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MICHIGAN
STATE HIGHWAY DEPARTMENT
CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER

INITIAL SELECTION OF
INTERSTATE HIGHWAYS
IN MICHIGAN

JULY 1, 1945

INITIAL SELECTION OF INTERSTATE HIGHWAYS
IN MICHIGAN

The Federal-Aid Highway Act of 1944 prescribes that, "there shall be designated within the continental United States a National System of Interstate Highways.....so located as to connect by routes, as direct as practicable the principal metropolitan areas, cities, and industrial centers, to serve the national defense and to connect at border points with routes of continental importance. The routes.....shall be selected by joint action of the state highway departments of each state and the adjoining states as provided by the Federal Highway Act of November 6, 1921."

On February 6, 1945, the Commissioner of Public Roads issued Administrative Memorandum No. 268 which outlined the procedures to be followed and the maps and tabulations to be submitted. It suggested sound principles and references for carrying out the selection of the system by the individual states. It suggested that the maps be accompanied with evident qualification for the routes designated by the state. On April 9, 1945, the memorandum was supplemented with details for reporting of mileage and traffic data concerning the routes selected by the states.

The Michigan State Highway Department has followed the procedures and considered the report entitled, "Interregional Highways" published in 1944 by the 78th Congress with particular attention to the criteria employed. With these guides, the Highway Planning Survey data was organized and studied for the selection of routes in Michigan that qualify with the terms of the Act and the desire of Congress.

This report has incorporated data which is indicative of the merits of the interstate highways that have been selected in Michigan. It presents

the over-all qualifications for the group of routes that have been tentatively designated. It is accompanied by a report presenting the essential elements that influence the location of the routes in the urban areas and the assembly of the mileage and traffic data requested in the supplement.

SELECTED INTERSTATE HIGHWAYS

The general location of the routes that have been selected for the interstate highway system in Michigan is shown on plate 1. The mileage and usage are presented graphically on plate 2.

The length of the routes selected, including the circumferential and distributing routes, amounts to 1,180 miles, of which 1,006 miles are on rural sections and 174 miles are on urban sections. This mileage is 1 percent of the total mileage of roads and streets in Michigan.

An average daily traffic volume of 7,970 vehicles is estimated for the rural sections of the system had it been in existence in 1941. The usage of the rural sections would have amounted to 2.9 billion vehicle miles which is 38 percent of the total usage of all rural roads in 1941.

It has not been practical in the majority of the cities to estimate how much use would be made of the interstate route extensions into and through the cities.

Studies of street usage provide evidence that the interstate highway routes and their distributors in the cities will be used to a far greater extent than the existing state trunkline routes that follow the business streets and are usually congested with traffic. The interstate highways will be located to directly connect the principal points of traffic interest. They will be constructed with ample capacity for the free flow of

INITIAL SELECTION INTERSTATE HIGHWAYS IN MICHIGAN



MILEAGE AND USAGE OF THE SELECTED INTERSTATE ROUTES

ROUTE	LENGTH IN MILES			AVERAGE DAILY TRAFFIC RURAL SECTIONS
	RURAL	URBAN	TOTAL	
CHICAGO - DETROIT	187.4	22.6	210.0	9,610
TOLEDO - DETROIT - PORT HURON	85.4	34.0	119.4	13,260
MUSKEGON - GRAND RAPIDS - DETROIT	164.2	28.1	192.3	8,630
SAULT STE. MARIE - DETROIT	294.4	42.9	337.3	6,040
CHICAGO - BENTON HARBOR - GRAND RAPIDS	77.3	3.1	80.4	4,980
CIRCUMFERENTIAL AND DISTRIBUTING ROUTES	197.3	43.1	240.4	7,620
TOTAL	1,006.0	173.8	1,179.8	7,970

MILES OF ROADS IN MICHIGAN	RURAL	URBAN	TOTAL
	92,294	11,745	104,039

TOTAL ANNUAL VEHICLE MILES TRAVELED ON RURAL ROADS - 1941

INTERSTATE SYSTEM
2,926,920,000

ALL RURAL ROADS
7,663,360,000

PERCENT INTERSTATE OF ALL MICHIGAN ROADS

RURAL
1.08

URBAN
1.48

TOTAL
1.13

38 % OF ALL RURAL TRAVEL IS ON

1.08 % OF TOTAL RURAL MILES

traffic with adequate interchange connections with the arterial surface streets. It is recognized that these superior facilities will receive as high a percent of all travel in the urban places as the similar percent ascertained for the interstate routes in the rural areas.

The situation in the cities served with the selected interstate highways is discussed further in the supplemental assembly of urban data.

MICHIGAN'S PLACE IN THE NATIONAL ECONOMY

Significant statistics of the United States and Michigan are presented for comparison on plate 3. These portray this state's part in the life of the nation. They are prime factors affecting transportation.

