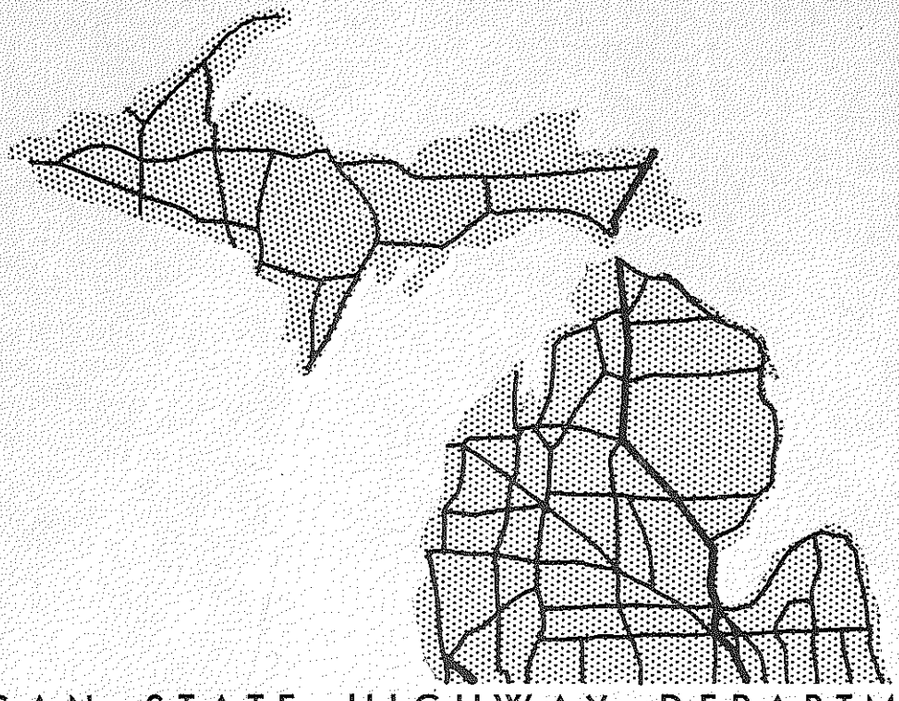
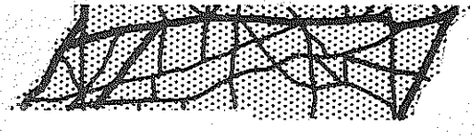
THE ADRIAN AREA TRAFFIC STUDY

STREET TRAFFIC
AND
TRUNKLINE REPORT



MICHIGAN STATE HIGHWAY DEPARTMENT

CHARLES M. ZIEGLER, STATE HIGHWAY COMMISSIONER



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MICHIGAN
STATE HIGHWAY DEPARTMENT
Charles M. Ziegler
State Highway Commissioner

THE ADRIAN AREA TRAFFIC STUDY

STREET TRAFFIC
and
TRUNKLINE REPORT

Cooperating Agencies:

The City of Adrian

U.S. Department of Commerce
Bureau of Public Roads

Prepared by the
Planning and Traffic Division
January, 1952

FOREWORD

Since the Fall of 1945 comprehensive traffic studies have been undertaken in several important Michigan urban areas. The purpose of these studies is to secure sound highway transportation data for the solution of the critical problems that exist in and around the state's principal cities. They were initiated and are being conducted by the Michigan State Highway Department in cooperation with the United States Bureau of Public Roads and the cities participating in each of the area studies.

It has been determined that for the smaller cities data collected at interview stations surrounding the area will provide a sufficient accumulation of factual data without internal or house to house sampling within the city. This external type of survey was used to collect the data on the traffic movements into, out of, and through the Adrian area. These data tabulated by the Planning and Traffic Division of the Michigan State Highway Department are used in the analysis and investigation of the specific phases of the local traffic problems.

This "Street Traffic and Trunkline Report" is the first of the reports to be made to present the results of the traffic study. The suggested arterial street plan and the trunkline street plan in the city are presented with the tabular material that made the selection of the street plans possible. A study of this report and the methods of using the tabulated data will enable the city's planning officials and the Department's engineers to arrive at solutions of the specific individual problems posed by local traffic situations. Subsequent reports will be prepared for any further special studies that may be made in the future.

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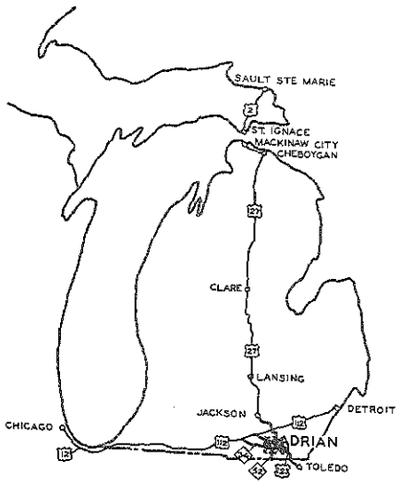
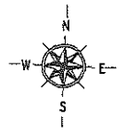
STATE TRUNKLINE ROUTES AND TRAFFIC IN SOUTHEASTERN MICHIGAN



ADRIAN TRUNKLINE CONNECTIONS

SCALE

NUMBER OF VEHICLES 4000 2000 500



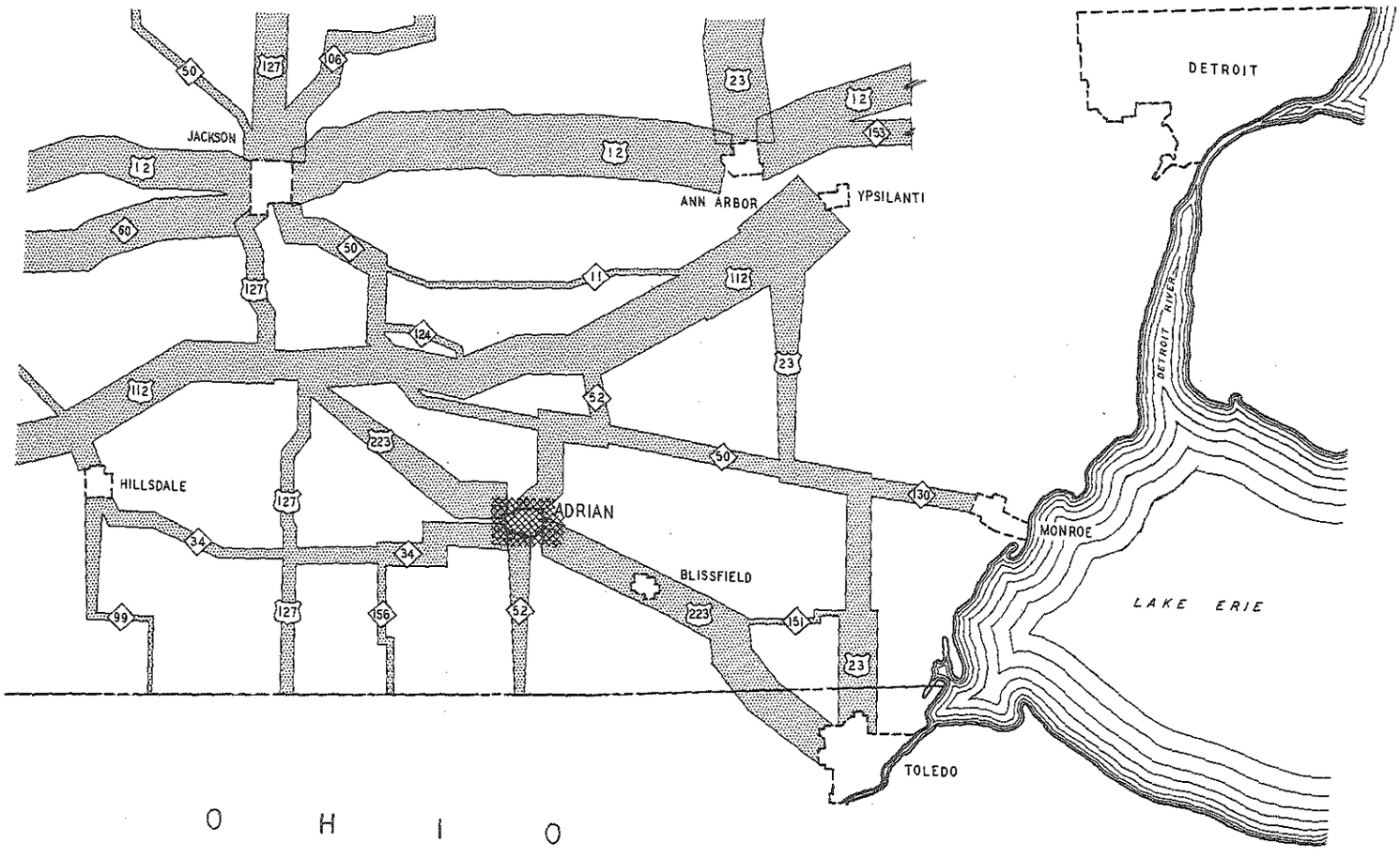


PLATE I

THE SURVEY AREA

Adrian, the county seat of Lenawee County, 59 miles southwest of Detroit and 33 miles northwest of Toledo, lies on the Raisin River approximately in the center of one of the state's richest agricultural counties. Federal Highway US-223, whose point of beginning is at the junction of US-112 and US-27 and becomes 0-333 at the Ohio border, passes through the city. Two Michigan Highways, M-52, a north-south route beginning at US-112 and becoming 0-109 on entering Ohio, and M-34 that has its origin in Adrian and ends at the junction of M-99 in Hillsdale, serve the area. There are three railroads passing through the city, the Detroit, Toledo and Ironton Railroad, the Wabash Railroad and the New York Central.

Adrian, founded in 1832, where more than eighty percent of the residents own their own homes, is known as "The Maple City" taking its name from the fine old trees that shade its streets. It is a prosperous college town as well as an industrial and farming center. Darius Comstock and his son, Addison, who founded the community, were instrumental in bringing to Adrian the first railroad west of Schenectady. This road, the Erie and Kalamazoo Railroad, was started at Toledo in 1832 and completed to Adrian in 1836. The horses drawing the cars were replaced in 1837 by a locomotive.

Adrian College, a Methodist School; St. Joseph's Academy and Siena Heights College, both Catholic Schools; are located in the city.

The city has a very diversified group of manufacturing plants. The plants produce paper, automotive accessories, tire parts, canned fruit, castings, electrical goods, furniture, woven wire fence, concrete products, and a great number of other items.

The shipping facilities, both rail and truck, and the abundance of native American labor available, were major factors in attracting the various industries to the city.

Due to the fact that US-223, M-34 and M-52 pass through the business section of the city, the volume of through traffic has created a very serious traffic problem. To aid in the solution of this problem it was deemed advisable to conduct an Origin-Destination Study of traffic passing into, out of, and through the area.

THE ADRIAN STUDY AREA

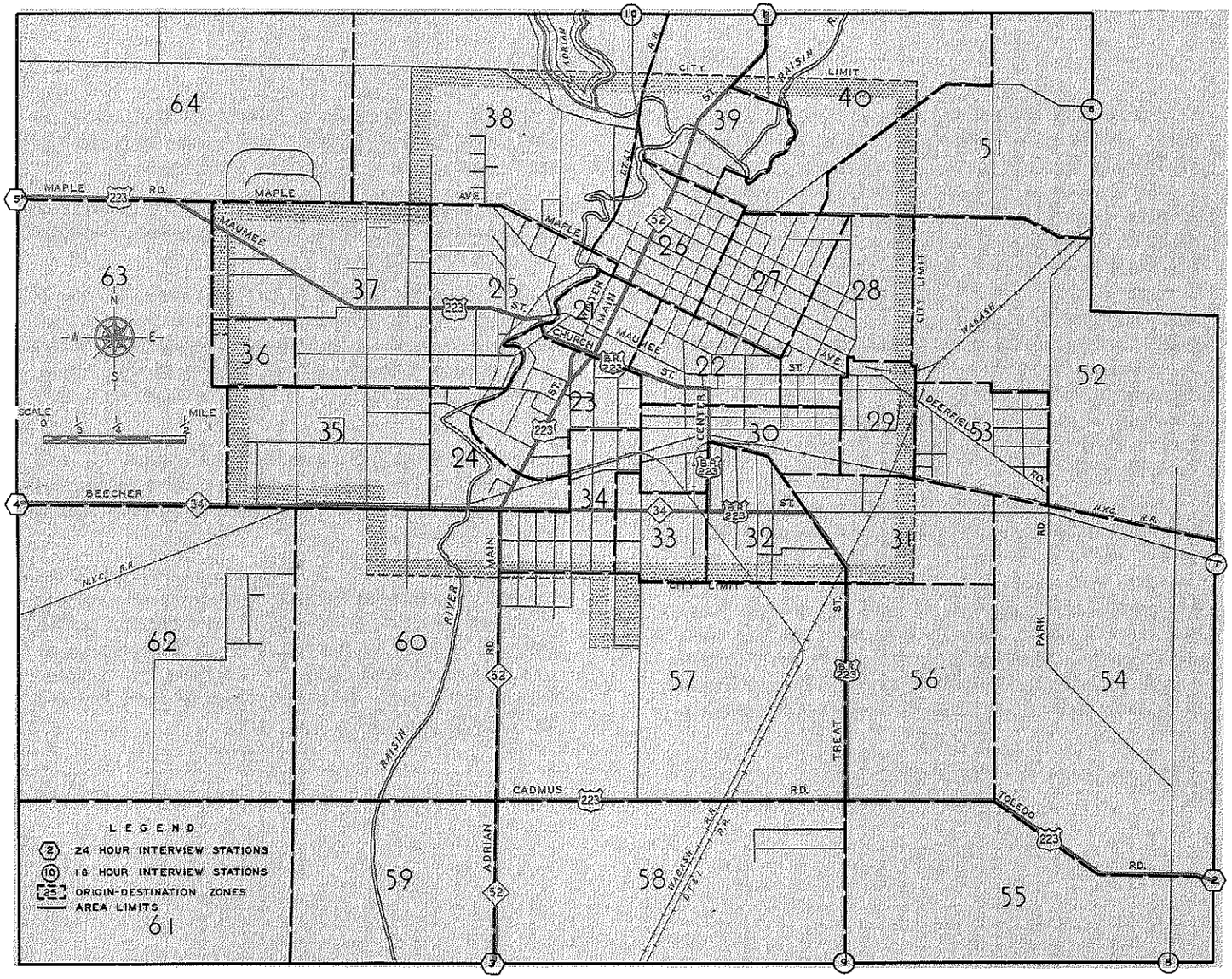


PLATE II

TERMINOLOGY AND DEFINITIONS

Central Business District:	The zones comprising the concentrated commercial and retail business center of the city.
Cordon Trip:	A trip with one terminal outside the Study Area and one terminal inside the Study Area.
Destination:	The place where a trip ends.
Downtown Area:	The zones comprising the Central Business District and its commercial-residential fringe.
External:	Outside the Study Area.
External Cordon:	The line connecting the External Stations and outlining the Study Area.
External Station:	A point on a highway at the limits of the Study Area at which the drivers of vehicles were interviewed.
External Trip:	A trip with one or both of its terminals outside the Study Area.
Internal:	Within the Study Area.
Internal (Local) Trip:	A trip with both terminals inside the Study Area.
Non-Resident:	A person living outside of the Study Area.
Origin:	The place where a trip begins.
Origin-Destination Zone; O-D Zone; Zone:	A basic subdivision of the Study Area having a single or a dominant land use, designated for purposes of tabulation and analysis.
Resident:	A person living within the Study Area.
Screen Line:	A line through the Study Area on a natural or artificial division where all cross traffic is counted for later comparison with the expanded survey data.
Study Area:	The area enclosed by the external cordon.
Thru Trip:	A trip passing through the Study Area with both terminals outside the Study Area.
Trip:	One-way travel between an origin and a destination.
Trip Terminal:	The point where a trip begins or ends.

SUMMARY OF FACTS

* 22,922 vehicles were counted at the External Cordon Stations.
* Of the 22,922 vehicles entering and leaving the area on an average weekday, 3,213 made thru trips and were counted at the external station of entrance and the external station of exit.
* 15,229 interviews were made.
* 66.4 percent of the total trips across the cordon line were interviewed.
* 82.4 percent of the traffic was passenger cars.
* 11.0 percent of the traffic was trucks.
* 6.4 percent of the traffic was trailer combinations.
* A total of 870 Trailer-combination trips crossed the external cordon line. 551 trips, 63 percent of the total, were through trips and 319 trips, 37 percent of the total, had either an origin or a destination in the study area.
* 0.2 percent of the traffic was buses.
* On an average weekday 16,417 vehicles made trips having either an origin or a destination in the study area and of this number 4,332 vehicles, 26.4 percent, had either their origin or destination in the Central Business District.
* 80.4 percent of the traffic entering and leaving the area was carried by state trunkline routes.
* The Peak Hour of vehicles entering and leaving the study area on an average weekday was between 5:00 P.M. and 6:00 P.M., representing 8.2 percent of the total traffic.
* Sunday traffic was twice the weekday traffic for the period 2:00 P.M. to 10:00 P.M.
* Of the 6,151 trips with destinations in the area and entering on the state trunklines, 4,719 or 77percent have their origins in Lenawee County.
* The study area covered approximately 14 square miles.

RECOMMENDATIONS

* Adopt a revised trunkline system for the area with formal approval by the Adrian City Planning Commission, the City Commission and the Michigan State Highway Department.

* Complete the southwest bypass for US-223 from Cadmus Road to US-223 west of Adrian. The completion date should coincide with the completion of relocated US-127 from Jackson to US-112.

* Reroute US-223BR to provide access from both east and west to the central business district and to the industries located on the east side of Adrian.

* M-52 to remain in its present location.

* M-34 to remain in its present location from the west city limits to Main Street.

* Reroute M-34 north on South Main Street along with M-52, terminating at Church Street.

NOTE: 1. Portions of US-223BR will need to be resurfaced before the route can be put in operation.

