THE PORT HURON AREA TRAVEL STUDY

WEEKDAY TRAVEL PATTERNS

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CENTER FOR URBAN STUDIES
DEARBORN CAMPUS
THE UNIVERSITY OF MICHIGAN

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WEEKDAY TRAVEL PATTERNS 1967

Prepared for TALUS--Detroit
Regional Transportation and Land Use Study

TALUS is a Special Project of the Planning Division
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In Cooperation With:

Michigan Department of State Highways

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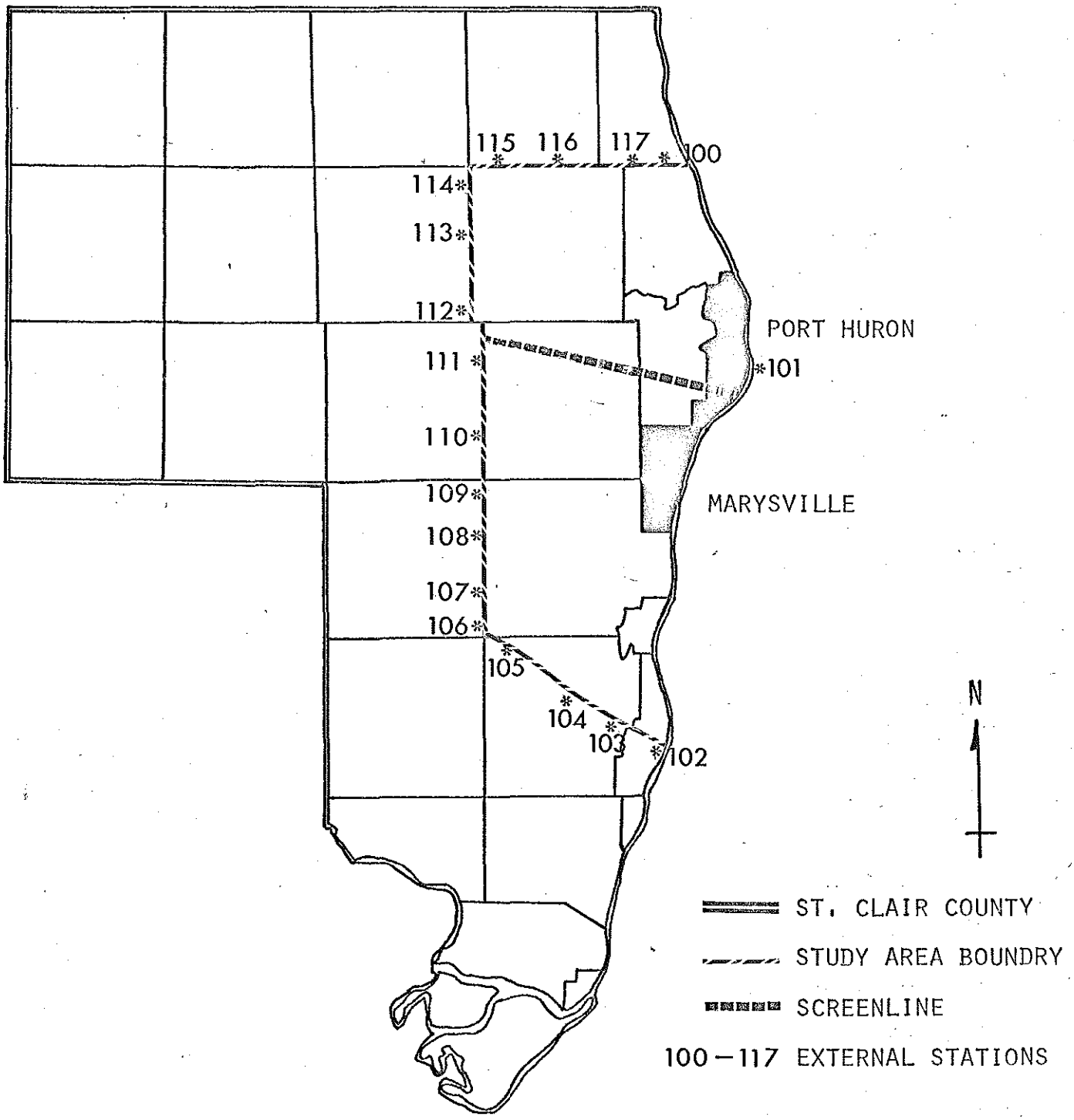

I. INTRODUCTION

This report was prepared for TALUS, a special project of the Planning Division of the Southeastern Michigan Council of Governments, and the Michigan Department of State Highways. The report presents statistical information about the characteristics of weekday travel in the Port Huron area. The information included in this report was based on a survey undertaken in the fall of 1967 in the Port Huron study area. Interviewing for the Home Interview Survey was conducted by the Center. The Michigan Department of State Highways obtained both the External and the Truck-Taxi interviews.

Home Interview Survey

Dwelling units, for this study, were selected at a rate of .125 (1 in 8). This sampling fraction was recommended by the U. S. Bureau of Public Roads and the Michigan Department of State Highways. Several strata were established for purposes of sample selection and execution: The city directory sample, a field sample, and an apartment stratum. Also, a block supplement was used in conjunction with the directory sample in order to account for any residential construction built after the directory was prepared.*

Interviewing began on 30 October and ended December 15, 1967. Of the 2,791 addresses which fell into the sample, completed interviews were obtained from 2,595 households. Not all sample addresses yield a possible interview. For example, a dwelling may be vacant when the interviewer

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* See Technical Report #1, Port Huron Area Transportation Study, "Sampling Procedures", 8 pp. mimeo, Center for Urban Studies, January 1968.

arrives. Only those dwelling units which were occupied at the time of the visit by the interviewer fall into the category of possible interviews. Completed interviews were obtained from 93 per cent of all possible interviews.* A response rate this large is indicative of the high degree of cooperation received from people living in the Port Huron area (see Appendix Table B-1 for response rates by tract).

The Truck-Taxi Survey

This survey provides information about average daily travel patterns of trucks and taxis registered at addresses within the study area. The average daily travel patterns of trucks and taxis which are registered at places outside the cordon line is also known as a result of interviewing at external stations, as is described in the following section.

Sampling and interviewing for the truck-taxi survey was conducted by the Michigan Department of State Highways. The interviews were taken between October 1 and November 25 of 1967.

The sample was selected largely from listings of registrations on file with the Michigan Department of State in Lansing. Supplemental listings were prepared to obtain a sample of trucks and taxis operated by government agencies. A 25 per cent sample of registered trucks was selected for this study. Thirteen taxicabs were observed to have registration addresses within the study area. Because the number of taxicabs was so small, all (100 per cent) were included in the study.

Of the 848 trucks which fell into the sample, trip information was ascertained for 727, a completion rate of about 86 per cent. Trip information was obtained for all 13 taxicabs. The trip average for

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* For additional details see Technical Report #2, Port Huron Area Transportation Study, "The Disposition of Sample Addresses in the Home Interview Survey", 5 pp. mimeo, Center for Urban Studies.

trucks was 3.9 and 63.1 trips is the average for taxis.

