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Research On
Economic and Social Effects
of
Highway Improvements

EFFECTS ON BUSINESSES OF BY-PASS HIGHWAYS

by

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THE RESEARCH PROGRAM

This report represents part of a joint research program on the Economic and Social Effects of Highway Improvements made possible through financial support from Highway Planning Survey funds, under an agreement between Michigan State University Highway Traffic Safety Center and the Michigan State Highway Department with the participation of the U. S. Department of Commerce Bureau of Public Roads. The research program was administered by the Michigan State University Highway Traffic Safety Center and was made possible through the cooperation and interest of a large number of university departments both in planning the research and in making available competent research staff qualified in different subject matter areas.

The research program included some 17 studies in the following areas:

An Inventory of the Economic Factors Influenced by a
Highway Development Program

Effects of Highway Development on Rural Lands and
Communities

Land and Property Values in Relation to an Urban
Highway Improvement

Small Communities and Controlled Access Highways

Effects on Businesses in Small Cities of By-Pass
Highways

Effects of Highway Development on Social Groups and
Interactions

Geographical Analysis of Land Use Changes in Relation
to Highway Development

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Personnel in many divisions of the Lansing office of the Michigan State Highway Department have provided information on highways, traffic flow, and other subjects, and they have always been willing to do so on short notice. Various departments at Michigan State University also have supplied information and advice.

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One of the keystones to the success of these studies has been the cooperation of people at the local level. These include local government officials and officers of commercial and other local organizations. First in number are the owners of businesses and their employees who supplied us with sales tax license information essential to the study. Frequently these people discussed the by-pass and its effects on the general local economy. Specific acknowledgments for such assistance will be found in sections reporting on individual cities.

Within the study staff and more directly responsible for completion of the studies, Frank Brutt was involved in all the studies in his capacity as a Graduate Research Assistant. He did all of the field work in Mason and a large part of the compilation of published tax figures and the subsequent analyses. Many of the graphics stem from his fine hand.

George S. Woodhouse also served capably in much of the data collection and analysis.

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PART ONE

INTRODUCTION

METHODOLOGY

INTRODUCTION

Engaged in the greatest highway building program in the world's history, our nation is witnessing the creation of a great network of high-speed, high-standard highways covering the entire continental United States. These new highways have many features aimed at expediting the movement of traffic with the maximum feasible degree of safety, not the least of which is the selection of routes and alignments which "by-pass" most small communities and even many larger cities which formerly straddled our trunkline highways.

From the motorists' viewpoint, these by-passes provide a means of maintaining rural highway speeds free of the impediments of frequent slowdowns and stops necessitated by urban development along the highway. They also remove from the centers of these communities through traffic which does not desire to be there, has no real reason for being there, and only adds to the congestion, noise, and traffic hazards present in such locations. Their use is especially appreciated by the residents along city streets formerly used as through truck routes.

But whatever their good features, by-passes are still viewed with a jaundiced eye by many people who fear that the re-routing of through traffic away from the centers of these communities will have adverse effects on local business activity, dependent, it is assumed, on a large volume of automobile traffic past the front door. Nor can it be said that this fear is completely without some basis in fact, since it is not difficult to point to examples of businesses which have suffered from the diversion of such traffic, although the most striking examples of this are businesses located on former trunklines in rural, not urban, areas.

With a growing number of Michigan communities being by-passed, and many more to be so in the future under the accelerated highway construction program, it was perhaps natural for a research project to turn its attention to the effect of by-passes on such communities. How much will business be affected, if at all? What types of business are most vulnerable to adverse effects from by-passes? Will there actually be a loss in business volume, or will the effect be limited to preventing growth at a rate comparable to that of businesses not affected by the by-pass?

The objective of this series of Michigan by-pass studies has been to evaluate the general effect of highway by-passes on selected communities meeting the following four criteria:

1. Be by-passed by a U.S. or State route.
2. Have been by-passed long enough to allow valid comparisons of before and after conditions.
3. Have a population less than 25,000.
4. Be located outside a large metropolitan area.

While local opinions and comments have been solicited and oftentimes included in the reports of these studies, a more objective evaluation of by-pass effects was sought from an analysis of retail sales tax collection figures for local businesses, both before and after the opening of the by-passes, and as compared with the performance of comparable businesses in the county and State or with other "control" groups of similar businesses within the communities. It is these sales tax analyses which make up the major part of the Michigan by-pass studies.

The Mason and Adrian studies are joint efforts by both authors. Hugh Faville did the Niles and Hart studies; Carl Goldschmidt those in Holland and Zeeland.

METHODOLOGY

To provide a relatively unbiased and objective comparison of retail business activity in Michigan communities before and after the opening of highway by-passes, the sales tax records of the Michigan Department of Revenue have been utilized. This section outlines the procedure followed and points out some of the problems encountered in the use of sales tax information. This section is based upon the Michigan Department of Revenue's coding system and other practices in effect at the time of the six by-pass studies. Since then the coding system has been changed, so that currently active research would encounter different situations and problems.

Published Sales Tax Collection Figures

Much of the required information on sales tax collections is contained in the Department's monthly Research and Statistical Bulletin. The Department of Revenue's information on sales tax collections at the time of these studies was based on the placement of all tax-paying establishments into one of fifty-seven "type of business" categories, as listed on the following pages. Each of these fifty-seven types of business was in turn included in one of nine "groups" of broader nature, also shown in this listing.

As can be seen, some of these nine groups are rather homogeneous in that the included types of business are similar and would be expected to react in a similar manner to various economic stimuli. This is especially true of the Apparel group. At the opposite end of the scale in this respect are the Miscellaneous Retail and Non-Retail groups, made up of very heterogeneous types of business which display quite dissimilar characteristics.

Information contained in the Bulletin includes the state-wide sales taxes collected from each of the fifty-seven types of business, sub-totaled to give the sales taxes collected for each of the nine groups, and totaled to give a grand total for the State. Comparable figures for the same month of the previous year are also shown, along with the dollar increase or decrease indicated by the reported month's figures. Of additional value to the research work is a listing of the number of returns filed for each of the fifty-seven types of business, both for the reported month and the same month the preceding year.

Types of Business and Groups Used by
Michigan Department of Revenue for
Sales Tax Collections Prior to January 1, 1960

<u>Group</u>	<u>Type of Business</u>	<u>Code No.</u>
AUTOMOTIVE	Autos.....	11
	Auto Accessories.....	12
	Other Vehicles.....	13
	Gas Stations.....	14
APPAREL	Men's Clothing.....	21
	Women's Clothing.....	22
	Family Clothing.....	23
	Shoes.....	25
	Other Apparel.....	26
BUILDING, LUMBER, HARDWARE	Building Materials.....	31
	Electrical Supplies.....	32
	Heating & Plumbing.....	33
	Paints & Awning.....	34
	Hardware.....	35
	Farm Equipment.....	36
FOODS	Restaurants.....	41
	Taverns, Pool Rms., Refresh. Stands..	42
	Groceries.....	43
	Bakeries and Caterers.....	44
	Candy, Confectionery, Ice Cream.....	45
	Dairy Products.....	46
	Fruits and Vegetables.....	47
	Delicatessen & Other Food.....	48
FURNITURE	Draperies, Rugs, Etc.....	51
	Household Furniture.....	52
	Household Appliances.....	53
	Radios, Music Supply.....	54
	Misc. Home Furnishings.....	55

<u>Group</u>	<u>Type of Business</u>	<u>Code No.</u>
GENERAL MERCHANDISE	Department Stores.....	61
	Dry Goods.....	62
	General Merchandise Stores.....	63
	Five and Ten Stores.....	64
SPECIALTY STORES	Drugs and Cosmetics.....	71
	Tobacco.....	72
	Gifts and Toys.....	73
	Jewelry.....	74
	Stationery & Books.....	75
	Office, Store, & School Supply.....	76
	Sporting Goods.....	77
	Florists and Greenhouses.....	78
MISC. RETAIL	Coal, Coke, & Wood.....	81
	Flour, Grain, & Feed.....	82
	Monuments.....	83
	State Liquor Stores.....	84
	Petroleum and Products.....	85
	Pawnbrokers.....	86
	Vendors and Peddlers.....	87
	Other Retail.....	88
NON-RETAIL	Barbers and Beauticians.....	91
	Garages.....	92
	Photographers.....	93
	Physicians & Undertakers.....	94
	Shoe Repair, Dry Cleaning.....	95
	Other Repair and Service.....	96
	Gas & Electric Utilities.....	97
	Bldg. Materials, Contractors, Mfgs., Whlse.....	98
	Other Contractors, Mfg., Whlse., & Misc. Outlets.....	99

The Bulletin also contains a separate tabulation of sales tax collection figures for counties, as well as for cities with a population over 10,000. This table shows the current Michigan Department of Health population estimate, the total number of tax returns, the total tax collected, and the tax collected in each of the nine groups, for each of the 83 counties, and for each of the cities over 10,000. For the 29 counties in which these cities are located, all of these items are also given for the "balance of county", which are in fact the county figures minus the total of the figures for all cities listed for that county. In addition, there is a separate line for taxes collected from "out-of-state" establishments not assignable to any Michigan county. In the previously described tabulation of state-wide taxes, these out-of-state sales are segregated and added into the proper type of business category along with in-state sales, but since they represent only a little over one-half of one per cent of the total of sales taxes collected, no great problem is created by this difference in handling in the two tabulations.

Supplementing these published data, additional information on county sales tax collections is available at the Research Division of the Michigan Department of Revenue at its Lansing headquarters. This consists of month-by-month tabulations of the sales taxes collected for each of the 57 types of business in each of the 83 counties in the state, comparable to the state-wide figures contained in the Bulletin. However, there is no similar tabulation for the cities over 10,000 population.

Field Survey Work, Office Research, and Analysis

Sales tax information for cities of less than 10,000 population is not coded and segregated from the county information, and for cities over 10,000 such information is tabulated only in the nine basic groups. Therefore, it is necessary to undertake considerable research in order to obtain any information about sales tax collections in the former cities, or detailed information about taxes collected in the latter cities. Cities in both categories have been included in the Michigan studies.

Field survey work done by the Project Staff consisted of obtaining certain retail sales tax license information directly from the businesses themselves. Principal information sought was the licensee's name, license number, and type of business code number, although in practice little additional effort was involved in copying down all of the license information and in many cases this additional information (e.g., address, type of ownership) helped answer certain questions which arose during office use of the data.

While the usual procedure was to determine which businesses should be contacted on the basis of visual observation in the field, the classified section of local telephone directories and city directories proved extremely valuable in locating businesses which were apt to be missed or which, while having been in operation during some part of the study period, were not extant at the time of the field work. It was necessary to be this thorough in cases where all businesses, or all of a certain type, within the community were being included in the study. That this procedure was somewhat time-consuming can be seen from the fact that it involved personally visiting numerous business establishments: over 40 in Niles, 60 in Mason, 70 in Hart, and 110 in Zeeland. Call-backs were often necessary and in some cases the name of the licensee had to be obtained from other sources.

These businesses were then classified by the staff in accordance with the types and groups of the Department of Revenue's classification system, following which the Department personnel undertook the time-consuming task of obtaining from its files a month-by-month breakdown of sales tax paid, and in some cases gross sales, for each business on the list for the years in which sales information was desired. Figures were then totaled for each type of business, group, or other category, for each month, and it was these totals which were then transmitted back to the staff for analysis.

In order to meet the requirement of the Department of Revenue not to disclose sales tax information for any given establishment, it was necessary to place the businesses in categories such that there were at least three establishments together for which the total gross sales and total sales tax paid could be obtained. For example, in the Mason study sales tax license information was obtained for five establishments coded for the "restaurant" type of business so that it was possible to obtain the total gross sales of, and total sales taxes paid by, these five restaurants for comparison with the restaurant sales tax figures already available for Ingham County and Michigan. On the other hand, Mason and other small cities have too few establishments in the vast majority of "type of business" categories to permit obtaining sales tax information for each type individually, and it was necessary to classify the businesses by "group" to obtain the required sales tax information. Thus in Mason, while the four clothing establishments represented three types of business in the Department's classification system, they had to be classified together in the "Apparel" group in order to obtain the required sales tax information. Even some groups did not contain a sufficient number of establishments, and it was necessary to combine two groups to have the required three or more.

In a few cases, establishments were classified with types or groups other than that indicated by the type of business code numbers shown on the licenses, when it was apparent to the staff that the coding did not reflect the true character of the business. This resulted from an original error in the coding, or a change in the nature of the major business activity since coding.

Upon return to the staff, monthly gross sales and sales tax figures were added to give the totals for the year or years preceding the opening of the by-pass, and the individual years following the opening of the by-pass. These do not necessarily coincide with calendar or fiscal years but are instead based on the actual month of opening of the by-passes.

While awaiting the return of the material from the Department of Revenue, the staff tabulated and added for the same years the figures available in published form for the county in which the city is located, and for the entire state. This was done for the same types of business or groups as were used in the classification of the sales tax license information obtained from the local businesses themselves, thus providing a basis for comparison of changes in business activity in the three geographical areas.

Changes were expressed in terms of percentages or through the use of "index numbers". With the former method, the change in sales taxes collected or gross sales from the year before opening of the by-pass to the year after opening, or the second year after, was expressed as a percentage of the taxes or sales of the year before. When "index numbers" were used, the total of sales taxes or gross sales for the year prior to opening of the by-pass was used as the base number with an index of 100; the total of taxes or sales in subsequent years was assigned an index number calculated from its relationship with the base number. It is these percentages or index numbers which have been used in the various reports as the basis for conclusions on the effect of the by-passes, or as the basis for comments on general business activity in the community after the opening of the by-pass.

Critique

The use of sales tax information to determine the economic effects of by-passes is not unique; it has been so used in other states. However, sales taxes, along with classification and collection procedures, vary from state to state and it is not correct to merely assume that if they can be used for such studies in California they also can be used in Michigan. Their use is based on certain assumptions; in the case of Mason, and to a lesser extent in other communities, certain additional research was done to check the validity of these assumptions.

It cannot be said that the use of the sales tax collection figures in the by-pass studies was an unqualified success. There are many practical problems associated with such studies, one of the major ones being that there are obviously many factors constantly influencing the business activity in a city --without extensive research and analysis it would be very difficult to isolate those changes in activity which could be attributed to the by-pass alone.

Despite these problems, in most cases it has been possible to arrive at some tentative conclusions about the effect of a by-pass on a particular community or type of business. A comparison of the activity of types of business susceptible to adverse effects from the diversion of through traffic, such as gas stations, with those believed to be relatively immune to such effects, such as groceries, has yielded significant results. In other cases the comparisons made with county and state figures point up differences in business activity which can be attributed, at least in part, to the diversion of through traffic to a by-pass. The most accurate studies are those in which changes in business activity for several establishments of the same type, located along the former route of a highway but now by-passed, can be compared with changes in business activity for several "control" establishments of the same type, in the same general area, but not located along the former highway. This approach worked well in the studies of gas stations, since the large number of establishments of this type made it possible to obtain a sufficient number of by-passed and "control" establishments, even in the smaller cities. Finally, in some instances, a plotting of before and after sales tax collection figures on a monthly basis points to losses in business which can fairly definitely be attributed to the diversion of through traffic to the by-pass. This was the case with the restaurants in Mason.

In addition to the aforementioned basic problem of isolating changes in business activity which can be attributed to the diversion of through traffic to a by-pass, there are a number of problems associated with the use of the sales tax collection information available from the Michigan Department of Revenue. Some of these problems would undoubtedly exist with any system of sales taxation; others are due to the particular way in which the sales tax law is administered in Michigan. However, the pointing out of these problems should not be construed as a criticism of the Michigan law or its administration, since it is not being viewed in the light of its true function, but rather from the standpoint of its use for a purpose other than that for which it was designed. These problems are:

1. Variable Sales Tax Percentages. Despite the fact that there is in theory a uniform three per cent sales tax on retail sales of tangible personal property, agricultural and other exemptions and deductions greatly alter this sales tax - retail sales ratio. In addition, some businesses derive their income from a combination of non-taxable "services" and taxable sales of property. In the Mason study, in which both sales taxes paid and gross sales were obtained for the majority of Mason businesses, this sales tax - gross sales relationship over a two-year period ranges from 0.30 per cent to 2.94 per cent. The former is for a combination of the Miscellaneous Retail and Non-Retail groups, containing many service establishments, while the latter percentage is for the Apparel group.

If these percentages remain constant from year to year, then the sales tax figures are just as valid an indicator of business activity change as gross sales, in each group or type of business. But if they change slightly from year to year, then they are not, and their use can be quite misleading. For example, while the Apparel group had a 2.94 per cent average for two years, it was actually 2.86 per cent the year before the by-pass opened, and 3.00 per cent the year after it opened. As a result, while the sales tax figures indicated a 17.9 per cent increase in sales the year after opening, the actual gross sales figures showed only a 12.4 per cent increase. In the Mason study, the gas stations, restaurants, taverns, and groceries exhibited the most consistent sales tax percentages over the two-year period, which is considered fortunate from the standpoint of these

studies. Reports from other states show that the first three of these types of business may be adversely affected by highway by-passes; the last is considered virtually unaffected and provides a good basis for comparison.

In the use of county and state sales tax collection figures (for which there are no comparable gross sales figures) it is assumed, and hoped, that the possible error introduced by the variable sales tax percentages would decrease with an increase in the number of establishments included in the analysis.

2. Classification and Coding of Establishments by Type of Business. The Department of Revenue's system of classification of businesses into "types" and "groups" creates some problems for the researcher.

One of the major problems stems from the fact that any given business establishment has only one retail sales tax license, with its type of business classification selected on the basis of the majority of its sales. In the case of a new business, it is based on what is expected to be the field of major sales. The actual "coding" or classification of businesses is done by personnel at the Department of Revenue who, lacking clear-cut standards to follow, must exercise considerable judgment in this process. Changes in personnel obviously can result in different approaches to the difficult decisions involved in the classifying of establishments of a borderline nature, especially with the categories used in the Foods group. This would include deciding whether to classify strictly by the type of business, or by the type of taxable sales where the major part of the income comes from non-taxable services. Some questions about the use of sales tax figures from certain establishments arose when it was felt that the classification code on the license did not accurately reflect the true present nature of the business, although only in one or two instances was it felt that an actual error was made in the original coding of the establishment. (There was some logic to the classifying of a "feed and seed" store as a restaurant!) Suspected errors were reported to the Department of Revenue.

The classification of businesses by major sales is one of the weaknesses in the use of sales tax information for the analysis of business activity in specific types or groups of businesses. Businesses classified as hardware stores, in the Building, Lumber, Hardware group, sell household appliances, which are included in the Furniture group. Many

drug stores, in the Specialty group, have lunch counters, which belong in the Foods group. Most department stores, in the General Merchandise group, have large sales in lines in the Apparel group. And so on. It is almost difficult to think of a business establishment in which the items sold wouldn't actually belong in at least two of these categories but, from the standpoint of administration of the sales tax law, it would be practically impossible to segregate such sales and probably be of little value to the Department. A corollary problem is created by businesses which gradually change the nature of their major sales, for example the hardware store which eventually becomes an appliance store. Some time elapses before the Department of Revenue's field men run across these changes and have the type of business classification changed accordingly. It would appear that if the monthly report filed by tax-paying businesses had space for indicating major sales, by code number or name, it might be possible for the Department to keep a running check on the classification of individual establishments.

The classification of businesses by major sales creates problems within specific groups as well as between them. In the Mason analysis of gas stations, the sales trends in that type of business were somewhat confused by the fact that auto dealers in Mason also had important gas sales, while gas stations sold accessories and parts in connection with repair work. The gas stations, auto accessory establishments, and auto dealers, while distinct types of business, are all within the Automotive group. Thus in a community the point of sale of particular items is important in the sales tax analysis. For example, there may be no increase in the number of tires sold within the community, but if gas stations sell more than they did, and auto accessory stores less, then there will be apparent changes in business activity which can easily be misinterpreted as an increase in gasoline sales.

Of lesser importance, but still a problem in some cases, is the fact that all businesses have to be placed in one of the 57 "type of business" categories used in the Department's system. Thus it is obvious that some kinds of business must be combined with others to make up a "type". "Other vehicles" in the Automotive group includes aircraft, motorcycles, bicycles, motor boats, yachts, and canoes, which would appear to have little in common from the standpoint of business trends. In the Foods group there is a "type" of business which includes taverns, pool rooms, and refreshment stands. (Does the kindly little old lady running the small refreshment stand on the main street of one city know that her establishment is in the same category as the taverns?)

It was not always so. Prior to the 1954-1955 fiscal year, a classification system including 89 types of business was in use by the Department. It was the consolidation which took place at that time which created most of these problems, although this was probably justified by the fact that in each case the types of business paying very small sales taxes were combined with those in a stronger position, eliminating some bookkeeping of questionable value. For example, over ninety per cent of the taxes paid at the state level by the "tavern, pool room, refreshment stand" type of business is actually paid by taverns.

As mentioned previously, establishments do change their major sales without having their type of business classification changed. In 1957, the Department acted to correct one basic error of this nature when it reclassified many establishments coded as "gas stations" in the Automotive group to "petroleum and products" in the Miscellaneous Retail group. As a result, the published 1957 data for gas stations and the Automotive group must be used with caution to avoid arriving at erroneous conclusions as to the true change in gas station activity during that year.

3. Classification and Coding of Businesses by Geographical Location. In addition to being classified by type of business, all establishments are coded and classified by geographical location: by county, and by city if it has a population of over 10,000. Unfortunate from the standpoint of by-pass research is the fact that time and manpower limitations make it necessary to base this coding on post office addresses, so that all business establishments having, for example, a Lansing post office address (including rural routes), would be coded as Lansing businesses. This means that businesses in the fringe area, which may benefit from a by-pass, are grouped with those within the city where an adverse effect might be experienced. This seriously limits the usefulness of the published city data except in cases where it is known that all, or a great majority, of the establishments in a given group, e.g., General Merchandise, are located in the same general area and would be affected similarly by the diversion of through traffic to the by-pass. Sales tax collection figures for groups having part of the included establishments on the former route, and part on the by-pass route, have considerably less value in these studies.

4. Sales Taxes on Autos. A problem of more limited scope stems from the somewhat different method of handling the tax on auto sales, which is paid directly by the seller

to the Secretary of State. In the published sales tax figures the taxes on auto sales are totaled in with the others paid by auto dealers on the sale of parts, gasoline, etc. However, in the sales tax figures obtained directly from the Department on the basis of supplied license information, the sales taxes shown do not include the tax paid on the auto sales, but only on the incidental sales. These sales tax figures have relatively little value and should not be compared with the published figures for county and state auto dealers. The gross sales figures obtained at the same time on the basis of supplied license information do include automobile sales and local changes in gross sales have been compared with changes in sales taxes at the county and state level in some studies.

5. Keeping of Records. One potential problem associated with the Department of Revenue's procedures has not yet seriously affected the by-pass studies but has increased the work which the Department must do in fulfilling requests for sales tax figures on the basis of supplied license information. The monthly returns filed by a taxpayer are kept in his file in the Lansing office of the Department for about three years, after which they are transferred to the "record center" for storage for another three years. After the total of six years has elapsed, the records have no value for legal purposes and they are destroyed. It is therefore impossible to go back more than six years in any sales tax analysis based on other than the published data. The oldest by-pass studied, that at Mason, required that the Department utilize some records on the verge of being destroyed, but fortunately still intact.

6. Changes in Ownership. The work of the Department personnel in tabulating sales tax figures for supplied license numbers is greatly complicated by changes in ownership over the years, with corresponding changes in license numbers. This means that for a particular establishment for which the license number of the current proprietor can be supplied, the Department personnel must frequently trace the ownership back through various license numbers to obtain the proper files. In some cases the arrival at a dead end in this process leads to the conclusion that it was a new business just starting up at that point, but the office personnel usually have no way of being sure of this. Gas stations, in which there is special interest, are especially troublesome in this respect because of their high turnover in ownership.

7. Avoidance of Errors. Accuracy and the avoidance of errors is obtained only through constant vigilance and checking. It was found that the sales tax collection figures,

published or otherwise, were somewhat "tricky" to work with because of their peculiarities.

Published sales tax collection figures are dated for the month the tax is actually collected, which is the month following the actual month of sale. However, these figures are published in the Research and Statistical Bulletin which comes out the month following the month of collection. As a result, for example, the May Bulletin contains the tabulation of sales taxes collected in April on March sales. But when the Department supplies information directly from the taxpayers' files, it is identified by the actual month of sale because the tax returns themselves are so identified.

The fact that the out-of-state sales are included in some published figures, but not in others, has been mentioned previously. While as noted this makes a relatively small difference, it was found that it was necessary to be consistent and use the grand total including out-of-state sales taxes when working with the statewide figures for the various groups and types of businesses. Difficulty was experienced in cross-checking when this was not done.

Published sales tax figures include not only the actual sales taxes collected, but also the penalties, interest, and license fees collected in the same period, for each type of business. This was not always so. Figures included in the Bulletin prior to the February, 1953, issue did not include these "extra" revenues. However, when these figures were used in subsequent Bulletins for purposes of comparison with the later year, the penalties, interest, and license fees were added in, producing what appeared to be, but were not in fact, conflicting sets of figures.

Studies which go back earlier than July, 1954, become involved with the change in type of business categories which took place at that time. For example, in working with published figures for the present "groceries" category (Code No. 43), in order to obtain comparable information for months prior to July, 1954, it is necessary to total the taxes collected in three separate categories in the old classification system: "groceries"; "meat, fish"; and "combination groceries and meats" (Old Code Nos. 32, 33, and 34, respectively). The present "taverns, pool rooms, refreshment stands" category was the other one in which pre-July, 1954, information was desired which had to be obtained in this way.

Finally, with the many pages and tables from which figures were copied in the course of these studies, the opportunity for making errors was great, and it was necessary to check virtually every copied figure and addition. When working alone, the most frequent error was to copy the wrong number; when working with someone else who read off the numbers, the transposition of the last few digits of the number was the most common error.

PART TWO

A STUDY IN
THE CITY OF MASON

PREFACE

SUMMARY OF THE MASON STUDY RESULTS

INTRODUCTION

BUSINESS ACTIVITY IN MASON - THE SALES TAX STUDY

CONCLUSIONS

PREFACE

One of the keystones to the success of the Michigan studies has been the cooperation of people at the local level. First in number are the owners of businesses, and their employees, who have supplied the sales tax license information essential to the sales tax study. Over sixty businesses were contacted in Mason, and with few exceptions the desired information was supplied willingly. Frequently, upon learning the nature of the research, these people freely discussed the by-pass and its effect on their business and the general local economy.

Also greatly appreciated is the help received from local officials in Mason, and the personnel of the Ingham County News, a Mason paper which is well aware of, and has editorialized on, the purpose and value of a highway by-pass. The Consumers Power Company, through its Area Development Office in Jackson, did some research to provide us with information on the number of electric meters in Mason, used as one of the indicators of growth.

SUMMARY OF THE MASON STUDY RESULTS

In July, 1953, a by-pass of U.S. 127 was opened around the City of Mason, Michigan, resulting in the diversion of over 3,000 vehicles a day away from the former route through the center of the city. It is evident that the city in general has benefited from the virtual elimination of through traffic, especially trucks, from city streets.

To provide a means of measuring business activity in Mason during the period of transition, the sales taxes paid by Mason businesses the year immediately preceding the opening of the by-pass were compared with those paid the year following the opening. The percentage changes in sales indicated by this analysis were compared with the changes in sales taxes collected for the same types of business in the entire county and state.

This comparison showed an increase which was about 60 per cent greater than that for Ingham County, and 70 per cent greater than that for the entire state.

Analysis of specific types of business showed that restaurants in Mason suffered a 13.2 per cent loss while county and state restaurants were enjoying increased sales, a loss which due to its nature can be attributed to the diversion of traffic to the by-pass. Groceries in Mason showed an increase in sales slightly more than those in the county and state, while gas stations in Mason enjoyed a gain three times the increase shown in the county and state. Stations on the former route of U.S. 127 had a smaller increase than stations not on the route, but it was still twice that of stations in the county and state. Mason taverns had sales increases as large as the aforementioned total for all city businesses, while at the same time county taverns were experiencing a loss.

Since the period of time covered by this study, there have been signs of adjustment to the by-pass. One of these is found along the by-pass itself, at the point northwest of the city where it diverges from the former route. Here is located a small retailing center which actually had its genesis prior to the construction of the by-pass, but it was this action which provided the real impetus for its development. A gas station, grocery, two restaurants, and an auto agency, along with several other businesses, are located in this satellite of the Mason business community.

I. INTRODUCTION

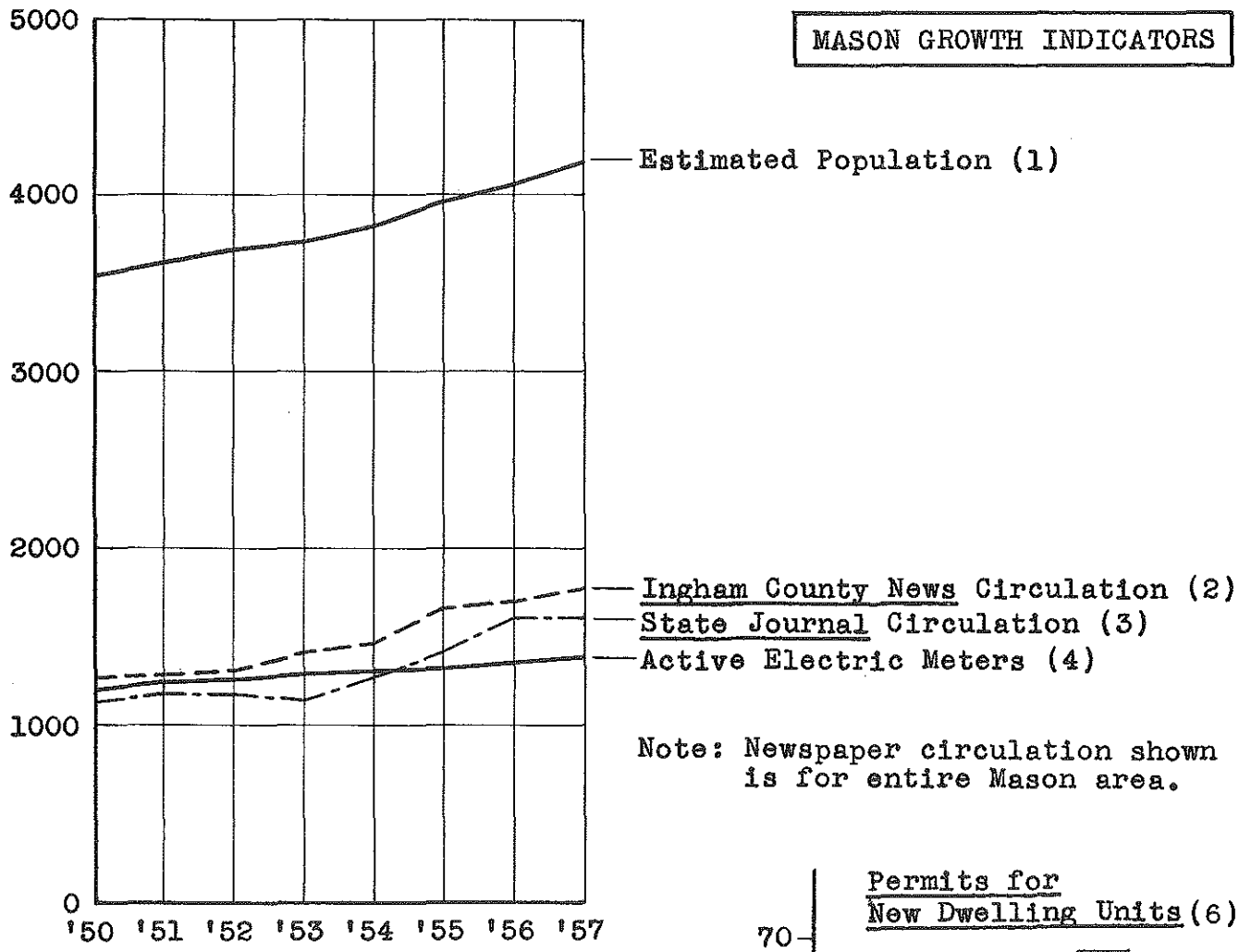
Mason is the county seat of Ingham County, located near the county's geographical center and approximately thirteen miles southeast of Michigan's capital city of Lansing, the nucleus of the major concentration of population in the county. The principal highway serving Mason is U.S. 127, a direct route from Lansing to Cincinnati, Ohio, which also provides a part of the shortest and best route from Lansing to the Ohio Turnpike, Toledo, and points east. From a point near Lansing, south past Mason and Jackson, U.S. 127 is a four-lane divided highway with limited access over the greater part of this distance but with most intersections at grade. The only other trunkline route in the Mason area is M-36, which enters from the east and terminates in the city.

In 1950, the U. S. Census recorded a Mason population of 3,514. out of a total of 172,941 for Ingham County. Preliminary results of the 1960 Census give the city a population of 4,490. Some indicators of Mason's growth are shown on the following page.

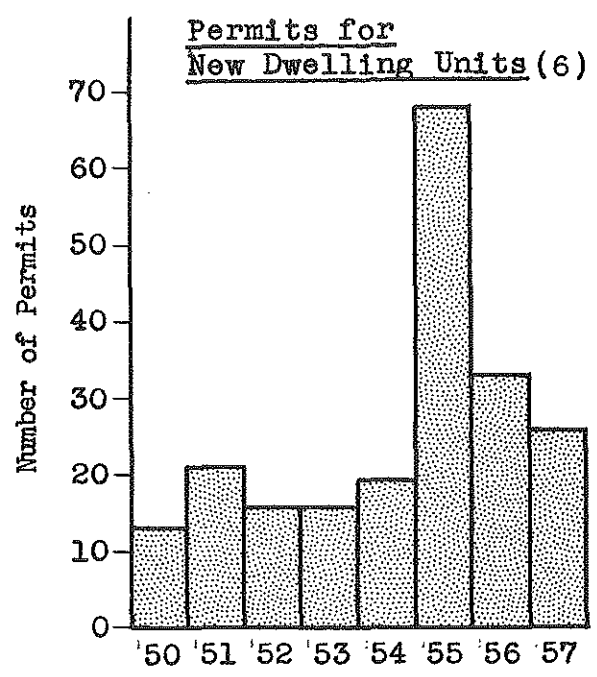
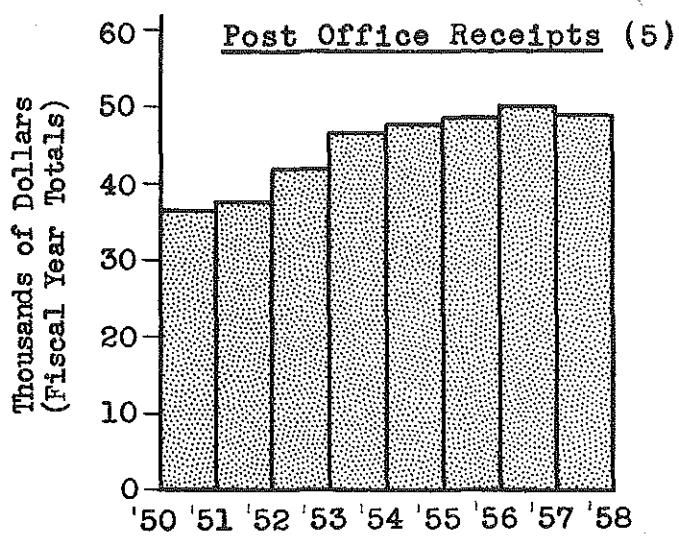
Mason's economy is based on three major sources of employment in the area: farming and farm service, manufacturing, and the county government. This is significant because the impact a by-pass will have upon a community will depend to some extent upon the economic base of the community as well as the percentage of income derived from highway traffic. The three largest employers in Mason itself are the County Road Commission with 180 employees, the Wyeth Laboratories with 165, and the general county government with 115. In the Mason area there are some 70 retail businesses in which a large number of local citizens are engaged. Furthermore, Lansing is only 13 miles away--just a few minutes drive on a modern highway--so that to a limited, but probably increasing extent, Mason is a "dormitory community" for workers who commute to the Lansing area.

Prior to the building of the by-pass, U.S 127 entered the city from the south via Jefferson Street, crossed the New York Central tracks at grade, proceeded up a low hill through a residential area, passed in front of the Mason High School, traversed a part of the business district and turned left on Ash Street. West on Ash Street the route again crossed the New York Central tracks at grade and after three blocks made a second 90-degree turn north into Cedar Street, following Cedar Street to the city limits. The present Business Route U.S. 127 follows this former route for the major part of its length.

MASON GROWTH INDICATORS



Note: Newspaper circulation shown is for entire Mason area.



- Sources:
- (1) Michigan Department of Health, Population by County and Specified Cities
 - (2) Mr. James Brown, of the Ingham County News
 - (3) The State Journal, Lansing, Circulation Department
 - (4) Consumers Power Company, Lansing Division
 - (5) U.S. Post Office Department, Annual Postal Receipts and Classifications
 - (6) U.S. Department of Labor, Bureau of Labor Statistics, New Dwelling Units by Local Building Permits

Considering the characteristics of the former route, with its high volume of traffic on narrow city streets with curb parking, the two railroad grade crossings, and its passing directly in front of the high school, the need and desire for a by-pass around Mason is easy to understand.

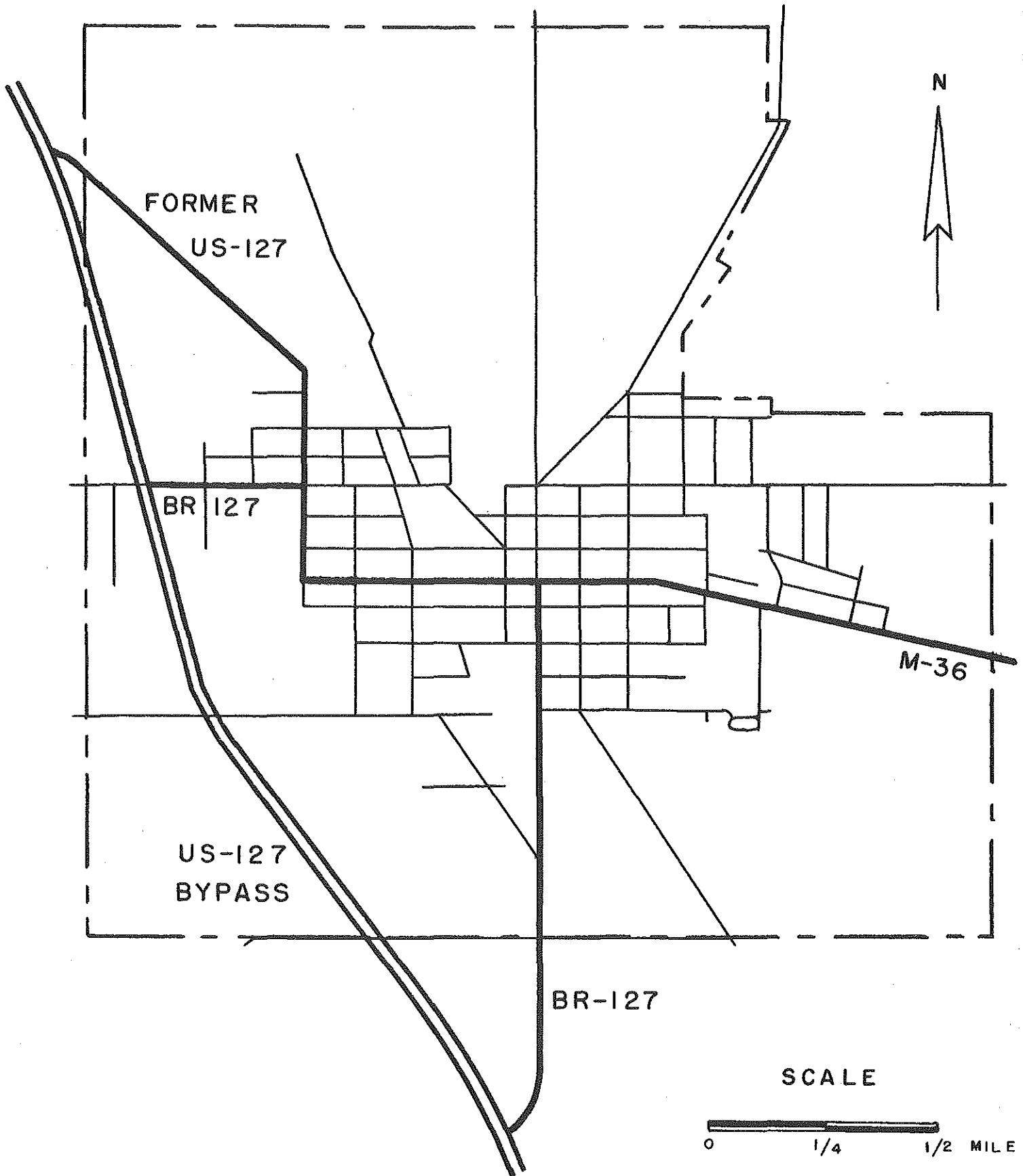
The By-Pass

On July 23, 1953, the original by-pass was opened around Mason, starting at South Jefferson Street and swinging to the west of the city, intersecting Kipp Road, Sitts Road, and Columbia Road at grade, and ending at its intersection with Cedar Street, for a total length of approximately three miles. This original by-pass was constructed as a two-lane concrete highway. In 1957 it was expanded to a four-lane divided highway with a grass median strip, but without elimination of the grade level intersections with other roads. This was a part of the general improvement of U.S. 127 between Lansing and Jackson which brought it to its present stage of development.

The opening of the U.S. 127 by-pass resulted in an immediate reduction in traffic volumes and congestion on the streets of Mason. Traffic counts taken on the former route of U.S. 127 (now Business Route U.S. 127) at the south city limits of Mason showed a drop in the Average Daily Traffic from 4,100 vehicles per day before the by-pass was opened (1953) to a little over 1,400 vehicles per day two years after opening (1955). The drop in traffic through Mason is even more spectacular when the tourist-inflated summertime volumes are examined. Daily counts of 6,259, of 7,728, and of 7,768 were recorded at this same station on the 25th, 26th, and 27th of July, 1952 (Friday, Saturday, and Sunday). But on the 29th and 30th of June, 1955, (Wednesday and Thursday) after opening of the by-pass, daily counts were only 1,417 and 1,489. While the fact that these counts were taken in different months and different days of the week could account for some of this difference in volumes, the counts taken at a permanent station beyond the south end of the by-pass showed much less change. For the three days in 1952, counts of 4,689, of 5,967, and of 6,295 were recorded; for the two days of 1955, counts of 4,686 and 5,090.

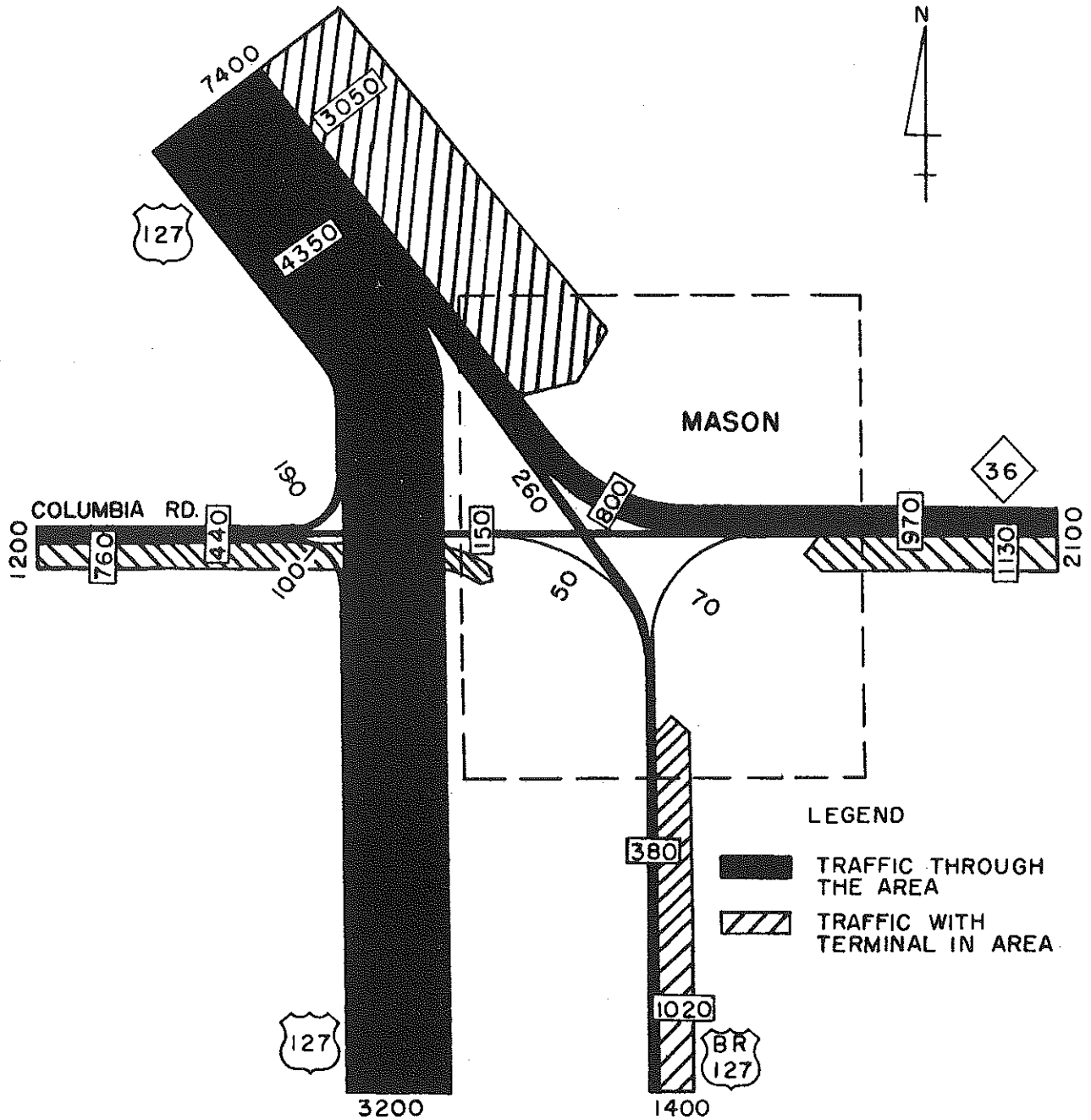
On Thursday, March 24, 1955, a traffic count taken on the by-pass by the Michigan State Highway Department showed the following counts for a 24 hour period:

MASON



MASON

DISTRIBUTION OF TRUNKLINE TRAFFIC 1955 A.D.T.



