highway Commissioners of Wayne, Oakland and Macomb Counties. In this report, the Commissioners adopted a master plan of superhighways for the tri-county area. The plan provided for a network of 21 superhighways with 204 feet wide rights-of-way, establishing a system of radial and circumferential highways extending to a radius of 15 miles from the central business district of Detroit.

This plan resulted in the construction of several superhighways in the Detroit region to provide for increasing vehicle traffic volumes. Mound Road was designated as a superhighway, extending from the City of Detroit north-erly through Warren, Sterling and Shelby Townships. This highway was subsequently constructed to superhighway standards from Caniff Avenue in the City of Detroit to the vicinity of Eighteen Mile Road in Sterling Township.

The onset of the economic depression brought an end to the superhighway program and little was done until after World War II to provide a high capacity regional highway system for the Detroit area. Subsequently, the need was recognized for an expansion of the limited number of expressways constructed during the war into a regional expressway system. In 1946, the City of Detroit studied highway needs in the Detroit area. The resulting plan recommended the construction of 105 route miles of expressways to serve the Detroit metropolitan area. Among others, the study indicated that a major highway facility was necessary within the next 25 years to serve the expanding industrial and residential development of southwestern Macomb County.

In 1953, the Michigan Department of State Highways, in conjunction with the City of Detroit, Wayne County Road Commission and the Bureau of Public Roads of the U.S. Department of Commerce, organized the Detroit Area Traffic Study (DATS). This study related land use and traffic generation in establishing a plan for a highway network for the metropolitan area. The study encompassed a 27-year planning period planning for highway needs in the Detroit area until 1980.

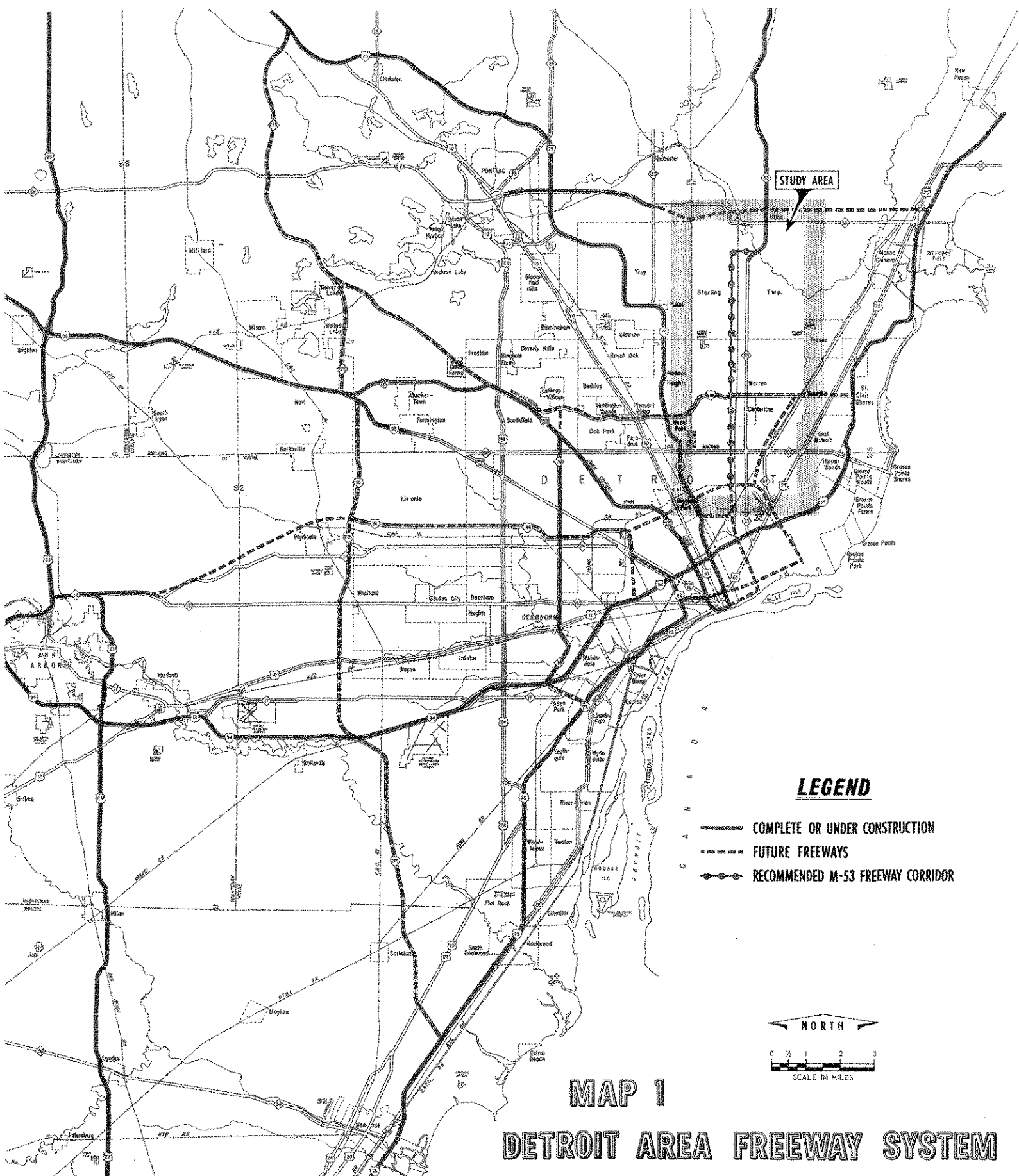
Utilizing traffic desire information obtained in its study, DATS formulated a regional system of freeways and high capacity arterials for the Detroit metropolitan area. The final plan recommended almost 260 miles of freeways and 118 miles of connecting arterial routes. The DATS plan designated the Mound Road corridor as the location for a future freeway, as did the 1946 City of Detroit study. It was found that a heavy traffic demand had been developing along this corridor as new industrial plants were built along the New York Central railroad which parallels Mound Road one-half mile to the east. Mound Road was designated as the freeway route because of the high traffic desire and the existing 204 feet of right-of-way.

As a result of the 1962 Highway Act, a more comprehensive study than DMATS was necessary to guide transportation planning in the Detroit region. It was because of this need that the Transportation and Land Use Study for the Detroit region (TALUS) was formed. TALUS was organized as a special project of the Detroit Metropolitan Area Regional Planning Commission. The Michigan Department of State Highways is a major financial participant in the TALUS program which covers a seven-county area.

The principal function of TALUS is to develop a comprehensive long-range plan for the Detroit region to guide the development of future land use patterns and to plan a balanced transportation system. The study will analyze land use development, economic activity, population growth, and traffic patterns as well as sociological and governmental factors. The TALUS program will evaluate alternative transportation systems including public transit, highways, rail, water and air.

## Study Area

The study area was determined so as to be of sufficient size to permit an evaluation of all possible corridor locations and one for which planning and related data are available. Included are the Cities of Warren and Centerline, Sterling Township and a portion of the City of Detroit (see Map 1, Detroit Area Freeway System).



**MAP 1**  
**DETROIT AREA FREEWAY SYSTEM**

# Corridors Under Consideration

The northern control point is dictated by the existing freeway near Eighteen Mile Road and the southern point is determined by possible interchange locations with the Davison-McNichols-Conner Freeway. Preliminary studies by the Detroit Freeway Planning Committee selected Mound Road and Sherwood Avenue as first priority interchange locations. Alternative corridor locations south of Eight Mile were, therefore, limited in this study to Mound and Sherwood.

Alternative freeway corridors that were studied north of Eight Mile Road were limited to the area between Ryan Road and the Detroit Edison utility right-of-way. Corridors east or west of this area were eliminated from detailed consideration because they would not serve the principal traffic desire corridor centered on Mound Road and Van Dyke Avenue. Within the selected area, every feasible location was analyzed. The five corridors retained for further study are shown on Map 2, Alternate Corridors.

## **Detroit Edison Utility Right-of-Way**

Beginning at the existing M-53 freeway terminus, the Edison Corridor follows an alignment south of Clinton River Road to the Detroit Edison utility right-of-way. This corridor then extends along the utility right-of-way to the vicinity of Ten Mile Road where it turns southwest to a connection with Sherwood Road at Eight Mile Road. The corridor then follows Sherwood Road to the future Davison-McNichols-Conner Freeway.

## **Hoover Road Corridor**

Beginning at the M-53 Freeway, the Hoover Corridor passes west of Dodge Brothers State Park No. 8 to a connection with Dodge Park Road. The corridor then follows Dodge Park Road to Fifteen Mile Road where it turns easterly to avoid the Maple Lane Golf Club located at Maple Lane Drive and Fourteen Mile Road. The alignment then follows Hoover Road to the vicinity of Ten Mile Road, curves west to avoid disruption to an industrial concentration between Eight and Ten Mile Roads and continues south on the same alignment as the Edison Corridor.

## **Van Dyke Avenue Corridor**

Beginning at the present M-53 Freeway, the Van Dyke Corridor follows Van Dyke Avenue south to Toepfer Road, then turns west to Sherwood Road and continues along

Sherwood Road to the proposed Davison-McNichols-Conner Freeway.

## **Mound Road Corridor**

Beginning at the M-53 Freeway, the Mound Corridor extends parallel to Eighteen and One-Half Mile Road to Mound Road. It then follows Mound Road south to a terminus with the proposed Davison-McNichols-Conner Freeway. A sub-alternative of this corridor consists of the utilization of Sherwood Road from Ten Mile Road south to the proposed freeway.

## **Ryan Road Corridor**

Beginning at the M-53 freeway, the Ryan Corridor extends west along Eighteen and One-Half Mile Road to Ryan Road then follows Ryan Road south to Frazho Road where it turns southeasterly to a connection with the Mound Corridor south of Nine Mile Road.

# Major Streets and Highways

## Regional Freeway System

The system of existing and proposed freeways and arterial routes in the Detroit region is shown on Map 1, Detroit Area Freeway System. It is composed of radial routes that converge toward downtown Detroit and two systems of loop freeways; one an outer periphery loop, and the other an inner loop through the mid-section of Detroit.

Interstate freeways are an important part of the Detroit area freeway system. These routes serve to connect the Detroit area with other urban areas in the state and nation as well as provide for traffic movement within the urban area. Detroit is the focal point of three Interstate Freeways; I-75, I-94 and I-96.

I-75, which has its origin in St. Petersburg, Florida, enters the Detroit region from the south (Seaway Freeway), passes near downtown Detroit (Fisher Freeway) and will continue northward through the Detroit urban area (Chrysler Freeway) to its termination at Sault Ste. Marie. The primary regional function of I-75 is to move traffic between Detroit and Toledo to the south and between Detroit and the Pontiac and Flint areas to the north. Locally, I-75 serves one of the greatest concentrations of industrial development in the area; an industrial complex that stretches from the Ambassador Bridge to Trenton along the Detroit River.

I-94 enters the Detroit area from the southwest (Detroit Industrial Freeway), passes through Detroit in a north-easterly direction (Edsel Ford Freeway) and continues northeast to Port Huron.

I-96, which originates in Muskegon, enters the Detroit region from the northwest. When completed within the urban area, this freeway (Jeffries Freeway) will terminate at the Ambassador Bridge. The main function of I-96 is to connect the Detroit region with the central and western portions of the state including the Lansing, Grand Rapids and Muskegon urban areas. The freeway will also constitute an important local facility serving traffic needs in northwestern Detroit including the Schoolcraft Road industrial corridor.

Two additional interstate freeway routes have been designated to provide traffic relief to the Detroit region. These are I-275 and I-696. I-275, in conjunction with future M-275, will provide a north-south bypass route from I-75 north of Monroe to I-75 northwest of Pontiac. I-696,

when fully constructed, will provide an east-west link between I-96 in Farmington Township to I-94 in St. Clair Shores.

Existing and proposed Detroit area freeways that are not part of the Interstate system include M-14, M-39, M-53, M-59 and M-97. The M-14 Freeway will extend from I-96 and I-275 west of Livonia to move traffic between Detroit and Ann Arbor and provide relief to I-94. The M-59 freeway will provide for the eastwest movement of traffic across the northern portion of the Detroit region. M-39 (Southfield Freeway) provides a north-south connecting link between (Northwestern Highway) and I-94. A future M-97 freeway will serve traffic moving between north-eastern Detroit and central Macomb County and provide access to the Groesbeck industrial corridor in Warren and Roseville.

The proposed M-53 Freeway will connect the proposed Davison-McNichols-Conner Freeway and existing M-53 Freeway near Utica. One important function of the M-53 Freeway will be to serve existing and future industrial development in the study area, now concentrated between Mound Road and Van Dyke Avenue north to Fourteen Mile Road. It will also serve a wider corridor of very rapid population growth.

Another function of the M-53 Freeway will be to provide improved access to regional recreation facilities. Existing recreation facilities in the northern portion of the Detroit region that would be served by the freeway include the Rochester-Utica State Recreation Area (including Dodge Brothers State Park No. 8) and the Stoney Creek Metropolitan Park of the Huron-Clinton Metropolitan Authority System. When extended northward, the freeway will also furnish residents of the Detroit region access to recreation facilities in the thumb area of the state.

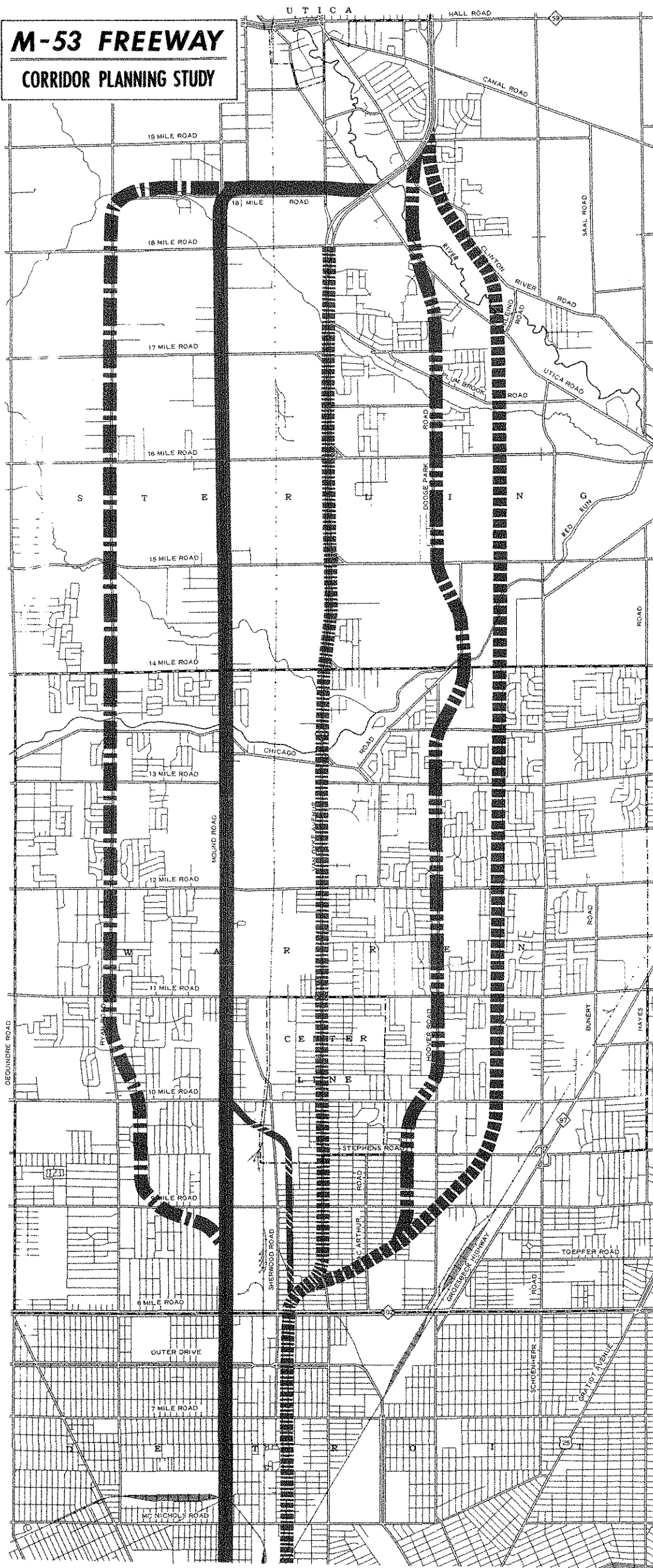
## Street and Highway System

Most of the continuous north-south routes and east-west mile roads in the study area function as arterial thoroughfares. The major arterial right-of-way widths are shown on Map 3, Right-Of-Way Widths.