2. M-52 will need to be widened from the city limits south to Cadmus Road to accommodate the indicated traffic.

PRINCIPAL LAND USES AND ARTERIAL STREET SYSTEM

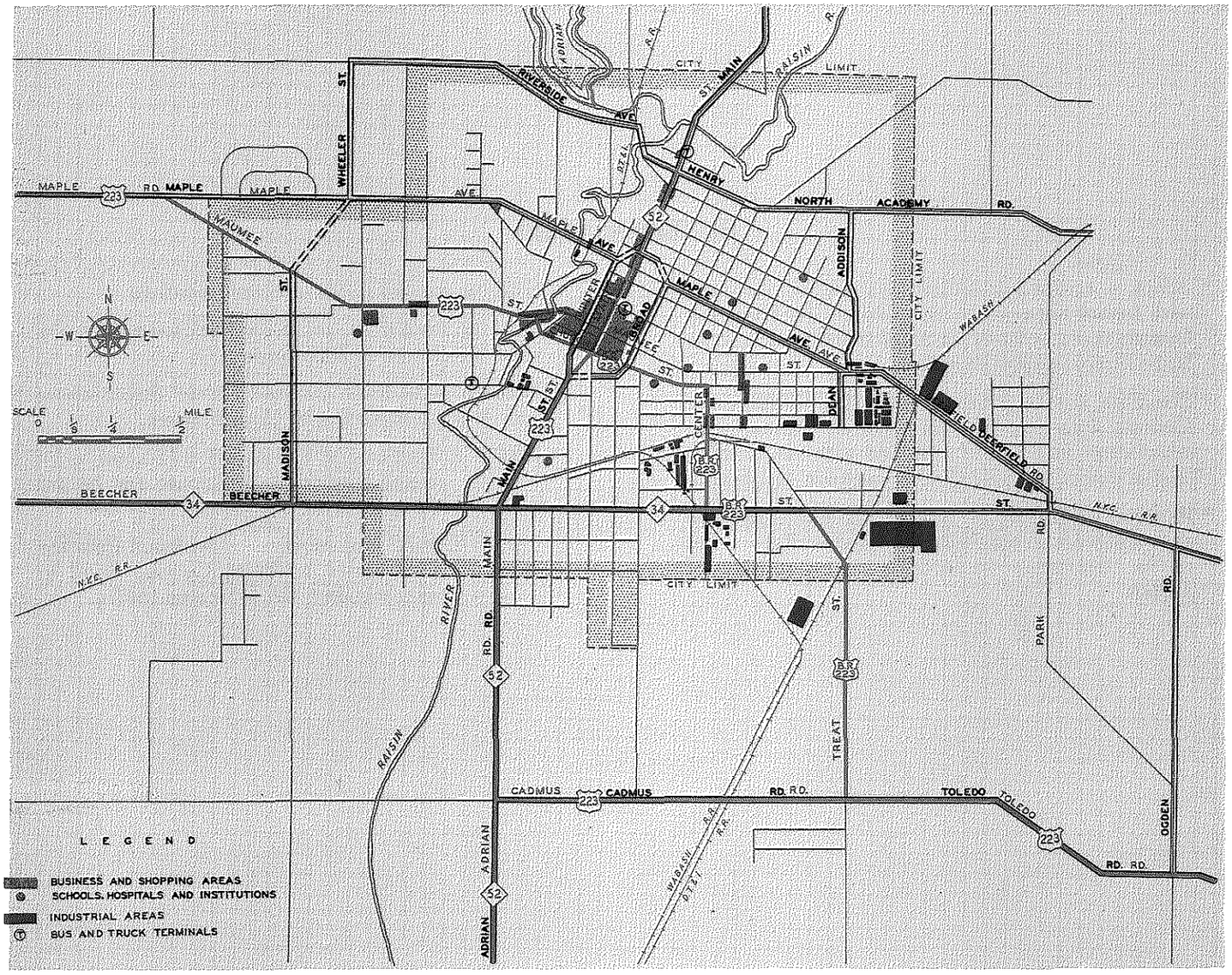


PLATE III

PRINCIPAL LAND USES
AND
ARTERIAL STREET SYSTEM

In studying traffic routing and traffic behavior, it is necessary to know the predominant land use of the various blocks and districts in the study area. For this purpose a complete land use map is prepared in the field showing the commercial, industrial, residential, recreational and institutional areas with the public buildings, industrial buildings, and other pertinent information.

However, for most of the interpretative results, consideration is limited to the location of the Central Business District, the commercial areas, industrial districts, schools and institutions, and warehouse and trucking terminals. For the study of traffic data in the Adrian Area, these items are the only ones shown on the Land Use Map, Plate III.

As the traffic moves from its origin to its destination certain patterns of movements are followed. These movements are very closely related to the land uses in the various parts of the city. A study of the traffic flow on all of the cities' streets will show that the desire of the traffic movements is on the streets that will provide the shortest, easiest, and least time consuming routes between the centers of traffic attraction.

From a study of traffic desires, location of streets and the feasibility of connecting them into an arterial system, a major street plan that will best serve the needs of the city has been developed. This plan presented on Plate III has been approved by the Adrian City Planning Commission and adopted as part of the Master Plan for the City.

24 HOUR TRAFFIC FLOW ON STATE TRUNKLINES & SELECTED STREETS

JUNE WEEKDAY 1949

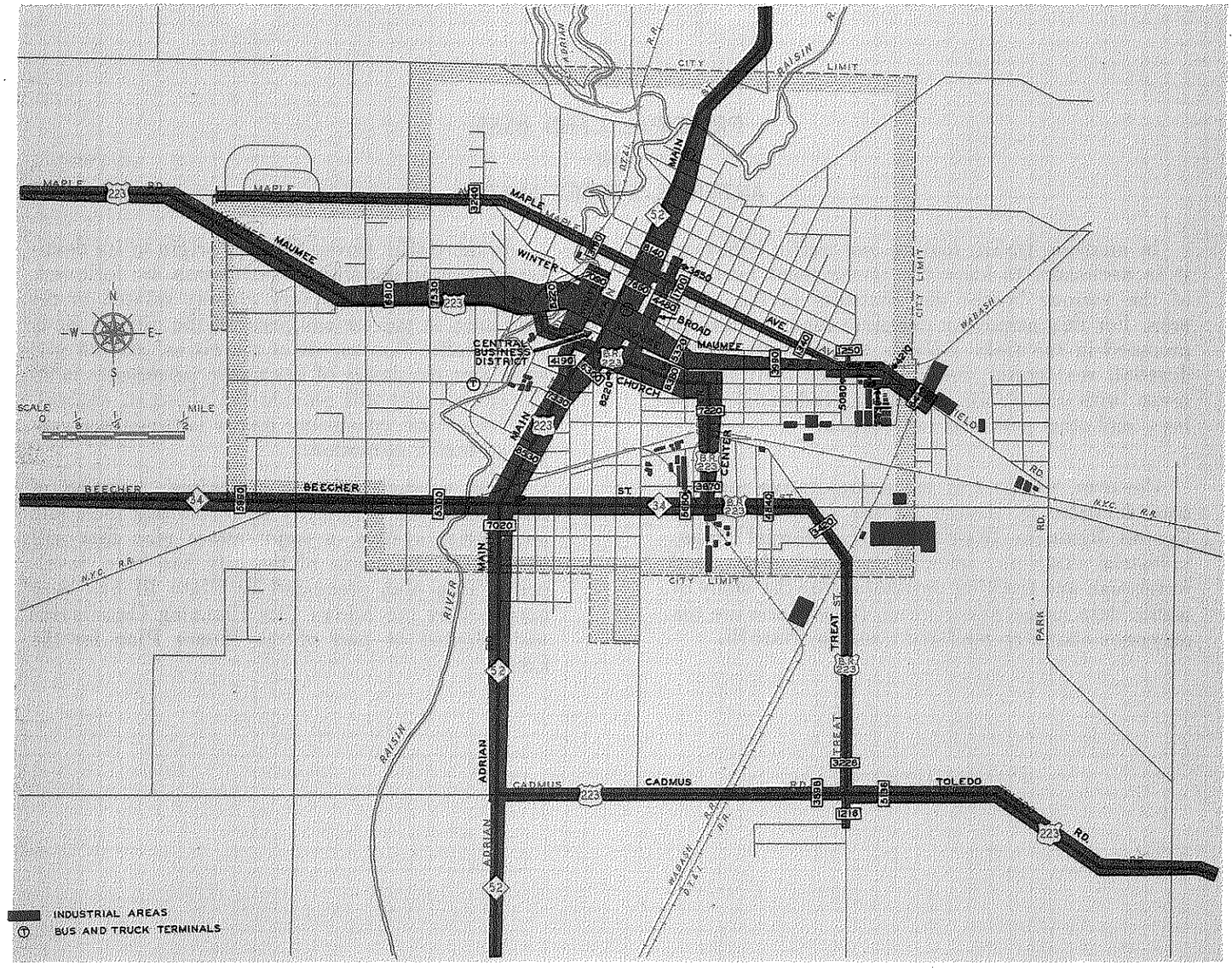


PLATE IV

TWENTY-FOUR HOUR TRAFFIC FLOW ON STATE TRUNKLINES AND SELECTED STREETS

During the course of the survey, both manual and automatic recorder counts were made at the signalized intersections on the trunklines and at various other selected intersections on the principal streets that carry the largest volumes of traffic. These are shown as traffic flow bands over the street system on Plate IV. As classification counts were not taken along these routes the volumes shown represent all types of vehicles.

There are several objections to the present routing of the traffic:

1. US-223BR is a poorly aligned route as it now has 10 turns to be negotiated from the east side of the area limits to the west side.
2. US-223BR carries a heavy volume of traffic in an east-west direction through the heart of the Central Business District on Church Street.
3. US-223BR passes through a highly developed residential area on West Maumee Street.
4. Trips on US-223 on Main Street south of Church Street, bound for areas northwest of Adrian must make turns at the heavily congested intersections of Main and Church Streets and Winter and Church Streets.
5. East Maumee Street carries a large volume of trips from the industrial area on the east side of the city - through the central business district to rural US-223 west of the city. These trips also go through a highly developed residential area. East Maumee Street is not a part of the trunkline system.
6. The industrial area on the east side of the city is not served by a direct trunkline connection in any direction.

24 HOUR FLOW OF TRAILER — COMBINATION TRIPS

ESTIMATED FROM 8 — HOUR COUNTS AT THREE MAJOR INTERSECTIONS

JUNE WEEKDAY 1950

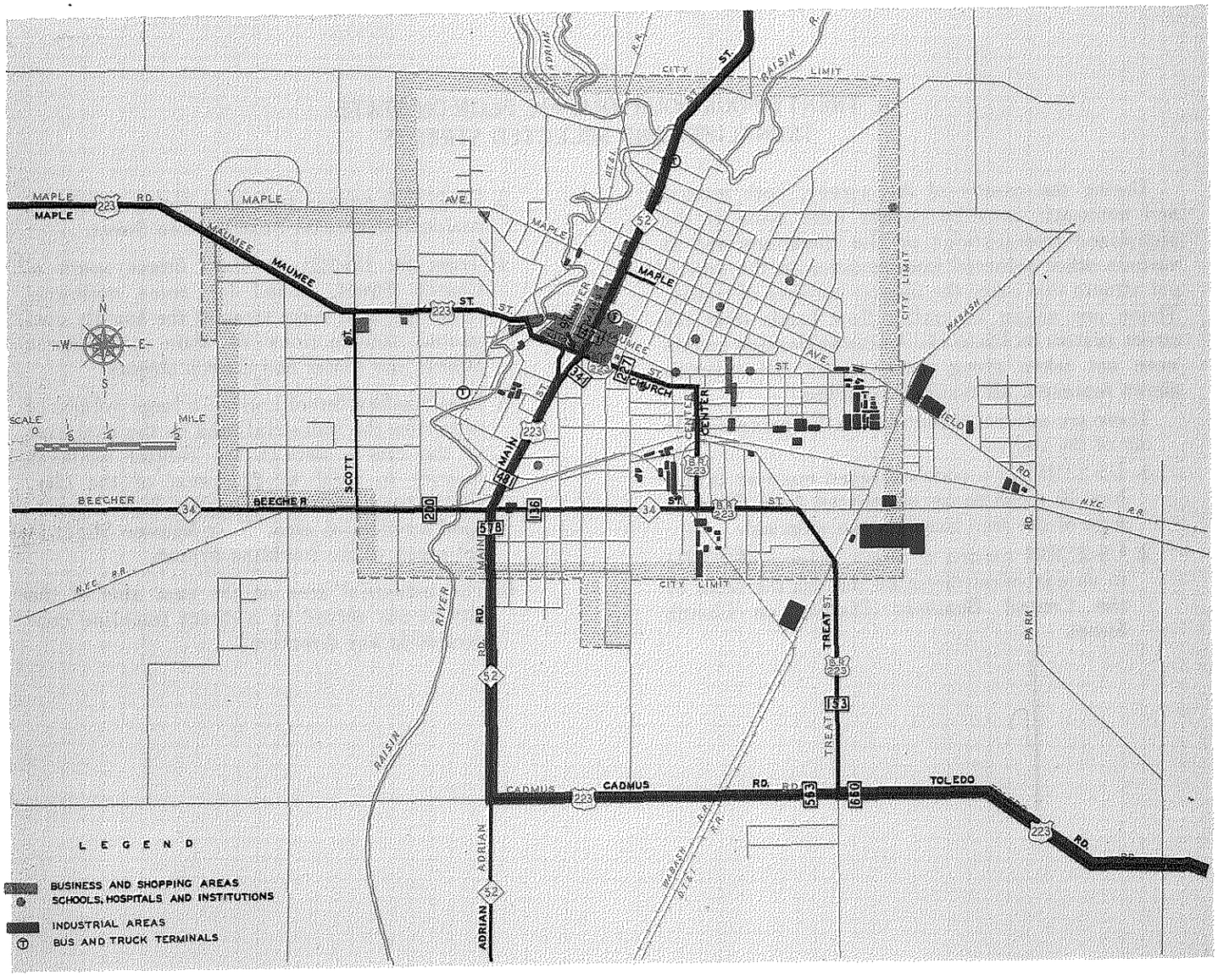


PLATE V

TWENTY-FOUR HOUR FLOW OF TRAILER COMBINATION TRIPS

The trailer-combination traffic flow shown on Plate V is estimated from eight-hour counts taken at the intersection of Cadmus Road and Treat Street, Beecher and Main Streets, and Church and Main Streets. These counts were made in June, 1950, approximately one year after the original survey was made, and the eight-hour count was expanded to 24-hour representation for this diagram. This count was made to plot the flow of trailer-combinations on the city streets.

Trailer-combination traffic in this area is composed of approximately 77 percent thru trips and 23 percent with a terminal in the city. This through traffic is carried on US-223 and M-52 along Cadmus Road, Adrian Road, Main Street, and Maumee Street. Most of the balance of the trips with one terminal in the area having either Origin or Destination in the industrial area along the railroads in the south-east section of the city, are routed over US-223BR, Beecher Street and Main Street. The heavy trailer-combination movement along Main Street from Beecher, northeast to the city limits is the reason for much of the confusion, congestion and noise in the Central Business District.

PRINCIPAL DESTINATION AREAS OF INBOUND TRIPS FROM RURAL STATE TRUNKLINES

THE SIX SHADED ZONES ACCOUNT FOR 49% OF THE TOTAL INBOUND TRIPS

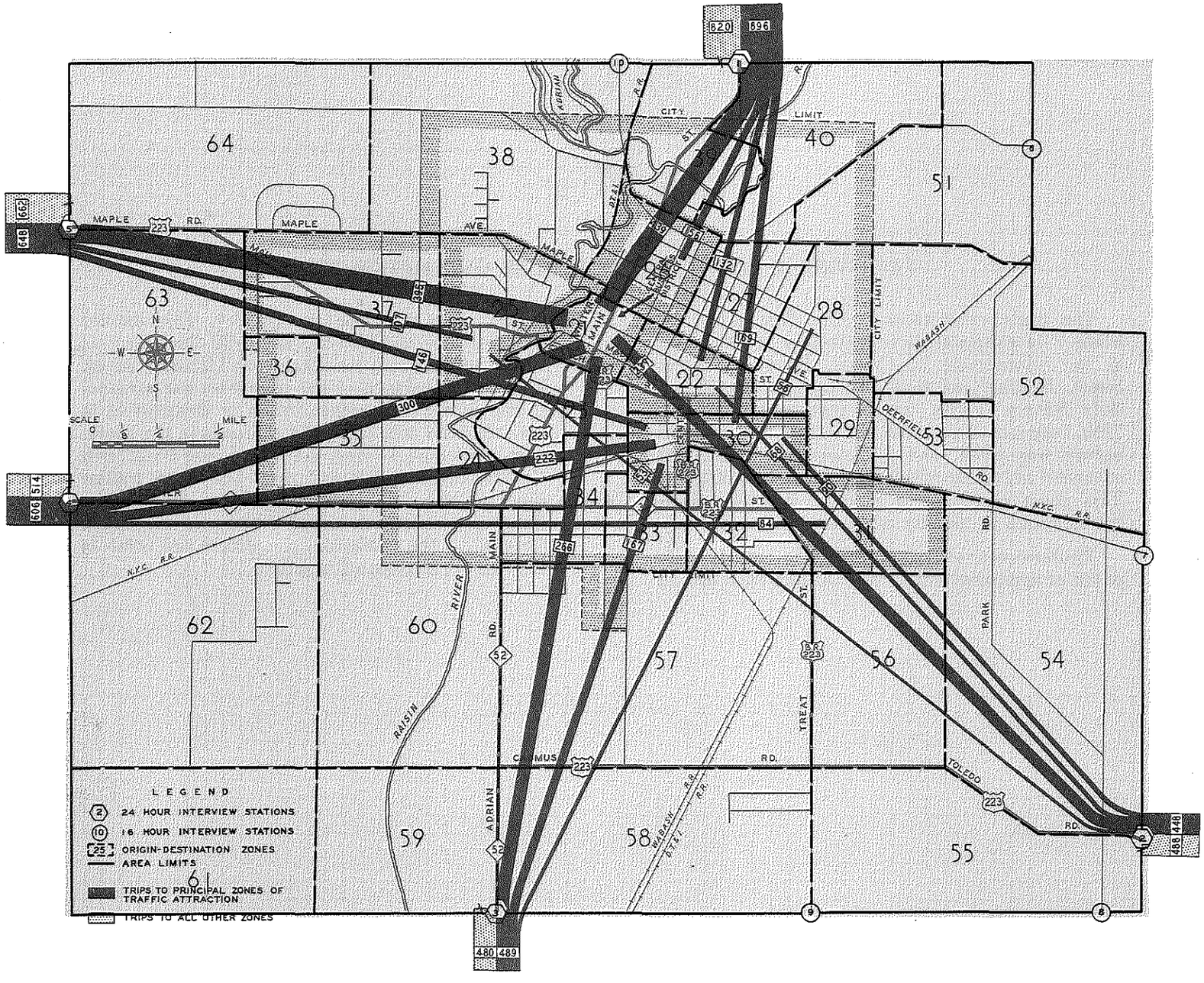


PLATE VI

PRINCIPAL DESTINATION AREAS OF TRIPS INBOUND FROM RURAL STATE TRUNKLINES

Total vehicle trips entering the study area on state trunklines with destinations inside the area, are shown on Plate VI. Band widths indicate the relative number of trips from each of the rural state trunklines to each principal zone. The bands are drawn on a straight line desire basis without regard to the city street pattern.

Of the 6,151 inbound trips approximately 50 percent have destinations in Zones 21, 22, 25, 26, 30 and 31, that comprise the Central Business District, the fringe commercial zones and two industrial zones.

The remaining 50 percent of the trips from the rural state trunklines have destinations which are evenly distributed over all of the rest of the zones in the study area.

