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State Highway Plan

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Letter of Transmittal

STATE OF  MICHIGAN

HIGHWAY DEPARTMENT

STEVENS T. MASON BUILDING . . . LANSING 48926

HOWARD E. HILL JOHN E. MEYER FREDERICK E. TRIPP
ACTING DIRECTOR DIRECTOR
STATE HIGHWAY DIRECTOR FOR ENGINEERING FOR ADMINISTRATION

May 3, 1965

E. A. Bellenbaum
Chief Planning Engineer
Office of Planning


Dear Mr. Bellenbaum:

This letter presents the "Vassar State Highway Plan." The report presents a planning analysis of various state highway improvement alternatives. It was initiated to review programmed improvements to M-15 and coordinate the project with long-range highway plans for the area.

Proposed recommendations are based upon an inventory, forecast and analysis of economic, population, land use and traffic conditions in the Vassar area. The plan was formulated in cooperation with various other divisions of the Highway Department with conclusions acceptable to both State Highway and local officials.

Implementation of the proposed improvements will adequately serve area traffic and should enhance economic growth. It is, therefore, requested that the recommendations be submitted for engineering studies and scheduling of construction.

Sincerely,



Robert S. Boatman, Director
Planning Division
Office of Planning



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MICHIGAN STATE HIGHWAY DEPARTMENT

Howard E. Hill, Acting State Highway Director

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

Paul J. Marek, Assistant Chief Planning Engineer, Office of Planning

Robert S. Boatman, Director, Planning Division

Richard J. Lilly, Assistant Director, Planning Division

PREPARED BY THE URBAN PLANNING SECTION

Harry A. Doehne, Chief

Mearl Talsma, Project Planner

Contributing Staff

Robert M. Stuart

John F. Kennedy

With The Participation Of:

U. S. DEPARTMENT OF COMMERCE, BUREAU OF PUBLIC ROADS

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Preface

The object of this report is to present factual information relating to planning recommendations for state highway improvements in the Vassar area. It has been prepared to fulfill a policy established by the Michigan State Highway Department, which requires that a state highway plan be formulated and approved by both local and highway officials before construction of significant proportions is undertaken in any Michigan municipality.

Preparation of state highway plans is the responsibility of the Planning Division of the Michigan State Highway Department. Staff members of this Division work cooperatively with local officials and other divisions of the Highway Department, gathering and analyzing data pertinent to solving highway problems of the community involved. Upon completion of a highway plan, recommendations contained therein are presented to the Programming and Route Location Divisions for allocation of funds and engineering studies.

Improvements recommended in this report were determined after evaluation of local economic conditions, population trends, land use patterns, traffic problems, existing and projected traffic volumes, and the relationship of these factors to present and anticipated highway requirements.

Summary of Recommendations

The conclusion reached by the Urban Planning Section from this study is that M-15 in the Vassar area be improved on its existing alignment. Basically, this includes widening of the route and improvement of the Huron-Goodrich-Water Streets intersection. It is also recommended that, when traffic conditions warrant, prohibition of parking be considered on the improved sections of M-15.

This alternative is recommended rather than two others involving relocations because of its capability for serving both existing and anticipated traffic requirements, its ability to resolve present traffic problems, and its obvious cost and implementation advantages.