MICHIGAN STATE HIGHWAY DEPARTMENT

PLANNING AND TRAFFIC DIVISION

Total vehicles	3,665
Commercial vehicles other than combination tractor-trailer	476
Combination tractor-trailer units	173

Thus an average of 27 additional commercial vehicles and 153 additional automobiles per hour would have been required to pass through the narrow streets of Mason if the by-pass had not been available. Since traffic is obviously not uniformly distributed throughout the day, at peak hours the additional volume would have been far greater.

II. BUSINESS ACTIVITY IN MASON - THE SALES TAX STUDY

While local "off-the-cuff" evaluations of the effect of the by-pass are interesting and have some value, a more objective comparison of business activity in Mason before and after the opening of the U.S. 127 by-pass was desired. For this purpose, sales tax collection figures, and in a few cases gross sales figures, for the one-year period immediately prior to the opening of the by-pass were compared with corresponding figures for the one-year period immediately following. The percentage change for each type of business, or group, in Mason was compared with the percentage change for the same type of business, or group, in Ingham County and Michigan during the same two-year period. The year before included the months from August 1952 through July 1953; the year after August 1953 through July 1954. Since an equal period of time before and after opening of the by-pass was desired, and sales tax information for Mason was no longer available prior to mid-1952, this study was limited by the availability of data.

Total Business Activity

If a conclusion can be drawn from the percentage changes in Table I, it is that the diversion of through traffic to the U.S. 127 by-pass did not adversely affect business in Mason in general, and may have improved it, but at the same time certain types of business apparently did experience a loss in sales as a result of the great decrease in the volume of through traffic passing through the center of Mason.

On the basis of sales taxes paid, total business activity in Mason increased significantly more than it did in Ingham

Table I: Changes in Retail Sales Tax Collections
from year before opening of by-pass to year after

Type of Business or Group (1)	(2)	(3)	
			Mason : Ingham Co. : Michigan
Total Tax (Excluding Auto Sales)	/\$6.90%	/\$4.26%	/\$3.97%
Gas Stations (Along Former Route of US 127)	/\$22.4		
Gas Stations (Not Along Former Route)	/\$56.4		
Gas Stations (All)	/\$39.4	/\$10.5	/\$11.6
Restaurants	-13.2	/\$2.87	/\$0.86
Taverns, Pool Rooms, Refreshment Stands, Etc.	/\$6.92	-4.44	/\$1.69
Groceries	/\$6.49	/\$5.77	/\$5.19
Apparel Group	/\$12.4 (4)	/\$5.00	-2.44
Furniture & General Merchandise Groups (Combined)	/\$1.25 (4)	/\$4.12	-1.34
Autos	-5.10 (4)	-0.46	-6.14

- (1) Only the types of business and groups considered significant in this study are shown separately, although all are included in the "total tax" figures, with the exceptions noted.
- (2) The reason for excluding auto sales is discussed below in the section on autos.
- (3) Sales tax information was not obtained for all Mason businesses paying this tax. However, this figure is based on over 90 per cent of the taxable sales in the city and, it is believed, 100 per cent of the sales which might be directly affected by the by-pass in the two-year period.
- (4) Mason figures based on gross sales.

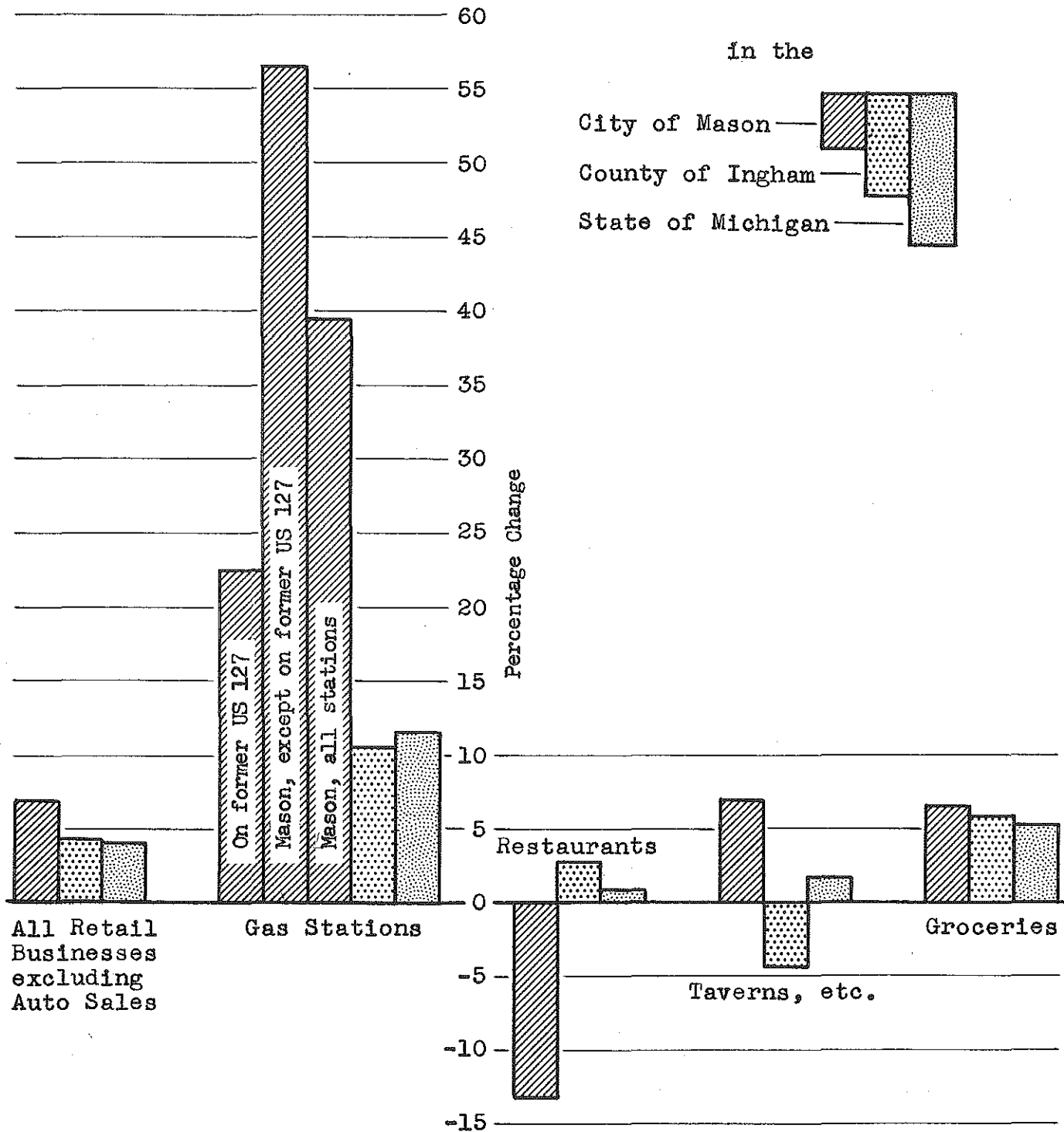
Sources:

County & State: Michigan Department of Revenue, Research and Statistical Bulletin, monthly issues for time periods covered.

City: Tax and sales data from Michigan Department of Revenue, based upon field survey and establishment grouping by Project Staff.

PERCENTAGE CHANGES IN SALES TAXES PAID

from: August 1952 through July 1953
to: August 1953 through July 1954



Sources:

State data: Michigan Department of Revenue, Research and Statistical Bulletin

County data: Unpublished records of Michigan Department of Revenue

City data: Tax and sales information from Michigan Department of Revenue, based upon field survey and establishment grouping by project staff

County or the entire State of Michigan, but it is equally apparent that this increase was not uniformly spread throughout the business community. A more detailed analysis of some specific types of business is needed to understand what took place in this two-year period.

Gas Stations

Most surprising is the large increase in gas station sales in comparison with the county and state, especially in view of the studies made in other states which have shown that gas stations, along with restaurants and bars, are very frequently adversely affected by by-passes. At the same time, the marked difference between the increase for establishments on the former route of U.S. 127 and those not on the route might indicate that the loss of business resulting from the movement of through traffic to the by-pass prevented the former group from gaining even half as much as stations in the rest of the city.

The gas station business is characterized by its constant state of flux - changes in ownership, reconstruction and modernization, abandonment of locations, and the construction of new stations in new locations. The Mason gas station "industry" during the period of this study was probably typical in this respect, at least in that two new stations were opened. Thus it must not be concluded that all of the gas stations in these two groups enjoyed these large percentage increases in their business.

However, the fortunes of individual establishments are not of primary concern in assessing the effect of the by-pass; a better evaluation is obtained from an analysis of the effect on groups of like businesses where the factor of intra-city competition can be minimized. The preceding table shows large percentage increases for both groups of gas stations in Mason in distinctly different types of location from the standpoint of the effect of the by-pass. Many factors may have played a part in these increases, and while the weight which should be accorded each cannot be determined at this time, some of these factors can be identified and described.

First of all, it is obvious that Mason gas stations may have enjoyed the same general ten or eleven per cent increase in sales as the stations throughout the County and State, coming principally from the increased number of motor vehicles. (The number of registered passenger cars in Ingham County increased 8.3 per cent from 1952 to 1953; 4.2 per cent from 1953 to 1954. The State showed similar gains.) This should

be especially true of those stations not on the former route of U.S. 127, and thus least affected by the diversion of traffic to the by-pass. It should be noted that part of this general increase probably can be attributed to the retail price of gasoline which, in Detroit at least, increased nearly two cents per gallon during the period of the study.

Secondly, Mason area residents may have shifted more of their gasoline purchases to stations within the city; new stations opening may have provided outlets for brands not previously available in Mason, and the elimination of the heavy through traffic made existing stations more accessible and more attractive for use by the local motorists. A corollary increase may have resulted from a change in local driving habits necessitated by more commuting to out-of-town centers of employment, such as Lansing, by residents changing their place of work or by newcomers working in other localities who selected Mason as their place of residence.

Finally, part of the apparent increase in gas station sales may have resulted from a shift of business between tax categories within the City of Mason. For example, the sales tax paid on gasoline sold by an auto dealer would be included with the sales tax collections for auto dealers, not gas stations. If, however, some of these gasoline sales are transferred to a gas station classified as such, then they will appear with the sales tax collections for gas stations. While there may have been no actual change in the total amount of gasoline sold by the auto dealer and gas station, the sales tax figures would show an apparent increase in gas station activity. A shift within the community of the point of sale of other products, such as tires, auto accessories, etc., can also result in an increase in the gas station sales tax collections. In this respect it is perhaps significant that the sales tax collections from Mason auto dealers, for items other than autos themselves, increased only 1.08 per cent in the study period, while auto accessory stores showed a loss of 3.17 per cent during the period. Compared with the rather general sizeable increases in other types of business and the community at large, it is obvious that a shift of this nature may have taken place, although it could account for only a part of the increase enjoyed by the gas stations.

What actually happened could not be determined without an exhaustive analysis, probably now impossible because of the five years which have elapsed since the opening of the by-pass. However, the sales tax analysis would indicate that,

collectively, gas stations in Mason did very well in the year following the by-pass opening.

Restaurants

The second type of business worthy of a more detailed analysis is that of restaurants, which in Mason demonstrated far greater stability in terms of number and ownership than did gas stations during the two-year study period. Restaurants, by Department of Revenue classification and tabulation, do not include lunch counters, refreshment stands, or similar businesses.

The resultant 13.2 per cent drop in restaurant sales, at a time when both county and state restaurants were experiencing small increases, is in keeping with the findings in some by-pass studies in other states, and was not unexpected. What is interesting about this loss of business is the manner in which it occurred, especially noticeable because of the stability of the restaurant operations: there was apparently no change in the number (5) or ownership of restaurants in Mason during this period.

A month-by-month analysis discloses a rather uniform drop in restaurant sales for the year after the by-pass opened. Comparison of each month of the "year after" with the corresponding month of the "year before" discloses a loss every month, ranging from 7.6 per cent the month after the by-pass opened (August) to 17.5 per cent the following June. A graphical presentation of the total sales tax paid discloses strikingly similar curves for the two years, the one for the year after being on the average 13.2 per cent lower.

This suggests that rather than suffering from the diversion of tourist traffic away from the center of town, the Mason restaurants lost the steady, year-round business of salesmen, truck drivers, and other non-seasonal travelers who no longer wished to take the time or effort to digress from the new by-pass to patronize the in-town establishments. Insofar as the trucks are concerned, the city in general benefited from the decreased noise, dirt, and congestion resulting from their diversion from city streets, so that the small loss in restaurant patronage by truck drivers should not be considered a valid argument against the by-pass. How much of this loss might be due to the lack of patronage by salesmen and other automobile drivers is not known. With the year-round driver on a familiar trip there is no question about his knowing what facilities the city has to offer;

advertising would appear to do little good. It is the time and effort involved in the side trip, and his knowledge of the existence of more accessible facilities up the road, that are the governing factors in arriving at a decision on where to stop.

In the years of re-adjustment following the opening of the by-pass, the diversion of through traffic with the consequent development of a new market for eating facilities has resulted in the opening of two restaurants within the retail center along the by-pass northwest of Mason. An analysis of the total restaurant business in the Mason area today might present a more favorable picture than in the year immediately following the opening of the by-pass, since the sales of these establishments would compensate, at least in part, for the loss of business resulting from the diversion of through traffic away from the downtown restaurants.

Taverns, Pool Rooms, and Refreshment Stands

Over ninety per cent of the sales tax paid in the state by this somewhat heterogeneous group of businesses, which is actually classified as one "business type" by the Department of Revenue, is paid by the taverns. Therefore, although the only Mason establishments falling within this category are three taverns, this is not considered to affect the validity of comparisons among the city, county and state sales tax figures for this type of business.

The reason for the sizeable increase in business enjoyed by the Mason taverns during a period in which those in the county suffered a loss and those in the state a small gain, is difficult to determine. Taverns may be adversely affected by by-passes, rather than benefited, but this depends upon the source of patronage. It might be assumed that favorable local economic conditions were the principal factor in the increase, although improved accessibility and easier parking through the diversion of through traffic may also have been important. There was no apparent change in the number of ownership of taverns during this period.

The actual change in sales tax during the year after the opening of the by-pass compared with the year before on a month-to-month basis, discloses changes ranging from a loss of 8.1 per cent to a gain of 22.8 per cent. Oddly enough, the maximum loss was experienced the month (August) after the by-pass was opened; the maximum gain just two months later following an intervening month with a 5.1 per cent loss. All other months showed gains ranging from 16.1 per cent down to

3.1 per cent. Of significance is the fact that August is the month the Ingham County fair is held in Mason, and the paid attendance at the 1953 fair was about 16 per cent less than that at the 1952 fair. This may account for at least part of the drop in August sales, the month of maximum tavern sales in Mason.

Groceries

The 6.49 per cent increase in grocery sales is in close agreement with increases for both the county and state and would seem to indicate no unusual local condition or by-pass effect. The fact that Mason's increase is somewhat higher than the other two might reflect slightly better local economic conditions. There was no change in the number (7) or ownership of groceries during the period of this study and the sale of groceries, as with other convenience goods, should not be materially affected by the by-pass.

Apparel, Furniture and General Merchandise

Because there were only one or two establishments in most "type of business" categories other than those already described in detail, it was necessary to obtain information for entire "groups", rather than individual types. However, each of the Apparel, Furniture, and General Merchandise groups is fairly homogeneous and the included types of business in each should respond in a similar manner to various economic influences. It is considered desirable to analyze the changes in these groups because they include the businesses which are the "hard core" of the central business district, the stores which should reflect the adverse or beneficial effects of the by-pass on the central business district.

The Apparel Group businesses experienced a 12.4 per cent increase in sales the year after the by-pass opened. (Gross sales were used in this case, rather than sales tax paid, because the tax was not a consistent percentage of the sales over the two-year period and its use would have resulted in an even larger and misleading percentage increase.) Unfortunately for the purposes of this study, all establishments in this group underwent some type of a change in ownership during the two-year period, clouding the basic issue of general economic conditions in the central business district and the effects of the by-pass. Changes in ownership often result in changes in methods of operation, greatly affecting gross sales. One can only conclude that Mason's apparel stores, through good management or otherwise, showed a large gain in business at a time when the county's apparel stores showed less than half this gain, and the state's apparel stores were experiencing a 2.44 per cent loss.

Neither the Furniture nor General Merchandise groups in Mason contained a sufficient number of establishments to permit tabulation of sales tax data for each group alone. As a result, sales tax information was obtained for a combination of the two groups and the percentage changes are shown in the table, along with those obtained by summing the sales tax totals for these two groups at the county and state level. However, it is questionable whether any valid conclusions can be drawn from a comparison of these percentage changes.

An examination of the sales tax paid on a monthly basis by the General Merchandise group in Michigan shows that sales fluctuate greatly throughout the year, reflecting seasonal buying. December sales are about 100 per cent above average, followed by two months with sales only 75 per cent of the average. A gradual rise in sales to the next December is interrupted by a summer slump. The Furniture group, in contrast, shows great stability throughout the year, with very little fluctuation from month to month. Although basically the curve has the same high and low points as that for General Merchandise, the December sales are only about 50 per cent above average, and the other peaks and valleys are even less pronounced by comparison. Because of the dissimilar nature of these two sales patterns, and since Mason contains only two stores in each group, not enough to be representative, no valid conclusions can be drawn from a comparison with the county and state data.

Automobiles

Sales taxes on automobiles are paid through the Secretary of State's office, rather than directly to the Department of Revenue. When information was obtained from the Department on gross sales and sales tax paid by auto dealers in Mason, the latter figure did not include the tax paid on auto sales, but rather only the relatively small amounts of tax paid by auto dealers on sales of gasoline, parts, etc. Published sales tax figures for the county and state, however, do include the sales tax on autos and so the available Mason information was not comparable. A comparison of the Mason gross sales changes for autos with sales tax collection changes for the county and state indicates that while Mason dealers did 5.10 per cent less business in terms of dollar volume, statewide dealers lost 6.14 per cent, while in Ingham County they lost only 0.46 per cent.

Mason's six automobile sales agencies did not, of course, represent a complete cross-section of the industry in that

they handled only seven of the approximately eighteen makes being manufactured in the country at that time. However, five out of the six largest-selling makes were represented, and the seven makes sold locally accounted for nearly 60 per cent of the new car registrations in Ingham County during the two-year period. But it is apparent that the public's acceptance or disapproval of any of these seven makes in any given year would have a greater relative effect on Mason's sales than on those for the county or state. Another important factor affecting gross sales of auto dealers is used car sales, which would be included with the new car sales.

During the period of this study, automobile sales taxes represented approximately 17 per cent of the total tax at the state level and nearly 20 per cent of Ingham County's. On the basis of gross sales figures, auto sales in Mason represented as much as 30 per cent of the total sales in the city. A given uniform percentage change in automobile sales would, therefore, have a greater effect on total sales in Mason than the county or state.

Lacking comparable tax data, and because Mason's total auto sales are more sensitive to the ups and downs of particular makes than either those in the county or state, and Mason's total taxable sales are more sensitive to changes in automobile sales than are total taxable sales in the county or state, it was deemed desirable to place greatest emphasis on the total tax excluding that paid by auto dealers when comparisons were to be made with county and state data. This has been done in Table I.

It is believed that due to the nature, size and cost of the product, automobile sales would not be materially affected by the by-pass and can be excluded from the analysis without affecting its validity. In fact, by so doing it is hoped that a large variable having nothing to do with the by-pass has been eliminated.

III. CONCLUSIONS

There are many factors which influence the sales volume of particular types of business within a given area. In addition to those of external origin, on which local action has no effect, internal factors such as manner of merchandising, change of ownership, and modernization of individual establishments are reflected in total business volume. Local government activity, most notably in the area of parking, is known to exert strong influences on business. During the period of this study in Mason, these factors continued to affect sales just as much or more than the diversion of through traffic to the U.S. 127 by-pass. For this reason, it is felt that the greatest weight in evaluating the effect of the by-pass should be given to those types of business in which some of these major factors were not "active" during the period of the study. Most significant of those which can be isolated are changes in number and changes in ownership of particular types of business.

On the basis of the information available, three major types of business in Mason showed no changes in number or ownership during the two-year study period: restaurants, taverns, and groceries. Despite this one similarity, these three types of business showed interestingly different changes in business activity during the study period, especially when compared with the county and state figures. The loss in restaurant business was almost certainly due to the diversion of through traffic to the by-pass. The reason for the increase in tavern sales, especially in contrast to the county taverns, is difficult to explain unless it reflects an improvement in the local environment for shopping and leisure time activities resulting from the virtual elimination of through traffic. The increase in grocery sales, so nearly in line with those for the county and state, would indicate that sales were virtually unaffected by the by-pass.

A broad look at all the statistical information obtained on business activity in Mason during the period of the by-pass study leads to the conclusion that, in spite of some adverse effects on a few types of business, the removal of U.S. 127 through traffic from Mason did not prevent the total retail activity in the city from enjoying a significantly greater increase than that in the county or state.

PART THREE

A STUDY IN
THE CITY OF ADRIAN

SUMMARY OF THE ADRIAN STUDY RESULTS

INTRODUCTION

THE SALES TAX STUDY OF BUSINESS ACTIVITY IN ADRIAN

CONCLUSIONS

SUMMARY OF THE ADRIAN STUDY RESULTS

December 19, 1955, marked the opening of a new highway by-pass southeast of Adrian, Michigan, to carry the U.S. 223 through traffic which was formerly obliged to travel through the center of the city. The diversion of this through traffic to the by-pass has been considered generally beneficial to the city; so beneficial, in fact, that there is a local desire to have a second by-pass built to divert the through traffic presently using M-52, the route of which includes Adrian's principal shopping street.

Business activity changes in Adrian during the period of transition were measured by comparing the retail sales taxes paid by Adrian businesses the year (1955) immediately preceding the opening of the by-pass with those paid the first and second years (1956 and 1957) following the opening. The changes in taxes collected were compared with those for the same types of business in the balance of the county and in the entire state.

The comparison shows that during the three-year study period total sales tax paid (excluding the Automotive and Miscellaneous Retail groups) in Adrian was 5.7 per cent higher in 1957 than in 1955, while in the state the comparable figure was 3.3 per cent; in the balance of Lenawee County, a 4.1 per cent loss was experienced.

Analysis of the three groups of businesses making up the nucleus of the central business district in Adrian -- General Merchandise, Apparel, and Furniture -- indicates that the last two showed increases of 2.5 per cent and 15.8 per cent, respectively, from 1955 to 1957. Statewide, the businesses in these groups showed increases of only 0.6 per cent and 2.1 per cent, and the businesses in the balance of the county showed decreases of 1.1 and 21.6 per cent. In the General Merchandise group, the picture was somewhat different, since the Adrian businesses show a 1.7 per cent increase, those in the state 2.9 per cent, and those in the balance of the county a large (and unexplained) increase of 11.8 per cent. On the basis of these figures, it is concluded that the diversion of through traffic to the U.S. 223 by-pass did not adversely affect the central business district in Adrian.

At the same time, businesses in the Food group in Adrian paid sales taxes in 1957 which were 13.3 per cent higher than those in 1955, a considerably larger change than the 6.5 per cent increase recorded in the state and the 2.0 per cent decrease

in the balance of the county. This group consists of businesses which, for the most part, are not apt to be affected by a by-pass because of their known reliance on local trade.

A study of seven gas stations west of the center of Adrian, on the former route of U.S. 223 (now Business Route U.S. 223), reveals that they appear to have been somewhat adversely affected by the by-pass since they paid sales taxes in 1957 which were only 4.5 per cent higher than those paid in 1955, while stations throughout the county and state showed increases of 12.1 and 14.9 per cent, respectively. However, it is considered significant that these seven stations were not affected more seriously, and serves to emphasize the fact that the vast majority of gas stations serve principally local people, not transients.

I. INTRODUCTION

Adrian, Michigan, the county seat of Lenawee County, is located near the latter's geographical center, midway between Jackson, Michigan, and Toledo, Ohio. Highway M-52 passes through the city in a north-south direction, while M-34 enters from the west and terminates in the city. Adrian is by-passed on the south and southwest by U.S. 223, the shortest route between Toledo and Jackson. Prior to December 19, 1955, this highway entered the city from the south, followed South Main Street to the center of the city and then continued west to the city limits along Church and West Maumee Streets. After U.S. 223 was moved to the by-pass on the above date, this route was designated as Business Route U.S. 223.

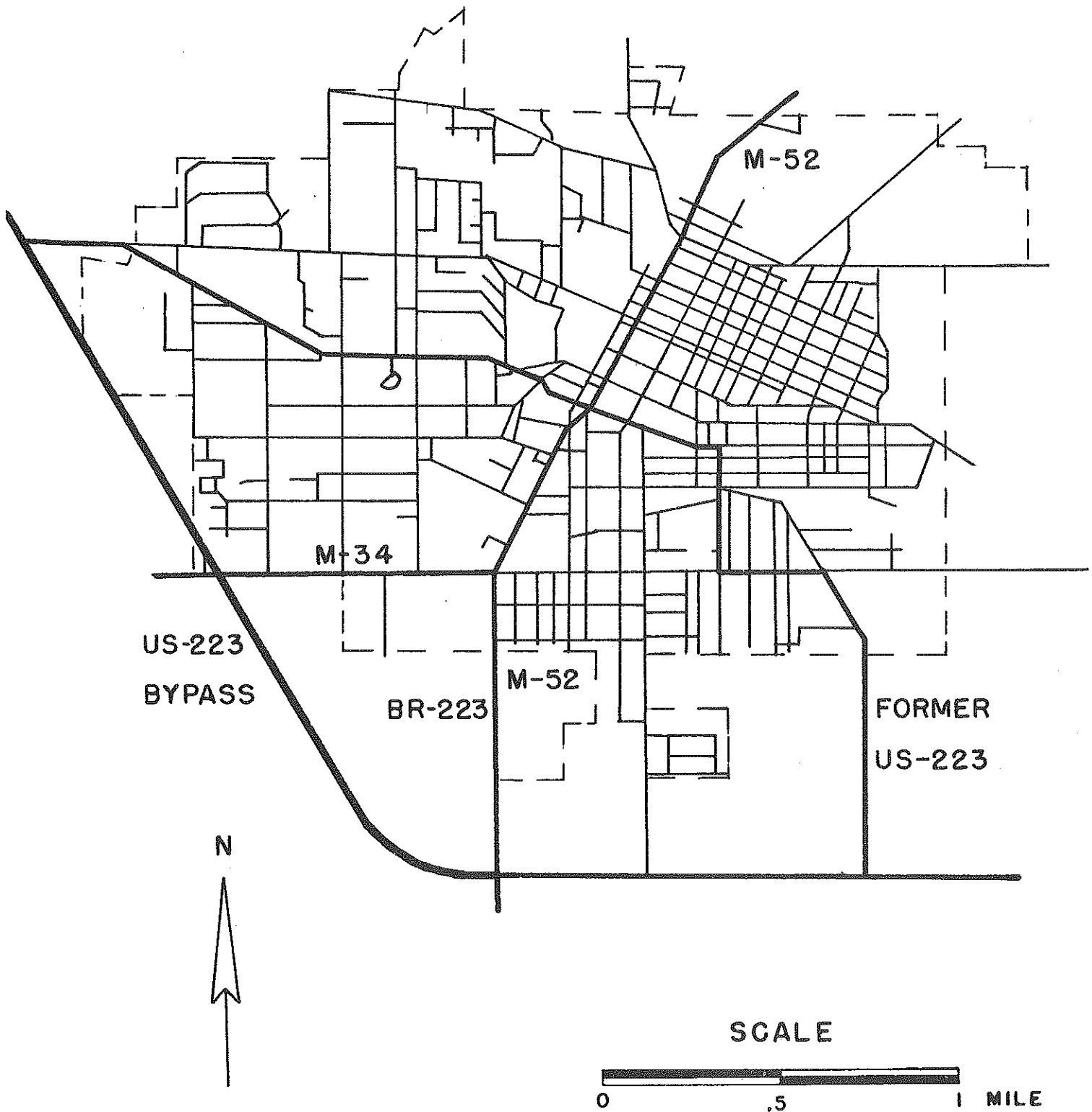
With a 1950 population of 18,393, Adrian is by far the largest city in Lenawee County, which had a population of 64,629 at that time. Scattered quite evenly throughout the county are a number of small communities, the largest of which are, with their 1950 populations: Tecumseh (4,020), Hudson (2,773), Blissfield (2,365), Morenci (1,983), and Clinton (1,344). By 1960, Adrian's population had grown to 20,229.

The economic base of Adrian and Lenawee County is principally a combination of industry and agriculture. Adrian contains many important manufacturing plants, including those of Bridgeport Brass, Hurd Lock, Bohn Aluminum and Brass, American Chain and Cable, and some 35 other concerns. The importance of agriculture can be appreciated from the fact that in 1949 the value of farm products sold in Lenawee County was the second highest in the state -- over seventeen million dollars, or 3.6 per cent of the total for all 83 counties.

The By-Pass

At one time, U.S. 223 entered the city on Treat Street, in the southeast corner of the city, and followed a somewhat circuitous route along Beecher, Center, Church, and West Maumee Streets, crossing railroad tracks at three separate places. The highway was subsequently shifted in stages to the present route of the business route, and finally to the by-pass. The U.S. 223 by-pass is over two and one-half miles in length between the two points where it joins Business Route U.S. 223, and its construction has eliminated 30 grade intersections and three railroad crossings on this important highway.

ADRIAN



The attitude of Adrian residents towards the U.S. 223 by-pass has been briefly summarized with the statement, "It's great. When are we going to have a by-pass for M-52?" The answer to that question is apparently, "Not for several years." Despite local enthusiasm for this project, which resulted in the State Highway Commissioner being invited to Adrian to view personally the need for this second by-pass, the State's current five-year highway construction program has provided no funds for this purpose.

Precisely what effect the opening of the by-pass has had on traffic volumes on the former route of U.S. 223 (now Business Route U.S. 223) through Adrian is difficult to determine from available Highway Department traffic counts, primarily because of a lack of counts prior to the opening of the by-pass. The most significant counts recorded are as follows:

Station Location	Average of two 24-hr. counts	
	Before: Aug. 11 & 12, 1954 (Wed. & Thur.)	After: July 17 & 18, 1957 (Wed. & Thur.)
1. U.S. 223: 1.5 miles west of Adrian and west of junction of by-pass and Business Route U.S. 223		6,587
2. BR U.S. 223: At west city limits of Adrian and one-half mile east of junction with by-pass	4,897	4,265
3. U.S. 223 By-Pass: Southeast of junction with BR 223		3,911

These counts show a 13 per cent drop in volume on the former route of U.S. 223 (BR U.S. 223) in a three-year period during which the by-pass was opened. During this same 1954-1957 period, traffic counts on U.S. 223 at Station 1 apparently increased about 35 per cent.* In addition, the 1957 counts

*It was necessary to estimate the 1954 figures for this station from figures available for 1953 and 1955, which are not shown here.

indicate that the by-pass is carrying nearly 50 per cent of the traffic entering or leaving the city via U.S. 223 west of the city. Since the counts shown for BR U.S. 223 are at the west city limits, the indicated reduction in volume due to the by-pass would become proportionately less important near the center of the city where traffic volumes associated with internal circulation would become much larger.

In view of the apparently rather modest drop in traffic on BR U.S. 223 as a result of the opening of the by-pass, why are the residents so enthusiastic about it? The clue to this can be found in a look at the average 24-hour commercial traffic volumes in the Adrian area during 1957. These figures show that the by-pass was carrying commercial traffic volumes equal to approximately 70 per cent of that approaching the city on U.S. 223 from both the east and west. Not only does the by-pass eliminate the U.S. 223 through truck traffic from the center of Adrian, it also permits some interchange between that route, M-34, and M-52 to take place outside of the city, instead of inside as was formerly the case.

II. THE SALES TAX STUDY OF BUSINESS ACTIVITY IN ADRIAN

Because it is one of the Michigan cities with a population over 10,000, certain sales tax information for Adrian is available in published form. Despite the limitations mentioned in the section on "Methodology", availability of the published data means that it was possible to make certain comparisons among business activity in Adrian, Lenawee County, and Michigan, without "on-the-scene" research for this purpose.

In order to obtain additional information about a specific group of businesses which might be affected by the diversion of some through traffic to the U.S. 223 by-pass, a limited study has been made of seven gas stations located on the former route of U.S. 223 (now Business Route U.S. 223) between the center of the city and its westerly junction with the by-pass. No other group of businesses in Adrian seemed adaptable to a short-range tax study because of a number of complicating factors, including the presence of other trunkline routes through the center of the city which have not been rerouted and the fact that east of the center of the city U.S. 223 was shifted in stages over several years. Changes in sales taxes paid by these seven stations were compared with the published data for county and state gas stations, but they were not compared with others in Adrian because of the lack of published sales tax information for the city gas stations alone.

Both on the basis of the official 1950 U. S. Census figures and 1957 estimates, Adrian contained about 29 per cent of Lenawee County's population. But at the same time, businesses classified as "Adrian" businesses file about 39 per cent of the tax returns in the county, representing about 55 per cent of the tax dollars collected. This last figure even runs as high as 75 per cent for some groups of businesses, such as Apparel.

For this reason, published Adrian sales tax figures have been compared with those for the "balance of Lenawee County", since it is obvious that there would be little value in comparing them with those for the entire county, so heavily influenced by the Adrian sales themselves.* In the case of the seven gas stations, however, the sales taxes paid have been compared

*The "balance of county" is in reality that area not served by the Adrian Post Office. There are four other post offices in Lenawee County: at Blissfield, Clinton, Hudson, and Tecumseh.

with those paid by all stations in the county because the seven represent only a minor percentage of the total number in the city, and consequently only a small percentage of those in the entire county.

The study of the Mason by-pass indicates that the total of sales taxes collected, minus those collected from the Automotive group, gives a truer picture of local business activity in comparison with the county and state than does the total tax collected from all nine groups. However, in the following tabulation showing changes in sales tax collections, both the Automotive and Miscellaneous Retail groups have been excluded, and it is the total of taxes paid by the seven other groups of businesses which has been used for the "total tax". The reason for doing this stems from the fact that during the year 1957 the Department of Revenue reclassified certain establishments selling gasoline from the "gas station" classification (in the Automotive group), to the "petroleum and products" classification (in the Miscellaneous Retail group). This shifting resulted in some confusion, and during the first few months of 1957 many gas stations properly in the Automotive group were apparently grouped with the Miscellaneous Retail businesses, producing some misleading sales tax figures which do not give a true picture of gas station sales for these months. Unfortunately, it has not been possible to compensate for this apparent error in classification to produce reliable data, so that if the taxes paid by the Automotive group are to be excluded, then the taxes paid by the Miscellaneous Retail group (which pays the smallest taxes of any of the nine groups) should also be excluded, as has been done in the tabulation.

The Adrian study, covering a three-year period, disclosed the indicated changes in sales taxes collected. These have been expressed in terms of "index numbers", based on total collections, rather than percentage changes. The first column of index numbers for each geographical area represents the sales tax collections on sales during the year before opening of the by-pass (the calendar year 1955) and being the base year in this study all index numbers are 100. The second column gives the index numbers for the first year after opening of the by-pass (the year 1956), and the third column those for the second year after opening (the year 1957). These numbers are shown for businesses in the areas indicated and as previously described. In addition to the tabular presentation of these index numbers, this information is subsequently shown in graphic form.

General Business Activity

On the basis of information in Table I, which follows, it is concluded that in the two years immediately following the opening of the U.S. 223 by-pass general business activity in the Adrian area held its own and may have improved, but at the same time some types of business apparently did suffer a loss in sales or enjoyed a lesser increase than their counterparts in the county and state. The Total Tax for the seven groups of businesses shows that Adrian's overall business activity increased somewhat more than the state's and much more than that in the balance of the county where losses were experienced.

Gas Stations

Based on sales taxes paid, the seven Adrian gas stations along the former route of U.S. 223 west of the center of the city show nearly as much increase the first year after the by-pass was opened as the stations in Lenawee County and the state. However, the second year after the by-pass was opened, the seven stations had a much smaller increase than the stations in the county and the state. It is important to note, too, that the number of stations in the county and state was not constant during this period. In Lenawee County, the average number of gas stations filing returns during the year 1957 was 5 per cent lower than during 1955. In the state during the same period there was an increase of less than 1 per cent in the number of stations.

The increases shown for the county and state gas stations in 1957 must be considered approximations -- that for the county because of apparent errors in classification of a magnitude which can only be estimated, and that for the state because of the re-classification of certain establishments selling gasoline. Nevertheless, on the basis of available data it appears that the stations in both of these geographic areas paid sales taxes in 1957 at least 10 per cent greater than those paid in 1955.

During the year 1957, the average Detroit retail price for regular gasoline was about 1.1 cents higher than during the year 1955, exclusive of state and federal taxes. This would account for a 5 per cent increase in sales taxes paid without any increase in the volume of sales, in terms of gallonage pumped. If the price of gasoline at the seven Adrian stations increased along with the Detroit prices, it appears that in terms of taxable sales the stations were doing about the same volume of business in 1957 as in 1955.

Table I: Changes in Sales Tax Collections
on sales during the calendar years 1955,
1956, and 1957
Index Numbers, 1955 Base Year

Gas Stations	Seven Adrian Stations			Lenawee Co.			Michigan		
	1955	1956	1957	1955	1956	1957	1955	1956	1957
	100.0	102.9	104.5	100.0	103.3	112.1 ⁽¹⁾	100.0	103.6	114.9
Group	Adrian			Balance of Lenawee Co.			Michigan		
	1955	1956	1957	1955	1956	1957	1955	1956	1957
Total Tax (2) (less Automotive and Misc. Retail Taxes)	100.0	103.9	105.7	100.0	96.2	95.9	100.0	103.7	103.3
Apparel	100.0	103.5	102.5	100.0	93.9	98.9	100.0	101.3	100.6
Building, Lumber and Hardware	100.0	101.7	104.8	100.0	91.3	83.5	100.0	102.2	89.2
Food	100.0	107.9	113.3	100.0	97.3	98.0	100.0	103.1	106.5
Furniture	100.0	107.5	115.8	100.0	84.2	78.4	100.0	103.9	102.1
General Merchandise	100.0	101.5	101.7	100.0	102.6	111.8	100.0	101.9	102.9
Specialty	100.0	90.2	84.9	100.0	111.2	110.4	100.0	103.0	103.4
Non-Retail	100.0	106.3	96.8	100.0	94.2	109.1	100.0	111.8	110.9

- (1) This percentage is approximate. Due to errors in classification for the months February through May, 1957, it was necessary to estimate the sales taxes for these months on the basis of the available information.
- (2) The reasons for excluding the Automotive and Miscellaneous Retail group sales from the Total Tax percentages are explained in the text. The Total Tax percentages shown are based on the sales taxes paid by the seven groups listed separately.

Sources:

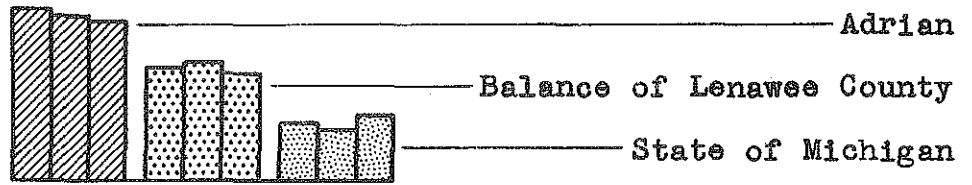
City, Balance of County, and State Data: Michigan Department of Revenue, Research and Statistical Bulletin, monthly issues for time periods covered.

Adrian Gas Station Data: Michigan Department of Revenue, based on field survey by Project Staff.

Lenawee Co. Gas Station Data: Unpublished records of Michigan Department of Revenue.

CHANGES IN SALES TAX COLLECTIONS: 1955-1956-1957

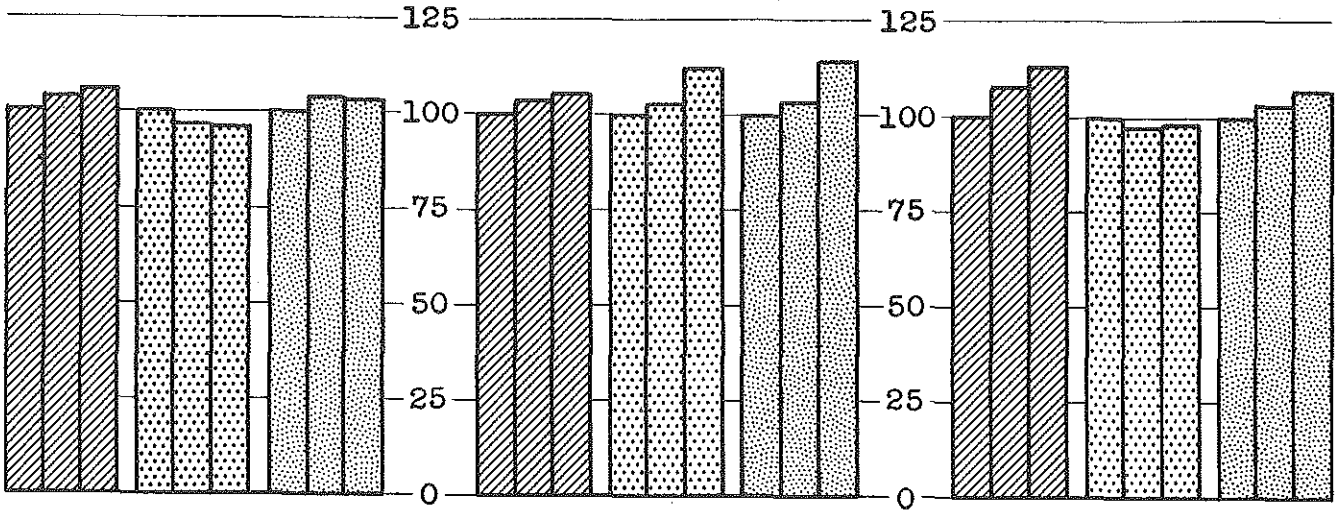
1955 Base Year
Collections = 100



Total Tax (1)

Gas Stations (2)

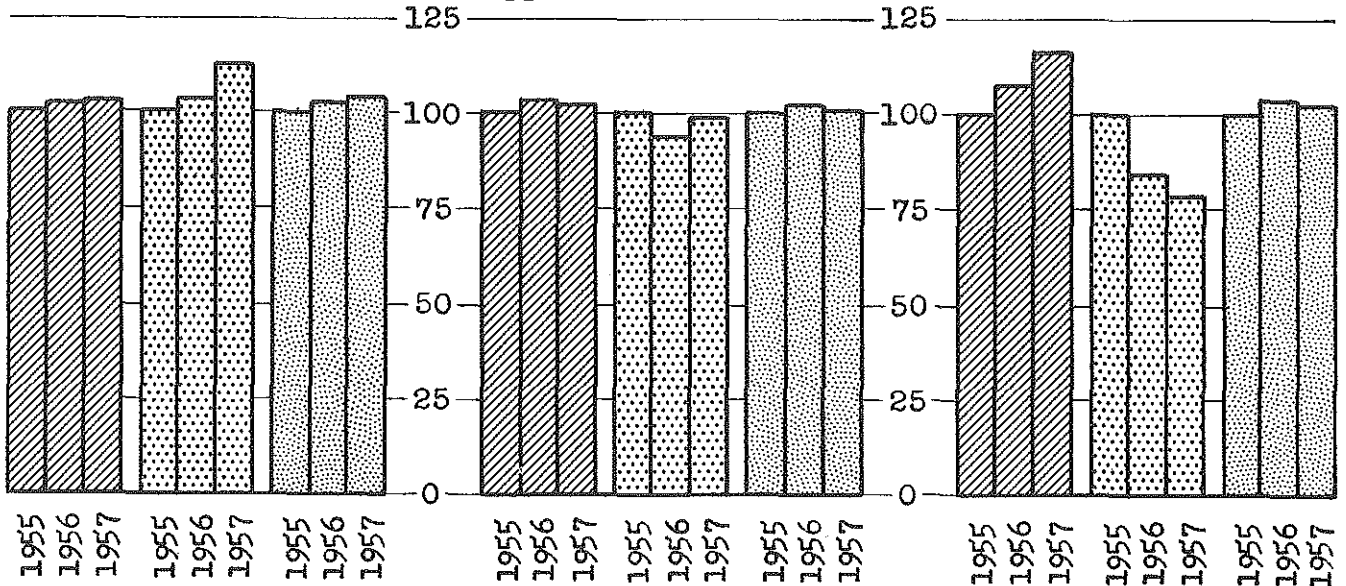
Food



General Merchandise

Apparel

Furniture



(1) Excluding Automotive and Miscellaneous Retail group taxes.