Because the southern portion of the study area is considerably more intensively developed than the northern portion, major thoroughfares are constructed with greater traffic capacity in the Cities of Detroit and Warren than in Sterling Township.

# M-53 FREEWAY







## CORRIDOR PLANNING STUDY

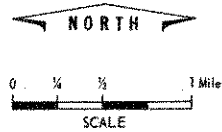


### ALTERNATE CORRIDORS

### MAP 2

#### LEGEND

-  Ryan Road Corridor
-  Mound Road Corridor
-  VanDyke Avenue Corridor
-  Hoover Road Corridor
-  Detroit Edison Utility Corridor
-  Sherwood Road Sub-Corridor



Mound Road and Van Dyke Avenue (M-53) constitute the most important north-south thoroughfares in the study area. Mound Road has six lanes south of Ten Mile Road with four lanes from Ten Mile Road to north of Seventeen Mile Road, where it becomes two lanes. Mound Road was designated on the Detroit superhighway system in 1925 and has 204 feet of right-of-way on most sections through the study area. Van Dyke Avenue has six moving lanes south of Fourteen Mile Road and four lanes from Fourteen Mile Road to Seventeen Mile Road, where it again increases to six freeway lanes. Van Dyke Avenue right-of-way is predominantly 106 to 120 feet, with short sections as wide as 220 feet.

Groesbeck Highway (M-97) comprises part of the system of radial arterial routes serving the Detroit region and functions as a collector of local traffic and provides access to the Groesbeck industrial corridor and abutting commercial development. This route, which has right-of-way mainly of 115 and 120 feet within the study area, is scheduled for widening from four to seven lanes.

Eight Mile Road (M-102) constitutes one of the most important east-west thoroughfares in the study area. The six-lane divided facility, which is currently being widened to four lanes each way, functions as the primary corridor for east-west traffic movement across the north portion of the Detroit urban area and serves abutting development. Eight Mile Road has 204 feet of right-of-way through the study area.

Other important east-west roads include Nine, Eleven and Twelve Mile Roads. Nine Mile Road has a variable right-of-way ranging from 66 to 120 feet and Eleven and Twelve Mile Roads have 66 to 204 feet of right-of-way. Fifteen Mile Road is constructed only as a two-lane road, with the exception of the four and five-lane sections between Mound Road and Van Dyke Avenue and has 66 to 120 feet of right-of-way.

## Corridor Analysis

The relationship of the recommended M-53 corridor to the existing and proposed freeway network is illustrated on Map 1, Detroit Area Freeway System. Alternative corridors are located between I-75 and the future proposed M-97 Freeway. The relationship of the total freeway network is an important consideration in the selection of an M-53 Freeway corridor, which should be spaced to obtain maximum service from each facility and avoid duplication of service areas.

The best freeway spacing would be achieved by utilizing the Mound, Sherwood or Van Dyke Corridors, which are centrally located. The Ryan Corridor would be approximately two miles from I-75 and would result in overlapping service areas. The Hoover and Edison Corridors would duplicate the service area of the future M-97 Freeway.

The amount of right-of-way available within a particular corridor affects the land acquisition requirements and right-of-way costs for the proposed route. It also affects the amount of disruption to homes, businesses, industries and community facilities that would be caused by constructing a freeway on a particular alignment. As an urban freeway serving an intensively developed area, the M-53 Freeway can be expected to need from six to eight lanes and service drives on both sides with two or three lanes. For corridor planning purposes a typical freeway cross-section with this laneage would require from 350 to 380 feet of right-of-way.

The Mound and Edison Corridors have substantially more available right-of-way than other corridors under consideration. The Edison Corridor, which has a 300-foot right-of-way, would provide a large proportion of the total land required for the freeway. However, the necessary relocation of major electrical transmission lines and large water, sewer and gas trunklines located in the right-of-way would make its use very difficult. The Mound Corridor with 204 feet of right-of-way, would also provide a large part of the needed right-of-way. Acquisition of additional right-of-way needed along the Mound Corridor would be relatively easy in the northern part of the study area, which is sparsely developed, but more difficult in the more densely developed southern section.

Lesser amounts of right-of-way are available along the Ryan, Sherwood, Van Dyke and Hoover Corridors. The Ryan and Hoover Corridors have variable rights-of-way, 66 to 120 feet. The Van Dyke right-of-way also varies in width but is predominantly in the 106 to 120-foot range. The Sherwood Corridor has a 66 to 86-foot right-of-way.

Another important consideration in the choice of a freeway corridor is the amount of additional driving distance caused by an indirect or curving alignment. Although one or two miles of adverse driving distance would not add greatly to the time or cost of a single trip, it would represent a substantial amount when the number of vehicles using the facility over a long period of time is considered.

The Ryan Corridor would curve about one mile west near Eight Mile Road then turn back near Eighteen and One-Half Mile Road to a connection with the existing M-53 freeway, causing about two miles of adverse driving distance for freeway users. Both the Edison and Sherwood-Mound Corridors would cause about one mile of adverse driving distance for traffic moving between the Davison-McNichols-Conner Freeway and the existing M-53 freeway. Adverse distance for other alignments would be negligible.

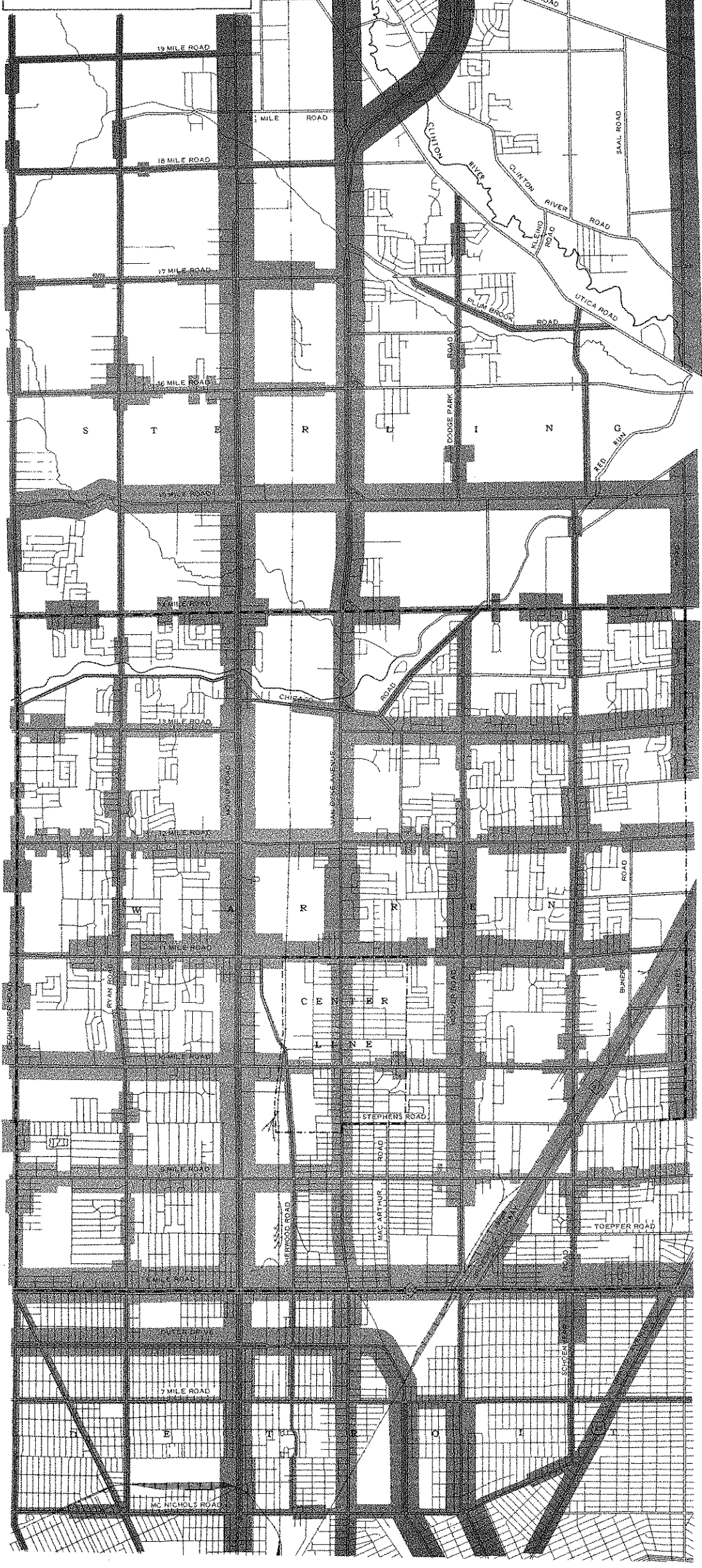
As mentioned previously, the industrial corridor between Mound Road and Van Dyke Avenue represents the major traffic attractor in the study area. As such, this area constitutes the terminus of a large proportion of all trips that will use the proposed M-53 freeway. While the



Mound and Van Dyke Corridors would provide direct access to this area, use of the Ryan, Hoover or Edison Corridor would increase traffic on east-west roads between these corridors and the industrial area.

Local thoroughfare plans are an important consideration in the determination of a freeway corridor, since they reflect local policies and objectives concerning future development of the area. Use of the Mound Corridor would be in conformance with thoroughfare plans for the Cities of Detroit, Warren and Center Line. Officials of Sterling Township have indicated that although the Sterling Township Thoroughfare Plan places the future freeway location on the Edison Corridor, the Mound Road Corridor is an acceptable alternative for the location of the M-53 freeway.

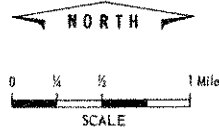
**M-53 FREEWAY**  
**CORRIDOR PLANNING STUDY**



**EXISTING RIGHT-OF-WAY WIDTHS MAP 3**

**LEGEND**

- 1 65' or less
- 66' - 85'
- 86' - 105'
- 106' - 119'
- 120' - 203'
- 204' or more



SOURCES: MACOMB COUNTY ROAD COMMISSION  
 DETROIT CITY PLANNING COMMISSION  
 MICHIGAN DEPARTMENT OF STATE HIGHWAYS

# Area Economic Conditions

The direction and extent of change in economic activity is a major determinant of an area's future transportation requirements. Increases in the level of economic development within the study area have placed great demands upon the street and highway system serving this area. Highways provide the primary means of transportation for this area and its continued economic growth will depend on the continued improvement of the highway system. An adequate transportation system is essential if the area is to reach its full economic potential.

The economic activities of the M-53 study area can be placed in two major categories; industrial development and commercial development. Industrial development is the more important of the two, providing substantial employment and a major proportion of the tax base of the study area. Components of the industrial base include manufacturing, industrial nonmanufacturing and industrial research. Automotive manufacturing and related industries comprise a large proportion of the industries located in the study area. Commercial activity in the study area include wholesale and retail trade, and personal and business services.

## Employment

Resident employment figures for 1960 indicate the importance of manufacturing and, particularly, motor vehicle related manufacturing employment to the economy of the study area (see Table 1). The 40,029 in manufacturing employment accounted for 46.8 percent of the total resident labor force, which is well above any other single employment group. Motor vehicle and motor vehicle equipment manufacturing was the largest single employment category with 45.4 percent of total manufacturing employment and 21.3 percent of the total civilian labor force. Study area manufacturing employment as a percentage of the labor force ranked well above the same category in the City of Detroit, Detroit urban area, Detroit SMSA and the State of Michigan. The major industrial employment locations are shown on Map 4, Industrial Employment Distribution.

The second largest employment group within the study area during 1960 was retail trade with 12.9 percent of the labor force, followed closely by services with 12.3 per-

TABLE 1 RESIDENT LABOR FORCE DISTRIBUTION BY INDUSTRY - 1960

Group	Study Area		City of Detroit		Detroit Urban Area		Detroit SMSA		Michigan	
Agriculture	113	0.13	1,025	0.15	3,517	0.26	7,294	0.51	92,120	3.14
Forestry and Fisheries	4	0.05	79	0.01	124	0.01	159	0.01	1,542	0.05
Mining	15	0.02	229	0.03	714	0.05	957	0.07	15,340	0.52
Construction	3,070	3.58	20,237	2.99	49,298	3.61	53,588	3.72	125,562	4.28
Manufacturing	40,029	46.77	228,806	33.68	511,681	37.50	541,418	37.58	1,035,892	35.35
Motor Vehicles & Equipment	18,186	21.26	107,874	15.88	232,492	17.04	246,451	17.11	377,163	12.87
Transportation, Communications & Utilities	3,808	4.45	36,057	5.31	75,163	5.51	79,192	5.50	155,588	5.31
Retail Trade	11,057	12.92	92,122	13.56	186,273	13.65	195,638	13.58	403,343	13.76
Wholesale Trade	2,701	2.46	20,230	2.98	41,310	3.03	42,917	2.98	80,675	2.75
Finance, Insurance & Real Estate	910	1.06	24,729	3.64	49,347	3.62	51,011	3.54	89,556	3.06
Services	10,534	12.32	127,531	18.77	242,817	17.79	255,483	17.73	542,827	18.52
Public Administration	3,248	3.80	27,916	4.11	47,927	3.51	49,782	3.46	94,837	3.24
Other	4,148	4.85	33,334	4.91	49,215	3.61	51,296	3.56	89,582	3.06
Total Employment	79,037	92.41	612,295	90.13	1,257,386	92.14	1,328,735	92.24	2,726,864	93.06
Unemployment	6,487	7.59	67,086	9.87	107,246	7.86	111,833	7.76	203,484	6.94
Total Civilian Labor Force	85,524	100.00	679,381	100.00	1,364,632	100.00	1,440,568	100.00	2,930,348	100.00

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1960

cent of the labor force. A total of 11,057 study area residents were employed in retail trade and 10,534 in services. As a part of total employment in the study area, retail trades and services employment ranked below the state, Detroit SMSA and within the City of Detroit. The retail trade employment rates were only slightly lower than those achieved at the state and regional level, while the rate of employment for the services group was substantially lower. This reveals that the area is not achieving its full employment potential within both groups, but in particular, services employment.

Table 2 indicates the place of work of study area employed residents in 1960. Because of the large population increases which have occurred in the study area since 1960, the data understates the present situation in total numbers. However, the information does provide an indication of proportions currently in each employment area.

Examination of place of employment of Warren, Center Line and Sterling Township residents indicates Macomb County and the City of Detroit as the two main areas of employment. Warren had a total of 40.8 percent of employed residents who worked in Detroit and 41.9 percent employed in Macomb County. Center Line had a much smaller proportion of its employed residents working in Detroit with a total of 31.8 percent. Over one-half or 52.7 percent were employed somewhere in Macomb County. Sterling Township had a total of 23.4 percent of all workers employed in Detroit and 59.6 percent in Macomb County. Oakland County accounted for the next highest area of employment with 8.5 percent of area employed persons.