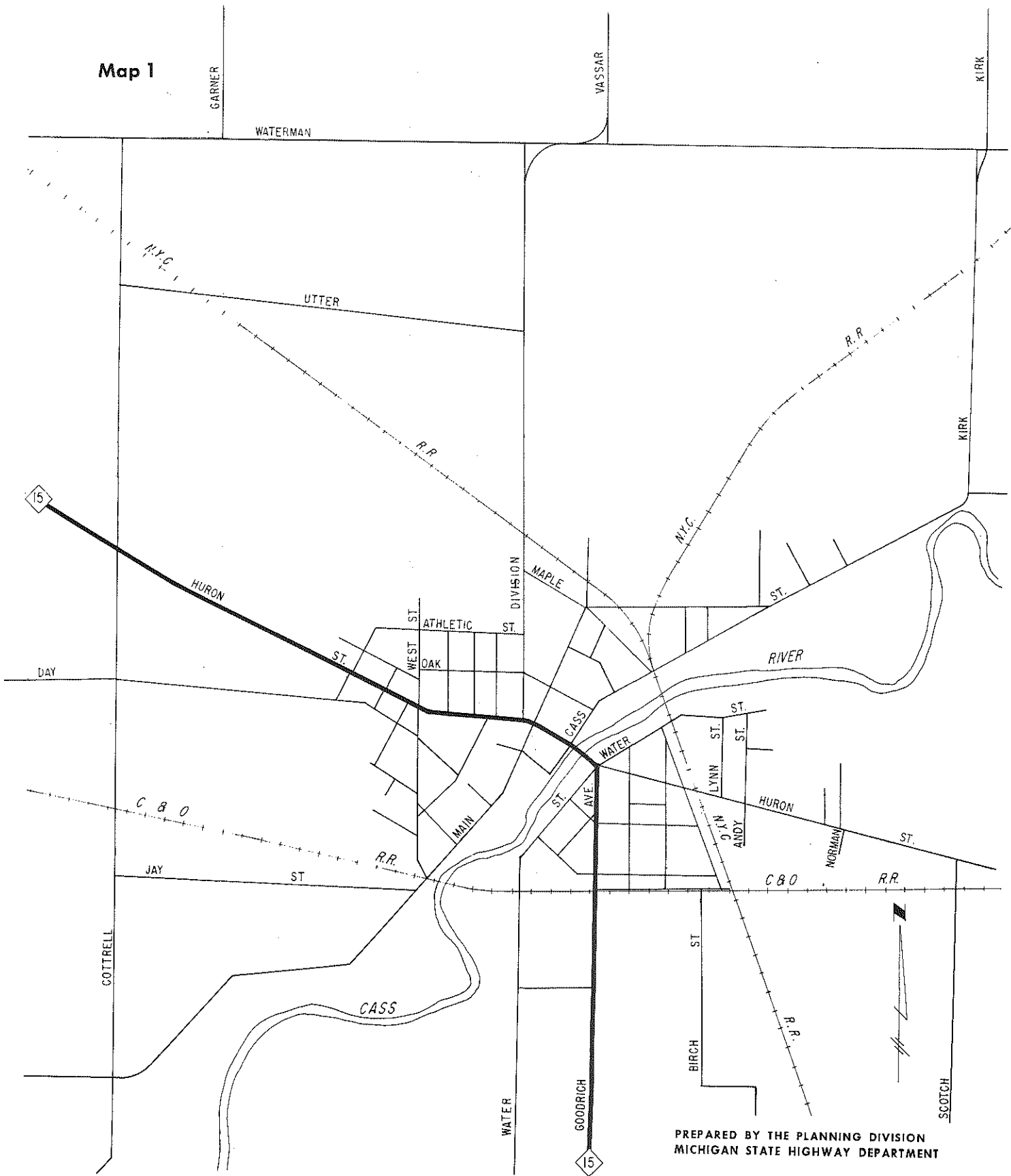
Introduction

Vassar officials for some time have been negotiating with the Michigan State Highway Department to consider improvement of M-15 in their area. These requests have been due primarily to the steep grade of the hill just west of the city's central business district. At the present time, the highway at the hill consists of two lanes, which creates several problems. Traffic in Vassar is somewhat impeded and, under icy conditions, hazardous driving prevails, especially for trucks. Even in good weather, heavy commercial vehicles find the grade difficult to negotiate and other vehicles following the trucks are often delayed.

A second possible problem involves the intersection of Goodrich, Huron and Water Streets. Difficult traffic maneuvers occur at the convergence of this five-legged intersection. A signal light is now used as the only means of controlling or aiding the many possible traffic moves. Map 1 shows the existing highway and street system in the Vassar area.

VASSAR AREA

HIGHWAY AND STREET SYSTEM



The Programming Division, aware of local needs, allocated funds for improving existing M-15 as part of the Second Five-Year Construction Program (1962-67). The Design Division, in preliminary surveys for implementing the proposed improvements, determined that funds programmed for the project would not be sufficient to complete the job. They subsequently requested that the Office of Planning re-evaluate the programmed improvement and consider an alternative solution or determine the feasibility of spending additional funds to complete the project as planned.

The Urban Planning Section considered three alternative solutions to these planning problems. One involved relocating M-15 to form a bypass generally southwest of the city, another proposed the use of Division Street north out of Vassar to existing M-46, and the third is improvement of the existing route (see Map 2).

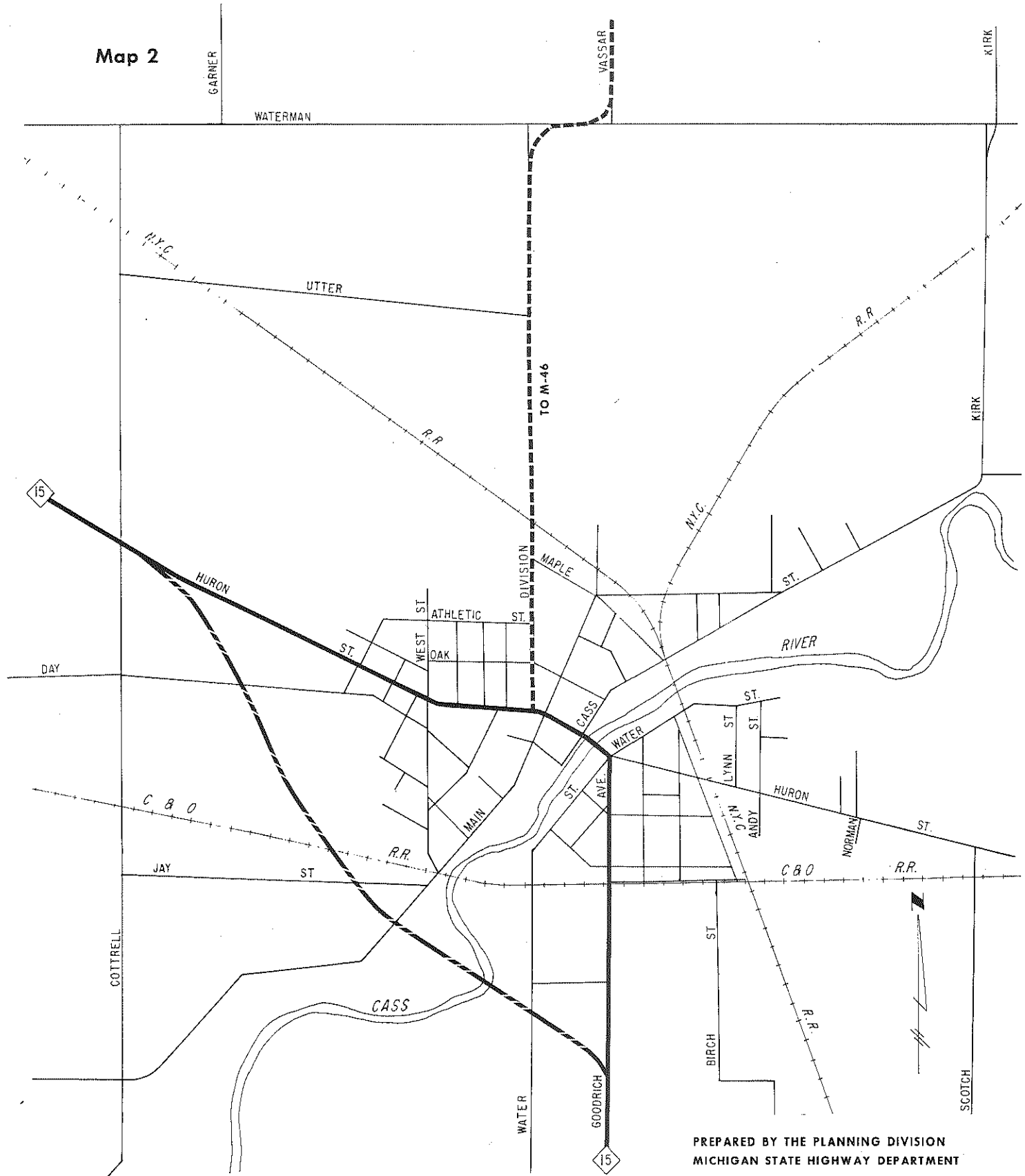
The information that follows has been used by the Planning Division as a basis for determining and recommending the more feasible of the three alternatives.