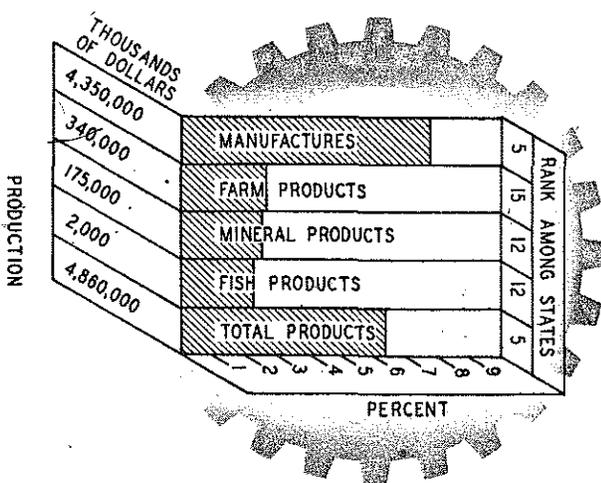
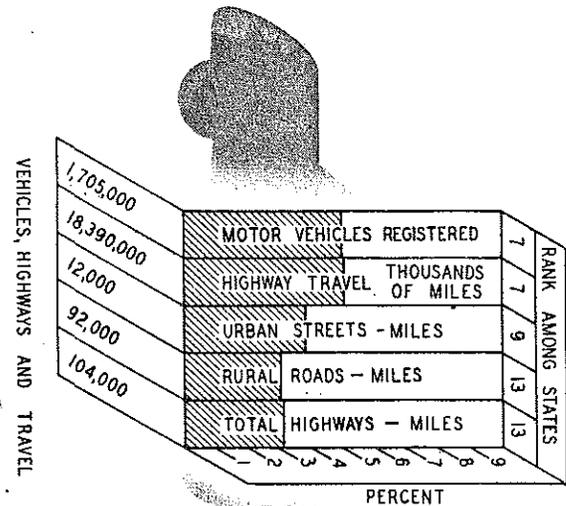
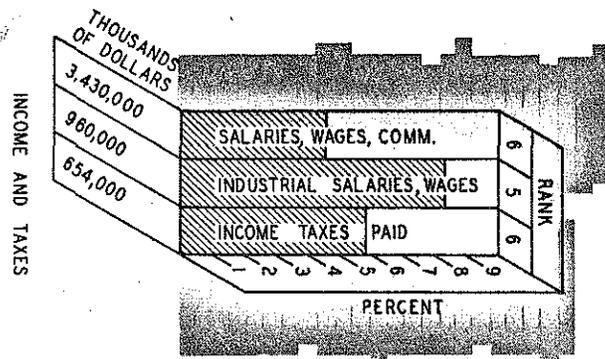
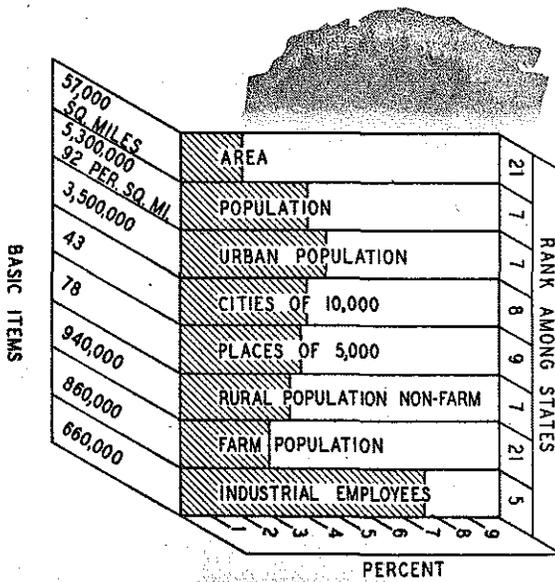
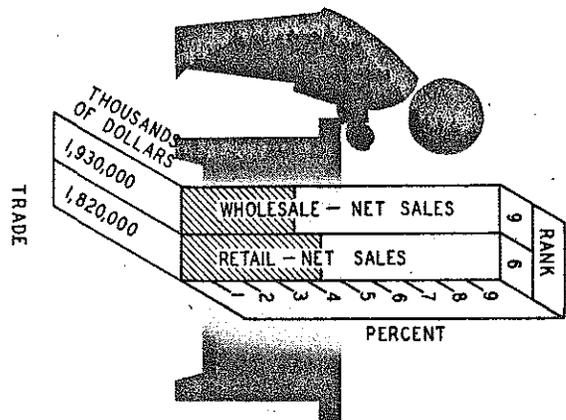
These data reveal Michigan's high rank in population, particularly that of urban and non-farm residence. Salaries, wages, income tax payments, retail trade, automobile ownership, and other pertinent indices are indicative of the prosperity of the state. These factors reflect the immense productivity of the state made practical through highway transportation.

Agriculture and mining contribute products of great value and are substantial elements in the state and national economy. Outdoor recreation is a product of the land which, combined with the various enterprises that it supports, is one of the most valuable source of revenue in the state. This is not directly reflected in the statistics. It is viewed in plate 13 and it is described under the heading "Recreational Development and Resources."

During the war, the population engaged in industrial employment has increased. This may result in even a higher rank for Michigan among the manufacturing states in the post-war period.

MICHIGAN IN THE NATIONAL ECONOMY

MICHIGAN ITEMS SHOWN AS PERCENTAGES OF UNITED STATES TOTALS



Automobile manufacturing is the principal industry and it is expected to continue. There is, also, evidence of the expansion of other industries in the state, particularly those requiring similar skills, production methods, and distribution systems. Desirable diversification is being accomplished.

THE AUTOMOTIVE INDUSTRY

Michigan manufacturing corporations produce 96 percent of all the motor vehicles produced in the United States. A considerable part of the entire manufacturing process is carried on within the boundaries of the state. Automobile manufacturing is a mass production operation employing the assembly line method.

The automobile assembly line, broadly conceived, incorporates the sources of raw materials, the plants that manufacture parts, the plants that produce accessories, the main assembly plants, and the branch assembly plants. The sources of materials and the plants are dispersed in the state and throughout the country. This vast industry, constituting hundreds of plants, is founded in Michigan and centered in Detroit. It is the industry that furnishes the vehicles for highway transportation and it employs the highways as an essential element in the mass production operation.

The national extent of the manufacturing process with relative values of the products produced in the several states is shown on plate 4. It provides a comparison of the value that is added in each of the states with the total value produced in each state. The locations of branch assembly plants are shown with the relative values of motor vehicle production.

The distribution of automotive industry in Michigan is shown on plate 5. The main assembly plants and the plants manufacturing parts and accessories are shown in relation to the selected interstate highways and the major state trunklines which serve to connect them into one extensive production unit. This statewide production unit contributes 58 percent of the total national value of automotive products.

Heavy truck traffic composed for the most part of trailer combinations is the principal hauling element for automobile manufacturing and the distribution of finished products. The heavy truck traffic flow that would have used the selected interstate highways in 1941 is shown on plate 6. The high values are evidence of the great activity in the automobile industries and the interdependence of plants in and out of Michigan. 28 percent of the heavy truck traffic on the state trunkline system is produced with trips that have an origin or a destination outside of the state. The corresponding value for passenger car traffic is 10 percent, and two-thirds of this travel is performed by passenger cars owned in other states.