PRINCIPAL DESTINATION AREAS OF INBOUND TRAILER COMBINATION TRIPS FROM RURAL STATE TRUNKLINES

THE SEVEN SHADED ZONES ACCOUNT FOR 69.6% OF THE TOTAL INBOUND TRAILER COMBINATION TRIPS

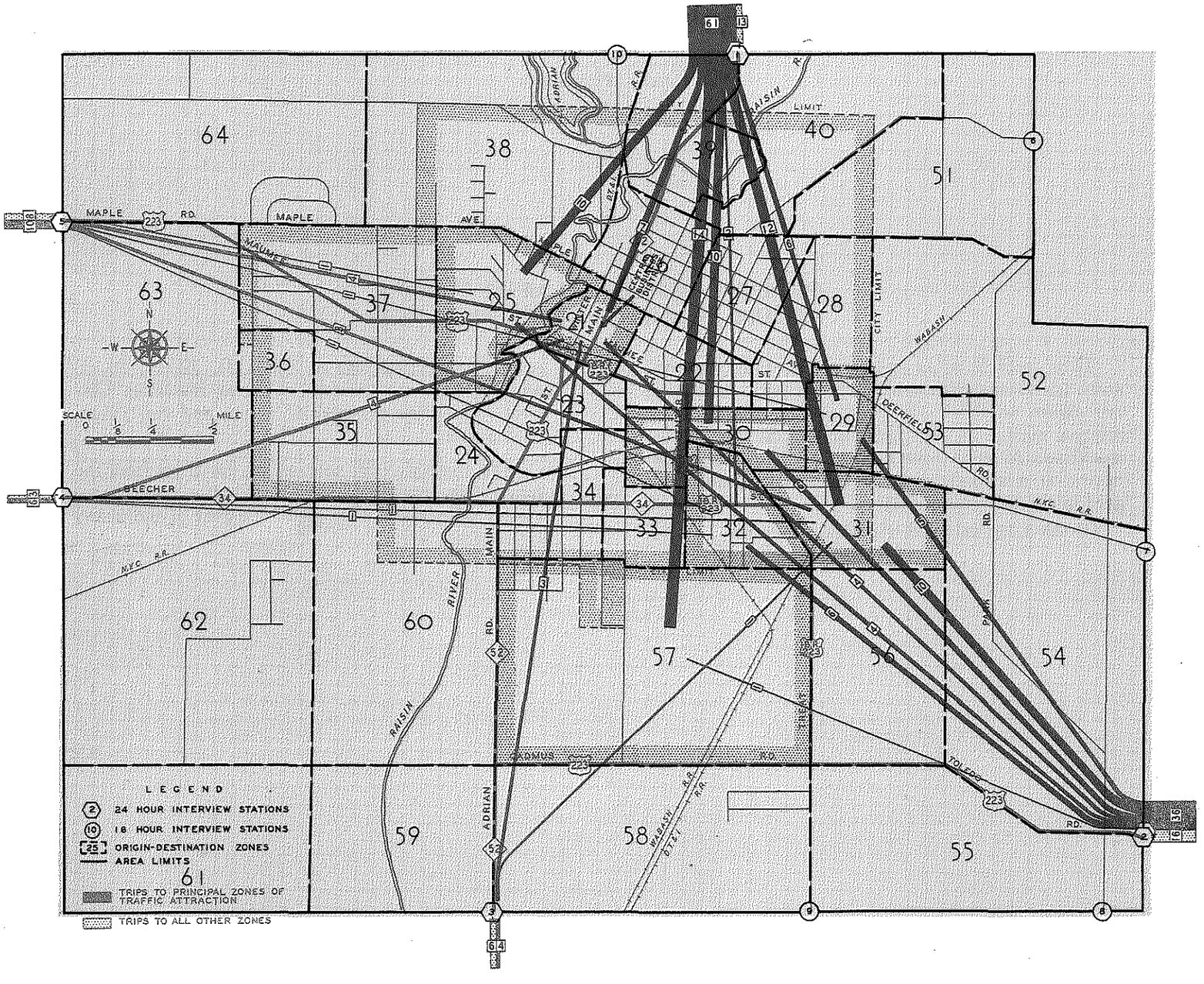


PLATE VII

PRINCIPAL DESTINATION AREAS OF INBOUND TRAILER COMBINATION TRIPS FROM RURAL STATE TRUNKLINES

Volumes of trailer combination trips are increasing year by year on the rural state trunklines. The largest percentage of this traffic in Adrian is made up of through trips. Trailer combination trips bound for points in the area are shown by colored bands. The band width indicates the number of trips from each rural state trunkline to the zones of highest concentrations.

Seventy percent of all trailer combination trips with destinations in the area are concentrated in the seven zones shown on Plate VII.

ORIGINS AND DESTINATIONS OF THROUGH PASSENGER CAR TRIPS ON STATE TRUNKLINES

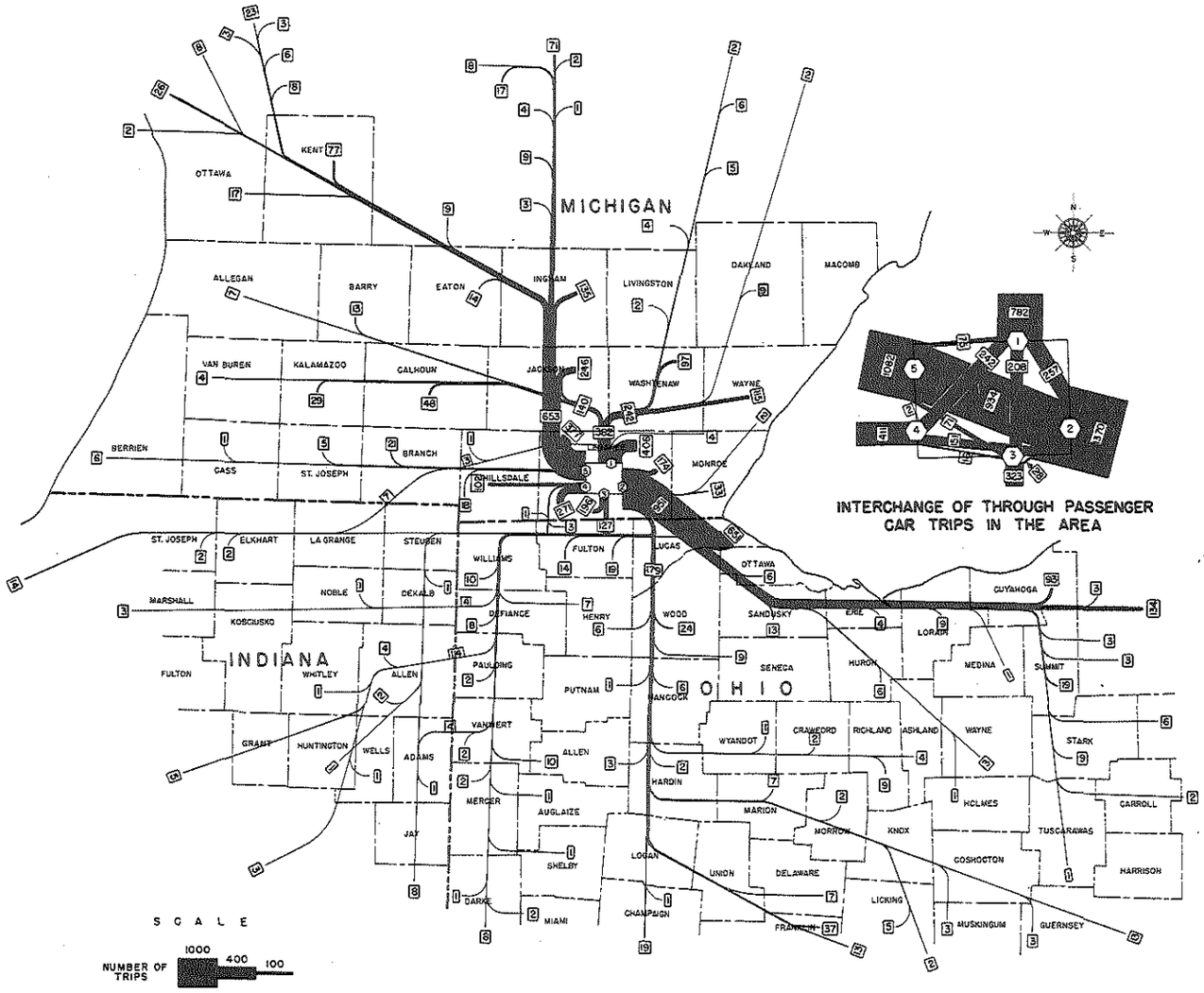


PLATE VIII

ORIGINS AND DESTINATIONS OF THROUGH PASSENGER CAR TRIPS ON STATE TRUNKLINES

Plate VIII shows the combined origins and destinations of the passenger car trips through the study area with the trips assigned to the general location of the most logical trunkline route that leads to the county or state of the trip terminal. To study the need for bypass routes and arterial street connections to the rural state trunklines, it is necessary to know where the through trips have their origins and destinations and by which route they approach the study area.

Trips that go beyond the limits of the three-state map are grouped as one volume at the end of each flow band at the edge of the map.

Trips passing through the area between the external stations are shown on a straight line desire pattern in the study area insert.

ORIGINS AND DESTINATIONS OF THROUGH TRAILER COMBINATION TRIPS ON STATE TRUNKLINES

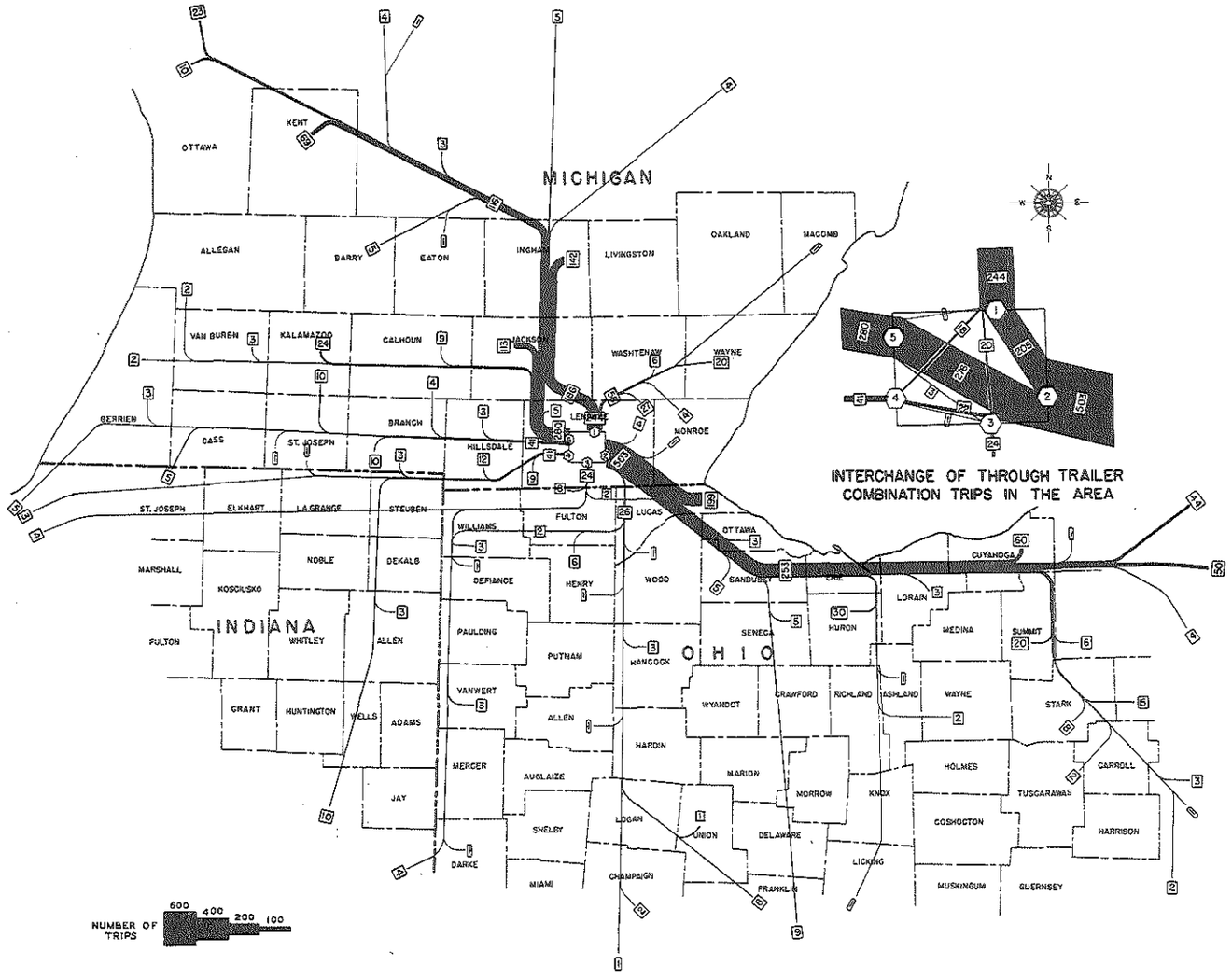


PLATE IX

ORIGINS AND DESTINATIONS OF THROUGH TRAILER COMBINATION TRIPS ON STATE TRUNKLINES

Plate IX shows the plotting of through trailer combination trips similar to that of through passenger car trips shown on Plate VIII. A different pattern is found for the trailer combinations as these trips are mainly through Station 2 (US-223) to the east and divided evenly between Station 1 (M-52) to the north, and Station 5 (US-223) to the west. It should be noted, however, that 80 percent of the trips with a terminal north of the Study Area passing through Stations 1 and 5, have the same origins and destinations but have a different distribution to the trunklines within the study area.

The difference between the distribution of trips north of Adrian in 1949, as shown on this Plate, and the distribution in 1950, as shown on Plate V, is due to road construction activities on M-50 during the time of the 1949 survey.

INTERCHANGE OF THROUGH STATE TRUNKLINE TRIPS

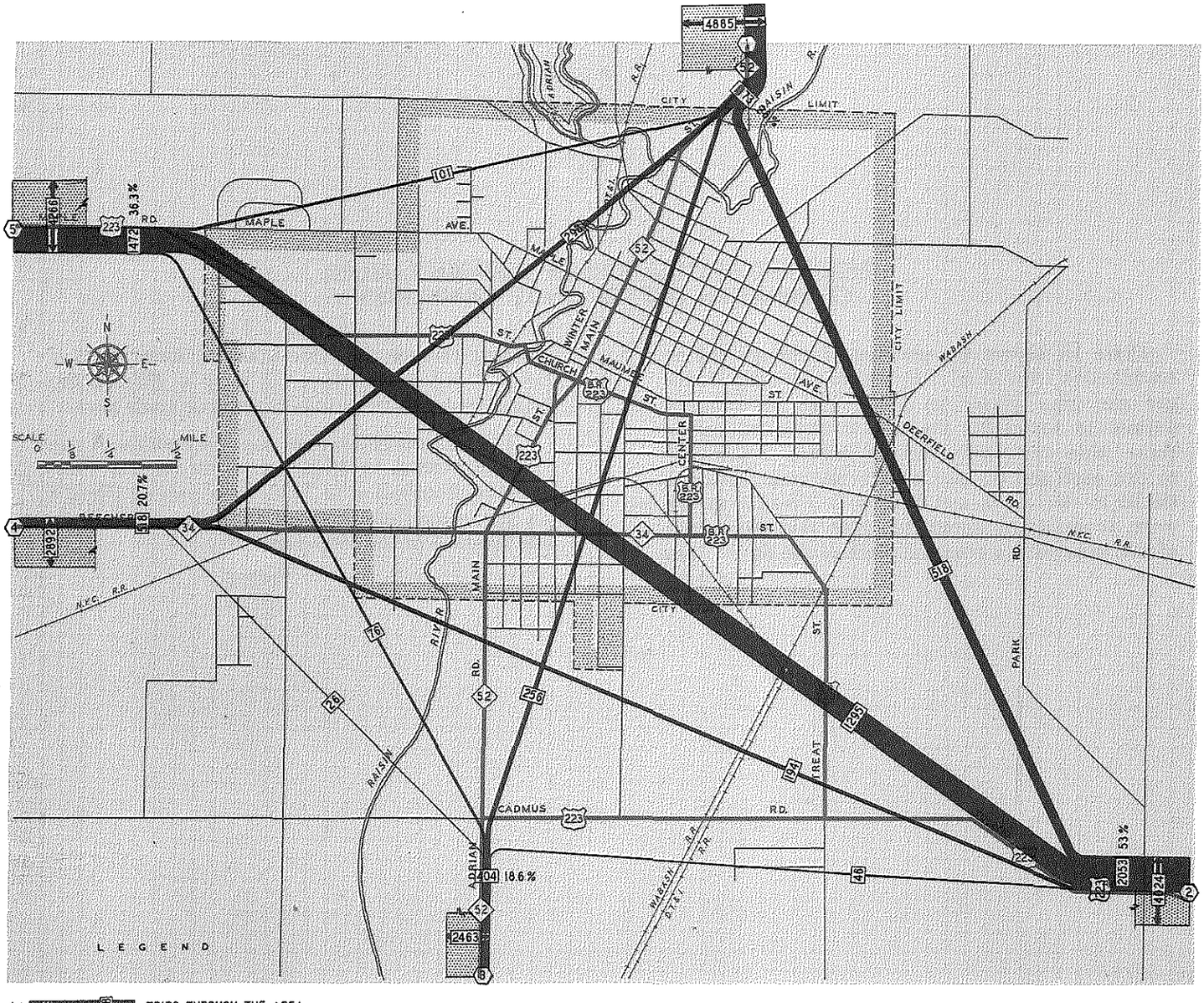


PLATE X

INTERCHANGE OF THROUGH STATE TRUNKLINE TRIPS

Through traffic in the east-west direction is of major importance in the Adrian Area as US-223, the principal Federal highway in this area, runs from Toledo, Ohio, to US-127 south of Jackson. In addition to this one main movement, the interchange between US-223, M-52 and M-34 is also of considerable volume. Plate X illustrates the movements on a straight line desire pattern without regard to the city streets.

In addition to the through movements this diagram also shows the volume of trips that have one terminal inside of the area and one terminal outside of the area. No attempt is made to show either the origins or destinations of these cordon trips on this diagram.

The predominant through movement being in an east-west direction tends to indicate a need for a bypass route that will allow this traffic to get from one side of town to the other without passing through the central business district.

A bypass route would also serve a large percentage of the trips from the trunklines with one terminal in the area by permitting the choice of several entrance routes to different parts of the city.