(2) Taxes paid by seven Adrian stations, and all Lenawee Co. stations.

Sources:

City, Balance of County, and State data: Michigan Department of Revenue, Research and Statistical Bulletin

Adrian gas station data: Michigan Department of Revenue, based on field survey by project staff

Lenawee Co. gas station data: Unpublished records of Michigan Department of Revenue

The seven stations studied are located at various points along Business Route U.S. 223, the easternmost being adjacent to the central business district and the westernmost at the fringes of residential development. Taken as a group, these seven stations are located in a developed area and it is expected they would receive heavy patronage from Adrian residents, and would have obtained only a small percentage of their business from transient trade even when U.S. 223 followed this route. This appears to be borne out by the fact that there is at most only a small loss in business which might be attributed to the diversion of through traffic from the former U.S. 223 to the by-pass.

It is reported that some of these stations have placed more emphasis on repair activities to offset losses in gasoline sales. Except for parts, such repair activities are classified as a non-taxable service and would not appear in the sales tax records, but would be reflected in gross sales. It is, therefore, significant to note that these seven stations had a 4.7 per cent increase in gross sales the year after the by-pass was opened, and a 9.0 per cent increase the second year after it was opened.* This is considerably more than the respective 2.9 and 4.5 per cent increases in sales taxes shown for these same two years.

General Merchandise, Apparel, and Furniture

These three groups of businesses are considered together for two reasons. First of all, these three general categories contain the businesses which constitute the real nucleus of major shopping area, supplying the "shopping goods", as contrasted with the "convenience goods" such as food and drugs.** For the most part, these represent businesses found in the central business districts and other large shopping centers, and their performance reflects the general economic life of the community and the city's ability to attract shoppers from outlying areas in the face of competition from other shopping centers. Secondly, each of these three groups of businesses is fairly homogeneous in that the included "types of business" are similar and would be expected to react in a similar manner to various economic stimuli.

*These two percentage changes do not appear in the tabulation or graphs, which are based solely on sales tax collections.

**In analyses of central business districts and other shopping centers, the sales by businesses in these three categories are sometimes referred to as the "G.A.F. Sales".

The Adrian area businesses in the General Merchandise group experienced slightly smaller increases in 1956 and 1957 than the comparable group in the state, but neither the Adrian nor state groups exhibited gains commensurate with the estimated population increases during these years. At the same time, however, the General Merchandise group in the balance of the county had increases greater than those in either the city or state. The reason for this is not known, but it should be recognized that there are other communities in Lenawee County, previously mentioned, in which establishments in this category might have been opened or business expanded sufficiently to account for this increase.

In both the Apparel and Furniture groups the Adrian establishments show increases greater than either those in the balance of the county or the state. In terms of dollars of sales taxes paid, the Adrian increases in the Apparel group are somewhat greater than the losses in the balance of the county, while the Adrian increases in the Furniture group are slightly less in dollar volume than the losses in the balance of the county. This suggests that there was to some degree a shift in the point of sale of some goods in these categories, from outside the Adrian area to establishments within the city.

It is mainly on the basis of the performance of the Adrian establishments in the General Merchandise, Apparel, and Furniture groups during the years 1956 and 1957 that it is concluded that the diversion of through traffic to the U.S. 223 by-pass did not adversely affect the central business district in Adrian.

Food

The Food group is somewhat less homogeneous in that it includes food for both on-site and home consumption. Taxpayers in this group include restaurants, which are very apt to be affected by the diversion of traffic to the by-pass, and groceries, which are virtually immune to by-pass effects, on the basis of experience in other communities. However, at the state level, the types of business which sell food products for home consumption pay approximately 75 per cent of the sales taxes in the Food group, and groceries alone pay nearly two-thirds of the sales taxes in this group, so that it is the fortunes of these establishments which play a large part in determining the trends in the Food group.

For this reason, it is not surprising that this group shows steady growth in both Adrian and the state. The grocery category has shown consistent increases in sales taxes paid over the past few years, even in times of recession. For example, at the state level in the 1957-1958 fiscal year, the Food group was the only one of the nine groups which showed an increase in sales taxes paid over those paid in 1956-1957, and this was due entirely to increases in the grocery category large enough to offset losses in the seven other types of business within the Food group.

While the balance of Lenawee County experienced decreases in food sales in 1956 and 1957, these were much smaller in dollar volume than the increases enjoyed by the Adrian establishments so that it was not merely a case of a shift in buying from establishments outside the Adrian area to establishments within. The Adrian Food establishments did very well in the two-year period following the opening of the by-pass and, taken as a group, do not appear to have suffered any adverse effects. An analysis of restaurants alone, of course, might show that they had experienced decreases in business attributable to the by-pass, but such a study is not possible with the available data.

Other Groups

Sales tax collection figures obtained for the three other groups of businesses shown -- Building, Lumber, and Hardware; Specialty; and Non-Retail -- do not produce index numbers from which any definite conclusions can be drawn.

The Building, Lumber, and Hardware group is fairly homogeneous in that about 80 per cent of the group's sales taxes are paid by businesses associated with building activity. The 1956 and 1957 increases in sales taxes collected from Adrian businesses in this group reflect the steady increase in the valuation of building permits issued in Adrian each year from 1954 through 1957. Comparable figures on the total dollar volume of building activity in the entire county and state are not available.

The Specialty group is fairly heterogeneous in that it includes businesses selling such diverse items as drugs, jewelry, sporting goods, and flowers, while the Non-Retail group is a catch-all category in which half the sales taxes are paid by the gas and electric utilities.

The Automotive and Miscellaneous Retail groups -- the only two remaining -- have been excluded from the analysis for reasons given previously.

III. CONCLUSIONS

The limited usefulness of the published data for cities over 10,000 population, resulting from a system of coding which does not differentiate between businesses located in the center of the city and those on the fringes or surrounding rural area, means that in attempting to use such data in evaluating the effect of a by-pass the most weight should be given to groups of businesses which are located in such a way that they would all be affected in a similar manner by the diversion of through traffic to a by-pass. In the case of Adrian, it was felt that the businesses concentrated in the central business district -- in the General Merchandise, Apparel, and Furniture groups -- would all be affected in a similar manner by the opening of the U.S. 223 by-pass. It is on the basis of their favorable showing the two years following the opening of the by-pass that it is concluded that the diversion of through traffic to the by-pass did not adversely affect the central business district in Adrian.

On the other hand, the analysis of sales tax data for the seven gas stations on the former route of U.S. 223 indicates that while they paid increasing sales taxes the two years following the opening of the by-pass, this increase would have been larger if the by-pass had not been opened; it is smaller than the increases in taxes paid by stations in the entire county and state. But despite this, and the fact that the indicated increase may be due in large part to increases in the retail price of gasoline, it is significant that these seven stations fared as well as they did after the opening of the by-pass.

On the basis of the statistical information available, it is concluded that the diversion of a large part of the U.S. 223 through traffic to the by-pass did not adversely affect the general retail activity in Adrian nor prevent it from enjoying an increase in keeping with that in the state and better than that in the balance of the county.

PART FOUR

A STUDY IN
THE CITY OF HART

PREFACE

SUMMARY OF THE HART STUDY RESULTS

INTRODUCTION

THE IMPACT OF THE BY-PASS

BUSINESS ACTIVITY IN HART -- THE SALES TAX STUDY

CONCLUSIONS

PREFACE

Hart is a small city close to the Lake Michigan shoreline. It is of special interest because it is located in a fruit-growing area subject to seasonal variations in employment, and is close to and serves one major summer resort area while at the same time being by-passed by a major highway which carries through traffic to and from other shore resort areas. Finally, with the by-passing of Hart by U.S. 31, it was left without a state or U.S. highway into the center of the city.

In the course of the field work in Hart, local opinions and comments were solicited and provide the basis for one of the parts of this report. However, a more objective evaluation of the by-pass effects was sought from an analysis of retail sales tax collection figures for local businesses, both before and after the opening of the by-pass, and as compared with the performance of comparable businesses in the county and state. It is these sales tax analyses which represent the major part of the work in the Michigan by-pass studies, although in the case of the Hart study this analysis is supplemented by a review of local opinions and background information on the city, the by-pass, and the former route of U.S. 31.

Credit must go to Mr. Frank Halliday, District Engineer in Grand Rapids for the Michigan State Highway Department, for suggesting Hart as a subject for study.

Vital in the success of the Hart study has been the cooperation of people at the local level. Over 70 businesses were contacted in Hart, and with few exceptions the desired information was supplied willingly. Frequently, upon learning the nature of the research, these people freely discussed the by-pass and its effect on their business and the general local economy. Some of their observations are included in the report section on "Local Opinion".

Several individuals in Hart were especially helpful in this study. Mr. Walter Petersen, Secretary of the Hart Chamber of Commerce, provided some comments on the effect of the by-pass and was most helpful in providing information about establishments which, while closed at the time of the sales tax license survey, had been open at some time during the

study period. Mr. Al Chapman, of the Hart Journal, provided the newspaperman's view of the by-pass and the newspaper itself supplied some material in the form of past articles. And Mr. Howard Gwinnup, City Manager, along with other members of the Hart city administration, provided additional comments and statistical information on the city's growth. The help of all of these people is greatly appreciated.

SUMMARY OF THE HART STUDY RESULTS

Prior to December 2, 1955, Hart, Michigan, straddled U.S. 31, the major highway route along Lake Michigan's eastern shore. On that day a new by-pass was opened along the east side of the city and Hart was left without a single numbered highway or official business route through its center. What did this do to a community in an area which has a heavy influx of migrant workers and resort residents during the summer months, but which at the same time had apparently been providing certain services to motorists who were only "passing through"?

The effect of the by-pass on Hart was viewed from two standpoints: that as expressed in the subjective views and opinions of local businessmen and officials, and as determined from a more objective statistical analysis of retail sales tax collection figures obtained from the Michigan Department of Revenue. The two viewpoints did not produce greatly different results and both tend to substantiate the hypothesis that while highway by-passes will indeed adversely affect certain types of business in a community, the general business activity possibly may be increased as a result of the by-pass.

Initially, there was said to be little opposition to the proposal to by-pass the city -- Hart was especially plagued by a truck problem, accented by a long grade through the city and a traffic signal in the center of the business district. Now this problem has been virtually eliminated and both the "livability" of the city and the "shopability" of its business district have been greatly improved. Local opinion is that Hart business in general has not been adversely affected, or only slightly so, by the opening of the by-pass. However, the operators of certain motorist service-oriented businesses did report decreases in business activity, in some cases sizable, which they attributed to the by-pass. But even the "losers" often acknowledged that the by-pass had been good for the city in general.

The sales tax study compared the sales taxes paid by Hart businesses on sales the year prior to the opening of the by-pass with those for the first and second years after its opening. The changes in business activity were in turn compared with those for comparable types and groups of businesses in Oceana County, of which Hart is the county seat, and the entire state. Considering the businesses collectively in each of the three geographic areas, but excluding the

Automotive group to provide a more accurate comparison, those in Hart had increases slightly greater than those in the state (8.3 per cent against 7.5 per cent) the second year after opening of the by-pass, while the county businesses had a smaller increase (4 per cent). Two groups centered in the business district -- General Merchandise and Apparel -- showed increases in Hart approximately equal to those in the county and considerably more (by over 10 per cent) than those in the state. It was concluded from these findings that the city "as a whole" was not adversely affected by the by-pass and that the business district itself appeared to have benefited from the removal of through traffic, especially trucking, from the center of town.

Analysis of specific "types of business" showed, however, that certain businesses catering to motorists were adversely affected by the diversion of through traffic to the by-pass. Most apparent was the effect on the Hart restaurant business, which suffered a loss of approximately 14 per cent the two years following the opening of the by-pass, occurring in a manner which points to the diversion of the through summertime tourist as the cause. In-town gas stations, too, apparently suffered losses although here the picture is complicated by the construction of a new station near the by-pass after its opening. Collectively, the gas stations did enjoy the same increases as those in the county and state, but it is apparent that most or all of this increase must have represented sales at this new station. The "Taverns, Pool Rooms, and Refreshment Stands" type of business in Hart does not appear to have been greatly affected in either way when compared to the performance of the same group in the county and state. The groceries in Hart did considerably better (a 26.7 per cent increase the second year) than those in the two other geographic areas (approximately 13 per cent in each), although it is difficult to associate the favorable showing of this "convenience goods" type of business with the opening of the by-pass.

Three years after the opening of the by-pass there was no indication of any great change in the pattern of retail establishments in the Hart area. The only new businesses which might be associated with its opening are two new gas stations near, and plainly visible from, the by-pass at the south entrance to the city.

I. INTRODUCTION

Straddling U.S. 31, the major highway route along Lake Michigan's eastern shore, the City of Hart for many years was bisected and defiled by the movement of numerous cars and trucks traveling north to Michigan's recreation areas or between lakeshore manufacturing and transportation centers such as Ludington and Muskegon. Then, on the evening of December 2, 1955, the picture was suddenly changed and, as the Hart Journal noted:

"State Street was notably quiet from a traffic standpoint this week. There was no roar of heavy trucks and no honking of impatient motorists, anxious to be on their way north or south. For the first time since there has been through highway travel in Michigan, Hart was without long-distance traffic through the center of town....And now another era is gone. What this will mean to Hart is yet to be seen. The prevailing reaction now seems to be one of relief."

Several years have passed since the Hart by-pass was opened to traffic; sufficient time to permit a preliminary evaluation of its effect on the business life of the city, as well as on the community in general.

Hart and the County

Hart is a small city, with a population of 2,172 at the time of the 1950 U. S. Census; it had been growing at a fairly steady rate from a population of 1,690 in 1930. However, during the 1950-1960 decade Hart lost population so that the preliminary 1960 Census figure for Hart is 1,968 persons.

It is the county seat of Oceana County, which had a population of 16,105 in 1950. About 35 per cent of the county's population is located in Hart and the villages of Shelby, Pentwater, Hesperia, New Era, and Walkerville.

In spite of the population loss, other factors present more positive indications. The number of electrical meters in operation has increased at a fairly even rate from 1,350 at the end of July, 1951, to 1,600 at the end of July, 1957. Dwelling units authorized by building permits totaled 58 for the years 1950 through 1957, which would provide housing for 170 people at the 1950 figure of 2.9 persons per dwelling unit. The valuation of building permits issued in 1955, before the by-pass was opened, totaled \$109,000. In 1956, the first year after opening, they totaled \$131,325, and in 1957, \$183,785.

Oceana County is an important fruit-producing county, with the 1950 U. S. Census showing that over one-third of the 5,597 people in the labor force were employed in agriculture, while only slightly over one-fifth were in manufacturing. The county is best known for its cherries, ranking fourth in the nation in the quantity harvested in 1954. Oceana was also among the nation's top 100 counties in the harvesting for sale of plums and prunes, peaches, pears, apples, and snap beans. In the value of sales of fruits, including berries, it ranked seventieth in the United States. Migrant labor is used extensively in the harvesting of these crops and the summertime population of the area is swelled by these additional workers.

Hart, as a result, is a shopping center for an important agricultural area, as well as a food-processing and canning center (Stokely-VanCamp is the city's largest employer during the summer months). Its economy is augmented by a limited amount of manufacturing, by summertime tourist business, and by its role as a county seat.

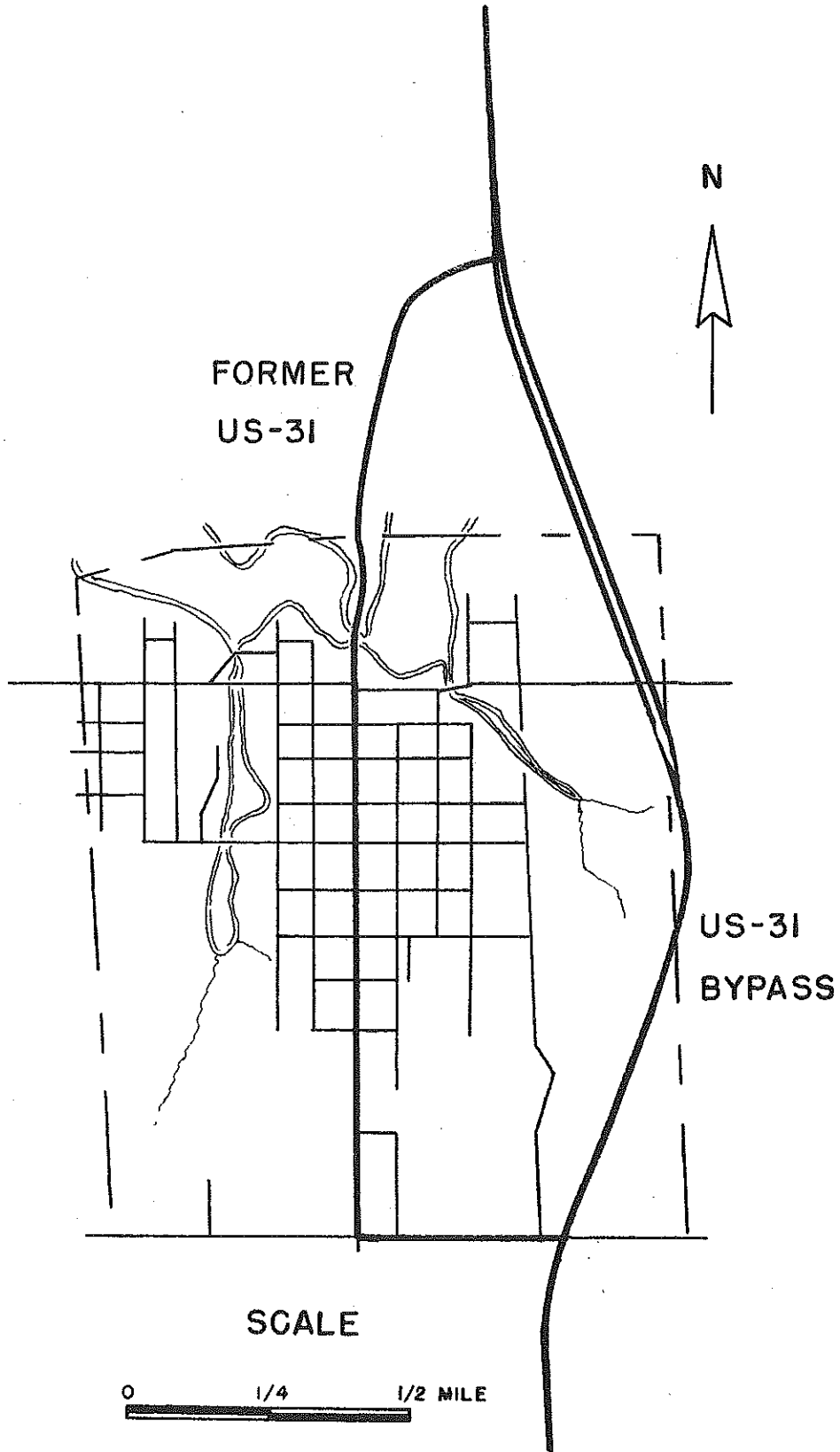
Hart's tourist business stems principally from the recreational facilities located about eight miles to the west: resort-rimmed Silver Lake and Lake Michigan, both noted for their sand dunes. The summertime population of the area is thus greatly increased by the tourists, summertime residents, and others making use of these facilities. Hart is the logical place for them to do the shopping which cannot be done at the corner grocery or similar establishments close at hand. The highway connections between the city and this recreational area are county roads; the movement between the two should not have been affected by changes in U.S. 31.

The Highway and the By-Pass

Prior to the construction of the new highway by-passing Hart, U.S. 31 entered the city from the south on a sharp curve to the west, followed by a right-angle turn to the north into State Street, Hart's "main street" and the backbone of the city's developed area. State Street runs straight north for a mile, with a gentle grade down into the business district just south of Hart Lake. From this point north the former U.S. 31 dropped down to a causeway across the lake, and climbed with some curvature to a tree-shaded stretch from which it curved east to a sharp corner, turning north to follow the alignment presently used for the new U.S. 31. The horizontal and vertical alignments of the highway both south and north of Hart was unsuitable for a major highway and was a factor in many accidents.

Despite the fact that all through traffic was routed through the center of the city, State Street has not been a victim of

HART



extensive strip commercial development. The business district is fairly compact, occupying both sides of one block on State Street and another block and one-half along State across from the courthouse. There appears to be little "courthouse square" orientation to the commercial development, perhaps due in part to the fact that until recently the Oceana County Courthouse was not of a character or size to encourage development in this manner. But it has just been replaced by what must rank as one of the most modern and attractive small courthouses in the United States.

Between the southern edge of the business district and the commercial-industrial development around the Pere Marquette Railroad crossing of State Street, a distance of about one-half mile, there are only seven scattered commercial establishments: two gas stations, an automobile dealer, used car lot, motel, drive-in restaurant, and supermarket. No one of these is large by today's standards and State Street for this half-mile stretch south of the business district has retained its essentially tree-shaded residential character.

The by-passing of Hart was a part of the general improvement of U.S. 31, from just south of the city ten miles north to a point north of Pentwater, a lakeshore community which was at the same time by-passed by a distance of about three miles. While the former U.S. 31 alignment was utilized south and north of Hart, the portion adjacent to the city was bowed to the east to miss the developed area (although still largely within the corporate limits), and constructed as a controlled-access highway on this new right-of-way. Access to Hart was provided at three points: where the new by-pass joins the old alignment both south and north of the city, and by the Walkerville Road which leads to the center of Hart and intersects the by-pass east of the city.

The by-pass is a four-lane divided highway from just south of the Walkerville Road intersection to just north of the north entrance to Hart, a distance of about one mile. The median strip is approximately eight feet wide and is paved with macadam except at the north entrance, where it flares out to a considerable width and is grassed. The remainder of the by-pass, like U.S. 31 to the north and south, is two lanes of concrete. The accident record at the south entrance to Hart indicates that some other treatment, possibly a divided highway, should have been used here to facilitate left turns off U.S. 31 in both directions and to permit proper acceleration and deceleration on the highway for cars entering and leaving at this point. Six of the eleven recorded accidents which occurred on the by-pass during the two years after opening were at this intersection, whereas the year prior to its opening a point about one-half

mile north of Hart on the former route was the site of six of the twelve recorded accidents. Analysis of the accident record for these same three years indicates that the opening of the by-pass has reduced the total number of accidents and injuries but increased the number of fatalities due to the higher speeds on the by-pass.

The effect of the by-pass on traffic volumes through Hart can not be accurately determined due to a lack of traffic counts on the former route of U.S. 31 after opening of the by-pass. However, one local source indicated that volumes in the center of Hart are now only 60 per cent of what they were prior to the by-pass opening, and more important, the majority of the commercial traffic on U.S. 31 now by-passes the city. The 1957 average daily traffic figures of the Michigan State Highway Department showed total volumes of around 4,000 vehicles per day north and south of Hart, and a commercial volume of 425 vehicles just north of Hart, with these counts including the users of both the by-pass and the former route.

With the shifting of the designated U.S. 31 from the former route to the by-pass, the streets in the center of Hart no longer carry any numbered U.S. or State routes. Even the former route through the city, although identified as a "business route", is not an official "U.S. 31 Business Route", but is rather a route over streets that are only classified as major city streets, and for a short distance a county primary route. Both north and south of the city on U.S. 31 there are official State Highway Department signs which direct interested motorists to the "City of Hart Business Route". There are also in both locations a number of private advertising signs giving directions on how to reach specific Hart business establishments, and in addition Chamber of Commerce sponsored signs pointing to "vacationland--HART Shopping Center". There is little reason for the motorist approaching the city to be unaware of Hart's existence or how to reach it.

II. THE IMPACT OF THE BY-PASS -- LOCAL OPINION

Hart in 1958 was not the time nor the place to obtain objective personal opinions on the effect of the by-pass. Affected, as most cities, by the general business recession, this area suffered an additional set-back from nature, which permitted the harvesting of a cherry crop locally described as only "ten per cent of normal", a figure close to the actual statistical drop from the previous year in the West Central Area of Michigan. While these two were recognized as the principal causes for a reduction in business activity by the majority of Hart businessmen, some added a third--the by-pass--when the subject was brought up. Thus a statistical analysis is needed to obtain an objective view of the economic effects of the by-pass, and for this purpose reliance has been placed on the sales tax records of the Michigan Department of Revenue, discussed in a later section.

Nevertheless, personal opinions, fears, and reactions do play an important role in the life and development of a community, and so it is important to take a look at the Hart by-pass in this light.

Announced plans for the by-passing of Hart by a relocated U.S. 31 did not precipitate mass meetings to protest the action. It is said there was very little opposition to the proposal, although there was some understanding that there would be some drop in the gasoline and restaurant business. But Hart had a truck problem, intensified by the long grade through town for southbound trucks which frequently had to stop for the traffic signal at State and Washington. Winter weather further accentuated this problem. It is said that the "public in general was delighted" at the prospect of eliminating the noise and dust associated with this trucking, as well as the accompanying interference with automobile traffic and parking in the downtown area.

Now, three years after the opening of the by-pass, there seems to be little reason for those who looked forward to elimination of the truck problem to be disappointed. Hart is now a quiet city with clean streets and it is said that even the objectors to the by-pass are glad to be rid of the trucking. Several people, not themselves in business but close to the business life of the community, felt that the by-pass had not hurt the town in any way, or only to a small extent. Mention was made of the fact that Hart has been helped in this respect by being the county seat. Persons not so close to the sound of a cash register are perhaps more apt to give greater weight to the visible and known benefits of the by-pass, such as the virtual

elimination of truck traffic, the increased ease of driving and parking, the great improvement in livability and "shopability" due to the reduction in noise, dust, and unnecessary through traffic.

Businessmen would be expected to evaluate the effect of the by-pass in terms of its impact on their own enterprises, and were frequently asked to do so in informal conversation. Expected to be affected by the by-pass, two gasoline stations did in fact report that summertime business is down 20 to 30 per cent but that the by-pass has not affected their winter business, which is almost completely dependent upon regular local customers rather than through traffic. One operator mentioned that before the by-pass was opened, traffic used to back up on State Street, and added that while the by-pass was of benefit to the motorist, it was not so good for the town. Another felt that the basic problem will be eliminated when all towns on the highway are by-passed and have equal status, but at present with the towns to the south, such as Shelby, not by-passed, the Hart service stations are operating under a handicap in attracting the transient trade. One gas station operator was not in his present location prior to opening of the by-pass and could not make a comparison; two other stations, near the by-pass, opened after the by-pass was constructed. One small station has gone out of business since opening of the by-pass but was, judging from comments, a very marginal operation.

Two other motorist service facilities along the former route, but outside the business district, are being managed by people who were not doing so before the by-pass opened; they could not, therefore, make a before-and-after comparison but both indicated that business was satisfactory. One restaurant, in a location which obviously had been chosen originally to attract transient trade, reported that business had held up fairly well because it had a large number of regular customers but that Sunday and holiday business had fallen off. While the by-pass had not yet affected this restaurant too much, the number of customers was not increasing due to the elimination of the majority of through traffic from the street it faces. Especially affected was a drive-in refreshment stand which previously had relied heavily on through traffic. Despite this, it appeared to be weathering both the diversion of through traffic and the recession. Not all of the effect on business has been negative. One proprietor in the downtown area reported that his business had improved as a result of the construction of the by-pass. The reason: while he was not located on the former route of U.S. 31 through Hart, his business is located on East Main Street, which becomes the Walker-ville Road intersecting the by-pass just east of the city. Whereas formerly no one going to or from Hart on U.S. 31 would

have used this street, they do now because it provides the quickest way to get from the new by-pass into the center of town, especially from the south. It is quite possible that other businesses on East Main Street have also benefited, although motorist service enterprises are few in number on this street.

The By-Pass and Real Estate Values

No attempt has been made accurately to evaluate the effect of the by-pass on real estate values in Hart. Studies made in other localities indicate that insufficient time has elapsed here, and too few real estate transfers made, since the opening of the by-pass to permit a good analysis of its effect. Conversations held with local people in the real estate field indicate that the by-pass has increased residential land values in the city, especially near State Street, the former route of U.S. 31. This is another indication that Hart's "livability" has been improved by the new by-pass.

III. BUSINESS ACTIVITY IN HART -- THE SALES TAX STUDY

Interesting as personal opinions are in a by-pass study, a more objective approach is needed properly to evaluate business activity in Hart in the light of business trends throughout Oceana County and the State of Michigan. Sales taxes paid during the year immediately prior to the opening of the by-pass have been compared with those paid the first and second years after opening. These sales taxes have been expressed in terms of "index numbers", based on the total of collections in various business categories. In Table I, the first column of index numbers for each geographical area represents the sales tax collections for sales during the one-year period before opening of the by-pass (December 1954 through November 1955) and since it is the base year in this study, all index numbers are 100. The second column gives the index numbers for the first one-year period after opening of the by-pass (December 1955 through November 1956), while the third column gives the index numbers for the second year after opening (December 1956 through November 1957). Index numbers for the years after opening of the by-pass are calculated from the relationship between the sales tax collections for these years with the comparable collections during the base year. For purposes of brevity, these three year-long periods are sometimes hereafter referred to as the calendar years 1955, 1956, and 1957. Since sales tax collections are made the month following the month of sale, the calendar years represent the time periods during which the sales taxes for the various one-year periods were actually collected.

The objective of the sales tax study is not to determine the effect of the by-pass on individual establishments, but rather the effect on all establishments of a certain type, or in a certain group. This minimizes the factor of intra-city competition which may bear no relationship with the opening of the by-pass, and this method of procedure is in any event necessitated by the secrecy requirements of the Department of Revenue. In the larger cities, it is possible to compare the changes in business activity for a number of establishments of a given type, on the former route of a trunkline highway, with a "control" group, not on the former route; but in the smaller cities, such as Hart, there are not enough establishments of any given type to permit such refined analysis. Nor was it possible to include hotels, motels, and other tourist accommodations in this analysis, since their facilities are not subject to retail sales taxes.

The selection of the time period covered by the Hart sales tax analysis was based on a number of factors. The field research was done in Hart during July, 1958, and it was decided that

the period after opening of the by-pass should include only the two full years up through November, 1957, especially since the sales tax data for all months through November, 1958, were not available at the time the field information was submitted to the Department of Revenue for tabulation. Furthermore, even if this had not been the case, it is apparent from the comments received in Hart that 1958 would have been rather a poor year to include in the analysis, since the poor showing of the cherry crop greatly affected the city's economy and, unlike the general business recession, this would not have been reflected to a comparable degree in the statewide figures used for comparison with those for Hart and Oceana County.

A question might be raised regarding the use of only a one-year period prior to the opening of the by-pass; it would appear that a two-year period might have permitted a better averaging of business activity before the by-pass opened. However, the further one goes back in time in sales tax analyses which are based on the obtaining of sales tax license numbers from field survey, the more difficult both the field survey and sales tax tabulation become (the latter because of changes in business ownership), and the more questionable the completeness of the study. There is little difficulty associated with obtaining sales tax license information for businesses currently in operation, but finding the required information, or even the names, of businesses which expired several years ago and were not followed by others to provide continuity in licensing at a particular location, presents a problem. The missing of a business which expired, for example, at the time the by-pass opened tends to minimize any adverse effect which the by-pass may have had. This is so because the sales tax collection totals for the base year are thereby reduced, resulting in an increase in the index numbers for subsequent years.

The types and groups of businesses studied in detail were those considered to be most significant in analyzing the effect of the Hart by-pass, while at the same time containing a sufficient number of establishments to permit a meaningful analysis. Of the 79 Hart businesses tabulated in the field survey and included in the "Total Tax" category, 38 are also included in the four "type" and two "group" categories analyzed separately. The names of these types and groups as used hereafter in this report, e.g., "Gas Stations", "Taverns, Pool Rooms, Refreshment Stands", and "Apparel" are those used by the Department of Revenue, and it was considered best to retain them.

General Business Activity

On the basis of the information contained in Table I, it is concluded that the opening of the U.S. 31 by-pass around Hart did not adversely affect general business activity; the city "as a whole" did not suffer. Two types of "Total Tax" are shown, and in both cases the index numbers based on the total of sales taxes collected from the Hart businesses included in the study show that, collectively, they had increases in both years after opening of the by-pass which exceeded those of comparable businesses in Oceana County and Michigan. For a more accurate comparison of general business activity in the three geographic areas, the "Total Tax Excluding the Automotive Group" is considered to be preferable, and this shows the 68 included Hart businesses did considerably better than their counterparts in the entire county and slightly better than those in the state.*

At the same time, Table I makes it clear that certain types of business did experience adverse effects, and it is interesting to note that the statistical analysis yields results which are in general agreement with the subjective observations obtained from brief personal interviews. This may not appear to be true, especially in the case of gas stations, but in the following analysis of specific types of business and groups this agreement will become clearer.

Gas Stations

The Hart gas stations show increases of 9.8 and 15.6 per cent the two years after the opening of the by-pass, roughly equal to those of stations in the county and state, and it would

*The "Total Tax" for all nine groups includes the taxes paid by 79 Hart businesses. However, while the Oceana County and Michigan "Total Tax" index numbers are based on totals which include the taxes paid on automobile sales, those for Hart are not. These taxes are paid to the Secretary of State, rather than the Department of Revenue, and are not included in the total tax due as shown on the returns filed with the Department which were used as the source of information for sales taxes paid by Hart businesses. Thus this "Total Tax" is not entirely comparable in the three geographic areas. During the three years included in the study, the automotive group taxes in the state (which are 20 to 25 per cent of the total of all sales taxes) dropped due to declining automobile sales, and this explains why the exclusion of the automotive group results in a much more favorable picture of business activity at the state level, and to a lesser extent at the county level.

Table I. Changes in Retail Sales Tax Collections:
Hart - Oceana County - State of Michigan

for sales from: December 1954 through November 1955 (1955)
December 1955 through November 1956 (1956)
December 1956 through November 1957 (1957)

Expressed in terms of index numbers with the 1955 Base Year = 100

	HART			OCEANA COUNTY			MICHIGAN		
	1955	1956	1957	1955	1956	1957	1955	1956	1957
Total Tax Excluding the Automotive Group	100.0	109.2	108.3	100.0	102.0	104.0	100.0	105.2	107.5
Total Tax (For all 9 groups)	100.0	111.3	111.6	100.0	100.2	102.2	100.0	100.8	101.5
<u>Types of Business:</u>									
Gas Stations	100.0	109.8	115.6	100.0	110.2	114.4	100.0	105.3	114.1
Restaurants	100.0	86.8	85.5	100.0	100.9	104.8	100.0	101.0	102.7
Taverns, Pool Rooms, Refresh- ment Stands	100.0	102.2	97.7	100.0	107.5	95.3	100.0	101.7	101.0
Groceries	100.0	119.9	126.7	100.0	97.0	113.0	100.0	106.4	112.5
<u>Groups:</u>									
General Merchandise	100.0	115.6	114.5	100.0	114.6	120.0	100.0	102.2	103.6
Apparel	100.0	113.2	117.0	100.0	96.6	113.2	100.0	103.2	103.3

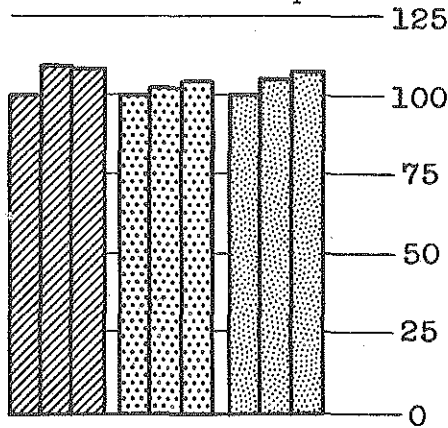
Sources:

State Data: Michigan Department of Revenue, Research and Statistical Bulletin, monthly issues for time period covered.

County Data: Unpublished records of Michigan Department of Revenue, and above source.

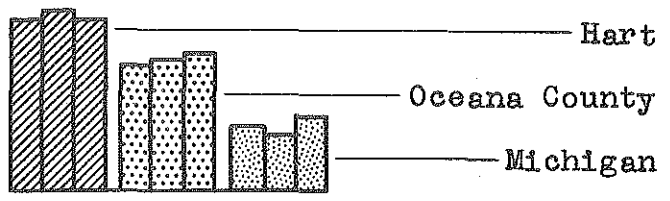
City Data: Sales tax information from Michigan Department of Revenue, based upon field survey and establishment grouping by project staff.

Total Tax excluding Automotive Group



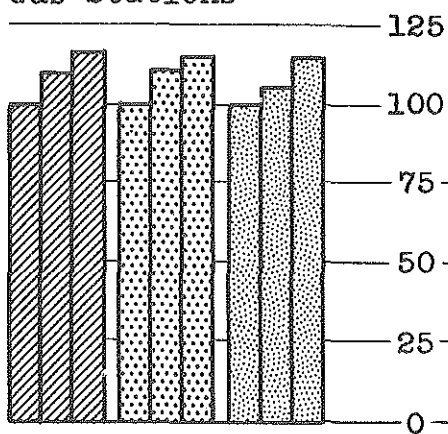
CHANGES IN SALES TAX COLLECTIONS
HART - OCEANA COUNTY - MICHIGAN

For sales from:
Dec. 1954 through Nov. 1955 (1955)
Dec. 1955 through Nov. 1956 (1956)
Dec. 1956 through Nov. 1957 (1957)

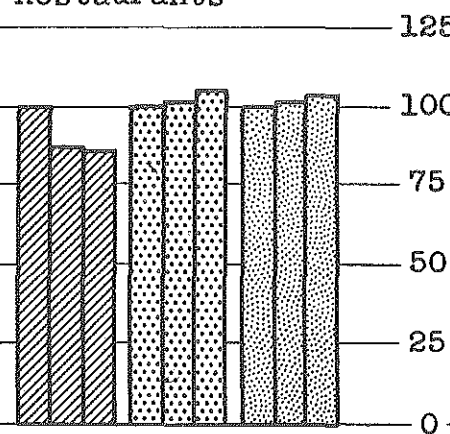


1955 Base Year = 100

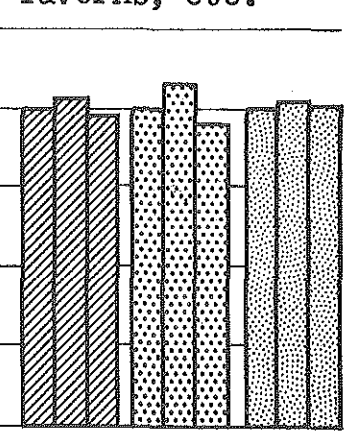
Gas Stations



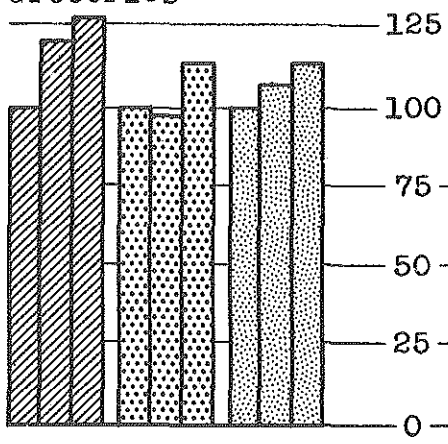
Restaurants



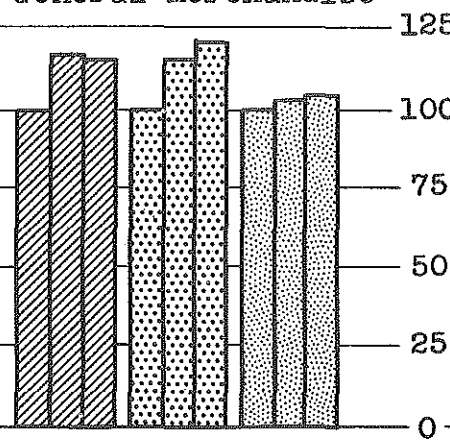
Taverns, etc.



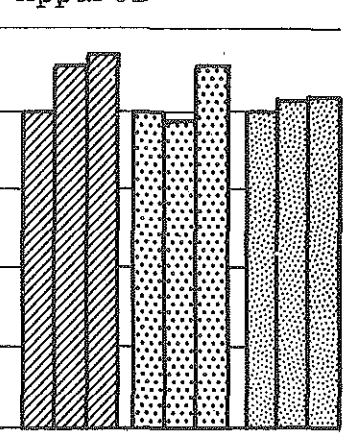
Groceries



General Merchandise



Apparel



1955 1956 1957 1955 1956 1957 1955 1956 1957 1955 1956 1957 1955 1956 1957 1955 1956 1957 1955 1956 1957

Sources:
State data: Michigan Department of Revenue, Research and Statistical Bulletin
County data: Unpublished records of Michigan Department of Revenue, and above source
City data: Sales tax information from Michigan Department of Revenue, based upon field survey and establishment grouping by project staff

appear at first glance that the operators' comments about adverse effects of the by-pass were not substantiated by the statistical analysis. However, during the three-year study period, the Hart gas station business was subject to the fluidity which characterizes this type of business: three stations operated throughout the study period, two new stations near the south end of the by-pass were opened (in 1956 and 1957), and one small in-town marginal station closed near the end of the study period. The new station opened in 1957 was an outgrowth of another type of business and is still so classified on the sales tax license.* The only definite conclusion which can be drawn from the sales tax figures is that, taken collectively, those establishments in Hart which were classified as gas stations during the three-year study period enjoyed increases in sales of the same general magnitude as those in the county and state. It is at the same time apparent that some or all of this increase represented sales at the new station near the by-pass, and that the in-town stations in Hart did not enjoy these increases, and may have suffered losses after the opening of the by-pass.

Restaurants

Because other by-pass studies have shown that restaurants may be adversely affected by the diversion of through traffic, their inclusion in the Hart study was considered important. All of the Hart restaurants included in the analysis are either on the former route of U.S. 31 or are in the business district, so that it is assumed that they all received some patronage from motorists passing through the city. The restaurant business in Hart reflects the seasonal fluctuation in resort area and work force populations, not only in the monthly variation in sales taxes paid (which peak sharply in July), but actually in the number of restaurants in operation. During the study period, the latter varied from a high of five during each summer down to two each winter, mute testimony to Hart's dependence upon summertime residents and tourists for an important contribution to its economy.

*Two other establishments which were in business throughout the study period sold gasoline but are not classified as gas stations due to their primary concern with other types of automotive activity. Perhaps some, or all three, of these establishments should, on the basis of their major sales, be actually classified as gas stations; however, it was felt that it would be presumptuous to assume that this was the case without a factual basis for such action.

Examination of the index numbers for the three-year study period shows that while restaurants in Oceana County and the State of Michigan were showing slight increases in sales taxes paid, those in Hart showed a drop of about 14 per cent for each of the two years after the by-pass opened. A month-by-month analysis shows that all of the decrease in sales taxes paid occurred between April and November of the two years after the by-pass opened, with July, August, September and October showing the largest decreases. Sales taxes paid in 1957 were lower than in 1956, the first year after opening, in all but two of these eight months. The two exceptions: July and August, where the 1957 sales taxes paid were about the average of the 1955 and 1956 taxes. Since the other indicators of business activity in Hart during the two years following the opening of the by-pass did not show similar decreases, it is concluded that the drop in the restaurant business in Hart was due primarily to the opening of the U.S. 31 by-pass.