The City of Detroit and Macomb County are the two most important areas of employment for study area residents in 1960. However, the City of Detroit as a place of employment is most important to those who already live in that portion of the study area within the Detroit

	Study Area		Warren		Center Line		Sterling Twp.		Detroit (Study Portion)	
	Workers	%	Workers	%	Workers	%	Workers	%	Workers	%
Total Workers	77,397	100.0	30,120	100.0	3,582	100.0	4,386	100.0	39,309	100.0
Worked Inside Detroit SMSA	74,492	96.2	28,954	96.1	3,367	94.0	4,234	91.5	37,937	96.5
Detroit City	43,321	56.0	12,305	40.8	1,141	31.8	1,026	23.4	28,849	73.4
Remainder Wayne County	6,556	8.5	2,245	7.5	142	4.0	205	4.7	3,964	10.1
Macomb County	21,181	27.3	12,619	41.9	1,888	52.7	2,614	59.6	4,060	10.3
Oakland County	3,434	4.4	1,785	5.9	196	5.5	389	8.8	1,064	2.7
Worked Outside Detroit SMSA	585	0.8	217	0.7	43	1.2	31	0.7	294	0.8
Place of Work Not Reported	2,320	3.0	949	3.2	172	4.8	121	2.8	1,078	2.7

SOURCE: Bureau of the Census, 1960

In 1960, 56.0 percent of the 77,397 employed study area residents worked in the City of Detroit, and 27.3 percent were employed in Macomb County. The remainder were distributed mainly throughout the SMSA, with Wayne County having 8.5 percent of total employed residents. This data points up the importance of the City of Detroit as a place of employment for study area residents. Examination of the place of work of those residents of the Detroit portion of the study area reveals that 28,849 or 66.5 percent of employed residents out of a total of 43,321 study area employed residents who worked in Detroit lived in Detroit. This was a total of 73.4 percent of all workers in the Detroit portion of the study area. Only 10.3 percent worked in Macomb County. Of the remaining employed in the study area, 14,472 or 18.7 percent worked in the City of Detroit.

city limits. Macomb County as a place of employment is most important to those study area residents north of Eight Mile Road. Oakland County was of some importance to both areas.

Information was obtained from the General Motors Corporation showing the residential dispersal of employees working in company plants. This information showed that 3,367 or 18.2 percent of those employed at the Technical Center complex at Twelve Mile Road between Mound Road and Van Dyke Avenue live in the City of Warren. Of the total employees, 24.6 percent reside in an area southwest of Warren, 20.7 percent reside northwest, 19.4 percent southeast and 17.1 percent northeast. This reveals that a maximum of 81.8 percent of Technical Center complex employees make work trips in excess of two miles,

creating a substantial number of trips which could potentially be handled by a freeway.

Similar information for the Chevrolet Warren plant at Nine Mile Road and Mound Roads indicates that 1,078 or 26.6 percent of total plant employees reside within a five mile radius of their employment location. A total of 1,656 or 40.5 percent reside within five to ten miles, with the remaining 22.9 percent residing ten miles or more from their place of employment.

A 1961 Warren Master Plan study further substantiates the mobility of those employed within the study area. This study disclosed that only 9 percent of those employed in Warren manufacturing plants lived in Warren, indicating a heavy dependence of area industries on the entire Detroit regional labor market area.

One objective of the freeway corridor location is to provide service to major employment concentrations within the study area. Map 4, Industrial Employment Distribution, points out the location of manufacturing employment concentrations within the M-53 study area. This map indicates that a major concentration of employment in the Mound industrial corridor is in the area of Mound Road and Twelve Mile Road, where 15,000 to 20,000 persons work. This number is expected to double within the foreseeable future.

Another industrial corridor is located between Groesbeck Highway and the Grand Trunk Western Railroad. This corridor contains many medium and small manufacturing plants that employ fewer than 500 people.

If the recent rate of industrial expansion that has taken place in the Mound Corridor is continued in the future, and every indicator points in this direction, the result would be by 1990 a nearly solid mile-wide corridor extending north to Nineteen Mile Road.

## Corridor Analysis

Because of the high traffic attraction of the Mound Corridor it is important that the M-53 Freeway be planned to provide as direct and convenient service to this section as is economically feasible. In this regard, Mound Road or Van Dyke Avenue would be the best location, both being immediately adjacent to the corridor.

The Hoover Road Corridor or the Edison Utility Corridor would provide direct freeway service to only a small portion of total manufacturing employment in the study area, serving only the southern portion of the Groesbeck industrial corridor. This portion of the study area north to Ten Mile Road is primarily residential or planned for residential development. No industrial concentrations are planned along the Hoover or Edison Corridors north of Ten Mile Road.

The Ryan Road Corridor would not directly serve any

large concentrations of industrial employment north of Nine Mile Road, as all industrial development is approximately one mile east of Ryan Road in this area. Development adjacent to Ryan Road is primarily low density residential or vacant land planned for future residential development.

## Retail Sales

The volume of retail sales reflects the economic strength of the commercial sector of the economic base. It also indicates the current level of commercial activity in the study area and the potential for future growth. Because retail sales data is compiled on a municipal unit basis only, retail sales are available only for the Cities of Warren and Center Line. However, because of similar existing and developing land use patterns within the study area as a whole, data for these cities provides an insight into the trends occurring throughout the study area.

A comparison of per capita retail sales in the Cities of Warren and Center Line, to the region and state indicates the area is not achieving its full retail sales potential. Per capita retail sales during 1966 in Warren-Center Line were \$1,340, while per capita retail sales were \$1,515 in the City of Detroit and \$1,465 in the state. Macomb County retail sales of \$1,262 per capita were below the rate in Warren-Center Line (See Table 3).

Historically, per capita retail sales in Warren-Center Line have ranked below regional and state rates. Since 1960, the gap has been gradually narrowed, but they remain below the region and state in 1966. Per capita retail sales for Warren-Center Line should show a further increase as the effect is felt of the newly opened Universal City regional shopping center at Twelve Mile Road and Dequindre Road in the City of Warren.

In Warren-Center Line the disposable income of residents is close to the regional and state average (see Table 3A).

Although the study area has not achieved its full retail sales potential, it must be considered a major retail sales market area. Examination of retail sales in 1966 for the Detroit SMSA reveals that Warren ranked fourth with sales of \$219,193,000. Warren was surpassed only by the Cities of Detroit, Dearborn and Southfield with sales of \$2,539,663,000 and \$264,205,000, and \$241,185,000 respectively.

One factor limiting the extent of retail sales in the study area is the nature of past development. The study area is typical of many developing suburban communities in that it lacks a central business district. Commercial development has become established in either strip commercial development or community shopping centers having a limited service area. The first regional shop-

ping facility to locate in the study area is the Universal City shopping center. With 650,000 square feet of floor area, this center is comparable in size to the Macomb Mall and about two-thirds as large as Eastland shopping center.

Small local commercial facilities in the study area would not directly benefit from freeway service because their trade area is of neighborhood size. Trips of this type are short in duration and are better served by the local and arterial street system.

The freeway would indirectly benefit these commercial

uses, however, by removing many through trips from the local street system. Removal of through trips will reduce traffic congestion and improve traffic circulation, resulting in improved access to commercial facilities.

Construction of the proposed freeway will increase the potential for development of additional regional shopping centers by increasing the accessibility of the area to shoppers throughout the Detroit region. In this regard, the Mound or Van Dyke corridors would be the best location for the M-53 freeway, since local plans indicate that future commercial development will be concentrated along these two corridors.

**TABLE 3** **RETAIL SALES PER CAPITA**

	1960	1961	1962	1963	1964	1965	1966
Warren-Center Line	\$ 909	\$ 767	\$ 824	\$ 869	\$1,183	\$1,334	\$1,340
Macomb County	999	901	1,019	1,098	1,140	1,250	1,262
City of Detroit	1,332	1,278	2,043	1,420	1,386	1,558	1,515
Detroit SMSA	1,283	1,205	1,267	1,353	1,370	1,513	1,508
Michigan	1,238	1,163	1,227	1,279	1,342	1,422	1,465

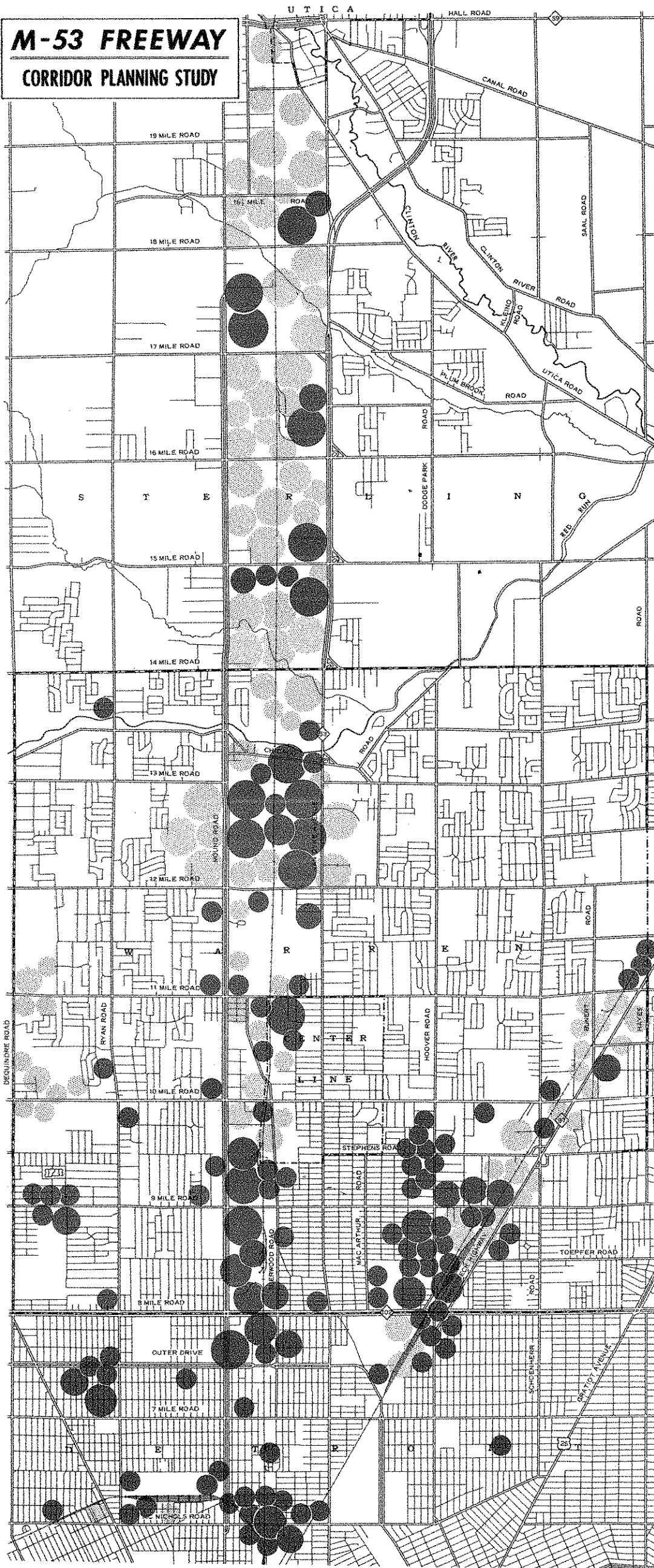
SOURCE: Sales Management Magazine, *Survey of Buying Power* (Copyright 1960-1966). Further reproduction is forbidden. (Adjusted to 1957-59 dollar value)

**TABLE 3A** **DISPOSABLE INCOME PER CAPITA**

	1960	1961	1962	1963	1964	1965	1966
Warren-Center Line	\$2,116	\$1,714	\$1,854	\$1,980	\$2,087	\$2,137	\$2,376
Macomb County	2,150	1,839	1,898	1,984	2,109	2,237	2,565
City of Detroit	2,237	1,933	2,043	2,130	2,246	2,403	2,645
Detroit SMSA	2,310	2,097	2,210	2,282	2,392	2,530	2,719
Michigan	2,052	1,923	2,013	2,128	2,245	2,339	2,515

SOURCE: Sales Management Magazine, *Survey of Buying Power* (Copyright 1960-1966). Further reproduction is forbidden. (Adjusted to 1957-59 dollar value)

**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**

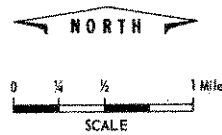


**INDUSTRIAL EMPLOYMENT  
DISTRIBUTION**

**MAP 4**

**LEGEND**

CURRENT EMPLOYMENT	FUTURE EMPLOYMENT
● 100 - 499	● 100 - 499
● 500 - 999	● 500 - 999
● 1000 - 1999	● 1000 - 1999
● 2000 - 3000	● 2000 - 3000



SOURCES: MICHIGAN DIRECTORY OF MANUFACTURERS, 1966  
WARREN CHAMBER OF COMMERCE, 1966  
URBAN PLANNING SECTION, MICHIGAN DEPARTMENT OF STATE HIGHWAYS

## Motor Vehicle Registrations

Historically, with few exceptions, motor vehicle registration in the M-53 study area have increased at a more rapid rate than growth rates in the rest of the Detroit region and the State of Michigan. The study area experienced its largest decade of vehicular registrations growth from 1940 to 1950. During this period, registrations of passenger vehicles increased by 125.4 percent reaching a total of 55,000 vehicles and commercial vehicles by 189.5 percent with 5,500 vehicles. Within the Detroit SMSA, passenger vehicle registrations increased by 56.2 percent and commercial vehicles by 92.3 percent during the 1940-50 period, considerably below the rate of growth achieved within the study area. The rate of change for the state as a whole was lower still with a change of 51.1 percent for passenger vehicles and 83.7 percent for commercial vehicles (see Table 4).

The 1950-60 period, however, showed a definite reduction of motor vehicle registration growth rates within

the study area while maintaining a higher rate than at the state level. 1960-65 showed an increase of growth in motor vehicle registrations with the study area again showing the largest percentage gains. Projections for 1990 indicate that the study area motor vehicle registrations will continue to expand at a more rapid rate than the Detroit SMSA and the State of Michigan, with a gain of 126.4 percent over 1965 for a total of 273,000 vehicles and in commercial vehicle registration a 188.1 percent for a total of 29,100.

To serve this continued growth of motor vehicle registrations in the Detroit metropolitan area, a regional transportation system designed to handle increasing volumes of vehicular traffic is imperative. Because of the rapid population and economic growth projected for the study area, it is expected to gain more than its proportionate share of the region's increased vehicle registrations. Construction of a freeway in the study area would provide service to the large numbers of vehicles expected in this region.

**TABLE 4** MOTOR VEHICLE REGISTRATION TRENDS

Year	Study Area					
	Passenger	Percent Change	Per 1,000 Residents	Commercial	Percent Change	Per 1,000 Residents
1940	24,400		271	1,900		21
1950	55,000	125.4	332	5,500	189.5	33
1960	81,500	48.2	367	7,200	30.9	32
1965	120,600	48.0	414	10,100	40.3	35
1990	273,000	126.4	523	29,100	188.1	56
Detroit SMSA						
1940	644,872		271	52,591		22
1950	1,007,627	56.2	337	101,143	92.3	34
1960	1,375,151	36.5	366	125,542	24.1	33
1965	1,693,998	23.2	419	147,722	17.7	37
1990	2,834,711	67.3	517	285,116	93.0	52
Michigan						
1940	1,401,654		267	120,711		23
1950	2,117,662	51.1	332	221,797	83.7	35
1960	2,879,225	36.0	368	354,765	60.0	45
1965	3,480,560	20.9	415	439,390	23.8	52
1990	5,908,558	69.8	526	876,174	99.4	78

SOURCE: 1940-1965, Michigan Department of State. 1990 projections by Urban Planning Section, Michigan Department of State Highways, 1967.