PRESENT DISTRIBUTION OF TRAILER – COMBINATION TRAFFIC

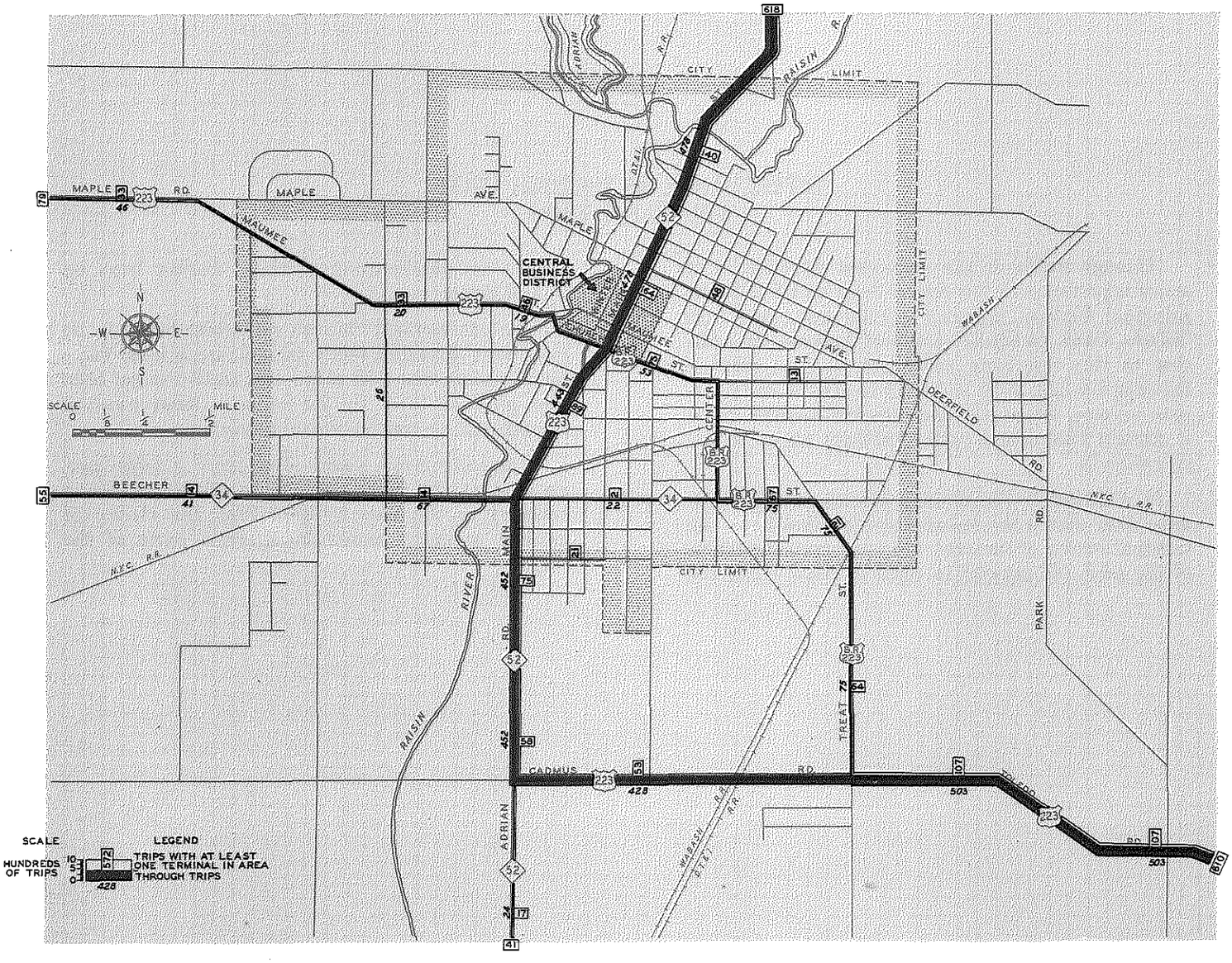


PLATE XI

PRESENT DISTRIBUTION OF TRAILER COMBINATION TRIPS

For several years the Michigan State Highway Department and the city have been concerned in improving the trunkline routes through Adrian to eliminate the congestion within the city. Two major factors contribute to the existing traffic problem. The first is the rapid expansion of the heavy commercial traffic movement between Jackson and Toledo that is routed through Adrian. The second factor is the condition of US-127 south of Jackson that necessitates routing this large movement over M-52 through the central area and over M-50 into Jackson.

Two improvements will be necessary to deal with these factors. First, the south and west bypass of US-223 across Cadmus Road on the south and up to Maple Road on the west must be completed, and second, US-127 from US-223 to Jackson should be relocated and reconstructed. The city is making some readjustments to serve as remedial measures until the two basic improvements can be put in effect.

Plate XI shows the distribution of the heavy commercial traffic as it is now routed over Main Street through the central business district. On the average weekday this commercial traffic is the cause of the congestion and noise in the central area and the numerous gasoline carriers create a serious fire hazard.

TRAILER – COMBINATION TRAFFIC WITH U.S.-127 RECONSTRUCTED

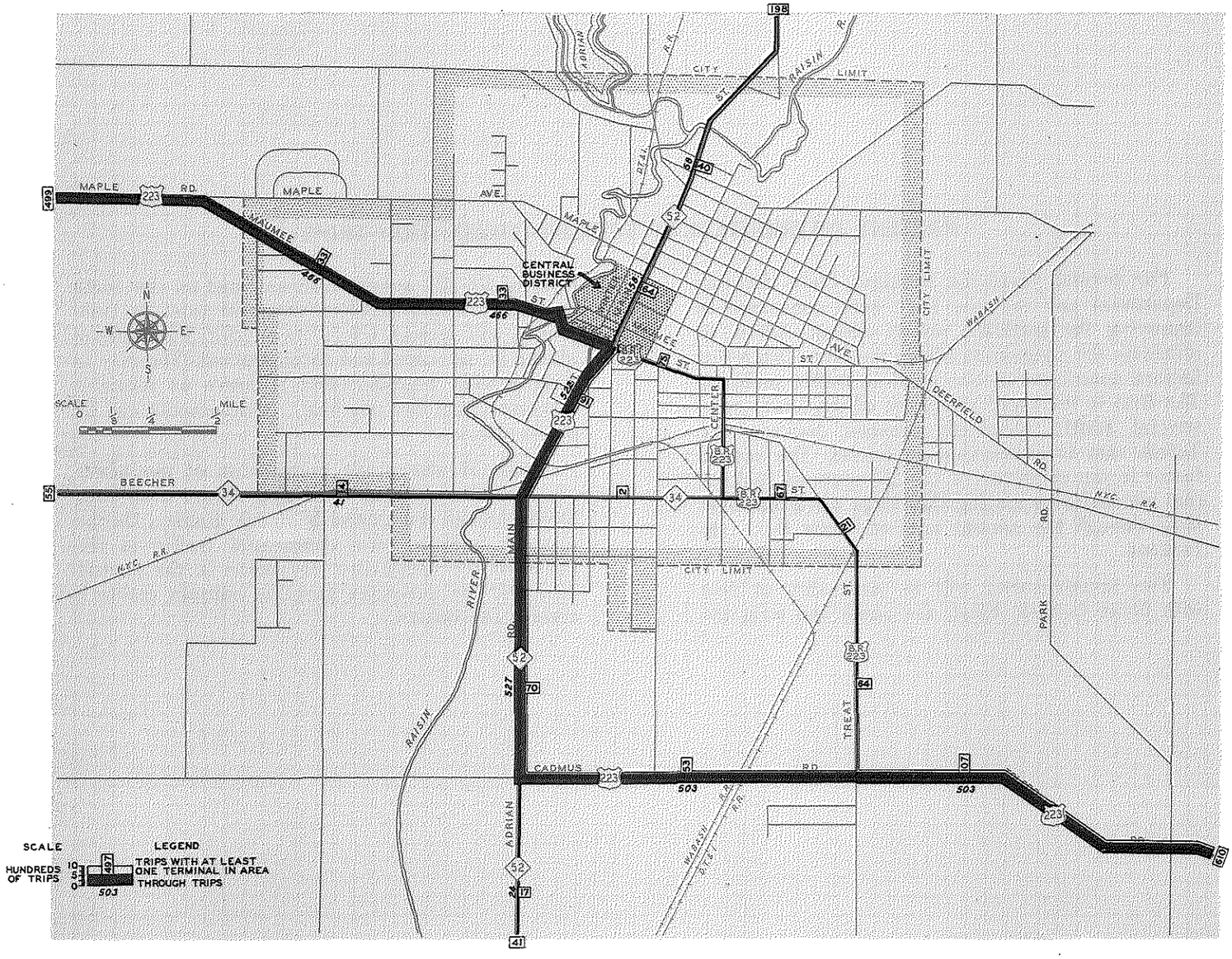


PLATE XII

TRAILER COMBINATION TRAFFIC WITH US-127 RECONSTRUCTED

Plans for the improvement of US-127 south of Jackson provide for the construction of a modern two lane pavement from Jackson to the intersection of US-112 with US-127 and US-223. With this section in operation the entire route from Jackson to Adrian would be in condition to carry all of the heavy trailer-combination traffic that now uses M-52 and M-50.

Completion of this project would cause a decided revision of the trailer-combination movement through Adrian. Estimates of the revised trunkline routing indicate a transfer of 422 trailer-combinations from M-52 north of Church Street to US-223. This results in a reduction from the present 618 units to 196 units for an average 24-hour day. Of the 196 units only 58 will be through trips as compared with 417 now using the route. However, unless the projected US-223 Bypass is built at the same time, traffic conditions would not be helped on Main Street south of Church Street.

Plate XII shows the pattern of trailer-combination traffic that would result from improving US-127 without completing the US-223 Bypass. It shows that this movement would still traverse a large and important sector of the Central Business District. It also indicates that all of the US-223 traffic would be required to turn at the intersection of Main and Church Streets, or at Church and Winter Streets, which would aggravate the already serious condition at these intersections.

TRAILER - COMBINATION TRAFFIC USING A SOUTHWEST BYPASS AND U.S.-127

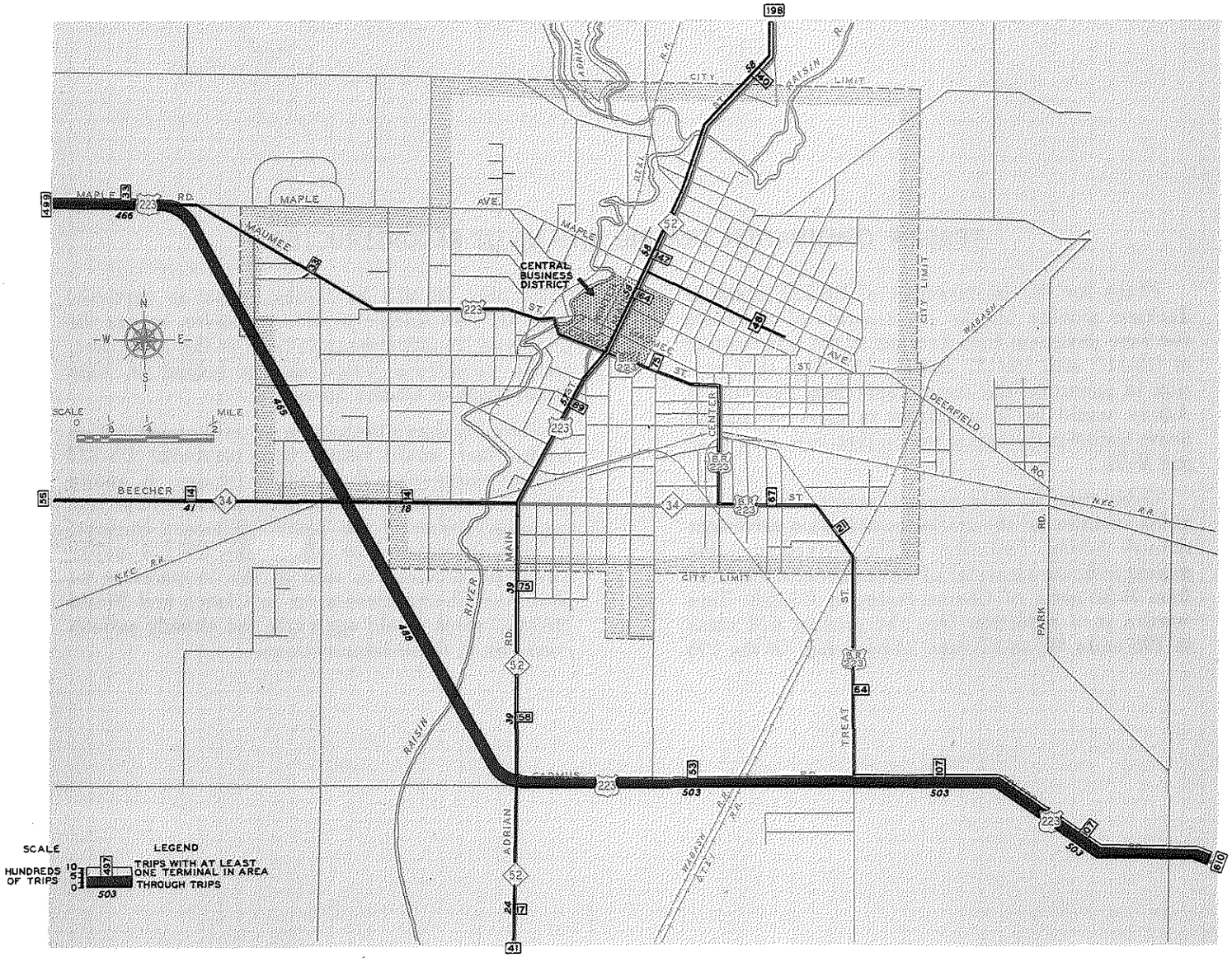


PLATE XIII

TRAILER COMBINATION TRAFFIC USING A SOUTHWEST BYPASS AND US-127

Completion of the US-223 Bypass requires the construction of a modern highway connection between Cadmus Road and US-223 northwest. Its completion is essential for the service of the trunk-line traffic and the relief of the traffic conditions in the central area.

Plate XIII shows the estimated usage of the Bypass by trailer-combination units. It indicates that the usage of this route by the heavy units would leave the downtown area practically free of those vehicles that now make a major contribution to traffic congestion and confusion.

The location of the bypass, on Plates XIII, XIV, and XV, is diagrammatic and does not pretend to be the final selected location. A diagonal two or three miles further west would still satisfy these traffic desire requirements.

TOTAL WEEKDAY TRAFFIC WITH A SOUTHWEST BYPASS AND RECONSTRUCTED U.S.-127

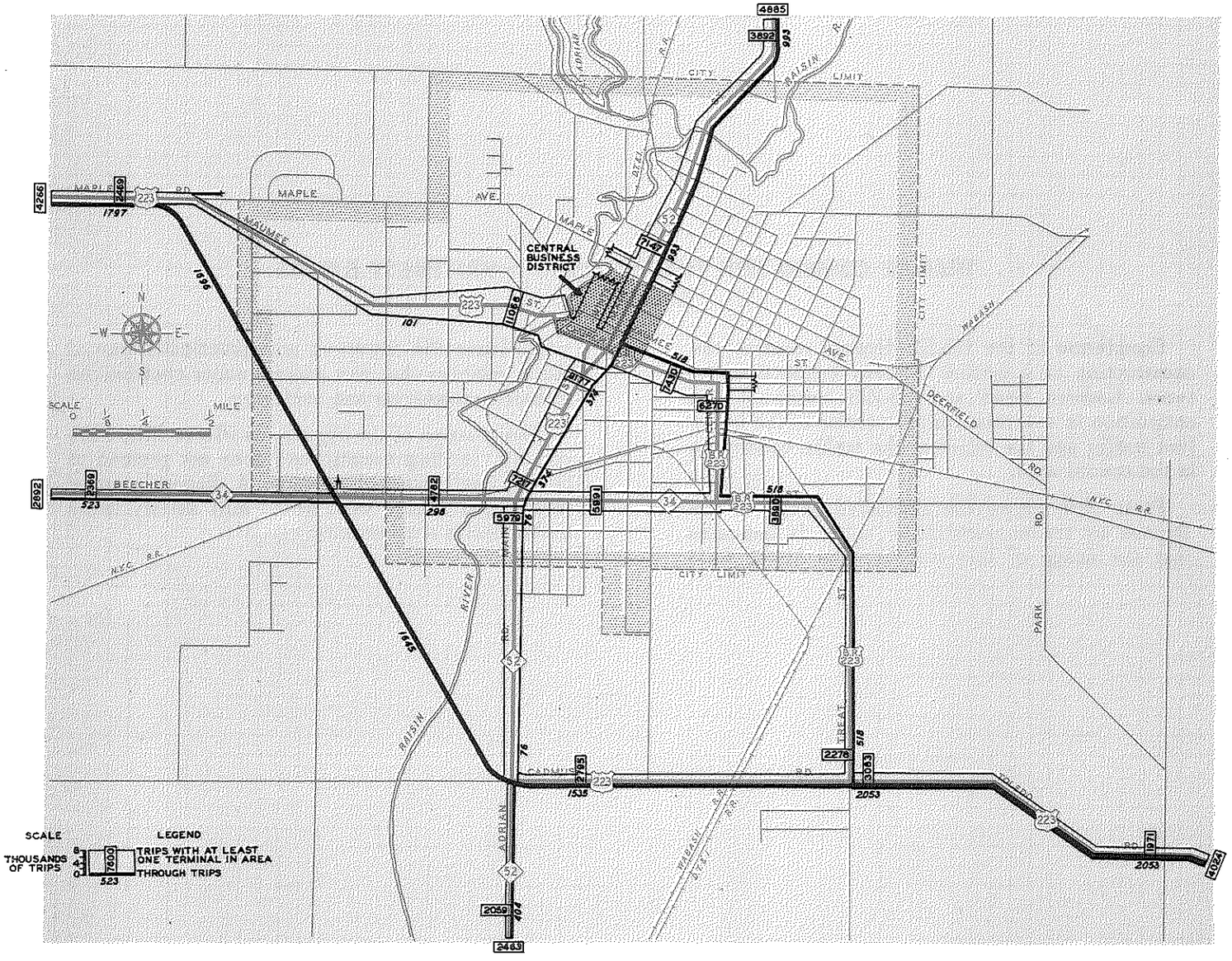


PLATE XIV

TOTAL WEEKDAY TRAFFIC WITH A SOUTHWEST BYPASS AND RECONSTRUCTED US-127

With the US-223 Bypass completed and US-127 reconstructed, the total vehicle traffic, through and local, would be distributed to the trunkline highways and streets as shown on Plate XIV. It is estimated that on the average weekday, the Bypass would carry about 1700 trips. It is also estimated that in the 30th highest hour the volume would be approximately 700 vehicles.

The relief afforded by diverting this traffic from the streets inside the city should be measured, not by bare volume figures, but by the fact that approximately one-third of the bypass traffic would be trips by the larger and heavier types of commercial vehicles.

TOTAL TRAFFIC ON A SOUTHWEST BYPASS ON A SUMMER SUNDAY

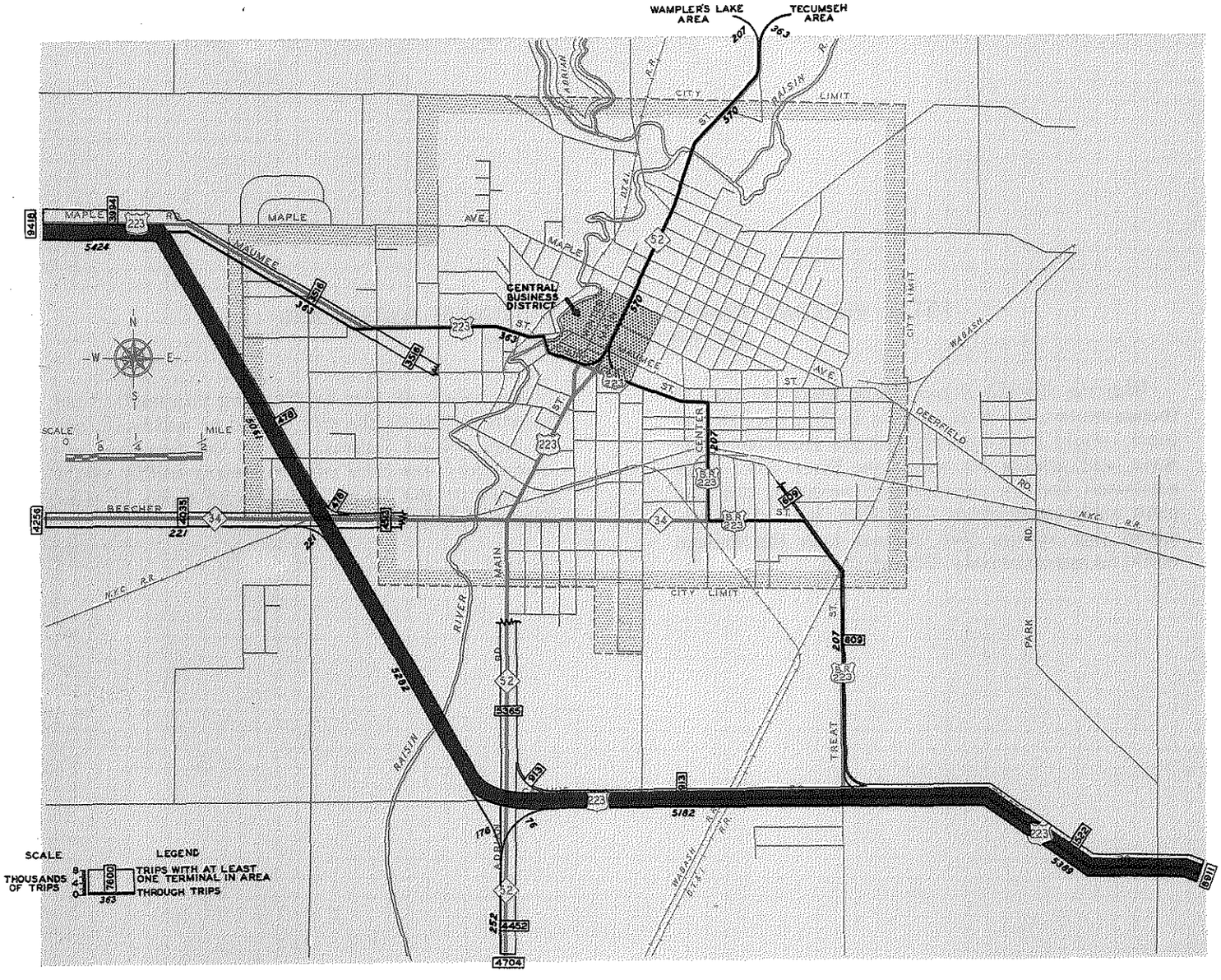


PLATE XV

TOTAL TRAFFIC ON A SOUTHWEST BYPASS ON A SUMMER SUNDAY

By far the largest volumes of traffic would be carried by the bypass on summer Sundays when the recreational travel is at its peak. Over three times as much through traffic would use the route on Sunday than on an average weekday. This recreational travel is especially heavy between Toledo, Ohio, and the Wampler's Lake, Irish Hills, and Devil's Lake areas. The normal desire line of these movements follows along a route that very closely approximates the bypass route as shown on Plates XIII, XIV, and XV.

