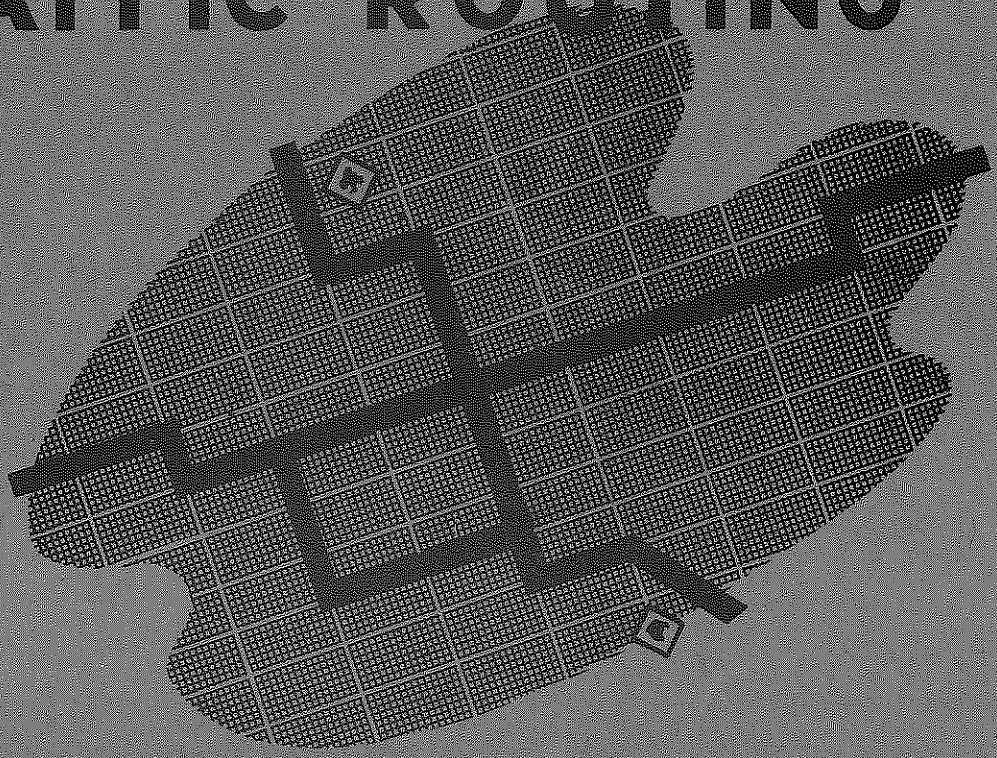
A PLAN TO IMPROVE TRAFFIC ROUTING



IN BAY CITY MICHIGAN

MICHIGAN STATE HIGHWAY DEPARTMENT
Charles M. Ziegler - State Highway Commissioner

CHARLES M. ZIEGLER
STATE HIGHWAY COMMISSIONER
LANSING, MICHIGAN

April 22, 1946

The Honorable Mayor and City Commission
City of Bay City
Bay City, Michigan

Gentlemen:

At the request of the City of Bay City, the Michigan State Highway Department has studied traffic routings on State trunklines and connecting streets in the downtown area of Bay City.

I am transmitting herewith for your consideration the report of this study with recommendations.

Very truly yours,

Charles M. Ziegler

STATE HIGHWAY COMMISSIONER

CMZ:vml

MICHIGAN
STATE HIGHWAY DEPARTMENT
Charles M. Ziegler
State Highway Commissioner

A PLAN TO IMPROVE TRAFFIC ROUTING IN BAY CITY

Prepared By Planning & Traffic Division

April 1946

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A PLAN TO IMPROVE TRAFFIC ROUTING IN BAY CITY

INTRODUCTION

The City of Bay City is faced with a traffic problem in its downtown area. The problem involves the movement of trunkline traffic through this area and the City has asked the assistance of the State Highway Department in finding a solution.

The Department has conducted a survey of traffic and street facilities in the affected district. On the basis of the information obtained by this survey a plan for improving the traffic movement has been developed.

This report presents the results of the Department's study of conditions and its recommendations for remedying them.

THE TRAFFIC PROBLEM IN BAY CITY

Traffic congestion in downtown Bay City is due to the concentration in that area of high volumes of traffic, widely divergent types of traffic, limited choice of streets, and other factors. These long existing conditions are now being aggravated by the rising volume of travel since the removal of wartime restrictions. A prompt solution is necessary.

The location of Bay City in relation to the Saginaw River is the primary cause of its traffic problem. The broad stream flows north through the western half of the City, but before reaching the northern limits it turns and flows east