External Survey

The external survey supplements trip information obtained in the home interview survey and in the truck-taxi survey. Not all of the traffic in a region is generated either by residents or in commercially licensed vehicles registered at places within the study area. The purpose of the external survey is to obtain information about the remaining segment of travel, that is, trips made by non-residents and trips made in commercially licensed vehicles registered at places outside the study area. Roadside interviewing at 17 locations took place between September 18 and November 13 of 1967. At these locations, motorists entering and leaving the study area were stopped and asked questions about both the origin and the destination of the trip in progress at the time. It is frequently not possible to stop and take interviews with drivers of all vehicles passing certain places. All vehicles passing the locations, however, are counted and classified by vehicle type. Of the approximately 35,500 vehicles classified, interviews were obtained for 71 per cent of all trucks and 78 per cent of all cars.

Acknowledgments

This study was conducted by the staff of the Center for Urban Studies, a division of the Dearborn Campus of The University of Michigan. The Director of the Center is Robert B. Smock; the Dean of the Dearborn Campus is Norman R. Scott. Interviewing for this study was supervised by Myra Gross and Caroline Purdy. Data processing was under the supervision of Edward Przebiends. This report was prepared by William M. Ladd

with the assistance of Arthur Katser and Robert Hansen. The report was typed by Margaret Poe.

The study has benefited from suggestions made by Norman Farnum and Kenneth Underwood of the Michigan Department of State Highways.

II. ACCURACY CHECKS

There are several reasons why the number of trips reported in the several surveys may not total the actual number of trips made in a region. Sampling error arises from the fact that the total population was not interviewed. Errors can also arise in the selection of the sample itself, such as dwellings missed in field listings. Respondents may not recall one or more trips made on the preceding day. And not all persons in a household were actually interviewed. Therefore, some trips made by persons in a family other than the respondent may not be reported despite efforts to confirm trips with all persons aged 16 or over. Also, interviewers may record some information incorrectly. Because there are many possible sources of possible error and because of the importance in origin-destination surveys of obtaining accurate counts of trips, it is necessary that survey results be compared with other sources of data. The discussion of accuracy checks presented in this chapter is divided into two parts, population comparisons and trip comparisons.

Population Comparisons

Occupied dwelling units. Undoubtedly, the best check possible of the completeness of the home interview sample is a comparison between total occupied dwelling units as ascertained by the survey and counts of occupied dwelling units obtained from other sources. The following tabulation shows estimates of occupied dwelling units prepared from the survey and estimates prepared by the Michigan Department of State Highways as well as those generated from the 1966 school census in St. Clair County.

Cities	Number of Occupied Dwelling Units: Survey Estimates (Nov. 1967)	School Census Estimates (1966)	Highway Department Estimates (July 1967)	Column 1 ÷ Column 2	Column 1 ÷ Column 3
Port Huron	11,631	12,074	12,170	96.3	95.6
Marysville	1,345	1,246	1,270	107.9	105.9
St. Clair (city)	1,496	1,433	1,440	104.3	103.9
Townships					
Port Huron Twp.	2,243	1,952	1,970	114.9	113.9
Fort Gratiot Twp.	1,969	1,740	1,770	113.1	111.2
Clyde Twp.	697	627	660	111.1	105.6
Kimball Twp.	1,677	1,656	1,670	101.2	100.4
Total	21,058	20,728	20,950	101.6	100.5

The comparisons show that the survey figure is .5 per cent higher than the Highway Department estimate and 1.6 per cent higher than the school census figure. In general, the numbers for cities and townships show that survey estimates are lower for the city of Port Huron but higher elsewhere compared with estimates prepared by the Highway Department and the school census figures. Overall, however, the conclusion can only be that survey estimates are remarkably close to the other estimates. (Three townships within the study area have been excluded from the comparisons just shown: China, East China, and St. Clair. The cordon line bisects China and East China. St. Clair Township was excluded because sampling was conducted on a tract basis and one tract covered both St. Clair and China.)

Population comparisons. Comparisons similar to those just shown for occupied dwelling units were also made on the basis of total population as is shown on the following page.

Cities	Estimates of Total Population: Survey Estimates (Nov. 1967)	School Census Estimates (1966)	Highway Department Estimates (July 1967)	Column 1 ÷ Column 2	Column 1 ÷ Column 3
Port Huron	35,314	37,216	37,400	94.8	94.4
Marysville	5,133	4,605	4,700	111.4	109.2
St. Clair (city)	5,203	4,730	4,750	110.0	109.5
Townships					
Port Huron Twp.	8,198	7,282	7,400	112.5	110.8
Fort Gratiot Twp.	6,656	5,867	6,000	113.4	110.9
Clyde Twp.	2,391	2,226	2,340	107.4	102.2
Kimball Twp.	5,658	6,410	6,500	88.2	87.0
Total	68,553	68,336	69,090	100.3	99.2

Estimates of total population based on the survey are very close to estimates from the other two sources. The survey figure is .3 per cent higher than the estimates prepared from the school census and .8 per cent lower than estimates prepared by the Highway Department. It should be pointed out that little growth was expected between the time of the school census 1966 and the time of the survey. With the exception of Kimball Township, the detail on population by townships and city show the same pattern for population that was observed in the case of occupied dwelling units. It will be recalled that the occupied dwelling unit comparison for Kimball Township was a very close one.

Family income. The Michigan Department of Highways provided an estimate of the 1967 income distribution for the city of Port Huron. Comparing this distribution with that obtained in the survey, a very close correlation is observed. Both distributions approximate the familiar normal curve as is shown in the following tabulation:

Family Income	Percentage Distributions (City of Port Huron) Sample Survey	Highway Department Estimate
Under $3,000	22	23
$3,000-$4,999	12	13
$5,000-$7,999	32	27
$8,000-$9,999	14	15
$10,000 and over	20	22
Total	100	100

Industry. Below is shown a comparison of the distribution of employed persons among industries from the survey with the one prepared from Highway Department estimates.

Industry	Percentage Distributions (Study Area) Survey (Family Heads)	Highway Department (Employed Population)
Agriculture, mining	1	
Construction	8	5
Manufacturing	43	41
Wholesale, retail trade	15	21
Transportation, communications	13	9
Professional and related services	8	8
Finance, insurance and real estate	3	4
Other	9	12
Total	100	100

The degree of correspondence between the two distributions is high. One would expect some differences because one distribution is based on employed heads of families while the other covers the employed population.

It was expected that comparisons using auto ownership would be made. However, estimates of automobile ownership were not available from the Highway Department.