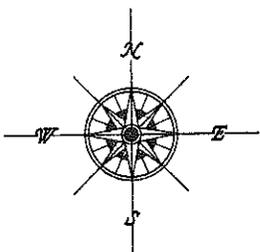
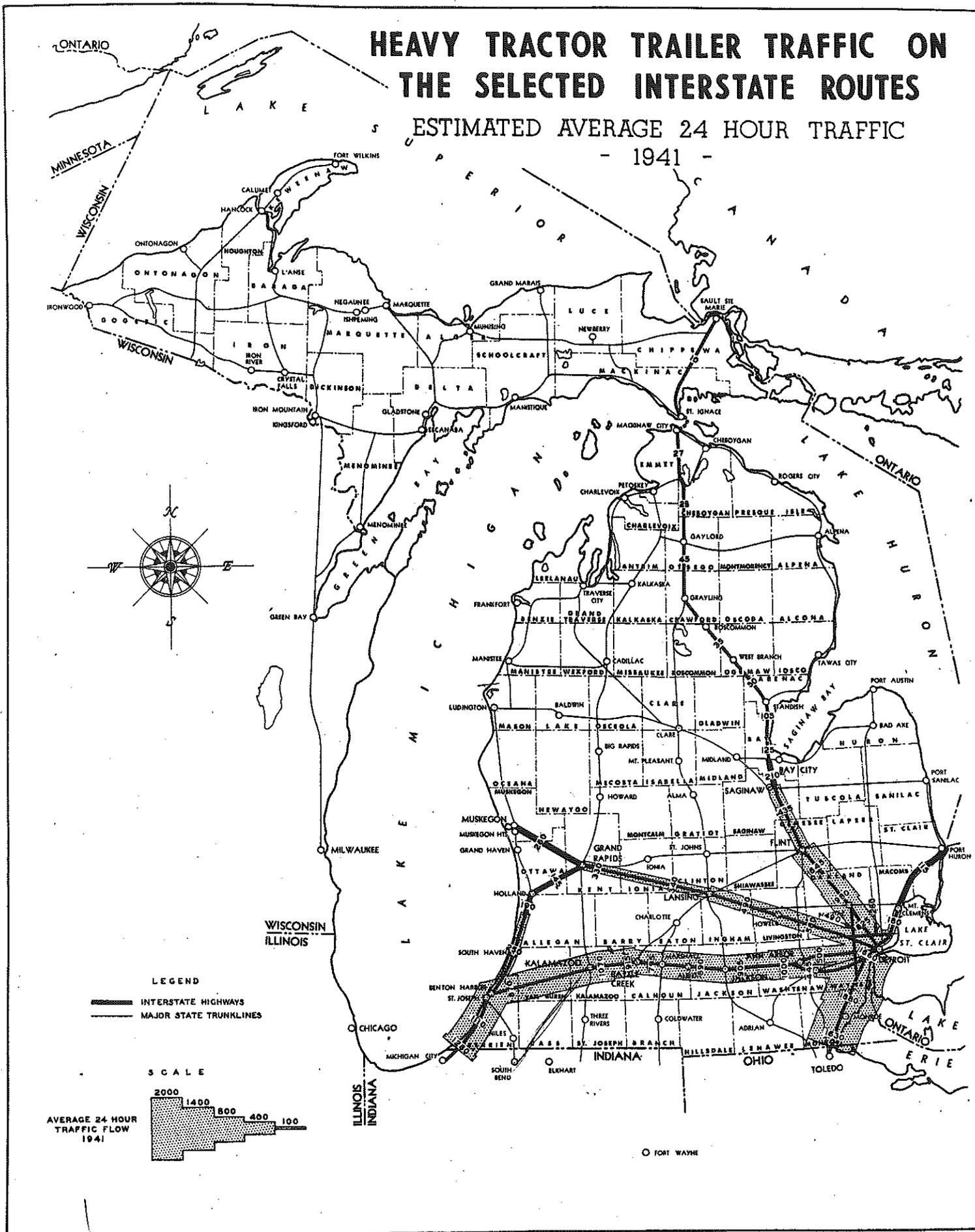
It is natural that a considerable mileage of Michigan's principal state trunklines qualify for the interstate highway system when they are examined with the criteria employed for the selection of interstate highways. It is reasonable that the major elements of the entire automobile plant should be served and connected with the interstate highway system.

BASES FOR THE SELECTION

The bases for the initial selection of interstate highways are the various phases of the Highway Planning Survey supplemented with general statistical information contained in the publications of the United States Department of Commerce. Facts concerning the manufacture and distribution

HEAVY TRACTOR TRAILER TRAFFIC ON THE SELECTED INTERSTATE ROUTES

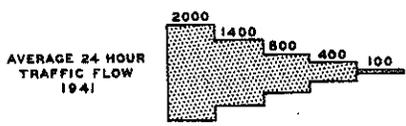
ESTIMATED AVERAGE 24 HOUR TRAFFIC
- 1941 -



LEGEND

- INTERSTATE HIGHWAYS
- MAJOR STATE TRUNKLINES

SCALE



○ FORT WAYNE

of automobiles were obtained from publication of the automotive industry and the Detroit City Plan Commission.

The preliminary studies of highway classification furnish additional bases and serve to establish confidence in the qualifications of the routes that have been selected.

INDUSTRIAL EMPLOYMENT

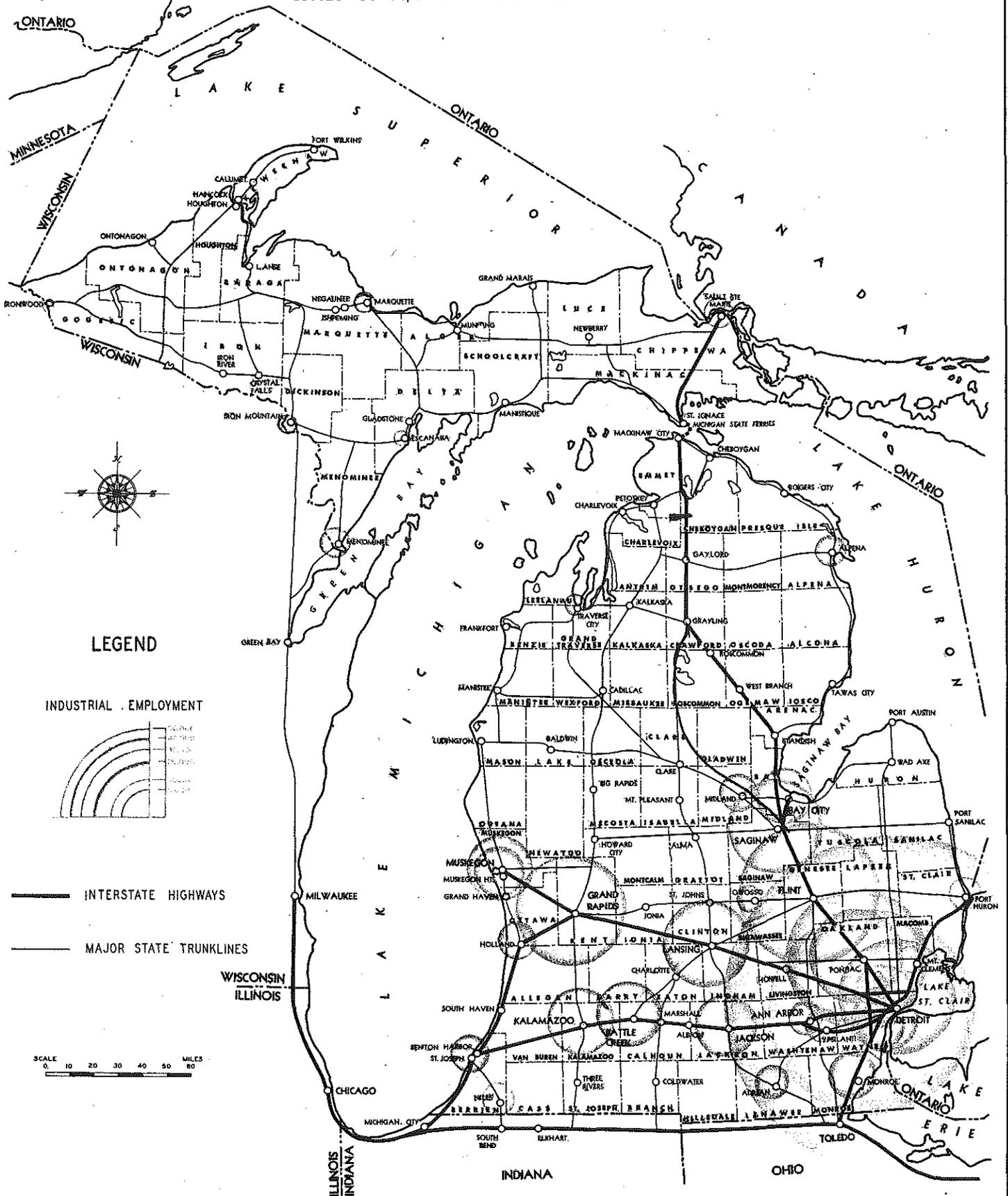
The number of workers employed in industry is a good index of the manufacturing importance of cities. The amount of industrial employment in relation to the selected interstate highways is shown on plate 7.