Of some interest is a comparison of the Hart restaurants with those in Mason, analyzed in an earlier study. In both cases the decreases in sales taxes paid the first year after the opening of the by-pass were the same -- 13.2 per cent -- but in the case of Mason this decrease was distributed quite evenly through the year and it was concluded that there the loss resulted from the diversion of year-round motorists in the form of truck drivers, salesmen, and other steady customers. In Hart, however, the wintertime business of the restaurants actually increased after the opening of the by-pass, and the overall yearly decrease was due to losses during the remainder of the year, especially during the summer months. Thus it appears that the Hart restaurants lost the business of many of the summertime tourists who now by-pass the city.

Taverns, Pool Rooms, and Refreshment Stands

This "type of business", which in Hart includes three taverns, bowling alley, pool room, and refreshment stand, all in the general vicinity of the business district, showed little change in the two years following the opening of the by-pass. In comparison with similar establishments in the county and state, it can only be concluded that the by-pass had little or no effect on this type of business in Hart. Here there is a somewhat compensating type of seasonal variation: the bowling alley is open during the major part of the year but is closed during the summer months -- with the refreshment stand the reverse is true. Its activity peaking sharply in July, this type of business in Hart is obviously dependent to a

large extent upon summertime vacationers and workers, and apparently only to a very minor extent, if at all, upon the motorist driving through.

Groceries

The performance of the groceries in Hart during the two years following the opening of the by-pass lends considerable support to the hypothesis that, since they are normally purchased close to home, the sale of groceries, like other "convenience goods", is relatively unaffected by the diversion of through traffic to a by-pass. The nine Hart groceries included in the analysis paid sales taxes the two years following the opening of the by-pass which were 19.9 and 26.7 per cent higher than those for the year prior to its opening.* The latter increase, for 1957, is twice that indicated for groceries in the entire county and state during the same year. As a further indication of their "local service" nature, the groceries in Hart are not all concentrated in the business district or on the former route of U.S. 31.

In grocery sales, too, the distinctive seasonal nature of Hart's economy is apparent. Sales during the month of July are twice as large as those during the low month of January or February whereas in the state as a whole the maximum grocery sales occur in December and are only about 30 per cent higher than those for the months of lowest sales. This points up what a drastic effect a poor tourist season, or blighted cherry crop, can have on business activity in Hart, and why, as a result, this city was especially hard hit by the 1958 business recession in combination with a poor fruit crop. The fluctuation in the Hart grocery sales also gives some indication of the large change in the population of the Hart area during the summer months.

General Merchandise

All four businesses in this group are located within a one-block stretch of State Street, in the heart of the business district, and on the former route of U.S. 31 through the city. Theoretically all subject to the same effect from the opening of the by-pass, they at the same time should have reflected its effect on the Hart business district. The first year after opening of the by-pass this group showed an increase in sales of 15.6 per cent, slightly greater than the comparable group

*One of the nine groceries went out of business before the end of the three-year study period. Otherwise the Hart grocery business was stable during the study period.

in the county, and much greater than in the state. The second year after opening, the general merchandise stores in the county showed additional gains while those in Hart dropped slightly, but the latter still ran well ahead of the state stores in this group. No definite reason is known for the fact that both the city and county did so much better than the state, but the fact that Hart did about as well as the county in general is considered an indication that the opening of the by-pass did not adversely affect the General Merchandise group in Hart.*

Apparel

The seven Hart establishments which fall within this group also are all located in close proximity within the business district. The comments made about the General Merchandise group thus also apply to this group -- only one of the Apparel stores is not located on State Street. Thus it is not surprising that this group shows increases of 13.2 and 17.0 per cent, roughly equal to those enjoyed by the General Merchandise group, although in this case the Hart stores did better than those in the county during both years. Meanwhile, the Apparel stores in the state had the same modest 3 per cent increase as those in the General Merchandise group.** This group, too, does not appear to have been adversely affected by the opening of the by-pass.

*The General Merchandise group contains four separate "types of business" in the Department of Revenue's classification system, and these types are not represented uniformly in the group as found in Hart, Oceana County, and Michigan. The types included are: Department Stores, Dry Goods, General Merchandise Stores, and Five and Ten Stores. Although it is assumed that all of these types of business react in a somewhat similar manner to various economic stimuli, the fact that the groups are not completely comparable in the three geographic areas may account for some of the differences in behavior.

**The Apparel group includes five separate types of business: Men's Clothing, Women's Clothing, Family Clothing, Shoes, and Other Apparel. Like the types in the General Merchandise group, these five are not uniformly represented in the Apparel group as found in Hart, Oceana County, and Michigan, so that here again the fact that the groups are not completely comparable in the three geographic areas may account for some of the differences in behavior. In the Apparel group, over half of the establishments in Oceana County are Hart businesses, in contrast with the General Merchandise group, where the Hart businesses were only about one-quarter of the total in the county.

IV. CONCLUSIONS

On the basis of the changes in the Total Tax figures for all businesses in the city, the county, and the state (whether or not the Automotive group is excluded), and the changes in the General Merchandise and Apparel groups separately, it is concluded that the opening of the U.S. 31 by-pass did not adversely affect general business activity in Hart. In fact, a statement of more positive nature may be warranted, since the business district and the "shopping goods" establishments located therein appear to have benefited from the diversion of through traffic to the by-pass. This is not difficult to understand when it is seen that the removal of through traffic has made it much easier to drive and park in the heart of the business district, while at the same time creating a much pleasanter shopping environment free of the congestion, noise, and dirt associated with the trucking and other through traffic which previously cut the business district in two.

At the same time, some types of business in Hart providing motorist services apparently did suffer adverse effects from the opening of the by-pass, either in the form of actual decreases in business activity from the year before opening of the by-pass or growth less than that which would have been expected if the by-pass had not been opened. Most noticeably affected were the restaurants, which collectively experienced an actual decrease in business activity of approximately 14 per cent for each of the two years following the opening of the by-pass at the same time that the sales by county and state restaurants were increasing. Less apparent without analysis, the in-town gas stations in Hart also either experienced losses in business or just held even, although collectively the gas stations in Hart kept pace with those in the county and state due to the sales of a new station opened near the by-pass after it was opened. Other types of business analyzed in Hart do not appear to have been adversely affected to any measurable degree.

The opening of the by-pass has not as yet resulted in any great change in the pattern of retailing in the Hart area. Three years after this event took place, the only new businesses which might be attributed to its opening are two new gas stations near, and plainly visible from, the by-pass at the south entrance to the city.

PART FIVE

A STUDY IN
THE CITY OF HOLLAND

SUMMARY OF HOLLAND STUDY RESULTS

INTRODUCTION

THE STUDY OF 22 GASOLINE STATIONS

SALES TAX STUDY OF ALL RETAIL BUSINESS

CONCLUSIONS

SUMMARY OF HOLLAND STUDY RESULTS

This is the fourth of the series of six studies of the effects on retail sales of by-pass highways in Michigan. The principal subjects for study in Holland were twenty-two gasoline stations. Half of these are located on the present business route of U.S. 31, which was also the route of U.S. 31 immediately prior to the opening of the by-pass. The others are on that portion of the pre-1950 U.S. 31, north of the center of the city, which is not on the business route. Each of these twenty-two stations was further assigned to one of four groups: on each of the two sections of highway one group included those stations close to the Holland central business district, the other those removed from the central business district.

After a slight decline (for three groups) or a lessened gain (for one group) in taxable sales during the year after the opening of the by-pass, all groups except one resumed upward trends. The exception is the group close to the central business district on the business route, which had not regained its immediately pre-bypass level by 1957. The group close to the central business district but not on the present business route has gained very well, while the gain of groups away from the central business district, both on and off the business route, has been spectacular.

There has been a steady increase in population in the Holland area since the 1950 census recorded a population of 15,858 for the city. The trends in sales tax payments in the Food and Non-Retail groups over the second half of the period since that census are concomitant with a rise in population. However, the sales of the "core" businesses of central business districts -- general merchandise, apparel and furniture -- have shown a steady decline over the same period. No evidence has been found which would indicate that this loss can be attributed to the diversion of through traffic. Rather, it may be presumed that this trend has the same causes which were responsible for the relatively poor performance of the two gasoline station groups near the CBD; likely the principal one of these is the gradual increase in sales in competitive establishments outside of the city.

I. INTRODUCTION

Of the six cities for which the series of studies of the effects on businesses of a by-pass highway was done, Holland is the largest. Partially as a result of recent annexations, its 1960 population is almost 24,000 and constitutes roughly one-quarter of the people in Ottawa County. Holland is the trading center for perhaps half of Ottawa and Allegan counties. Its location in the midst of the vacation areas along Lake Michigan's east shore makes tourism an important part of its economic base. Water-borne traffic from Lake Michigan can reach close to the center of the city via Lake Macatawa. Industrial activity is diversified: H. J. Heinz, Baker Furniture, Chris-Craft, Park, Davis & Co., General Electric, Holland Furnace, Hart & Cooley, Bohn Aluminum, National Biscuit, Hekman Rusk, and others.

Figure 1 shows the route of present U.S. 31 and Business Route U.S. 31 through the city. The new route is an expressway at grade, with controlled access from abutting properties, but unlimited access from intersecting streets; there also are two railroad crossings at grade. Prior to the opening of the present route, U.S. 31 followed essentially what is presently the business route, except that U.S. 31 traffic in both directions traveled on Chicago Drive. Before 1950, U.S. 31 continued north along River Avenue, Butternut Drive and 136th Avenue to the latter's intersection with the present highway.

Changes in Traffic Volumes are illustrated graphically in Figure 2. On the streets making up the business route, the sharp reductions in traffic after the opening of the by-pass are very noticeable. At Station B, south of the central business district, there was a reduction of over 50 per cent in traffic from 1953 to 1957. The reduction south of the city (Station A) was only slightly smaller. These reductions took place during a period when traffic generally increased significantly, as is shown by the counts taken on the by-pass north of its intersection with M-21 (Station D).

Even more important is the reduction in commercial traffic: since the opening of the by-pass only 35 per cent to 40 per cent of the commercial traffic has been using the business route. In addition to the relief from even heavier traffic enjoyed by Holland, the reduction in truck traffic with the consequent lessening of noise and exhaust fumes is a real boon to residents and businessmen along the old routes of the highway.

Fig. 1

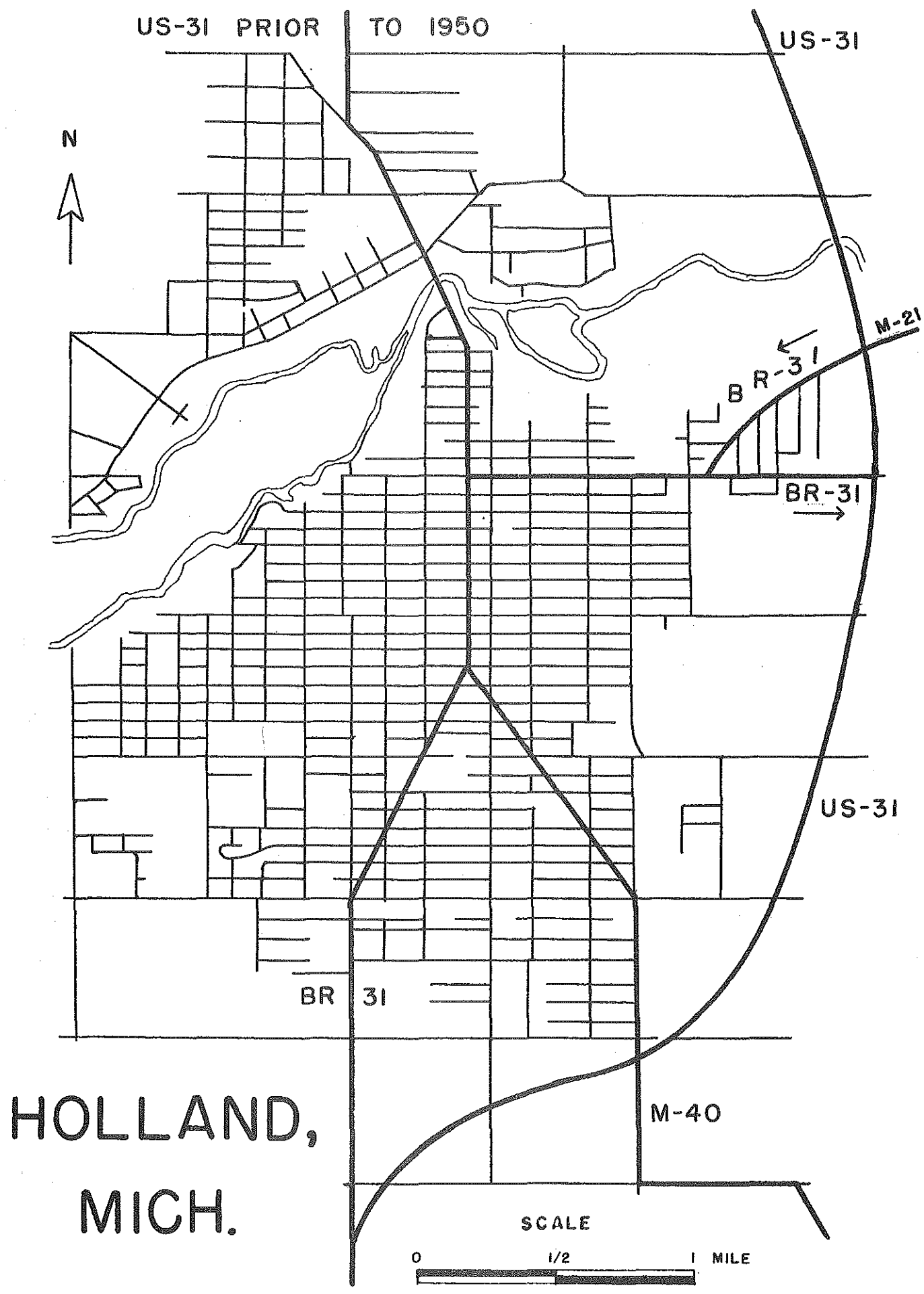
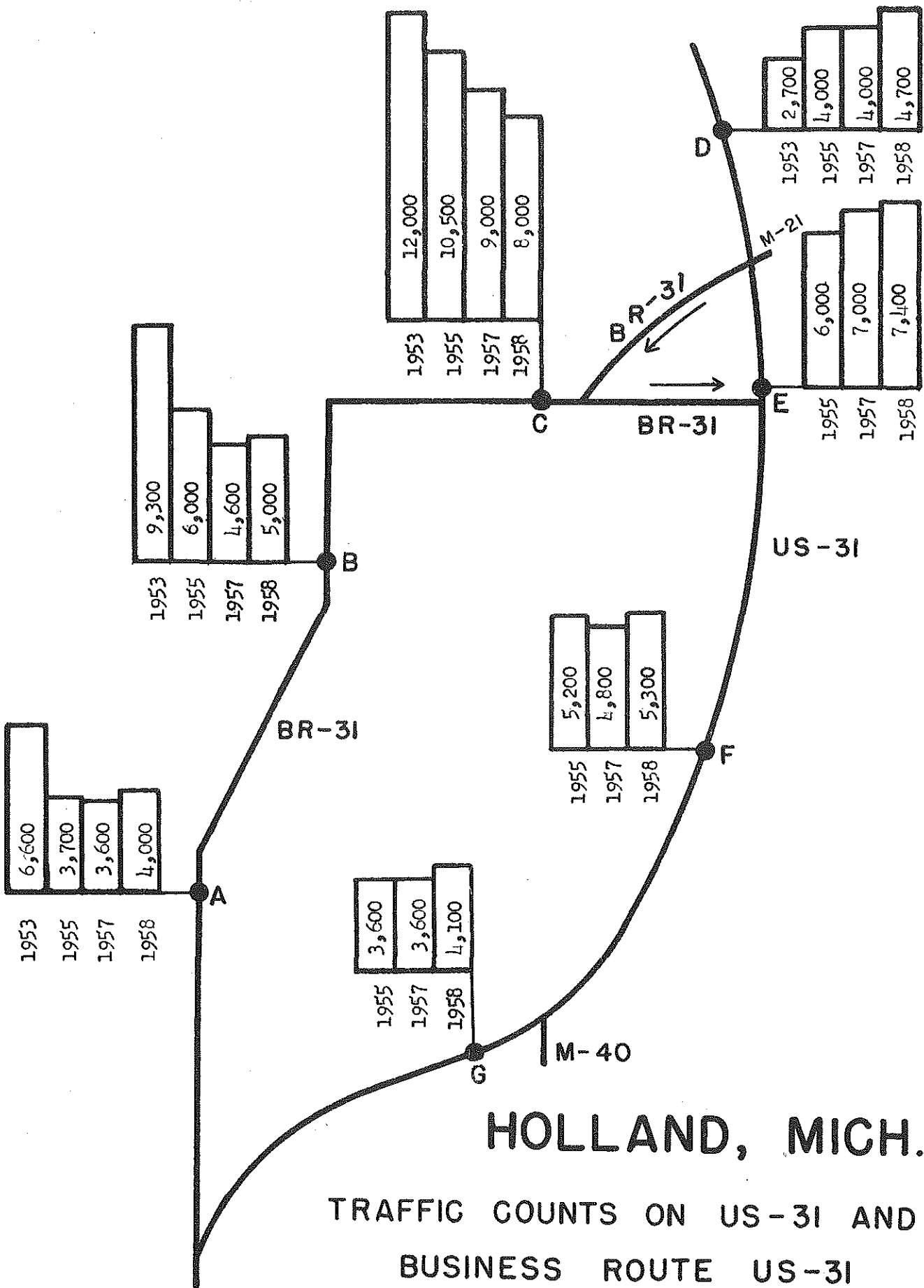


Fig. 2



Source: Traffic Survey Maps, Michigan State Highway Department
 Volumes shown are Average Daily Traffic (ADT)

In addition to the use of the sales tax data, it has been found very informative in the previous studies to interview briefly some of the businessmen in the city to ascertain their experiences regarding possible effects of the by-pass. This was also attempted in Holland but turned out not to be very successful. It became evident after only a few interviews that local opinion of the by-pass was dominated by the highway's unfortunate accident record. Apparently a significant number of very serious accidents had occurred on the by-pass since its opening, and while the accident rate may not have increased over that of the previous route, the severity of accidents certainly had. As a consequence of the understandable preoccupation with presumably inadequate safety features of the by-pass, its possible economic effects had apparently been given very little thought by those questioned. Hence this part of the study in Holland proved not to be productive of useful results. Work currently in progress on the highway, designed for its function as a part of the Interstate System, undoubtedly will contribute to an improvement of the accident record.

II. THE STUDY OF 22 GASOLINE STATIONS

Of all motorist-oriented businesses, the gasoline station has perhaps expressed most vociferously its objection to a removal of through traffic from its street. And there has been a very natural tendency on the part of people generally to accord its complaints credence and even a certain amount of stature.

While it is important to remember that no two towns, however similar, experience exactly the same consequences due to a given physical or economic change, having a factual picture of what has occurred in one town is better than knowing nothing. There is little disagreement with the contention that the construction of a by-pass highway may cause serious problems to certain businesses, but experience has indicated that the vast majority of by-passed communities enjoy definite benefits after the re-routing of through traffic. It must be recognized, therefore, that the experience of gasoline stations does not necessarily indicate the experience of retail business generally.

Holland offered an excellent opportunity to examine the business trends of gasoline stations on the previous U.S. 31 -- the present business route -- for two years prior to the opening of the by-pass and three years thereafter. As a group of stations which would be differently affected by the by-pass, that made up of the eleven stations on the pre-1950 U.S. 31 north of the present business route was chosen. This group, as well as the eleven stations on the business route, were further subdivided into two parts -- those stations close to the central business district and those some distance removed from it. The final groups, with their identifying designations, are as follows:

- C-1: Seven stations on previous U.S. 31 and on present B.R. U.S. 31, removed from central business district
- C-2: Four stations on previous U.S. 31 and on present B.R. U.S. 31, close to the central business district
- D-1: Six stations on pre-1950 U.S. 31 not on present B.R. U.S. 31, close to the central business district
- D-2: Five stations on pre-1950 U.S. 31 not on present B.R. U.S. 31, removed from central business district

At one time all of these groups were on U.S. 31. The highway was removed from D-1 and D-2 in 1949, from C-1 and C-2 in 1954. Hence all groups have been "by-passed"; the study

period covers a period of from three years to eight years after re-routing of U.S. 31 for the D groups, and two years before and three years after for the C groups.

Analysis of Sales Tax-Gross Sales Relationship

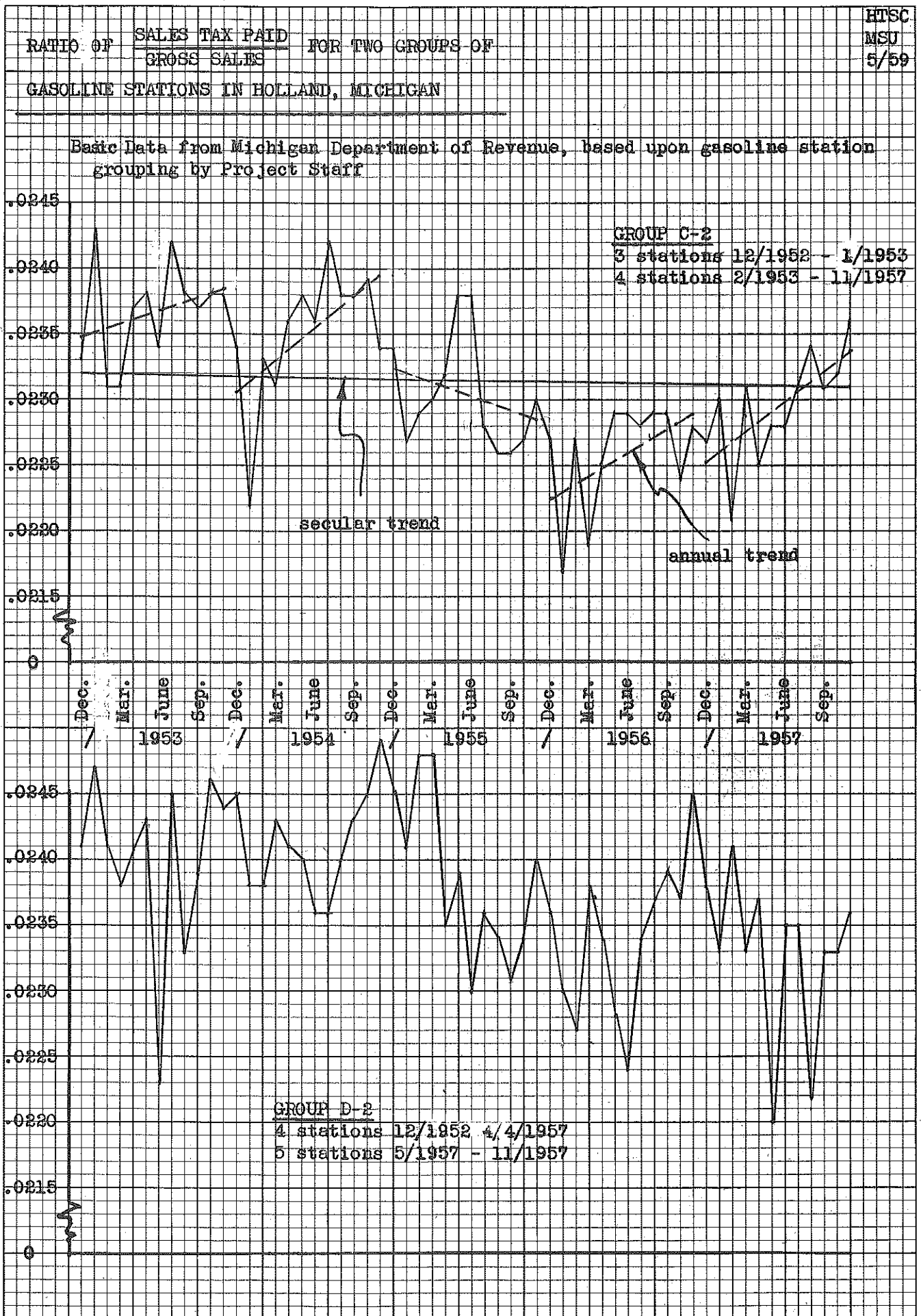
In order more clearly to indicate the limitations of sales tax data as an indicator of business volume, an analysis of the ratio of sales taxes paid to gross sales of two of the gasoline station groups here precedes the comparative sales tax study.

On all taxable sales in Michigan, the retailer is required to pay a tax of 3 per cent of the amount of the sale; almost invariably the tax obligation is passed on to the consumer. In the case of gasoline stations, virtually all sales are subject to tax, so that the amount of tax paid gives an accurate indication of sales volume of merchandise. However, services performed at gas stations are not subject to tax, but their dollar volume is included in the gross sales reported by the retailer. Therefore the trend in the ratio of sales tax to gross sales provides a good indication of changes in the relative importance of sales and service work for a group of stations.

In this study, Groups C-2 and D-2 were used in the ratio analysis; the choice was determined by the fact that only for these two were both sales tax and gross sales figures available for each month of the study period. The more detailed analysis of Group C-2 was made possible by the fact that the number of stations remained constant after the first two months of the study period. In using the ratio data, it is useful to remember that, generally speaking, the higher the ratio, the more of the total business involves taxable sales, and conversely, the lower the ratio, the less is the portion of taxable sales (and consequently the higher the non-taxable services). Since business volume and its two constituent parts -- sales and service -- are expressed in terms of dollars, a change in prices will affect the analysis in the same way as a change in business volume. Similarly, the ratio will be affected if the change in prices of sales and services is not proportionate.

Analysis of Figure 3 indicates that during one-third of the number of months included in the study, the ratio of one group rose while the other fell; during the remainder of the months, the ratios of the groups either rose or fell together, or one of them did not change. There appears no consistent

Fig. 3



annual pattern in either group, indicating that within each group the characteristics of the business vary without exhibiting monthly similarities from year to year.

However, the annual trends computed for Group C-2 indicate a repeated rise in the ratio during each study year with the exception of 1955. This would indicate a greater proportion of service activity in the winter months, and a higher proportion of taxable sales -- principally gasoline -- later in the year. The exception -- 1955 -- is the year after opening of the by-pass and the consequent diversion of through traffic from the street along which these stations are located. It is likely that during that year there was an effort on the part of the station operators to increase their service business to make up for the loss (however small -- see Figure 6) in taxable sales. The very slightly downward secular trend likely indicates the overall success of this effort, particularly since there were increases in gasoline prices during the study period; such increases affect the data in the same way as would a gain in taxable sales.

Figure 4 shows that the sales tax to gross sales ratios were generally lower for Group C-2, meaning that these stations had more non-taxable services in relation to taxable sales than did Group D-2. This also seems to confirm the presumption that the C-2 stations tended to increase their concentration on service after the opening of the by-pass.

Figure 5 shows most clearly the absence of repeated seasonal variations after removing from the data the annual trends. This confirms that the proportion of taxable sales to non-taxable business of this group of four stations follows no consistent monthly pattern.

Sales Tax Trends

The business volumes of the gasoline stations have been analyzed on the basis of the taxes paid. As indicated in the previous analysis, this does not give the complete picture but does represent 75 per cent to 80 per cent of gross sales. Further, since gross sales figures for individual stations in a chain are not submitted to the Department of Revenue, only tax figures are obtainable for these.

Taking the sales tax as the indicator of total gasoline station business, and expressing changes in terms of index numbers, they obtain the results graphically shown in Figure 6. The base year -- 1954 -- is the year prior to the opening of the by-pass.

MONTHLY RATIOS OF SALES TAX PAID FOR TWO GROUPS
GROSS SALES

OF GASOLINE STATIONS IN HOLLAND, MICHIGAN

for the period December 1952 through November 1957

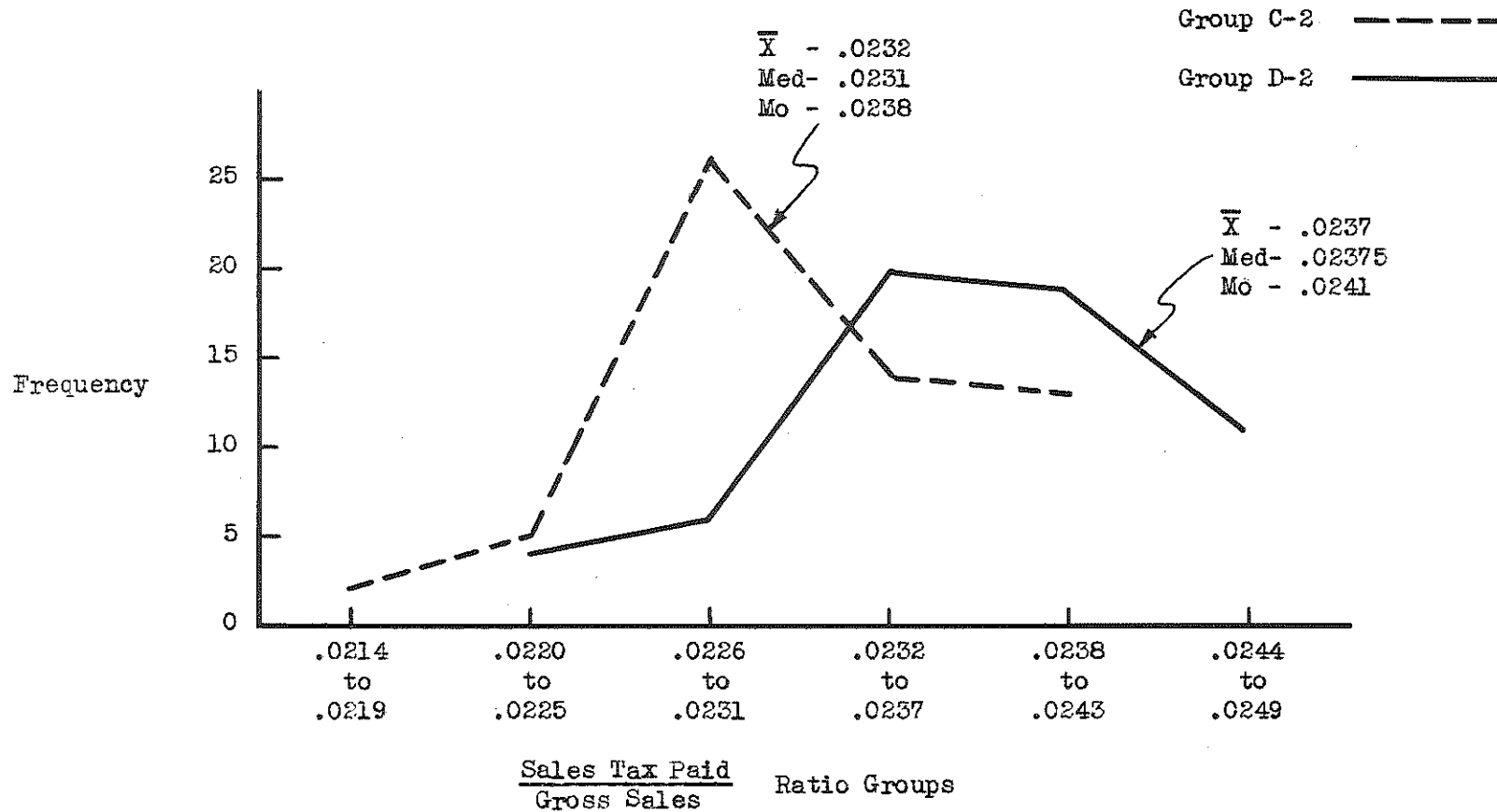


Fig. 4

Source: Monthly totals of sales tax paid and gross sales from Michigan Department of Revenue, for groups of gasoline stations established by Project Staff

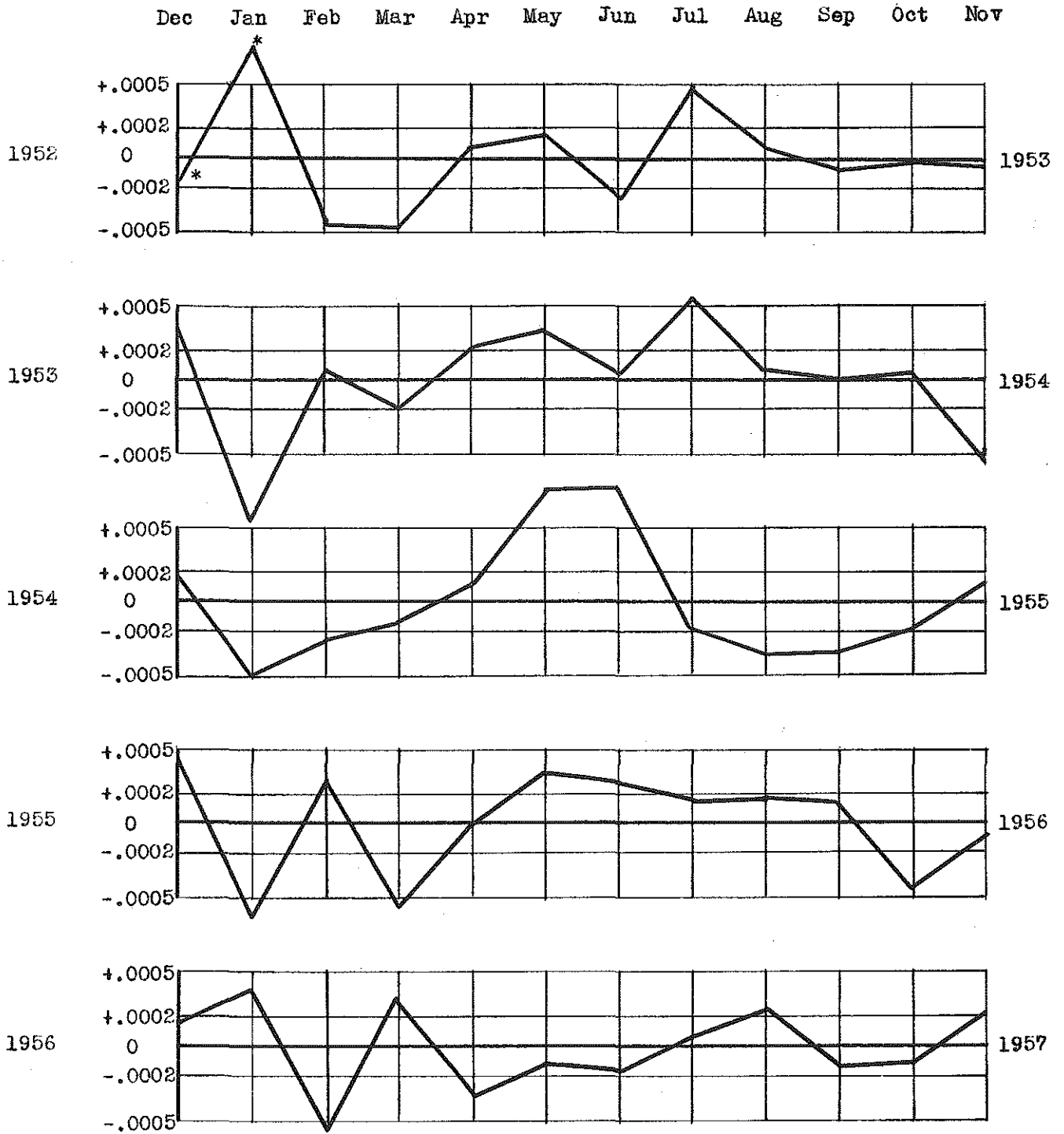
Fig. 5

DEVIATION OF $\frac{\text{SALES TAX PAID}}{\text{GROSS SALES}}$ RATIO FROM STRAIGHT-LINE TRENDS

FOR EACH STUDY YEAR, DECEMBER 1952 THROUGH NOVEMBER 1957

Data are for group of four gasoline stations (group C-2)
in Holland, Michigan

Basic tax and sales data from Michigan Department of Revenue,
based upon station grouping by Project Staff



* Data for these months are for three stations only

Table 1

Sales Taxes Paid by Gasoline Stations

Index Numbers, 1954 = 100

Years indicated are Study Years, December of previous year through November of year stated.

	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Michigan*	93.5	100.0	110.0	115.9	125.4
Ottawa Co.	92.3	100.0	106.1	118.6	128.4
Allegan Co.	88.7	100.0	110.1	117.2	132.1
Holland:					
C-1	76.6	100.0	95.7	120.1	140.5
C-2	92.4	100.0	96.8	97.8	96.7
D-1	96.9	100.0	99.2	105.1	114.1
D-2	89.2	100.0	106.1	119.9	143.2
Four Groups	88.6	100.0	98.6	118.1	133.9

*Michigan data are for calendar years

General Description of Gasoline Station Groups

- C-1: Seven stations on previous U.S. 31 and on present B.R.U.S. 31, removed from the central business district
- C-2: Four stations on previous U.S. 31 and on present B.R.U.S.31, close to the central business district
- D-1: Six stations on pre-1950 U.S. 31 not on present B.R.U.S. 31, close to the central business district
- D-2: Five stations on pre-1950 U.S. 31 not on present B.R.U.S. 31, removed from the central business district

SALES TAXES PAID BY GASOLINE STATIONS
HOLLAND, MICHIGAN

compared to two counties and the state.

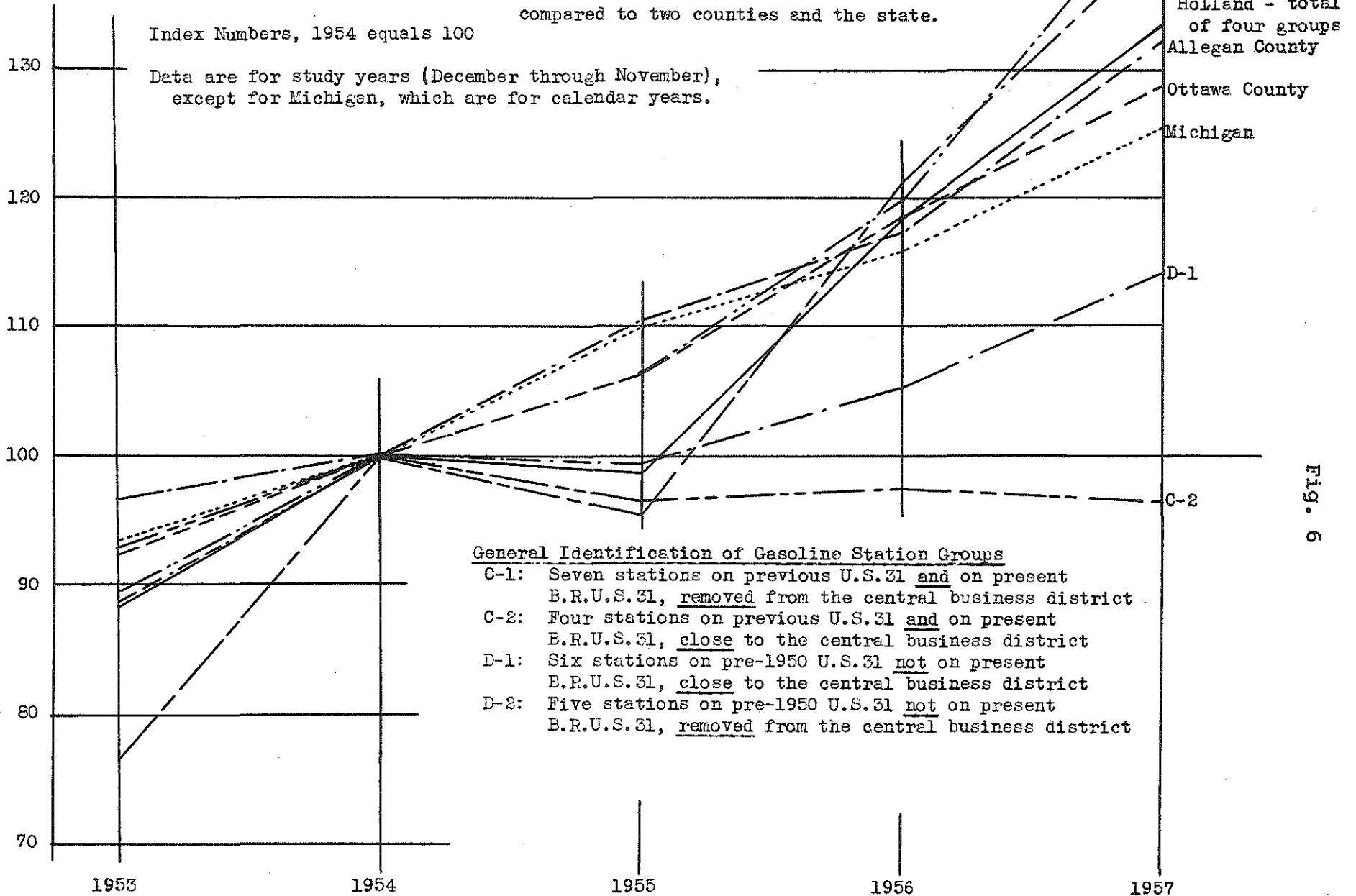


Fig. 6

Source: Tax data from Michigan Department of Revenue, based upon station grouping by project staff

All groups and geographical areas represented show an increase from 1953 to 1954, although the largest occurred at about six times the rate of the smallest. The increases for Ottawa County and Michigan are very similar, and that for Allegan County is not greatly different. From 1954 to 1955 the state and two counties continued the rise at about the same rates. The northern-most group of gasoline stations in Holland also continued its rise, though at a slower rate. The remaining three groups, and the total of all four groups, experienced a reduction in sales taxes paid and consequently, it is presumed, a decrease in business. The greatest declines, although even they are only about three and four points respectively, were experienced by the stations in the two groups on the current business route (and on the immediately prior route of U.S. 31). The group just off the business route near the central business district also showed a decline, while the fourth group continued its rise of the previous year.

The significant changes occurred between 1955 and 1956. Group C-1, which experienced the largest drop the previous year, rose spectacularly to the highest index number of any shown for 1956. Group D-2 continued its rise of the previous years, ending up only slightly below C-1. These are the two groups removed from the central business district; the performance of the two groups close to the CBD is in marked contrast thereto.

After 1955 Group C-2 (close to the CBD on the business route) never recovered from the slight decline after the opening of the by-pass. Group D-1 (close to the CBD not on the business route) showed significantly lower gains than the other groups, the two counties and the state.

In summarizing the foregoing it is apparent that, whether or not the group is on the business route, the stations removed from the center of the city fared very well -- in fact better than the total of those in each of the two counties and the total of those in the state. The stations close to the CBD, both on and off the business route, did noticeably less well, with one even declining below the 1954 level. This appears to indicate that the by-pass had much less direct effect on gasoline station business in Holland than did factors affecting business in general, and downtown business in particular.

Figure 7 shows the average per station of the total sales tax paid by each group of stations during the study period. It is apparent that the C groups -- those on the business route -- had higher taxable sales than the D groups. For Groups C-2 and D-2 we can apply a correction in the form of the mean of the sales tax/gross sales ratio in order to obtain average

AVERAGE OF TOTAL AMOUNTS OF SALES TAX PAID

from December 1952 through November 1957.

Four Groups of Gasoline Stations in Holland, Michigan

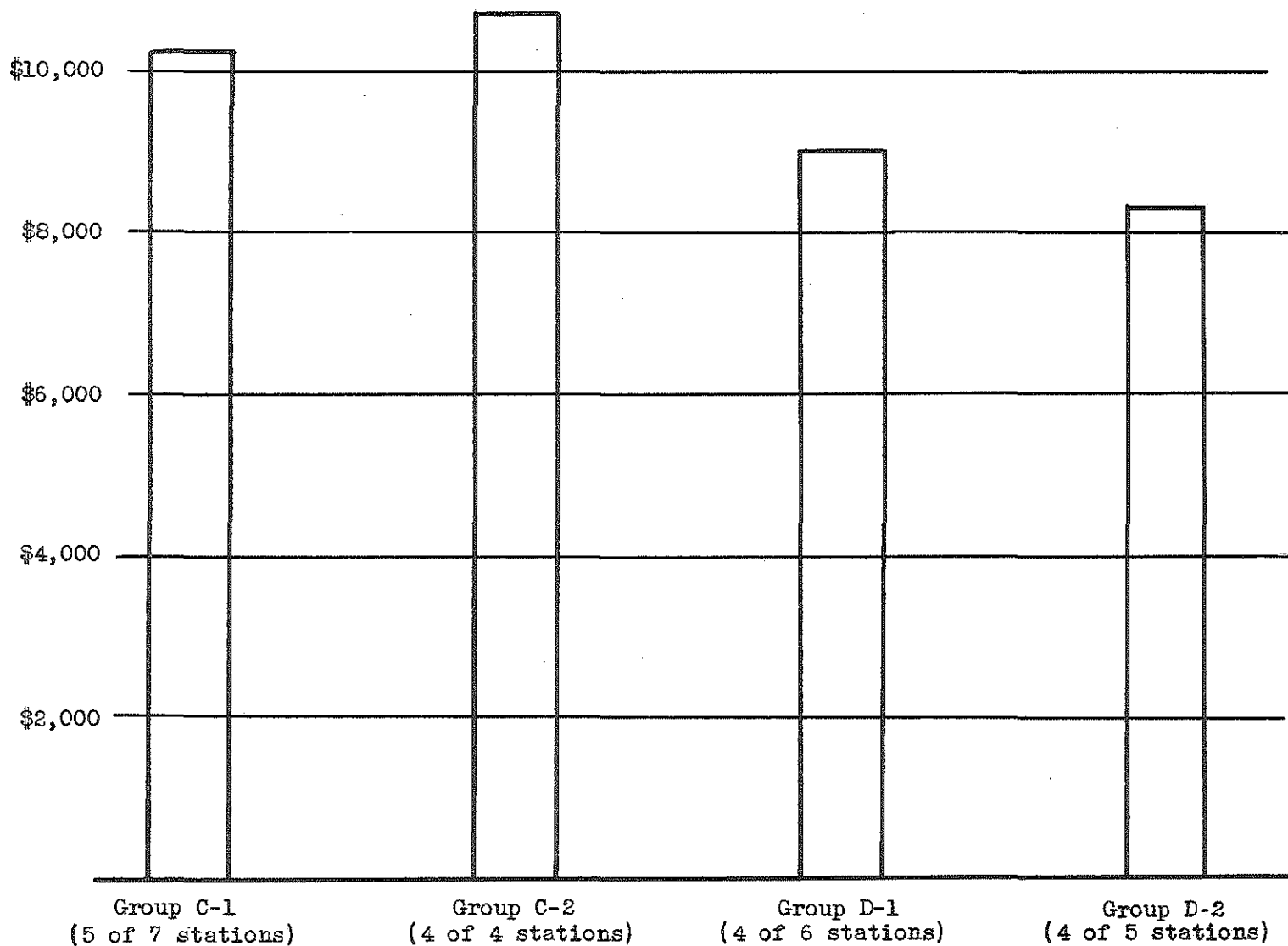


Fig. 7

Source: Tax Data from Michigan Department of Revenue, based upon station grouping by Project Staff

gross sales. Since this factor for C-2 (.0232) is smaller than for D-2 (.0237), the difference in average gross sales between these two groups is likely to be even greater than the difference in sales tax paid.