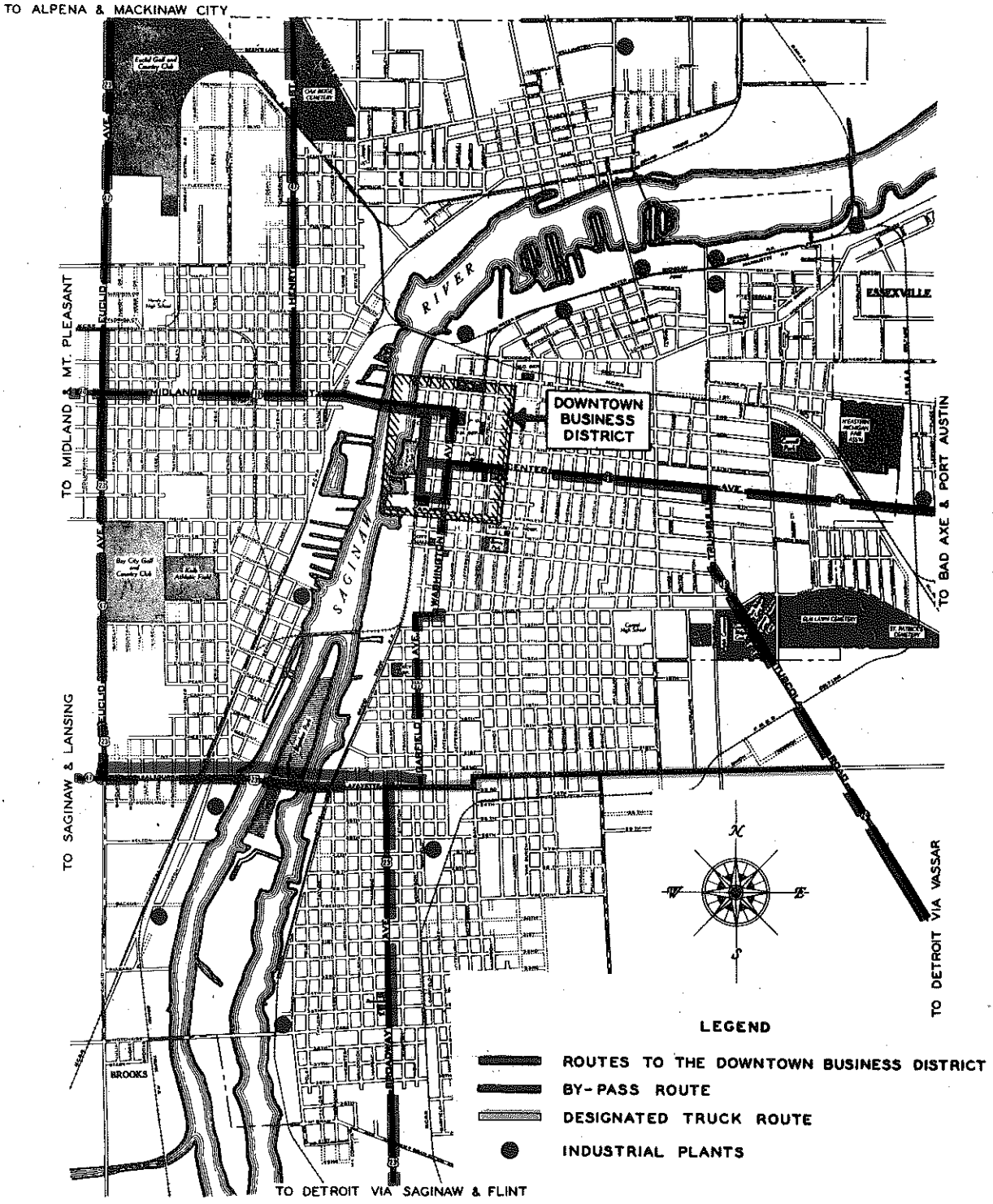
across the northeastern section. The major part of the City is east and south of the river. This includes the business district which is located just south of the river bend, and the principal industrial section which is just northeast of the business district. (Figure 1)

Four highway bridges span the Saginaw River within the municipal area. The Third Street Bridge gives direct access to the business district from westerly and northwesterly sections of the City. It carries a considerable share of the heavy truck and worker traffic to and from the principal industrial section which must traverse the business district to reach its destinations.

Added to this local shopping and industrial traffic in the downtown area is the movement to and through the area of trunkline traffic which is heavy at some seasons of the year. Bay City serves as a trading center for large areas to the east and north, and this creates a large volume of travel having its origins, or destinations in the business district. Bay City is also an important point on the principal routes leading from Detroit and southeastern Michigan to the vast northern recreational areas and much of the tourist traffic passes through the central part of the City.

Five state trunklines serve Bay City, two of which are directly involved in the downtown traffic problem. US-23 is the City's connection with Saginaw and Detroit and with most of its northern trading area; it is a heavily traveled tourist

STATE TRUNKLINE ROUTES IN THE BAY CITY AREA



APRIL 1946

FIGURE 1

route. M-25 gives access to Bay City from its trade territory in the thumb area and, through its connection with M-15, brings in much traffic from Detroit and the south.

US-23 enters Bay City from the south, crosses the Saginaw River on the Salzburg Avenue Bridge before reaching the business district, and continues north along the western edge of the City. However, a large portion of US-23 traffic uses the business route of this trunkline, which traverses the business district on Washington Avenue and Water Street and crosses the river on the Third Street Bridge.

M-25 enters the City from the east, picks up M-15 traffic at Trumble Street, and crosses the City and business district on Center Avenue and Water Street to its terminal at the east end of the Third Street Bridge. Through east-west traffic on this route follows US-23 BR across this bridge to its junction with westbound M-20.

It will be seen that the river barrier funnels much local and trunkline traffic through the business section to the Third Street Bridge which is the most convenient crossing for these movements. This traffic is superimposed on the normal concentration of shopping and business traffic in the area.

Thus the streets of downtown Bay City must carry large volumes of traffic which includes a considerable proportion of heavy commercial vehicles. The focal point of the congestion which results from this situation, is the Third Street Bridge. Congestion is particularly aggravated at the east end

of the structure where eastbound traffic is frequently blocked by the turning movement off of Water Street. Evidence of the seriousness of this condition is found in the abnormally high occurrence of rear-end accidents on the eastbound lane of the bridge.