The automotive industry is the largest unit in the economic structure of the state. In 1939, the automobile plants employed a force of 286,497, or 43 percent of all industrial workers in the state. The largest plants are located in the southeastern part of the state with the heaviest concentration near and in Detroit. In Detroit, itself, nearly 59 percent of industrial workers are employed in automobile plants. In Flint, Pontiac, and Lansing a higher percentage of the industrial workers are employed in automobile manufacturing.

In Detroit, there are a number of large manufacturing companies engaged in producing other articles that are distributed throughout the world. Among the articles manufactured are drugs, salt, chemicals, ships, and paper products. A majority of the out-of-state cities are famous for specialized products. Grand Rapids is a furniture manufacturing center of national importance. The product of cereal foods for world-wide consumption has made Battle Creek a famous name. Midland is famous as the home of a progressive chemical manufacturing company that has multiplied its production of light metals during the war. Important metal working machines

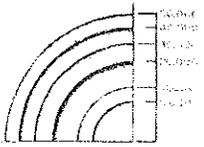
INDUSTRIAL EMPLOYMENT

CITIES OF 10,000 POPULATION AND OVER



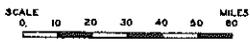
LEGEND

INDUSTRIAL EMPLOYMENT



INTERSTATE HIGHWAYS

MAJOR STATE TRUNKLINES



and engine manufacturing plants, some of them distributing their products throughout the country, are located in Muskegon, Saginaw, Bay City, Jackson and Lansing. The latter, the home of two main assembly plants, is one of the leading sources of drop forgings.

The routes selected for the interstate highway system connect the principal industrial centers. They will expedite the distribution of these nationally advertised products manufactured in these cities.

CENTERS OF URBAN POPULATION

The relative size of the urban places connected with the selected interstate highways is shown on plate 8. This system of highways will serve directly all but four of the cities with more than ten thousand population. They connect, as directly as is practicable, the major areal cities of Chicago, Detroit, and Toledo. Access is provided to the extensive recreational areas of Northern Michigan and Canada from the larger cities of the Midwest.

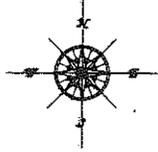
TRADING CENTERS AND THEIR AREAS OF INFLUENCE

The extent of the metropolitan and major trading areas with their centers is shown in relation to the selected interstate highways on plate 9. The major state trunklines shown on the map are those that connect the major trade centers with each other, and with the interstate highways that lead to the metropolitan centers. These two classes of trade centers are the bases that were used to select the major state trunklines that are shown with the interstate highways.

The extent of the metropolitan and the major trading areas that are served by the interstate highways have been delineated by studies of the highway planning survey traffic and road use data. Traffic is generated

CENTERS OF URBAN POPULATION

CITIES OF 5,000 AND OVER



LEGEND

POPULATION



— INTERSTATE HIGHWAYS

— MAJOR STATE TRUNKLINES



by the social and economic activities of the people comprising a major trade area. They are interested primarily in their own trade center. Their second consideration is the metropolitan center.

The characteristic usage of the automobile causes constantly increasing traffic volumes on principal highways, as they connect a series of trade centers with the metropolitan center.

The arrangement of the major trade centers in the geography of a region suggest the location of interstate highways between the metropolitan and national centers of interest that they serve to connect. Interstate highways should be located to connect the major trade centers en route between metropolitan centers. The greatest amount of intercity traffic on a principal highway is the traffic between major trade centers and metropolitan centers.

In the initial phases of the classification of marketing places and trade centers with highway traffic data, it appears that Grand Rapids has some of the characteristics of a metropolitan center. This is due to its strategic location, the geographic characteristics of the peninsula, and likely to other reasons that have not been identified. This lends confidence in the findings of this study that Grand Rapids is a center that qualifies for the interstate highway system and should be connected directly with Chicago, Detroit, and Milwaukee via Muskegon.

DISTRIBUTION OF RURAL POPULATION

The relative density of rural population in Michigan is shown in relation to the selected interstate highways on plate 10. The population used to determine the relative density includes those persons that live outside the boundaries of urban places with a population of less than five

thousand people. It should be noted that the counties with the highest density of rural population are those that contain the industrial cities.

Michigan industrial cities are characteristic. The rapid growth of these cities have produced highly developed urban areas beyond the corporate limits. A large portion of the non-farm rural population live in these fringe developments. A substantial fraction of workers, industrially employed, reside in the agricultural areas near these cities. Good agricultural lands are located in the vicinity of the industrial cities and the nearness of the market permits profitable operation of smaller farms. These two elements in land usage account for the higher density of rural population in southern Michigan near the industrial cities.

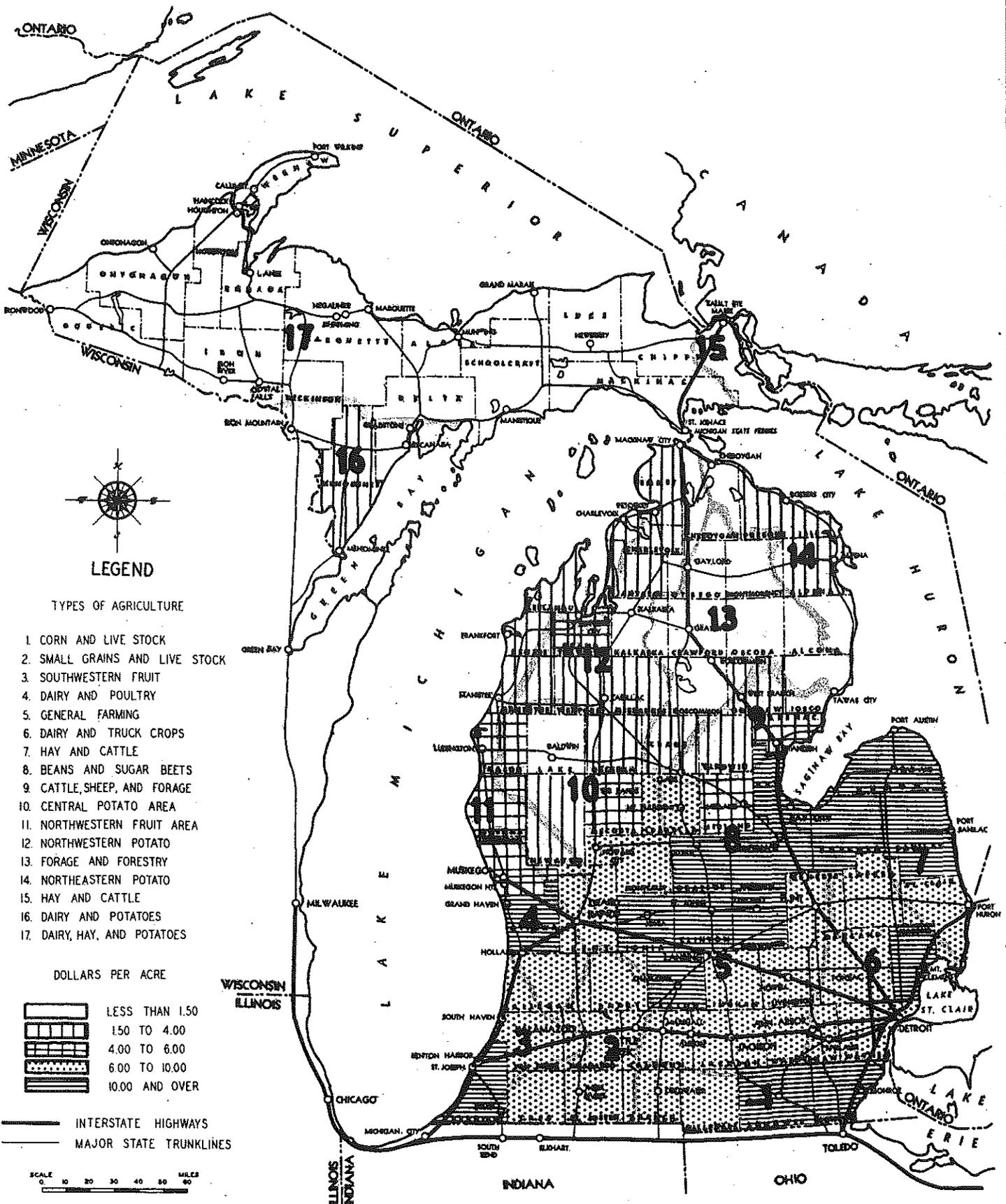
The selected interstate highways traverse the southern agricultural-industrial area of the state. They will furnish efficient transportation of farm products for the urban markets.