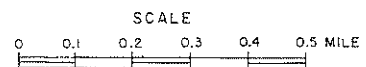
VASSAR AREA

ALTERNATIVE SYSTEMS

Map 2



PREPARED BY THE PLANNING DIVISION
MICHIGAN STATE HIGHWAY DEPARTMENT



INVENTORY-FORECAST

ECONOMICS

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An area's economic vitality is the predominant factor contributing to its growth potential. A number of indicators are usually available for use in analyzing an area's economic condition. Vassar's size, however, limits the types of information, and economic data used in this report pertains only to resident labor force.*

Resident labor force characteristics for the City of Vassar, Tuscola County and Michigan are shown in Table 1. The Michigan figures were included to enable comparison with local trends.

The civilian labor force in both the city and county increased during the 1950-1960 decade, with the county showing a 14.6 percent gain compared to 10.6 percent in Vassar. Both areas were below the state average increase of 15.8 percent.

Manufacturing is the most important source of employment for Vassar residents, and in 1960, furnished jobs for 45.1 percent of the resident civilian labor force. This was significantly higher than the state figure of 35.4 percent, and represented a 28.0 percent increase in resident manufacturing employment over 1950.

Wholesale and retail trade is the second most important employment category, with this group employing 24.0 percent of the Vassar resident labor force (243 workers) in 1960. This is the same percentage of the labor force employed in wholesale and retail trade in 1950, indicating stability in this sector of the economy.

*Resident labor force includes all members of the labor force living within a given area, regardless of where employed.

TABLE 1

RESIDENT LABOR FORCE

	VASSAR					TUSCOLA COUNTY					MICHIGAN				
	1950	% CLF	1960	% CLF	% Change '50-'60	1950	% CLF	1960	% CLF	% Change '50-'60	1950	% CLF	1960	% CLF	% Change '50-'60
Civilian Labor Force	916	100.0	1,013	100.0	10.6	12,716	100.0	14,574	100.0	14.6	2,530,060	100.0	2,930,348	100.0	15.8
CLF Unemployed	22	2.4	15	1.5	-31.8	358	2.8	709	4.9	98.0	136,486	5.4	203,484	6.9	49.1
Employed	894	97.6	998	98.5	11.6	12,358	97.2	13,865	95.1	12.0	2,393,574	94.6	2,726,864	93.1	13.9
Agriculture, Forestry & Fisheries	11	1.2	15	1.5	36.4	4,186	32.9	2,535	17.4	-39.4	161,615	6.4	93,662	3.2	-42.0
Construction & Mining	34	3.7	26	2.5	-23.5	665	5.2	711	4.9	6.9	133,748	5.3	140,902	4.8	5.3
Manufacturing	357	39.0	457	45.1	28.0	2,523	19.8	4,060	27.8	60.9	981,289	38.8	1,035,892	35.4	5.6
Wholesale & Retail Trade	220	24.0	243	24.0	10.5	1,738	13.7	2,401	16.5	38.1	418,269	16.5	484,018	16.5	15.7
Public Admin.	27	3.0	21	2.1	-22.2	245	1.9	282	1.9	15.1	73,708	2.9	94,837	3.2	28.7
Services *	208	22.7	225	22.2	8.2	2,639	20.8	3,484	23.9	32.0	591,674	23.4	787,971	26.9	33.2
Not Reported	37	4.0	11	1.1	-70.3	362	2.9	392	2.7	8.3	31,624	1.3	89,582	3.1	183.3

Source: US Department of Commerce, Bureau of the Census

*Includes Transportation, Communications and Other Public Utilities

Services employed 22.2 percent of the Vassar resident civilian labor force in 1960. A slight numerical increase in services employment occurred in Vassar between 1950 and 1960 (from 208 to 225). This type of work, however, constituted a smaller proportion of the labor force in 1960 than in 1950. This is not typical of the trend in other Michigan communities and may be due to Vassar's proximity to the Bay City and Saginaw metropolitan areas.

The largest percentage of the county's resident civilian labor force is also employed in manufacturing (27.8 percent). This is considerably less than the proportion for Vassar residents, but represents a significant difference over the county's 1950 figures. In 1950, the agriculture, forestry and fisheries group was the most important employer of county residents, with 32.9 percent of the civilian labor force, followed by services with 20.7 percent, while manufacturing was third with 19.8 percent.

The City of Vassar showed no extreme change in resident civilian labor force in any of the industry groups during the past decade. The increase in number of residents employed in manufacturing and the increase in total resident civilian labor force are favorable signs for the Vassar area and indicate that its economy is stable, but not dynamic.

County figures show transition from a predominantly rural economy to one increasingly dependent upon manufacturing to supply employment for its residents.

POPULATION

.....

Population trends are the result of an area's economic vitality and are important influences on traffic volumes. Population estimates, based on expected economic developments, are also used for projecting traffic volumes. Finally, an analysis of traffic projections aids in determining future highway requirements.

Vassar's population increased 24.4 percent between 1940 and 1960. Vassar Township increased 76.7 percent during the same period, while the Vassar study area (consisting of Vassar and Tuscola Townships and the City of Vassar) increased 40.7 percent. The Tuscola County increase of 21.3 percent more closely parallels that of the city. The numerical change in all these governmental units, however, has been relatively small (see Table 2) and rates of growth in all of them, except Vassar Township, were below that for the state from 1940 to 1960.

The 1950 to 1960 trend was more favorable in the Vassar study area, with a rate greater than that for the state. Most of this new growth occurred in the two townships, which had a numerical increase of 1,079. The city's growth continued to be well below that for the state (5.9 percent compared to 22.8 percent). County growth also continued at a slower rate than that of the state (see Table 2).

TABLE 2

POPULATION TRENDS

	VASSAR	VASSAR TOWNSHIP	TUSCOLA TOWNSHIP	VASSAR AREA	TUSCOLA COUNTY	MICHIGAN
1940	2,154	896	1,154	4,204	35,694	5,256,106
1950	2,530	982	1,174	4,686	38,258	6,371,766
% Change '40-'50	17.5	9.6	1.7	11.5	7.2	21.2
No. Change '40-'50	376	86	20	482	2,564	1,115,660
1960	2,680	1,583	1,652	5,915	43,305	7,823,194
% Change '50-'60	5.9	61.2	40.7	26.2	13.2	22.8
No. Change '50-'60	150	601	478	1,229	5,047	1,451,428
% Change '40-'60	24.4	76.7	43.2	40.7	21.3	48.8
No. Change '40-'60	526	687	498	1,711	7,611	2,567,088

Source: US Department of Commerce, Bureau of the Census

A population projection based upon an employment-to-population ratio was used to estimate future population and evaluate projected traffic expansion. This method involved projecting 1940 to 1960 resident employment data to 1970 and 1980. The past ratio of county resident employment-to-population was applied to obtain 1970 and 1980 population projections. Population estimates for the smaller governmental units were determined by ascertaining past relationships between their populations and that of the county, and then deriving their future population data from the county estimates. The results of these calculations are shown in Table 3.