A secondary focus of congestion is the intersection of Washington Avenue (US-23 BR) and Center Avenue (M-25). At this point the movement of vehicles and pedestrians is so heavy at peak hours that it has been found necessary to prohibit all vehicular turning movements.

TRAFFIC SURVEY

The need for remedial action in relation to traffic conditions in Bay City was clearly evident, but factual information was required before traffic engineers could formulate proposals for relief. In order to obtain this information a traffic survey was made in June 1945, by the Michigan State Highway Department in cooperation with officials of Bay City.

The data collected in this survey are presented here in the form of traffic flow maps. The volumes carried by all the major streets in the business district during 24-hours of an average day (Tuesday, Wednesday, or Thursday) are shown in Figure 2. The volumes in the morning and the afternoon peak traffic hours on these streets are shown in Figures 3 and 4, respectively.

These volume studies establish the magnitude and distribution of the total traffic movement in the area and the

AVERAGE WEEKDAY

24 HOUR TRAFFIC VOLUMES

BAY CITY

JUNE 1945

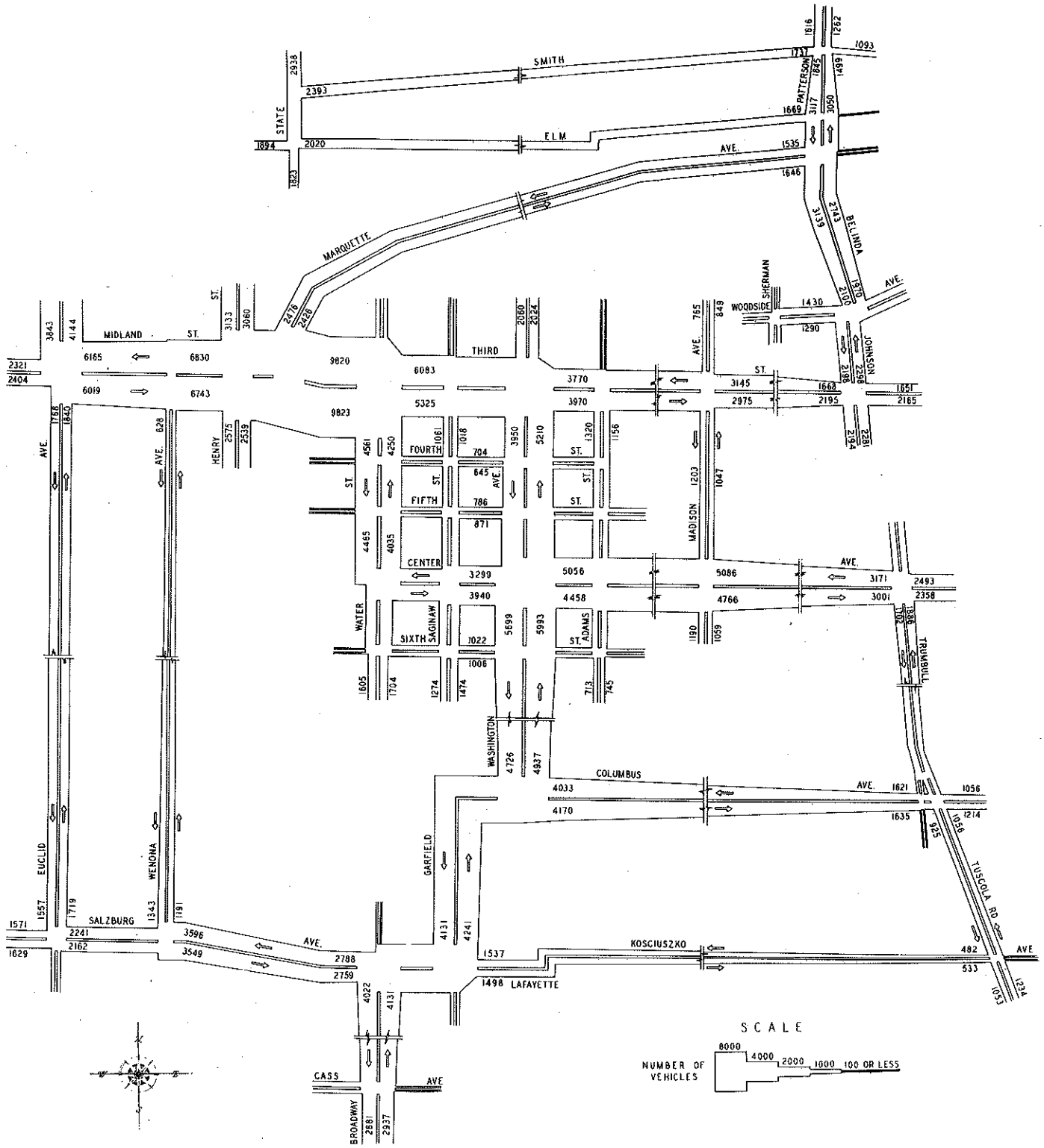
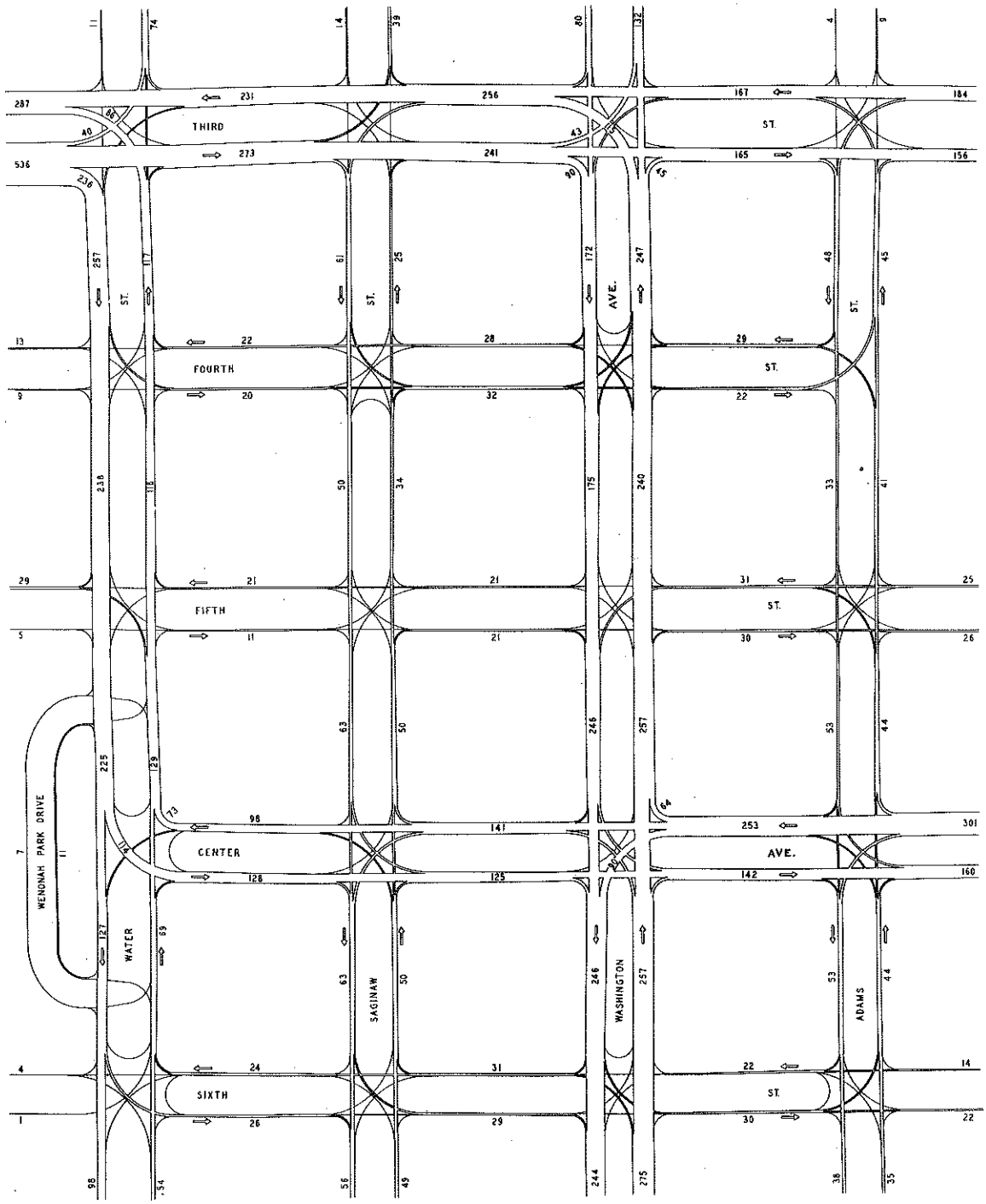