TYPES AND VALUE OF AGRICULTURAL PRODUCTS

Michigan contributes successfully to the national economy by its diversified farming activities. This is an achievement not generally attributed to this State because it is dwarfed by the production record of the automotive industry.

The soil in southern Michigan is suitable for agricultural production. It produces small grains, live stock, dairy, poultry, and truck crops. It has an immediate market in the industrial cities, which are reached with highway transportation. The interstate highways are compared with the types of agriculture and the value of farm products on plate 11. The areas for the various types of agriculture are those determined by the Michigan State College and approved by the State Land Use Planning Committee.

TYPES AND VALUE OF AGRICULTURAL PRODUCTION



Along the shores of Lake Michigan in the southwestern and northwestern areas, fruit is the specialized crop. It is marketed and distributed on an interstate scale and extensive use is made of highway transportation.

DISTRIBUTION OF MOTOR VEHICLE OWNERSHIP

The higher densities of motor vehicle ownership are found in the counties that are served by the interstate highways. This is shown on plate 12.

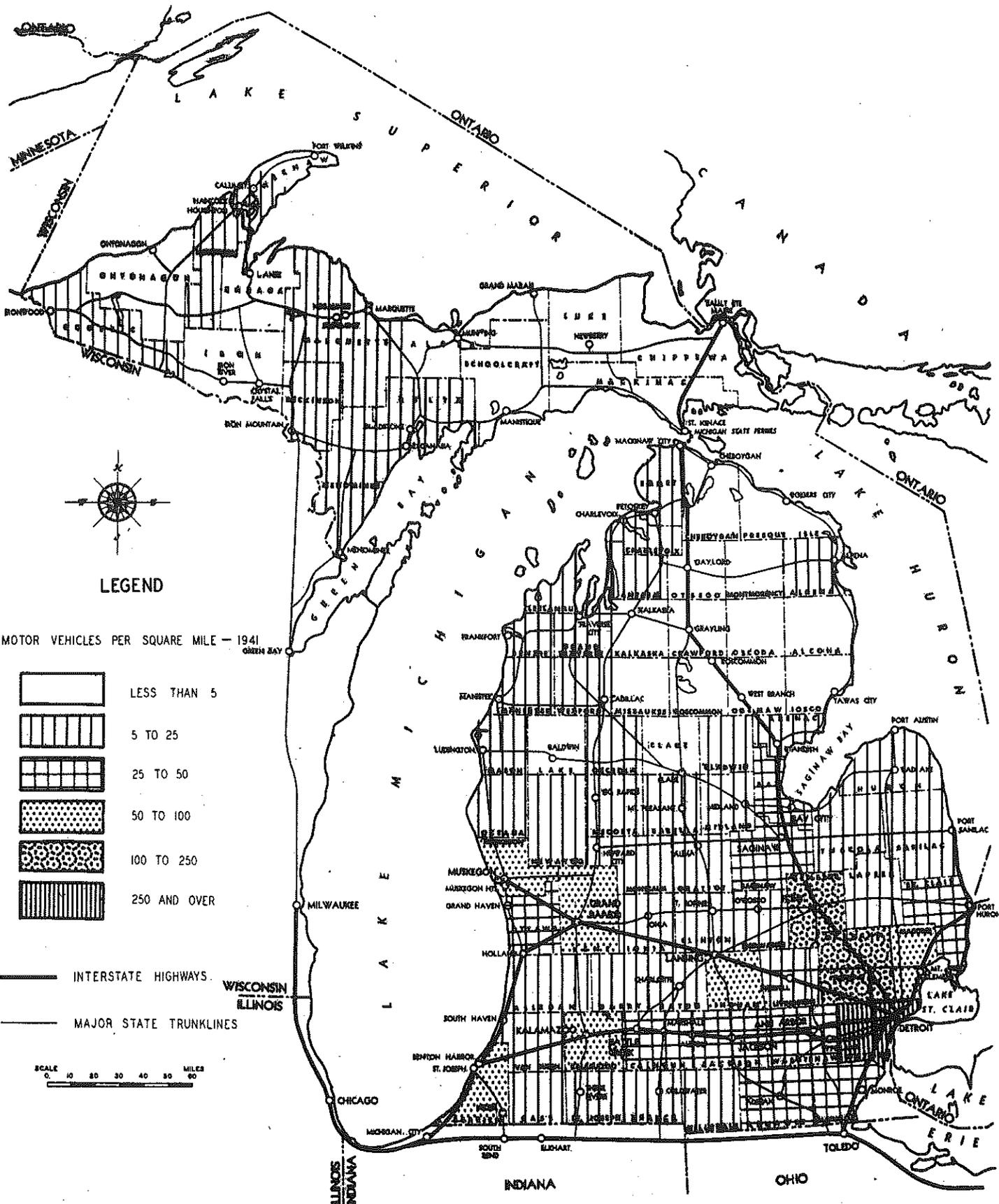
Michigan people who constitute 4 percent of the nation's population, own 5 percent of all the automobiles in the country. This is reflected in the high density of automobile ownership that exists in the southern counties. This high density of ownership is the reason that 5 percent of all highway travel is performed in Michigan. This is evidence that the 1,180 miles of the selected interstate highways, which constitute 3 percent of the system recommended by Congress is a minimum selection.