# Population Factors

A main objective of the Department of State Highways in developing urban highway facilities is to serve major areas of traffic generation. Existing and future population within the M-53 corridor represents an important source of the traffic generation and is especially significant in estimating local trips and service requirements.

Traditionally, development outside of central cities, such as the City of Detroit, has first occurred along the main highways. Highways in the M-53 study area brought increased accessibility to the area that is now the City of Warren and adjacent areas north of Detroit. Increased highway accessibility created a locational advantage which was complemented by the existence of a main railroad line midway between Mound Road and Van Dyke Avenue. These competitive advantages fostered rapid commercial and industrial development in a northerly direction from the City of Detroit along and between Mound Road and Van Dyke Avenue. Farmland on either side of this industrial corridor became more desirable for residential development. Beginning in the 1950's intensive subdivision development began filling the corridor.

## Inventory and Population Trends in the Study Area

The M-53 study area had 222,349 residents in 1960, of which 108,317 were in the City of Detroit; 89,246 in the City of Warren; 14,622 in Sterling Township and

10,164 in the City of Center Line (see Table 5). July, 1966 population estimates by the Detroit Metropolitan Area Regional Planning Commission reflect more recent population changes. The City of Warren was estimated to have 167,000 residents in July, 1966, an increase of 77,754 residents since the 1960 Census. Sterling Township with an estimated population of 32,000 increased by 17,378 residents since 1960 and the City of Center Line increased from 10,164 to 11,000 residents during the same period. Although current population estimates for the City of Detroit portion of the study area could not be extrapolated from the available data, the Detroit City Plan Commission estimates that the area probably experienced a slight loss. The study area, with the exception of the City of Detroit, has experienced very rapid growth. In total the area increased by 86,601 residents or 38.9 percent between the 1960 Census and July of 1966.

Historically, the population distribution trend in the M-53 study area has been a steady "filling-up" from south to north. The City of Detroit portion of the study area, south of Eight Mile Road, reached population capacity in 1950, after rapid growth during the 1940's. During the 1950's the southern half of the City of Warren underwent intensive development. This was followed by development of the City of Warren's north half during the 1950's and early 1960's. Simultaneously, prime residential land in Sterling Township was being developed; however, intense residential development did not begin until 1958/1959.

TABLE 5

POPULATION TRENDS AND PROJECTIONS

Political Unit	1940*	1950*	% Change		1966** Population Estimate	% Change		% Change		1990****	% Change			
			1940-50	1950-60		1960-70	1970-80	1980-90	1990-90		1940-60	1960-90		
Michigan	5,256,106	6,371,766	21.2	1,823,194	22.9	8,374,000***	8,645,000	18.5	9,868,000	14.1	11,233,000	13.8	48.8	43.6
Detroit SMSA	2,377,329	3,016,197	26.9	3,762,360	24.7	4,148,000	4,173,700	10.9	4,791,200	14.8	5,500,900	14.8	58.3	46.2
Macomb County	107,638	184,961	71.6	405,804	119.4	530,000	646,300	39.3	954,300	47.7	1,332,600	39.6	277.0	228.4
Wayne County	2,015,623	2,435,235	20.8	2,666,297	9.5	2,768,000	2,634,100	-1.2	2,700,500	2.5	2,724,700	0.9	32.3	2.2
M-53 Corridor	90,100	165,664	83.9	222,349	34.2	308,950	369,900	66.4	467,850	26.5	522,150	11.6	146.8	134.8
Warren <sup>1</sup>	22,126	42,653	92.8	89,246	109.2	167,000	210,000	135.3	218,000	0.0	210,000	0.0	303.4	135.3
Sterling Township	3,648	6,509	78.4	14,622	124.6	32,000	55,700	280.9	150,700	170.6	200,000	32.7	300.8	1267.8
Detroit (Portion in Corridor)	61,128	108,843	78.1	108,317	-0.5	98,950	92,700	-14.4	95,000	2.5	100,000	5.3	77.2	-7.7
Center Line	3,198	7,659	139.5	10,164	32.7	11,000	11,500	13.1	12,150	5.7	12,150	0.0	217.8	19.5

SOURCE:

- \* U. S. Bureau of Census.
- \*\* Detroit Metropolitan Area Regional Planning Commission.
- \*\*\* Dr. David Goldberg, The University of Michigan Population Studies Center, 1966.
- \*\*\*\* Michigan Department of State Highways, Urban Planning Section.

1. Includes Warren Township area prior to incorporation by the City of Warren in 1955.

## Past Population Growth Trends

Growth trends in Michigan and the Detroit region are similar, primarily because the region has such a large percentage of the total state population. Michigan grew from 5,256,106 residents in 1940 to 7,823,194 in 1960. The Detroit region, during the same time period increased from 2,377,329 to 3,762,360 or an increase of 58.3 percent. Macomb County, which encompasses all but one of the governmental units within the study area, almost quadrupled in size between 1940 and 1960, adding 298,166 residents for a total of 405,804 in 1960. The City of Detroit portion grew from 61,128 residents in 1940 to 108,317 in 1960; however, the area reached capacity in 1950 with 108,843 residents and has been losing population since. Warren, the second largest unit in the study area, quadrupled its population between 1940 and 1960, when it increased from 22,126 to 89,246 residents. The City of Center Line more than tripled in population by increasing from 3,198 residents in 1940 to 10,164 in 1960. Sterling Township north of Warren, also more than quadrupled its population size between 1940 and 1960, increasing from 3,648 to 14,622 residents. The distribution of population is shown on Map 5, Population Distribution.

## Population Projections

Anticipated population growth, which results in increased vehicle trips is valuable in determining the future level of required highway service in the study area. The population of Michigan and the Detroit region is expected to increase by 34.1 percent and 32.6 percent, respectively between 1966 and 1990. Michigan is expected to reach 11,233,000 residents and the Detroit region 5,500,900 residents by 1990, 51.0 percent of the total state population.

During the same period Wayne County is expected to decline slightly in population while Macomb County will gain 57.8 percent of the total projected regional increase. The M-53 study area will in turn account for about one-quarter of the expected Macomb County increase.

Governmental units within the study area will experience various rates of population change between 1966 and 1990. The Detroit City Plan Commission estimates that the Detroit portion of the study area, with a 1966 estimate of 98,950 residents will continue to lose population until 1970. After 1970 the area will slowly regain population and stabilize at 100,000 residents by 1990. The City of Warren at the present rate of population growth will reach its holding capacity of 210,000 residents by 1970, a 121,754 resident increase in approximately one decade. The City of Center Line at its present growth rate will reach 11,500 residents by 1970 and ultimate capacity of 12,150 prior to 1980. Sterling Township is predicted to reach 55,700 residents in 1970 plus a gain of 95,000 during the 1970's, reaching 150,700 by 1980. Between 1980 and 1990 the expected 49,300 additional new residents in Sterling Township will result

in a total population of 200,000 which is approaching the township's holding capacity.

## Population Densities

The holding capacities and population distribution mentioned previously are controlled through density restrictions found in zoning ordinances. Population densities in the City of Detroit range from 7,000 to over 10,000 residents per gross square mile in areas that have predominantly single-family housing (see Table 6). A general awareness of problems resulting when relatively high population densities exceed desirable levels in an urban area resulted in significant changes in the densities allowed in the City of Warren and Sterling Township by 1990. The Detroit portion of the corridor is expected to maintain 9,090 persons per gross square mile, which may be considered relatively high in the Detroit area. The City of Warren is presently at 4,869 residents per gross square mile and not yet fully developed. However, by 1990, if current population projections are accurate, the density may be at 6,122 residents per gross square mile. The City of Center Line, which is surrounded by Warren, should rise to 7,147 residents per gross square mile at capacity in 1980. This density is close to the densities found in the southern half of the City of Warren which developed simultaneously with the City of Center Line. Presently, the City of Center Line exhibits a density of 6,470 residents per gross square mile. The northern half of the City of Warren should more closely resemble Sterling Township's projected density when near capacity in 1990, of 5,435 residents per gross square mile. A trend is evident of higher densities along arterial highways, particularly Van Dyke Avenue and Hoover Road.

TABLE 6

### POPULATION DENSITY PER GROSS\* SQUARE MILE

	1960	1966	1970	1980	1990
Detroit (Portion in Corridor)	9,845	8,995	8,427	8,636	9,090
Warren	2,602	4,869	5,306	5,977	6,122
Center Line	5,971	6,470	6,852	7,147	7,147
Sterling Township	397	870	1,514	4,095	5,435
Corridor	2,653	3,964	4,088	5,490	6,231

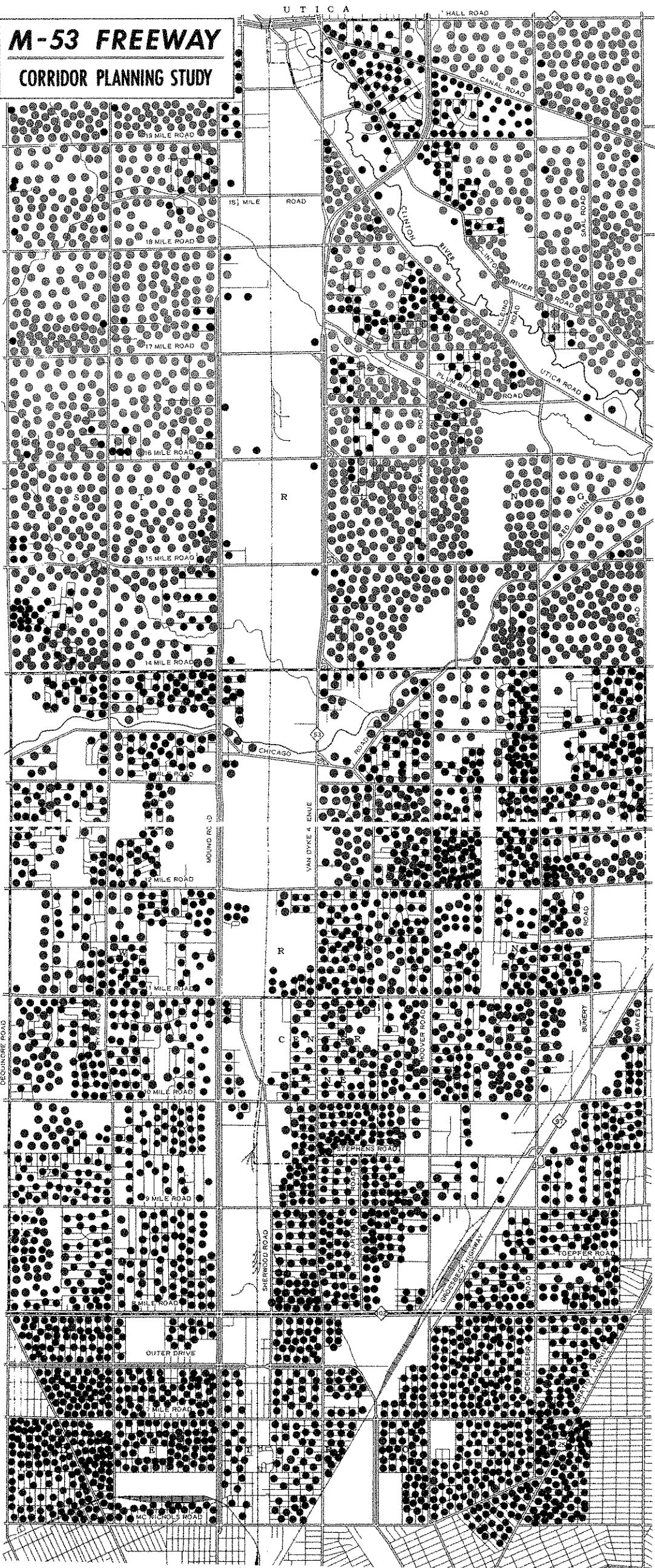
\* Gross area is total area including streets, public areas and commercial and industrial areas.

Source: Based on Table 5 and existing land acreage.

## Corridor Analysis

The location of the freeway on either of the corridors would provide adequate service to population since all alignments are either adjacent to or pass through population concentrations. The Hoover and Edison Corridors would most directly serve population east of the Mound Road industrial corridor because they are located near the center of a major population corridor. The Hoover Corridor would directly serve an area of high density residential development. The Ryan Road alternative would be located near the center of a developing population corridor west of Mound Road. Since a greater concentration of trips are generated by industrial and commercial uses, the importance of serving residential areas must be subordinated to serving the major traffic generators which are in the Mound Road Corridor.

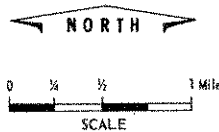
**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**



**POPULATION DISTRIBUTION MAP 5**

**LEGEND**

- Present (1966)
  - Future (1990)
- each • represents 100 people



SOURCE: LOCAL GOVERNMENTAL UNITS  
PROJECTIONS: MICHIGAN DEPARTMENT OF STATE HIGHWAYS, 1966

# Land Use

Various types of land use generate varying amounts of traffic and, to an extent, determine direction of traffic flow. In planning the location of a freeway, an alignment must be determined which gives the most effective service to the area, yet minimizes disruption of the community.

## Area Growth Patterns

Growth of land use in the Detroit region was similar to that of many other large metropolitan areas throughout the United States. The central city of Detroit historically exerted a strong influence on the surrounding communities. Detroit developed as a center for retail trade, service and wholesale trade activities, with most manufacturing activities in concentrated areas. Prior to 1930, the northern portion of the M-53 study area was almost exclusively rural. Then, in the late 1930's, industry began developing within the study area along major railroad lines. In the next two decades, auto-oriented industries began to establish plants in the vicinity of the New York Central railroad and the Grand Trunk Western railroad. By 1950, the City of Detroit was almost entirely developed. Between 1950 and 1960, a surge of population growth carried expansion along the radial transportation routes into the adjacent area north of Detroit. The Mound Road industrial corridor was also beginning to form.

Urban growth has continued at a rapid pace through the 1960's. The City of Warren is rapidly reaching full development and urban development is occurring in Sterling Township increasing the need to improve the level of highway service. A north-south freeway through the study area would provide the capacity necessary to adequately serve major population concentrations and the intensively developed commercial and industrial corridors.

## Existing and Future Land Use Patterns

Present land use patterns are shown on Map 6 in the four classifications of residential, commercial, industrial and public/semipublic use. The future land use map 7 does not reflect land use plan adjustments that would result from construction of the freeway. For practical purposes, that portion of the study area within the City of Detroit and the City of Center Line are totally developed. Most of the undeveloped land within the M-53 study area is in the northwestern section of Warren and

throughout Sterling Township. Rapid residential development is taking place in the northern portion of Warren and in the southern section of Sterling Township. A large part of the residential development in the study area is composed of single family structures with multiple family units developing primarily along major arterials. Several large apartment developments are located on Hoover Road. A large proportion of future residential development will occur in Sterling Township because of the greater availability of vacant land.

Commercial land use within the M-53 study area is in the form of strip development along most of the major mile roads, particularly within the Cities of Detroit and Warren. Van Dyke Avenue is one of several thoroughfares radiating from Detroit that are lined with strip commercial. Development along these routes is made up of highway oriented uses and community and neighborhood shopping facilities. Twelve community shopping centers exist within the study area, three of which are located along Van Dyke Avenue.\* There are no commercial developments within the study area that can be considered a typical central business district.