FIGURE 2

MAXIMUM HOURLY TRAFFIC VOLUMES (A.M.)

BAY CITY

JUNE 1945



SCALE

500 300 100 40 8 OR LESS

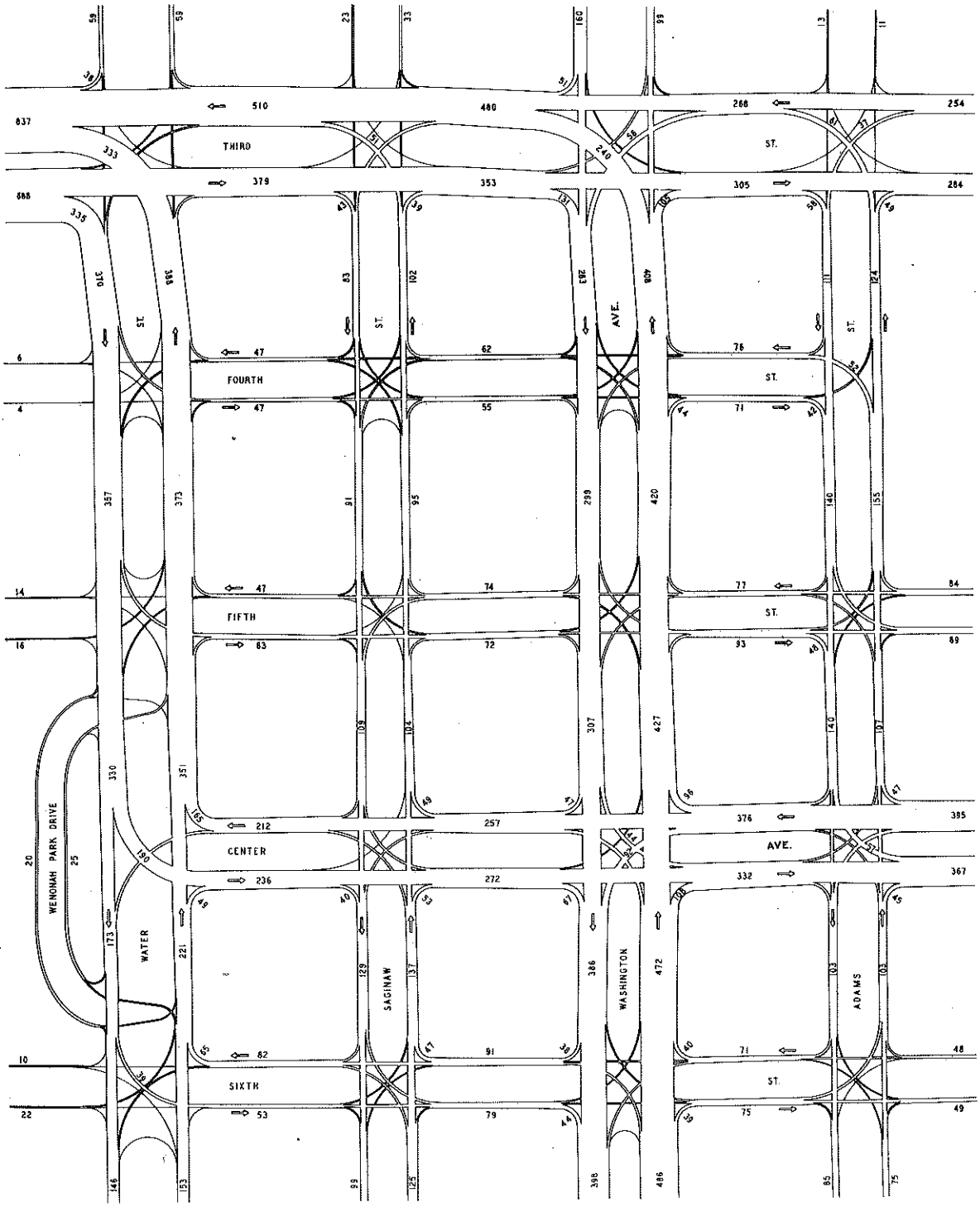
NUMBER OF VEHICLES

FIGURE 3

MAXIMUM HOURLY TRAFFIC VOLUMES (P.M.)

BAY CITY

JUNE 1945



SCALE

500 300 100 40 & OR LESS

NUMBER OF VEHICLES

FIGURE 4

volume and direction of movement in the hours of greatest congestion.

RECOMMENDATIONS FOR TRAFFIC IMPROVEMENT

The traffic information shown on the three maps -- Figures 2, 3 and 4 -- and other data collected during the field investigations in Bay City form the basis for the solution proposed in the following recommendations:

REROUTE TRUNKLINE M-25

Route westbound M-25 traffic north on Madison Avenue from Center Avenue to Third Street, thence west on Third Street. Eastbound traffic on this trunkline to continue as at present, i.e., south on Water Street from Third Street to Center Avenue, thence east on Center Avenue.