Based on this method, the City of Vassar is expected to have a population of 3,300 by 1980, compared to the 1960 population of 2,680 (a numerical increase of 620 persons). Vassar Township should grow from 1,583 to 2,300 (a gain of 717 persons) and the county is expected to increase from 43,305 to 50,100 persons by 1980.

When this information is related to highway planning, one can only conclude that such a small population growth will mean only relatively slight increases in locally-generated traffic. However, an anticipated statewide increase in highway travel should not be overlooked, and planners and local officials should anticipate that highway traffic will increase more rapidly than population growth.

TABLE 3

POPULATION PROJECTIONS

	VASSAR	VASSAR TOWNSHIP	TUSCOLA TOWNSHIP	VASSAR AREA	TUSCOLA COUNTY	MICHIGAN
1960	2,680	1,583	1,652	5,915	43,305	7,823,194
1970	3,000	1,900	1,800	6,700	46,500	8,891,000
% Change '60-'70	11.9	20.0	9.0	13.3	7.4	13.6
No. Change '60-'70	320	317	148	785	3,195	1,067,806
1980	3,300	2,300	2,100	7,700	50,100	10,204,000
% Change '70-'80	10.0	21.1	16.7	14.9	7.7	14.8
No. Change '70-'80	300	400	300	1,000	3,600	1,313,000
% Change '60-'80	23.1	45.3	27.1	30.2	15.7	30.4
No. Change '60-'80	620	717	448	1,785	6,795	2,380,806

Source: Michigan and County projections by Dr. David Goldberg, University of Michigan Survey Center, 1964. Other projections by Planning Division, Michigan State Highway Department, based on extension of resident employment trends.

LAND USE

.....

The extent of an area's land development is the result of the expansion demands of its populace (see Map 3). Land use development, because of traffic generated by various uses, dictates areas of major traffic attraction. A knowledge of the spatial relationship between major traffic attractors aids highway planning by providing a better understanding of traffic movement patterns and their demands on major streets and highways.

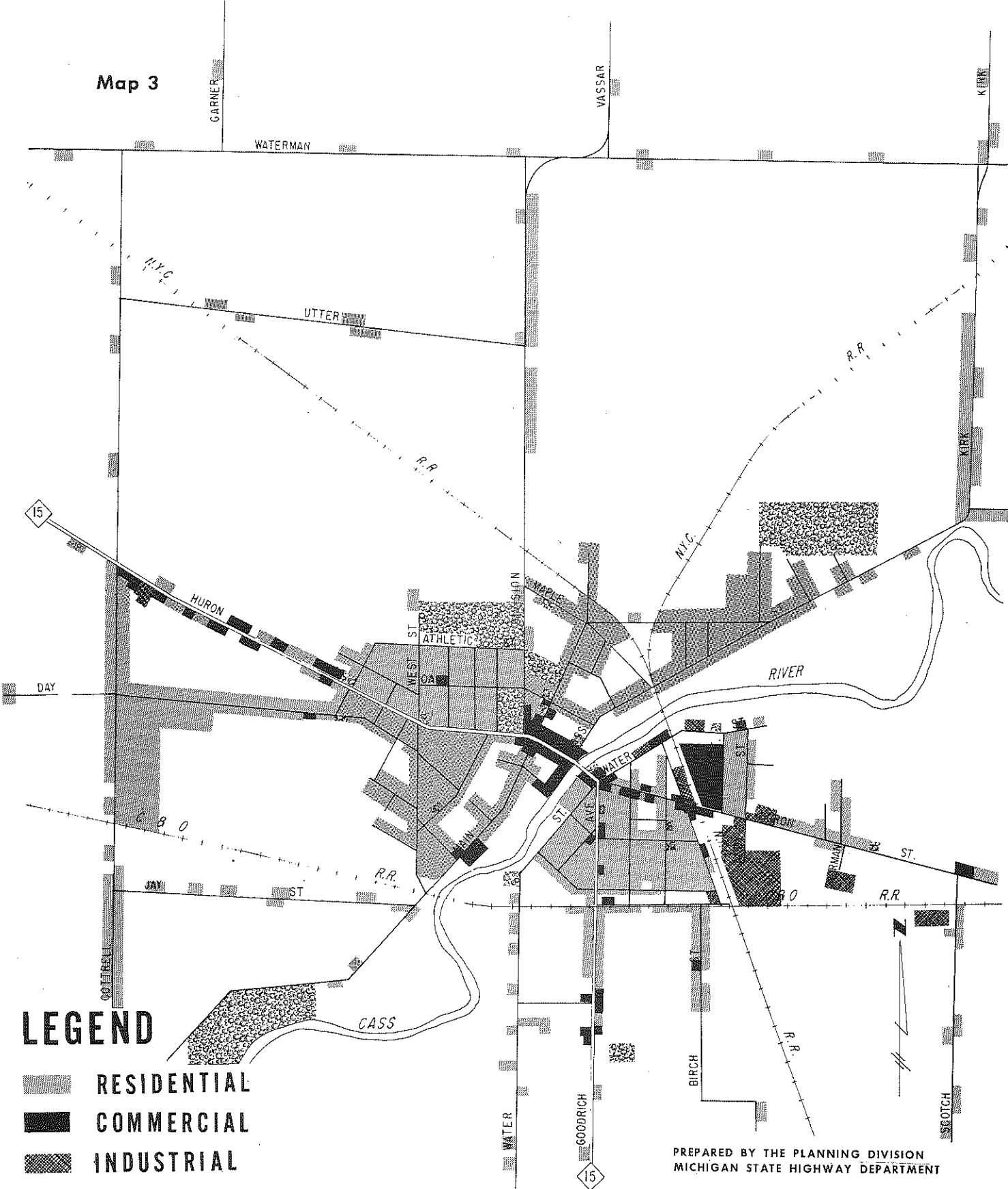
One of the more important aspects of development in the Vassar area is the concentration of industrial uses on the east side of the city near the New York Central and the Chesapeake and Ohio railroads. Eaton Manufacturing, located at the intersection of the two railroads, is the major manufacturing employer in the area.