RECREATIONAL DEVELOPMENT AND RESOURCES

There is a constantly increasing recognition of the need for healthful outdoor recreation for the people who reside in the large industrial centers. Michigan's outdoor recreational resources are the finest in the country. They are near many of the large masses of urban population in the Midwest. This essential element in a successful economical and efficient industrial production should be taken into account in considering the routes to be incorporated in the interstate highway system. Highways are the principal transportation facilities that reach and service the extensive outdoor recreational areas.

Government ownership, control and development of the land that nobody wants is publicly accepted and sponsored. Much of that kind of land

DISTRIBUTION OF MOTOR VEHICLE OWNERSHIP



is now in the national forests, the state forests, and the state game areas. These areas are dotted with hundreds of lakes that are useful for resorts, summer homes, and cottages. The shores of the Great Lakes are also available for this type of land use. Winter sports are available and their patronage was rapidly increasing before the war. In addition, the vast public lands where timber is growing are available for fishing, hunting, camping, and vacationing.

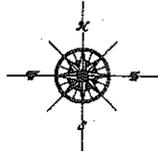
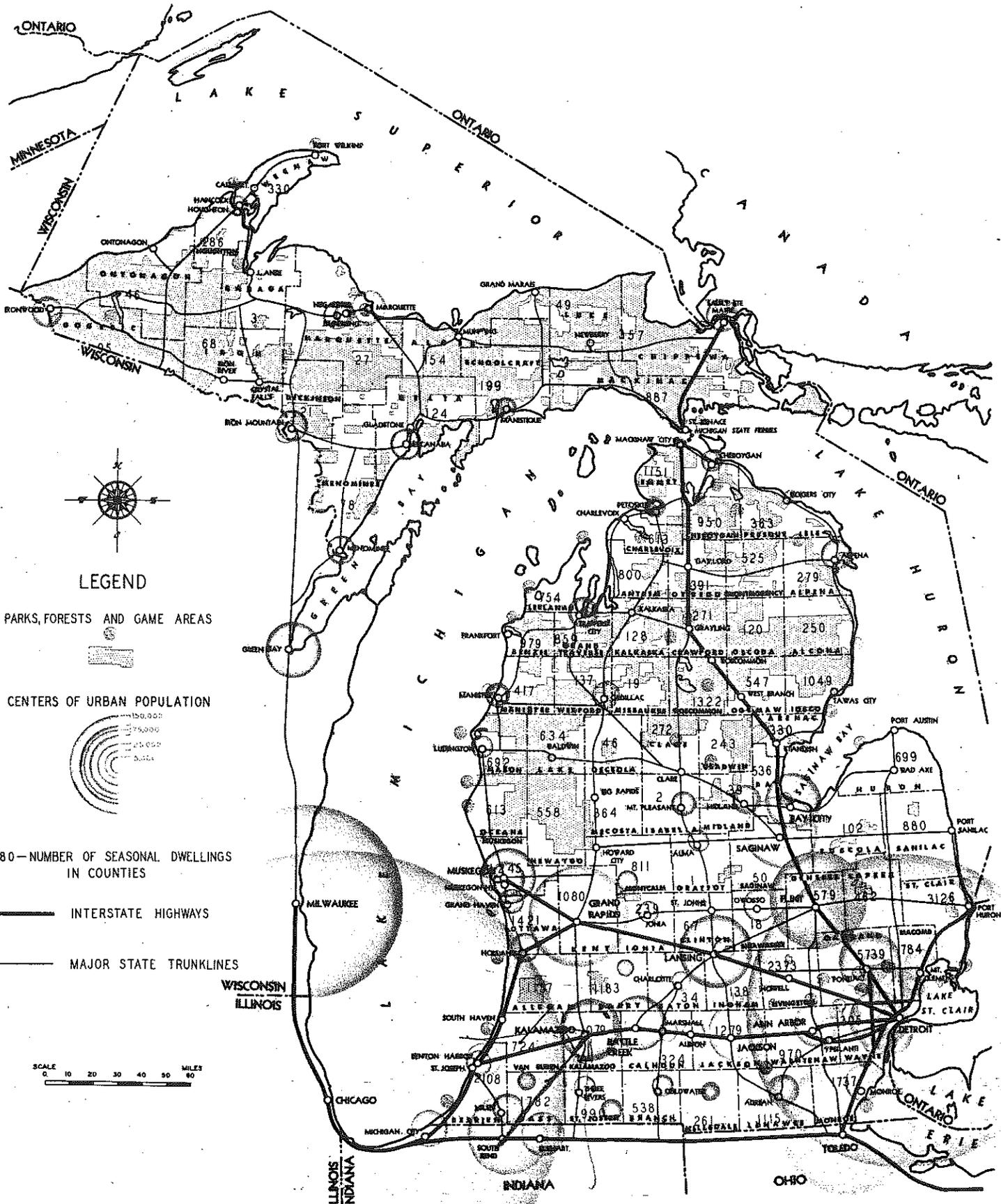
The lumber industry is on the increase in Michigan. Authorities on reforestation can foresee, in the not too distant future, when more extensive acreage will be selectively cut each year than in any year of this State's leadership in the lumber industry. This recreated lumber industry will depend on highway transportation for its operations and distribution.

The interstate highways are compared with the extensive recreational resources of the State and the source of their patronage on plate 13. On this map are inscribed the number of seasonal dwellings in each county, which is a measure of the present degree of development. The shore lines and extent of lands in public ownership are evidence of the outdoor recreational resources. They are near the concentration of population in the Chicago and Detroit metropolitan areas and their associated major trade centers.

TRAFFIC DATA

The total traffic flow map, plate 14, for the interstate highways is an estimate of the state trunkline traffic that would have used the system in 1941 had it been in existence with ample traffic capacity. No allowance is made in the estimate for the increase in automobile usage that will develop when these completely adequate time saving highways are constructed.