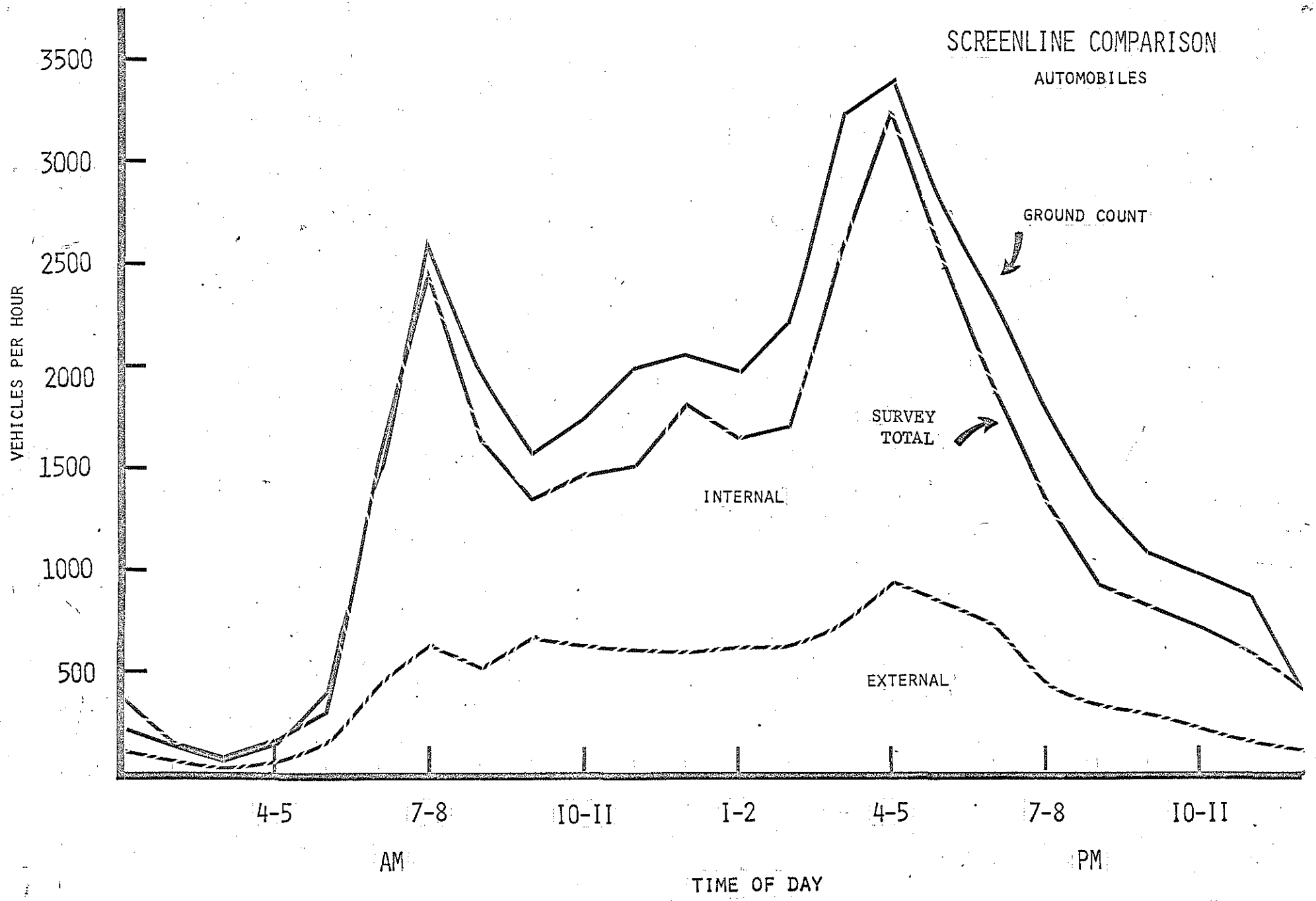
The data in this section indicate that the validity of the survey data had been established. The dwelling unit comparisons show that a good sample of all addresses in the Port Huron study area was selected. The data also suggest that any inaccuracies resulting from the interview situation either on the part of the respondent or the interviewer are quite negligible.

Trip Comparisons

Several trip accuracy checks were run to test the completeness of trip reporting in each of the surveys. The principal check of trip reporting is that of the screenline comparison. A screenline is an artifical boundary which divides the study area into two parts. Counts of vehicles which cross this line can then be compared with the number of trips reported in the surveys. The aggregate screenline comparison is shown below separately for automobiles and trucks.

	Screenline Comparisons		
	Survey Totals	Ground Counts	Per Cent Comparison
Automobiles, taxis	31,492	35,725	88.2
Trucks, buses	4,493	6,456	69.6
All vehicles	35,985	42,181	85.3

In the case of automobiles the tabulation shows that the surveys obtained a high level of reporting of trips as trips reported by respondents amounted to over 88 per cent of screenline crossings, as measured by ground counts. The Chart on the following page shows that there is a very close relationship between the two sets of figures for morning hours through the morning peak. There is a slight departure around noon. The afternoon peak traffic hours are well represented, but survey totals are below screenline crossings in the evening hours. The pattern just


SCREENLINE COMPARISON
AUTOMOBILES
3500
3000
2500
2000
1500
1000
500
VEHICLES PER HOUR
GROUND COUNT
SURVEY TOTAL
INTERNAL
EXTERNAL
4-5
7-8
10-11
1-2
4-5
7-8
10-11
AM
PM
TIME OF DAY

described is rather typical of results in origin-destination surveys. However, the overall comparison of 85.3 per cent is somewhat higher than is usually obtained. The Chart also shows comparisons for automobiles separately for the home interview survey and the external survey.

In the case of truck trips, screenline crossings are considerably higher than the number of truck trips reported in the truck-taxi survey or the external survey. This result is not too uncommon either for origin-destination surveys. It is extremely difficult to get a very good listing of all vehicles garaged in the study area. It is much more likely that trucks were undersampled rather than truck trips underreported in the interviews obtained.

Work-trip comparisons. Another kind of accuracy check involves comparisons between first work trip destinations as reported in the survey, and independent estimates of the number of jobs in particular zones. In the following tabulation first work trips are compared with estimated number of jobs for four zones within the study area.

Zone Number	Highway Department Estimate of Jobs*	Number of First Work Trips
20	661	558
60	1,582	1,244
69	906	912
94	511	364

* Excludes employment in government agencies

In three of the four cases the figure of first work trips is below that of the number of estimated jobs. This is the result expected since it is well known on an average workday attendance figures are below employment figures. People do not go to work on a given day for many reasons including vacation, illness, personal business, and so forth. And, for a considerable number of persons who work Saturdays or Sundays or both, a day or two off

during the week is not uncommon. Information was obtained in the survey about the place of work for each employed person. Comparing the number of work places mentioned with first work trips, it was observed that first work trips amounted to 85.2 per cent of all work places reported. This finding suggests that on an average weekday almost 15 per cent of the employed population DO NOT go to work. If the total number of jobs reported in the tabulation on the preceding page is reduced by 15 per cent to obtain estimated attendance, the resulting comparisons are much better for three of the four zones.

The figures shown for first work trips should be viewed as indicative of general levels but should not be read too closely. The sampling error associated with such relatively low trip volumes is quite high.

Cordon comparison. The cordon check compares the reporting of trips by residents interviewed in the external survey and in one of the internal surveys. Trips which cross the cordon line should be counted at the external stations. These trips should also have been counted in either the home interview survey or the truck-taxi survey. It is this duplication of counts that permits the following comparisons:

	Cordon Trips Made by Study Area Residents
A. Home Interview Survey Truck-Taxi Survey	6,604
B. External Survey	7,072
A/B	.933

The comparison shows that 93 per cent of the cordon crossings counted at external stations were reported in either the home interview survey or the truck-taxi survey. This test demonstrates a high level of reporting in the internal surveys.

III. TRAVEL PATTERNS

This section describes some of the characteristics of trips and trip makers from the home interview survey. Residents of the study area made almost 200,000 trips on an average weekday in the fall of 1967. These trips were made by slightly over 65,000 trip makers living in the Port Huron study area. The first part of this section presents characteristics of trips. The second part presents data which show how the frequency of trip making varies with characteristics of the trip maker.