Commercial uses are concentrated in the downtown portion of the city. The strip commercial development west of the city and along Huron Street (M-15) consists primarily of service establishments, including car dealers, motels, restaurants, filling stations, etc. A number of commercial establishments are also located on Huron street, east of the central business district. The largest concern in this area is the Great Atlantic & Pacific Tea Company warehouse located just east of the New York Central tracks and north of Huron Street. The effects these concentrations of industrial and commercial development exert on traffic patterns are graphically displayed on Map 6 .





VASSAR AREA

EXISTING LAND USE

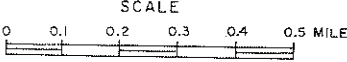
Map 3



LEGEND

-  RESIDENTIAL
-  COMMERCIAL
-  INDUSTRIAL
-  PUBLIC AND SEMI-PUBLIC

PREPARED BY THE PLANNING DIVISION
MICHIGAN STATE HIGHWAY DEPARTMENT



SOURCE: MICHIGAN STATE HIGHWAY DEPARTMENT

More important land uses in the public and semipublic classification include the elementary and high school complex located north of the central business district, between West and Division Streets. The fairgrounds occupy a large plot of ground north of Cass Street and there is a cemetery south of the city on Main Street. Although these areas of land use are important for community planning, they do not represent areas of major traffic generation.

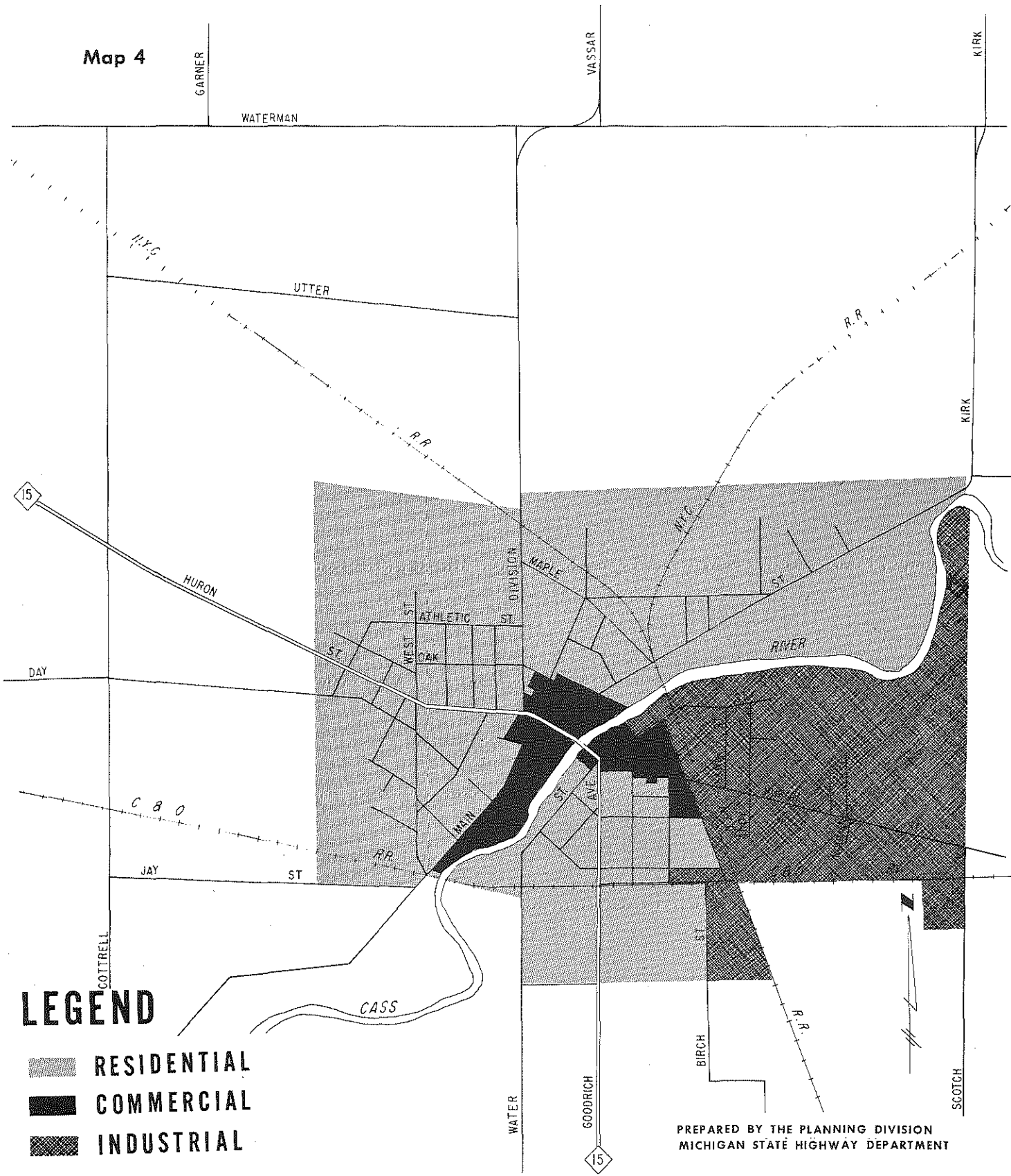
Residential uses comprise the remainder of development in the Vassar area. Residential areas have developed in a rather compact manner on both sides of the Cass River. Most new residential growth has occurred west of the city.

Vassar's zoning ordinance is the only source of information indicating probable future city land use patterns. If strictly adhered to, new land development will eventually form a pattern similar to that shown on Map 4. It is anticipated that industry will continue to locate east of the city, while commercial development is to be encouraged near the central business district and between Main Street and the Cass River. Residential growth will occur primarily west and north of the city.

VASSAR AREA

ZONING DISTRICTS

Map 4

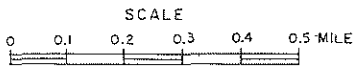


LEGEND

- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL

SOURCE: CITY OF VASSAR

PREPARED BY THE PLANNING DIVISION
MICHIGAN STATE HIGHWAY DEPARTMENT



TRAFFIC

.....

Economic activity, the distribution of population and resulting patterns of land use development, are important influences on traffic volumes and traffic movement patterns.