With the bypass in operation all of the heavy east-west through movements could be diverted from the central business district to the route south of the congested area thereby affording relief to the city.

STATE TRUNKLINE SYSTEM RECOMMENDED FOR DEVELOPMENT

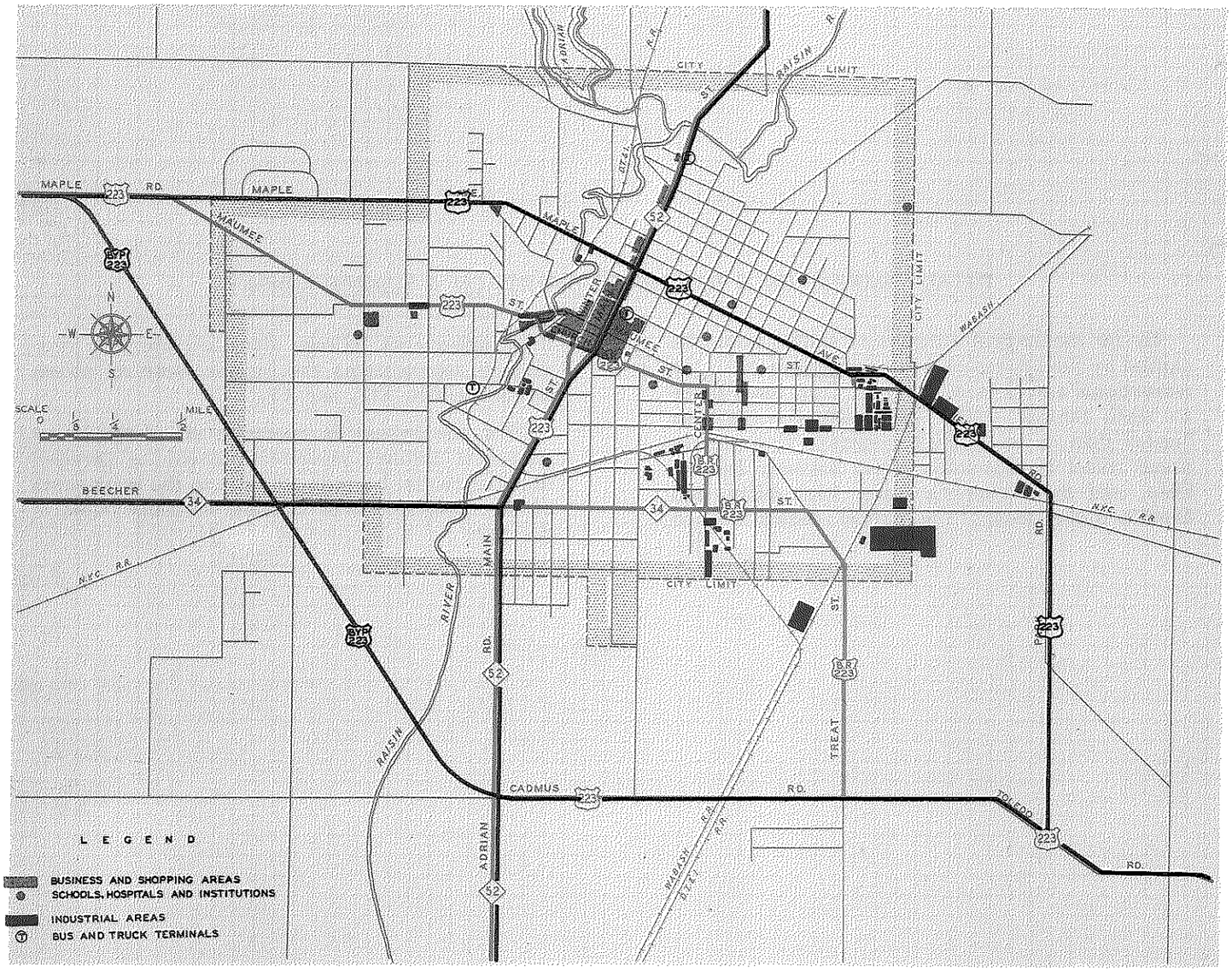


PLATE XVI

STATE TRUNKLINE SYSTEM RECOMMENDED FOR DEVELOPMENT

The preceding diagrams and text have presented the pertinent information regarding the characteristics of the trunkline traffic. An analysis of this data indicates several desirable changes in the present trunkline routing.

Main Street from Church Street to Maple Street is the most heavily congested area in the city. As shown on Plate XI, the congestion is caused primarily by the concentration of trailer-combination units that are routed through this central area for want of an east-west route that would connect with the rural trunklines and still be away from the business district. North-south traffic on M-52 does not pose such a problem, as the volume of trailer-combinations is much smaller for the average weekday.

To be of service to the industrial areas and the central business district, trunkline streets must be either through, or along the edge of those areas. A plan of routing the trunklines through the Adrian area is shown on Plate XVI. This plan is based on the assumption that the southwest bypass will be completed and that US-127 south of Jackson will be reconstructed to enable the thru trailer-combinations to use it.

No change will be made in the routing of M-52. It will perform the necessary functions of taking the vehicles to the central business district and provide a direct route through the city along the full length of Main Street for the small volume of thru vehicles.

US-223BR will provide access from both east and west to the central business district and the industrial areas by the routing along a line north of its present location. Trailer-combination traffic with an origin or a destination in Adrian will use this route. The industries located on the east side of Adrian are associated with industries in Detroit. The truck route between these two areas is over this new route, thus avoiding the central business district. Thru traffic will be routed on the southwest bypass that will connect Cadmus Road with the present US-223 on West Maple Street.

M-34 will remain in its present location on Beecher Street from the west city limits to Main Street and thence north on Main Street with M-52, terminating at Church Street.

The trunkline routes were selected from, and are part of, the cities' arterial street system.

FIELD PROCEDURE

AND

TABULATIONS

FIELD PROCEDURE

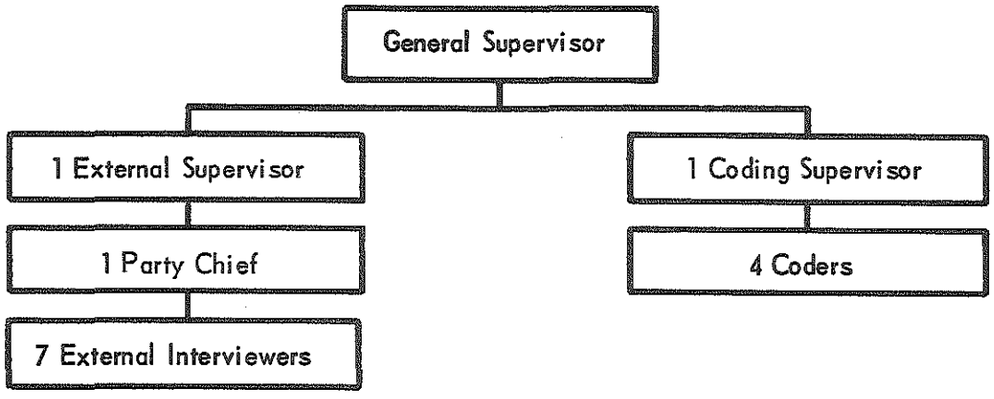
The field work on the Adrian Area Traffic Study was started May 23, 1949, and completed June 25. The purpose of the survey was to secure data pertaining to the movement of all vehicular traffic into, out of, and through the Study Area. As on previous external surveys the data for the study of external trips was obtained at interview stations located on all important routes entering the area. At each of these stations vehicles were stopped and the drivers questioned as to the origin, destination, and purpose of the trip. The information thus obtained was recorded in the field on Form O-D-5, shown in Appendix B. Ten stations were established. Five of these stations located on trunklines were operated twenty-four hours. At the five other stations not on trunklines, sixteen-hour interviews and manual vehicle classification counts were taken from 6:00 A.M. until 10:00 P.M. with machine counts covering the eight hours from 10:00 P.M. until 6:00 A.M.

During the summer months there is considerable week-end congestion on the trunklines in Adrian, especially on US-223 in the period from 2:00 P.M. to 10:00 P.M. To study these movements external stations 2 and 5 were operated for this eight-hour period on Sunday, June 5, with interviews and classification counts being taken for the eight hours and machine counts taken for the other sixteen. This data to be later expanded and tabulated separately from the data taken on the regular weekday survey.

As it is impossible to interview one-hundred percent of the vehicles passing the external stations, the classification counts were recorded to establish the control for expansion of the interviewed sample. Both inbound and outbound traffic were interviewed and classified at all stations.

Preliminary machine counts were taken April 26, 1949, to establish the locations of the external stations.

All of the operational field work was conducted by the Traffic Surveys Section of the Planning and Traffic Division with the organization shown below:



The coding was done in the field by the coding section which started this work on June 1, 1949, and completed it on July 28.

Coding consists of reducing all of the answers to interviewers' questions to a predetermined numerical code. All of the information as to the origin, destination, purpose of trip, direction of travel, type of vehicle, place of ownership of vehicle, number of passengers, state of registration, etc., was recorded on Form O-D-5 at the time of the interview, and it is the responsibility of the coding section to enter the proper code numbers on the interview form so that when the forms reach the tabulating section the information can be recorded on the tabulation cards.

Prior to coding, the entire area was divided into thirty-four Wards or Zones of three-hundred and eighty-six Blocks. As no suitable established Ward and Block system was available, a Ward and Block system was laid out by using the land use map made for this study. Twenty Wards, numbered from 21 through 40, were assigned to the area within the city limits and fourteen Wards, numbered from 51 through 64, were assigned to that territory lying outside the city proper and within the study area. Every Block in the area was assigned a number that is included in a four digit code so that all locations could be identified by a six digit code, the first two digits being the Ward and the last four digits being the Block.

The following survey data was transmitted to the Traffic Analysis and Planning Section on July 28, 1949:

I INTERVIEW FORMS
1. External Interviews Form O-D-5

II TRAFFIC DATA
1. Hourly traffic volumes by vehicle type for:
   (a) Five twenty-four hour External Stations
   (b) Five sixteen-hour External Stations

III GENERAL
1. Land Use Map
2. O-D Base Maps
3. Lenawee County Map
4. A.A.A. Adrian Map
5. City Precinct Map with house numbers

IV MANUALS
1. Prospectus of Operation
2. Coding Supplement

OFFICE PROCEDURE

When the field survey data is submitted to the Traffic Analysis and Planning Section it is grouped and coded by ward and block on the original interview forms. In this study it was decided to use the original ward designations as origin-destination zones. The complete breakdown is shown in Appendix A. To tabulate and analyze this information the data for each trip is recorded on International Business Machine tabulating cards. The recording is done by keypunching into the cards the coded information that is listed on the interview forms. On an external survey such as this, only one tabulating card, the "Urban Area Traffic Studies - II-External" is used for the original recording. A reproduction of this card is shown in Appendix B.

After all of the original data is punched into the cards by the operators, each card is verified for accuracy by being run through a machine similar to the keypunch except that it punches no holes but throws out cards that do not agree with the original. This process eliminates the possibility of any wrong code numbers being punched into the cards.

With all the cards key punched and verified for accuracy, the coding is machine checked. This is not a process for checking the key punching or verifying; it is instead, a method of checking the original coding and it will detect only certain classes of errors. These two general types of errors are:

(1) Impossible codes for a single item.
(2) Impossible combinations of codes between two or more items.

Specific examples to illustrate the types of error are:

1. Impossible codes.

   These are the result of the erroneous use of code numbers to which no meaning was or could be attached when the codes were set up.

   EXAMPLE - A combination of Ward and Block Number that does not exist. This occurs in coding Origin-Destination or other geographical locations.

2. Impossible combinations of codes for two or more items in the same card.

   EXAMPLE - In the external cards, trips with both terminals outside the area must have specific station numbers for routes of both exit and entrance. Conversely, trips with one terminal inside the area can have a specific station number only for route of exit or entrance. The codes for direction of travel (inbound or outbound) origin, destination, and route of entrance or exit are interlocked. The coding of these four items has proved highly susceptible to error. Machine checking detects these errors and they are corrected to permit logical tabulations.

The machine checking is a continuous process from the start of the key punching and verifying. Final machine checking for this study was completed October 3, 1949.

In addition to the original information recorded on the tabulating card, certain additional data such as O-D Zones and expansion factors are entered on the cards by gang-punching so that each card is a complete record of a single trip.

A total of 18,965 cards were punched for this study over the period July 29, 1949 to January 19, 1950.

I.B.M. Tabulating Cards	Number Punched
External Trip Reports	18,211
Summary Cards for Trip Tables	754

EXPANSION OF TRIP DATA

Interviews and classification counts were taken at five twenty-four.hour stations and five sixteen-hour stations as stated under "Field Procedure". To use the interview data it is necessary to expand it to full twenty-four-hour representation. This expansion must be made separately for each vehicle type (passenger car or truck) by hour, and direction of travel because of the difference in volume of vehicles that pass each station during the twenty-four one-hour periods. During the peak hours the ratio of vehicles interviewed to vehicles counted drops, and in some of the hours of low volume all vehicles may be interviewed. It is necessary to use two expansion factors to bring the interview data to full representation. For the twenty-four-hour stations the first factor is the ratio of the number of vehicles counted to the number of vehicles interviewed by hour, by type, by direction. The second factor is always 1.000 as both the interviewing and classifying were conducted for twenty-four hours. For the sixteen-hour stations the first factor is the same as for the twenty-four-hour stations but the second factor is the ratio of the total manual or machine count for the twenty-four hours to the total interviews for the sixteen-hour period. These factors are gang-punched into the cards after the original survey data punching is completed. When the interview data is multiplied by the expansion factors the resulting data is used for all future tabulations as it then represents one-hundred percent of the traffic at each station.

TABULATION OF DATA

The data accumulated during the course of this study can be summarized in many different ways for the study of specific problems inherent in the improvement of the urban state trunklines and the arterial street system. The tabulating cards are available at all times and tabulations will be prepared as the progress of the studies reveals the need and the results will be summarized and presented in appropriate form. The purpose of this report is to develop and present the basic tabulations that are considered essential to an understanding of the scope of the compiled data and additional tabulations to demonstrate the use of the basic data in the preliminary stages of analysis and interpretation.

As this survey was made at external stations on a cordon line around the periphery of the study area, it results in certain data being duplicated on the tabulation cards. Trips through the area, i.e., both origin and destination outside the area, were duplicated because such trips were recorded inbound by interviewers at one external station and the same or similar trips recorded as outbound by interviewers at some other external station. This duplication was eliminated by punching into the through trip cards a factor equal to one-half of the computed expansion factor, therefore, it is not necessary to divide by two the tabulated figures for these trips.

In the analysis of the traffic movements and the study of the route locations for urban state trunkline and arterial street plans, the important tabulations are the trip tables. From these tables data can be tabulated to determine the major desired lines of travel to and from the areas of trip terminal concentration, also estimates of the amount and distribution of potential traffic to proposed routes, and other studies and analyses of similar nature as the need develops.

It should be borne in mind that the data set forth in these tables were determined by the expansion of a sample and that they are representative of week day travel during the Summer of 1949. These data must be regarded as relative rather than absolute and they serve to establish general traffic flow patterns which are reliable within the limits of error of the sampling. Seasonal variations and anticipated future increases in traffic volumes may

be estimated by applying appropriate multipliers to the basic data contained in the tables. As no internal samples were taken, the traffic flow diagrams and estimates will show only the traffic into, out of, or through the area, unless the internal traffic is estimated from data available from other studies in the state and added to the external traffic. If an internal estimate is used in any table or chart it will be so stated in the explanation.

To arrive at a total figure in the Adrian Area the internal or zone to zone trips must be estimated if using only the external trips will not give a satisfactory solution to the problem under consideration. The following table is a summary of inbound trips in seven Michigan cities where internal surveys were conducted at the same time the external study was made. The ratios shown can be used as a guide in estimating the internal trips.

Study Area	Year of Survey	1/ City Population	Total Internal Trips	Ratio of Internal Trips To Population	Internal Trips To & From C.B.D. 2/ No. of Trips	Internal Trips To & From C.B.D. 2/ Percent of Int. Trips
Kalamazoo	1946	55,767	81,249	1.5	19,228	24
Muskegon-Musk. Hts.	1946	69,880	86,052	1.2	23,011	25
Lansing-E. Lansing	1946	95,003	167,873	1.8	42,098	25
Pontiac	1947	71,417	79,866	1.1	22,876	29
Grand Rapids	1947	173,088	333,421	1.9	83,263	25
Bay City	1948	52,909	112,357	2.1	30,272	27
Saginaw	1948	89,384	176,005	2.0	46,676	27
Total		607,448	1,036,823	1.7	267,424	26

1/ Population from Dwelling Unit Sample
2/ Central Business District

Five trip tables are presented in Appendix C as follows:

C-2 Trips by Passenger Cars
D-1 Trips by Trucks
S-1 Trips by All Vehicles
S-2 Trips by Trailer Combinations
S-3 Trips by All Vehicles for an Eight-Hour Period on Sunday

Table numbers C-2 and D-1 are the original numbers assigned to this type of table by the Bureau of Public Roads, Tables S-1, S-2, and S-3 are special tables that the Planning and Traffic Division has found very useful.