Major public and semipublic land uses within the study area include the Detroit City Airport at Conner Avenue and McNichols Road, Warren City Hall on Van Dyke near Twelve Mile Road, Macomb County Community College located one-half mile east of Twelve Mile Road and Schoenherr Road, and the Mt. Olivet Cemetery at Van Dyke Avenue and McNichols Road. Also included in this category is the Dodge Brothers #8 State Park located on Utica Road at Dodge Park Road, a unit of the Rochester-Utica State Recreation Area. The Rochester-Utica State Recreation Area had a gross attendance in 1966 of 395,293. In day use attendance, this park ranked fifth in the entire state with 429,832 visitor days representing 4.1 percent of total state park day-use. The heaviest users of Rochester-Utica State Recreation Area are from Macomb, Oakland and Wayne Counties. Macomb County had a day-use attendance of 217,517, Oakland County a total of 100,062 and Wayne County 104,413. These three counties represented a total of 98.2 percent of total day-use attendance at Rochester-Utica State Recreation Area.

Future plans for public and semipublic land uses for the study area include approximately 90 additional schools, nine neighborhood parks, seven fire stations and seven libraries. Both Warren and Sterling Township have pro-

\* The Detroit Metropolitan Area Regional Planning Commission has classified shopping centers with 50,000 to 200,000 square feet of floor space as community centers.

posed civic centers. Future land use plans show a major expansion of public open space along the Clinton River.

Industrial land use is concentrated in three sections of the study area, each near railroad lines and major thoroughfares. A heavy concentration of industrial plants has developed along the New York Central Railroad, between Mound Road and Van Dyke Avenue. Lighter industrial development has occurred along the Grand Trunk Western Railroad and Groesbeck Highway. The switching yard and railroad line of the Detroit Terminal Railroad is an area that has attracted substantial industrial development. Local land use plans propose a continued expansion of industrial land use within existing corridors.

## Urban Renewal

A substantial redevelopment project is planned by the City of Center Line for the vicinity of Van Dyke Avenue and Ten Mile Road. This urban renewal project involves the clearing of existing structures and development of a large commercial center on the northwest corner of Van Dyke Avenue and Ten Mile Road. In addition, Center Line has a program of housing conservation, which affects mainly the northwest portion of the city. Warren has two renewal areas under consideration; one east of Van Dyke at Nine Mile Road, and the other at Dequindre and Eight Mile Roads. Specific re-use for these areas has not been designated. No urban renewal projects are currently active or planned in the study area portion of the City of Detroit or in Sterling Township.

## Corridor Analysis

The Edison Corridor traverses a relatively undeveloped area in Sterling Township, which is planned for future residential development. This corridor passes through an existing residential area from Ten Mile Road to Fourteen Mile Road. Use of this corridor would necessitate acquiring a large amount of property along the Clinton River that is proposed for park development. In Warren the corridor would be located approximately one and one-half miles east of the existing and proposed industrial development in the Mound industrial corridor, with primarily residential land uses located between.

An advantage of the Edison alternative is that it would serve existing industrial land uses in the southern portion of Warren and would serve as a buffer between the industrial and residential land uses in this area. This corridor would, however, divide several existing elementary school attendance areas and would disrupt neighborhood units south of Ten Mile Road (see Map 8, Public School Facilities and Attendance Areas).

The Hoover Corridor would pass through existing and proposed residential areas from the existing M-53 freeway to Ten Mile Road and would disrupt a number of neighborhood units and several elementary school attendance areas. The Hoover Road alternative would result in some

alignment problems to avoid the existing golf course at Fourteen Mile Road and the Dodge Brothers #8 State Park.

This corridor is approximately one mile from the industrial corridor which is the study area's largest source of vehicular traffic generation. However, direct service would be given to existing industrial land uses along Hoover Road and Groesbeck Highway in the southern portion of Warren and the apartment developments located along Hoover Road north of Ten Mile Road.

The Van Dyke Avenue Corridor is adjacent to the existing and proposed industrial development in the Mound industrial corridor. It is located on the western edge of existing and proposed residential land uses throughout its length and would act as a buffer between these residential land uses and the industrial development along the Mound industrial corridor.

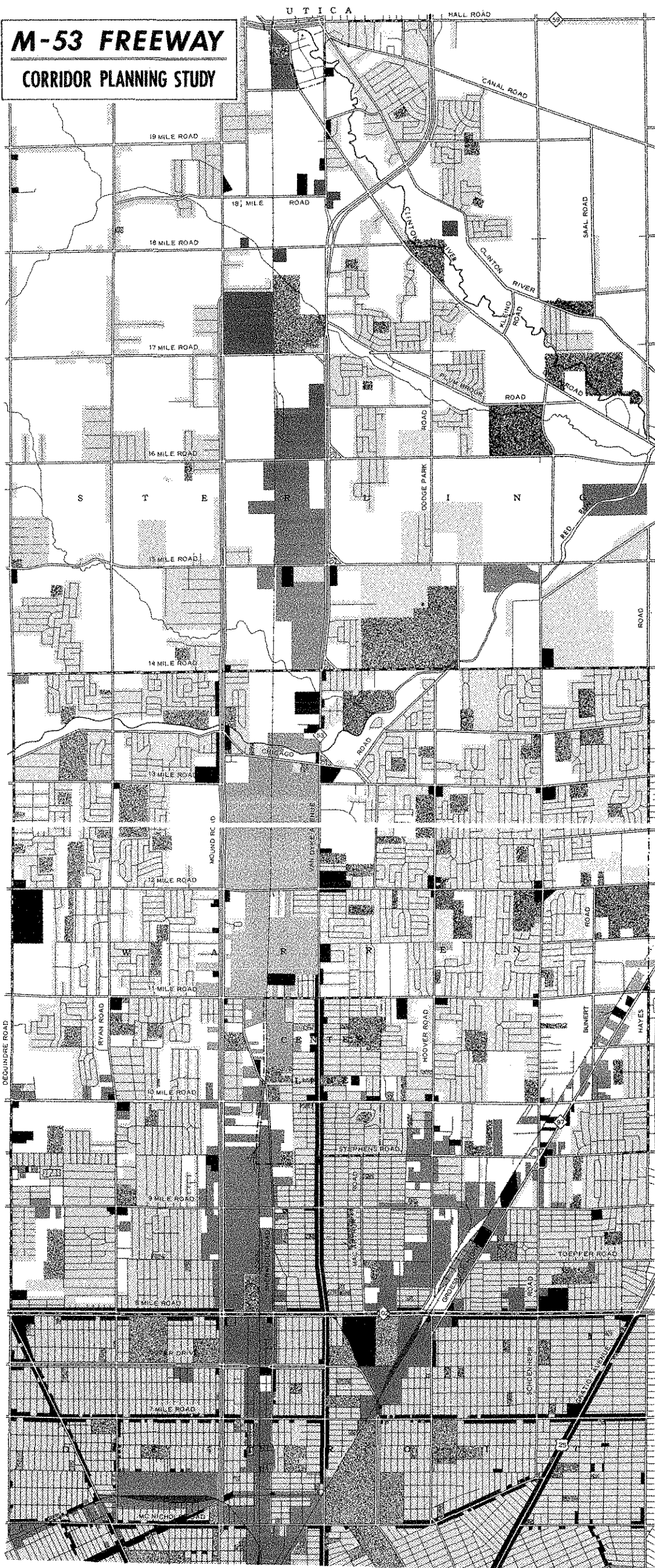
The use of the Van Dyke Corridor for the freeway would result in the disruption of large sections of existing and proposed commercial land uses along Van Dyke Avenue. It would also affect the proposed civic center of Warren, its existing city hall and some city offices of Sterling Township. The Van Dyke Corridor also divides several elementary school attendance areas.

The Mound Road Corridor would be directly adjacent to existing and proposed development in the Mound industrial corridor, providing direct service to this large concentration of traffic attraction. The location of a freeway in this corridor would necessitate the disruption of several small industrial uses located on the western side of Mound Road, mainly in the City of Warren. This alternative would cross four elementary school attendance areas in Warren and in the City of Detroit, all of which are already crossed by Mound Road. This alternative would not disrupt any neighborhood units.

The Ryan Road alternative would displace a minimum number of existing and future commercial, industrial and residential land uses. In Sterling Township, this corridor would pass through an area which is relatively undeveloped at the present time. However, in the City of Warren, this alternative would divide a number of existing neighborhood units and elementary school attendance areas south of Eleven Mile Road. In Sterling Township, the Ryan Corridor would pass through an area proposed for residential land uses. This corridor would be located approximately one mile from the Mound industrial corridor and traffic bound for the industrial corridor would have to pass through primarily local areas.

The Sherwood Road Sub-corridor would pass through the southwest corner of Center Line, displacing a large number of industrial and residential land uses. Construction of a freeway in this corridor would isolate a section of residential land along Sherwood Road in Warren. However, this corridor would directly serve the industrial area located along Sherwood Road.





**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**

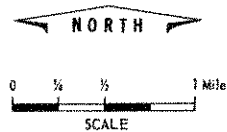


**EXISTING LAND USE**

**MAP 6**

**LEGEND**

-  Residential
-  Commercial
-  Industrial
-  Public & Semi-Public



SOURCES: MACOMB COUNTY PLANNING COMMISSION  
DETROIT CITY PLANNING COMMISSION  
STERLING TOWNSHIP PLANNING COMMISSION  
WARREN CITY PLANNING COMMISSION





**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**

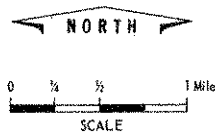


**FUTURE LAND USE**

**MAP 7**

**LEGEND**

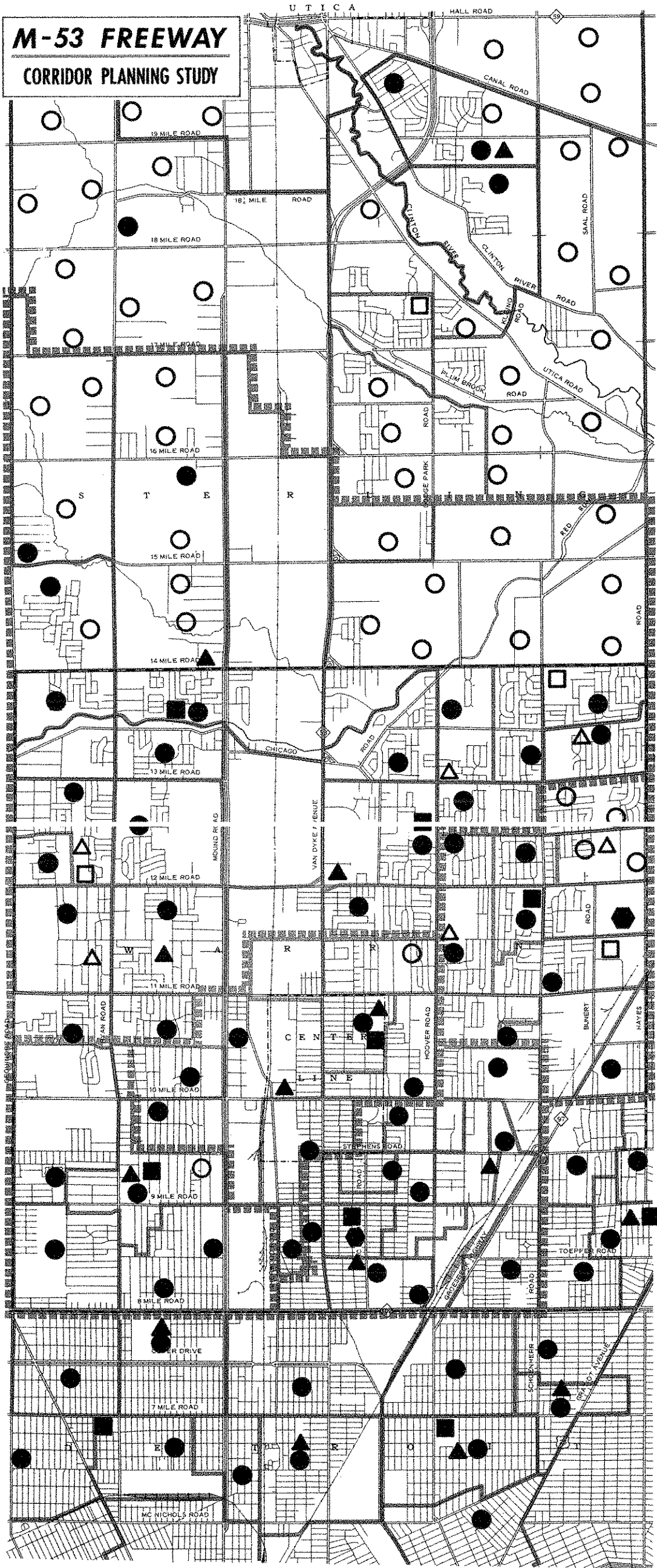
-  Residential
-  Commercial
-  Industrial
-  Public & Semi-Public



SOURCES: MACOMB COUNTY PLANNING COMMISSION  
DETROIT CITY PLANNING COMMISSION  
STERLING TOWNSHIP PLANNING COMMISSION  
WARREN CITY PLANNING COMMISSION



**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**

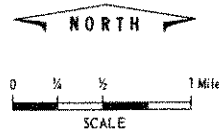


**PUBLIC SCHOOL FACILITIES  
AND ATTENDANCE AREAS**

**MAP 8**

**LEGEND**

- ELEMENTARY SCHOOL
- ◐ COMMUNITY COLLEGE
- ( SOLID ● = EXISTING      OUTLINE ○ = PROPOSED )
- ▤▤▤▤ SCHOOL DISTRICT BOUNDARY
- ELEMENTARY SCHOOL ATTENDANCE AREA
- ▲ JUNIOR HIGH
- HIGH SCHOOL



# Transportation Facilities

The relative importance of various transportation forms for work trips in 1960, is shown by Table 7. A total of 79.58 percent of all study area employed persons used the private automobile as a means of transportation to work. This was below the rate for Macomb County and substantially above the rate of automobile usage for the City of Detroit and the Detroit SMSA. The reduced rate of auto usage for the latter two reflects the higher use of mass transit. Within the study area, about 11 percent of all work trips made by study residents were bus trips. However, the majority of bus trips were made by residents of the Detroit portion of the study area, with a total of 84.15 percent of all study area work oriented bus trips. The higher rate of bus use in the Detroit portion of the study area indicates the greater availability of bus service to this area.

Twelve Mile Roads. Service is provided on this route 21 times daily, Monday through Friday. Great Lakes Lines travels Nine Mile Road with a one-half hour schedule during the rush hours and service is provided on Schoenherr between Ten and Twelve Mile Roads (see Map 9, Bus and Rail Lines).

Suburban or intercity bus service in the study area is provided by the Great Lakes Transit Corporation, Indian Trails Bus Line and Greyhound Bus Lines. Great Lakes operates 40 buses daily on Gratiot Avenue. Indian Trails operates 21 buses daily Monday through Friday on Van Dyke Avenue. Greyhound Bus Lines travels Gration Avenue with variable time schedules and service.

TABLE 7

MEANS OF TRANSPORTATION

	Study Area	Percent	City of Detroit	Percent	Macomb County	Percent	Detroit SMSA	Percent	Michigan	Percent
All Workers	77,397	100.00	579,387	100.00	134,082	100.00	1,300,984	100.00	2,664,250	100.00
Private Automobile or Car Pool	61,595	79.58	379,881	63.59	113,919	84.96	965,945	74.25	1,991,975	74.77
Railroad	15	0.02	239	0.06	22	0.02	2,139	0.16	3,000	0.11
Bus	8,474	10.95	128,666	21.54	4,354	3.25	161,469	12.41	190,826	7.16
Walked to Work	3,142	4.06	38,291	6.41	6,087	4.54	73,390	5.64	209,763	7.87
Other Means	1,193	1.54	7,192	1.20	2,767	2.06	21,637	1.62	47,876	1.80
Worked at Home	731	0.94	8,404	1.41	3,013	2.25	21,871	1.68	123,081	4.62
Not Reported	2,247	2.90	34,714	5.81	3,920	2.92	55,133	4.24	97,729	3.67

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1960. Percentage figures may not equal 100.00 because of rounding.