The Highway Department conducted a minor origin and destination study of traffic on M-15 and Division Street during October of 1963. The following data, compiled by the Transportation Survey and Traffic Analysis Section of the Planning Division, reveals traffic volumes on a segment of the city's major street system and displays the traffic attraction to major land use areas. Total traffic and the percentages of through and local trips are displayed on Map 5.

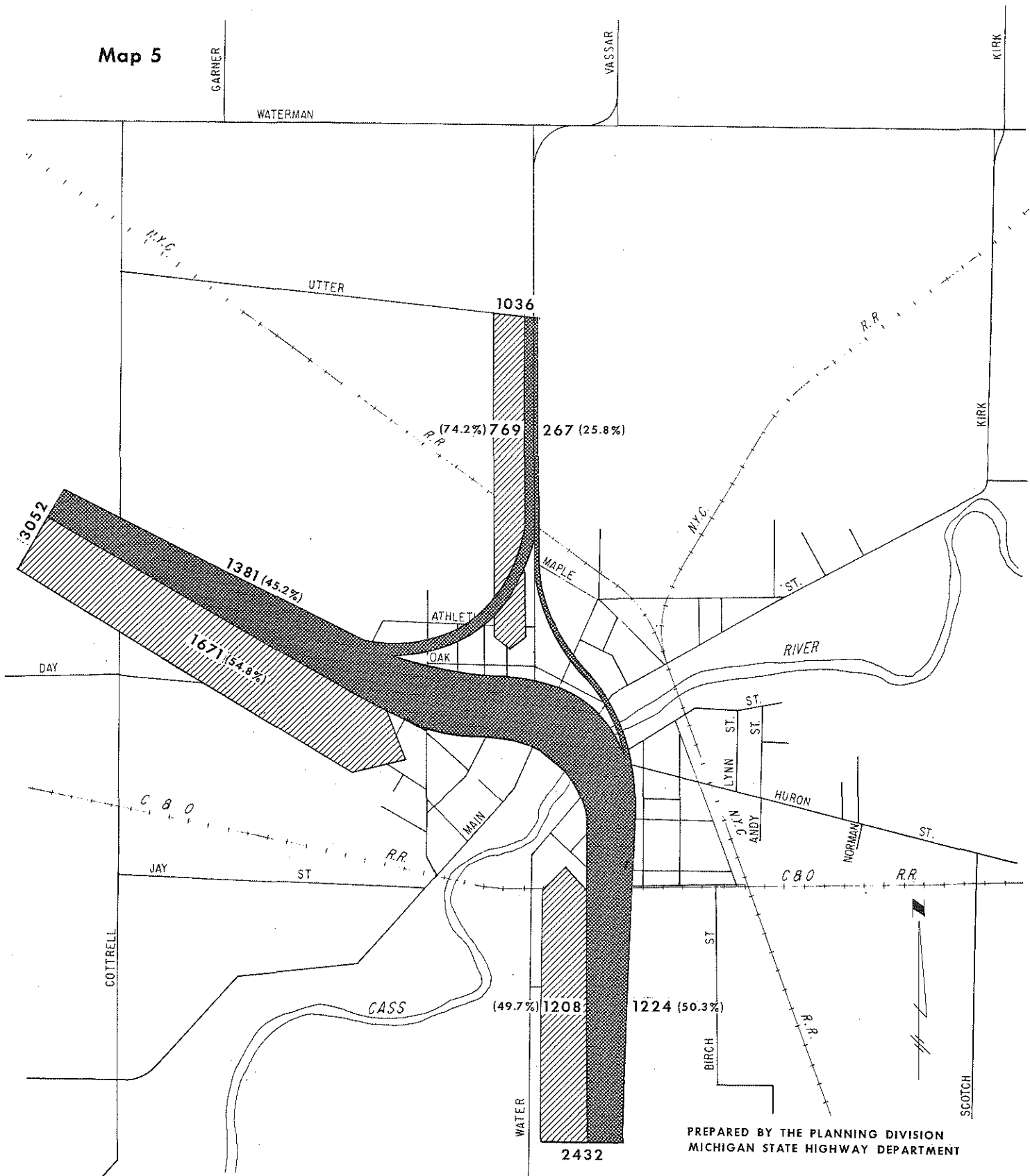
This study shows 2,432 vehicles per day on M-15 just south of Vassar (Goodrich Avenue). Of this number, 1,224 (50.3 percent) were making through trips and 1,208 had local terminals (49.7 percent).

M-15 northwest of Vassar carried 3,052 vehicles per day during the traffic study, with 1,381 (45.2 percent) making through and 1,671 (54.8 percent) making local trips. Division Street, north of Vassar, with 1,036 trips per day, carried 769 local trips (74.2 percent), with the remaining 267 being through trips.

VASSAR AREA

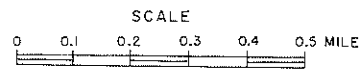
DISTRIBUTION OF TRUNKLINE TRAFFIC

Map 5



PREPARED BY THE PLANNING DIVISION
MICHIGAN STATE HIGHWAY DEPARTMENT

SOURCE: M.S.H.D. TRANSPORTATION SURVEY AND TRAFFIC ANALYSIS SECTION



Map 6 shows the distribution of traffic having a terminal in Vassar. The central business district is the major generator and attractor for traffic on Goodrich Avenue-Huron Street (M-15) and Division Street. The industrial east side of town is the second most significant attractor of traffic on these three streets.