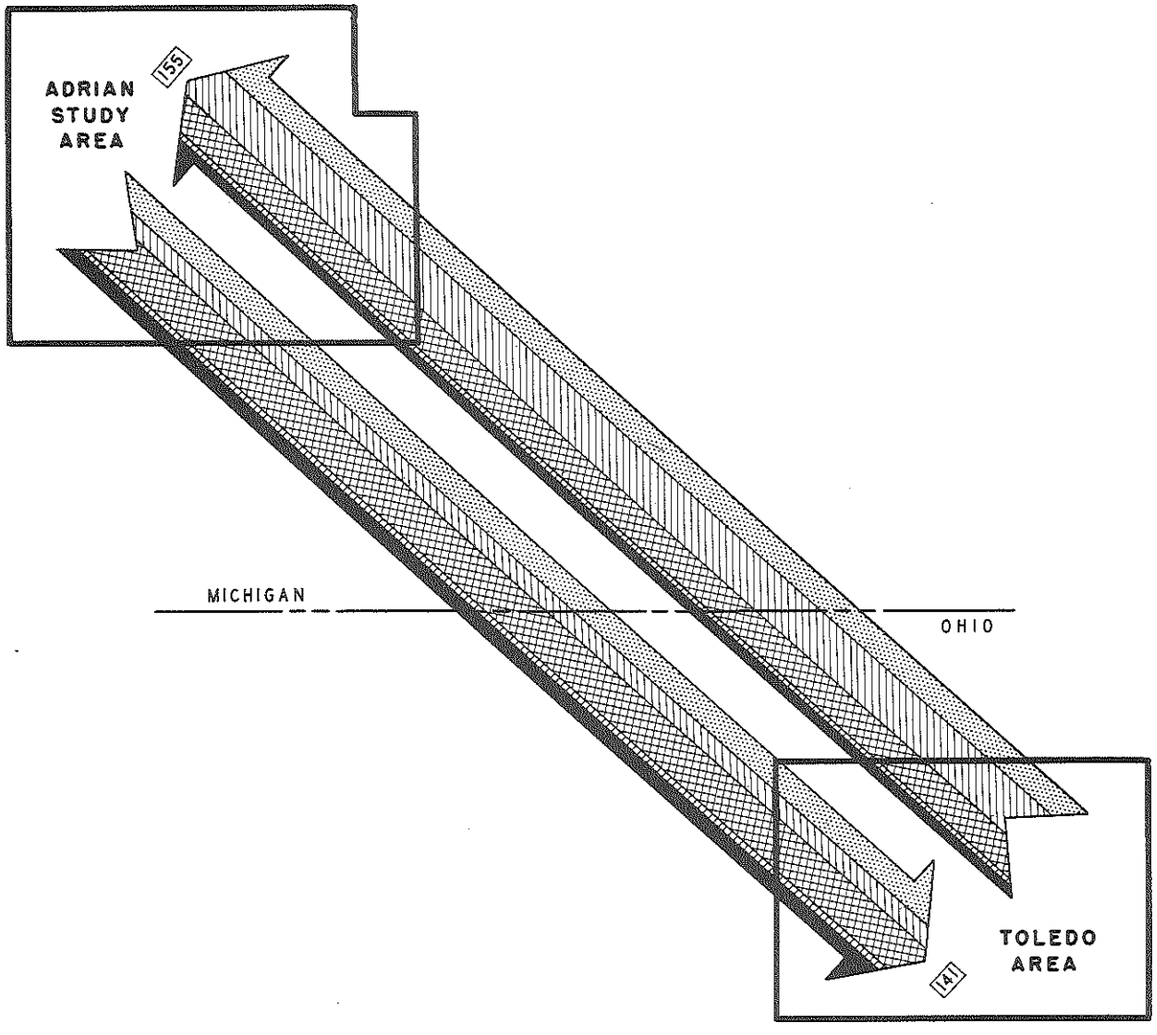
To facilitate the use of these tables each is made in three sections; the first section showing through trips with origin at external stations and destinations at external stations; the second section showing the inbound cordon trips with origins at external stations and destination in internal O-D zones; and the third section showing outbound cordon trips with origins in internal O-D zones and destination at external stations. The use of the three sections is identical in that to arrive at the number of trips between an origin and a destination the trips are the figure shown at the intersection of the origin line and the destination column for sections one and three, and at the intersection of the origin column and the destination line for sec-

tion two. This gives one way traffic only from the origin to the destination, and to arrive at the number of trips in the reverse direction between the origin and destination, it is necessary to reverse the origin and destination when referring to them on the tables. For example: to determine the number of through passenger car trips between Stations 2 and 5, consult sheet 1 of Table C-2. The trips with origin at Station 2 and destination at Station 5 are 452, and the trips with origins at Station 5 and destinations at Station 2 are 440, for a total of 892 trips between the two stations.

Separate tabulations of the data from the Sunday interviews and counts are made, some as comparisons with the weekday data and some for the Sunday survey alone. Where possible, in the following pages, the weekday data will be given first, followed by the Sunday data.

A special trip table designated as S-3, External Trips by Passenger Car, Truck and Taxi Drivers for a Sunday in June, 1949, from 2:00 p.m. to 10:00 p.m. for Stations 2 and 5, is shown in Appendix C. This trip table is for total external vehicle trips, broken down into the three parts; thru, inbound, and outbound, and should be used the same as the trip tables mentioned in the preceding paragraphs.

OBJECTIVE PASSENGER CAR TRIPS BETWEEN THE ADRIAN AND TOLEDO AREAS BY RESIDENTS OF THE TWO AREAS



L E G E N D

	ADRIAN RESIDENTS TO TOLEDO	TOLEDO RESIDENTS TO ADRIAN
WORK	35	34
BUSINESS	26	59
SOCIAL- REC.	55	42
SHOPPING	7	8
ALL OTHERS	18	12
TOTAL	141	155

PLATE XVII

PASSENGER CAR TRIPS BETWEEN ADRIAN AND TOLEDO, OHIO

Objective passenger car trips between the Adrian Study Area and the Toledo, Lucas County, Ohio area are shown as directional trips on Plate XVII. Being directional objective trips the return trips are not shown as they would be the same total volumes but in the opposite direction. The southeast bound band represents trips made for specific purposes by residents of the Adrian area to destinations in Lucas County, Ohio, and the northwest bound band represents the trips made for specific purposes by residents of Lucas County, Ohio, to destinations in the Adrian Study Area.

This chart should not be construed as showing total vehicular trips between these two areas because in addition to the objective trips shown, there are the returns from these trips, the through trips in both directions, trips to and from the Adrian Area and other states, and all of the commercial vehicle trips. The total volume in the general direction shown by the arrows is approximately 6,700 trips for the average weekday in June, 1949.

Although the volumes are nearly identical, it must be noted that in comparing these volumes with the population of the two areas, the trips from Adrian represent a ratio of 7.8 trips per thousand people and the trips from Lucas County represent a ratio of 0.4 trips per thousand people. The difference in these ratios means that Lucas County has about nineteen times the traffic attraction for Adrian people as Adrian has for persons in Lucas County. This attraction is in direct proportion to the population of the two areas as the population of the Adrian Study Area is about 18,000 and the population of Lucas County, Ohio, is about 350,000.

Passenger Car Occupancy by Purpose of Trip
For a Weekday in June, 1949
Vehicles Owned in the Area

Purpose of Trip (To or From)	Number Of Vehicles	Percent Of Vehicles	Total Passengers	Average Occupancy
Work	1105	25.2	1777	1.61
Business	1069	24.4	1858	1.74
Medical-Dental	74	1.7	144	1.95
School	22	.5	43	1.95
Social-Recreation	1896	43.3	5041	2.66
Change Mode of Travel	2	--	4	2.00
Eat Meal	18	.4	34	1.89
Shopping	133	3.0	267	2.01
Serve Passenger	67	1.5	172	2.57
All Purposes	4386	100.0	9340	2.13

Passenger Car Occupancy by Purpose of Trip
For a Weekday in June, 1949
Vehicles Owned Outside of the Area

Purpose of Trip (To or From)	Number Of Vehicles	Percent Of Vehicles	Total Passengers	Average Occupancy
Work	4213	43.3	6715	1.59
Business	1866	19.1	3346	1.79
Medical-Dental	334	3.4	818	2.45
School	166	1.7	373	2.25
Social-Recreation	1576	16.1	4023	2.55
Change Mode of Travel	10	.1	35	3.50
Eat Meal	72	.7	106	1.47
Shopping	1426	14.6	3329	2.33
Serve Passenger	99	1.0	224	2.26
All Purposes	9762	100.0	18969	1.94

PASSENGER CAR OCCUPANCY FOR A WEEKDAY IN JUNE, 1949

These two tabulations are made from the expanded cordon trips for (1) vehicles owned in the area going to and coming from destinations outside of the area, and (2) vehicles owned outside of the area going to and coming from destinations inside inside of the area. In all cases the return trips to home are recorded under the same purpose as the original trip purpose "To", and consequently do not show as "Home" trips in the tables. Both of the tables show the number of vehicles and number of passengers for each trip purpose as well as the percentage of vehicles and the average occupancy for each purpose. The driver of each vehicle is included in the count of the occupants.

In these tables it must be noted that the purpose of the trip is recorded for the vehicle and driver and not for the other passengers.

Passenger Car Occupancy by Purpose of Trip
Stations 2 and 5 from 2:00 P.M. to 10:00 P.M.
For a Sunday in June, 1949
Vehicles Owned in the Area

Purpose of Trip (To or From)	Number Of Vehicles	Percent Of Vehicles	Total Passengers	Average Occupancy
Work	29	3.8	57	1.97
Business	53	6.9	169	3.19
Medical-Dental	33	4.3	87	2.64
School	18	2.3	63	3.50
Social-Recreation	596	77.3	1932	3.24
Change Mode of Travel	--	--	--	--
Eat Meal	--	--	--	--
Shopping	18	2.3	43	2.39
Serve Passenger	24	3.1	73	3.04
All Purposes	771	100.0	2424	3.14

Passenger Car Occupancy by Purpose of Trip
Stations 2 and 5 from 2:00 P.M. to 10:00 P.M.
For a Sunday in June, 1949
Vehicles Owned Outside of the Area

Purpose of Trip (To or From)	Number Of Vehicles	Percent Of Vehicles	Total Passengers	Average Occupancy
Work	41	2.5	63	1.54
Business	47	2.8	125	2.64
Medical-Dental	7	0.4	9	1.50
School	4	0.2	15	3.75
Social-Recreation	1551	93.4	4949	3.19
Change Mode of Travel	--	--	--	--
Eat Meal	--	--	--	--
Shopping	4	0.2	9	2.25
Serve Passenger	8	0.5	31	3.88
All Purposes	1662	100.0	5201	3.13

PASSENGER CAR OCCUPANCY ON A SUNDAY IN JUNE, 1949

These two tabulations of the trips made for the eight-hour period from 2:00 p.m. to 10:00 p.m. for a Sunday in June, 1949 for Stations 2 and 5 show (1) the vehicles owned in the area going to and coming from destinations outside of the area, and (2) vehicles owned outside of the area going to and coming from destinations inside of the area. The return trips to home are recorded under the same purpose as the original trip purpose "To" and consequently do not show as "Home" trips in the tables. The driver of each vehicle is included in the count of the occupants.

In these tables it must be noted that the purpose of the trip is recorded for the vehicle and driver and not for the other passengers.

Passenger Car Occupancy by Purpose of Trip
Stations 2 and 5 from 2:00 P.M. to 10:00 P.M.
For a Weekday in June, 1949
Thru Trips

Purpose of Trip (To or From)	Number Of Vehicles	Percent Of Vehicles	Total Passengers	Average Occupancy
Work	142	19.5	240	1.69
Business	134	18.3	227	1.69
Medical-Dental	13	1.8	31	2.38
School	2	0.3	2	1.00
Social-Recreation	421	57.5	1150	2.73
Change Mode of Travel	--	--	--	--
Eat Meal	2	0.2	5	2.50
Shopping	3	0.3	7	2.33
Serve Passenger	15	2.1	38	2.53
All Purposes	732	100.0	1700	2.32

Passenger Car Occupancy by Purpose of Trip
Stations 2 and 5 from 2:00 P.M. to 10:00 P.M.
For a Sunday in June, 1949
Thru Trips

Purpose of Trip (To or From)	Number Of Vehicles	Percent Of Vehicles	Total Passengers	Average Occupancy
Work	46	1.3	95	2.07
Business	137	3.9	334	2.44
Medical-Dental	6	0.2	19	3.17
School	13	0.4	36	2.77
Social-Recreation	3284	93.6	11036	3.36
Change Mode of Travel	4	0.1	15	3.75
Eat Meal	--	--	--	--
Shopping	1	--	3	3.00
Serve Passenger	19	0.5	49	2.58
All Purposes	3510	100.0	11587	3.30

PASSENGER CAR OCCUPANCY FOR AN EIGHT-HOUR PERIOD ON SUNDAY COMPARED WITH THE SAME PERIOD ON A WEEKDAY

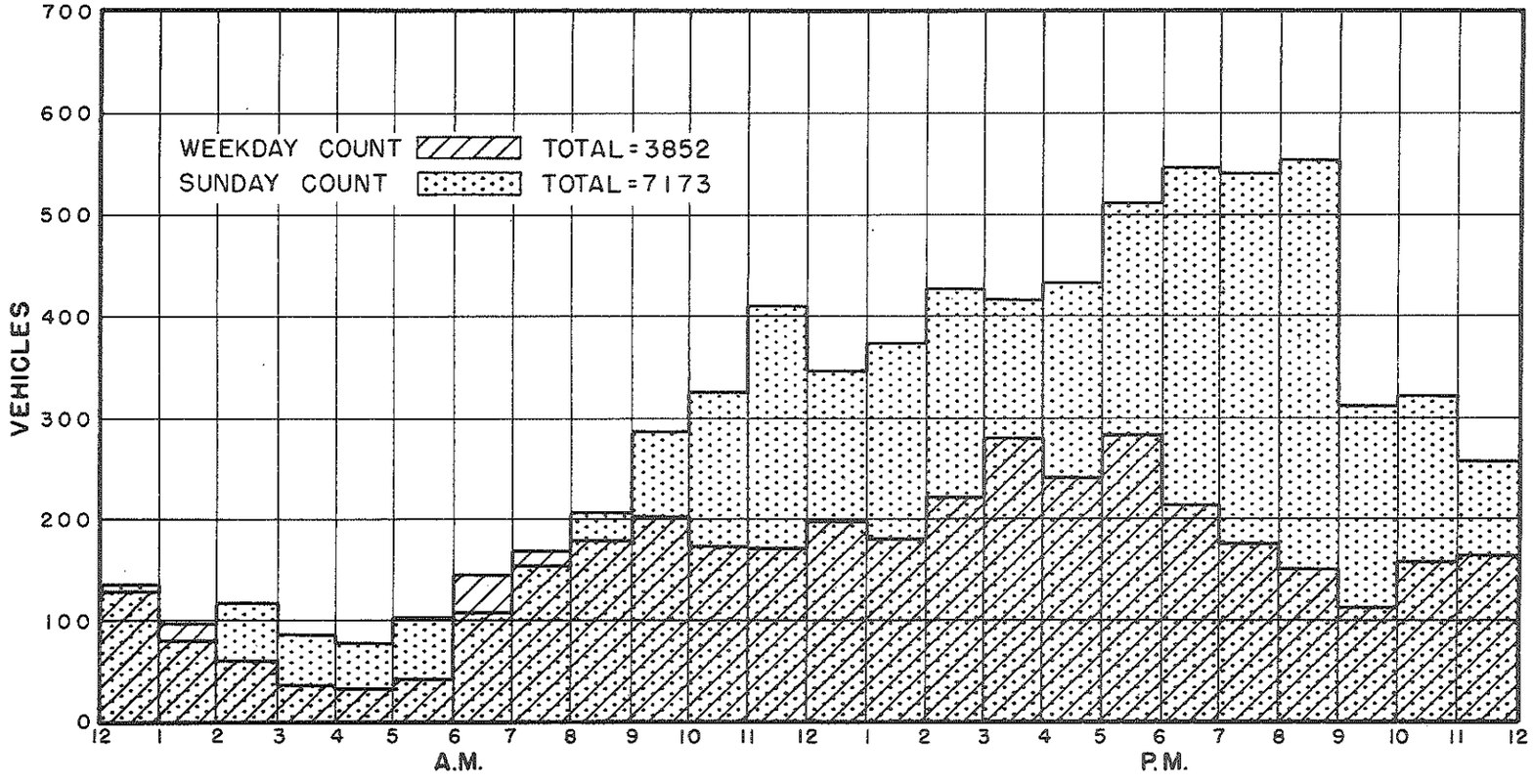
In the course of this survey, Stations 2 and 5 were operated for an eight-hour period from 2:00 p.m. to 10:00 p.m. on Sunday. Interviews were made and classification counts taken for this period the same as on the regular weekday schedule. This time period covers the peak travel for both days.

The two tables on the opposite page show the tabulation of the Sunday and weekday data for this eight-hour period for thru trips. A comparison of the two tables shows that the patterns for volumes by trip purpose and average occupancy by trip purpose are entirely different on the two days. It was not deemed feasible to expand the Sunday interviews to twenty-four hour representation as there was no classification count taken for the other sixteen hours.