Indications here are that sales per station have been higher on the business route than on the route of pre-1950 U.S. 31 during the study period. However, as has been shown by Figure 6, the trend is toward a reversal of this situation, with the D groups gaining at a higher rate than the C groups.

It has been attempted here to explore several ways in which the business trends over five years of the four groups of Holland gasoline stations could be analyzed to discern any influence which the by-pass might have had. The evidence indicates that only during the first year after the opening of the by-pass was there an apparent direct influence; thereafter the indirect influences working through their effect on the total retail business in Holland obliterated any manifestations of a direct effect of the by-pass. These indirect influences will be considered in the next section.

III. SALES TAX STUDY OF ALL RETAIL BUSINESS

In 1955 the Michigan Department of Revenue commenced the separate tabulation of the monthly sales tax collection totals of each of the nine groups of business for cities with a population over 10,000. Therefore it has been possible to compute the annual totals for the calendar years 1955 (the year after the opening of the by-pass) through 1958 for the City of Holland, to make comparisons with the corresponding figures for the rest of Ottawa County and for Michigan, and to discern some trends.

The chapter on Methodology discusses the utilization of the tax data of the nine groups of business. In most of the groups the included types of business are similar, and may be expected to react in a similar fashion to a given economic stimulus such as a by-pass highway. On the other hand, the miscellaneous retail group and non-retail group is each made up of a rather heterogeneous collection of types of business which display quite dissimilar characteristics. The analysis following is based upon data as they are reported by the Michigan Department of Revenue. Hence, while the information for most groups of business can be readily utilized, for the two groups particularly mentioned above the data have limited use.

Since the significance for this study lies in comparing business trends through the examination of trends in sales tax payments, all the dollar amounts have been expressed in terms of index numbers. For this part of the study the base year is 1955, since, regrettably, no city tax data are available for earlier years.

The index numbers are tabulated in Table 2, and shown graphically in Figure 8. The study period encompasses the calendar years 1955 through 1958.

Judging by the trend of Total Tax during the study period, Holland business held its own in relation to Michigan, but fell below the balance of Ottawa County. This may be a result of the gradual movement of the center of retail trade away from the center of cities; this increase in commercial activity on the periphery of cities may most frequently be seen in the form of suburban shopping centers.

In view of the experiences of gasoline stations, indicated in the previous chapter, it is likely that this shift away from the CBD is also the reason for the falling sales in the General Merchandise, Apparel and Furniture groups. As was indicated there, the stations some distance from the CBD enjoyed

Table 2

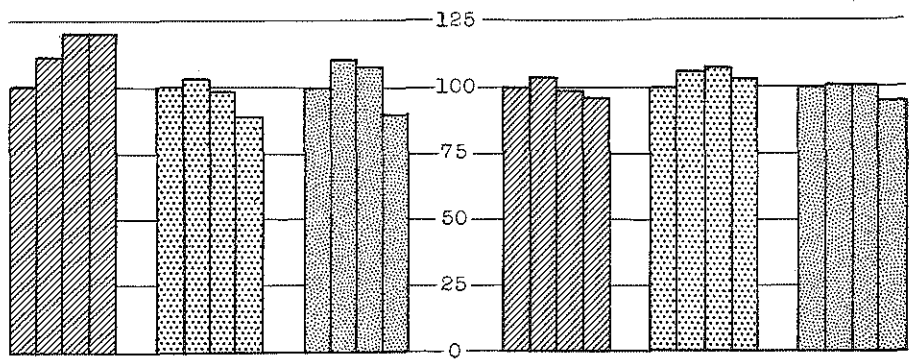
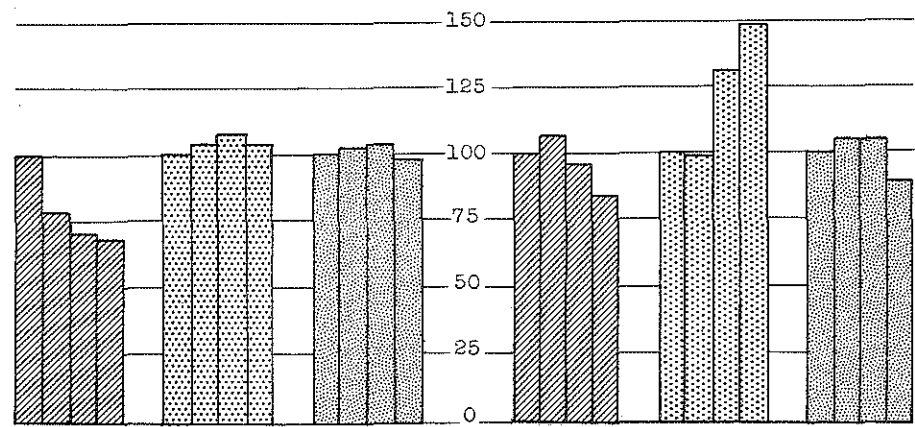
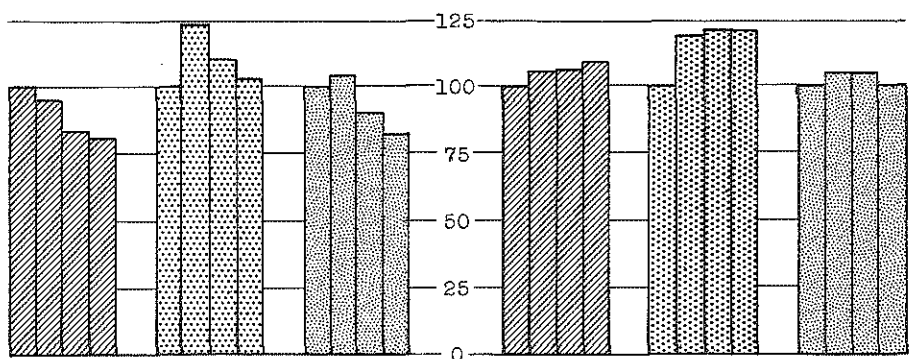
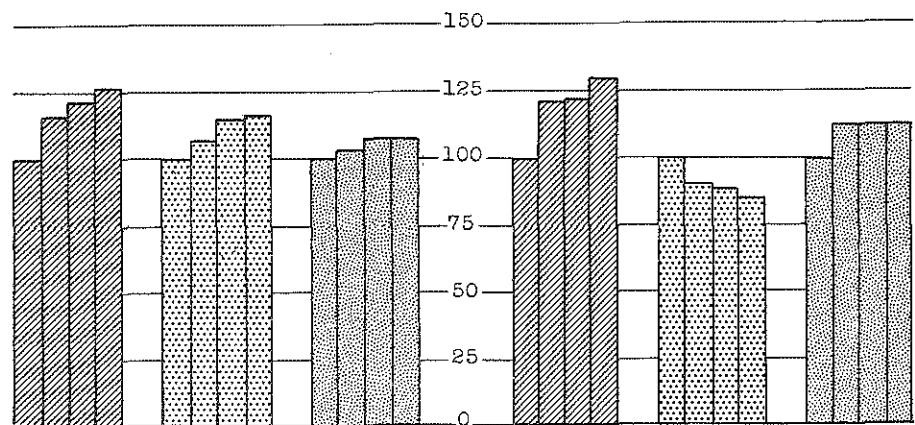
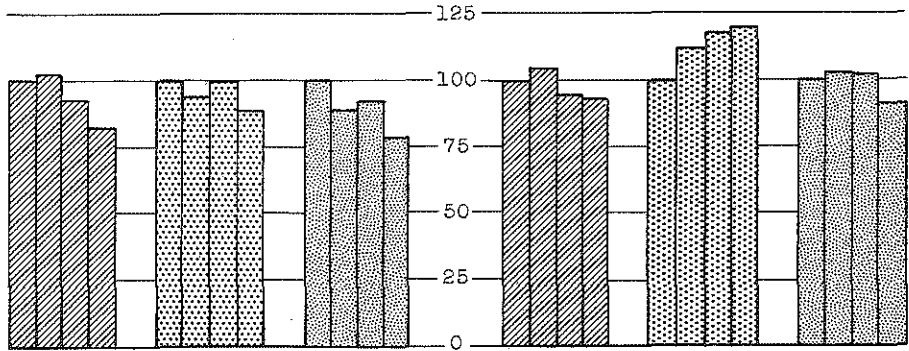
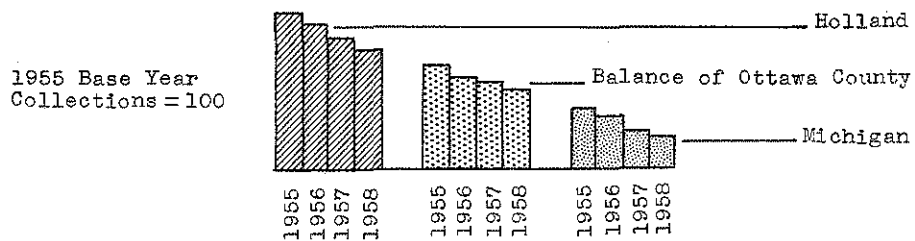
Changes in Sales Tax Collections
 Calendar years 1955, 1956, 1957, 1958
 (1955 Base year = 100)

	Holland				Balance of Ottawa Co.				Michigan			
	1955	1956	1957	1958	1955	1956	1957	1958	1955	1956	1957	1958
Total Tax	100	103.95	99.63	96.96	100	106.05	108.49	104.51	100	100.83	101.48	94.45
Automotive	100	103.32	93.38	83.06	100	94.76	100.79	88.62	100	88.58	92.20	78.09
Apparel	100	104.86	95.49	96.35	100	112.89	118.06	120.00	100	103.25	103.30	92.76
Bldg., Lmbr., Hdw	100	95.49	83.57	81.94	100	124.22	110.81	102.92	100	104.05	90.45	82.12
Food	100	115.80	121.30	125.74	100	108.81	114.73	116.03	100	104.23	107.37	107.02
Furniture	100	106.57	95.73	84.97	100	97.20	131.61	147.54	100	105.84	105.12	89.62
Gen. Mdse.	100	78.25	70.33	68.49	100	104.30	107.63	104.12	100	102.23	103.57	97.74
Specialty	100	105.35	105.89	109.25	100	118.60	122.48	121.55	100	104.96	105.69	101.27
Misc. Retail	100	111.18	120.86	120.34	100	103.41	97.91	87.11	100	110.50	107.86	89.47
Non-Retail	100	121.98	122.48	130.01	100	90.64	88.68	86.26	100	112.87	112.12	113.22

Source: Michigan Department of Revenue: Research and Statistical Bulletin,
 monthly issues for the time period covered.

Fig. 8

CHANGES IN SALES TAX COLLECTIONS: 1955-1956-1957-1958



Source: Michigan Department of Revenue, Research and Statistical Bulletin

substantially greater increases than those which are close to, or in the downtown area. While the gains of the former were sufficient to result in significantly increased sales of all four Holland gasoline station groups, one of the latter two groups gained only moderately and the other lost sales.

Using the so-called "GAF" sales (general merchandise, apparel, furniture) as indicators of CBD business, it can be concluded that the Holland CBD generally experienced a sales trend quite analogous to the downtown gas stations. It is possible that out-of-city establishments gained at the expense of downtown, just as the outlying stations gained at the expense of the close-in ones.

Another aspect of this situation may be seen by referring to Figure 2. The traffic counts on all three stations (A, B, C) on the business route of U.S. 31 show a decline during the first year of operation of the by-pass. Since then, however, two of these stations (A, B) have recorded increases, while the one closest to the CBD (C) has continued to show declining traffic. This portion of the route also carries the traffic destined for downtown from the east, while on the other hand CBD traffic to or from U.S. 31 north of Holland may prefer using one of the connections to U.S. 31 north of the river in order to avoid traffic congestion at the junctions of U.S. 31 and the business route.

In the Automotive, Building-Lumber-Hardware, and Food groups, city sales tax trends were roughly similar to those for the balance of the county and the state. In the Automotive, the decline throughout the study period was slightly less pronounced for the city and balance of county than for the state; in Building-Lumber-Hardware, the balance of county did better than either city or state; and in Food the city showed the most marked increase. In this last group the changes in the city tax collections were quite parallel to the corresponding changes in the Non-Retail group. About half of the tax payments in the Non-Retail group arise from sales by utility companies. Therefore these parallel trends are both quite reliable and consonant indicators of population growth in Holland.

The remaining groups (Specialty and Miscellaneous Retail) are each too diverse in nature to permit ready analysis. Further, the two contribute only about 10 per cent of the total tax payments.

IV. CONCLUSIONS

The analysis of the gasoline station sales tax data for Holland has shown that the retail sales trends of the four groups of stations did not exhibit a consistent influence of the by-pass. Rather, their business seemed much more a factor of their location. The two groups close to the city's central business district -- one on the Business Route of U.S. 31 and one not -- fared much less well than the two groups away from the CBD, of which there is also one on the business route and one not.

The taxable sales of all four groups showed some reversal of the previous upward trend during the year immediately after the opening of the by-pass. It is significant, though, that all groups again showed increases during the subsequent year, and with one exception have continued to gain. In fact, two of the groups have far outdistanced the rise in gasoline station business of Ottawa and Allegan counties, and of the State of Michigan.

Sales tax payment trends for the nine groups of business including all retail activity in Holland showed a decline for those businesses generally representative of downtown retail sales during the four years following the opening of the by-pass. There is indication that this decline was not due to the reduction in through traffic traversing the downtown area. It is certainly likely that a type of business oriented strictly to service to the motorist is likely to suffer more serious consequences as a result of the removal of through traffic past its location than is a business type with only tenuous connection to service for the traveler or his vehicle. The record of the remarkable gains in taxable sales exhibited by the two groups of gasoline stations located away from the central business district points to the conclusion that Holland gasoline stations experienced no irretrievable loss of customers as a result of the by-pass, and may in fact have benefitted significantly as the result of through traffic removal. Since gasoline stations as a whole -- the one most motorist-oriented business -- did not suffer as a consequence of the use of the by-pass, it seems most unlikely that downtown sales would be so affected. Hence the decline in CBD business volume can be attributed to causes, not here determined, other than the reduction in through traffic.

PART SIX

A STUDY IN
THE CITY OF NILES

SUMMARY OF THE NILES STUDY RESULTS

INTRODUCTION

TRUNKLINE PATTERN AND TRAFFIC

THE BY-PASS, THE TOLL ROAD, AND TRAFFIC FLOW

THE IMPACT OF THE BY-PASS

BUSINESS ACTIVITY IN NILES - A SALES TAX STUDY

CONCLUSIONS

SUMMARY OF THE NILES STUDY RESULTS

Niles, Michigan, was a city plagued by problems associated with heavy movements of through traffic and trucks until December 1, 1956, when a new by-pass for two of the trunklines dissecting it, M-60 and U.S. 112, was opened just south of the city. This occurred hard on the heels of the opening of the Indiana Toll Road, seven miles farther south, and both of these new highway facilities have greatly altered traffic flow patterns in the Niles area.

The Niles study was aimed principally at attempting to evaluate the effect on the city of the opening of the by-pass, but also to some extent the effect of the opening of the Toll Road, through analysis of the retail sales tax collection data supplemented by some observations of local businessmen and officials, and by a review of the changes in traffic flow patterns resulting from the opening of these new highway facilities. Use was made of both the published sales tax figures for all businesses in Niles as classified in broad groups by the Michigan Department of Revenue, and specially tabulated data for various geographical groupings of gas stations in the Niles area. Both types of tax data were analyzed for two years before, and two years after, the opening of the by-pass.

Unfortunately, the general business recession entered the picture the first year after the opening of the by-pass, greatly affecting retail sales tax collections in Niles as well as elsewhere and making it difficult to isolate those changes in business activity which might be attributed to the by-pass itself.

The detailed analysis of gas stations yielded more significant results, and through use of a "control group" of Niles stations, the effect of the general business recession was minimized in the evaluation of by-pass effects. Seven separate groups of stations were analyzed, selected on the basis of their relationship with various segments of the trunklines entering the Niles area and the anticipated effect of the opening of the by-pass on their sales.

The analysis of the published sales tax information for Niles showed a very slight drop in total business activity during 1957, and a larger drop in 1958, from pre-by-pass 1956 levels. Both drops were similar to the recession-induced drops in the embracing counties of Berrien and Cass, as well as in the

entire state. In the Benton Harbor-St. Joseph area, 1957 sales were actually about 10 per cent higher than those in 1956, but on the basis of local comment in the three communities this is attributed to the fact that 1957 was still a good year in the Twin Cities area, with the recession not felt until 1958, whereas in Niles with its different type of economic base, the recession affected local industry early in 1957. Inconclusive as the published data are, it is generally concluded that the opening of the M-60 by-pass and Indiana Toll Road, while adversely affecting some establishments in Niles, did not have any measurable effect on general business activity or on sales in the more limited area of the central business district through which the now-diverted traffic used to pass.

The detailed analysis of all Niles gas stations showed an increase in sales taxes paid during 1957 and 1958 of about 7 per cent above those paid in the last pre-by-pass year of 1956. This was slightly below the increase for all stations in the state, where it averaged 9 per cent, considerably below the increase in all of Berrien County, where it averaged 13 per cent, and much lower than in Cass County, where increases of 21 and 31 per cent were recorded in 1957 and 1958, respectively. Because of different rates of increase in gasoline prices in different parts of the state, comparison of Niles with the embracing counties is considered the best measure of relative performance.

An analysis of individual groups of stations showed that all those on streets which formerly carried M-60 and U.S. 112, which now carry the Business Routes of these two trunklines, and on which the opening of the by-pass resulted in estimated decreases in traffic volumes ranging from 20 to 70 per cent, had taxable sales during 1957 and 1958 as much as 15 per cent below the 1956 levels, despite increases of as much as 33 per cent in the number of stations reporting in each group during this same time period. Thus it is assumed that individual stations experienced losses as high as the 25 per cent reported by some operators, although the principle interest of this study was in groups of stations, not individual establishments. One sub-group of four stations, constant in number throughout the study period, experienced decreases of about 7 per cent in 1957 and 16 per cent in 1958, and this on a street which still carries the heavy volumes of U.S. 31-33 in addition to the lighter traffic of the two aforementioned Business Routes.

In contrast with the drop in sales experienced by groups of stations on the former routes of M-60 and U.S. 112, groups

located on other trunklines, or not on any trunkline, recorded increased sales in 1957 and 1958 over those in 1956. Individual stations in two of these groups, combined to form the "control group", just about "held their own" during the recession and were much better off than those subject to decreased traffic volumes as the result of the diversion of some through traffic. In locations which it was felt would not be affected at all by the diversion of traffic to the by-pass, the control group stations showed an average increase over 1956 of 25 per cent in 1957 and 41 per cent in 1958, while the average number of stations reporting was increasing 38 per cent during the same period. One group of five stations, along the general route of the by-pass in locations which could be seen from the by-pass and on M-60 northeast of the by-pass was the only one which had increases in sales greater than those of the control group -- understandable in view of the fact that three of the stations were constructed around the time of the by-pass opening.

Niles has benefitted from the reduction in congestion resulting from the removal of much of the through traffic, especially heavy trucking, from its central business district and several major streets leading to it. At the same time, there is no conclusive evidence that this has caused a decrease in total business activity in the city. On the other hand, gas stations on the former routes of M-60 and U.S. 112 through Niles were adversely affected by the diversion of through traffic to the by-pass. Despite this, three new gas stations have been opened on Business Route M-60 since the by-pass was opened and they, as well as the older stations, all appear to be surviving and should benefit from growing local traffic volumes associated with new residential and shopping center development in the Niles area.

I. INTRODUCTION

The City of Niles, while having its center only 12 miles from the center of South Bend, Indiana, is a separate and distinct community of the type desired in this series of studies. Niles is an industrial city and, unlike some other cities studied, does not appear to cater to the needs of summertime tourists. Motel development in the immediate vicinity of the city is very limited, and in some instances relatively old, while eating facilities appear to be largely dependent upon local patronage. The by-pass, which carries both U.S. and State routes, was not a by-product of extensive route relocation and improvement but, instead, was constructed for the specific purpose of carrying through traffic on these routes around Niles, providing a new linkage among existing highways east, south, and west of the city.

The major part of this report on the Niles by-pass is concerned with an analysis of the effect of the opening of the by-pass on business activity in the Niles area, as reflected in the retail sales tax collections for various groups of businesses. For all businesses in Niles, use was made of the published sales tax figures of the Michigan Department of Revenue. For a special study of gas stations, additional field work was necessary to obtain information which permitted the tabulation of sales tax collections for specific groups of stations in the Niles area. With both types of sales tax information, comparisons were made with collection data for the embracing counties, the state, and in some cases the Benton Harbor-St. Joseph area. In the course of the field work in Niles, local opinions and comments were solicited and provide the basis for one of the parts of this report, as does other information about the city, the by-pass, and traffic flow in the area.

Several individuals in Niles were especially helpful during the fact-finding state of this study. Mr. F. J. Cole, former Executive Secretary, and Mr. Justin F. McCarty, present Executive Secretary of the Niles Chamber of Commerce, provided information about the local economy, the effect of the by-pass, and local action taken to offset its possible adverse effects. Other information was obtained from various city officials, including Mr. Edward Kalling, Building Inspector; Mr. William E. Korbitz, City Engineer; and Mr. Arthur Pears, Chief of Police. In nearby communities, personnel in the Greater Dowagiac Chamber of Commerce and Twin Cities (Benton Harbor-St. Joseph) Chamber of Commerce helped answer several questions which arose during the analysis of the sales tax data. The help of all these people is greatly appreciated.

The Setting - Niles and the County

Niles had a population of 13,145 in 1950, which had increased to 13,766 by 1960. It is one of those industrial cities whose products may be better known than their place of manufacture. But the residents of Niles have reason to be proud of their city which strikes the visitor as a pleasant city in which to live, work, and shop. Some hills, especially on the west, the St. Joseph River which winds through the city, and the Dowagiac River just north of the city, provide added interest and the setting for recreational facilities, both existing and proposed.

An appreciation of the role Niles' products play can be gained from mere mention of some of their names: Simplicity patterns, Kawneer store fronts, Tyler refrigerated display cases, and French Paper Company products. These are the names most likely to be familiar, but there are more than thirty other industries in Niles often functioning as suppliers or sub-contractors for other industrial or commercial establishments. A survey by the Niles Chamber of Commerce in March 1956 showed 36 industrial establishments with a total employment of 5,300. Of these workers, 88 per cent were employed by those ten industries which employed more than 100 persons each. Of the ten, two industries employed more than 1,000 persons each, accounting for 40 per cent of the total employment.

One other facet of local industrial life is important in analyzing traffic movement in the Niles area: a 1956 survey of four representative industries showed that one-fifth of the employees lived in South Bend, or in other communities beyond the Niles urban area. A similar analysis in the South Bend area showed that some 1,100 persons employed in South Bend lived in the Niles area. In addition, the 1949 traffic study by the State Highway Department showed that 355 of the 814 objective daily passenger car trips from the Niles area to the South Bend area were for the purpose of work, while in the opposite direction 255 out of 787 trips were for this purpose. Thus it can be seen that the U.S. 31-33 route plays a vital role in the Niles economy.

This manufacturing activity provides the backbone of the Niles economic base, and in fact this is true throughout Berrien County where more than one-third of the employed persons are in manufacturing -- more than three times the number of workers in agriculture. Nevertheless, one of the strong points in the local economy is the balance provided by agriculture, with Berrien County ranking high in the production

of fruits and berries. In 1954 this county ranked third in the United States in the harvesting for sale of cherries, and ranked among the top twenty-five counties in the harvesting for sale of apples, peaches, pears, plums and prunes, grapes and strawberries. This favorable showing resulted in Berrien County being ranked twentieth in the nation in the value of fruit sales. Also important in the county's agricultural economy are vegetables, as well as nursery and greenhouse products.

Building activity in Niles over the past four years (two each before and after the opening of the by-pass) has been as shown in Table I, with the totals in the latter period exceeding those in the former period in all but the total number of building permits issued. The drop in 1958 reflects the state-wide drop in construction activity which is apparent from Table II, appearing later in the report, which shows that the retail sales taxes collected in the "Building, Lumber, Hardware" category during 1958 were considerably lower than those collected in 1957 in all areas studied.

Table I: Building Activity in Niles: 1955-1958

	TOTAL BUILDING PERMITS	TOTAL VALUATION	NEW RESIDENCES	ESTIMATED COST
1955	786	\$1,339,885	53	\$ 629,921
1956	642	1,825,330	46	627,960
1957	456	1,849,005	58	1,067,170
1958	444	1,373,980	45	656,364

At the present time, there is no indication that either the M-60 by-pass or Indiana Toll Road have adversely affected the population and physical growth of Niles.

This, then, is the setting for the study of a city in which traffic volumes have been greatly affected by the opening of new highway facilities outside of its city limits. Niles, a city with a diversified industrial economy, set in a rich agricultural area, a growing, livable community not dependent upon tourists or other transient trade for a major contribution to its economy.

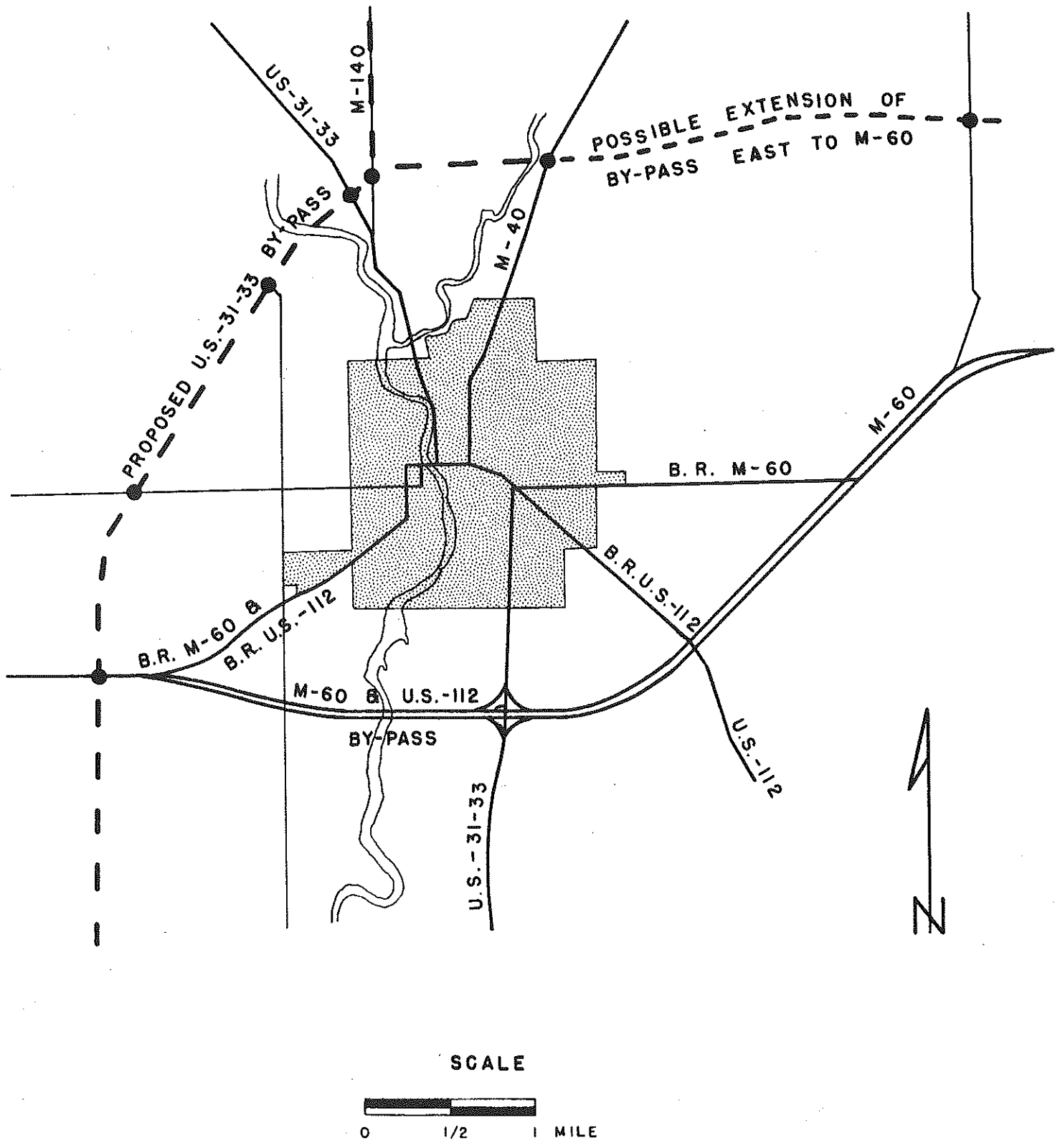
II. TRUNKLINE PATTERN AND TRAFFIC

Niles is an important industrial city located in the southwest corner of Michigan, in Berrien County but only one-half mile from the Cass County line. It is also distinguished by being at the focal point of more major highways than are usually found in a city of its size. The presence of these trunkline highways, combined with a street pattern which forced all traffic on these highways to pass through the heart of the city, created serious traffic problems in the center of Niles prior to the opening of the M-60 by-pass on December 1, 1956. It was not traffic volume alone which made the problem serious -- the fact that a large percentage of it was trucks and the presence of sharp turns and hills in the center of the city were contributing factors. And it wasn't just the through traffic on these highways which had to pass through the center of Niles -- most of the traffic changing from one trunkline to another had to do likewise.

The trunkline highways entering the Niles area carry five separate numerical designations: M-40, M-60, M-140, U.S. 112, and U.S. 31-33 (Figure 1). Most important in terms of volume carried is U.S. 31-33, leading south to South Bend, Indiana, only twelve miles away, and northwest to St. Joseph, Benton Harbor, and points north along the Lake Michigan shore. The trunklines passing through the Niles area in the east-west direction, M-60 and U.S. 112, should be considered together. They are both sections of routes from Detroit to Chicago, the former by way of Jackson, the latter by a more southerly route through Coldwater. Formerly these two routes merged within the city itself (as the Business Routes do now) and followed the same highway southwest out of the city and thence westerly (as at present) to the Lake Michigan shore, where both designations are dropped at the junction with U.S. 12, which continues on into Chicago.

Entering Niles from the north is M-40, the route from Dowagiac and Paw Paw northeast of Niles which terminates at its junction with U.S. 31-33 in the center of Niles. The last trunkline, M-140, does not actually enter Niles, but rather terminates at its junction with U.S. 31-33 about one mile north of the city limits. Although M-140 runs nearly straight north and provides the shortest route from Niles to South Haven and other shore points to the north, it carries a rather small volume of traffic due to its condition. Reconstruction as part of the Highway Department's current five-year program should result in substantially increased use of this highway.

Figure 1: Major Highways, Existing and Proposed, in the Niles Area



The need for a by-pass around Niles, to divert this through traffic causing problems in the center of the city, has been recognized for many years. The Michigan State Highway Department's 1949 Niles Area Traffic Study showed the degree of relief which could be realized through the diversion of this through traffic.* Since opening of the "M-60 by-pass" on December 1, 1956, the magnitude of the problem in Niles has been greatly reduced. This by-pass has had a far greater effect on traffic flow than the name itself implies, for, in looping south of Niles from the east, it intersects U.S. 112 and provides a by-pass route for that highway to the west and also intersects U.S. 31-33 so that a considerable interchange of traffic between the three routes can take place outside of Niles itself.

However, the M-60 by-pass was not the only highway improvement opened during 1956 which affected Niles. Only seven miles to the south, the Indiana Toll Road was opened late that same year and has affected traffic flow in the Niles area in several ways. The only interchange in a distance of 43 miles, that for South Bend, is with U.S. 31-33, thus increasing the use of this highway by motorists traveling to or from the Toll Road. Secondly, the Toll Road is only a few miles from, and parallel to, U.S. 112 for fifty miles east of Niles and 25 miles west of it, and is obviously being used by motorists who are traveling any distance between points along U.S. 112 or who were formerly using it as one segment of a longer trip. Traffic volumes on M-60 have also been affected because the majority of the Detroit to Chicago through traffic now apparently makes use of the Toll Road, in preference to the slower conventional Michigan highways.**

*Michigan State Highway Department, The Niles Area Traffic Study-Basic Facts and Tables; Lansing, Michigan, June 1950.

**A "patron survey" conducted on the Indiana Toll Road during 1958 and 1959 showed that Michigan ranked third among the six most frequent points of origin and destination for toll road traffic, ranking after Chicago and Indiana (excluding Gary) in both instances, and ahead of Gary, Illinois, and Ohio. Gary ranked fourth as a point of origin; sixth as a destination. The other five ranked in the order indicated, and as a destination Michigan was only slightly less important than the two leaders. Source: Public Relations Department, Indiana Toll Road Commission, Patron Survey on the Northern Indiana Toll Road, Indianapolis, Indiana, 1959.

While the Niles traffic problems have been reduced in magnitude by both of these highway improvements, the fact that their openings were so close in time makes it more difficult to evaluate the effect of either one separately on business in Niles. Thus this report in some cases makes no attempt to segregate the effects which might be ascribed to the M-60 by-pass, and those which might be due to the Indiana Toll Road.

III. THE BY-PASS, THE TOLL ROAD, AND TRAFFIC FLOW

A discussion of the effect the M-60 by-pass and Indiana Toll Road have had on traffic flow in the Niles area should properly start with a look at the findings of the 1949 Niles Area Traffic Study conducted by the State Highway Department. In this study, data were obtained on a weekday in July 1949, from interviews of drivers at stations on each of the seven major highways, six of them trunklines, leading into the Niles study area. (The seventh highway leads west to Buchanan.) Most significant from the standpoint of by-pass planning was the analysis of through trips on major highways, and the interchange of through trips among these highways.

Overall, the through trips accounted for 59 per cent of the traffic crossing the cordon line at the trunkline stations, but this ranged from 51 to 82 per cent at the various stations. Also significant was the fact that a large part of this traffic was changing routes in Niles. For example, only 36 per cent of the through traffic on U.S. 31-33 south of Niles (which was 51 per cent of all 9977 vehicles per day on that highway) left or entered Niles by way of U.S. 31-33 northwest of the city, while 33 per cent left or entered by way of M-60 east of the city. In contrast, on U.S. 112 southeast of Niles 65 per cent of the 2413 vehicles per day was through traffic, and 71 per cent of this was destined for, or came from, U.S. 112 west of Niles.* On M-60, east of Niles, 58 per cent of the 5694 vehicles per day was through traffic, and while 40 per cent of it came from, or was going to, M-60 west of the city, 50 per cent of it was going to or from U.S. 31-33 south of Niles. The only other movement of note was between M-40 and U.S. 31-33 south of Niles, with 83 per cent of the through traffic on M-40, which was 64 per cent of the total of 1757 vehicles/day on that highway, moving between the two trunklines.

The pattern resulting from this analysis made quite clear the need for two by-passes around Niles: one along the lines of the M-60 by-pass since constructed; and a second to carry U.S. 31-33 around Niles, while at the same time permitting an interchange with M-40 outside of the city. But the real "clincher" as to which should have priority showed up in the

*On U.S. 112 southeast of Niles, 80 per cent of the passenger car through traffic was from or going to Wayne County or the eastern states, while on M-60 east of Niles this figure was only 40 per cent. Wayne County alone accounted for 64 and 32 per cent of this through traffic, respectively.

analysis of through trailer combination trips in the Niles area, of which a total of 89 per cent (1942 vehicles per day) were through trips. The movement between M-60 east of Niles and M-60 west of Niles (425 vehicles per day) was only slightly less than the total of the next three highest movements through the city: between U.S. 112 east and west of the city, between M-60 east and U.S. 31-33 south, and straight through on U.S. 31-33. Here the answer was clear; the provision of a by-pass for M-60 and U.S. 112 should cut the volume of through trailer combination trips in Niles by as much as 80 per cent, and since it was this type of vehicle which was creating many of the traffic problems in the center of the city, such a by-pass would be of maximum value.

Also analyzed in this study was the effect on traffic in the Niles area of the construction of the proposed Chicago-Detroit link in the Interstate Highway System, north and west of Niles, now being built as part of Interstate 94. It was shown that it would have a drastic effect on east-west (M-60 and U.S. 112) traffic through Niles, reducing passenger car through trips to less than 30 per cent of the then existing volumes. The effect on trailer combination through trips would be even more spectacular, reducing them to about 11 per cent of the measured volume. At the same time, it was concluded that the construction of that part of the Interstate System "would in no way affect the north-south traffic on U.S. 31 and U.S. 33." This appears to be a rather strong assumption in view of the known attraction of high-standard highway facilities, the willingness of motorists to go somewhat out of their way to use them, and the fact that much of this through traffic is moving to and from the Benton Harbor area which would be directly served by the proposed Interstate Highway. It is unfortunate, but obvious why, no recognition could be given to the still to be proposed Indiana Toll Road, which was eventually to affect Niles before the construction of Interstate 94, and in a very similar manner.

Despite the facts that the M-60 by-pass and Indiana Toll Road have alleviated the traffic congestion in Niles, and that opening of the new Interstate 94 should bring further relief, the local desire for a by-pass for U.S. 31-33 has not been eliminated. The proper location for this by-pass has been a subject of local discussion, and one subdivider went so far as to dedicate a 100-foot right-of-way along 17th Street with the idea that a by-pass, obviously not of controlled-access type, might be located along the city's eastern limits. Present thinking, however, is more along the lines of the

proposal contained in the Bartholomew Comprehensive plan for Niles* (Figure 1). This calls for a controlled-access by-pass highway west of the present junction of M-60 and Business Route M-60 west of Niles. To the south, this highway would connect with a similar by-pass west of South Bend, the location of which has already been approved. To the north of its interchange with M-60 and U.S. 112, the U.S. 31-33 by-pass would curve around Niles on the northwest and turning east extend to the present M-40. Presented, also, is the possibility of its eventually being extended farther east to meet M-60 east of Niles.

By-Pass Features

The M-60 by-pass was built to standards somewhat lower than those being employed on the new Interstate System. This is also true of the improved M-60 developed along the original alignment of M-60 to the east, from about five miles east of the city to the point where the former route turned west to enter the city via Oak Street. This is not a part of the actual by-pass, but it was improved shortly after the by-pass was constructed. While developed as a divided four-lane highway with a grass median, this stretch lacks controlled access -- there are grade level crossings of intersecting roads and access directly to the highway from abutting private property.

From this point southwesterly, and then westerly to its connection with the former route of M-60 west of Niles, the by-pass itself is a four-lane divided highway on new alignment with partial control of access. Abutting property does not have direct access and there is a grade level separation with an interchange at its crossing of U.S. 31-33; but other intersecting roads, including U.S. 112, several local roads, and the Niles to South Bend line of the Michigan Central Railroad (New York Central System) have grade level crossings of the by-pass.

That this type of development -- short of a full controlled-access highway -- has its limitations is shown by the fact that the intersection of U.S. 112 and the M-60 by-pass earned the dubious distinction of being "Public Enemy No. 1" on the State Highway Department's list of the "ten most hazardous intersections" on Michigan's 9300-mile rural trunkline system during the year 1957. This rating was earned on the basis of 25 accidents, with 2 killed and 53 injured during the year. Re-signing and the installation of a flasher signal are

*Hart and Bartholomew and Associates, A Report Upon Comprehensive Plan, Niles, Michigan; St. Louis, Missouri, October 1957.

credited with reducing the 1958 toll at this intersection to 16 accidents, with 1 killed and 24 injured, which resulted in its dropping to third place on the Department's "most hazardous" list. It will undoubtedly drop completely off the list after opening of a proposed grade separation with partial cloverleaf at this intersection, which is to be placed under contract during November 1959. Even now, this is a wide-open intersection in fairly level country and it is difficult to understand the reason for the poor accident record.

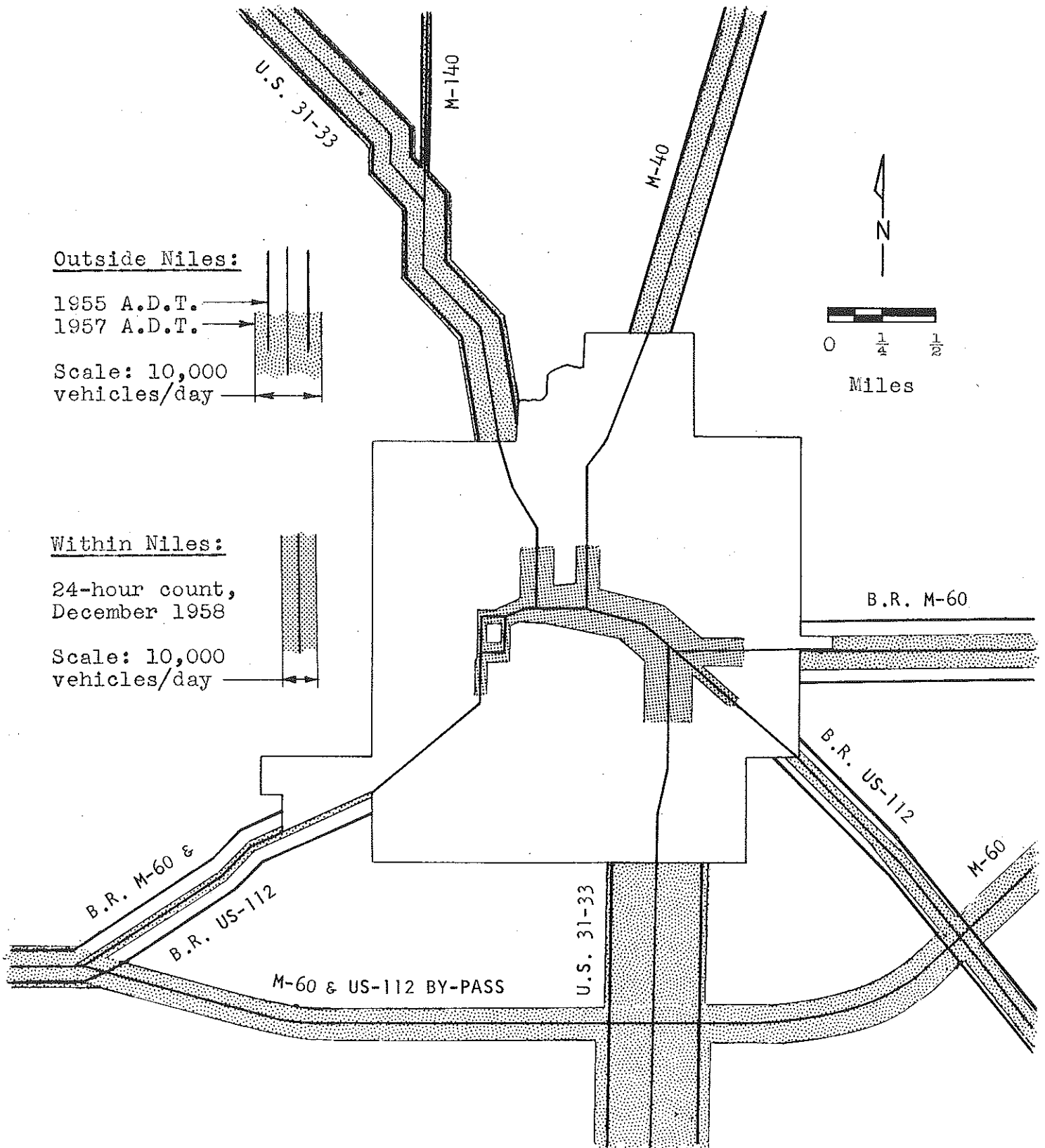
Traffic Flow in the Niles Area

The opening of the M-60 by-pass and the Indiana Toll Road greatly altered the pattern of traffic flow in the Niles area. Figure 2 shows generalized traffic flows on trunklines in the Niles area (but outside the city) for the years 1955 and 1957, before and after the opening of the by-pass and Toll Road, and superimposed to permit easy comparison. Volumes indicated for the two years are based for the most part on Average Daily Traffic figures from the Michigan State Highway Department's flow maps for the two years, supplemented by station and intersection counts for the same or proximate years. As would be expected in view of the highway pattern in the Niles area there was little change in the volume of traffic using the routes north of the city -- U.S. 31-33, M-40, and M-140 -- other than the normal increase associated with the general increase in vehicle miles driven each year. However, east, south, and west of the city there have been very significant changes which can be attributed in part to the opening of the by-pass, and in part to the opening of the Indiana Toll Road. Figure 2 also shows the results of counts taken on December 22 and 23, 1958, within the city itself which, while not directly comparable to the 1955 and 1957 flows, gives an indication of the distribution of traffic between routes in the center of the city.