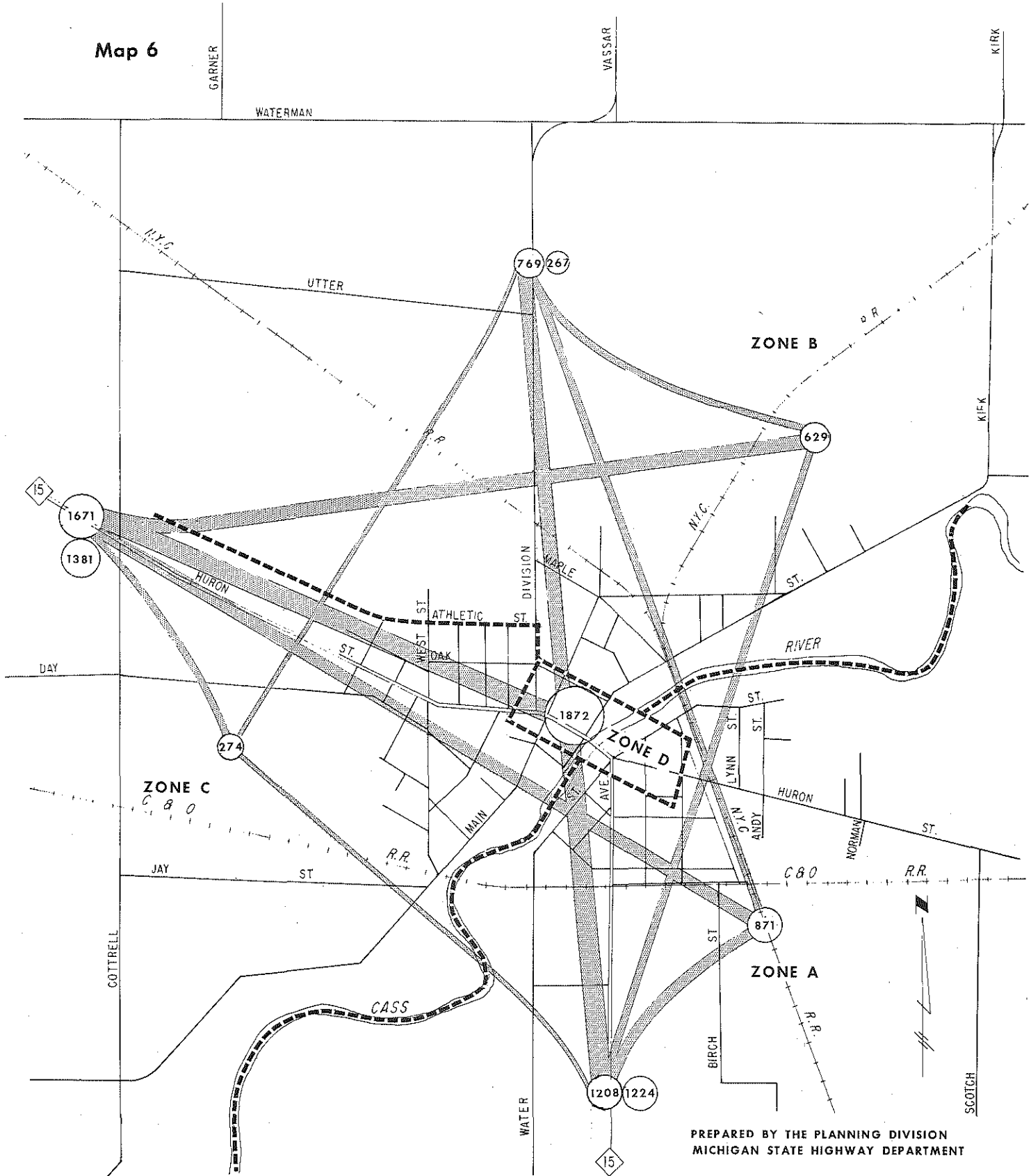
Of the 1,208 trips on south M-15 (Goodrich Avenue) having a terminal in Vassar, 714 or 59.1 percent had a terminal in the central business district, while 298 or 24.7 percent were destined for or departing from the industrial areas on the east side of town. Zone B, which includes the high school, was a terminal for 129 trips (10.7 percent) and only 67 (or 5.5 percent) originated from or were destined for the west side of Vassar (Zone C).

M-15 northwest of the city (Huron Street) carried 1,671 trips having a local terminal. The central business district was a terminal for 742 (44.4 percent) of these trips. The east side of Vassar was the origin or destination for 434 trips, or 36.0 percent. Zone B was a terminal for 354 trips (21.2 percent) while the west side of Vassar (Zone C) was again the least important area, with 141 trips (8.4 percent) having a terminal in this zone.

VASSAR AREA

DISTRIBUTION OF TERMINAL TRAFFIC

Map 6



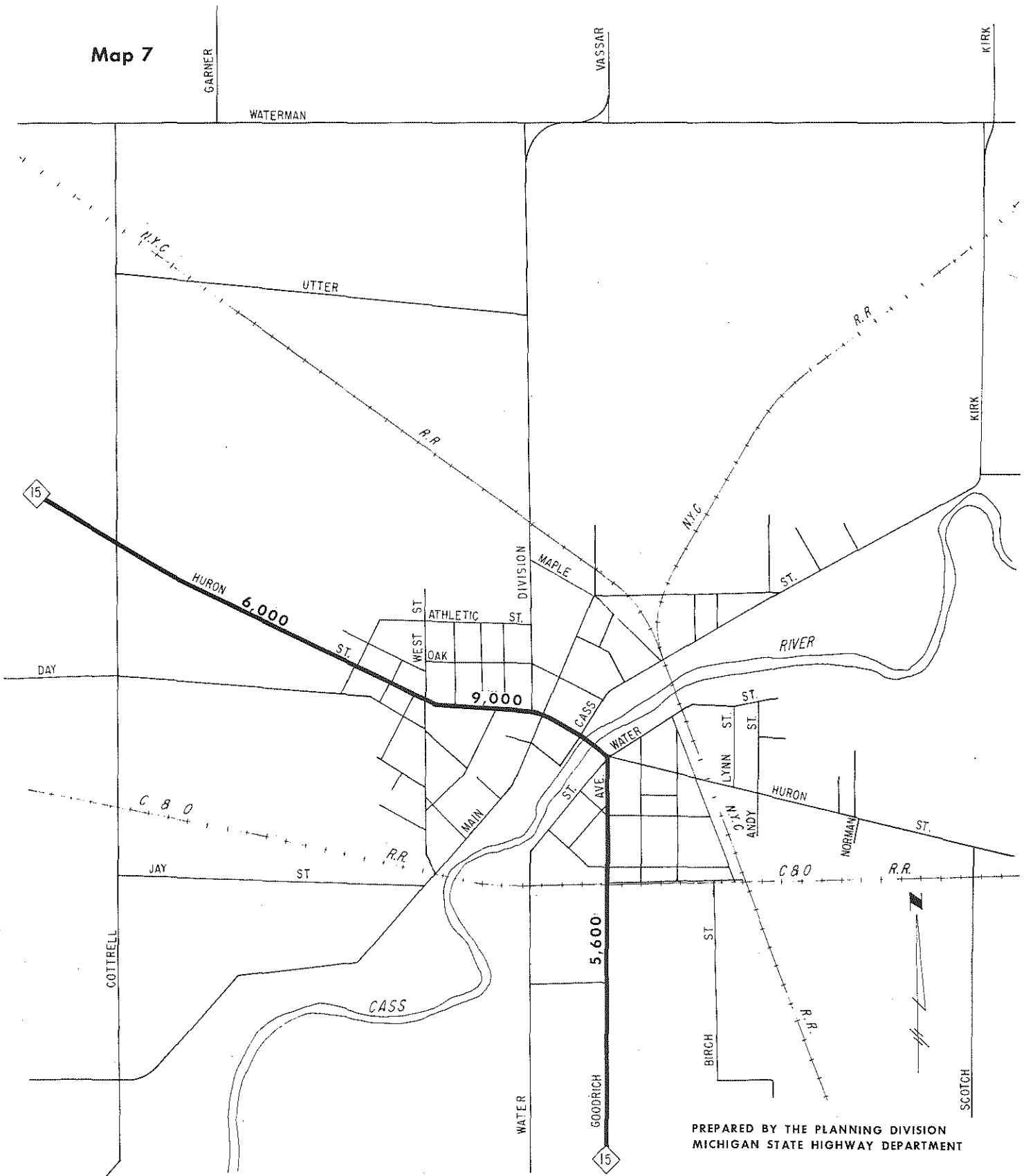
This same pattern of attraction holds true for Division Street, except that the north side (Zone B) is the terminal for slightly more trips than the east side of Vassar (Zone A). The downtown area was again the greatest attraction for local trips, being a terminal for 416 of 769, for 54.1 percent, while Zone B was a terminal for 146 (19.0 percent) and Zone A generated or attracted 139 trips (18.1 percent). The traffic study shows that Zone C was the least important traffic generating area, with only 66 (8.6 percent) of Division Street's local trips terminating or originating there.