Characteristics of Trips

Trip purpose. Table 1 shows trip origins and trip destinations according to nine purpose categories. Thirty-seven per cent of all trip origins are from home; slightly over 36 per cent of trip destinations are to home as is shown by column and row percentages, respectively. Work is the second most frequent trip purpose mentioned amounting to about 15 per cent of trip destinations and slightly less than 15 per cent of trip origins. It is interesting to note that there are about 2,500 more home to work trips than there are work to home trips. One possible reason for this finding is that people are probably more likely to walk home from work than they are to walk to work. Another reason is that people tend to go directly from home to work but quite often stop on the way home from work to shop or engage in some kind of personal business. Some of these observations are supported by data shown in the Table; there are more trips from work to shopping than there are from shopping to work. The same is true for personal business.

Mode of travel. Almost 64 per cent of all person travel is accounted for by the driver of the car (Table 2). Passengers account for only

TABLE 1

PERSON TRIPS BY ORIGIN PURPOSE AND DESTINATION PURPOSE

Origin Purpose*	Destination Purpose*										
	Home	Work	Personal Business	Social-Recreation	Eat Meal	Shopping	School	Change Mode	Serve Passenger	Total	Per Cent Of Trips
Home		19,717	9,245	12,131	1,002	11,065	11,320	285	8,827	73,937	37.1
Work	17,123	4,745	1,444	817	2,058	1,491	35	86	1,103	28,902	14.5
Personal Business	8,298	827	2,678	1,413	309	2,775	52	17	673	17,042	8.6
Social-Recreation	13,655	431	765	4,702	492	1,521	259	120	1,315	23,260	11.7
Eat Meal	1,260	1,936	284	464	17	372	208	9	241	4,791	2.4
Shopping	13,742	468	1,427	1,822	344	4,444	43	9	765	23,064	11.6
School	10,184	129	267	531	337	190	95	52	165	11,950	5.9
Change Mode	199	87		128	8	61	51	17	9	560	.3
Serve Passenger	7,639	1,524	906	1,239	283	1,206	251	9	2,692	15,749	7.9
Total	72,445	29,864	17,016	23,247	4,850	23,125	12,314	604	15,790	199,275	
Per Cent Of Trips	36.4	15.0	8.5	11.7	2.4	11.6	6.2	.3	7.9		

* Trip records for which purpose was not ascertained have been deleted from the table. The remaining tables in the section are also shown without the "N.A." category.

TABLE 2

PERSON TRIPS BY MODE OF TRAVEL AND DESTINATION PURPOSE

Mode Of Travel	Destination Purpose									Total	Per Cent Of Trips
	Home	Work	Personal Business	Social-Recreation	Eat Meal	Shopping	School	Change Mode	Serve Passenger		
Auto Driver	44,343	23,706	12,469	11,060	3,333	16,349	1,419	156	14,406	127,241	63.8
Auto and Taxi Passenger	20,368	4,313	4,425	11,895	1,466	6,543	3,965	259	1,357	54,609	27.4
Truck Passenger	94	95	17	35	9	17		9		276	.1
Bus Passenger	1,991	215	85	85		172	1,537	34	17	4,136	2.1
School Bus Passenger	5,176	9		86		34	5,322	60		10,687	5.4
Air and Railroad Passenger		43								43	
Walk or Other To Work	480	1,483	17	86	43	9	70	86	9	2,283	1.1
Total	72,453	29,864	17,013	23,247	4,851	23,124	12,313	604	15,789	199,275	

slightly over 27 per cent of total person travel. For two of the principal purpose categories (social recreation and school), the number of passengers exceed drivers. These are the two expected since, of the categories shown, social recreation is most often a family oriented activity. The typical journey by car to school is that of the mother driving one or more of her children. There are virtually no truck, air, or rail passenger trips recorded in the survey.

Land use. As would be expected about one-half of all trips originate at residential land (Table 3). Trade and services are the next largest attractors of trips as almost 20 per cent of trip destinations are to places covered by each of these two categories. Of all trips, the greatest number are between residential and services land uses, followed closely by residential trips; that is, trips made from residential land to residential land.

Table 4 shows that for all destination land uses the number of auto driver trips exceeds the number of passenger trips.

Table 5 shows destination purpose by destination landuse. The greatest number of work trips are to manufacturing and the second largest number go to services. Almost one-half of social recreation trips are to residential land. A large portion of these trips are visits with friends or relatives. (See Appendix Table A-3 for trip counts classified according to specific land use.)

Time of day. That work trips are a principal component of peak-hour traffic should surprise no one (Table 6). It may surprise some readers, however, that school trips exceed work trips during the two a.m. peak-hours. Social recreation trip destinations are highest between six and nine p.m.

TABLE 3

PERSON TRIPS BY ORIGIN AND DESTINATION LAND USE

Origin	Destination Land Use: Residential	Manufacturing	Transportation, Communication	Trade	Services	Cultural, Educational	Resource Production	Vacant Land	Total	Per Cent Of Trips
Residential	26,872	8,850	3,312	21,272	31,076	3,324	645	197	95,660	48.0
Manufacturing	8,117	225	103	1,308	609	52	224	9	10,552	5.3
Transportation, Communication	2,952	104	454	791	448	17	60	8	4,842	2.4
Trade	24,507	673	499	8,417	3,503	511	734	26	38,887	19.6
Services	27,710	637	447	6,327	4,943	439	924	59	41,520	20.8
Cultural, Educational	3,311	77	52	540	276	69	69	8	4,402	2.2
Resource Production	568	276	60	585	1,149	52	190	17	2,906	1.5
Vacant Land	173		16	26	51	8	9	42	325	.2
Total	94,339	10,851	4,961	39,180	42,062	4,471	2,854	366	199,275	

TABLE 4

PERSON TRIPS BY MODE OF TRAVEL AND DESTINATION LAND USE

Mode Of Travel	Destination Land Use: Residential	Manufacturing	Transportation, Communication	Trade	Services	Cultural, Educational	Resource Production	Vacant Land	Total
Auto Driver	60,380	8,314	3,402	27,049	23,313	2,677	1,714	393	127,242
Auto and Taxi Passenger	26,495	2,066	1,284	11,388	10,910	1,682	638	146	54,609
Truck Passenger	112	17	26	60	43		9	9	276
Bus Passenger	2,034	9	26	181	1,785	77	26		4,138
School Bus Passenger	4,684		9	35	5,484	26	449		10,687
Air and Railroad Passenger			9	17	17				43
Walk or Other To Work	635	446	206	449	510	9	17	9	2,281
Total	94,340	10,852	4,962	39,179	42,062	4,471	2,853	557	199,275
Per Cent Of Trips	47.3	5.4	2.5	19.7	21.1	2.2	1.4	.3	

TABLE 5

PERSON TRIPS BY DESTINATION PURPOSE AND DESTINATION LAND USE

Destination Purpose	Destination Land Use: Residential	Manufacturing	Transportation, Communication	Trade	Services	Cultural, Educational	Resource Production	Vacant Land	Total
Home	69,408	17	9	224	405	70	2,320		72,453
Work	2,243	9,154	3,057	6,206	8,267	362	249	221	29,864
Personal Business	2,689	335	463	2,477	10,593	285	87	43	17,015
Social-Recreation	11,544	208	447	3,558	4,069	3,207	130	59	23,247
Eat Meal	2,045			2,529	200	69	8		4,851
Shopping	26	104	130	22,072	758		34		23,124
School	18			35	12,236	25			12,313
Change Mode	43	52	180	130	162		9	18	603
Serve Passenger	6,315	981	676	1,949	5,372	454	17	26	15,789
Total	94,339	10,851	4,961	39,180	42,062	4,471	2,854	367	199,275
Per Cent Of Trips	47.4	5.4	2.5	19.7	21.1	2.3	1.4	.2	