The most noticeable change occurred on the former route of M-60, now designated as Business Route M-60. East of Niles, between the by-pass and the city limits, the 1957 volumes dropped to less than one-half of those measured in 1955 before opening of the by-pass. But even more striking was the change west of Niles, between the by-pass and the city limits, where the highway also carries Business Route U.S. 112, and 1957 volumes were only one-quarter to one-third those in 1955. It is obvious from the 1957 volumes recorded on the by-pass that the diversion of through traffic to this highway was responsible for a large part of the drop on what is now Business Route M-60. At the same time, it must be noted that the traffic volumes on M-60 east of the by-pass dropped from an

Figure 2: Generalized Traffic Flow on Trunklines in the Niles Area

1955 and 1957 Average Daily Traffic on trunklines outside the city and 24-hour counts taken within the city on December 22-23, 1958



average daily volume of 7000 in 1955 to 4900 in 1957, and somewhat lesser decreases were recorded on M-60 all the way east to Jackson. This drop, of course, is attributed to the opening of the Indiana Toll Road and the diversion of through traffic to that facility. If this had not occurred, it is quite likely that the majority of this through traffic would have used the M-60 by-pass, and the traffic on Business Route M-60 would have been only slightly increased by those essentially through motorists who wished to stop in Niles for food or fuel. Thus the effect of opening of the by-pass on Business Route M-60 traffic volumes minimized the effect of the Indiana Toll Road on Niles. An 8-hour count made in April, 1957, indicated that of all the cars on M-60 northeast of the junction of the by-pass and Business Route, approximately two-thirds were going to or from the by-pass and one-third to or from the Business Route into Niles.

Traffic volumes on Business Route U.S. 112 southeast of Niles also dropped, but not as much as volumes on U.S. 112 southeast of the by-pass. Since the by-pass should not have affected this latter volume, it is assumed that this resulted from the diversion of much of the through traffic on U.S. 112 to the Toll Road. Thus the volumes recorded in 1957 represented principally local traffic traveling between Niles and points in the surrounding rural area and communities along U.S. 112, such as Edwardsburg and Adamsville. An 8-hour traffic count in January, 1958, showed that two-thirds of the traffic on U.S. 112 at the intersection with the by-pass actually crossed the by-pass going to and from Business Route U.S. 112. By far, the heaviest turning movement was between U.S. 112 and the M-60 (and U.S. 112) by-pass route to the west, a movement facilitated by a "cut-off ramp". During the 8-hour period, 20 per cent of the traffic on U.S. 112 made this turn. But the 1949 traffic study had shown that more than 50 per cent of the traffic on U.S. 112 might be expected to make this movement, with the great majority of this going to and from U.S. 112 - M-60 west of Niles. The difference between the 1949 and 1958 percentages, with total volumes on U.S. 112 nearly equal during the two studies, reflects the diversion of through traffic to the Indiana Toll Road and serves to emphasize that U.S. 112 east of Niles has been turned into a highway of primarily local use. Even the 1958 turning movement of 20 per cent may be misleading in an analysis of through traffic, since some of this might represent traffic which enters or leaves Niles via other highways intersecting the by-pass, such as U.S. 31-33 and Third Street.

Traffic volumes on U.S. 31-33 south of the by-pass are 15 to 20 per cent (approximately 2000 vehicles per day) higher than those north of the by-pass, indicating that there is a

considerable interchange of traffic between U.S. 31-33 and other trunklines via the by-pass -- interchanges which previously took place within the city. Between 1955 and 1957 traffic volumes north of the by-pass on this trunkline increased about 9 per cent, but south of the by-pass the increase was 23 per cent. Counts taken on comparable June days for the years 1954 through 1959 at a station on U.S. 31-33 just north of the Indiana-Michigan state line, about three miles south of the by-pass, show a distinct 24 per cent jump in volume after opening of the Toll Road.

While there is a fairly heavy movement across the by-pass at Third Street, the fourth junction of major importance is that of the M-60 and U.S. 112 by-pass with the Business Routes of these two highways west of Niles. Here an 8-hour count in April, 1957, showed that 70 per cent of the traffic west of the junction used the by-pass, with the remaining 30 per cent entering or leaving the junction via Business Routes U.S. 112 - M-60. Because of the location and configuration of the highways at this junction, over 98 per cent of the traffic on the Business Routes was going to or coming from the west.

The emphasis here has been on 1957 traffic figures, because of their availability and the fact that this was the first year after opening of the by-pass. The 1958 average daily traffic figures for the Niles area reflect the state-wide recession-induced drops in vehicle mileage and traffic volumes. Trunkline counts around Niles during 1958 were mostly lower than in 1957, with traffic volumes on U.S. 112 east of the by-pass dropping 20 per cent between the two years. However, those on M-40 and on Business Route M-60 at the east city limits did not change, while counts on M-60 in Cass County increased about 15 per cent, and those on U.S. 31-33 north about 5 per cent.

From the information available, it is impossible to determine exactly which changes in the Niles area traffic pattern have resulted from the construction of the M-60 by-pass, and which from the construction of the Indiana Toll Road, although it is believed that the assumptions and opinions previously stated give a fairly accurate picture of their respective roles. With the by-pass in existence, the principal effect of the Toll Road would be to draw east-west through traffic from the by-pass, not from the center of Niles. The exception would be essentially through traffic which might be tempted to stop in Niles for food or fuel if it were only a matter of deviating from the by-pass to the business routes, whereas through traffic on the Toll Road would not leave that facility to seek these services in Niles. In addition, either

the by-pass or the Toll Road alone would alter somewhat the pattern of traffic entering Niles, with both placing increased emphasis on the U.S. 31-33 route from the south.

Despite the fact that Niles has already felt the impact traffic-wise, of the opening of two major highway facilities, the end is not yet in sight. Shortly it will receive a third jolt from the completion of Interstate 94 (U.S. 12) to the north and west, removing virtually all east-west through traffic from the city, affecting the use of U.S. 31-33, and attracting back to Michigan much of the Detroit to Chicago traffic now using the Toll Road. And finally, Niles may be by-passed to the west by a new U.S. 31-33, providing the final link in a highway network which will permit all through traffic to avoid the center of Niles.

IV. THE IMPACT OF THE BY-PASS

It is clear that the M-60 by-pass, along with the Indiana Toll Road, has greatly affected traffic flow in the Niles area. But what other effects have been noticed, and how do the residents of Niles view the new by-pass?

The general effect of the opening of the by-pass has been desirable -- there has been a very noticeable improvement in traffic flow on Main Street, especially due to the elimination of much of the truck traffic. So far, the by-pass has had no appreciable effect on zoning or building in the city, except to encourage residential building along the former route of M-60, made more desirable for this purpose by the virtual elimination of heavy truck traffic. There has been no marked increase in commercial construction on the approach roads to the by-pass in locations visible from it.

Prior to the construction of the by-pass, there was in Niles strong opinion on both sides as to its desirability. The average citizen was reported as being strongly in favor of the by-pass, while the average merchant was in fear of being hurt. Comments received indicate that some establishments experienced a loss in business as a result of the reduction in traffic volumes, and the outlying service stations have been hurt. Of course it is quite apparent from the analysis of traffic volume figures that the M-60 by-pass itself was not responsible for all of this loss -- the Indiana Toll Road siphoned off some through traffic from the Niles area. But because the opening of the by-pass and Toll Road were so close in time, there appears to be little public recognition of the role the latter played in changing traffic flow in the Niles area. Also of interest is the fact that discussion of the by-pass with local residents appeared to bring forth as many comments about the bad accident record at the U.S. 112 intersection with the by-pass as about its effect on the local economy.

Experience in other by-passed cities has shown that service stations are apt to be among those businesses most affected by the diversion of through traffic, and in Niles this is the only type of business represented in quantity on the routes which have experienced a considerable drop in traffic volume as a result of the opening of the by-pass and Toll Road. Some comments of operators of such stations are therefore of interest. From one near the east city limits, where there was a 50 per cent drop in the volume of traffic past the station: "It hurt a little bit, but it hasn't been as bad

as everybody thought it would be. Everyone has been hurt a little." An operator on Business Route M-60 west of the center of the city, but still close in, reported: "The by-pass hurt a lot--summertime business is down." This station has been doing more repair work lately to compensate for the loss in gasoline sales. And finally, a station in the area of maximum concentration, just northwest of the intersection of U.S. 31-33, Business Routes M-60 and U.S. 112, claimed a 25 per cent loss in business due to the by-pass.

In the light of such comments, the measured drop of traffic volume on what is now Business Route M-60, and the observed nature of traffic on this route, it is somewhat surprising to see new service stations springing up on this highway in locations which would appear to be anything but desirable since the reduction in traffic volumes. Since opening of the by-pass, one new station has opened on Business Route M-60 near the west city limits where the volumes in 1957 were only one-third those of pre-by-pass days, and two new service stations were constructed during 1958 near the east city limits on Business Route M-60 where traffic volumes in 1957 were one-half of those in 1955. All three stations were in operation in 1959, and those constructed near the east city limits, as well as the existing stations in that area, stand to gain from the increased traffic volumes on Business Route M-60 induced by the opening of a shopping center just outside the city limits which was just completed, although the first store opened in 1957. One of the new gas stations is, in fact, a part of this center. It is apparent that the persons constructing these stations recognize that the vast majority of urban service stations derive most of their income from local trade, not through traffic, and that the surrounding areas have a potential for additional residential growth.

With a reported loss of trade by some businesses in Niles, what has been done to counteract the effect of the diversion of some through traffic to the by-pass? Niles businesses have been attacking this problem through the use of concentrated retail promotions, provision of additional off-street parking, and store modernization, all aimed at making Niles a more attractive place to shop, an effort augmented by the elimination of much of the traffic-congesting, parking-impeding through traffic in the central business district. Foods group sales (which includes those of restaurants and other eating establishments) represent a larger percentage of the total sales in Niles than is the case in the Benton Harbor-St. Joseph area, and in the entire state. A "convenience good", food is usually bought in the immediate vicinity of a person's residence and food sales in an urban area bear a direct relationship with the population in that area. Conversely,

sales in the "shopping goods" lines represent a smaller percentage of total sales in Niles than in the Benton Harbor area and the state, and this is especially true in the apparel, furniture, and specialty lines of merchandise. Thus it appears that there is a larger demand for shopping goods in Niles than is presently being met locally, and aggressive promotion and central business district improvement may make it possible for Niles to attract more people in from the surrounding area and to compete more successfully with the Benton Harbor area and South Bend in serving the needs of the local residents despite the handicap of having to compete with a city as large and as close as South Bend. As for the problem faced by the service stations, one observer noted that those on the former route of M-60 have had to resort to more aggressive promotion and development of local trade. Some stations are placing more emphasis on repair activities and other services catering to the local residents.

Attention has also been given to the through traffic on the by-pass, especially the motorist who might be unfamiliar with Niles, or how to get to it from the by-pass. On M-60 east of the city, just north of where Business Route M-60 turns off, and on M-60 and U.S. 112 several miles west of the Business Route M-60 turn-off (a location dictated by county zoning), have been placed two large eye-catching, but neat, billboards suggesting that the motorist "Turn Right (or Left, as the case may be) Business M-60 to Niles". Initiated by the Niles Chamber of Commerce, these two signs are actually financed by four of the largest local industries whose names, without other advertising, occupy about 60 per cent of the sign area. It is interesting to note that none of them operates a retail establishment which might benefit from the attraction of through traffic into the city.

V. BUSINESS ACTIVITY IN NILES - A SALES TAX STUDY

While the reporting of personal opinions and observations does have its value, and would in this case appear to provide ample basis for concluding that many service stations in Niles did experience a decrease in sales after the opening of the M-60 by-pass, a more objective approach is needed properly to evaluate business activity in Niles in the light of business trends throughout Berrien County, Cass County and the state. For this purpose the retail sales tax collection figures of the Michigan Department of Revenue have been utilized, permitting a comparison of retail sales in Niles before and after the opening of the by-pass, and further comparison with retail sales in the two counties and state during the same periods of time.

Being in the category of cities with a population of more than 10,000, certain published tax data for Niles are contained in the Department of Revenue's monthly Research and Statistical Bulletin. This includes month-by-month figures on the total of all sales taxes collected from Niles businesses, and also for each of the nine basic groups of businesses, such as Foods, Apparel, and Furniture. Sales tax collection figures for each of the fifty-seven "types of business" are not available for cities regardless of size, but are available for counties and the state.

With the system of coding used by the Michigan Department of Revenue, the published sales tax figures for "Niles" include taxes paid by all businesses having Niles as a post office address, covering establishments on the fringes of the city as well as those farther out on the Niles rural routes. This limits the usefulness of the published city data in by-pass studies where there may be distinct differences in the effect on the city itself and fringe area in which the by-pass is located. However, due to the controlled-access nature of the M-60 by-pass, and the lack of extensive commercial development on the approach roads in the immediate vicinity of the by-pass, this is not considered to be a major problem in the use of the published sales tax data for Niles. This is especially true if attention is focused on those groups of businesses which are concentrated in the central business district, or at least in the general area served by the trunkline routes which were subsequently placed on the by-pass.

In addition, it had been concluded on the basis of earlier studies that a better indication of general business activity changes, and more valid comparison with other geographical

areas, can be obtained by using the Total Tax excluding the Automotive group taxes, in preference to the total of taxes collected from all nine groups of businesses in an area. About one-quarter of all taxes collected are paid by businesses in the Automotive group, which includes gas stations, and since most of the establishments near the M-60 by-pass which might have benefitted from its opening are gas stations, the use of the Total Tax excluding the Automotive group minimizes the effect of including fringe area and rural businesses with those in Niles itself. Gas stations in the Niles area were the subject of a more detailed study discussed separately in this report.

Table II and the accompanying graphs of Figure 3 summarize the findings based on the published retail sales tax information. The analysis covered a four-year period -- two years before, and two after, the opening of the M-60 by-pass. Since the by-pass opened on December 1, 1956, and sales tax collections are reported in the month following the actual month of sale, the analysis was actually based on tax collections during the four calendar years 1955, 1956, 1957, and 1958. Sales tax collections are expressed in terms of "index numbers" rather than actual sales in dollars or percentage changes, to simplify comparison. Using this system the 1956 collections for each group in each area were assigned the index number of 100.0, and the index numbers for 1955, 1957, and 1958 were obtained by dividing the 1956 base year collections into those for the three other years.

Index number changes for three additional areas are shown in Table II for comparison with those for Niles. Since both Benton Harbor and St. Joseph have populations in excess of 10,000, sales tax collections for these two cities are also published in the Bulletin and, combined for this study because of their economic interdependence, provide a nearby urban area for comparison with Niles. Sales tax collections for the "Balance of Berrien County", or all that area not served by the Niles, Benton Harbor, and St. Joseph post offices have been combined with those for neighboring Cass County (which contains no cities over 10,000 population) to permit comparison of Niles business activity changes with those in the surrounding small cities and rural areas. This two-county area excluding the three cities is sometimes referred to in the text as Cass and Berrien Counties, or "the counties". And finally, to provide a means of comparison with a larger area not so subject to change due to limited local conditions, index numbers are shown based on sales tax collections in the entire State of Michigan.

Table 11: Changes in Retail Sales Tax Collections: Niles—Benton Harbor—St. Joseph—Cass—Berrien Counties—Michigan

For sales from: December 1954 through November 1955 (1955)
 December 1955 through November 1956 (1956)
 December 1956 through November 1957 (1957)
 December 1957 through November 1958 (1958)

Expressed in terms of index numbers with the 1956 Base Year = 100.0

	NILES				BENTON HARBOR- ST. JOSEPH				CASS CO. AND BALANCE OF BERRIEN COUNTY				MICHIGAN			
	1955	1956	1957	1958	1955	1956	1957	1958	1955	1956	1957	1958	1955	1956	1957	1958
Total Tax Excluding the Automotive Group	90.0	100.0	99.9	94.5	91.7	100.0	112.0	108.3	94.0	100.0	94.1	89.9	95.1	100.0	99.6	95.3
Total Tax (For all 9 groups)	94.5	100.0	99.4	93.6	94.5	100.0	110.1	104.2	97.8	100.0	98.0	90.4	99.2	100.0	100.6	93.7
<u>Groups</u>																
Apparel	88.2	100.0	88.9	85.4	92.2	100.0	102.2	93.5	98.4	100.0	89.3	97.2	96.9	100.0	100.1	89.8
Building, Lumber, Hardware	89.7	100.0	95.4	82.1	91.8	100.0	102.5	90.4	95.7	100.0	94.8	84.8	96.1	100.0	86.9	78.9
Foods	97.1	100.0	103.1	101.9	95.0	100.0	117.0	119.1	94.0	100.0	92.7	93.1	95.9	100.0	103.0	102.7
Furniture	87.2	100.0	111.7	87.6	88.3	100.0	114.4	101.9	95.8	100.0	105.7	99.9	94.5	100.0	99.3	84.7
General Merchandise	79.0	100.0	90.1	86.7	99.1	100.0	120.0	113.8	82.5	100.0	97.6	87.4	97.8	100.0	101.3	95.6
Specialty	82.5	100.0	96.4	90.8	90.7	100.0	112.6	108.9	97.1	100.0	102.7	94.8	95.3	100.0	100.7	96.5

Source: All data from the Michigan Department of Revenue, Research and Statistical Bulletin, monthly issues for the time period covered.

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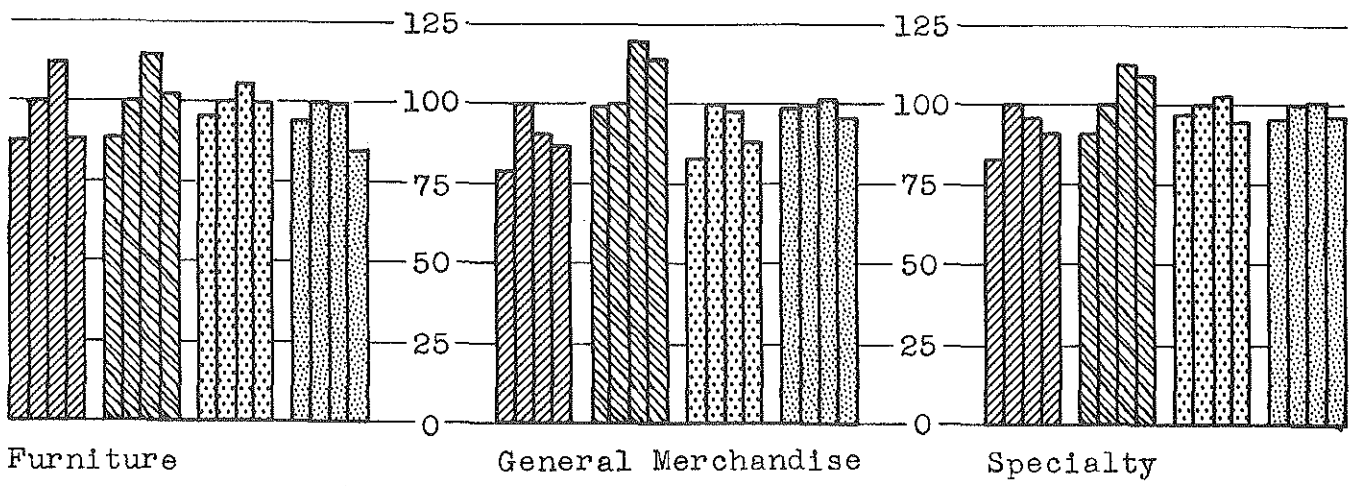
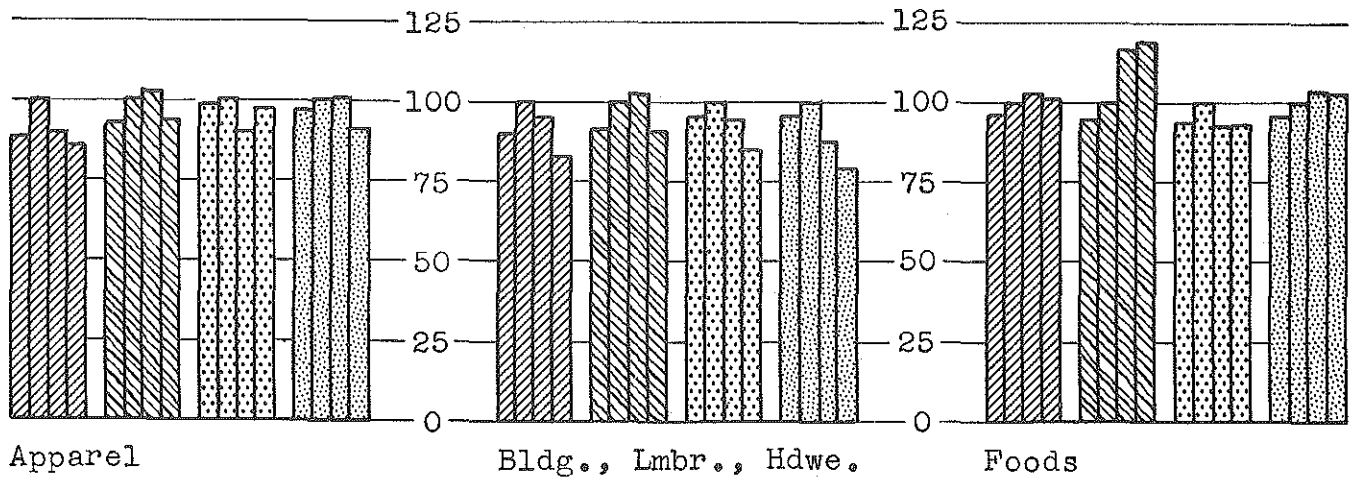
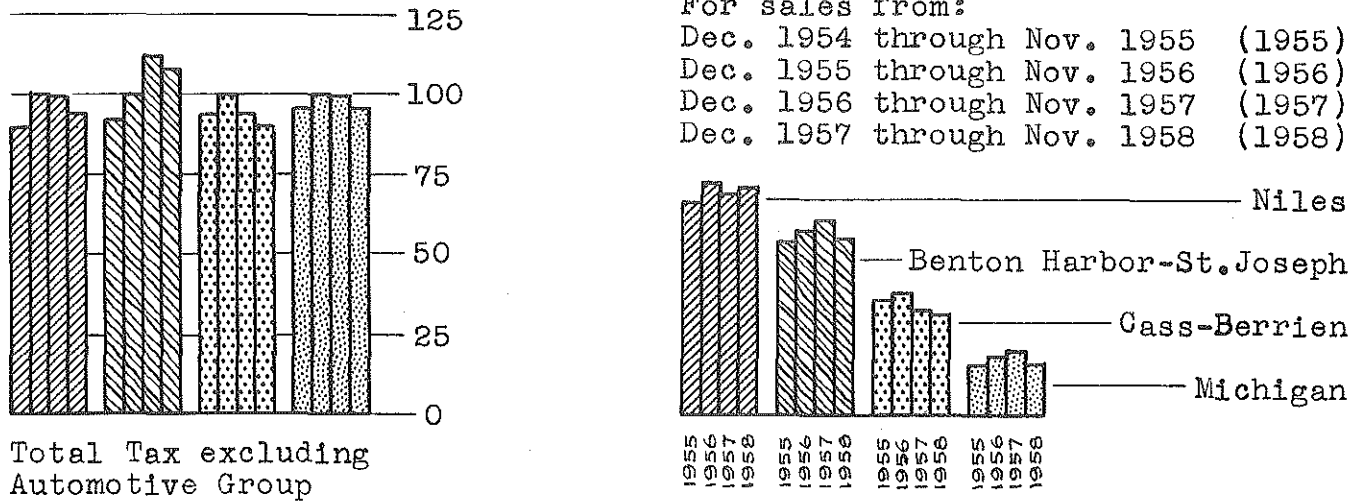
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Figure 3

1956 Base Year Collections = 100

CHANGES IN SALES TAX COLLECTIONS:
 NILES / BENTON HARBOR-ST. JOSEPH
 CASS-BERRIEN COUNTIES / MICHIGAN

For sales from:
 Dec. 1954 through Nov. 1955 (1955)
 Dec. 1955 through Nov. 1956 (1956)
 Dec. 1956 through Nov. 1957 (1957)
 Dec. 1957 through Nov. 1958 (1958)



Note: Collections from the three cities are excluded from the Cass-Berrien figures.

Source: Michigan Department of Revenue, Research and Statistical Bulletin

There are, of course, many factors which influence the economic well-being of a city or other geographical area. For Niles, construction of the M-60 by-pass and opening of the Indiana Toll Road were just two of these, and as it turns out, they appear to have had pretty minor effects compared to the business recession which occurred in the post-by-pass years. In general, and as indicated by the Michigan figures in Table II, the recession started during the latter part of 1957, causing the sales tax collections for that year to be approximately equal to those during 1956. This was the "plateau" before the real decline in collections during 1958 and marked the end of the rise in sales tax collections which would be normal with increasing population and creeping inflation. But the recession was not felt at the same time, in the same manner, and to the same degree, in Niles and the other geographical areas used for comparison, and this fact makes it difficult to evaluate the effect of the highway openings alone. The years 1955 and 1956 are locally described as "good" years in Niles, but the recession was felt early in 1957 due in part to the fact that a number of major local industries rely on commercial construction and expansion for their sales, and these are cut back quickly as our economy moves into a recession. In the Benton Harbor-St. Joseph area, however, the impact of the recession was slower in arriving and sales tax collections increased from 1956 to 1957 at a rate equal to that from 1955 to 1956, helped to some extent by a good fruit crop in the area during 1957.

General Business Activity

On the basis of the information contained in Table II, it is difficult to arrive at any firm conclusions as to how the opening of the M-60 by-pass (and Indiana Toll Road) affected general business activity in Niles. In both years after the opening of the by-pass, 1957 and 1958, Niles business activity, as indicated by the Total Tax excluding the Automotive group, dropped from the 1956 level, but this drop was about the same as that in the entire state and was somewhat less than the drop recorded in Cass and Berrien Counties. On the other hand, the Benton Harbor-St. Joseph area showed a marked increase in business activity between 1956 and 1957, with the recession not appearing in the yearly statistics until 1958. Whether these differences between the changes in business activity in Niles and Benton Harbor-St. Joseph are due solely to the manner in which the recession affected these two areas, or due in part to the effect of the diversion of through traffic from Niles, is impossible to say with the information available. But the fact that Niles still did about as well as the state, and even better than the

surrounding county areas, would seem to point to the recession and not to the by-pass as the principal cause of the general business activity drop in Niles in 1957 and 1958. To be noted, too, is the fact that between 1955 and 1956 business activity in Niles increased by a larger percentage than in any of the three other areas. This points to the possibility that 1956 might have been an exceptionally good year in Niles, and the fact that if business that year had experienced a more normal increase over 1955, than a small increase, rather than a drop, would have been recorded in 1957.

General Merchandise, Apparel, and Furniture

The so-called "G.A.F. sales" by the stores in the General Merchandise, Apparel, and Furniture groups are considered to be the best indicators of central business district activity, and should reflect the effect of the by-pass on that vital section of the city's total commercial development.

Niles stores in the General Merchandise group fared badly in 1957 and 1958 compared with those in the other areas shown. Their drop from 1956 was greater than that experienced by comparable stores in any of the other areas, and was in marked contrast to the large increases in sales enjoyed by the Benton Harbor-St. Joseph stores in this group. But here again the large increase between 1955 and 1956 suggests that the latter year was exceptionally good for General Merchandise stores in Niles, and that the post-by-pass drop was not in reality as serious as it appears.

In the Apparel group, too, Niles stores showed the largest drops in sales in the years 1957 and 1958, although not so drastic as General Merchandise in comparison with the stores in the other geographical areas. Here again is a case where the 1956 sales increased considerably over those in 1955, and despite the large drop in 1957, sales in that year were still equal in dollar volume to those in 1955.

Of the G.A.F. stores, the Furniture group in Niles made the best showing the year after opening of the by-pass, showing an increase in sales exceeded only, and then slightly, by that in Benton Harbor-St. Joseph. Here the 1955 to 1956 increase in Niles was close to that in the Twin Cities area, rather than much greater. The 1957 sales of Furniture stores in Niles also showed an increase over 1956 greater than that in the counties and the state, although there was a rather severe drop from 1957 to 1958 which was worse than in any of the other areas. But it seems fair to assume that the 1958 drop was due to the recession and that the good performance in 1957 negates any argument that the by-pass might have been responsible for the decline.

Were it not for the fact that local sources indicated that Niles felt the recession early in 1957, that Benton Harbor-St. Joseph did not feel it until 1958, and that the apparent prosperity in 1956 serves to emphasize declines in the following years, one might be inclined to assign the blame for the relatively poor showing of the General Merchandise and Apparel groups in 1957 to the opening of the M-60 bypass and Indiana Toll Road. This may have been a factor, but there would appear to be insufficient evidence on which to base such a conclusion. Thus it is concluded that the opening of these highway facilities had no major effect on business activity in the Niles central business district.

Foods

This group includes restaurants and other transient eating facilities, but about two-thirds of the sales in the Foods group in the entire state are food for home consumption. Food sales in an area not subject to a heavy influx of tourists, migrant labor, or other temporary residents are quite directly related to the resident population of the area and are not so apt to vacillate or be as sensitive to economic conditions as most other businesses. This is seen in Table II where the Foods group index numbers for both Niles and the state are relatively stable, reflecting first a gradual increase through the years due to increasing population and inflation, and secondly, a very modest drop as the recession affected sales in 1958.

While the Benton Harbor-St. Joseph and Cass and Berrien Counties Foods groups do not exhibit these same characteristics, a more detailed analysis disclosed that in 1957 there was an apparent sudden shift in Foods group sales into Benton Harbor-St. Joseph from the "balance of Berrien County", or that part of the county outside of the Twin Cities and Niles. This might have represented an actual shift in the point of sale of food items, due to the construction of several new supermarkets in the cities, or it might have been due to a change in the postal service areas or "paper changes" which, while affecting how certain stores were classified by area in the Department of Revenue's tabulations, did not change the physical location of the stores. Whatever the cause, it is important to note that totaling the sales tax collections from Benton Harbor-St. Joseph and Cass County-Balance of Berrien County, produces index numbers for the four years from 1955 through 1958 of: 94.5, 100.0, 103.6, and 104.7 in order, very close to those for Niles and the entire state.

On the basis of these figures, it is concluded that the opening of the by-pass and Toll Road did not adversely affect Foods group sales in Niles, and, since restaurant and other transient eating facilities are included in this group, had no great effect on the total sales of these establishments.

Other Groups

The Specialty group is a somewhat heterogeneous one in which about half of the sales taxes at the state level are paid on drug and cosmetic sales. Niles stores in this group experienced a decrease from 1956 to 1957, whereas in the three other geographical areas, increases were being recorded. And by 1958, the drop in Niles was considerably in excess of that in the other areas. But as in the General Merchandise group, the large increase between 1955 and 1956 must be noted, indicating that 1956 was an unusually good year for this group and therefore made the 1957 and 1958 drops more noticeable.

The Building, Lumber, Hardware group reflects building activity, as previously noted in a comment about building activity in Niles. The Niles establishments in this group did as well in the post-by-pass years as those in the counties, better than those in the entire state, but somewhat worse than those in Benton Harbor-St. Joseph, as measured by the relationship with sales the year before the by-pass opened. It would not be expected that sales in this group would be affected by the diversion of through traffic and there is no evidence here to indicate that this was the case, especially in view of the fact that even in the comparatively "booming" Benton Harbor-St. Joseph area the Building, Lumber, Hardware group was doing as badly as any group.

Gas Stations - A Detailed Study

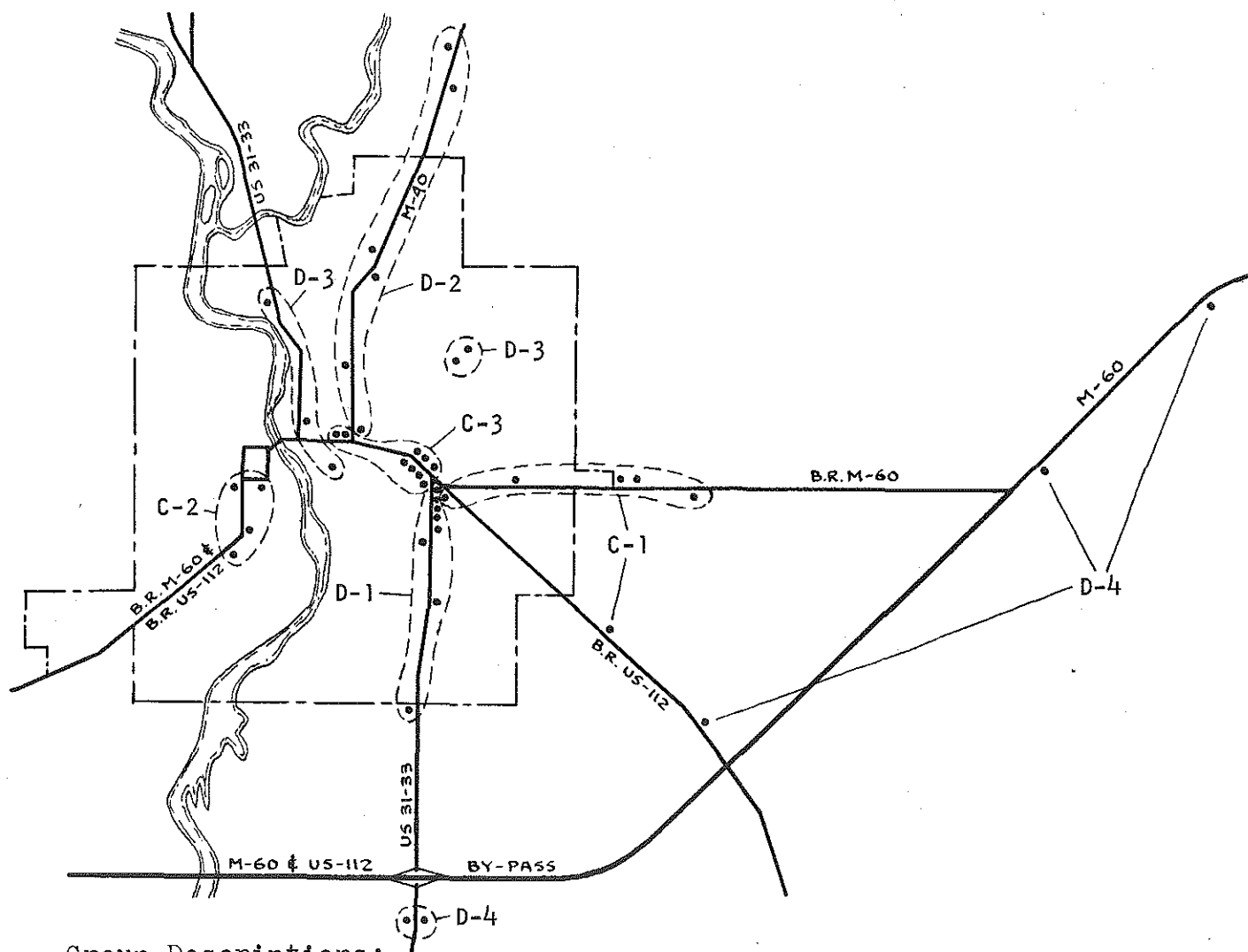
To examine in detail the effect of the opening of the M-60 by-pass, and also the Indiana Toll Road, on a specific type of business in Niles which might have been adversely affected, a sales tax study was made of all gas station business in Niles and the immediate area which it appeared obtained the major parts of their incomes from the provision of automotive services. A total of 43 such stations were included in the study. Two additional stations were excluded because it did not appear that they met the aforementioned criterion and were small operations in locations which should not have been affected to any great degree by the opening of the new highway facilities.

All but three of the stations included were on trunklines with state or federal route designations, and there were enough stations (three or more) on most segments of each of the different routes to permit a comparison of business activity changes between groups of stations which, theoretically at least, should have been affected differently by the diversion of through traffic to the M-60 by-pass. The locations of the stations included and their grouping is shown on Figure 4, along with short descriptions of these groups. Stations in groups C-1 through C-3 were all located on the former routes of M-60 and U.S. 112 through Niles and some were on streets where decreases in traffic volume were as high as 70 per cent. While this was not the case in the segments which still carry U.S. 31-33 traffic, it was assumed that all of the C-group stations were adversely affected by the by-pass to some degree. Stations in groups D-1 through D-4 were in locations which should not have been affected at all by the diversion of through traffic, or locations which might actually benefit from it. The D-2 and D-3 stations, especially, were considered to be relatively immune to by-pass effects and, taken together, are considered the "control group" in this study.

As originally submitted to the Department of Revenue for the tabulation of sales tax information, the list of Niles area gas stations had groups C-3 and D-1 broken down into two sub-groups each, in the hope that additional information about the impact of the by-pass could be obtained. Sub-group C-3a (the only one shown in Table III) contained stations selling brands of gasoline not sold elsewhere in Niles, while sub-group C-3b stations sold brands which were sold elsewhere in the city. In an attempt to determine if the general quality of a gas station had any effect on how its sales were affected by the by-pass, sub-group D-1a contained the D-1 stations considered to be of "average or above" quality, at least through the eyes of the transient motorist, while D-1b contained stations of "below average" quality. Unfortunately, while the average number of returns in the C-3a and D-1a sub-groups stayed fairly constant through the years studied, the number in both C-3b and D-1b increased considerably, making it difficult to evaluate the differential effect on these sub-groups. The C-3a sub-group is included in the Table III tabulation because it was the only group or sub-group in which the average number of returns remained constant over the four-year study period, and provides some basis for comparison with the other groups in which the average number of returns was increasing.

Table III contains the index numbers based on the sales taxes paid by the various groups of gas stations in Niles, by all

Figure 4: Location and Grouping of Gas Stations in the Niles Study



Group Descriptions:

- C-1: On Business Route M-60 or Business Route U.S. 112 between the eastern section of the by-pass and their junction east of the Niles central business district. (6 stations)
- C-2: On combined Business Route M-60 and Business Route U.S. 112 between their western junction with U.S. 31-33 and the western section of the by-pass. (4 stations)
- C-3: On combined Business Route M-60, Business Route U.S. 112, and U.S. 31-33 through the center of Niles. (9 stations)
- D-1: On U.S. 31-33, from its easterly junction with Business Routes M-60 and U.S. 112 south to the by-pass. (8 stations)
- D-2: On M-40, north from its terminus in the central business district. (6 stations)
- D-3: On U.S. 31-33 north from its westerly junction with Business Routes M-60 and U.S. 112, and other stations in Niles not on any trunkline. (5 stations)
- D-4: On M-60 northeast of the by-pass and on by-pass access roads but visible from the by-pass. (5 stations)

Table III: Changes in Retail Sales Tax Collections from Gas Stations

Niles - Berrien County - Cass County - State of Michigan

for sales from: December 1954 through November 1955 (1955)
 December 1955 through November 1956 (1956)
 December 1956 through November 1957 (1957)
 December 1957 through November 1958 (1958)

Expressed in terms of Index Numbers with the 1956 Base Year = 100.0

	1955	1956	1957	1958	Approximate Change in Traffic Volumes past Stations (A.D.T.) 1955 - 1957*	Percentage Increase in Average Number of Returns 1956 - 1958
Michigan	94.9	100.0	108.3	109.4		3.7
Berrien Co.	103.9	100.0	112.8	113.1		-3.2
Cass Co.	96.6	100.0	120.8	131.0		16.0
Niles - All Stations	90.4	100.0	107.9	107.4		29.6
<u>"C" Group Stations</u>						
C-1	81.8	100.0	98.8	97.9	Down 30-50%	20.0
C-2	113.7	100.0	85.7	94.8	Down 50-70%	33.3
C-3	87.1	100.0	96.6	92.1	Down 20-25%	17.0
C-3a	101.8	100.0	92.5	84.1	Down 20-25%	0.0
<u>"D" Group Stations</u>						
D-1	82.3	100.0	114.7	109.2	Up 5-10%	38.8
D-2	103.3	100.0	117.2	127.7	No change	41.2
D-3	120.6	100.0	133.2	153.3	Up 5%	34.1
D-4	50.2	100.0	184.9	169.3	Little change in total volume on three high-ways	32.6
D-2 & D-3 (Control)	112.2	100.0	125.5	141.0	Up slightly	37.9

*Estimated by author on basis of available information. Ranges in percentages indicate both the lack of accurate data and the fact that the percentage drop in volume past a particular station in a group will depend upon its distance from the center of the city.

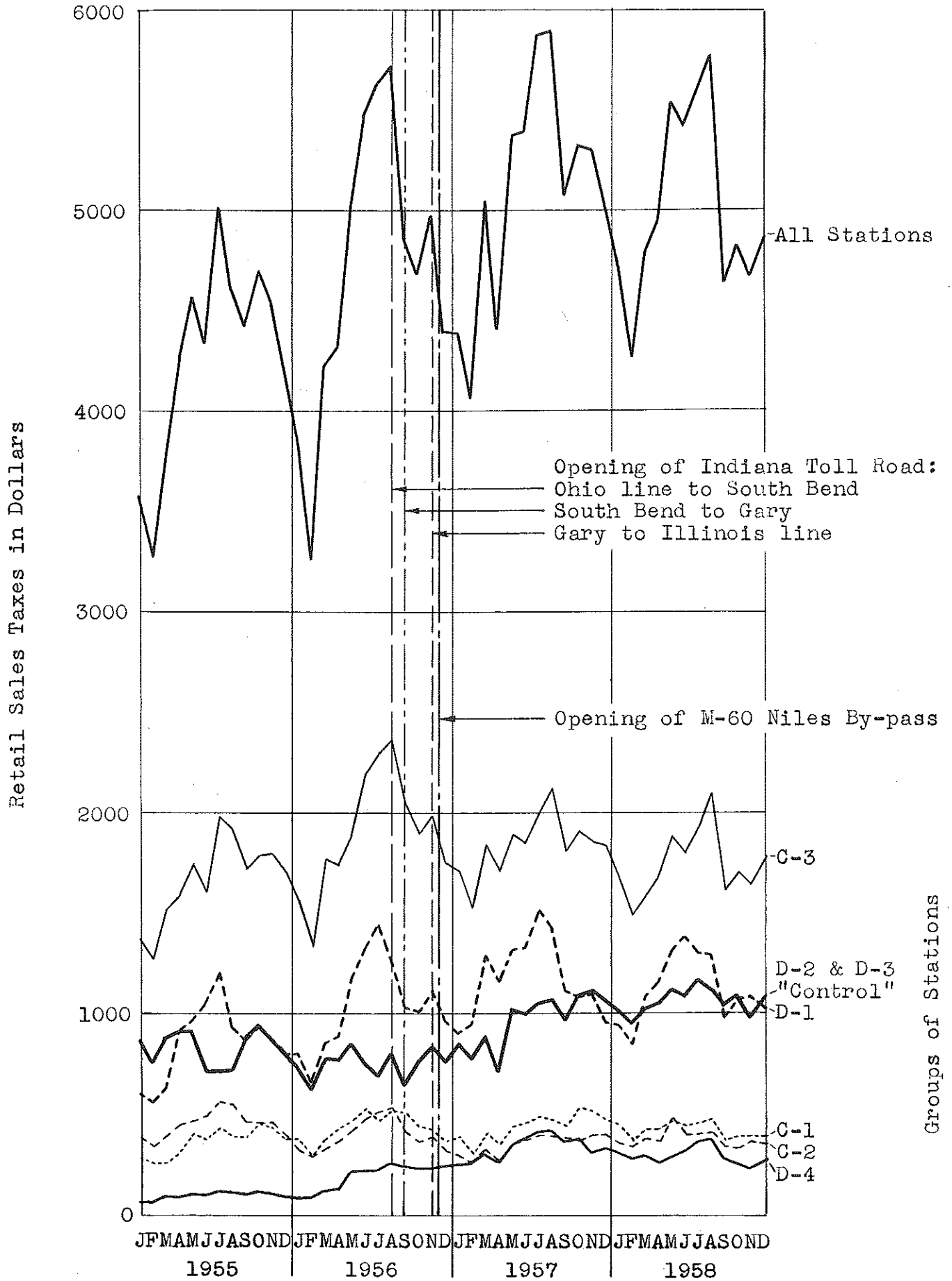
Sources: State Data: Michigan Department of Revenue, Research and Statistical Bulletin, monthly issues for time period covered.
 County Data: Unpublished records of Michigan Department of Revenue.
 City Data: Sales tax information from Michigan Department of Revenue, based upon field survey and establishment grouping by project staff.