ONE-WAY STREET OPERATION

Establish Water Street from Third Street to Center Avenue as a one-way street for southbound traffic.

Establish Saginaw Street from Center Avenue to Third Street as a one-way street for northbound traffic.

PARKING RESTRICTIONS

Prohibit parking on east side of Madison Avenue from Center Avenue to Third Street.

Prohibit parking on south side of Third Street from Third Street Bridge to Madison Avenue.

Explanation of Recommendations

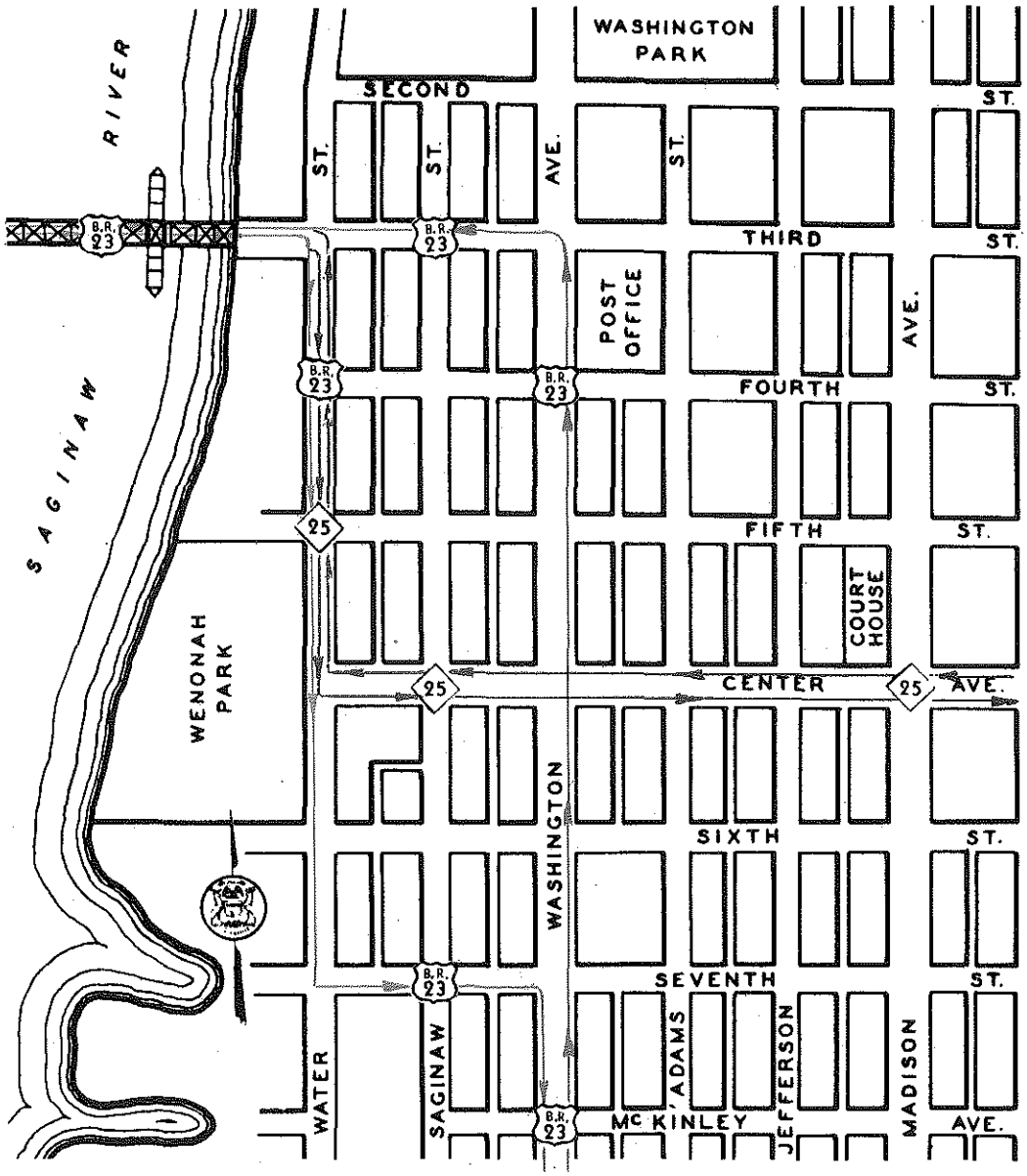
Analysis of the information regarding the street pattern and traffic volumes in downtown Bay City makes it clear that the solution of the problem requires a dispersion of traffic at the points where congestion occurs. The measures included in the above recommendations are aimed to accomplish this dispersion.