TABLE 6

TIME OF DEPARTURE BY DESTINATION TRIP PURPOSE

(Weighted Percentage Distribution of Residents' Trips)

Hour of Departure	Total	Trip Purpose									Number Of Person Trips	Per Cent Of All Trips
		Home	Work	Personal Business	Social-Recreation	Eat Meal	Shopping	School	Change Mode	Serve Passenger		
12 A.M.	100	76	1	2	11	2	2			6	1,879	1
01 A.M.	100	66	1		20	4	3			6	772	
02 A.M.	100	70	2	2	9	5				12	486	
03 A.M.	100	95	5								163	
04 A.M.	100	29	58							13	325	
05 A.M.	100	7	73	1	4	1				14	1,224	1
06 A.M.	100	5	79	3	1	1		1	1	9	5,294	3
07 A.M.	100	8	41	2	2		1	35	1	10	14,919	7
08 A.M.	100	9	29	6	4		2	40		10	13,081	7
09 A.M.	100	14	25	18	13	1	19	3		7	6,019	3
10 A.M.	100	21	14	22	11	1	25	1		5	7,043	4
11 A.M.	100	27	12	14	11	8	16	4		8	9,327	5
12 P.M.	100	25	18	11	9	12	14	4		7	11,797	6
01 P.M.	100	22	17	18	10	3	22	2		6	9,280	5
02 P.M.	100	42	15	10	9	1	15			8	12,989	6
03 P.M.	100	57	7	9	9		10			8	22,033	11
04 P.M.	100	49	6	9	11	1	14			10	17,904	9
05 P.M.	100	56	4	6	10	3	13			8	14,783	7
06 P.M.	100	36	4	9	24	3	15	1		8	12,094	6
07 P.M.	100	28	4	10	32	2	17	1		6	11,675	6
08 P.M.	100	46	2	5	23	3	14	1		6	9,519	5
09 P.M.	100	61	2	2	16	2	10			7	7,101	4
10 P.M.	100	61	13	2	11	1	3			9	4,948	2
11 P.M.	100	69	8	2	9	1	1	—	—	10	3,920	2
Total	100	36	15	9	12	2	12	6		8	199,275	100

Characteristics of Trip Makers

Age. The frequency of travel first increases then decreases with age. The highest trip average is shown for persons aged 40 to 49 as persons in this age category make on the average 4.1 trips per day. The data are presented below:

Age	Average Number of Person Trips
5-9	1.6
10-19	2.5
20-29	3.9
30-39	4.0
40-49	4.1
50-59	3.3
60-69	3.0
70-79	1.6
80 and over	.8
Average	3.0
Total Persons 5 and older	65,670

Trip information in tabulations in this section are based on total persons aged 5 and older. Trip information is not recorded for children under five.

Sex. Males are somewhat more likely to make a trip on a typical fall day than is true of females as is shown in the following tabulation:

Sex	Average Number of Person Trips
Female	2.9
Male	3.2
Average	3.0
Total Persons 5 and older	65,670

The male population in the Port Huron area averages 3.2 person trips per person whereas the corresponding figure for the female population is 2.9.

Marital status. Married persons on the average make more trips than persons in other marital status groups.

Marital Status	Average Number of Person Trips
Divorced	3.3
Married	3.7
Single	2.3
Widowed	1.8
Average	3.0
Total Persons 5 and older	65,670

The lowest trip rate figure is observed in the case of the widows or widowers. No doubt this result reflects the influence of age.

Occupation. As is shown below, craftsmen and foremen are the most mobile of the occupational groups.

Occupation	Average Number of Person Trips
Professional workers	3.9
Semi-professionals	4.4
Managers, proprietors, officials	4.1
Clerical, kindred workers	4.1
Sales	4.3
Craftsmen, foremen	4.6
Operatives	4.0
Private household, service workers	4.3
Laborers	4.1
Farmers	3.7
Not in labor force	2.3
Average	3.0
Total Persons 5 and older	65,670

The least mobile are housewives, students, and others not in the labor force. Farmers are the least mobile of the employed population, averaging 3.7 person trips.

APPENDIX A

ZONAL DATA AND DETAILED LAND USE

TABLE A-1

SUMMARY OF EXPANDED HOUSING UNIT DATA

Zone	Population				Occupied Housing Units	Persons/ Housing Units	Autos Available	Licensed Drivers	Total Person Trips	Person Trips/ Housing Units
	Housing Units	Group Quarters	Total Resident	Visitors						
001	17		17		9	1.89	9	9	52	5.9
002										
003	157	9	166		122	1.29	52	122	313	2.6
004	96		96	9	61	1.57	35	70	574	9.4
005	174		174		96	1.81	17	70	218	2.3
006	686		686		255	2.69	202	343	1,382	5.4
007	148		148	35	52	2.85	44	70	400	7.7
008	861	17	878		322	2.67	244	383	1,749	5.4
009	931		931		357	2.61	331	505	2,184	6.1
010										
011	1,469		1,469		516	2.85	570	828	3,765	7.3
012	1,540		1,540	18	481	3.20	614	872	3,765	7.8
013	1,294		1,294		387	3.34	466	651	3,802	9.8
014	1,830		1,830	9	660	2.77	810	1,074	6,468	9.8
015	2,801		2,801	52	957	2.93	1,053	1,496	6,847	7.2
016	625		625		246	2.54	264	361	1,663	6.8
017	1,285		1,285	44	449	2.86	528	678	5,746	12.8
018	598		598		238	2.51	246	299	1,223	5.1
019	991		991	25	319	3.11	344	454	2,453	7.7
020	1,235		1,235		403	3.06	504	722	5,023	12.5

(continued)

(continued)

Zone	Population			Visitors	Occupied Housing Units	Persons/ Housing Units	Autos Available	Licensed Drivers	Total Person Trips	Person Trips/ Housing Units
	Housing Units	Group Quarters	Total Resident							
021	596		596	8	134	4.45	160	269	1,084	8.1
022	774		774		235	3.29	305	426	2,158	9.2
023	766		766		238	3.22	317	449	2,561	10.8
024	1,311		1,311		405	3.24	572	862	4,752	11.7
025	926		926		294	3.15	374	436	2,350	8.0
026	596		596		160	3.73	227	319	1,411	8.8
027	1,445		1,445		555	2.60	645	851	4,773	8.6
028	504	8	512	59	118	4.27	126	168	1,109	9.4
029	1,478	42	1,520	17	580	2.55	580	781	4,267	7.4
030	2,141	69	2,210	43	636	3.37	808	1,230	6,390	10.1
031	138		138		43	3.21	77	69	542	12.6
032	1,505		1,505	9	464	3.24	731	937	5,263	11.3
033	1,342		1,342		404	3.32	645	817	4,352	10.8
034	52		52		26	2.00	52	43	241	9.3
035	112		112		26	4.31	34	60	258	9.9
036	1,376		1,376	34	386	3.56	613	823	4,343	11.3
037	302		302		92	3.28	160	218	1,210	13.2
038	344		344		101	3.41	84	168	680	6.7
039	848		848	8	235	3.61	336	412	1,907	8.1
040	1,394		1,394		378	3.69	521	697	4,074	10.8

(continued)

(continued)