RECREATIONAL DEVELOPMENT AND RESOURCES



LEGEND

PARKS, FORESTS AND GAME AREAS



CENTERS OF URBAN POPULATION



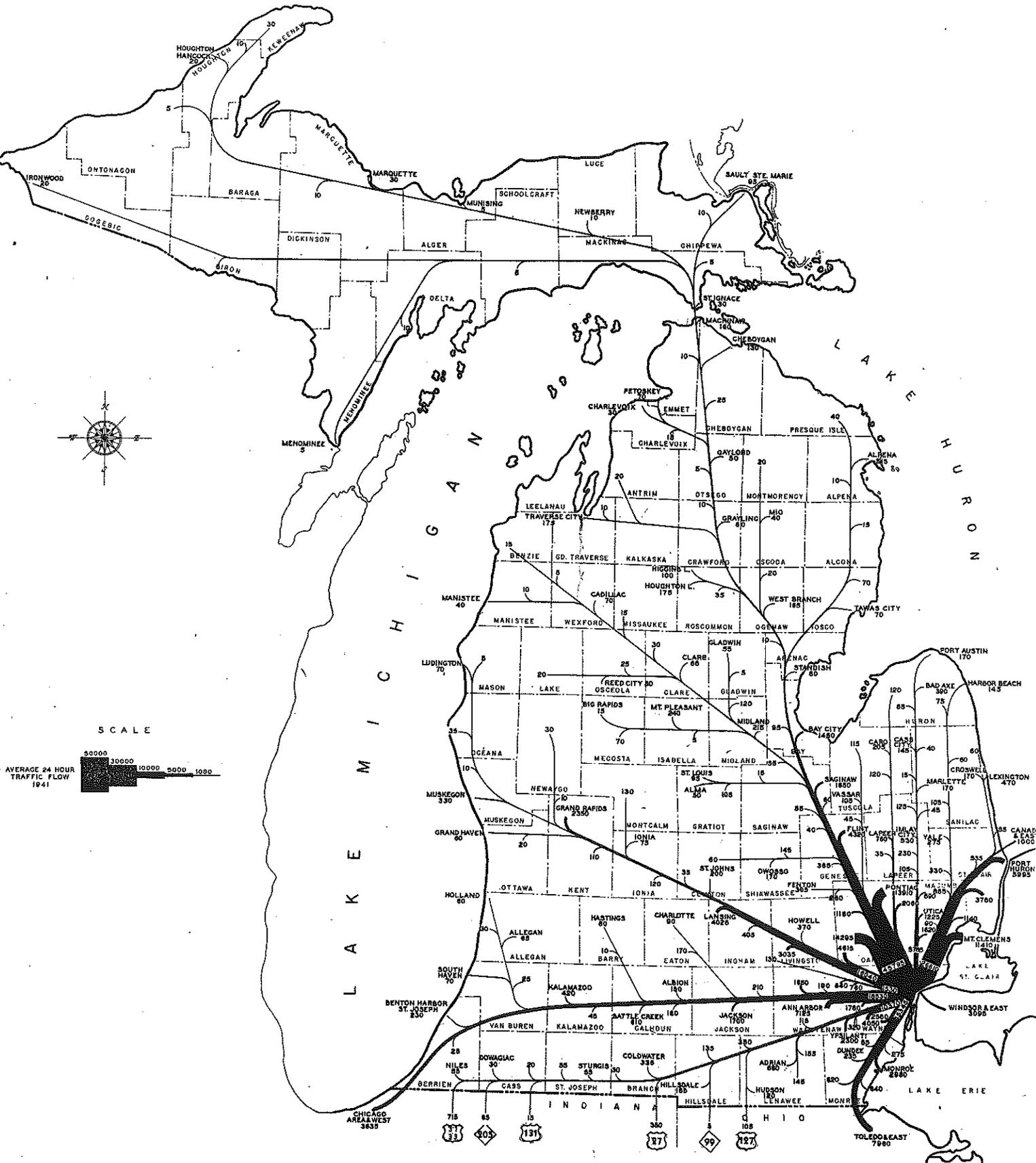
1980—NUMBER OF SEASONAL DWELLINGS IN COUNTIES

INTERSTATE HIGHWAYS

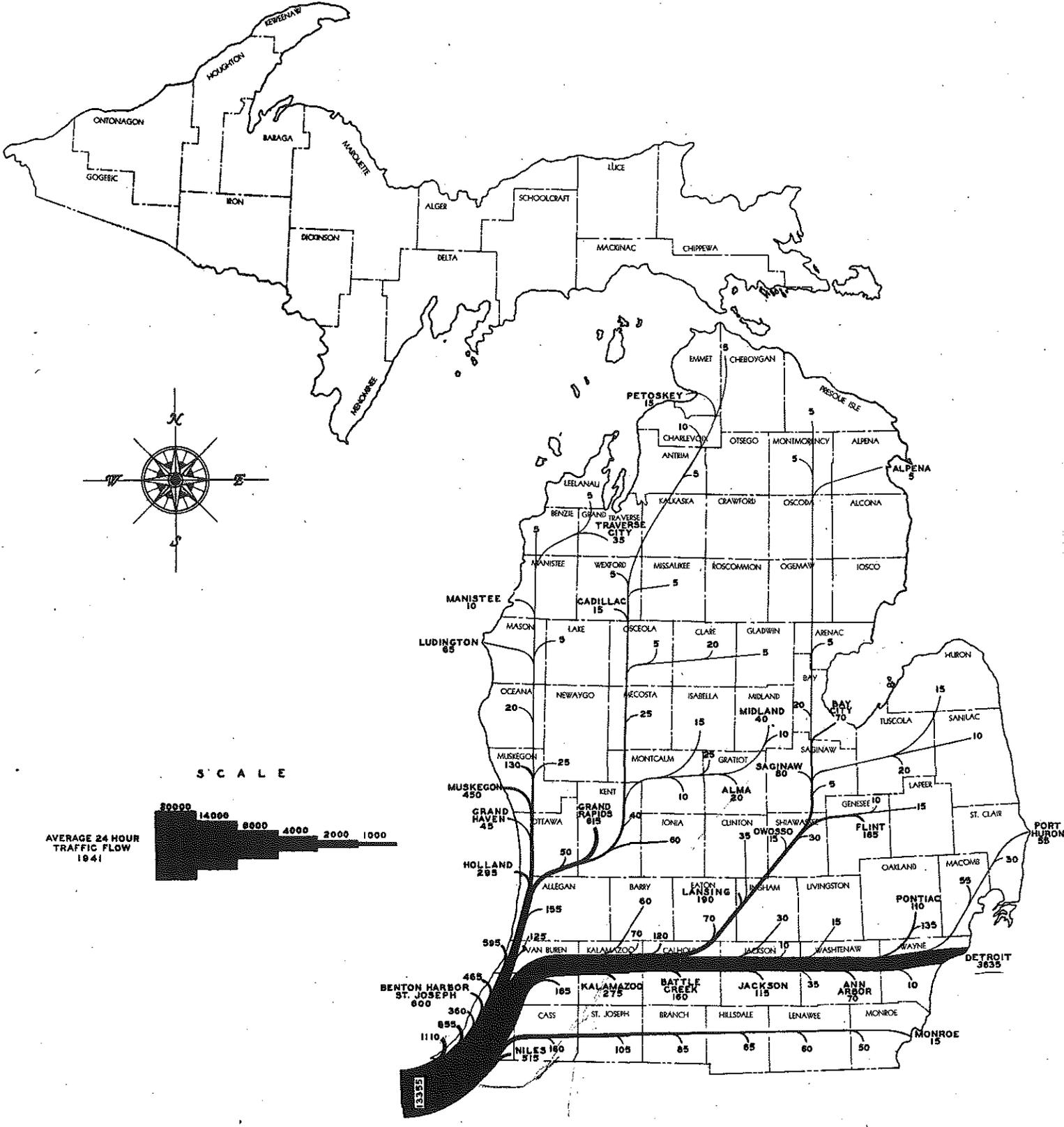
MAJOR STATE TRUNKLINES



HIGHWAY TRAFFIC BETWEEN OUTSTATE AREAS AND METROPOLITAN DETROIT



INTERSTATE TRAFFIC *Between* MICHIGAN *And* The CHICAGO AREA



It does not contain the traffic volume that would be generated by short trips between rural homes and communities and their immediate trading centers.