The first step in the solution is the rerouting of M-25; first, because the turning movement of traffic from this route west onto Third Street frequently blocks traffic at the east approach to the Third Street Bridge; and, second, because this traffic contributes to peak hour congestion at the intersection of Washington Avenue and Center Avenue. (Figure 5) Both these conditions are eliminated by routing westbound M-25 traffic north over Madison Avenue to Third Street and west over Third Street to a junction with US-23 BR at Washington Avenue (Figure 6).

Madison Avenue is a narrow street, narrower, in fact, than any other street at present used as a trunkline artery. However, capacity for the additional traffic which the rerouting proposal will put on Madison will be provided by the elimination of parking on the east side of the street (Figure 7).

The second step in the solution consists in obtaining better operation of the streets which disperse the traffic from

PRESENT ROUTING OF STATE TRUNKLINES IN DOWNTOWN BAY CITY



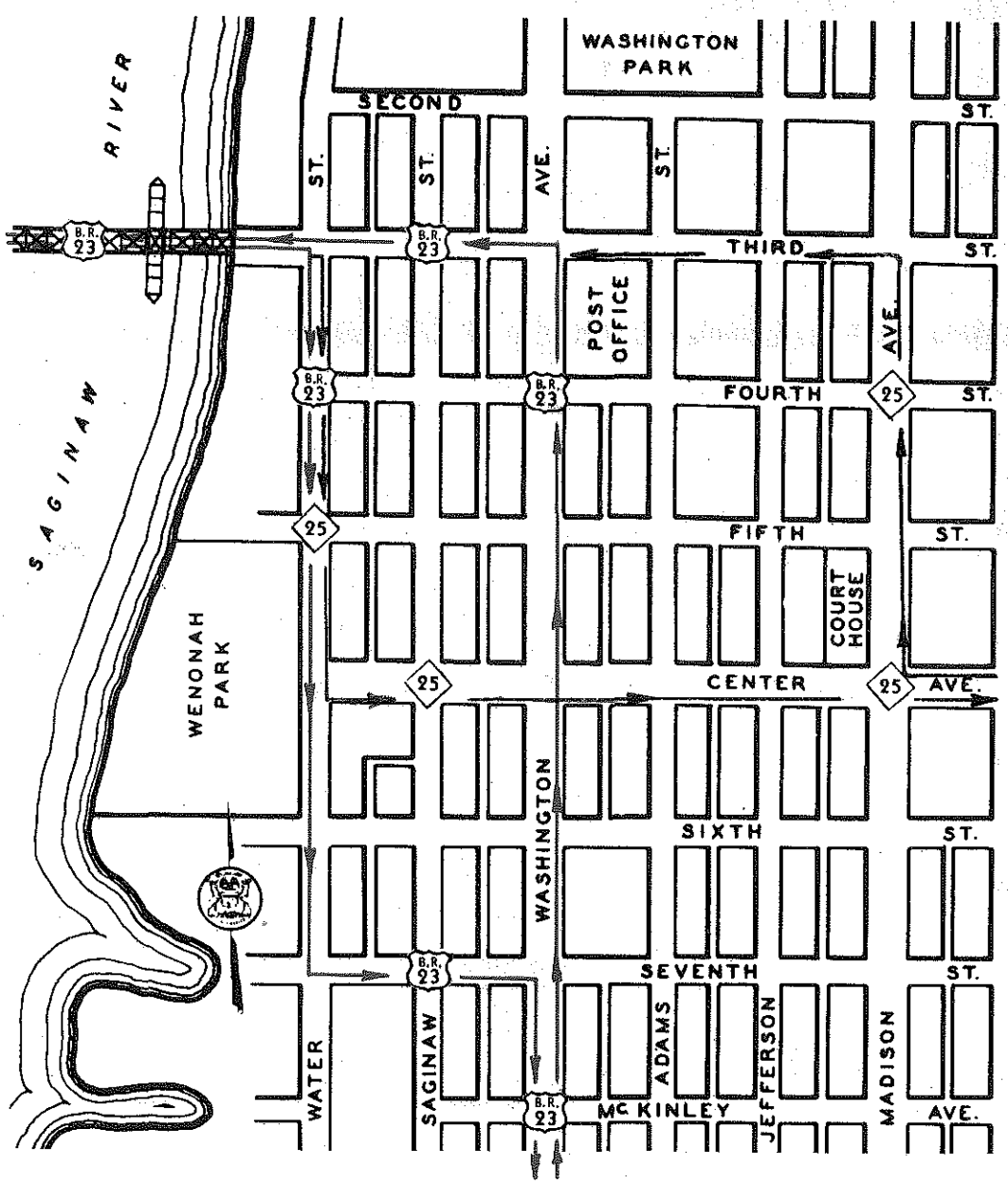
LEGEND

B.R. 23 — 25

APRIL 1946

FIGURE 5

PROPOSED ROUTING OF STATE TRUNKLINES IN DOWNTOWN BAY CITY



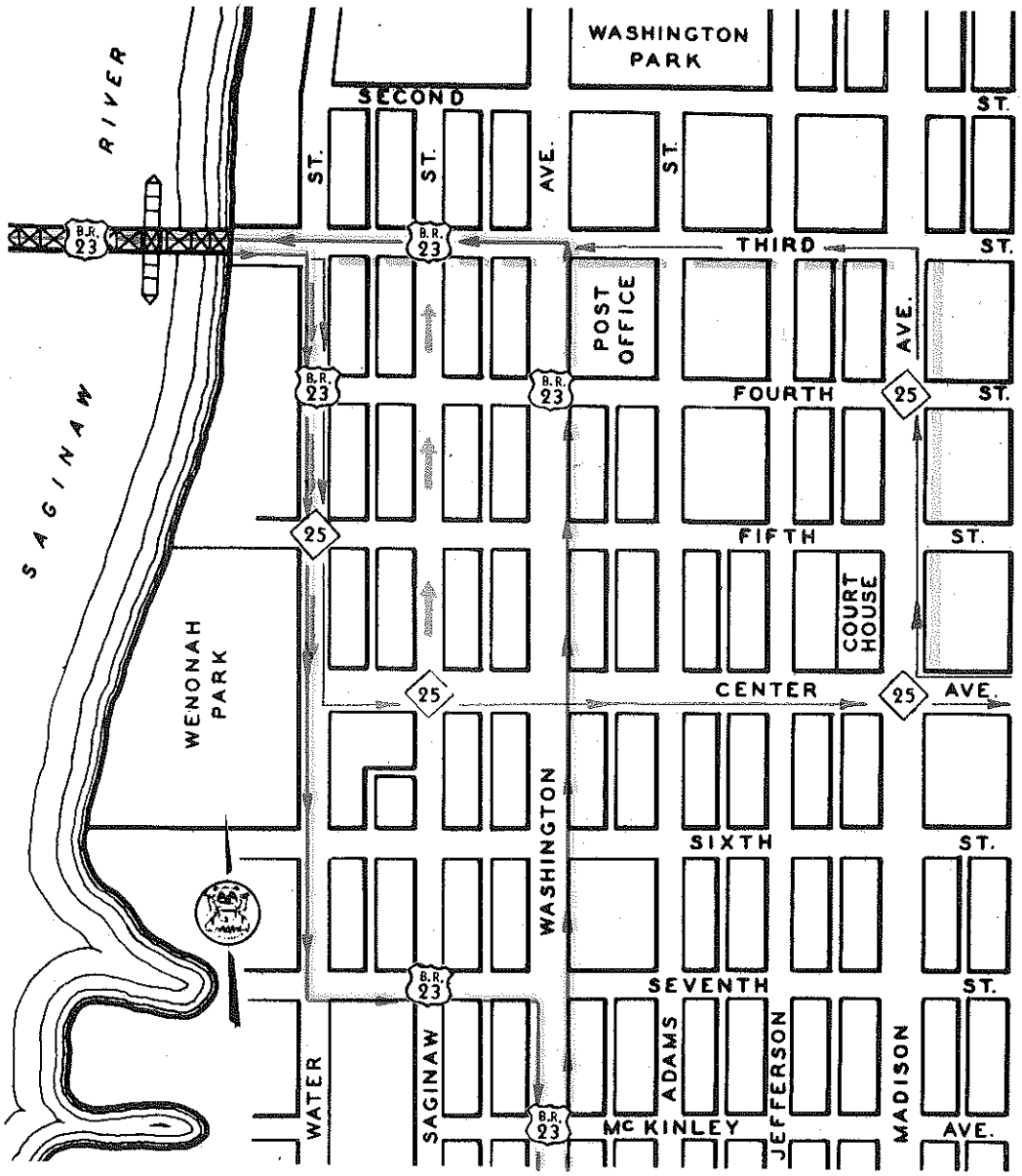
LEGEND

B.R. 23 — 25

APRIL 1946

FIGURE 6

PROPOSED ONE WAY STREETS AND PARKING RESTRICTIONS IN DOWNTOWN BAY CITY



LEGEND

NO PARKING — ONE WAY

B.R. 23 — 25

APRIL 1946

FIGURE 7

and deliver traffic to the east end of the Third Street Bridge.