## Mass Transit

Local transit service in the study area is provided by the Detroit Department of Street Railways (DSR), Brooks Bus Line, Inc., and Great Lakes Lines, Inc. The DSR provides the most complete transit service in the area with routes following most of the major streets in the Detroit portion of the study area with frequent service on each route. Brooks Bus Line operates in Warren and Center Line on Van Dyke Avenue between Eight and

An area proposal for future mass transit was completed by the City of Detroit Rapid Transit Commission in 1958. A current comprehensive study of rapid transit needs in the Detroit region is now being done as part of the Detroit Transportation and Land Use Study which will make recommendations concerning the type and location of a future public transit system.

## Motor Freight

Despite the heavy industrial character of the study area, only one motor freight terminal is located within the area. This terminal is located in the extreme southwest portion of the study area on McNichols Road between Conant Avenue and Dequindre Road. Motor freight demands are served mainly by centralized freight terminals located further south in the City of Detroit. Also, many of the larger industrial firms maintain their own fleets of motor carriers. Considerable trucking is done in the operation of the Chrysler Corporation, the Ford Motor Company and General Motors Corporation. The General Motors Technical Center complex, for example, is served by nearly 600 trucks daily. The dominant movement of motor freight in the study area is expected to focus on Mound Road, Van Dyke Avenue and Groesbeck Highway.

No data is presently available which could indicate the level of motor freight traffic which is destined for commercial establishments within the study area. However, on the basis of land use factors, substantial volumes of commercial truck traffic can be expected on Van Dyke Avenue, Eight Mile Road, Seven Mile Road and McNichols.

## Rail

Two major railroads, the New York Central System and the Grand Trunk Western Railroad, serve the study area (See Map 9, Bus and Rail Lines).

The New York Central System line, parallel to Mound Road, connects the study area with other major centers in the state and nation, as well as Canada. A total of 65 trains per week operated throughout the study area in 1965, with freight tonnages of approximately 4,790,000 gross tons per year. Approximately 50 percent of this tonnage was made up of auto and auto parts. New York Central freight transfer points at which freight and passengers are transferred to the highway system are not maintained within the study area. Four marshalling yards, used to assemble railroad cars, are located adjacent to Eight, Nine, Twelve and Seventeen Mile Roads.

The Grand Trunk Western Railroad passes through Macomb County adjacent to Groesbeck Highway, continuing into the City of Detroit where a connection is made with the Detroit and Toledo Shoreline Railroad. A total of 42 trains per week, all freight, operated through the study area in 1965. Freight tonnages were a total of 366,000 gross tons. Three marshalling yards, located adjacent to Nine, Ten and Eleven Mile Roads, serve area industry. Two terminal and switching yards are located north and south of Eight Mile Road. However, no freight transfer points are operated by Grand Trunk Western within the study area. In addition to these two major railroads, the Detroit Terminal Railroad, a switching facility jointly owned by various railroads, traverses the Detroit portion of the study area. A large terminal and switching yard is located north of McNichols between Mound Road and Conant Avenue.

## Air

Detroit City Airport is the only air facility within the study area. The terminal building is located on Conner Avenue and is bounded on the north and south by McNichols Road and the Detroit Terminal Railroad, and by Conner Avenue and French Road on the east and west. The airport is designated by the Federal Aviation Agency as a large general aviation airport with its aeronautical function being primarily the use of private aircraft in the conduct of business such as corporate flying. In addition, several smaller airline companies have operations at the Detroit City Airport.

Table 8 shows various operational totals for 1965 and 1966. Total enplaned passengers numbered 82,400 in 1960 and 115,400 in 1965. Projections for 1970 and 1975 indicate 141,400 and 171,000 passengers, respectively.

TABLE 8

### DETROIT CITY AIRPORT

	1965	1966
Aircraft Operations*	215,832	233,606
Passengers**	85,500	107,700
Airline Freight***	687,970	988,459
Based Planes	262	298

\*Total number of landing and takeoffs.

\*\*Airline passengers only.

\*\*\*Number of pounds.

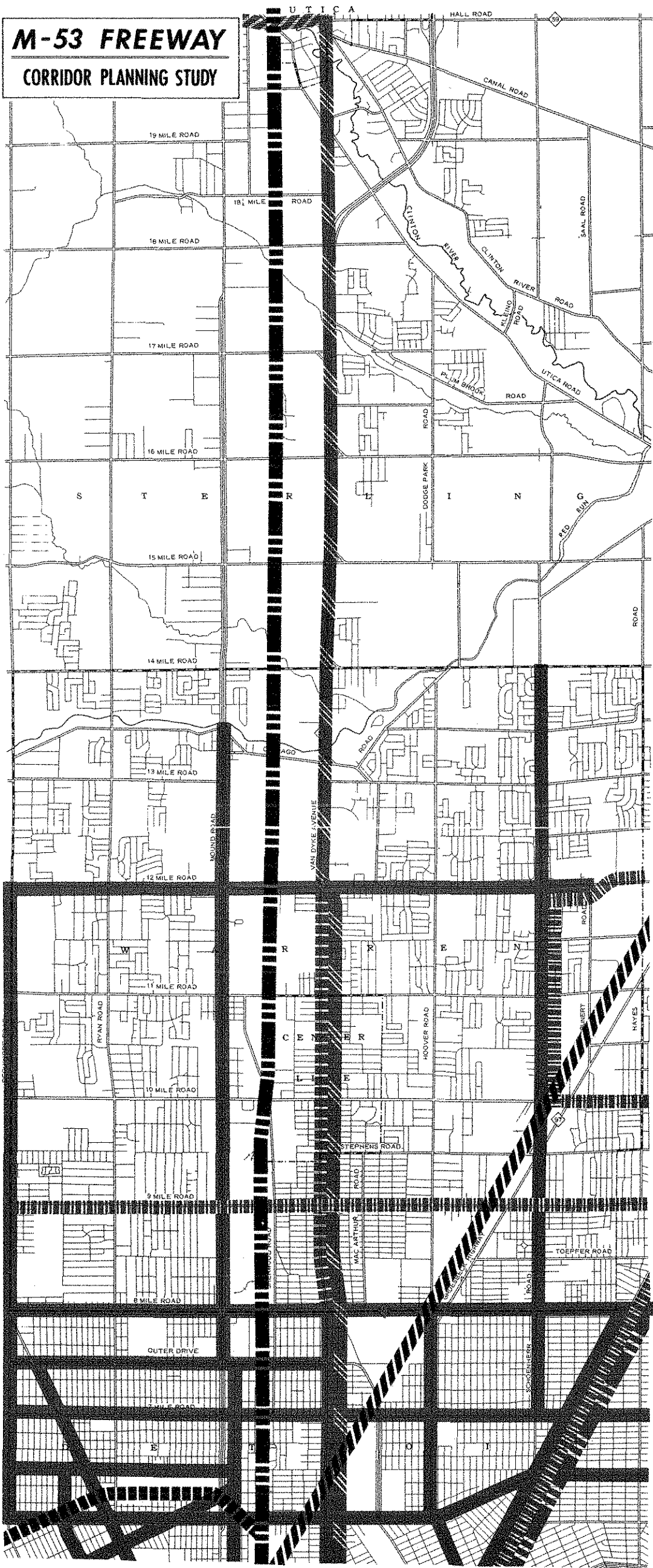
SOURCE: Detroit Aviation Commission

## Corridor Analysis

Motor freight, because of its operation upon the street system, will receive substantial benefits from the construction of a freeway within the study area. Since motor freight service is highly oriented toward industrial and commercial operations, the Mound or Van Dyke Corridors would be most beneficial to this mode of transportation.

Rail transportation, due to the lack of freight transfer points within the study area, would not be directly affected by the choice of a particular corridor. Air transport, because of its location in the southeast portion of the study area would not be affected by either alternative within the City of Detroit. The present and future mass transit demand will be centered along the Mound Road-Van Dyke Avenue industrial commercial complex. The

**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**









**BUS AND RAIL LINES**

**MAP 9**

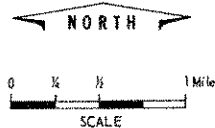
**LEGEND**

**BUS LINES**

-  BEE LINE
-  BROOKS
-  INDIAN TRAILS
-  GREAT LAKES
-  GREYHOUND
-  DEPARTMENT OF STREET RAILWAYS

**RAIL LINES**

-  DETROIT TERMINAL
-  GRAND TRUNK WESTERN
-  NEW YORK CENTRAL



use of either Mound Road or Van Dyke as the freeway location would be beneficial to the existing mass transit system by making available to transit vehicles a high capacity congestion free highway, thereby reducing driving time and operating costs.

# Traffic Conditions

The M-53 study area has experienced substantial rates of growth and development. Adding impetus to the rapid population growth is the steady development of new industrial and commercial establishments. This rapid urban development has resulted in a sharp increase in traffic volumes on the arterial street and highway system serving the M-53 study area.

Because business and industry constitute major traffic generators, their concentration in portions of the area create additional traffic problems. The industrial corridors and strip commercial development in the study area have resulted in very high traffic volumes on Mound Road, Van Dyke Avenue and Groesbeck Highway. As a result, thoroughfares serving these major corridors often operate at above capacity, particularly during peak hours of travel.

## Travel Patterns

Traffic desire information for the M-53 freeway study was obtained from the 1955 Detroit Area Traffic Study (DATS) with projections as updated in 1963. The DATS study indicated a strong travel desire extending from the central business district of Detroit north along Mound Road and Van Dyke Avenue to Sterling Township. The density of this desire decreases with increasing distance from Mound Road and Van Dyke and with increasing distance from the central portion of the City of Detroit. This reflects the dispersal of large traffic generators. However, travel densities again increase near Groesbeck Highway. Due to the less intensive nature of industrial and commercial development in the Groesbeck Corridor, travel desire densities in this area rank far below those of the Mound Corridor.

The DATS analysis of external travel indicated that through traffic comprises a relatively small proportion of total vehicle trips within the study area. Most traffic on the highway system is there because of the significant traffic attractors located within the study area.

The DATS study included an analysis of truck trips which indicated that truck travel desires were primarily oriented to the major industrial corridors located within the study area. Truck travel desires decrease with increasing distance from the Mound and Van Dyke Corridors and increase again near Groesbeck Highway. This is basically the same pattern as established by total vehicular desires.

## Current Traffic

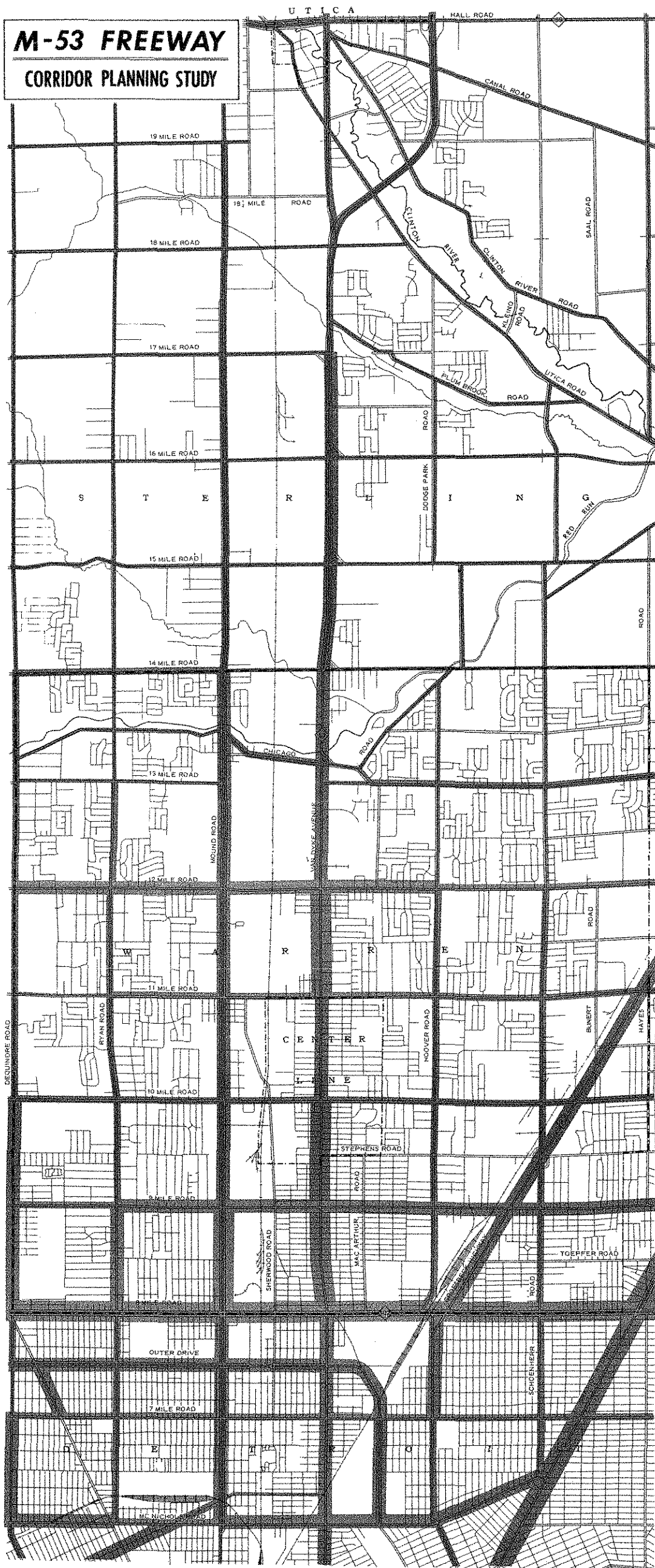
Existing traffic volumes on principal streets and highways in the study area are graphically depicted on Map 10, Existing Traffic Volumes. Current traffic volumes on major thoroughfares coincide with the travel desire patterns described above. Traffic volumes on major thoroughfares also indicate that the industrial and commercial development along Mound Road and Van Dyke Avenue, and the industrial corridor along Groesbeck Highway, are important generators of vehicular traffic. The largest volumes of north-south traffic are currently on Mound Road, Van Dyke Avenue and Groesbeck Highway. The 1965 vehicle volumes on Mound Road and Van Dyke Avenue in the vicinity of Eight Mile Road averaged 44,890 and 47,000 vehicles per day, respectively. Vehicular traffic on these highways decline as development in the Mound industrial corridor decreases, particularly north of Fourteen Mile Road where traffic volumes range from 29,640 vehicles per day on Van Dyke Avenue at Fourteen Mile Road, to 11,440 vehicles per day on Mound Road and 16,500 vehicles per day on Van Dyke Avenue at Eighteen Mile Road. Groesbeck Highway carried an average of 31,000 vehicles per day throughout its length within the study area. Dequindre, Ryan, Hoover and Schoenherr Roads had substantially lower traffic volumes in 1965. This indicates both the lack of concentrated traffic attractors and, to a certain extent, lack of street capacity. Traffic volumes on these arterials range from 24,130 on Dequindre Road at Eight Mile Road to less than 1,000 vehicles per day on Schoenherr Road north of Fourteen Mile Road.

Major east-west vehicular traffic volumes within this area are carried on McNichols, Eight Mile and Twelve Mile Roads. In 1965, Eight Mile Road carried an average of 60,000 vehicles per day near US-25. Traffic volumes on McNichols Road ranged from 15,530 to 29,002 vehicles per day in 1965.

Vehicular volumes on other major east-west mile roads, in general, reflect the attraction of Mound industrial corridor and the commercial development along Van Dyke Avenue. Traffic volumes on Twelve Mile Road, for example, increased from 15,370 vehicles per day at the east boundary of the study area and 26,340 vehicles per day on the west, to 29,590 vehicles per day between Mound Road and Van Dyke Avenue. With minor exceptions, similar patterns occur on each of the other major east-west arterials in the southern portions of the study area.