Zone	Population: Housing Units	Population: Group Quarters	Population: Total Resident	Visitors	Occupied Housing Units	Persons/ Housing Units	Autos Available	Licensed Drivers	Total Person Trips	Person Trips/ Housing Units
041	602		602		138	4.36	241	318	1,539	11.2
042	504		504		134	3.76	193	252	1,193	8.9
043	1,754		1,754	17	499	3.52	765	1,023	4,386	8.8
044	1,445		1,445	34	458	3.16	683	848	3,302	7.2
045	1,247		1,247	43	370	3.37	619	757	4,395	11.9
046	903		903		258	3.50	404	490	2,374	9.2
047	705		705		215	3.28	353	430	2,219	10.3
048	490		490		129	3.80	232	258	1,410	10.9
049	318	17	335		112	2.84	155	215	774	6.9
050	224		224		77	2.91	120	146	636	8.3
051	869		869		249	3.49	404	447	1,823	7.3
052	370		370		103	3.59	206	215	1,591	15.5
053	120		120		43	2.79	69	77	335	7.8
054	1,204		1,204	17	327	3.68	602	662	3,681	11.3
055	490		490		146	3.36	267	310	1,195	8.2
056	1,471		1,471	9	490	3.00	688	894	5,031	10.3
057	292		292		77	3.79	86	112	800	10.4
058	206		206		52	3.96	43	60	533	10.3
059	1,299		1,299		335	3.88	301	396	1,883	5.6
060	1,029		1,029		327	3.15	404	507	2,003	6.1

(continued)

(continued)

Zone	Population: Housing Units	Population: Group Quarters	Population: Total Resident	Visitors	Occupied Housing Units	Persons/ Housing Units	Autos Available	Licensed Drivers	Total Person Trips	Person Trips/ Housing Units
061	791		791		244	3.24	286	395	2,066	8.5
062	991		991		235	4.22	244	370	2,008	8.6
063	235		235	42	67	3.51	92	134	756	11.3
064	1,328		1,328	41	303	4.38	517	722	3,624	12.0
065	189	8	197		49	3.86	74	107	476	9.7
066	959		959		287	3.34	402	517	2,780	9.7
067										
068	2,435		2,435		615	3.96	992	1,263	6,043	9.8
069	90		90		41	2.20	41	66	205	5.0
070	16		16		8	2.00				
071	66		66		25	2.64	49	49	189	7.6
072	426		426		157	2.71	218	278	1,166	7.4
073	270		270		96	2.81	122	183	539	5.6
074	232		232		61	3.80	104	121	519	8.5
075	322		322		78	4.13	131	200	705	9.0
076	157		157		44	3.57	44	87	313	7.1
077	396		396		138	2.87	172	215	946	6.9
078										
079	241		241		69	3.49	69	103	568	8.2
080	327		327		103	3.17	146	155	671	6.5

(continued)

(continued)

Zone	Population				Occupied Housing Units	Persons/ Housing Units	Autos Available	Licensed Drivers	Total Person Trips	Person Trips/ Housing Units
	Housing Units	Group Quarters	Total Resident	Visitors						
081	151		151		34	4.44	42	59	580	17.1
082	1,643		1,643	52	482	3.41	671	912	4,713	9.8
083	413		413		129	3.20	215	232	946	7.3
084	697		697	9	189	3.69	327	387	1,462	7.7
085	628		628		172	3.65	241	344	1,935	11.3
086	444	17	461	104	131	3.39	183	278	1,270	9.7
087	165		165		35	4.71	61	78	287	8.2
088	296		296		78	3.79	104	139	800	10.3
089	339		339		78	4.35	131	174	827	10.6
090	313		313		61	5.13	104	148	896	14.7
091	313		313		78	4.01	104	165	661	8.5
092	261		261		87	3.00	122	165	687	7.9
093	261	26	287		78	3.35	139	174	1,061	13.6
094	1,157		1,157		313	3.70	365	557	2,828	9.0
095	592		592		183	3.23	244	357	1,444	7.9
096	2,575		2,575	52	740	3.48	905	1,331	6,377	8.6
097	531	17	548		165	3.22	278	365	1,810	11.0
098	261		261	52	61	4.28	96	122	696	11.4
099	322		322		78	4.13	113	165	1,166	15.0
Total	73,107	230	72,877	842	22,250	3.27	28,683	39,337	199,275	8.9

TABLE A-2

PERSON TRIP DESTINATIONS BY DESTINATION PURPOSE

-RESIDENTS-

	Destination Purpose									
Zone	Home	Work	Personal Business	Social-Recreation	Eat Meal	Shop-ping	School	Change Mode	Serve Passenger	Total
001	17	888	291	222	61	2,489	18	9	518	4,513
002		818	507	368	42	1,863	26	9	415	4,048
003	131	1,436	982	319	104	379	9	17	493	3,870
004	183	524	310	551	198	267	42	9	259	2,343
005	70	678	516	1,070	96	120	9	26	206	2,791
006	598	398	241	120	9	156	929	9	259	2,719
007	148	364	257	198	8	146			165	1,286
008	722	380	462	655	105	893	59	51	489	3,816
009	713	191	451	468	295	78	347		356	2,899
010		820	621	565	34	138	9	9	147	2,343
011	1,228	268	235	320	52	149	8		279	2,539
012	1,380	157	103	244	71	263		18	139	2,375
013	1,267	259	275	361	88	112	181		309	2,852
014	1,998	87	293	409	114	141	9		251	3,302
015	2,679	183	312	540	61	216	102		365	4,458
016	607	207	69	145	35	43	52		77	1,235
017	1,848	802	790	798	184	113	195	9	611	5,350
018	440	589	662	328	61	172	9	9	129	2,399
019	899	147	258	344	42	446			180	2,316
020	1,571	793	155	361	42	93		8	336	3,359

(continued)

(continued)

Zone	Destination Purpose: Home	Work	Personal Business	Social-Recreation	Eat Meal	Shopping	School	Change Mode	Serve Passenger	Total
021	504	52	17	51	8	52	25		104	813
022	740	2,213	199	439	52	163		26	377	4,209
023	853	580	456	378	104	449	1,269	26	632	4,747
024	1,690	140	441	356	105	287	17		224	3,260
025	917	344	424	248	94	78	8		157	2,270
026	588	165	85	255		87	1,026	17	318	2,541
027	1,677	112	77	248	60	34	302		292	2,802
028	361	353	180	617	488	1,107			180	3,286
029	1,529	188	129	343	59	84			233	2,565
030	2,098	276	379	652	112	395	343	17	608	4,880
031	172	446	386	205	112	2,449			198	3,968
032	1,763	94	51	240	60	9	9	9	206	2,441
033	1,531	309	51	274	86	34			225	2,510
034	69	120	95	52					35	371
035	112	353	94	121	52	241	1,619	25	471	3,088
036	1,596	77	103	266	69	17			85	2,213
037	470	78	26	86	51	43	92	18	69	933
038	270	604	129	406	318	4,100		17	224	6,068
039	731	267	198	298	8	171	43	26	104	1,846
040	1,663	68	131	248	8	171	321	9	77	2,696

(continued)

(continued)