The Traffic Division of the Michigan State Highway Department has made 1985 projections for M-15 traffic in the Vassar area. These projections are shown on Map 7. In general, traffic at the south side is expected to increase approximately 25 percent by 1985 (from 4,500 to 5,600), while that at the northwest is projected to 6,000 trips, compared to 5,200 currently, for an increase of about 15 percent.

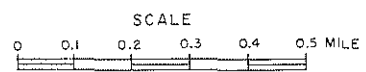
Traffic desire patterns, although not projected, are expected to remain essentially the same, and it can be assumed that if the zoning ordinance is adhered to, traffic to the various traffic zones will increase in proportion to the traffic growth predicted for M-15.

VASSAR AREA

1985 TRAFFIC PROJECTIONS



SOURCE: M.S.H.D. TRAFFIC DIVISION



ANALYSIS

Analysis of the data inventoried indicates that Vassar and the surrounding area is economically stable, but not dynamic. Population growth, in terms of percentage increases, compares favorably with similar communities in the state. Numerically, however, growth has been rather insignificant and the county's percentage increase between 1950 and 1960 was considerably below that of Michigan's (13.2 percent compared to 22.8 percent).

Population increases are expected to continue, but are not anticipated to exceed past growth trends. Population projections based on past employment rates indicate an increase of only 620 persons in the City of Vassar between 1960 and 1980, and an area increase of 1,785, including city growth.

Anticipated land use patterns are expected to remain similar to those that presently exist. Land development has been slow, and this trend is expected to continue. Most recent residential development appears to have occurred west of the city. New industrial uses have located, and will be encouraged to continue situating on the east side of the city near existing plants. Major commercial activities are in the central business district and along Huron Street on the east side of town.

The recent origin-destination study reflects the influence various land use activities exert on traffic patterns. This study has clearly shown that commercial activities in the central business district are the most important traffic attraction. The east side of the city, with its industrial development, is the second ranking attractor. These two areas alone are the origin or destination for approximately 75 percent of the locally-oriented trips in the Vassar area.

The 1985 traffic projections made for M-15 by the Michigan State Highway Department's Traffic Division, indicate a gradual traffic increase, which corresponds with economic population and land use trends in the Vassar area.

Following are some of the more important facts and principles related to highway planning, which were obtained from a study and analysis of existing and anticipated conditions in the Vassar area:

- A. The Vassar area is basically rural and, consequently, not growing rapidly. Growth rates indicate there will be no need for additional highway and street capacity for some time.
- B. The 1963 traffic study shows the central business district and industries on the east side of the city as major traffic attractors. Current limited growth is locating to the west and north of town; consequently, the need for additional capacity to the south is not anticipated.
- C. Present and estimated traffic volumes on M-15 do not appear to be a problem in the Vassar area. The steep grade northwest of the central business district is the major problem causing delay of traffic in this area.

- D. The southwest bypass would serve primarily through traffic. Local traffic which constitutes a majority of total trips, would realize little benefit from this relocation.
- E. Rerouting of M-15 on Division Street would alleviate most of the hill problem; however, the right angle turn at the foot of the hill could create traffic hazards. Its location adjacent to the schools is also a distinct disadvantage.
- F. Implementation of the Division Street alignment would require locally-oriented traffic with a terminal west of the Division-Main Street intersection to contend with the hill.
- G. Widening of M-15 would probably not be necessary to handle traffic volumes if the hill did not present such a serious traffic movement problem.
- H. If M-15 were widened between Goodrich Avenue and West Street, the steepness of the grade could be lessened at the same time and the additional width would permit passenger vehicles to pass slow-moving trucks.
- I. Construction of the bypass would mean retention of the existing undesirable situation at the hill. Locally-oriented traffic would still have to contend with the steep grade.

RECOMMENDATIONS

Based on this knowledge, the Office of Planning recommends improvement on the present alignment of M-15, as opposed to construction of a bypass or rerouting on Division Street. Facts revealed in this study indicate that the existing alignment is the most logical and feasible from a planning viewpoint. The bypass would be desirable, primarily because it would remove through traffic from downtown Vassar. Because of the low volume of through traffic, however, construction of a bypass would not be justified.

The Division Street alignment does not provide a solution to the area's basic traffic difficulties while creating possible additional problems. Improvements to M-15 on its present alignment would directly benefit Vassar and enhance its growth potential. It would accommodate both through and local traffic for the foreseeable future, while remaining reasonably close to the limits of funds previously programmed.

Improvements to the intersection of Goodrich, Huron and Water Streets should be accomplished as part of the M-15 program if possible.

To further improve its capacity and safety, it is recommended that, upon completion of these improvements, parking prohibition be evaluated on that section of the highway passing through the city.