HOURLY WEEKDAY AND SUNDAY TRAFFIC VOLUMES

IN JUNE 1949

STATION 2



STATION 5

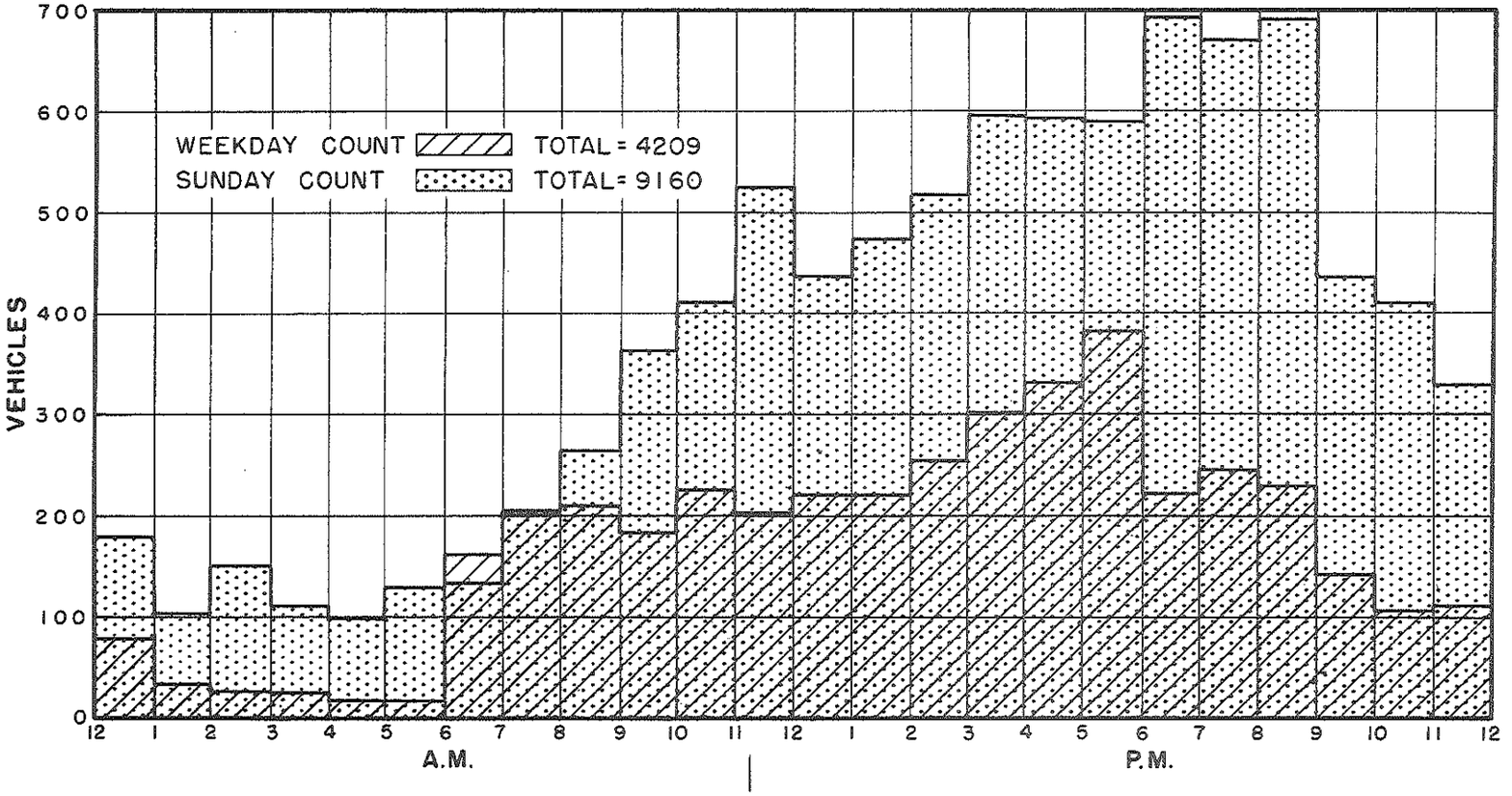


PLATE XVIII

COMPARISON OF HOURLY WEEKDAY AND SUNDAY TRAFFIC VOLUMES IN JUNE, 1949

The two graphs, for Station 2 and Station 5 in Plate XVIII show the comparison of the hourly traffic volumes as shown by machine counts taken at each station on a weekday and on Sunday. They show very clearly that the total volume of vehicles is larger on a Sunday and that the peak hours are later in the evening on Sunday than on a weekday.

Classified Twenty-Four Hour Traffic Volumes at External Stations For a Weekday in June, 1949

Station	PASSENGER CARS Volume	Per-cent	TRUCKS Volume	Per-cent	TRAILER COMB. Volume	Per-cent	BUSES Volume	Per-cent	All Vehicles
1	3,882	79.8	527	10.9	442	9.1	8	0.2	4,859
2	2,840	73.6	402	10.5	599	15.6	11	0.3	3,852
3	2,183	86.3	287	11.3	52	2.1	7	0.3	2,529
4	2,524	85.0	379	12.7	64	2.2	4	0.1	2,971
5	3,481	82.7	433	10.3	282	6.7	13	0.3	4,209
6	230	89.1	25	9.7	3	1.2	--		258
7	1,560	88.8	181	10.3	15	0.9	--		1,756
8	454	89.1	54	10.6	1	0.3	--		509
9	461	86.0	66	12.3	--		9	1.7	536
10	1,284	88.9	156	10.8	3	0.3	--		1,443
Totals	18,899	82.4	2,510	11.0	1,461	6.4	52	0.2	22,922

Traffic Volumes and Percentages of Twenty-Four Hour Traffic For High One-Hour, Two-Hour and Three-Hour Periods At External Stations For a Weekday in June, 1949

Station	HIGH ONE-HOUR Time	Volume	Per-cent	HIGH TWO-HOUR Time	Volume	Per-cent	HIGH THREE-HOUR Time	Volume	Per-cent
1	5-6 P	363	7.4	4-6 P	718	14.7	3-6 P	1,047	21.5
2	5-6 P	284	7.4	4-6 P	528	13.8	3-6 P	808	21.1
3	4-5 P	207	8.2	3-5 P	412	16.3	3-6 P	610	24.2
4	3-4 P	269	9.0	3-5 P	516	17.3	3-6 P	744	25.0
5	5-6 P	385	9.1	4-6 P	722	17.1	3-6 P	1,024	24.4
6	4-5 P	33	12.8	4-6 P	59	22.9	3-6 P	80	31.0
7	4-5 P	165	9.4	4-6 P	298	16.9	3-6 P	430	24.5
8	4-5 P	52	10.2	4-6 P	93	18.3	3-6 P	131	25.7
9	5-6 P	71	13.2	5-7 P	100	18.6	5-8 P	129	24.1
10	5-6 P	139	9.6	4-6 P	270	18.7	4-7 P	369	25.6

Note: (1) Stations 6, 7, 8, 9 and 10 are 16-hour stations with 8-hour count prorated by vehicle type to complete the 24-hour counts.

(2) Stations 1, 2, 3, 4, and 5 are Trunkline Stations and account for 80.4 percent of the cordon traffic.

TRAFFIC VOLUME SUMMARIES

Tables of hourly traffic volumes were compiled from the classification counts taken at the ten external stations. At station 1 to 5 inclusive the figures shown are actual counts for the twenty-four hours, Stations 6, 7, 8, 9 and 10 are composed of the sixteen hour classification count plus the eight hour machine count, with the vehicle type prorated over the eight hour period. A summary of these counts is shown on the opposite page but the individual tables are not reproduced in the report.

In addition to the twenty-four hour count a summary of the peak one-hour, peak two-hour and peak three-hour traffic volumes for each station is compiled to aid in the analysis of travel habits for this area.

Classified Eight-Hour (2:00 P.M. to 10:00 P.M.)
Traffic Volumes at Stations 2 and 5
For a Sunday in June, 1949

Station	PASSENGER CARS		TRUCKS		TRAILER COMB.		BUSES		All Vehicles
	Volume	Per-cent	Volume	Per-cent	Volume	Per-cent	Volume	Per-cent	
2	3651	97.1	69	1.9	34	0.9	5	0.1	3759
5	4697	97.9	83	1.7	16	0.3	3	0.1	4799

Traffic Volumes and Percentages of Twenty-Four Hour Traffic 1/
For High One-Hour, Two-Hour, and Three-Hour Periods
At Stations 2 and 5
For a Sunday in June, 1949

Station	HIGH ONE-HOUR			HIGH TWO-HOURS			HIGH THREE-HOURS		
	Time	Volume	Per-cent	Time	Volume	Per-cent	Time	Volume	Per-cent
2	8-9P	555	7.7	7-9P	1099	15.3	6-9P	1647	23.0
5	6-7P	693	7.6	6-8P	1365	14.9	6-9P	2056	22.4

Machine Count for 24 Hours:

Station 2 7173
Station 5 9160

1/ Percentage of Twenty-Four Hour Machine Count

TRAFFIC VOLUME SUMMARIES FOR A SUNDAY IN JUNE, 1949

Hourly traffic volumes were compiled from the classification counts taken for the eight-hour period on Sunday at Stations 2 and 5. In addition, machine counts were made for the sixteen hours from 10:00 p.m. until 2:00 p.m. to obtain the overall hourly and twenty-four hour record. Totals of the eight hour classification counts are shown in the table opposite. No attempt is made to expand this count to twenty-four hour representation in this table.

In addition to the eight-hour count, a summary of the peak one-hour, two-hour and three-hour traffic volumes for each station is presented for comparison with the weekday volumes shown on page 58.

APPENDIX A

STATISTICS OF OPERATION

For control of the survey operation and recording of data, the study area was subdivided into 386 blocks. For tabulation and analysis, the blocks were combined into 34 Origin-Destination Zones as shown on the zone map on page 8. The grouping of blocks into zones was made according to the predominant land use, as shown in the following tabulation:

O-D Zone Number	Type of Land Use	Number of Blocks	Area in Acres
21	Central Business District	12	59
22	Residential	21	88
23	Residential - Industrial	20	125
24	Residential - Industrial	10	79
25	Residential - Industrial	22	179
26	Residential	27	115
27	Residential	34	108
28	Residential - Recreational	19	128
29	Industrial	10	75
30	Industrial	24	107
31	Industrial	8	154
32	Industrial - Residential	14	114
33	Residential	9	69
34	Residential	20	99
35	Residential	10	212
36	Residential	3	50
37	Residential	13	294
38	Residential	16	483
39	Residential - Recreational	9	156
40	Residential	7	233
51	Suburban	5	296
52	Suburban	4	487
53	Residential - Industrial	18	122
54	Suburban	6	635
55	Suburban	3	387
56	Suburban - Commercial	2	255
57	Suburban - Residential	14	605
58	Suburban	5	440
59	Suburban	2	277
60	Suburban	6	496
61	Suburban	1	348
62	Suburban	5	632
63	Suburban	2	490
64	Suburban	5	496
	Total	386	8893

For the average weekday data, traffic was stopped and the drivers interviewed at the ten external stations on the cordon line surrounding the study area. The following table shows the number of interviews, number of vehicles passing through each station, and the percentage of the drivers interviewed:

External Station	Hours of Operation	Total Interviews	Total Count	Percent of Drivers Interviewed
1	24	2697	4859	55.5
2	24	2709	3852	70.3
3	24	1760	2529	69.6
4	24	2222	2971	74.8
5	24	2336	4209	55.5
24-Hour Station Subtotal		11724	18420	63.6
6	16	223	258	86.4
7	16	1270	1756	72.3
8	16	427	509	83.9
9	16	389	536	72.6
10	16	1196	1443	82.9
16-Hour Station Subtotal		3505	4502	77.9
Total All Stations		15229	22922	66.4

For the Sunday data, traffic was stopped and the drivers interviewed during the eight-hour period from 2:00 p.m. until 10:00 p.m. at Stations 2 and 5. Machine counts of total traffic were taken for the 24-hour Sunday period, as shown in the following table:

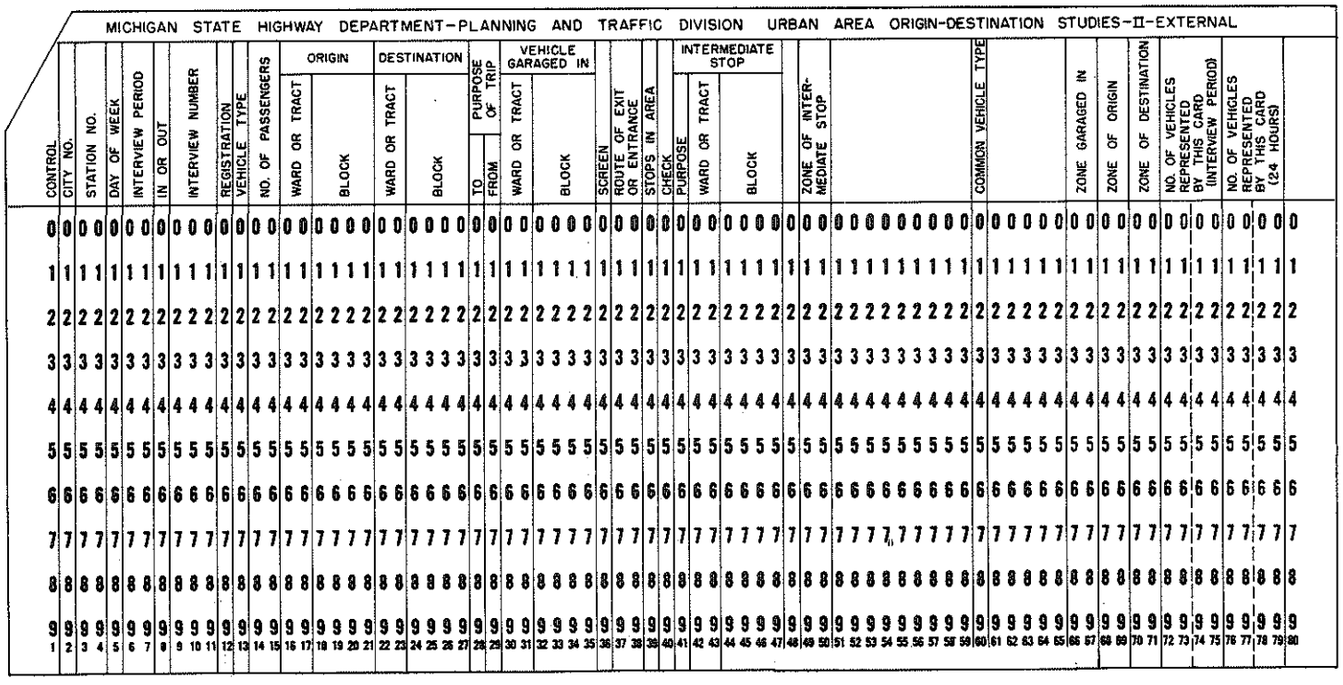
External Station	Hours of Operation	Total Interviews	Total Count	Percent of Drivers Interviewed
2	8	1243	7173	17.3
5	8	1739	9160	19.0
Sunday Subtotal		2982	16333	18.3

The ten external stations operated on weekdays on all of the main highways and important secondary roads accounted for ninety-five percent of all traffic entering and leaving the area.

APPENDIX B

TABULATING CARD INTERVIEW FORM

TABULATING CARD
EXTERNAL



Form OD 5

MICHIGAN STATE HIGHWAY DEPARTMENT
Charles M. Ziegler, State Highway Commissioner
Planning & Traffic Division

METROPOLITAN AREA TRAFFIC STUDY

EXTERNAL INTERVIEW

Date Hour Period ____ to ____ A.M. / P.M.	City (2)	Station (3 4)	Day of Travel (5)	Hour Period Ending (6 7)	Inbound 1 Outbound 2	Direction of Travel (8)

1 Interview Number	2 State of Registration	3 Vehicle Type	4 No. in Vehicle	5 Where did this trip begin? Origin	6 Where will this trip end? Destination	7 Trip Purpose	8 Where is this vehicle garaged?	9 Screen	10 Route of Exit or Ent.	11 Stops in area	Check	12 Intermediate Stop Purpose	13 Intermediate Stop Location
	1 Michigan 2 Other (write in)					X	5 Other 6			1 Yes 2 No X Not Stated	Y		
	1 Michigan 2 Other (write in)					X	5 Other 6			1 Yes 2 No X Not Stated	Y		
	1 Michigan 2 Other (write in)					X	5 Other 6			1 Yes 2 No X Not Stated	Y		
	1 Michigan 2 Other (write in)					X	5 Other 6			1 Yes 2 No X Not Stated	Y		
	1 Michigan 2 Other (write in)					X	5 Other 6			1 Yes 2 No X Not Stated	Y		
	1 Michigan 2 Other (write in)					X	5 Other 6			1 Yes 2 No X Not Stated	Y		
9 10 11	12	13	14 15	16 17 18 19 20 21	22 23 24 25 26 27	28 29	30 31 32 33 34 35	36	37 38	39	40	41	42 43 44 45 46 47

1. Passenger Car
2. Pick-up or Panel
3. Single Unit—Single Rear Tire
4. Single Unit—Dual Rear Tire
5. TT-ST Combination
6. TT-ST-TR or TK-TR
7. Bus Not C.C.
8. Taxi
9. Single Unit - 3 Axle

1. Work
2. Transact Business
3. Medical - Dental
4. School
5. Social, Recreation
6. Change Mode of Travel
7. Eat Meal
8. Shopping
9. Serve Passenger

1. Course of Work
2. Transact Business
3. Social - Recreation
4. Eating
5. Gas-Oil Service
6. Serve Passenger
7. Secure Lodging
8. Shopping

INTERVIEW FORM
OD 5

APPENDIX C

TRIP TABLES

ADRIAN AREA TRAFFIC STUDY

TABLE C-2

EXTERNAL TRIPS BY PASSENGER CAR DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

THRU TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
01		127	105	128	40	4	19	13	4	7	447	01
02	138		16	67	452	1	2	7	6	14	703	02
03	88	13		8	32	1	11			11	164	03
04	112	77	7		1	1	24	1	3	7	233	04
05	42	440	31	2			19	2	1	8	545	05
06	2	1	2	2							7	06
07	16	1	8	11	17			2		3	58	07
08	17	8		1	5		3			1	35	08
09	4	4	1	1	3	1		1		1	16	09
10	7	17	7	10	4	1	3	3	2		54	10
TOTAL	426	688	177	230	554	9	81	29	16	52	2262	

ADRIAN AREA TRAFFIC STUDY

TABLE C-2

EXTERNAL TRIPS BY PASSENGER CAR DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

INBOUND CORDON TRIPS

ORIGIN - (EXTERNAL STATIONS)

DEST.	01	02	03	04	05	06	07	08	09	10	TOTAL	DEST.
21	374	205	243	256	367	39	197	44	57	164	1946	21
22	127	58	41	48	63	9	48	21	12	20	447	22
23	81	25	41	51	54	6	22	5	6	22	313	23
24	15	4	6	9	7	1	9			7	58	24
25	67	44	40	48	85	3	19	4	10	21	341	25
26	148	22	50	35	64	8	48	4	13	47	439	26
27	65	19	8	9	22	1	22	4	2	11	163	27
28	37	11	55	26	35	1	32	10	1	13	221	28
29	29	19	34	14	35	3	21	3	11	20	189	29
30	138	76	156	212	131	10	88	22	18	63	914	30
31	29	38	30	63	40		17	35	10	25	287	31
32	54	31	22	18	16	1	14	5	22	16	199	32
33	29	14	17	11	12	2	12	1	1	4	103	33
34	42	22	16	20	28	2	10	3	21	28	192	34
35	32	13	13	16	20		4		2	6	106	35
36	9	14	4	9	9		9	2		8	64	36
37	71	38	17	18	64	5	15	1		9	238	37
38	37	17	13	8	20		8		1	16	120	38
39	42	16	7	27	19	1	17	3	1	7	140	39
40	4	1	1	2	2	1	1			5	17	40
51	13	8	2	11	11	4	18	1		7	75	51
52						1					1	52
53	47	21	18	33	23	2	44	3	10	17	218	53
54	2	10	3	1			3	6		1	26	54
55	2	10	1		3		1	20	4		41	55
56		1	1	2	1		1	1	1		8	56
57	5	5	9	9	1	1	6		4	2	42	57
58	9	9	8	2	5		1		2	1	37	58
59		2	4	1						2	9	59
60	16	16	15	9	5	1	2			12	76	60
61	7	5	1		1		2			2	18	61
62				1	1						2	62
63	6	2	4		10				1		23	63
64	1	2	1	2			4	1		6	17	64
TOTAL	1538	778	881	971	1154	102	695	199	210	562	7090	

ADRIAN AREA TRAFFIC STUDY

TABLE C-2

EXTERNAL TRIPS BY PASSENGER CAR DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