Zone	Destination Purpose									
	Home	Work	Personal Business	Social-Recreation	Eat Meal	Shopping	School	Change Mode	Serve Passenger	Total
041	559			9	9	8			9	594
042	487	18	34	43	8				26	616
043	1,772	259	258	440	17	543	671	17	259	4,236
044	1,256	197	51	111	26	26			112	1,779
045	1,574	52	25	113	43	26	413	9	43	2,298
046	834	146	94	346	17	121			130	1,688
047	843	34	35	25					34	971
048	499	52	9	266	17	26		9	78	956
049	284	42	9	78	9	60	26		17	525
050	258	35	51	26		9			17	396
051	688	44	26	60					9	827
052	421	18	9	344					60	852
053	129	9	9	69					0	216
054	1,324	86	26	112		52			43	1,643
055	482	43		52	17	34	17		34	679
056	1,849	458	451	239	26	9	9		209	3,250
057	318	103	68	42	9	8	207	9	78	842
058	232	335	17	87	9	26			26	732
059	782	189	60	255	43	34	51		103	1,517
060	885	1,561	238	245	17	366	43	9	337	3,701

(continued)

(continued)

Zone	Destination Purpose									
	Home	Work	Personal Business	Social-Recreation	Eat Meal	Shop-ping	School	Change Mode	Serve Passenger	Total
061	764	102	33	136	17		9		103	1,164
062	874	655	101	43		18	109	9	105	1,914
063	269	60	8	50		33			25	445
064	1,337	33	59	311	16	9	163		58	1,986
065	189	452	25	92	112	76			85	1,031
066	910	494	226	359	58	195	598	8	376	3,224
067		152	343	174	9	754	76	17	92	1,617
068	2,017	170	108	301	58	83	8		210	2,955
069	82	1,057	151	50	42				119	1,501
070										
071	74	403	34	43				9	34	597
072	409	61	61	78	35	17			18	679
073	226	26		26		9			94	381
074	225		18	17					9	269
075	305	43	9	25	8	9			25	424
076	131	60	26	60					9	286
077	353	51	25	76					44	549
078								8		8
079	232	26	17	68					34	377
080	249	9	35	52						345

(continued)

(continued)

Zone	Destination Purpose: Home	Work	Personal Business	Social-Recreation	Eat Meal	Shopping	School	Change Mode	Serve Passenger	Total
081	218	9	17	68		9				321
082	1,823	120	223	327	52	180	300		129	3,154
083	353	17	52	78	17	43			17	577
084	550	43	34	137		34	342	9	94	1,243
085	722	34	86	111		26			52	1,031
086	531	26	52	26		17			26	678
087	139		26	17				17		199
088	348	26	17	70			26		44	531
089	339	70	9	61	9				8	496
090	313	17	17	17					9	373
091	261	26	43	87	9	9			17	452
092	305	43	35	35		9			26	453
093	383	213	17	52				26	34	725
094	1,114	529	70	122	44	208		17	157	2,261
095	530	216	87	234	26	17			61	1,171
096	2,253	581	954	798	104	1,181	1,122	17	617	7,627
097	609	119	61	52	95				94	1,030
098	270	26	26	95	9	9	426		200	1,061
099	400	9	35	9	17	17	17		17	521
Total	72,453	29,864	17,015	23,247	4,851	23,124	12,313	6,030	15,789	199,275

TABLE A-3

PERSON TRIP DESTINATIONS BY DETAILED LAND USE

-RESIDENTS-

Residential	
Single family	85,432
Two family	4,963
Multiple family: walk-up	2,298
Trailer parks and camps	848
Hotels, motels, resorts	789
Total	94,330
Manufacturing	
Food and kindred products	753
Textile mill products	95
Apparel and finished products	75
Lumber and wood: non-furniture	138
Furniture and fixtures	95
Paper and allied products	920
Printing, publishing, and allied industries	437
Chemicals and allied products	330
Petroleum refining and related industries	139
Rubber and miscellaneous plastic products	503
Stone, clay, and glass products	179
Primary metal industries	932
Fabricated metal products	6,145
Professional, scientific, and controlling instruments	34
Miscellaneous manufacturing	52
Total	10,827

(continued)

(continued)

Transportation, Communication, and Utilities	
Railroad, rapid rail transit, and street railway transportation	1,068
Motor vehicle transportation	294
Air craft transportation	34
Marine craft transportation	43
Highway and street right-of-way	970
Automobile parking	156
Communications	688
Utilities	1,648
Other transportation, communication, and utilities not elsewhere classified	61
Total	4,962
Trade	
Wholesale trade	697
Retail trade	
Building materials and hardware	1,784
General merchandise	10,212
Food	10,893
Automotive, marine craft, aircraft, and accessories	4,089
Apparel and accessories	852
Furniture, home furnishings, and equipment	976
Eating and drinking	5,406
Other retail trade not elsewhere classified	4,262
Total	39,171
Services	
Finance, insurance, and real estate services	3,892
Personal services	3,520
Business services	855
Repair services	713
Professional services	4,893
Contract construction services	534
Governmental services	3,082
Educational services	19,737
Miscellaneous services	4,836
Total	41,563

(continued)

(continued)

Cultural, Entertainment, and Recreational	
Cultural activities	302
Public assembly	1,460
Amusements	86
Recreational activities	2,008
Parks	94
Other cultural, entertainment, and recreational activities not elsewhere classified	463
Total	4,413
Resources Production and Extraction	
Agriculture and related activities	2,768
Mining activities and related services	43
Total	2,811
Undeveloped Land and Water Areas	
Under construction	130
Total	130
Grand Total	199,275

APPENDIX B

SAMPLING ERROR AND STATISTICS OF OPERATION

TABLE B-1

RESPONSE RATES AND EXPANSION FACTORS BY TRACT

Tract	Response Rate	Expansion Factor
6000, 6001	93.0	8.6
6002	95.3	8.4
6003	91.6	8.7
6004	91.1	8.8
6005, 6006	92.0	8.7
6007	91.1	8.8
6008	89.6	8.9
6009, 6010	93.2	8.6
6101, 6107	93.4	8.6
6108	95.7	8.4
6109	97.6	8.2
6102, 6106, 6110	93.0	8.6
6111, 6112, 6114	92.1	8.7
6113	92.5	8.7
Total	93.0	8.6

TABLE B-2

TRACT TO ZONE CONVERSION

Civil Divisions	Tracts	Zones
Port Huron	6001-6010	1-20, 22-25, 27-34, 56-60
Burtchville Twp.	6101	part of 54, part of 53
China Twp.	6112	90-92
Clyde Twp.	6106	48, 51, 52, part of 53, part of 55
E. China Twp.	6114	93
Fort Gratiot	6107	35, 43-47, 54
Grant	6102	part of 53, part of 55
Kimball	6110	41, 49, 50, 77, 78, 79, 80, 82-85
Marysville	6109	64-71
Port Huron Twp.	6108	21, 26, 36-40, 42, 61-63, 81
St. Clair	6113	94-99
St. Clair Twp.	6112	72-76, 86-89

TABLE B-3

CLASSIFIED TWENTY-FOUR-HOUR TRAFFIC VOLUMES AT ALL EXTERNAL STATIONS

External Station	Total	Autos & Taxis	Trucks	Buses, Other
51 (100) U.S.-25, North	3,947	3,276	652	19
52 (101) Blue Water Bridge	4,665	4,230	409	26
53 (102) M-29	4,156	3,433	699	24
54 (107) I-94	6,358	5,162	1,173	23
55 (108) Gratiot (old U.S.-25)	2,948	2,021	914	13
56 (112) M-21	4,267	3,332	912	23
57 (114) M-136	794	661	133	
58 (117) State	639	522	104	13
59 (115) Wildcat Road	1,132	902	215	15
60 (116) North Road	895	725	168	2
61 (103) King Road	1,536	1,220	267	49
62 (104) Indian Trail	275	181	92	2
63 (105) St. Clair Highway	822	611	202	9
64 (106) Division Road	1,587	1,258	317	12
65 (109) Rattle Run Road	374	288	76	10
66 (110) Smith Creek Road	442	373	67	2
67 (111) Sparling Road	594	454	118	22
68 (113) Bryce Road	78	60	16	2
Total	35,509	28,709	6,534	266