Since the most potent cause of congestion at this point is the turning of northbound Water Street traffic onto the bridge, this turning movement is eliminated by making Water Street a one-way artery for southbound traffic. This has the added advantage of clearing Water Street for US-23 BR traffic coming off the bridge.

The recommendation for one-way northbound operation of Saginaw Street is made for two reasons; First, to balance street operation in this area, and, second, to provide access for westbound local traffic from this area to Third Street and the bridge (Figure 7).

The proposed elimination of parking on the south side of Third Street will further aid in dispersing traffic coming off the east end of the Third Street Bridge by opening up a wider traffic way (Figure 7).

CONCLUSION

The solution of Bay City's traffic problem proposed in this report will reduce congestion and secure a complete circulation of traffic in the downtown area. The estimated pattern of traffic during the afternoon peak with the recommended measures in operation is shown in Figure 8.

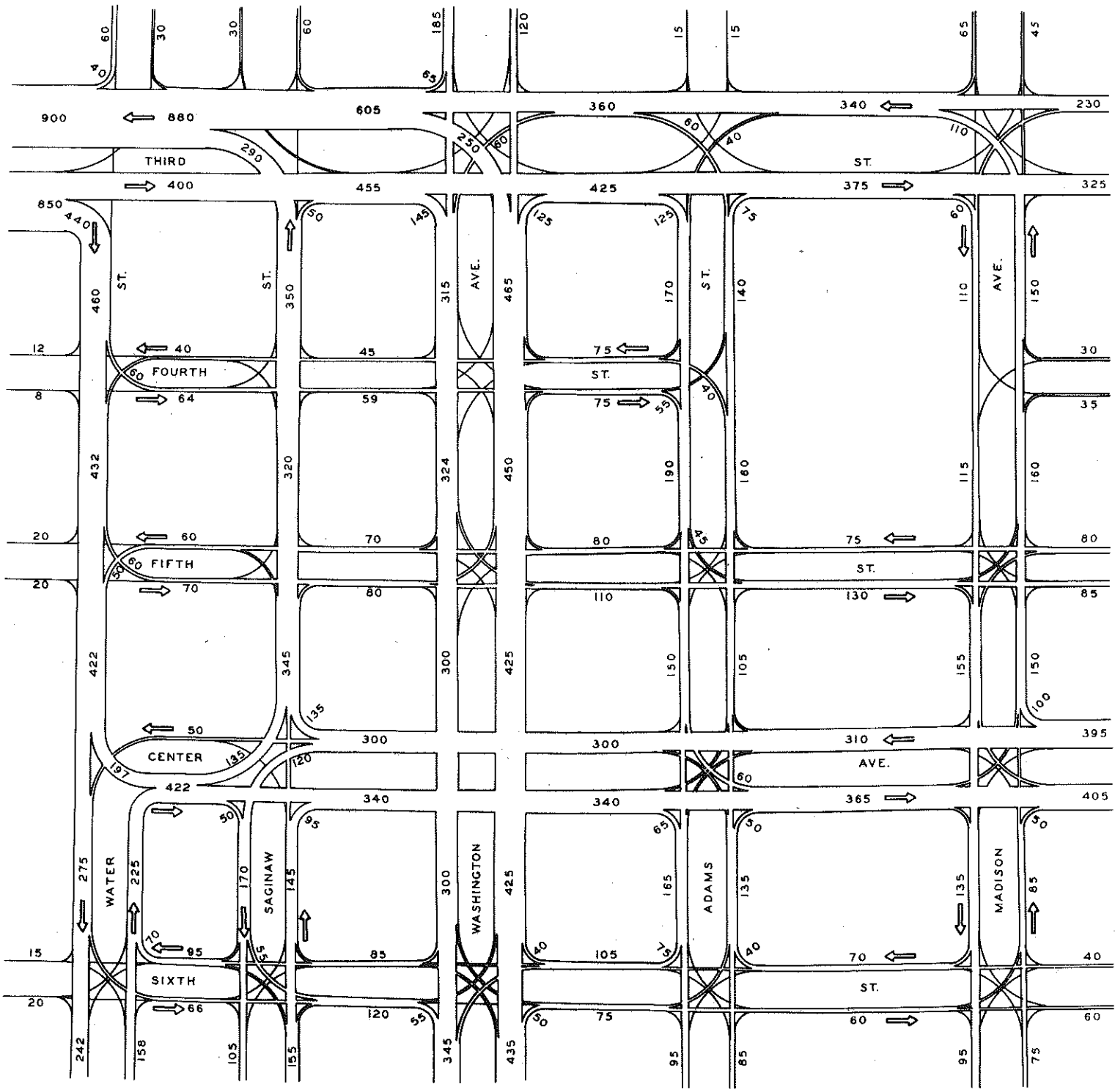
It will be seen that the elimination of conflict between the heavy left-turn band off Water Street onto Third

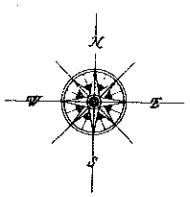
ESTIMATED MAXIMUM HOURLY TRAFFIC VOLUMES (P.M.)

WITH THE PROPOSED ONE WAY STREET SYSTEM

BAY CITY

JUNE 1945





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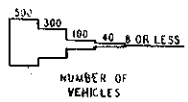

FIGURE 8

Street and the bridge has increased the structure's lane capacity. The increased volume of eastbound traffic on the bridge is due to this factor plus the parking restriction on Third Street.

More efficient dispersal of vehicles at the east end of the bridge will unquestionably reduce the occurrence of rear-end accidents.