Niles stations, and for comparison, by all gas stations in Michigan, Berrien County, and Cass County. (Some of the Niles area stations are actually located in Cass County.) Figure 5 shows graphically the month-by-month four-year variation in sales taxes collected from the various groups and all stations in Niles. Also included in Table III is an indication of the changes in the volume of traffic past the various groups of stations, and the changes in the yearly average number of returns filed during the study period.

An examination of Table III shows that the increase in sales taxes paid by the total of all gas stations in Niles during 1957 and 1958 was nearly as much as the increase in the entire state, but somewhat less than in all of Berrien County, and considerably less than in Cass County. The "control group", however, after a drop from 1955 to 1956, enjoyed increases in 1957 and 1958 much larger than the total of all stations in Niles and even somewhat larger than those in Cass County. Because of differential changes in gas prices, discussed later, the most valid comparison is with the counties, not the entire state.

In addition to the index numbers for the various groups of gas stations in Niles, Table III contains information on the approximate changes in traffic volumes experienced by the various groups based on previously discussed traffic flow information, as well as the changes in the yearly average number of returns. This last figure reflects the fluidity of the gas station business and is one of the major sources of difficulty associated with sales tax analyses of this type. As previously noted, 43 gas stations which were in existence at the time of the field survey during November 1958 were included in this study. Even though the maximum effort was made during the tabulation of the sales tax information to obtain the predecessors and moves of all these stations, the number of stations for which sales tax information was obtained increased considerably from 1955 through 1958. Most of this increase is apparently due to an actual increase in the number of stations in operation, but some of it may be due to a failure to uncover information on stations which, while in operation during the first years of the study period, had gone out of business before the field survey and had not been succeeded by another operator. The yearly averages of the number of monthly returns filed by Niles area stations were 28 in 1955, 32 in 1956, 37 in 1957, and 42 in 1958. In Michigan the average number of returns filed by gas stations increased from 10,469 in 1955 to 10,881 in 1958, while in Berrien County the number decreased from 261 to 245 during the same period.

Figure 5: Retail Sales Taxes on Monthly Sales by Niles Gas Stations



Because the M-60 by-pass of Niles was opened on December 1, 1959, the retail sales taxes collected during the calendar year 1956 (on sales from December 1955 through November 1956) would have been for the last full year preceding the opening and would therefore be the proper ones for an analysis of by-pass effects. However, while the Indiana Toll Road was also opened in the fall of 1956, it was opened to traffic in four different sections, and at different times, as follows:

Ohio line to South Bend ----- August 16, 1956
South Bend to LaPorte ----- September 5, 1956
LaPorte to Gary-East ----- September 17, 1956
Gary to Illinois line ----- November 15, 1956

Thus the date of complete opening was about the same as that of the Niles by-pass, but it is quite obvious that the Toll Road would have begun to siphon off through traffic from the Niles area as soon as the first section was opened and would have been of growing importance during the remainder of the year as more sections were opened and drivers adjusted their routes to utilize this new facility. Because it appears that the diversion of this through traffic would be somewhat gradual, it is difficult to fix a definite date on which the Toll Road would have reached its maximum effect on Niles, although it is assumed that it was about the time that the M-60 by-pass was opened.

It is significant to note the trend in sales taxes collected from the group C-1 stations, which are located on former M-60 east of Niles and would have been the first ones affected by the opening of the Ohio line to South Bend section of the Toll Road on August 16, 1956. Sales taxes collected on C-1 station sales during August and September of 1956 were higher than in the same months in any of the three other years (1955, 1957, and 1958), but then started to decline until by December of 1956 they were lower than in that month in any of the three other years. Since this trend does not appear in any other group this early in the fall, and runs counter to that of the "control group", it is assumed that this performance of the C-1 stations was due to the opening of the Toll Road. On the other hand, all of the "C" groups do show a drop in sales between November and December of 1956 which was not typical of the three other years, reflecting the effect of the M-60 by-pass on through traffic in Niles.

A review of the index numbers contained in Table III indicates that the basic assumptions made prior to the analysis as to which groups of stations would be adversely affected, and which possibly benefited, are in general supported by the findings. All of the "C" groups show decreased sales after the opening of

the by-pass and Toll Road, while all of the "D" groups show increases, in some cases quite sizeable. Of course, these gross increases were spread over an increased number of stations so that individual stations probably did not enjoy percentage increases of the magnitude indicated, and the individual stations in the D-1 and D-2 categories may have experienced losses after the opening of the by-pass and Toll Road. A similar situation exists with those categories in which the gross sales dropped in 1957 and 1958, because even these lessened sales must be spread out over an increasing number of stations. So while the indicated drop in gross sales for the "C" group stations does not appear to be severe, consideration of this drop accompanied by an increase in the number of stations lends statistical support to the previously quoted operator views about drops in individual station sales of as much as 25 per cent along the former route of M-60. In actual fact, the drop indicated for stations in the C-3a group gives a better indication of what happened to individual stations since the number of stations in this group remained constant through the four-year study period. And it must be further recognized that of all the "C" groups, the C-3 stations experienced the smallest decrease in traffic volumes.

Some of the indicated increase in sales volume (as expressed in terms of index numbers based on sales taxes) is due to increases in the price of gasoline and other products sold by the gas stations during the study period. The Michigan figures reflect to a considerable degree the increase in the average Detroit retail prices for regular gas of 1.3 cents, or about 6 per cent exclusive of taxes, from January 1955 to January 1958. But the available information about prices in the Niles area, while not precise enough to be expressed in terms of actual numbers, indicates that the increase during this period was much greater than that in the Detroit area. This would explain why sales in Berrien and Cass Counties, and even Niles itself, increased as much or more than those in Michigan, and points out the desirability of placing the most emphasis on a comparison of groups of stations within the Niles area, or at the extreme, with stations in the embracing counties, when attempting to evaluate the effect of the by-pass and Toll Road. And the reader is again reminded that it is possible that in this study several small stations which were in existence at the beginning of the study period, but which expired prior to the 1958 field survey, were missed and their inclusion in the analysis would result in lower index numbers for the post-by-pass years, reflecting greater losses, or lesser increases, than are indicated.

It would appear from Table III that increases in gas station business activity along a given route result more from the opening of new stations than the enjoyment of large increases in sales by existing stations, or conversely, that sustained increases in traffic volumes on a highway will result in the construction of new stations -- not in the enjoyment of a permanent boom by the existing stations. And it is seen in Niles that even where there is a drop in traffic volume due to the diversion of through traffic, new stations may be constructed with the objective of attracting customers from growing residential areas, or the increasing volumes of traffic generated by new shopping centers, and perhaps with the additional hope that some trade can be siphoned off from some of the existing, but perhaps older and less attractive, stations in the area.

VI. CONCLUSIONS

Because the opening of the M-60 by-pass around Niles so nearly coincided with the initial impact of the general business recession, it is difficult to arrive at definite and clear-cut conclusions on the impact of the by-pass from the published sales tax data. Unfortunately, the nearest cities for which there are comparable published sales tax data -- Benton Harbor and St. Joseph -- have somewhat different economic base profiles and were not affected by the recession in the same manner, or at the same time, as Niles. But on the basis of the information available and through comparison of the changes in the Total Tax, both including and excluding the Automotive group, with those in Cass and Berrien Counties, and in the State of Michigan, it is concluded that general business activity in Niles did not suffer measurable adverse effects as a result of the opening of the by-pass.

Examination of the changes in the General Merchandise, Apparel, and Furniture groups in Niles in the light of the performance of like groups in the other areas does not lead to any definite conclusions as to the effect of the by-pass on the Niles central business district, although there is no firm basis on which to conclude that it suffered any adverse effects. Nor did the Foods group, in which are found restaurants and other establishments for on-site consumption of food as well as those selling for home use, show any adverse effects as a result of the opening of the by-pass.

In contrast to the inconclusiveness of the majority of the analysis based on published sales tax information, the detailed study of gas stations in the Niles area yielded much more significant results. This study showed quite clearly that gas stations located along the former routes of M-60 and U.S. 112 through Niles were adversely affected by the diversion of the majority of through traffic to the by-pass, although much less than one might expect in view of the sizeable drops in traffic volumes along certain portions of these routes. With the number of stations in most of the groups studied increasing through the study period, it was impossible accurately to estimate the percentage decrease in sales for most of the stations existing at the time the by-pass opened, but the statistical analysis appeared to support the claims of some operators of losses as high as 25 per cent. In the one group of stations in which the number of stations remained constant through the study period, taxable sales during 1957 were down over 7 per cent from 1956, the last year before the by-pass

opened, and down 16 per cent in 1958. And this has added significance because this group of stations is in a location where the percentage reduction in traffic volumes was the smallest of any of the groups on the former route of M-60.

On the other hand, some groups of stations appear to have benefited from the changes in traffic patterns in the Niles area which resulted in an increase in traffic volumes on some other routes, but an accurate evaluation of the actual increase in terms of number of customers is impossible because of price increases during the study period.

In summary, all gas stations in Niles collectively did not show increases in sales in 1957 and 1958 as great as the total of stations in the embracing counties of Berrien and Cass. Groups of stations in Niles on the former routes of M-60 and U.S. 112 showed definite decreases from 1956 levels, while those in other locations in the Niles area showed increases with a considerable range in degree, but averaging above the increases in the two counties. Not reflected in the sales tax figures is the increased emphasis on non-taxable services by some stations which experienced losses in taxable sales of gasoline and other products. And despite this somewhat pessimistic picture of business in some locations, new stations are being constructed and there are indications that they, along with the existing stations included in this study, will survive as traffic patterns adjust to new residential and shopping center development along the former route of M-60.

PART SEVEN

A STUDY IN
THE CITY OF ZEELAND

SUMMARY

INTRODUCTION

RETAIL BUSINESS IN ZEELAND, 1956 TO 1958

CONCLUSIONS

APPENDIX

SUMMARY

Zeeland is a community whose remarkable economic stability has enabled its retail business as a whole to demonstrate considerable independence of the economy of Ottawa County and of Michigan. Sales tax collections in the study year 1957 showed a significant increase over 1956, and even in 1958, a year when County and State collections were down substantially, Zeeland continued to gain. The first of these increases was the result of gains by 60 of the 106 establishments included in the study, while the remainder declined. The gains from 1957 to 1958 were caused by increases in 79 establishments in the face of decreases in the remaining 27. Furthermore, those gaining accounted for 72 per cent of the total tax paid in 1957, and 79 per cent in 1958. Over the entire study period, 7 of the 18 business groupings used in the study declined in taxable sales; 11 gained.

Retail businesses oriented toward service to highway users evidenced considerable gain in taxable sales during the study period. Most notable are the gasoline stations, but the performance of the restaurants also resulted in a rise in business. The expansion of industrial development has been accompanied by an extraordinary increase in banking activity, and a gradual increase in the younger population has caused new residential construction at higher rates than in the recent past. Some municipal services and school facilities, such as electric generating capacity and the junior high school, have expanded accordingly, and now are adequate to meet anticipated needs during the coming decade. Others, notably the water and sewerage systems, will require improvement and expansion in the near future.

Zeeland's retail business trends have evidenced not the slightest detrimental influence of the by-pass; on the contrary, the benefits of the removal of through traffic are everywhere apparent. During the study period non-retail business in Zeeland boomed, while Michigan as a whole was fighting a recession. Land adjacent to the by-pass has developed steadily.

The removal of through traffic from Zeeland streets has turned out to be a blessing to most every aspect of the city's economic and physical development.

I. INTRODUCTION

For years, Zeeland's location -- 21 miles southwest of Grand Rapids -- has placed it athwart the main highway from Grand Rapids to Chicago, a route the importance of which is indicated by its inclusion in the Interstate System. Until the latter 1930's the highway used Main Street (which is in fact the city's main street) to traverse Zeeland. Its relocation at that time one block north to Washington Avenue caused no little concern among Main Street's businessmen -- a concern which developed to be quite unnecessary. The benefit of this removal to Main Street has been substantial throughout the years, and it is most evident today in contrast to the development along Washington Street which has been obviously stunted by that street's tenure as a main highway.

The talk about a by-pass apparently started shortly after 1950. No local opposition to the basic proposal of a by-pass was apparent, in spite of the paucity of information available about it. That the people of Zeeland were not entirely happy at being kept in ignorance was indicated by an item in the Zeeland Record in 1951:

"The State Highway Department has never pinpointed the exact spot where the sweep (of the highway) to the south will begin....."

That this situation never changed is indicated by the following in the August 19, 1954 issue, eight months after work on the new highway was started:

"Construction work on the new roadbed for the relocation of M-21 to by-pass Zeeland has now reached the stage at which it can be seen just where the by-pass is to rejoin the present highway about two miles west of the city."

The first contracts for the road had been awarded in October of 1953, with the highway's completion date set for December 31, 1954. Zeeland's patience was rewarded two years later when, early in December of 1956, the by-pass of M-21 was opened to traffic. It is to Zeeland's great credit that these annoyances and minor agonies did not result in a lasting antipathy toward the by-pass, but that the prevailing attitude was one of relief and appreciation of the new road's benefits.

ZEELAND

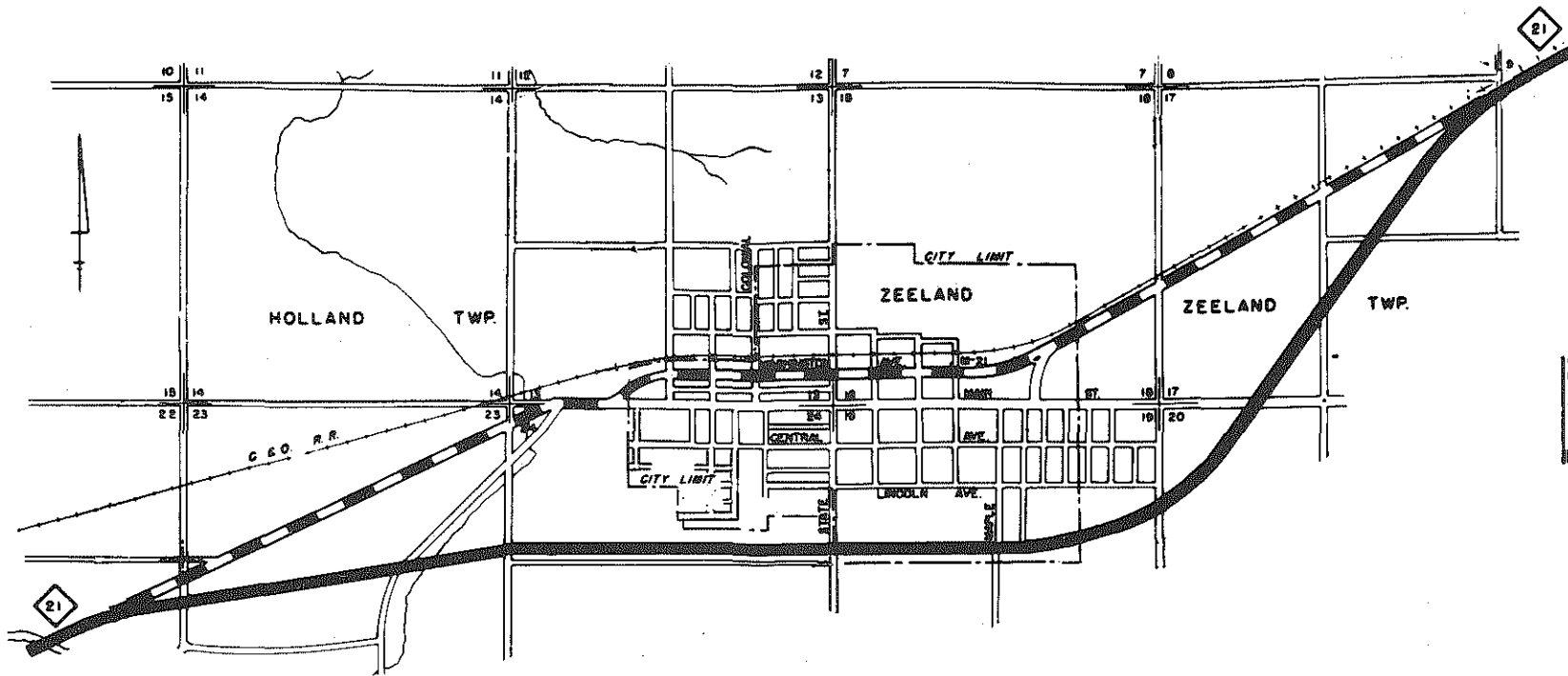


FIGURE 1

SCALE: 1" = 1/2 MILE

 M-21 PRIOR TO PRESENT ROUTE

 PRESENT M-21

The Present

For the purposes of this study, it is convenient to consider the present as having commenced with the opening of the by-pass, and having continued through the conclusion of the study period at the end of November 1958. This is the period for which it was possible to obtain detailed information, arising out of conversations with several Zeeland citizens, the files of the Record, and the Michigan Department of Revenue.

Recent traffic counts for the City of Zeeland apparently do not exist; the only available information indicates that the average traffic between Zeeland and Holland west of the junction of the by-pass with the previous route has varied between 12,000 and 13,000 vehicles per day. Without the by-pass most of this traffic would be required to use some of Zeeland's streets, and even the traffic passing through the city would likely amount to more than half of this total. However, due to the routing of through traffic around the city, traffic on Zeeland's streets is only that which wants to be there. The city, therefore, can boast of having been able to provide satisfactory parking for its main street shoppers without restrictions and without meters longer than almost all other cities in the United States: meters did not appear until September 1959. Recognizing that, notwithstanding the convenience of street parking spaces, their supply is not adequate, the city over the past years has provided some 500 off-street spaces adjacent to the main business area, which may be used without restrictions and without fee.

While there appeared to be some feeling that the new highway is too close to the presently built-up parts of the city, only a small portion of urban development has been separated from Zeeland proper by the by-pass. The limited access character of the by-pass affords considerable protection to nearby property, although its route is still crossed by nine streets at grade between the points where it joins the old right-of-way. Judging by the fact that a great deal, including the best, of recent residential development has taken place close to the by-pass, it is unlikely that the vicinity of the new highway has been subject to any influences which might depress the values of the land.

Some other facts about the city are pertinent here. Water and electric utilities are city-owned; gas and telephone services are supplied privately. A new 38-bed community hospital was dedicated on May 22, 1956. The city has a

twelve-grade public school system, and a nine-grade school system of the Christian Reformed Church; in the corresponding grades the total number of pupils is shared about equally.

It has been mentioned that chick hatching is one of Zeeland's largest industries. Certainly another prime economic asset is furniture manufacturing. In addition to the Herman Miller Furniture Company mentioned above, there are Sligh-Lowry, Hubbell, Fleetwood, and Townsend. Colonial Manufacturing Company and Howard Miller produce clocks. Mead-Johnson has a large plant in Zeeland which manufactures milk-food products; pharmaceuticals are produced by the Sumner Chemical Company. Rounding out the leading industries are the Royal Casket Company, Automatic Poultry Feeder Company, and Camfield Fiberglass Plastics. As the employers of the majority of Zeeland's wage earners, these industries by their nature have been instrumental in providing the community with an unusually stable economic base. Needless to say, this would not have been possible without Zeeland's inherent human resources which have created a labor force characterized by exceptional skill, industriousness, and devotion.

The Future

There are indications that Zeeland's population has been increasing more rapidly in recent years than at any other time since the turn of the century, and that more and more of its young people are staying in their home town. The new residential development at the southwest corner of the city has been brought about principally by the need of young families for residences appropriate to their requirements and desires. The trend of births at the Community Hospital is an encouraging corroboration of the apparently increasing attraction of Zeeland to the younger people -- from 420 in 1955 they jumped to 520 in 1956 and further increased to 536 in 1957. These factors are bringing with them the need for expansion of virtually all public facilities and services. Most apparent will be the need for schools, only a part of which has been met by the Lincoln Elementary School built in 1951 and the recently completed new Junior High School and addition to the High School. The parochial school system will face considerable expansion if it can no longer send its high school pupils to Holland. The spirit and character of Zeeland's development progress was indicated quite clearly by the provision of an open house for all of the "old grads" at the venerable junior high school after the new structure to replace it was finished in November of 1957 -- and the subsequent demolition of the old building.

Of considerable significance in Zeeland's future is the expansion of the Herman Miller Furniture Company, which has moved its offices into another building to obtain more space, and has constructed an additional plant on part of a new 35-acre site at the eastern edge of the city. Further complementing the city's industrial base are a new plant of the Keeler Brass Company of Grand Rapids, which constitutes a significant expansion of its activities in Zeeland, and enlargements of Mead Johnson and Hubbell Manufacturing. An activity of Zeeland's Chamber of Commerce which is quite unusual for organizations of this nature -- the acquisition and holding for future use of potential industrial land -- has developed to be a very successful activity, and in August of 1957 the Chamber purchased another 20 acres near existing industry north of the city in order to have it available for prospective industrial users.

After very serious attempts to launch a water authority in conjunction with several other cities in Kent and Ottawa counties, this move to construct a pipeline and pumping stations to deliver Lake Michigan water to these communities was temporarily stopped by the recognition of the Michigan Supreme Court of certain defects in the enabling legislation. While down but by no means out, Zeeland and the other cities are continuing to work toward this goal of lake water to supplement the unreliable ground water supply. Zeeland recognizes that its future development hinges to a great extent on a safe, plentiful and economical water supply to remove the repeated threats of water shortages, sprinkling bans, and the possibility of imposing a general curtailment of consumption.

The demand for electric power rose almost 25 per cent from February 1955 to February 1956. Rather than facing the future possibility of having to purchase power from a larger public utility, the city decided to spend \$400,000 for an additional diesel-electric generator of 2,000 kw capacity for the municipal power plant. This is the wisest sort of investment in the future.

The new highway will not remain in its present form for very long. As a part of the Interstate System, it will be improved in the coming years to achieve complete control of access and eliminate all crossings at grade. This will afford still greater protection to the city and its people from the dangers inherent in a highway, as well as from the deleterious effects of excessive roadside development. Further, as an increasingly greater part of the entire Interstate System is completed, Zeeland will undoubtedly find the highway to be a mighty

impetus to urban development. In terms of travel time, Zeeland will be closer than ever before to Grand Rapids and Chicago; likely as not this strategic location will offer singular advantages to the city, advantages which, if properly utilized, will reinforce still further Zeeland's unusual character and fame.

II. RETAIL BUSINESS IN ZEELAND, 1956 to 1958

Views and Comments

While the most factual and reliable means for assessing the state of retail business is through the use of sales tax data, the expressions of the people of the community on the state of business are significant in that they reflect the attitude toward influences presumed to affect the local retail economy. The objective of the Zeeland study was, of course, to attempt to ascertain whether or not the removal of through traffic to the by-pass was followed by a determinable decline in business volume. The remarkable consistency of the responses at the outset of conversations on the subject led to the early discontinuance of the interview process: there seemed to be no disagreement at all about the benefit to Zeeland as a consequence of the by-pass. A paraphrase of the consensus would be as follows.

Clearly, the economy of the city is not based upon either the travel business or service to the motorist, hence through traffic is best off outside of town. There was very little discussion of the by-pass while it was still in the talking and design stages; since its completion no complaints about business have been heard. Not only has Zeeland not been hurt by the by-pass, it is hard to see how it could have gotten along as well without it. Employment has continued to be steady, with virtually no unemployment. Perhaps the events precipitated by the need for expansion of a restaurant in Zeeland typify the course of business during the past few years. In 1956 the restaurant's owners decided to move their establishment to Holland; their decision may very well have been based upon the assumption that a community the size of Zeeland could not support the type of restaurant which they wished to operate, and that with the completion of the by-pass their hope for attracting customers from elsewhere would be quite slim. However, their fellow businessmen managed to convince them that they ought to stay, and in November 1956 the restaurant moved a distance of one block into new facilities which constituted an investment of \$100,000 in Zeeland's future. Thereafter, in short order, a shoe store enlarged its operations in the vacated restaurant quarters, and a clothing store took over the former shoe store location in the process of expanding. The vacant store finally remaining two years later was then leased to a new tenant.

If the restaurant owners were concerned about their clientele, it appears that they worried needlessly. Theirs has become the destination of diners from miles around, and it is

estimated that the vast majority of weekend customers are from out of town. This fact seems to have given a noticeable boost to Zeeland's stores, which remain open late on Saturday evenings.

On the 80th anniversary of its founding on October 16, 1878, the Zeeland State Bank opened its first branch. The location of the branch is in Allendale, twelve miles north of Zeeland. Less than two months later, on December 5, 1958, a second branch was opened in Hamilton, ten miles south of Zeeland in Allegan County. This physical expansion far beyond the limits of its home city was recognized when the Bank, on March 31, 1959, changed its name to First Michigan Bank and Trust Company.

And even the gasoline station, that one business most directly oriented toward serving the motorist, has done well. The operator of one station on the previous route of M-21 reported that his gallonage pumped rose 15 per cent when the through traffic was gone because, he feels, it was finally safe to slow down to enter his station, and to leave again. His subsequent business decisions certainly are an obvious demonstration of the benefit of the by-pass: he moved his business from an antiquated station into a more modern one diagonally across the street, acquired more land, built a brand new station, and then tore down the existing one on the site. Since then, another operator has closed his station, torn it down, and on the same site erected a new, larger facility which must certainly rank with the most attractive examples of structures in which esthetic considerations are normally overwhelmed by functionality.

The other side of this picture does exist. However, even the former operator (who is now employed elsewhere in Zeeland) of one of the two stations which closed after the by-pass went into service admits quite readily that the demise of his business should be blamed principally on obsolescence; the station which he operated had a totally inadequate site, and only outdoor lubrication facilities. The sales tax analysis of this Study indicates the correctness of his appraisal.

The one comment which was heard several times in virtually the same words, and which probably summarizes very well the city's general attitude, is "We're very happy with the by-pass."

The Sales Tax Study

A. Scope

The use of sales tax data as an indication of retail business activity automatically results in the inclusion of taxable sales while excluding sales not taxed under the law, and personal services not used in the creation or preparation of goods taxed at their total retail price. For instance, the amount of business done by barber or beauty or dry cleaners shops cannot be determined in this manner, while for auto repairing or house building we may get some indication of the activity by the amount of tax paid on the materials used. On the other hand, photo finishing is taxable on the total retail price of the final product -- prints or enlargements -- which actually constitutes principally a labor charge. Hence, while recognizing that retail business is but one aspect of a community's economic life, it is not possible even to obtain a total picture of this activity. Furthermore, the Zeeland Study, while endeavoring to include every retail establishment which could be located, purposely omitted several for the reasons stated here.

1. Barber and Beauty Shops. The taxable sales, if any, of these do not necessarily bear a relationship to total business.
2. Dry Cleaners and Laundries. These are nontaxable services.
3. Funeral Parlors. While the taxable sales of these (caskets) may possibly be a gauge of their total business, it is unclear how this business activity relates to the total economic picture in a small city over a period of a few years.
4. Home Deliveries of Retail Products (Examples: milk, bread) by businesses not located in Zeeland. While it may be possible to determine the tax paid on sales of this nature in Zeeland, it would likely require the apportionment of each establishment's sales among Zeeland and other delivery areas; the basic nature of this study precludes the consideration of individual businesses.
5. Mail Order Sales. These may be quite substantial, particularly since one mail order house maintains a "catalog store" in Zeeland. However, the reasons stated under "4" above apply here also.

6. Natural gas and electric energy sales. While sales of these are considered as retail sales by the law, they react quite differently to economic stimuli than do sales of the more conventional "retail" concept.
7. Motor Vehicle Sales. The tax on all motor vehicles sales is paid directly to the Office of the Secretary of State. In spite of the fact that the retailer is required to report sales volume to the Department of Revenue, these data are not always obtainable.

B. Procedure

During the field work for this study an attempt was made to locate every establishment engaging in retail business in Zeeland, with the exceptions noted above. Included as well were businesses located outside of the city limits but within reasonable proximity. It was decided that the establishments located beyond the immediate vicinity of the intersection of the by-pass and the previous route of M-21 west of Zeeland more properly belonged in the Holland area, and therefore the western limit of the study area was established there. In addition to traversing all streets during this process, use was made of the most recent editions of the city directory and of the classified telephone directory to assist in the location of establishments not evident from the street. Further, back copies of the city directory were consulted in an attempt to locate businesses which existed at some time during the study period but had since then ceased operations.

For each business located, the information stated on its sales tax license was copied on field sheets: name, address, license number, business type code, county code, city code,* number of business locations, and ownership type code. While normally the license number is sufficient to allow the Department of Revenue to locate the taxpayer's file, all of the other information was obtained in order to minimize the importance of possible errors in the recording of the license number, to assist in the grouping of businesses, and to determine if a given license covered the business at more than one location. A total of 113 establishments were so recorded; the subsequent elimination of five motor vehicle dealers (for the reasons mentioned above), one wholesale electric supply house which is a branch of one located elsewhere, and

*Since its population is less than 10,000, Zeeland's sales tax payments are not tabulated separately from its county. Hence in this case there is no city code.

one heating contractor whose sales tax is paid by his suppliers, resulted in 106 establishments actually included in the study. It might be mentioned parenthetically that the 1954 U.S. Census of Business reported 70 "retail" establishments in Zeeland, a gain of 16.2 per cent in the six years since the last previous Census of Business. Using the Census definition, there were 97 establishments at the time of the field work for this study in 1958, an increase of 22.8 per cent in only four years.

All establishments were then grouped according to their type of business. This grouping conformed generally to that utilized by the Department of Revenue, although there was no hesitancy to depart from this in the several instances in which it was felt that such a move would result in greater validity of analysis and conclusions. Most significant here are four such changes. First is the removal of two bicycle sales and service shops from the "Other Vehicle" business type in the "Automotive" group to a grouping, more germane to the purposes of this study, which includes also a musical instrument and sheet music store, and the sales of equipment, refreshments, tobacco goods, etc., at a bowling alley, a pool room, and a skating rink. Second is the grouping together of two establishments whose principal business is the sale of coal, with a dealer in bottled gas and associated supplies and equipment. Third is the creation of a "remnant" grouping out of three farm equipment and two feed businesses (whose taxable sales include only those not made for agricultural purposes), and a manufacturer of truck bodies. Fourth is the creation of a grouping with two variety stores and two drug stores. Eighteen groupings were used, containing from three to twelve establishments each. The designations and constituent establishments of the groupings are detailed in the Appendix.

The principal purpose of the study of sales tax payments is the discernment of trends, and the comparison of trends for comparable businesses in different geographical areas as well as among different business types in the same area. Figures in terms of dollars are not suitable for this purpose, therefore all tax figures were converted to index numbers prior to the bulk of the analysis process. The first year of the study period, the year before the opening of the by-pass, was used as the base year, during which all tax payment totals were expressed as the base index number of 100.

It should be emphasized again that unqualified references to sales or business volume in the analysis following are based upon the premise that the sales tax payments are a reliable and, within each type of business, consistent indicator of the actual volume of business. The limitations of this

premise have been outlined in the Chapter on Methodology; recognition of these limitations will provide a small yet important part of the perspective within which the study's conclusions should be viewed.

Analysis

A. Trends of Business Within Zeeland

The annual totals of tax paid by each business grouping, together with the corresponding index numbers, provide remarkably useful material for a strictly internal analysis of Zeeland's retail picture. In view of the fact that the total business done in Zeeland rose throughout the study period, it may be of interest to determine what business grouping contributed to this rise, and which showed a decline, if any. Comparing the study years (December through November) 1956 and 1957, it appears that one-half of the groupings gained business, and one-half of them experienced a decline:

Change in Business Volume as Indicated by Sales Tax Payments
Study Year 1957 Compared to Study Year 1956

	<u>Increase</u>	<u>Decrease</u>
Number of Business Groupings	9	9
Number of Establishments	60	46
Groupings by designation in order of decreasing gain or increasing loss	Food Stores Gas stations not on previous M-21 Jewelry Farm & Truck Equip. Furniture Stores (All Groupings) Apparel Heating & Plumbing Drug & Variety Stores Restaurants	Fuels Gas stations on previous M-21 Auto Parts Radio - TV Books, Printers Recreation Hardware Household Appliances Bldg. Materials
Portion of Zeeland's Total 1957 Sales Tax Payments	72%	28%

Source: Table II

Comparing the next two years yields the following results:

Change in Business Volume as Indicated by Sales Tax Payments
Study Year 1958 compared to Study Year 1957

	<u>Increase</u>	<u>Decrease</u>
Number of Business Groupings	12	6
Number of Establishments	79	27
Groupings by designation in order of decreasing gain or increasing loss	Radio - TV Household Appliances Gas stations on previous M-21 Heat. & Plumbing Food Stores Apparel Drug & Variety Stores Bldg. Materials (All Groupings) Restaurants Books, Printers Gas Stations not on previous M-21 Auto Parts	Fuel Farm & Truck Equipment Jewelry Furniture Stores Hardware Recreation
Portion of Zeeland's Total 1958 Sales Tax Payments	79%	21%

Source: Table II

Obviously business was better for more retail establishments in Zeeland in 1958 than it was in 1957. Further, those gaining during 1958 accounted for a larger portion of total volume than those gaining during 1957. A comparison of the two orders in which the groupings were placed in the tables above yields some additional interesting results. With but one exception, all of the groupings, as well as the total (all groupings) changed position; the one is auto parts which, notwithstanding its move from the "loss" to the "gain" column, maintained its same position. The most remarkable gain, signifying an increase in taxable sales of almost 55 per cent for 1958 over 1957 took place in the Radio and TV grouping; Household Appliances recorded the greatest change in standing -- from next-to-last to next-to-first. Building materials rose from the bottom of the list, a position which reflects a decrease of almost 22 per cent in volume of taxable sales, to a position just above the middle as a result of a recovery

of about $3\frac{1}{2}$ per cent. The Gas Stations on the previous trunk-line route also made a remarkable recovery; this grouping, along with Book Stores and Printers round out those which reversed a decrease from 1956 to 1957 to an increase from 1957 to 1958.

The opposite trend was, of course, also experienced. Furniture stores, and the somewhat heterogeneous Jewelry, and Farm and Truck Equipment groupings, moved from near the top of the list to near the bottom. Their declines amounted to approximately 10 per cent, 6 per cent and $2\frac{1}{2}$ per cent, respectively. These are the only three whose gain from the first year of the study to the second was followed by a decline in taxable sales from the second to the third. However, the Recreation, Hardware, and Fuels groupings continued the declines experienced during the previous year, which amounted to reductions in taxable sales of roughly 20 per cent, 17 per cent, and $1\frac{1}{2}$ per cent respectively, from 1957 to 1958.

It should be noted that in comparing the 1958 taxable sales to those in 1956, a two-year span, for the various groupings, it appears that for seven of these the 1958 volume was less: Recreation ($-25\frac{1}{2}$ per cent), Hardware ($-22\frac{1}{2}$ per cent), Building Materials (-18 per cent), Furniture ($-5\frac{1}{2}$ per cent), Book Stores and Printers ($-2\frac{1}{2}$ per cent), Fuels ($-1\frac{1}{2}$ per cent), and Auto Parts and Accessories ($-1\frac{1}{2}$ per cent).

An assessment of the significance of the foregoing analysis can be aided by two additional sets of data. These are the arrangement of the groupings in order of dollars of sales taxes paid with an indication of the percentage of the total tax paid by each grouping, and sales tax paid per capita by each grouping. These data are shown in Table I.

The most striking conclusion, and the most obvious, emerging from an examination of Table I is the trend of tax payments by food stores. That this grouping paid more tax than any other, and in fact about twice as much as the next-highest, does not come as a surprise to anyone who has had the responsibility for the feeding of a family. Nor should the upward trend indicated by the increases in the dollar amounts per capita be surprising. What is noteworthy is the significant rise in the percentage of total sales taxes paid by food stores -- a business which already at the beginning of the study period accounted for almost one-quarter of Zeeland's taxable sales. Over the two years, food increased its share of sales by more than one-fifth, while the tax per capita resulting from these sales rose 22 per cent! During this same period, the tax per capita for all retail sales included in the study rose only

Table I

RETAIL BUSINESS ESTABLISHMENTS IN ZEELAND, MICHIGAN:

Business Type Groupings Arranged in Order of Amount of Sales Tax Paid for Study Years (December - November) With Percentage of Total Payment Deriving from each Grouping, and Tax Paid Per Capita

1 9 5 6			1 9 5 7			1 9 5 8		
Business Type Grouping	% of Total Taxes Paid	Tax Paid per Capita	Business Type Grouping	% of Total Taxes Paid	Tax Paid per Capita	Business Type Grouping	% of Total Taxes Paid	Tax Paid per Capita
Food Stores	22.6	\$11.06	Food Stores	26.6	\$13.04	Food Stores	27.5	\$13.51
Furniture Stores	13.8	6.73	Furniture Stores	14.0	6.83	Furniture Stores	12.2	6.00
Bldg. Materials	13.0	6.38	Bldg. Materials	10.0	4.87	Bldg. Materials	10.1	4.97
Apparel Stores	9.1	4.45	Apparel Stores	9.1	4.44	Apparel Stores	9.4	4.64
Gas Stations D*	6.3	3.04	Gas Stations D*	6.5	3.16	Gas Stations D*	6.4	3.12
Gas Stations C**	5.4	2.61	Drug, Variety	5.2	2.56	Gas Stations C**	5.6	2.73
Drug, Variety	5.3	2.61	Gas Stations C**	5.2	2.52	Drug, Variety	5.3	2.62
Restaurants	4.6	2.24	Restaurants	4.5	2.19	Restaurants	4.5	2.18
Fuel Dealers	3.8	1.87	Fuel Dealers	3.7	1.84	Fuel Dealers	3.5	1.74
Household Appliances	3.3	1.59	Household Appliances	2.6	1.28	Household Appliances	3.1	1.52
Heating, Plumbing	2.4	1.20	Jewelry***	2.6	1.25	Heating, Plumbing	2.6	1.29
Jewelry***	2.4	1.20	Heating, Plumbing	2.5	1.20	Jewelry***	2.3	1.15

Table I (Concl.)

RETAIL BUSINESS ESTABLISHMENTS IN ZEELAND, MICHIGAN

1 9 5 6			1 9 5 7			1 9 5 8		
Business Type Grouping	% of Total Taxes Paid	Tax Paid per Capita	Business Type Grouping	% of Total Taxes Paid	Tax Paid per Capita	Business Type Grouping	% of Total Taxes Paid	Tax Paid per Capita
Auto Parts	2.2	1.09	Auto Parts	2.1	1.04	Auto Parts	2.1	1.02
Hardware	2.0	0.98	Hardware	1.8	0.91	Hardware	1.5	0.72
Farm & Truck Eq.	1.1	0.55	Farm & Truck Eq.	1.2	0.56	Radio, TV	1.3	0.62
Books, Printers	1.1	0.53	Books, Printers	1.0	0.49	Farm & Truck Eq.	1.1	0.54
Radio, TV	0.9	0.43	Radio, TV	0.8	0.41	Books, Printers	1.0	0.49
Recreation****	0.7	0.34	Recreation****	0.6	0.31	Recreation****	0.5	0.24
	<u>100.0</u>	<u>\$48.90</u>		<u>100.0</u>	<u>\$48.90</u>		<u>100.0</u>	<u>\$49.10</u>

*Gas Station Grouping D consists of all stations except those on the previous route of M-21

**Gas Station Grouping C consists of the stations on the previous route of M-21

***The Jewelry Grouping includes also a flower shop and two photographer's studios

****The Recreation Grouping consists two bicycle sales and service stores, a sheet music and musical instrument store, and refreshment, tobacco products, and equipment sales of a bowling alley, a pool room, and a skating rink.

Sources: 1. Business Type Grouping by author from field survey of all retail establishments in Zeeland.
 2. Tax Payments for each grouping from Michigan Department of Revenue.
 3. Tax Payments per Capita based upon population estimates by Michigan Department of Health for 1956 (July 1 estimate: 3,830) and 1957 (July 1 estimate: 3,930). Estimate for 1958 by author through extrapolation of prior years' estimates (figure used: 4,030).

about 0.4 per cent. Evidently the rise in food sales occurred in the face of declines in other lines, although naturally some businesses felt this more than others. Among the eighteen study groupings, the balance during these two years changed: the six which increased their share of the total tax paid naturally caused a lessened share for the twelve remaining ones. The changes ranged from an impressive 44 per cent increase in their share of total taxable sales in Zeeland for the Radio - TV Stores, to a 29 per cent decrease for the Recreation grouping. The tax per capita paid by the eighteen groupings underwent changes during the same period also ranging from an increase of 44 per cent for the Radio - TV Stores to a decrease of 29 per cent for the Recreation grouping.

What caused these changes? In summarizing we find that gains in share of taxable sales as well as per capita tax paid were made by Radio - TV, Food Stores, Heating and Plumbing, Gas Stations (all), and Apparel Stores. Drug and Variety Stores lost in share of total taxable sales, while gaining in sales per capita; all of the other groupings lost in both categories. A general answer to the question above is provided by the overall change in economic activity in the United States from 1956 to 1958. During the latter year occurred the most pronounced declines as a result of the business recession which had its start during the previous year. In fact, during fiscal 1958 (July 1, 1957 to June 30, 1958), Michigan's statewide sales tax collections decreased 3.51 per cent from the previous fiscal year. Although it is likely that Zeeland was affected considerably less than many other areas of the state, the notable declines in tax payments by its retailers did occur (with one exception - Hardware) in business groupings whose merchandise is of a type the purchase of which can be delayed. Furniture and building materials are the best examples of this; household appliances, jewelry, auto parts and accessories, books, and bicycles may be expected to be similarly affected. The surprising gain by the Heating and Plumbing grouping may very well be a part of the reason for the decline in the Fuels grouping: the use of oil or natural gas fuel requires certain conversion equipment for a previous user of coal or liquefied petroleum gas. These manifestations of Zeeland's buying habits fit into the picture of a people who have managed to retain, amidst the pervasive American economic opportunism, a healthy bit of conservatism.

The gain in the Food Stores grouping becomes more understandable in comparison with per capita sales tax paid for all Food in other Michigan cities, and for the State as a whole. For the 1956-1957 fiscal year, the per capita sales tax paid for

Food (including Restaurants)* in all Michigan cities of over 10,000 population (excluding those in the Detroit Metropolitan Area) ranged from \$7.46 for East Lansing (a meaningless figure likely due to the inclusion of student population at Michigan State University but the omission of their on-campus food consumption), \$11.37 for Muskegon Heights and \$11.80 for Menominee (both of which are smaller cities immediately adjacent to much larger ones), to \$28.26 for Ypsilanti (an amount which is 25 per cent above the next-highest, and therefore likely to be due to unusual circumstances -- possibly the influence of the Willow Run Airport). The range of the remainder is from \$15.04 to \$22.64, with a mean of \$18.98.** This compares to a Food Stores plus Restaurants total for Zeeland of \$13.30 for the study year 1956, and of \$15.69 for the study year 1958. While the comparability of these data is limited by the reliability of the population estimates, and the necessity of using only cities with 10,000 or more inhabitants in the comparison (sales tax information is not published independently of the counties for smaller cities), the magnitudes of the figures, if not their precise amounts, are likely to present a true indication of the actual situation. It may be concluded, therefore, that a good part of the performance of food sales can be attributed to the process of "catching up" with the rest of the state's cities by Zeeland. This becomes even more apparent when considering that per capita sales taxes from food for the entire state amounted to \$12.19 for the 1956-7 fiscal year. This last amount is a true indication of the actual amount of money spent on food per person, while the city figures indicate in a general way how effectively a city's establishments are serving the population of a larger area in competition with alternate sources of these goods located in other communities. Hence Zeeland's citizens are not necessarily eating more or better, nor forced to pay significantly more for their food than others elsewhere, but more likely Zeeland's food stores are attracting more customers from outside the city than in prior years.

This analysis of the share of the total tax paid, and the tax paid per capita, indicates that, while only seven of the eighteen groupings showed declines in taxable sales from 1956 to 1958, thirteen groupings accounted for a smaller share of the total tax payments during 1958 as compared to 1956. Among both of these, only Auto Parts and Accessories has a significant orientation toward service for the highway user, and its

*Food Store sales tax payments are included in the Foods category in city tabulations by the Department of Revenue and, therefore, cannot be separated from Restaurant tax payments.