These traffic volumes reflect the results of a comprehensive analysis of the Highway Planning Survey data adjusted to conform to the 1941 traffic survey on the trunkline system. The traffic flow maps that follow plate 14 are representative of the diagrams that constitute the principal source of the traffic figures used to compile the estimate.

The traffic flow maps for the Detroit metropolitan center, the Grand Rapids center, the Chicago area, the Toledo area, and to Canada by Port Huron, display the basic highway transportation usage that interstate highways should serve. They confirm the selection and general location of the interstate routes in Michigan.

The interstate route to Sault Ste. Marie qualifies with the requirements for an international connection with Canada, the development of outdoor recreational facilities, and the reestablishment of the lumber industry in Michigan. The route to Sault Ste. Marie connects with the locks on the St. Mary's River at the outlet of Lake Superior. These locks are the most vital transportation facility in North America. The importance of these locks is discussed in further detail under the caption "Sault Ste. Marie-Flint-Detroit Interstate Highway."

CHICAGO-DETROIT INTERSTATE HIGHWAY

This route connects Chicago with Detroit and it is located to serve the five major trade centers and industrial cities: St. Joseph-Benton Harbor, Kalamazoo, Battle Creek, Jackson, and Ann Arbor. All of these cities are in the Chicago or the Detroit metropolitan trade areas and they generate intercity traffic with one another, as well as, with their

metropolitan centers. The route is strategically located as a collector of state trunkline traffic between other outstate trade centers and the national trade center of Chicago.

The route serves the University of Michigan at Ann Arbor and it connects the Benton Harbor fruit market with Chicago and Detroit.

At Ann Arbor, the route connects with the Willow Run Expressway System and the Detroit Industrial Expressway. These facilities are symbolic of the interstate highways contemplated by Congress. The report, "Inter-regional Highways" recognizes, as standards, these two achievements in modern highway transportation. They were constructed to expedite the production of big planes at Willow Run.

They are elements of the assembly line that produced 9,000 four-engine bombers at Willow Run. At peak production, 42,000 people were employed at Willow Run and another 100,000 workers were employed in more than 4,000 subcontracting plants. The subcontracting plants produced materials and parts that were transported to Willow Run where the planes were assembled, tested, and turned over to the Army Air Forces.

This plant is now closed and there is speculation of its future use. The best guess is that it will be purchased by private industry and used to build farm equipment or household appliances. In this event, a large number of people will be occupied in the plant and a greater number in other plants furnishing materials and parts.

The Willow Run Expressway System furnishes access to the plant and the Detroit Industrial Expressway connects it with Detroit, the major source of materials and parts. It is likely that there will be extensive urban development in the area. A substantial portion of the urban residents in

the area are employed in Detroit and they use passenger cars for their transportation. The present and future population will depend upon Detroit for its metropolitan services and it will use the Detroit Industrial Expressway.

The Chicago-Detroit route is extended directly to the center of Detroit from Ann Arbor and the Detroit Industrial Expressway will ultimately become a circumferential and distributing route for the Detroit metropolitan area. It will also serve as a connection from Ann Arbor to the industrial areas down-river from Detroit.

When this department was confronted with the problem of providing highway transportation for the United States Army Bomber Plant at Willow Run, it was engaged in basic studies to locate the Detroit Crosstown Expressway. It was found that this Expressway should be extended to serve the Ford Motor Company River Rouge Plant and connect it with the plant at Willow Run. Naturally, the "Master Plan" for the Detroit metropolitan area adopted in 1925 was reviewed. The Detroit Industrial Expressway follows the general alignment of a principal element of that plan; the Wabash Superhighway.

TOLEDO-DETROIT-PORT HURON INTERSTATE HIGHWAY

This route incorporates the Detroit Crosstown Expressway, and it connects at Port Huron with a Kings Highway across Canada to Niagara Falls and Buffalo and to Montreal.

Materials and parts from Toledo and the east for the automobile industry move in on this route and the finished automobiles move out to the eastern and southern markets. It is believed that the heavy truck traffic volume on the highway between Toledo and Detroit is the highest in the country.

MUSKEGON-GRAND RAPIDS-DETROIT INTERSTATE HIGHWAY

This route extends from the water shipping terminal of Muskegon to Grand Rapids and across the lower peninsula of Michigan to Detroit. It serves the State Capitol and Michigan State College.

Muskegon is a rapidly developing industrial city and it is the principal shipping point on Lake Michigan. Automotive parts and sub assemblies move in from Wisconsin and finished automobiles move out to the central northwest. Passenger and auto ferry service is operated across Lake Michigan to Milwaukee, a metropolitan center. With this facility, the route serves to connect Milwaukee and Detroit.

SAULT STE. MARIE-FLINT-DETROIT INTERSTATE HIGHWAY

This route integrates the locks at Sault Ste. Marie with the interstate system by its connection in Detroit. In 1938, the cargo traffic through the locks amounted to forty billion tons which is a third greater than the traffic through the Panama Canal that year. The locks on the St. Mary's River at Sault Ste. Marie were considered among the most critical defense areas in the nation. An armed force of 17,000 men were in the area to defend the locks.

The route serves Michigan's outdoor recreational area. At Sault Ste. Marie, it is a transcontinental connection with Canada and the undeveloped resources north of the Great Lakes. In southeastern Michigan, it connects the industrial cities of Bay City, Saginaw, Flint, and Pontiac with Detroit. The estimated traffic volume for the route, as it approaches Detroit, is the highest for the selected interstate highways in Michigan.

A majority of the automobiles that are assembled in Michigan are the output of the main assembly plants in Flint, Pontiac, and Detroit. The five

industrial cities served by the route contain a large number of subcontracting plants furnishing materials and parts that are transported by highway to the main assembly plants. These activities contribute to the high traffic volume on this route between Bay City and Detroit.

CHICAGO-BENTON HARBOR-GRAND RAPIDS INTERSTATE HIGHWAY

This route extends from Benton Harbor with its fruit market to the metropolitan center of Grand Rapids. It serves the recreational area along the shore of Lake Michigan between Benton Harbor and Holland. In Holland, it connects with a major state trunkline to the industrial and transportation center of Muskegon. A major trunkline to Northern Michigan and the Straits of Mackinac connects with this route at Grand Rapids.

SOURCE OF INTERSTATE HIGHWAY TRAFFIC

The traffic flow diagram is presented for each of the interstate routes. The diagrams are in the order of the routes discussed.

These diagrams subdivide the estimated total traffic flow for an understanding of the manner in which longer trip traffic accumulates along a principal highway. In a general way, they indicate the sources of the traffic that would use the interstate highway routes in Michigan.