Hourly traffic counts obtained from the Macomb County Road Commission and the Center Line Traffic Study indicate two peaks of traffic volumes on Van Dyke Avenue.

# M-53 FREEWAY CORRIDOR PLANNING STUDY



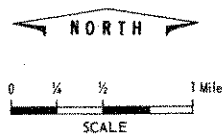
## EXISTING TRAFFIC VOLUMES

## MAP 10

### LEGEND

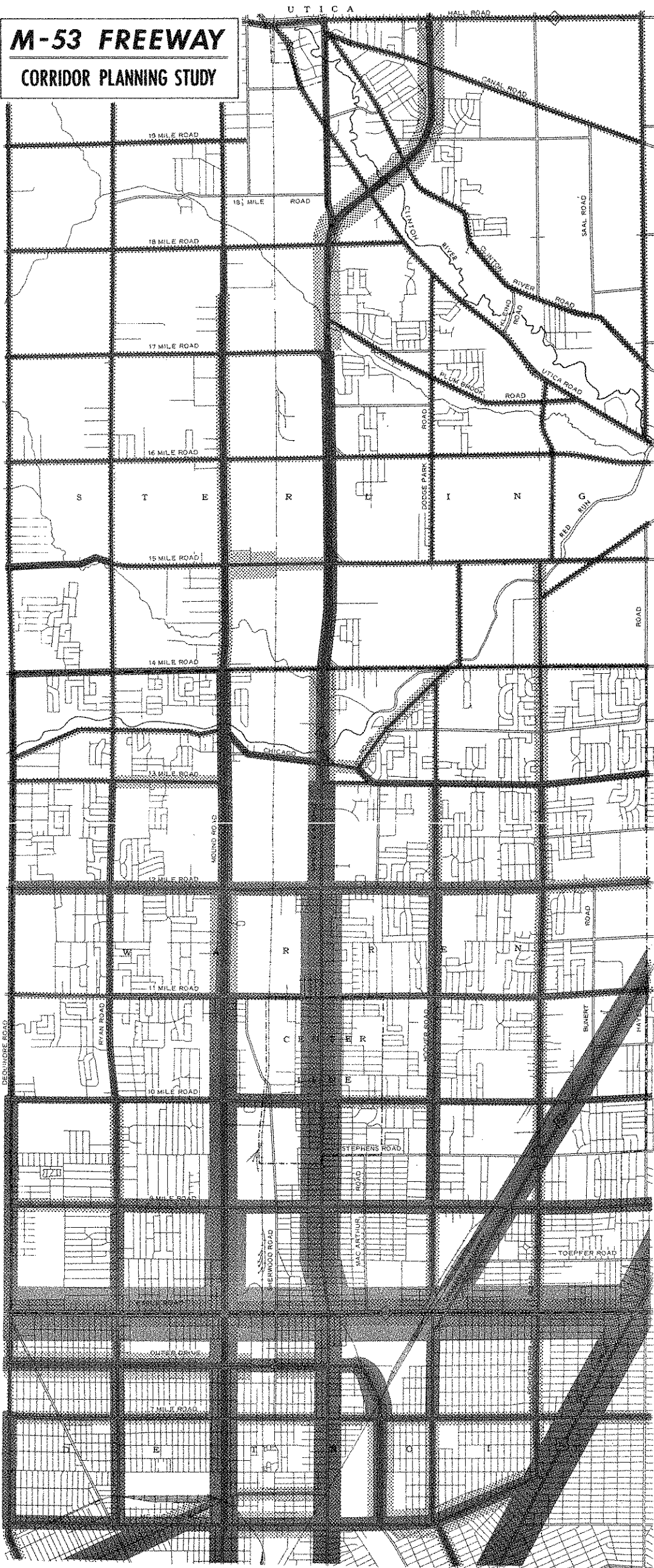
1	UNDER 10	■	60 - 80
2	10 - 20	■	80 - 100
3	20 - 40		
4	40 - 60		

Traffic Volumes in Thousands of Vehicles



SOURCES: DETROIT DEPARTMENT OF STREETS AND HIGHWAYS  
MACOMB COUNTY PLANNING COMMISSION  
MICHIGAN DEPARTMENT OF STATE HIGHWAYS

**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**

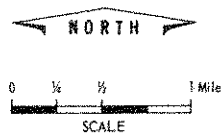


**ARTERIAL CAPACITY AND VOLUMES MAP 11**

**LEGEND**

TRAFFIC VOLUMES Average Daily Traffic	TRAFFIC CAPACITY 24 Hour Period
■ UNDER 10	■ UNDER 10
■ 10 - 20	■ 10 - 20
■ 20 - 30	■ 20 - 30
■ 30 - 40	■ 30 - 40
■ 40 - 50	■ 40 - 50
■ 50 - 60	■ 50 - 60

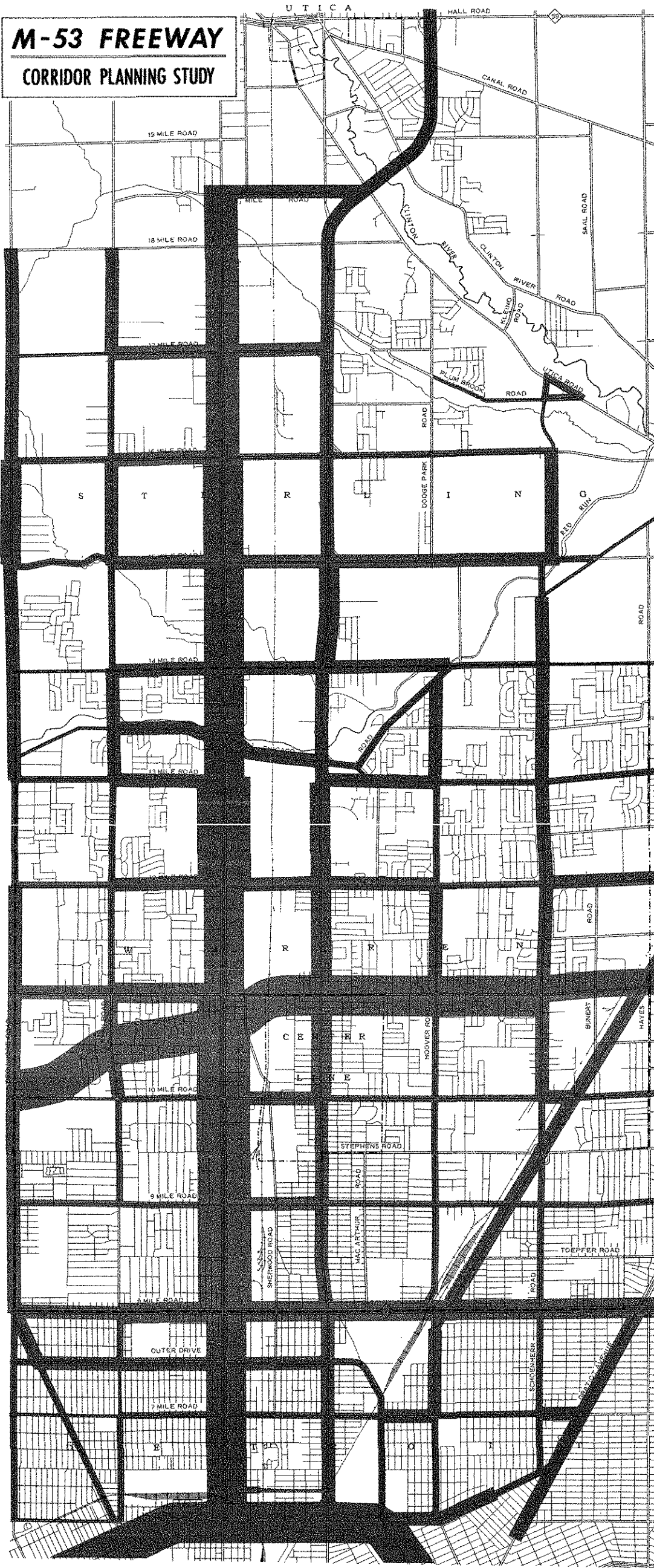
THOUSANDS OF VEHICLES



SOURCE: URBAN PLANNING SECTION  
MICHIGAN DEPARTMENT OF STATE HIGHWAYS



# M-53 FREEWAY CORRIDOR PLANNING STUDY



## FUTURE TRAFFIC VOLUMES

## MAP 12

### LEGEND

■	UNDER 10	■	60 - 80
■	10 - 20	■	80 - 100
■	20 - 40	■	100 - 150
■	40 - 60	■	OVER 150

Traffic Volumes in Thousands of Vehicles

SOURCE: DETROIT AREA TRANSPORTATION STUDY (DATS), 1963  
TRAFFIC VOLUMES ADJUSTED BY THE  
MICHIGAN DEPARTMENT OF STATE HIGHWAYS, 1967

These peaks of travel occur from 6:00 to 9:00 a.m. and from 3:00 to 6:00 p.m. Neither northbound or southbound traffic predominates during these peaks. The flow of vehicles north to the industrial and commercial corridors of the study area is equaled by a flow of vehicles moving into Detroit.

A comparison of arterial capacity to actual traffic volumes reveals that large sections of the major arterial system of the study area are operating substantially above their design capacities (see Map 11, Arterial Capacity and Volumes). This is especially true for those portions of the arterial system located in the Cities of Warren and Detroit. This situation is less serious in Sterling Township because of the lack of concentrated urban development.

The pattern of traffic congestion reveals a general lack of north-south and east-west traffic capacity throughout many portions of the study area. However, certain segments of the highway system display more congestion than others. Lack of north-south traffic capacity is greatest on Mound Road between Eight and Fourteen Mile Roads, on Van Dyke Avenue between Eight and Twelve Mile Roads, and on Dequindre Road between Eight and Ten Mile Roads and between Twelve and Thirteen Mile Roads. Groesbeck Highway is operating at more than 50 percent above practical capacity throughout its length within the study area.

Eight Mile and Twelve Mile Roads are the principal east-west routes lacking capacity. Eight Mile Road is the most over loaded highway within the study area, operating at 28,800 vehicles per day over practical capacity in 1965. Traffic congestion on Twelve Mile Road is greatest between Dequindre and Hoover Roads.

## Future Traffic

The expected growth of the future travel desires and traffic volumes within the M-53 study area is based on three premises. These are:

1. Continued dependence upon the automobile for personal transportation.
2. Urban development will occur as proposed in land use plans for the area.
3. Industrial development will continue to take place within existing industrial corridors.

Future travel desires developed by the DATS study indicate a substantial growth of vehicle travel desires within the M-53 study area and for the Detroit region as a whole. Area projections for 1990 show that the largest increase of travel desire will occur in the vicinity of the Mound Road and Van Dyke Avenue corridors, with additional increases occurring along Groesbeck Highway. Vehicular travel desires on the Mound and Van Dyke cor-

ridors will extend further north than at present. These corridors will serve the largest concentration of trip generating zones within the entire study area (see Map 12, Future Traffic Volumes).

## Corridor Analysis

Selection of either the Hoover or Edison Corridor as the location of M-53 freeway would not provide adequate service to existing and future major traffic desires along either Mound Road or Groesbeck Highway. Traffic desires in the vicinity of Groesbeck Highway would be served by these alignments only south of Ten Mile Road. Travel desires in the Groesbeck Corridor are oriented in a north-east to southwest direction, while Hoover and Edison alternatives would serve primarily a north-south traffic desire. The selection of either the Van Dyke Avenue Corridor or Mound Road Corridor as the freeway location would provide service to the Mound industrial corridor and would, therefore, serve the greatest existing and projected travel desires in the study area. Little or no direct service would be given to travel desires along Groesbeck Highway by either alternative.

The Ryan Road Corridor is located in an area consisting primarily of low density residential with some small industrial development located between Eight and Ten Mile Roads. Future development along this corridor will remain relatively the same. This corridor will, therefore, serve an area of low vehicle travel desires, with travel volumes expected to remain relatively low. The Ryan Corridor is located approximately one mile west of the Mound industrial corridor and would not provide direct services to this important area of high traffic attraction.

# Vehicular Accident Analysis

The frequency of vehicular accidents is one measure of how well a street or highway is functioning. Analysis of vehicular accidents discloses two aspects of highway operational characteristics. One aspect is an indication of hazardous locations where traffic accidents occur because of inherent deficiencies in design or construction of the roadway. The other factor is the element of traffic volumes and vehicular congestion. Under high volume conditions, as the highway approaches practical capacity, more traffic accidents are likely to occur. The principal objectives of an accident analysis are to determine the overall efficiency of the highway system in handling traffic volumes, and to determine where the operation of the system is deficient.

## Accident Patterns

By determining the number of accidents that occur for each 100 million vehicle miles of travel on a street, it is possible to make meaningful comparisons of its relative accident frequency with that of other streets. Map 13, Accident Frequencies and Map 14, Vehicular Accident Rates and Table 9 illustrate vehicular accident rates and volumes during 1966 on the major arterial system of the M-53 study area. In general, accident rates and volumes are highest on those portions of the major arterial system located in the Cities of Detroit, Warren and Center Line, and lower in that portion in Sterling Township.

A comparison of the north-south major arterials within the study area reveals that Van Dyke Avenue had both the largest total volume of traffic accidents and the highest average vehicular accident rate during 1966. The volume of accidents was more than double that of paralleling arterials, with a total of 16.5 percent of all study area traffic accidents occurring on Van Dyke Avenue. Approximately 84 percent of the accidents on Van Dyke Avenue occurred between McNichols and Fourteen Mile Roads. Accident volumes were exceptionally high at the intersection of Van Dyke Avenue with McNichols, Seven Mile, Eight Mile, Nine Mile and Twelve Mile Roads.