**Table IV, Appendix

decline in taxable sales amounted to only 1½ per cent. In a business in which taxable sales are frequently less important than services not subject to sales tax, a change such as this does not allow conclusions as to the overall trend of business. Of the others showing declining sales, only Hardware has not been mentioned before. No cause seems apparent here, particularly in view of the statement of one hardware store owner, whose establishment is located on the previous route of M-21, that business had been good enough during the study period to allow a substantial reduction in his long-term business indebtedness. Those who lost in share of total sales taxes paid in Zeeland while actually experiencing an increase in sales include the Drug and Variety Stores, Household Appliances, Restaurants, Jewelry, and Farm Equipment groupings. The last two are too heterogeneous in make-up to permit reliable analysis; for the changes in the Drug and Variety Stores, and in Restaurants, no reasons are apparent beyond a slight shift, probably unconscious, in the buying habits of Zeelanders. The appliance field, in which service plays an important part, is another one in which taxable sales do not tell the whole story.

Furthermore, the comparative analyses in the next section show that the household appliance business type for the entire county showed a tremendous increase in taxable sales during the study period. From this it may be concluded that Zeeland's appliance buyers were being attracted to establishments elsewhere in Ottawa County in greater numbers than before during 1957 and 1958.

There are available two additional indices of economic activity which are not derived from sales tax information. Banking activity in terms of total clearings is an excellent indicator of total economic activity. The officials of the Zeeland State Bank (now the First Michigan Bank and Trust Company), the only bank in the city, have kindly made available the amounts of total clearings -- debits plus credits -- for the first ten business days of August for the years 1956, 1957, and 1958. Converted to index numbers, these are shown in Figure 2. From 1956 to 1957 the increase amounted to 5.9 index points; during the following twelve-month interval the index rose another 7.6 points to 113.5. This represents a considerably steeper climb than the total of retail sales in Zeeland (which stood at 105.9 for 1958) but, like sales, the clearings rose more sharply during the second year than during the first. Without a more profound analysis of this aspect, it appears that non-retail economic activity in the Zeeland area grew at a substantially greater pace during the study period than did retail sales. When it is considered that this took place during a business recession which affected the Michigan economy

more seriously than that of most other states, the health of Zeeland's economy becomes even more impressive.

The assets of the Zeeland State Bank, taken from published statements of condition, have risen even more abruptly than either retail sales or total clearings. Graphically portrayed in terms of index numbers in Figure 2, they rose from the base of 100 on December 31, 1955 to 116.7 and 119.1 on the corresponding dates in 1956 and 1957, respectively. On June 23, 1958 the index stood at 124.6, and by October 9 of that year it had climbed to 127.5. If the information on clearings had not been available, this trend might or might not indicate an expanding economy. However, with that information, these data further corroborate the favorable economic condition of Zeeland and its economic hinterland.

The total assessed valuation of the City of Zeeland is also shown on Figure 2 in terms of index numbers. From 100 in 1955 it rose to 103.4 in 1956, 105.1 in 1957, and 114.2 in 1958. Considering the fact that much of the recent development has taken place outside the city limits, this trend speaks well for building activity and growth within the city.

Comparisons: Zeeland - Ottawa County - Michigan

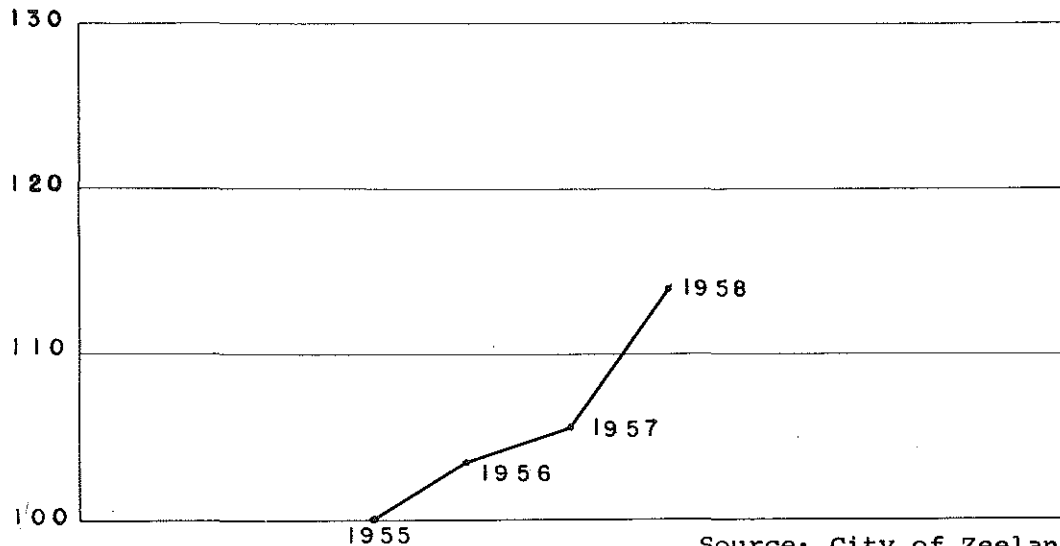
An ideal method of assessing the true impact of the by-pass highway upon retail business in Zeeland would be to compare the performance of its businesses to those in another city of the same general character and size, in a comparable location and, most important, subject only to exactly the same economic influence -- except that of the highway -- to the same extent at the same time. Obviously, such a community does not exist; but even if it did, its use as a "control" would require vast and complex analysis to confirm that, in fact, it did meet the criteria outlined above, or to determine to what extent it failed to meet them, in order to account for this deviation in subsequent comparative analyses.

A more satisfactory and practical method is the comparison of the city with its county and its state. Since the city data are also included in the other two sets of data, the performance of the city's businesses naturally affects the performance of county and state business to some extent. The validity of this approach is based upon the premise that the city's portion of the state's total is minuscule, so that even substantial changes in the former would be hardly noticeable in the latter. With the exception of sales taxes paid by furniture stores (Zeeland accounted for almost 5 per cent of all the retail furniture sales in Michigan during the study period), Zeeland's share of the Michigan sales ranged from

Fig. 2

TOTAL ASSESSED VALUATION, ZEELAND, MICHIGAN

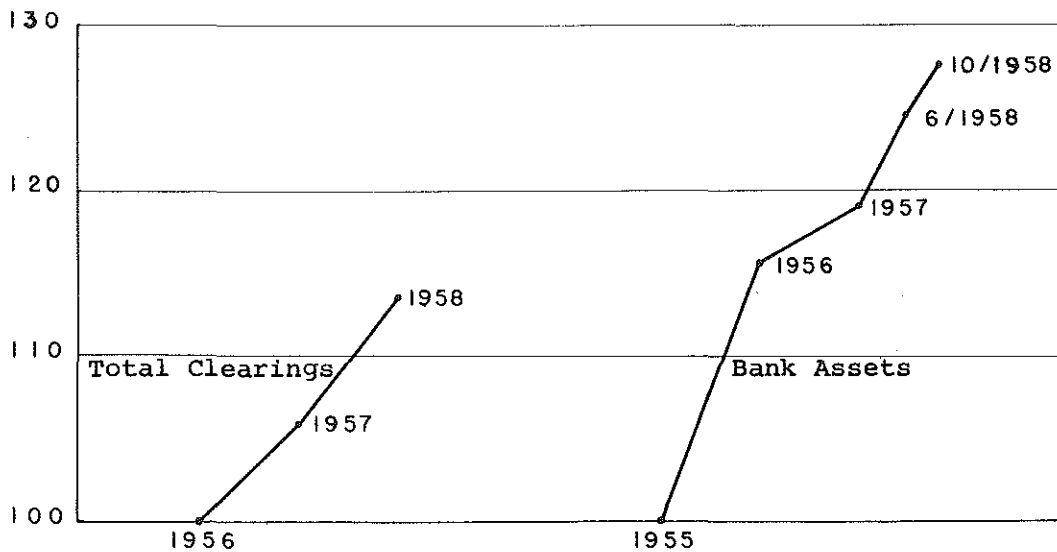
Index Numbers, 1955 = 100



Source: City of Zeeland

BANKING ACTIVITY, ZEELAND, MICHIGAN

Index Numbers, first date shown = 100



Total Clearings are debits plus credits for the first ten days in August for the years indicated.

Assets are for the following dates: December 31, 1955, December 31, 1956, December 31, 1957, June 23, 1958, October 9, 1958.

Source: First Michigan Bank and Trust Company, Zeeland

about one-quarter of one per cent (for the rather heterogeneous Farm Equipment and Jewelry groupings) down to one-twentieth of one per cent for all food sales. These ratios were obtained for the study year 1956, when Zeeland contained about 0.05 per cent of the state's population. Naturally Zeeland's share of Ottawa County sales is much larger. Again excepting furniture (Zeeland accounted for 43.4 per cent of the county's sales in 1956) as well as Book Stores (not sufficient comparability of dollar amounts at the county level), Zeeland's share of the county's sales ranged from 33 per cent for Household Appliances to 4.5 per cent for Radio - TV. In 1956 the city held about 4.2 per cent of the county's population.

Comparisons with the county data are useful because Ottawa County outside of the Zeeland area can be presumed not to have been affected significantly by the by-pass, while being subject to the same general set of economic influences. Furthermore, in comparing Zeeland study groupings to Ottawa County business types, it can be seen that in all but four cases Zeeland's taxable sales trends reflected greater gains (or smaller losses) than those for the county, so that if Zeeland's figures were subtracted from the county's prior to developing the latter's index numbers, the differences in performance would be still greater. Table II and Figure 3 present these comparative data in tabular and graphic form.

Since we are interested principally in the likely effects of the by-pass, particular emphasis needs to be placed upon the sales trends of motorist-oriented businesses. In Zeeland the grouping of gasoline stations located on the previous route of M-21 experienced a decline in taxable sales of about 1.4 per cent from 1956 to 1957. This occurred while the stations elsewhere in the city saw a rise of 7 per cent. However, from 1957 to 1958 the situation was reversed: the stations on the old route gained far more than the others; the former rose almost 11 index points to 109.5 while the latter rose only 1.6 index points to 108.6. This has become an almost predictable pattern on the basis of previous by-pass studies. The by-passed stations will suffer a decline in taxable sales during the first year after the opening of the by-pass, and during the next year recoup more than the loss to climb to higher position, by index number, than their competitors in other parts of the city. Indicated here is a change in clientele, which has gained local residents and customers of the business district in numbers sufficiently great to more than offset the obvious loss of the through traveler. As has been mentioned before, these figures give no inkling of the extent of nontaxable, but very remunerative, services which are rendered by the gasoline stations; consensus

Table II

SALES TAX PAYMENTS by Study Groups for the City of Zeeland, and Comparable Business Types for Ottawa County and Michigan in Dollar Amounts and Index Numbers (1956 = 100) for Study Years (December through November) 1956, 1957 and 1958.

Business Category Designations denote Establishment Grouping for Zeeland, and the comparable Department of Revenue Business Types for Ottawa County and Michigan.

Underlined Business Category Designations denote combinations of appropriate Establishment Groupings for Zeeland, and the comparable Department of Revenue Business Groups for Ottawa County and Michigan.

Z E E L A N D						
Business Category	1956		1957		1958	
	\$ Tax Paid	Index Number	\$ Tax Paid	Index Number	\$ Tax Paid	Index Number
Auto Parts & Acces.	4,174	100.0	4,097	98.16	4,111	98.49
Gas Sta. on Previous M-21	10,069	100.0	9,929	98.61	11,027	109.5
Gas Sta. Rest of City	<u>11,626</u>	100.0	<u>12,443</u>	107.0	<u>12,628</u>	108.6
<u>AUTOMOTIVE</u>	<u>25,869</u>	100.0	<u>26,469</u>	102.3	<u>27,766</u>	107.3
<u>APPAREL</u>	<u>17,009</u>	100.0	<u>17,463</u>	102.7	<u>18,711</u>	110.0
Farm & Truck Equip.	2,107	100.0	2,217	105.2	2,166	102.8
Hardware	3,741	100.0	3,525	94.23	2,897	77.44
Building Materials	24,381	100.0	19,182	78.68	20,018	82.10
Heating, Plumbing	<u>4,602</u>	100.0	<u>4,726</u>	102.7	<u>5,226</u>	113.6
<u>BLDG. MAT'S., LMBR., HDWR.</u>	<u>34,831</u>	100.0	<u>29,650</u>	85.13	<u>30,307</u>	87.01
Restaurants	8,594	100.0	8,623	100.3	8,802	102.4
Food Stores	<u>42,338</u>	100.0	<u>51,295</u>	121.2	<u>54,557</u>	128.9
<u>FOODS</u>	<u>50,932</u>	100.0	<u>59,918</u>	117.7	<u>63,359</u>	124.3
Radio, TV	1,656	100.0	1,606	96.98	2,509	151.5
Furniture Stores	25,731	100.0	26,803	104.2	24,222	94.14
Household Appliances	<u>6,108</u>	100.0	<u>5,048</u>	82.65	<u>6,145</u>	100.6
<u>FURNITURE</u>	<u>33,495</u>	100.0	<u>33,457</u>	99.89	<u>32,876</u>	98.15
Recreation	1,291	100.0	1,233	95.5	960	74.36
Drug, Variety Stores	9,986	100.0	10,063	100.8	10,573	105.9
Books, Printers	2,030	100.0	1,941	95.62	1,980	97.54
Jewelry, Flowers, Etc.	<u>4,601</u>	100.0	<u>4,899</u>	106.5	<u>4,638</u>	100.8
<u>SPECIALTY STORES</u>	<u>17,908</u>	100.0	<u>18,136</u>	101.3	<u>18,151</u>	101.4
Fuel Dealers	7,152	100.0	7,143	99.87	7,035	98.36
<u>TOTAL TAX PAID</u>	<u>187,196</u>	100.0	<u>192,236</u>	102.8	<u>198,205</u>	105.9

Source: Zeeland Data from Michigan Department of Revenue based upon business establishment grouping by author.

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Table II (Cont'd.)

O T T A W A C O U N T Y

Business Category	Bus. Type Code	1956		1957		1958	
		\$ Tax Paid	Index Number	\$ Tax Paid	Index Number	\$ Tax Paid	Index Number
Auto Accessories	12	32,045	100.0	31,136	97.16	30,296	94.54
Gas Stations	14	215,193	100.0	232,450	108.0	232,735	108.2
<u>AUTOMOTIVE</u>							
<u>APPAREL</u>	(20)	102,122	100.0	102,781	100.6	100,516	98.43
Farm Equipment	36	10,149	100.0	10,090	99.42	10,719	105.2
Hardware	35	80,800	100.0	55,117	68.21	47,421	58.69
Building Materials	31	213,863	100.0	210,903	98.62	210,029	98.21
Heating, Plumbing	33	55,390	100.0	44,837	80.95	38,551	69.60
<u>BLDG. MAT'S., LMBR., HDWR.</u>	(30)	420,132	100.0	372,118	88.57	352,782	83.97
Restaurants	41	94,309	100.0	100,829	106.9	99,813	105.8
Groceries	43	608,141	100.0	650,151	106.9	681,796	112.1
<u>FOODS</u>	(40)	887,424	100.0	932,874	105.1	954,260	107.5
Radio, Music Supply	54	36,420	100.0	33,579	92.20	31,929	87.67
Household Furniture	52	59,305	100.0	55,834	94.15	52,204	88.03
Household Appliances	53	18,691	100.0	30,748	164.5	32,663	174.8
<u>FURNITURE</u>	(50)	133,975	100.0	143,106	106.8	142,817	106.6
Drugs, Cosmetics	71	77,326	100.0	79,324	102.6	81,348	105.2
Stationery & Books	75	3,748	100.0	3,019	82.47	3,549	94.69
Jewelry	74	15,165	100.0	14,042	92.59	12,396	81.74
<u>SPECIALTY STORES</u>	(70)	167,156	100.0	170,547	102.0	172,249	103.0
<u>TOTAL TAX PAID</u>		3,087,511	100.0	3,058,118	99.05	2,960,684	95.89

Source: Ottawa County Data from unpublished records of Michigan Department of Revenue.

Table II (Concl.)

M I C H I G A N

Dollar Amounts in Thousands

Business Category	Bus. Type Code	1956		1957		1958	
		\$ Tax Paid	Index Number	\$ Tax Paid	Index Number	\$ Tax Paid	Index Number
Auto Accessories	12	3,122	100.0	3,192	102.2	2,938	94.11
Gas Stations	14	19,640	100.0	21,263	108.3	21,482	109.4
<u>AUTOMOTIVE</u>							
<u>APPAREL</u>	(20)	14,766	100.0	14,774	100.1	13,267	89.85
Farm Equipment	36	889	100.0	720	80.99	636	71.54
Hardware	35	4,771	100.0	4,444	93.15	4,172	87.44
Building Materials	31	14,553	100.0	12,830	88.16	11,667	80.17
Heating, Plumbing	33	3,969	100.0	3,210	80.87	2,857	71.98
<u>BLDG. MAT'S., LMBR.,</u> <u>HDWR.</u>	(30)	28,709	100.0	24,957	86.93	22,661	78.9
Restaurants	41	12,167	100.0	12,365	101.6	11,806	97.03
Groceries	43	59,976	100.0	63,381	105.7	64,784	108.0
<u>FOODS</u>	(40)	94,712	100.0	97,568	103.0	97,256	102.7
Radio, Music Supply	54	2,659	100.0	2,442	91.84	2,145	80.67
Household Furniture	52	6,003	100.0	5,916	98.55	4,811	80.14
Household Appliances	53	3,532	100.0	3,888	110.1	3,289	93.12
<u>FURNITURE</u>	(50)	14,642	100.0	14,543	99.32	12,400	84.69
Drugs, Cosmetics	71	9,608	100.0	10,010	104.2	9,839	102.4
Stationery & Books	75	1,384	100.0	1,324	95.66	1,354	97.83
Jewelry	74	1,896	100.0	1,852	97.68	1,539	81.17
<u>SPECIALTY STORES</u>	(70)	19,642	100.0	19,781	100.7	18,954	96.50
TOTAL TAX PAID		308,047	100.0	310,055	100.6	288,567	93.7.

Source: Michigan Data from appropriate issues of Research and Statistical Bulletin of Michigan Department of Revenue.

among operators here and elsewhere is that the re-routing of through traffic allows more time for desirable and profitable service operations. Added to the increase in taxable sales, this makes an encouraging picture.

It must be mentioned parenthetically that several of the Zeeland stations also sell goods other than fuel and associated automotive items. Notable among these is the Farmers' Cooperative, where inquiry of the management disclosed that approximately half of its taxable sales are made through the gasoline station, while about 30 per cent are fuel oil deliveries and 20 per cent are coal and other "mill" items. Since tax payments by individual tax payers are, of course, not available, it was not possible to allocate this establishment's business among the three principal categories. It is apparent that this Cooperative's role in Zeeland's retail economy is sufficient to preclude eliminating it from the study, hence it was placed in the "Gas Station C" grouping. Another gas station also operates a drive-in refreshment stand; it too has been placed in the same grouping.

In terms of index numbers, each of the Zeeland gas station groupings had achieved a higher level of taxable sales in 1958 as compared to 1956 than had all stations in Ottawa County. The city fell only slightly short (0.4 index points) of Michigan's level during that study year. Auto Parts and Accessories, another area of business which could serve a sizeable transient clientele, accounted for less taxable sales during the first year after the by-pass than during the year before the new road opened. During 1958, however, it also regained ground, although still not achieving the immediately pre-by-pass level. Nevertheless, the performance of this grouping was better than its counterparts in the county during both of these years, and on a statewide basis a decline from 1957 to 1958 placed the latter level also below the city's for that year. The third business which generally is of importance to the traveler is restaurants. Here Zeeland did quite well, less well than the county, but better than the state. Certainly the trend of tax payments of the Restaurant grouping is sufficiently close to those of the county and state that it can be presumed safely that the diversion of through traffic had no serious consequences for Zeeland restaurants. In fact, it must be noted that from 1957 to 1958 the sales taxes paid by Zeeland restaurants rose 2.1 index points, while those of the county dropped 1.1 points, and the state's figures show a decline of 4.6 points. It may be concluded here that during the first year after the opening of the by-pass Zeeland restaurants were not able to increase their business as much as the county or state restaurants were able to

TRENDS IN SALES TAX PAYMENTS
by Study Year (December Through November)

INDEX NUMBERS, 1956 = 100

On each curve, origin is for 1956, first point for 1957, end for 1958

Figure 3

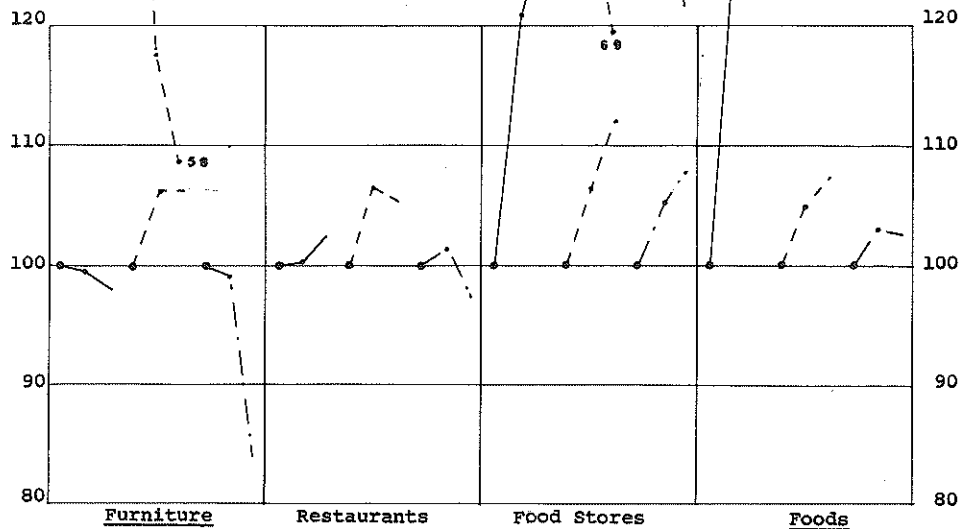
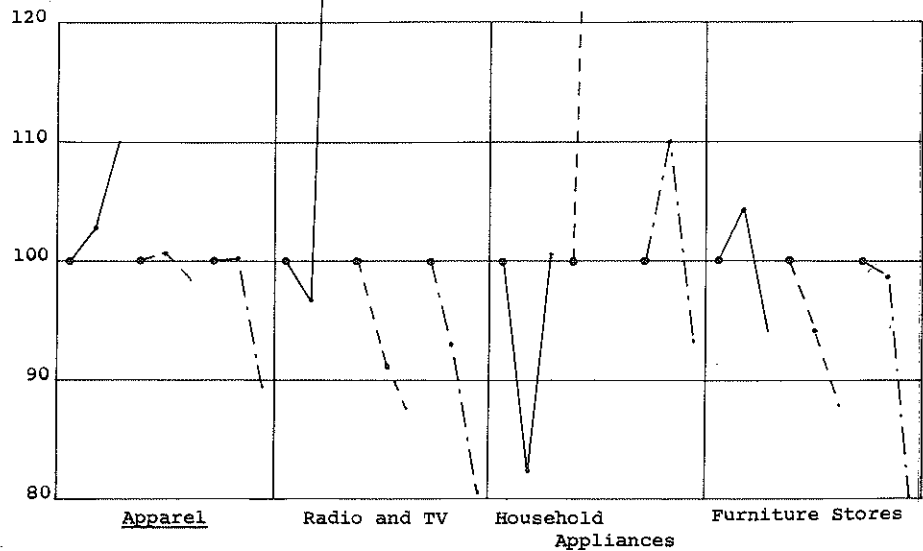
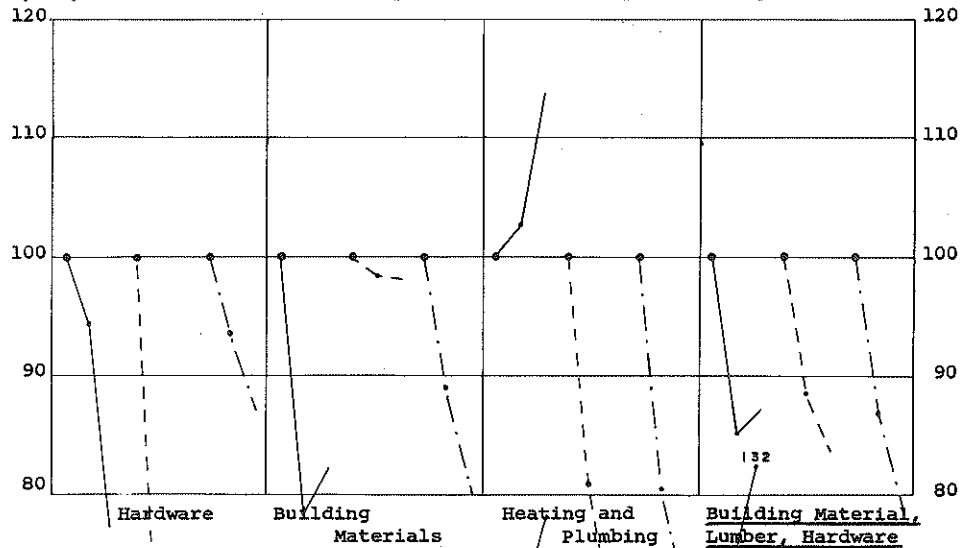
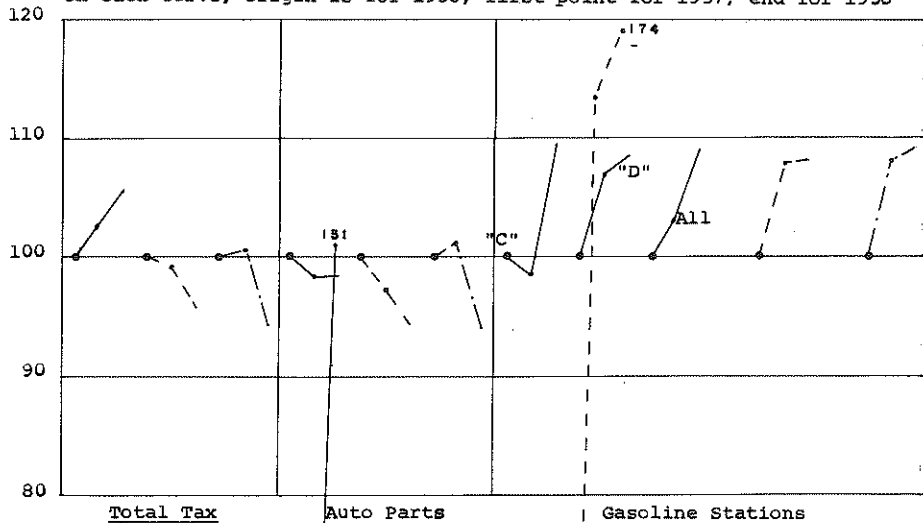
Zeeland

Ottawa Co.

Michigan

Business Category Designations denote Establishment Grouping for Zeeland, and the comparable Department of Revenue Business Types for Ottawa County and Michigan.

Underlined Business Category Designations denote combinations of appropriate Establishment Groupings for Zeeland, and the comparable Department of Revenue Business Groups for Ottawa County and Michigan.



Source: Table II

achieve. However, during the year following, they fared notably better than the restaurants in either of the other geographical areas.

In businesses not having a direct reliance on travelers, how did Zeeland fare as compared to its county and its state? Of the categories which are sufficiently similar for all three geographical areas, there are few in which the city did not do best. Most spectacular, perhaps, was the rise in taxable sales of the Radio and Television stores. During a business recession, a time when Ottawa County and Michigan showed sales declines of 12 per cent and 19 per cent, respectively, over a two-year period, Zeeland's sales in this area climbed 52 per cent. In determining a reason for this, one must rely on a knowledge of the community. One comment, of a semi-serious nature, from a Zeeland citizen who knows his community well, indicates that an innovation or new development is accepted in this city at least several years after it has become common in the rest of the country. The truth in this comment stems from the very conservative nature of Zeeland's people, and it seems not impossible that during the period of this study happened to occur the point at which television became an accepted and desirable medium of entertainment. Beyond this, evidence points to a basic change in the operation of the city's radio and television stores, which resulted not only in increased local sales, but also in the drawing of a substantial portion of the customers from Holland.

It is interesting to contrast with the Radio-TV grouping the Furniture Store grouping. While its 1957 sales were 4.2 points above 1956, a decline of 10 points followed to bring the 1958 level below that for the first year of the study. Here the sales picture is quite in step with what is known about the state's economic trends during the same period. In view of the several indications, presented in the previous section, that Zeeland's people did not necessarily pay much attention to the state's economy in their own purchasing (and for good reason), it might be concluded that a substantial portion of the furniture sales are accounted for by non-residents of Zeeland. There is unusually ample evidence to back this up. In 1956 sales taxes paid per capita for the entire furniture category (which in Zeeland includes also Radio-TV and Household Appliances) was \$8.75 for Zeeland, \$1.87 for the state as a whole. Zeeland, with 0.05 per cent of Michigan's population in 1956, accounted for 5 per cent of the sales taxes paid by furniture stores; with 4.2 per cent of Ottawa County's population it accounted for 43 per cent of sales taxes paid by furniture stores in the county. Two of the furniture manufacturers in Zeeland also carry on retail sales; one of the other stores included in the grouping is located

near the intersection of the by-pass and the old route between Zeeland and Holland, and certainly attracts a significant number of customers from Holland. A possible fly in the ointment is one store which has substantial appliance and hardware sales in addition to its furniture business. Faced with a quandary similar to that posed by the Farmers' Cooperative discussed previously, it was decided to place this store in the Furniture grouping.

Apparel Stores again constitute a group of establishments whose sales during the study period did not recognize the county and state trends. While Ottawa County and Michigan's apparel sales declined from 1957 to 1958 after only a slight rise from 1956 to 1957, those for Zeeland showed good gains from the first year of the study period to the second, but then kept right on climbing to 110 index points in 1958. Zeeland's per capita sales tax collections are among the highest for cities in Michigan for the Apparel Group.*

Hardware sales in Zeeland reflected the precipitously declining sales in the county during the study period, although in terms of index numbers the city's performance is closer to the more moderate decline of the state. In Building Materials the city experienced a sharp decline from 1956 to 1957, but a gain was shown thereafter in spite of continuing declines in the county and state. Heating and Plumbing is the bright spot in this area: significant gains were made in the face of declines in the county and the state. The combination of these effects is indicated by the Building, Lumber and Hardware Group trends. From 1956 to 1957 the sales of these establishments in Zeeland, in Ottawa County and in Michigan showed quite comparable declines. However, the 1958 performance resulted in a gain over the previous year for the city, while for the county and state the prior loss trend continued. This situation -- a gain in the face of declines for county and state -- is similar to the ones already noted for Apparel, Auto Parts, Restaurants, and Radio - TV.

In Household Appliances the great gain in county sales is immediately apparent. This constitutes such a remarkable performance that some effort was made to determine the reasons for it, beyond performing additional checks to ensure that the figures were not in error. While extensive investigation could doubtlessly reveal the basis for this increase, the necessarily limited inquiry was not able to do so. In speculating, the most likely cause would lie in the opening of an establishment in Ottawa County which has significant sales outside of the county, or the addition of a large number of

*Table IV, Appendix

outlets which together would account for this upward swing. The records of the Department of Revenue reveal no correlation between sales tax paid by this group and the number of establishments in it; in fact, the higher total monthly tax payments during this period seem generally to have originated from fewer taxpayers. This eliminates the second alternative above, leaving the first one as the most likely possibility.

Trends of tax payments in this category in Zeeland also point to the same basis for the county's gain. A new establishment elsewhere in the county with a large volume of business would tend to take some potential sales away from Zeeland. This could account for the decline from 1956 to 1957; the subsequent recovery is balanced by a much smaller gain for the county as a whole.

The analysis of Food Store Sales in the previous section gains additional basis in the comparison with county and state figures. Here it can be seen even more clearly that Zeeland's gains arose out of increased service to more people, rather than increased prices or food consumption.

The composite picture afforded by the total tax comparison probably sums up best the city's retail experience in comparison to its county and state. Zeeland did much better, in spite of the important fact that motor vehicle sales are not included in the city's figures, while they are included in the county's and state's. Zeeland thumbed its nose at the 1958 recession by doing better that year than in the years previously. Even so, in April of that year the business district merchants carried on the same sort of spirited "Buy Now" campaign which was at that time being waged elsewhere in the state. In comparing the monthly trends for the three study years of the several groupings most representative of the business district sales, only the Apparel stores seem to have gained a determinable benefit from this. The same grouping appears to be the principal beneficiary of the annual summer carnival, an event for which the central block of business district's Main Street is closed for two days in August, and the public way is given over to amusements, rides, and concessions. In 1956, the year before the carnivals started, August was eighth in Apparel sales among the months of that study year. In 1957, the first year of the carnival, it was fourth; in 1958 it was second.

III. CONCLUSIONS

Zeeland's economic stability and healthy business climate have shown themselves to be of a strength and vitality which have completely negated any adverse influences which the by-pass highway may have had. Rather, there are abundant indications that the city has recognized the advantages of emancipation from through traffic. The former route of the highway has again become a usable street for local traffic, and it has become a desirable location for new and expanded business. Main Street lives up to its name, and does not serve as a way to avoid an overcrowded highway route.

New residential development adjoins the by-pass, and the new hospital overlooks it; no reduction in development potential of land adjacent to the by-pass can be discerned. The successful readjustment of the gasoline stations and restaurants is evidenced by significantly increased taxable sales.

While no basis is apparent for an assumption that the industrial expansion which has taken place in Zeeland would not have occurred without the by-pass, the absence of through traffic in the city was obviously no deterrent. More likely, the re-routing of M-21 made the city vastly more attractive to employers, to businessmen, and to its people. Indeed, it is appropriate to consider that Zeeland's experience is one in which the optimum benefit of a by-pass has been realized, and that these benefits have evidenced themselves in a very short period of time with a consistency and clarity which are remarkable.

To those concerned with, and involved in the planning and building of highways, the guidance of community development and growth, and the reciprocal effects of highways and cities, the real import of the Zeeland study lies in the wider significance of its results. Reports from elsewhere in the United States have accorded to a substantial population growth during the study period a part of the credit for a successful economic recovery of some cities which have been by-passed. Conversely, the absence of population growth has been blamed for a continuing adverse influence due to the re-routing of traffic, in cities which have been the subject of other studies. In Zeeland, during a period of slight population growth, retail business rose substantially in apparently complete disregard of possible detrimental effects consequent to the establishment of the by-pass. Furthermore, non-retail business and industrial activity had notable increases as well. While economic activity in Michigan generally experienced a decided ebb,

Zeeland's economy not only did very well, but was strengthened substantially. These facts indicate that an increasing population is not necessary to counteract effectively any loss of business occasioned by the removal of through traffic in a community.

The character and stability of Zeeland's economy might indeed be important ingredients in this success story, but most likely only to the extent that their absence would have reduced somewhat the city's immunity to possible undue effects from the by-pass. The real key is the recognition by the business community that the justification for its own existence lies in its service to the citizens of Zeeland and the surrounding area, and not in an ephemeral beholdenness to the capricious habits of highway travelers.

A P P E N D I X

(ZEELAND)

TABLE III

CONSTITUENT ESTABLISHMENTS OF BUSINESS GROUPINGS IN ZEELAND

<u>Grouping Name</u>	<u>Number of Each Type of Constituent Establishment</u>	<u>Total</u>
Auto Parts and Accessories	3 repair garages, 2 tire service shops, 1 each auto dealer*, body shop, front end service, electric service	9
Gasoline Stations-"C"	7 stations on previous route of M-21	7
Gasoline Stations-"D"	7 stations not on previous M-21 (all in City not in "C")	7
Apparel	2 each men's wear, women's wear, shoe stores, 1 each hat store, shoe repair	8
Farm and Truck Equipment	3 farm equipment; 2 feed stores; 1 truck body manufacturer	6
Hardware	4 hardware stores; 1 paint store; 1 garden supply store	6
Building Materials	2 lumber yards, 2 block and brick dealers, 1 sash and door dealer	5
Heating, Plumbing	4 heating and plumbing contractors	4
Restaurants	6 restaurants and lunch counters	6
Food Stores	9 markets, 1 each bakery, dairy store, vegetable and fruit store	12
Radio, TV	2 radio and TV stores, 2 radio and TV repair	4
Furniture Stores	6 furniture stores**, 1 each floor coverings, furniture- appliances-hardware	8
Household Appliances	3 appliance stores	3
Recreation	2 bicycle stores, 1 each bowling alley, pool room, skate rink, music store	6
Drug, Variety Stores	2 drug stores, 2 variety stores	4
Book Stores, Printers	2 printers, 1 book and card shop	3
Jewelry, Flowers, etc.	2 jewelry stores, 2 photographers' studios, 1 flower store	5
Fuel Dealers	2 coal yards, 1 liquefied petroleum gas dealer	3

*tax data for this establishment do not include motor vehicle sales

**includes manufacturers with retail sales

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Table IV

SALES TAXES PAID PER CAPITA, FISCAL YEAR 1957
for several business groups, and total less the Automotive group

City	Total Less Automotive	Apparel	Bldg. Mat. Lmbr., Hdwr.	Foods	Furniture	Specialty
Zeeland*	\$42.22	\$4.45	\$8.38	\$14.27	\$8.64	\$4.63
Alpena	46.81	2.48	4.91	19.71	2.61	2.61
Bay City	46.12	3.41	4.99	15.83	2.93	3.31
Benton Harbor	60.87	3.68	7.20	21.77	3.72	3.82
Niles	44.04	1.84	4.72	19.94	2.26	2.81
St. Joseph	51.69	3.62	4.38	22.64	3.63	4.07
Albion	34.70	1.69	4.02	17.53	1.55	2.64
Battle Creek	56.76	3.25	5.18	21.78	3.51	4.18
Sault Ste. Marie	34.21	1.07	2.72	15.04	1.53	1.82
Escanaba	44.36	1.59	4.11	18.91	3.07	2.09
Flint	45.52	3.28	4.47	18.21	3.68	3.85
Ironwood	40.74	2.42	2.92	18.92	2.81	2.00
Traverse City	62.63	3.03	6.89	22.14	3.33	3.31
East Lansing	16.19	2.45	1.03	7.46	1.25	3.03
Lansing	54.19	2.99	5.22	19.46	3.11	3.90
Mt. Pleasant	48.84	2.78	7.07	18.84	2.04	3.43
Jackson	55.25	5.41	4.97	19.39	3.32	4.44
Kalamazoo	62.61	3.86	7.08	21.41	4.71	5.99
Grand Rapids	52.53	3.02	6.66	18.05	3.36	4.44
Adrian	42.21	3.85	4.03	17.01	3.09	3.27
Marquette	36.12	1.55	3.79	15.81	2.08	2.28
Menominee	22.04	0.54	2.45	11.80	0.53	0.85
Midland	38.21	2.23	5.23	15.84	2.29	2.64
Monroe	45.62	2.59	5.45	19.24	4.10	2.97
Muskegon	56.57	3.38	6.17	22.05	3.36	3.93
Muskegon Heights	23.21	1.00	2.88	11.37	1.28	1.93
Holland	56.05	3.05	7.81	21.68	4.14	3.93
Saginaw	43.58	3.89	5.41	15.97	2.63	2.94
Owosso	38.99	2.44	4.55	16.60	2.96	2.61
Port Huron	50.09	3.69	5.28	21.81	3.28	3.07
Ann Arbor	48.86	4.79	5.20	18.88	3.21	6.13
Ypsilanti	52.06	4.25	5.28	28.26	5.03	3.22
Cadillac	41.82	2.77	5.31	17.01	3.83	2.76
<u>Michigan</u>	30.26	1.90	3.44	12.19	1.87	2.50

*Zeeland data are the averages of data for the calendar years 1956 and 1957

Sources: Population from estimates as of July 1, 1957, from Michigan Department of Health
Zeeland tax data: Table I
All other tax data from Annual Report 1956-1957, Michigan Department of Revenue

PART EIGHT

CONCLUSIONS OF THE STUDY SERIES

CONCLUSIONS OF THE STUDY SERIES

The objective of the entire project was the determination of the impact felt by retail business in Michigan cities after through traffic had been re-routed to a new highway by-passing the community. The necessity of choosing for study cities where the by-pass had been in operation long enough to allow the local economy to regain some sort of equilibrium, together with the importance of avoiding the influences of metropolitan areas, resulted in the choice of six small cities, all located in the southern half of Michigan's lower peninsula.

Therefore, those of the conclusions of each study which arose, in some similar form, out of one or more of the other studies as well, can be considered as having application to small communities of generally similar characteristics.

The most basic and most important conclusion, common to five of the six studies, is that, based upon sales tax collections, retail business in each of these cities made greater relative gains than it did in Michigan as a whole during each particular study period. If business increased, it increased more in the city than in the state; if it declined, its decline was less in the city than in the state. Furthermore, even in the sixth city, the level of retail business dropped during the study period only 0.1 per cent more than did the state's. It is also noteworthy that the greatest difference between city and state performance -- 12.2 index points -- occurred during the same period as the greatest loss at the state level.

Thus the Project's most earnestly sought information has answered unequivocally the question of the likely effect of a by-pass highway on retail business generally within the by-passed community. Further, it has refuted most emphatically the oft-heard allegation that a by-pass will "kill" business in any small town. The smallest town of the ones studied -- Hart -- labored under the most serious economic handicaps during the study period and actually lost population during the 1950's; it is also the one far more reliant on tourist trade than any of the others, yet its retail business rose 10 per cent more than the state's.

The other conclusion of more than usual import concerns gasoline stations and restaurants -- the two kinds of business presumed to be most susceptible to detrimental effect due to the re-routing of traffic. The studies have shown that these two may indeed suffer, or that they may not. The restaurants

in Mason lost the year-around traffic, but not necessarily the tourists; the restaurants in Hart lost the tourists but not the year-around trade. In Zeeland, the restaurants increased their business.

In Niles and Hart the gas stations on the old route lost business during the study period, some in the former city quite seriously. In Adrian they gained, but less than the county and state. In Mason they did very well, gaining relatively more than the county and state, but less than stations in other parts of the city. In Holland, the gas stations on the old routes did extremely well, increasing business over 40 per cent, unless they were close to the central business district, in which case they either lost or made only moderate gains. Finally, in Zeeland, the stations on the old route reached a higher relative level of sales during the second year after the opening of the by-pass than did the stations elsewhere in the city. In all cities, there seemed to be an effort on the part of operators of by-passed stations to gain more local trade. The degree of their success is only partially shown in the tax figures, since automotive services consist in large part of non-taxable labor which is not reflected therein.

Whereas the feeling before the by-pass among some merchants in all of the cities ranged from unconcealed anger to mild skepticism, after the by-pass even some whose businesses suffered expressed appreciation for the benefits of the by-pass to the community. There was almost universal approval of the improvement consequent to the removal of through traffic, especially trucks.

It is further evident that the merchants' attention to local trade has paid off in the smaller of the cities. The reliability of the home-town shopper has been enhanced significantly by providing him with an easier and safer way to reach stores and other businesses.

Although no thorough research has been possible on the accident records of the new highways compared with the former routes, the vastly reduced traffic on those former routes decreases significantly the likelihood of accidents. The consequent greater safety for pedestrians is apparent.

The clear conclusion of this series of studies is that a basically healthy local retail economy can only benefit from a by-pass highway.

TABLE V

Index Numbers of Sales Tax Payments

	Study Years					
	1953	1954	1955	1956	1957	1958
Mason (Total Tax Less Autos)	100	106.9				
Michigan (" " " ")	100	104.0				
Adrian (Total Tax Less Automotive			100	103.9	105.7	
Michigan and Misc. Retail Group)			100	103.7	103.3	
Hart (Total Tax Less Automotive Group)			100	109.2	108.3	
Michigan (" " " " ")			100	105.2	107.5	
Holland (Total Tax)			100	103.95	99.63	96.96
Michigan (" ")			100	100.83	101.48	94.45
Niles (Total Tax)			94.5	100	99.4	93.6
Michigan (" ")			99.2	100	100.6	93.7
Zeeland (Total Tax Less Automobiles)				100	102.8	105.9
Michigan (Total Tax)				100	100.6	93.7

TABLE VI

The 1960 Census

At the time of editing, the preliminary 1960 census counts had just been made available:

	Population, 1950 Census	Population, Preliminary 1960 Census	Increase, 1950 to 1960	
			Number	Per Cent
Adrian	18,393	20,262	1,869	10.2
Hart	2,172	1,968	- 204	-9.4
Holland	15,858	24,685	8,827	55.7
Mason	3,514	4,490	976	27.8
Niles	13,145	13,763	618	4.7
Zeeland	3,075	3,692	617	20.0

While these population data do not alter the conclusions of any of the studies, they do in some instances affect the magnitude of the changes of various economic indicators.