OUTBOUND CORDON TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
21	359	203	276	346	353	25	138	30	51	134	1915	21
22	109	61	45	42	73		56	10	15	44	455	22
23	80	43	41	46	50	9	30	7	5	32	343	23
24	19	9	4	4	7		15			1	59	24
25	70	28	40	29	94	4	21	6	4	27	323	25
26	131	37	34	62	75	11	44	7	7	53	461	26
27	63	17	18	11	39	1	18	2	4	22	195	27
28	38	63	12	11	31	3	17	5	4	14	198	28
29	55	9	39	15	38	2	23	3	5	20	209	29
30	126	95	162	202	127	9	90	21	23	60	915	30
31	18	31	42	77	45	3	13	23	16	31	299	31
32	38	27	33	19	25	2	22	12	11	15	204	32
33	49	14	11	10	14	3	14	5	5	8	133	33
34	42	18	24	23	31	2	22	3	7	23	195	34
35	41	9	13	15	17		3	2		8	108	35
36	5	8	8	5	21	2	4			8	61	36
37	62	34	21	17	66	5	16	1		5	227	37
38	37	10	9	7	23	2	3		3	21	115	38
39	42	15	14	21	9		4	1	4	5	115	39
40	3	1	2	1	5	6	3			3	24	40
51	9	4	4	12	14	3	17			2	65	51
52	2					1	2	2		1	8	52
53	63	15	25	40	31	4	47	6	7	12	250	53
54	12	4	5		3		1	5	2	2	34	54
55	1	12			2			9	6		30	55
56		1	1				1	1	1		5	56
57	16	9	12	8	6	1	4		9	6	71	57
58	8	2	8	5	8	1	2		7	5	46	58
59		1	3							3	7	59
60	13	8	20	8	10	1	9		3	8	80	60
61	13	8	1		2		1				25	61
62	1		2	4	2						9	62
63	5	1	1		7		1		1	1	17	63
64	1				10		1			2	14	64
TOTAL	1531	797	930	1040	1238	100	642	161	200	576	7215	

ADRIAN AREA TRAFFIC STUDY

TABLE D-1

EXTERNAL TRIPS BY ALL TRUCK DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

THRU TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
01		109	35	29	5		1	1	1		181	01
02	143		12	23	204		1	1	1	3	388	02
03	28	5		6	9		4			2	54	03
04	29	27	5		1		3			1	66	04
05	14	193	4	1			2	1		2	217	05
06				1							1	06
07	1	1	5	6	7						20	07
08	3						1			1	5	08
09	1	1									2	09
10	1	3	3	2	1						10	10
TOTAL	220	339	64	68	227		12	3	2	9	944	

ADRIAN AREA TRAFFIC STUDY

TABLE D-1

EXTERNAL TRIPS BY ALL TRUCK DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

INBOUND CORDON TRIPS

ORIGIN - (EXTERNAL STATIONS)

DEST.	01	02	03	04	05	06	07	08	09	10	TOTAL	DEST.
21	65	32	23	44	28	2	22	6	3	11	236	21
22	5	10	3	2	8	1	4		1	3	37	22
23	7	1	10	2	5		1			4	30	23
24	5	3	1	7	12	1	1		1	4	35	24
25	29	9	7	9	22	1	6	1	3	9	96	25
26	8	1	1	6	10		2	2		7	37	26
27	4	12	1	4	4		2				27	27
28			1	1	4	1	3		2		12	28
29	33	12	3	22	8		20	4	2	5	109	29
30	31	14	11	10	15	1	6	1	8	5	102	30
31	22	13	8	21	15		9	7		4	99	31
32	5	15	2	2	4		1		2	2	33	32
33	5	1	5					2			13	33
34	4	6	1	1	3	1	1	2		1	20	34
35			1		1	1	2	1			6	35
36	3		1	1							5	36
37	3	12	3		3					2	23	37
38	5	1		1	1	1				4	13	38
39	4		1	9	5	9		1		2	31	39
40												40
51	2				3						5	51
52							2	1			3	52
53	6	1		2			5			1	15	53
54		5	3								8	54
55		1			1			2			4	55
56										2	2	56
57	18	1		2							21	57
58	3	2		1					3		9	58
59												59
60	10	4	1		4					1	20	60
61	1										1	61
62				2			2				4	62
63		2									2	63
64			1							1	2	64
TOTAL	278	158	88	149	156	19	89	30	25	68	1060	

ADRIAN AREA TRAFFIC STUDY

TABLE D-1

EXTERNAL TRIPS BY ALL TRUCK DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

OUTBOUND CORDON TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
21	58	39	40	24	22	3	17	4	4	14	225	21
22	4	8	2	5	5		2		3	3	32	22
23	12	1	6	3	14		2		1	4	43	23
24	4	4	3	9	2		1			2	25	24
25	22	4	7	6	11	2	1	1	4	8	66	25
26	14	4	1	1	12	1	5	2		8	48	26
27	9	10		1	14		1		1	2	38	27
28	3	2		2	2		3	1		1	14	28
29	22	8	4	11	13		20	2	1	4	85	29
30	36	9	10	19	19	2	10	3	4		112	30
31	21	23	2	28	17		1	2	2	6	102	31
32	8	14	6	2	12		6		1	1	50	32
33	1	2	2	1				1	1	2	10	33
34	6	3	8	3	4	1					25	34
35	2	2									4	35
36	3			1							4	36
37		8	7	3	1		4				23	37
38	7			3	6					6	22	38
39	5	5	1	4	1			1		3	20	39
40												40
51	1										1	51
52												52
53	4	1	2	3	6		1			1	18	53
54												54
55		4			3				2		9	55
56												56
57	7	7	1	3						2	20	57
58	3	1	1	2	1				4		12	58
59												59
60	6	5	2	1			1			1	16	60
61	3										3	61
62		1									1	62
63	2				1						3	63
64					3				1		4	64
TOTAL	263	165	105	135	169	9	75	17	29	68	1035	

ADRIAN AREA TRAFFIC STUDY

TABLE S-1

EXTERNAL TRIPS BY PASSENGER CAR, TRUCK AND TAXI DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

THRU TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
01		237	140	157	45	4	20	14	5	7	629	01
02	281		28	90	656	1	3	8	7	17	1091	02
03	116	18		14	41	1	15			13	218	03
04	141	104	12		2	1	27	1	3	8	299	04
05	56	639	35	3			21	3	1	10	768	05
06	2	1	2	3							8	06
07	17	2	13	17	24			2		3	78	07
08	20	8		1	5		4			2	40	08
09	5	5	1	1	3	1		1		1	18	09
10	8	20	10	12	5	1	3	3	2		64	10
TOTAL	646	1034	241	298	781	9	93	32	18	61	3213	

ADRIAN AREA TRAFFIC STUDY

TABLE S-1

EXTERNAL TRIPS BY PASSENGER CAR, TRUCK AND TAXI DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

INBOUND CORDON TRIPS

ORIGIN - (EXTERNAL STATIONS)

DEST.	01	02	03	04	05	06	07	08	09	10	TOTAL	DEST.
21	439	237	266	300	395	41	219	50	61	180	2188	21
22	132	68	44	50	71	10	52	21	13	23	484	22
23	88	26	51	53	59	6	23	5	6	26	343	23
24	20	7	7	16	19	2	10		1	11	93	24
25	96	53	47	57	107	4	25	5	13	30	437	25
26	156	23	51	41	74	8	50	6	13	57	479	26
27	69	31	9	13	26	1	24	4	2	11	190	27
28	37	11	56	27	39	2	35	10	3	13	233	28
29	62	31	37	36	43	3	41	7	13	25	298	29
30	169	90	167	222	146	11	94	23	26	68	1016	30
31	51	51	38	84	55		26	42	10	29	386	31
32	59	46	24	20	20	1	15	5	24	18	232	32
33	34	15	22	11	12	2	12	3	1	4	116	33
34	46	28	17	21	31	3	11	5	21	29	212	34
35	32	13	14	16	21	1	6	1	2	6	112	35
36	12	14	5	10	9		9	2		8	69	36
37	74	50	20	18	67	5	15	1		11	261	37
38	42	18	13	9	21	1	8		1	20	133	38
39	46	16	8	36	24	10	17	4	1	9	171	39
40	4	1	1	2	2	1	1			5	17	40
51	15	8	2	11	14	4	18	1		7	80	51
52						1	2	1			4	52
53	53	22	18	35	23	2	49	3	10	18	233	53
54	2	15	6	1			3	6		1	34	54
55	2	11	1		4		1	22	4		45	55
56		1	1	2	1		1	1	1	2	10	56
57	23	6	9	11	1	1	6		4	2	63	57
58	12	11	8	3	5		1		5	1	46	58
59		2	4	1						2	9	59
60	26	20	16	9	9	1	2			13	96	60
61	8	5	1		1		2			2	19	61
62				3	1		2				6	62
63	6	4	4		10				1		25	63
64	1	2	2	2			4	1		7	19	64
TOTAL	1816	936	969	1120	1310	121	784	229	236	638	8159	

ADRIAN AREA TRAFFIC STUDY

TABLE S-1

EXTERNAL TRIPS BY PASSENGER CAR, TRUCK AND TAXI DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

OUTBOUND CORDON TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
21	417	242	316	370	375	28	155	34	56	151	2144	21
22	113	69	47	47	78		58	10	18	47	487	22
23	92	44	47	49	64	9	32	7	6	36	386	23
24	23	13	7	13	9		16			3	84	24
25	92	32	47	35	105	6	22	7	8	35	389	25
26	145	41	35	63	87	12	49	9	7	64	512	26
27	72	27	18	12	53	1	19	2	5	24	233	27
28	41	65	12	13	33	3	20	6	4	15	212	28
29	77	17	43	26	51	2	43	5	6	24	294	29
30	162	104	172	221	146	11	100	24	27	60	1027	30
31	39	55	44	105	62	3	14	25	18	37	402	31
32	46	41	39	21	37	2	28	12	12	16	254	32
33	50	16	13	11	14	3	14	6	6	10	143	33
34	48	21	32	26	35	3	22	3	7	23	220	34
35	43	11	13	15	17		3	2		8	112	35
36	8	8	8	6	21	2	4			8	65	36
37	62	42	28	20	67	5	20	1		5	250	37
38	44	10	9	10	29	2	3		3	27	137	38
39	47	20	15	25	10		4	2	4	8	135	39
40	3	1	2	1	5	6	3			3	24	40
51	10	4	4	12	14	3	17			2	66	51
52	2					1	2	2		1	8	52
53	67	16	27	43	37	4	48	6	7	13	268	53
54	12	4	5		3		1	5	2	2	34	54
55	1	16			5			9	8		39	55
56		1	1				1	1	1		5	56
57	23	16	13	11	6	1	4		9	8	91	57
58	11	3	9	7	9	1	2		11	5	58	58
59		1	3							3	7	59
60	19	13	22	9	10	1	10		3	9	96	60
61	16	8	1		2		1				28	61
62	1	1	2	4	2						10	62
63	7	1	1		8		1		1	1	20	63
64	1				13		1		1	2	18	64
TOTAL	1794	963	1035	1175	1407	109	717	178	230	650	8258	

AURIAN AREA TRAFFIC STUDY

TABLE S-2

EXTERNAL TRIPS BY TRAILER COMBINATION DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

THRU TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
01		93	7	8	1						109	01
02	115		2	9	145						271	02
03	11			1	1						13	03
04	5	14	3				1				23	04
05	2	128	1								131	05
06												06
07	1		1	1							3	07
08												08
09												09
10					1						1	10
TOTAL	134	235	14	19	148		1				551	

ADRIAN AREA TRAFFIC STUDY

TABLE S-2

EXTERNAL TRIPS BY TRAILER COMBINATION DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

INBOUND CORDON TRIPS

ORIGIN - (EXTERNAL STATIONS)

DEST.	01	02	03	04	05	06	07	08	09	10	TOTAL	DEST.
21	7	4	3	4	4						22	21
22		1	1								2	22
23												23
24	2		1								3	24
25	10	4			1		1				16	25
26	3										3	26
27	1	9	1	1			2				14	27
28												28
29	6	5			1						12	29
30	10	6									16	30
31	12	10	1	1	3		1			1	29	31
32	2	6		1	1						10	32
33												33
34	1				1						2	34
35												35
36												36
37		2									2	37
38												38
39				2	4						6	39
40												40
51					3						3	51
52												52
53	2										2	53
54			3								3	54
55												55
56												56
57	14	1									15	57
58												58
59												59
60	3	4									7	60
61	1										1	61
62												62
63												63
64												64
TOTAL	74	52	10	9	18		4			1	168	

ADRIAN AREA TRAFFIC STUDY

TABLE S-2

EXTERNAL TRIPS BY TRAILER COMBINATION DRIVERS FOR A 24 HOUR WEEKDAY IN JUNE 1949

OUTBOUND CORDON TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL	ORIGIN
21	7	7	3	1	2			1			21	21
22		1			1						2	22
23	2										2	23
24	1										1	24
25	6	2	2								10	25
26	2										2	26
27	1	9		1	2						13	27
28		1			1						2	28
29	8	5									13	29
30	14	4			1		1				20	30
31	18	13			7					1	39	31
32	1	8									9	32
33												33
34												34
35												35
36												36
37					1						1	37
38												38
39				1							1	39
40												40
51												51
52												52
53			2								2	53
54												54
55												55
56												56
57	6	1		1							8	57
58												58
59												59
60		4		1							5	60
61												61
62												62
63												63
64												64
TOTAL	66	55	7	5	15		1	1		1	151	

ADRIAN AREA TRAFFIC STUDY

TABLE S-3

EXTERNAL TRIPS BY PASSENGER CAR, TRUCK, AND TAXI DRIVERS
FOR A SUNDAY IN JUNE, 1949, FROM 2:00 P.M. TO 10:00 P.M. FOR STATIONS 2 AND 5

THRU TRIPS

DESTINATION - (EXTERNAL STATIONS)

ORIGIN	01	02	03	04	05	06	07	08	09	10	TOTAL
01		260			52						312
02	292		6	54	841					6	1199
03		14			62						76
04		118			8						126
05	94	1611	84	2		2	20	8	2	8	1831
06					4						4
07		2			8						10
08											
09					2						2
10		10			8						18
TOTAL	386	2015	90	56	985	2	20	8	2	14	3578

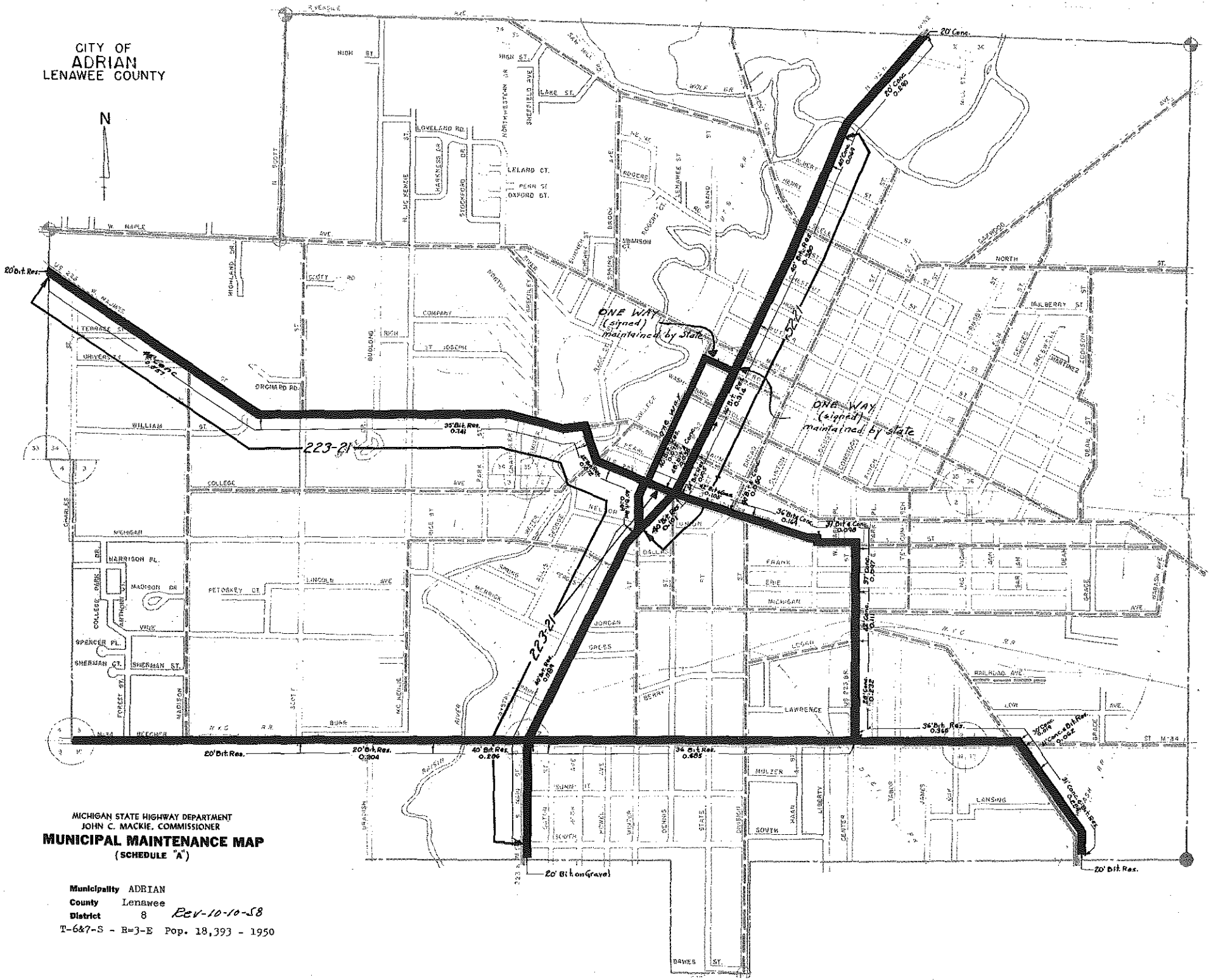
ADRIAN AREA TRAFFIC STUDY

TABLE S-3

EXTERNAL TRIPS BY PASSENGER CAR, TRUCK, AND TAXI DRIVERS
FOR A SUNDAY IN JUNE, 1949, FROM 2:00 P.M. TO 10:00 P.M., FOR STATIONS 2 AND 5

	INBOUND CORDON TRIPS Origin - (Ext. Station)				OUTBOUND CORDON TRIPS Destination - (Ext. Station)			
Destination	2	5	Total		Origin	2	5	Total
21	39	96	135		21	41	63	104
22	28	125	153		22	10	73	83
23	28	102	130		23	20	74	94
24		4	4		24		14	14
25	19	84	103		25	15	72	87
26	18	35	53		26	16	67	83
27	15	75	90		27	9	39	48
28	14	47	61		28	9	49	58
29	4	5	9		29	4	9	13
30	7	53	60		30	5	52	57
31	3	20	23		31	2	8	10
32	18	35	53		32	3	34	37
33	8	14	22		33	9	21	30
34	25	59	84		34	10	33	43
35	9	45	54		35	12	38	50
36	6	19	25		36	11	33	44
37	8	110	118		37	14	77	91
38	8	23	31		38	13	22	35
39	4		4		39	17	16	33
40					40			
51	4	7	11		51	2	8	10
52	2		2		52			
53	2	15	17		53	10	6	16
54	8		8		54	5		5
55	7		7		55	5		5
56					56	14		14
57	3	13	16		57	14	14	28
58	4	4	8		58	2	2	4
59					59		2	2
60	4	12	16		60	20	46	66
61	2		2		61		2	2
62					62			
63		2	2		63		6	6
64					64	4	3	7
Total	297	1004	1301		Total	296	883	1179

CITY OF
ADRIAN
LENAWEE COUNTY



MICHIGAN STATE HIGHWAY DEPARTMENT
JOHN C. MACKIE, COMMISSIONER

MUNICIPAL MAINTENANCE MAP

(SCHEDULE "A")

Municipality ADRIAN
County Lenawee
District 8 Rev-10-10-58
T-6&7-S - R-3-E Pop. 18,393 - 1950

Letter from Comm
5/29/58
to Finley