During 1966, Van Dyke Avenue had an average vehicular accident rate of 839 per 100 million miles of travel, in comparison to a state wide average of 760 accidents per 100 million vehicle miles. Individual accident rates were above the state average on all portions of Van Dyke Avenue south of Fourteen Mile Road with the exception of the segment between Twelve and Thirteen Mile Roads. Among the north-south major arterials, Mound Road had the second largest volume of traffic accidents during 1966, with a total of 636 accidents. The number of traffic ac-

TABLE 9

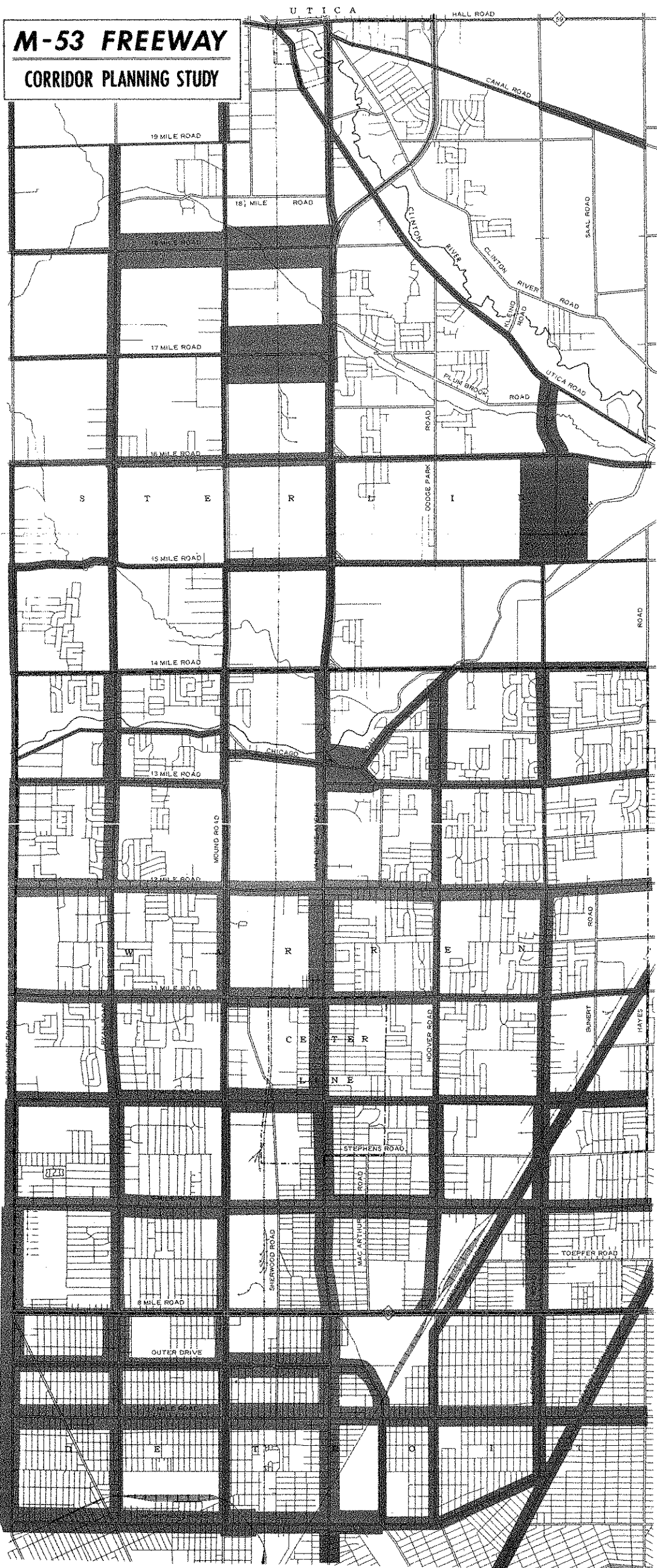
### ACCIDENT VOLUMES AND FREQUENCIES - 1966

Major Arterial	Total Number	Rate Per 100 Million Miles of Travel
Seventeen Mile Road	41	1,724
Eighteen Mile Road	26	1,524
Seven Mile Road	545	1,300
McNichols Road	444	1,103
Nine Mile Road	488	999
Outer Drive	441	925
Twelve Mile Road	503	922
Ten Mile Road	195	897
Van Dyke Avenue	1,374	839
Schoenherr Road	440	820
Graftot Avenue	337	820
Ryan Road	366	759
Chicago Road	49	731
Groesbeck Highway	320	687
Eleven Mile Road	199	687
Dequindre Road	461	669
Hoover Road	362	661
Thirteen Mile Road	86	582
Mound Road	636	460
Eight Mile Road	709	436
Sixteen Mile Road	73	424
Fourteen Mile Road	82	402
Fifteen Mile Road	61	378

SOURCE: Local Governmental Units, 1967  
Michigan Department of State Highways, 1967



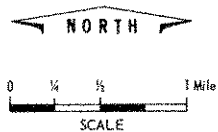
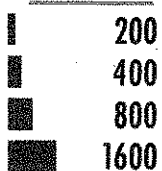
**M-53 FREEWAY  
CORRIDOR PLANNING STUDY**



**VEHICULAR ACCIDENT RATES**

**MAP 14**

**LEGEND**



**Vehicular Accidents Per 100,000,000 Vehicle Miles**

SOURCES: DETROIT DEPARTMENT OF STREETS AND TRAFFIC  
MACOMB COUNTY ROAD COMMISSION  
WARREN POLICE DEPARTMENT  
STERLING TOWNSHIP POLICE DEPARTMENT  
RATES PREPARED BY, URBAN PLANNING SECTION, M.D.S.H.

cidents was particularly high on those segments of Mound Road between Eight and Nine Mile Roads, and between McNichols and Seven Mile Roads. A substantial number of accidents occurred at the intersections of Mound Road with Eight, Nine, Ten and Twelve Mile Roads.

Considering the number of vehicular accidents in relation to traffic volumes, Mound Road was a relatively safe highway in comparison to the other study area major arterials during 1966. Mound Road had an average accident rate of 460 vehicular accidents per 100 million miles. Only four other major arterials within the study area had a lower rate. Mound Road accident rates reflect the safety advantages of a multi-lane divided highway. Although traffic volumes on portions of Mound Road exceeded 44,000 vehicles per day in 1966, the vehicular accident rate was above the state average on only one segment.

On the four remaining north-south arterials, total accident numbers ranged from a high of 461 vehicular accidents on Dequindre Road to a low of 362 on Schoenherr Road. Schoenherr Road had a relatively low total number of accidents, but had a rate of 820 per 100 million miles which is well above the state average. This was followed by Ryan Road with an average accident rate of 759 per 100 million, Dequindre Road with a rate of 669 per 100 million and Hoover Road with a rate of 661 per 100 million. East-west major arterials with high accident volumes were McNichols, Seven Mile, Eight Mile, Nine Mile, Twelve Mile Roads and Outer Drive. Eight Mile Road had the highest number of traffic accidents, but had an accident rate of only 436 per 100 million, again reflecting the safety superiority of a divided highway. This rate was quite low in view of the vehicular volumes of 53,000 to 60,000 per day carried on Eight Mile Road in 1966. Accident rates on other east-west major arterials were significantly high on McNichols, Seven Mile and Twelve Mile Roads.

## Analysis of Alternate Corridors

The location of a freeway in a specific corridor would have a series of possible effects upon the accident patterns within that corridor. One effect would be the immediate elimination of an arterial highway with relatively high accident rates and volumes, and its replacement with a freeway having much lower accident rates. Another possible effect of the freeway would be a short and long term reduction of vehicular volumes on adjacent arterials with subsequent declines in accidents as congestion is reduced. The selection of a freeway corridor for the M-53 freeway should consider which location would provide the greatest reduction of vehicular accidents and a decline in accident rates. Based upon analysis of existing data, the Van Dyke Corridor would meet these objectives to the greatest extent of any corridor under consideration. Van Dyke Avenue has the highest total number of vehicular accidents when compared to other north-south major arterials within the study area, and also the highest accident

rate. A freeway located in this corridor could, therefore, result in the direct elimination of nearly 12 per cent of all study area vehicular accidents.

The Mound Road Corridor had the second highest total number of accidents in relation to other major north-south arterials in 1966. However, based upon the relationship of vehicular traffic volumes to accident frequencies, Mound Road was one of the safest highways within the entire study area. Mound Road, while carrying vehicular volumes comparable to portions of Van Dyke Avenue had the lowest average accident rate of all north-south major arterials.

In total vehicular accidents, Mound Road had less than one-half as many accidents as Van Dyke Avenue. Therefore, the selection of this corridor, while resulting in the reduction of a significant number of accidents, would also replace an existing major arterial with a relatively low accident rate. The Ryan Corridor is ranked fifth in total accidents in relation to the north-south major arterials. Ryan had a total of 366 vehicular accidents in 1966, compared to 1,374 on Van Dyke Avenue and 636 on Mound Road. Ryan Road had an overall accident rate less than the state average. A freeway located in this corridor would not optimize the possibilities of reducing total vehicular accidents and rates. The selection of either the Hoover Road Corridor or the Detroit Edison Utility Corridor would provide about the same degree of relief to vehicular accidents as would be provided by the Ryan Road Corridor.

# Evaluation of Alternatives

The main advantages and disadvantages of each corridor alternative are summarized in the following section.

## Ryan

### Advantages

1. Would pass through a relatively undeveloped area north of Chicago Road resulting in lower right-of-way costs and permitting the possibility of adapting future development.
2. Would serve the industrial area west of Mound Road between Eight and Eleven Mile Roads.
3. Would displace a minimum number of homes in comparison to the other alternatives.
4. Would displace fewer commercial and industrial establishments than other alternatives.

### Disadvantages

1. Would be located one mile west of the industrial corridor, which is the greatest area of traffic attraction.
2. Would increase traffic on the east-west mile roads between the freeway and Mound Road, thus increasing traffic congestion and creating the need for local improvements.
3. Ryan Road has only 66 feet of right-of-way north of Fourteen Mile Road and 66-120 feet south which is below the amount required for a freeway.
4. Adverse driving time and distance would be created for through traffic.
5. Would be located close to the I-75 freeway, thus creating an overlapping service area.
6. Would result in the least direct connection of all alternatives to the existing M-53 freeway terminus.
7. Would require about two more miles of construction than a Mound Road alignment.
8. Would bisect elementary school attendance areas north of Nine Mile Road.

## Mound

### Advantages

1. Would be adjacent to the industrial corridor north of Outer Drive, thus providing direct services to the greatest area of traffic attraction.
2. Would act as a buffer between industrial and residential land use north of Fourteen Mile Road.
3. Would require minimum additional land since Mound Road has 204 feet of available right-of-way.
4. Would be located about midway between I-75 and proposed M-97 freeways, thus obtaining good freeway spacing.
5. Mound Road is shown as a major corridor of traffic demand in the 1955 Detroit Metropolitan Area Traffic Study.
6. Would conform to the freeway alignment indicated by Detroit and Warren master plans.
7. Would be more feasible to interchange with the proposed Davison-McNichols-Conner Freeway at Mound Road than at Sherwood Road.
8. Eventual extension of freeway south of proposed Davison-McNichols-Conner Freeway would be more feasible at Mound Road than at Sherwood Road.
9. Mound Road is preferred over Sherwood by the City of Detroit (Report to Detroit Freeway Planning Committee July 6, 1967).

### Disadvantages

1. Would affect several small manufacturing plants.
2. Would not align directly with north end of existing M-53 freeway, thus introducing some adverse driving distance.
3. Would bisect two school attendance areas. However, these areas are now divided by existing Mound Road.
4. Would be difficult to maintain traffic flow of existing high volumes during construction.
5. Would remove an existing major thoroughfare.
6. Would conflict with Sterling Township master plan,

which favors the Edison Corridor; however, it is an acceptable alternative to local officials.

7. Would isolate a narrow strip of residential land between the freeway and the industrial corridor from the proposed Davison-McNichols-Conner Freeway to Outer Drive.

## **Sherwood**

### Advantages

1. Would be located adjacent to the industrial corridor, thus providing direct service to the greatest area of traffic attraction.
2. Would provide a buffer between industrial and residential land use.
3. Would retain existing major traffic carriers south of Ten Mile Road.
4. Would be located midway between the I-75 and proposed M-97 freeway corridors, thus maximizing freeway spacing.
5. Right-of-way costs may be lower because it would pass through an older residential area.

### Disadvantages

1. Would disrupt a large number of homes.
2. Would create adverse driving distance if used in conjunction with Mound Road.
3. Would further reduce the width of the narrow residential strip between Sherwood and Van Dyke.
4. Would be necessary to acquire extensive industrial property to construct an interchange at the proposed Davison-McNichols-Conner Freeway.
5. Would be difficult to extend the freeway south of the proposed Davison-McNichols-Conner Freeway.

## **Van Dyke**

### Advantages

1. Would provide direct access to the industrial corridor, which constitutes the greatest traffic attraction.
2. Would act as a buffer between industrial and residential land uses.
3. Would be located about midway between existing I-75 and proposed M-97 freeways, thus maximizing uniformity of freeway service.

4. Would align directly with existing M-53 freeway on north end.
5. Heavy traffic would not penetrate the residential area, thus providing service without disrupting neighborhoods.
6. Would replace a highway having the highest average accident rate and largest number of total traffic accidents of any north-south major arterial.

### Disadvantages

1. Van Dyke has mainly 106-120 feet of right-of-way available, which is below the amount required for a freeway.
2. Would require the most extensive acquisition of commercial and industrial frontage along Van Dyke.
3. Acquisition of property for right-of-way would represent the greatest loss of taxable property for the local area of any alternative.
4. Would remove a recently improved major thoroughfare.
5. Would divide several school attendance areas; however, M-53 currently divides these areas.
6. Would divide the City of Center Line and remove a large part of its tax base.
7. Would be difficult to maintain traffic flow during construction.

## **Hoover**

### Advantages

1. Would provide a buffer between industrial and residential land use between Eight and Ten Mile Roads.
2. Would displace a minimum number of commercial and industrial establishments.
3. The north end would be located on a direct alignment with the existing M-53 freeway.
4. Would serve high density apartment development along Hoover Road.

### Disadvantages

1. Would be located one mile east of the industrial corridor, which is the greatest area of traffic attraction.
2. Would result in increased traffic on east-west mile roads between Hoover and Mound Road, thus increasing traffic congestion and creating the need for local



improvements.

3. Would be located close to proposed M-97 freeway, especially south of Ten Mile Road, thus creating an overlapping of service areas.
4. Would isolate a narrow strip of residential land from Eight to Ten Mile Roads.
5. Would disrupt a large number of homes between Eight and Ten Mile Roads.
6. Would not utilize existing pavement and structures across Clinton River.
7. Would bisect three elementary school attendance areas.
8. Use of a curving alignment to avoid golf course and state park would create some adverse driving distance.
9. A community hospital and two high schools are located on this route.

## **Edison**

### Advantages

1. The existing Edison utility right-of-way is 300 feet in most sections.
2. Would align directly with existing M-53 freeway on the north end.
3. Would serve high density apartment development near the corridor in the City of Warren.
4. Would not remove a major thoroughfare.
5. Would displace a minimum number of commercial and industrial establishments.
6. Would conform to the Sterling Township Master Plan, which favors the Edison Utility Corridor.

### Disadvantages

1. Would involve relocation of major electric transmission lines, large water and sewer trunklines and a main gas line, which are located in the Edison right-of-way.
2. Would be located close to proposed M-97 freeway corridor south of Ten Mile Road, thus creating an overlapping of service areas.
3. Would be located one and one-half miles east of the industrial corridor, which is greatest area of traffic attraction.

4. Would create adverse driving distance for through traffic.
5. Would penetrate residential neighborhood units.
6. Would bisect seven school attendance areas in the City of Warren.
7. Would result in increased traffic on east-west mile roads between the freeway and the industrial corridor, thus increasing traffic congestion and creating the need for local improvements.
8. Would disrupt a large number of homes between Eight and Nine Mile Roads.
9. Would isolate a narrow strip of residential land from Eight Mile Road to Stephens Road.
10. Would not utilize existing pavement and structures across Clinton River.

## Social and Community Value Factors

In the selection of the Mound Road Corridor, consideration was given to the preservation and enhancement of existing community recreation areas and open space. Precise right-of-way is yet to be determined by the route location engineering study; however, no recreation lands of any extent are expected to be acquired or disrupted. The route corridor does not affect any future recreation sites or open spaces proposed by local community master plans. The freeway will improve access from the core city area to the outlying recreation sites at the Rochester-Utica State Recreation Area and Dodge State Park No. 8. Since the recommended corridor follows an industrial corridor, the problems of family disruption and the division of neighborhood units and school attendance areas have been held to a minimum.

With regard to the preservation of historical sites and national landmarks, the Mound Road Corridor would affect neither.

From an aesthetic viewpoint, there are no topographic features or characteristics that would give one alternative corridor an advantage over the others. From the motorists viewpoint, the aesthetic potential of the Mound Road Corridor should be considered in relation to its location adjacent to a major industrial corridor and the traffic service and safety requirements. A worthwhile architectural visual aesthetic element that might be taken into consideration is the General Motors Technical Center complex at 12 Mile Road.

The joint development of freeways and urban facilities can result in land acquisition economies and the achievement of a functional integration of the freeway with urban facilities. In this regard, due to the location of the corridor, the opportunities for joint development involving neighborhood type facilities is very limited. Further consideration will be given to this during the engineering study when definite right-of-way requirements are determined.

Each of the alternative corridors would serve the objectives of the National Defense System of freeways equally well. Water pollution, conservation and flood plains were not significant factors in the selection of the recommended corridor.