TABLE B-4

CLASSIFIED TWENTY-FOUR-HOUR TRAFFIC VOLUMES AT SCREENLINE POINTS

Screenline Points		Total	Autos & Taxis	Trucks	Buses, Other
401	Eckles at G.T.W.R.R.	105	83	16	6
402	Sunnyside Road, South of Flinchbaugh Road	185	133	43	9
403	Bartlett Road, between Howard and Griswold	2,157	1,671	468	18
404	Allen Road, between Howard and Griswold	403	335	62	6
405	Range Road, North of Howard	1,182	929	240	13
406	Griswold Road, East of Range Road and West of C & O R.R.	2,590	2,245	322	23
407	I-94, South of Griswold	6,294	5,102	1,168	24
408	Michigan, South of Griswold	1,171	954	212	5
409	24th Street, North of Upton	10,615	8,805	1,755	55
410	16th Street, between Beard and Cedar*	503	416	87	
411	10th Street, between Johnstone and Beard	7,833	7,044	782	7
412	Military (M-29), South of Johnstone and 7th Street intersection	10,003	8,868	1,093	42
	Total	43,041	36,585	6,248	208
	Adjusted Totals**	42,181	35,725	6,248	208

* The volume reported for this point is lower than usual because of construction underway at the time counts were taken.

** The total count of autos was reduced slightly by the Michigan Department of State Highways to take into account seasonal variation between the time counts were obtained and the interviewing period for the Home Interview Survey.

APPENDIX C

QUESTIONNAIRES

UNIVERSITY OF MICHIGAN
DEARBORN CAMPUS
CENTER FOR URBAN STUDIES

DETROIT REGIONAL TRANSPORTATION AND LAND USE STUDY—HOME INTERVIEW

Address_____ Date of Interview_____

Interviewer's Name_____ Interviewer's No._____

Deck No. 5 1 2 (1 2 3) Interview Number _____ (4 5 6 7 8 9)

DAY OF TRAVEL_____

Q. 1. (INTERVIEWER—CHECK ONE)

☐ Housing Unit—(Continue with Q. 2.)
☐ Group Quarter—(Go to Listing Box. Change the 1 under Family Unit Number to a G. Fill in box for this person only.)

Q. 2. Altogether how many people live in this household? ..... "Now I would like to ask you a few questions about these people. Let's start with the head of the household. (Fill in box below for all persons in the household.)

Sex: M-Male, F-Female
Marital Status: S-Single, M-Married, W-Widowed, D-Divorced or Separated
Current Work Status: E-Employed, U-Unemployed, R-Retired, O-Other
Self-employed? Y-Yes, N-No
Driver's License? Y-Yes, N-No

A Persons by Relationship to Head	B Person Number	C Sex	D Age	E Family Unit Number	F Marital Status	G Work Status	H Principal Occupation in 1965	I Kind of Business	J Self-Employed	K Driver's License	L Total Number of Trips
Head of Housing Unit	01			1							
	02										
	03										
	04										
	05										
	06										
	07										
	08										
	09										
	10										
	11										
	12										
	(10 11)	(12)	(13 14)	(15)	(16)	(17)	(18 19)	(20)	(21)	(22)	(23 24)

INTERVIEWER: A family unit consists of all persons related by blood, marriage, or adoption. All persons NOT so related belong in unrelated secondary family units.

ADMINISTRATIVE RECORD

CALLS		APPOINTMENTS	
Date	Time	Date	Time

RESPONDENTS (Person Numbers)

IN PERSON_____

BY TELEPHONE_____

INTERVIEW SUBMITTED

☐ COMPLETE
☐ INCOMPLETE

REASON

Deck Number 5 1 3 (1 2 3) Interview Number (4 5 6 7 8 9)

INTERNAL TRIP REPORT

FOR PERSONS 5 YEARS OLD AND OVER
TRAVEL DAY: 4:00 A.M. TO 4:00 A.M.

MODE OF TRAVEL
1—Auto Driver
2—Auto Passenger
3—Truck Passenger
4—Taxi Passenger
5—Bus Passenger
6—School Bus Pass.
7—Railroad Pass.
8—Air Passenger
9—Other to work

PARKING
1—Free
2—Paid—Meter
3—Paid—Other

PURPOSE (Destination)
1—Home
2—Work
3—Pers. Bus.—Medical
4—Social—Recreation
5—Eat Meal
6—Shopping
7—School
8—Change Mode
9—Serve Passenger

A Person Number	B Trip Number	C Mode of Travel	Auto Driver Only: D Number in Car (Include Driver)	Auto Driver Only: E Parking	F Time Left	G Time Arrived	H Where did . . . (person's) first trip begin? Where did . . . go? Then where did . . . go? etc. (Interviewer: Repeat sequence for each person starting with trip 00.)	I Purpose	J Land Use
	0 0								
	0 1								

HOUSEHOLD REPORT

Deck Number [5][1][1] (1 2 3)

Interview Number [ ][ ][ ][ ][ ][ ] (4 5 6 7 8 9)

Travel Date (month) (date) [ ][ ][ ][ ] (10 11 12 13)

1. How many cars are owned or regularly used by the people in this household? ..... [ ] 14

IF ANY: 2. How many of these cars are registered at another address (e.g. company owned cars)? ..... [ ] 15

3. Does . . . (head) own this home or pay rent or what? ..... 1—Buying or Own | 2—Rent | 3—Other ..... [ ] 16

4. How long has . . . (head) lived at this address?

1. 7 weeks or less | 2. 8 to 51 weeks | 3. 1 to 4 years | 4. 5 to 10 years | 5. Over 10 years ..... [ ] 17

5. Is this your usual place of residence? ..... 1—Yes | 2—No ..... [ ] 18

IF NO: 6. Address: _____
(Street No.) (Street Name) (City or Town) (County or State)

7. How many grades of school did . . . (head) complete?

1. 8 or less | 2. 9 to 11 | 3. H. S. Grad. | 4. Some College | 5. College Grad. ..... [ ] 19

8. Would you tell me how much income you and your family will receive during the calendar year, 1965? I mean before taxes. ..... [ ] 20

1—under $2,000	4—$4,000-$4,999	7—$7,000-$7,999	A—$10,000-$14,999
2—$2,000-$2,999	5—$5,000-$5,999	8—$8,000-$8,999	B—$15,000-$19,999
3—$3,000-$3,999	6—$6,000-$6,999	9—$9,000-$9,999	C—$20,000 or more

9. Respondent's telephone number _____

BY OBSERVATION AFTER INTERVIEW:

10. Race ..... 1—White | 2—Negro | 3—Other ..... [ ] 21

11. Type of Structure ..... [ ] 22

OFFICE ONLY:

12. Total Number of Persons ..... [ ][ ] 23-24

13. Family life cycle ..... [ ] 25

TYPE OF STRUCTURE

one unit high
1. Single house detached
2. Duplex: 2 units, common wall
3. Row: 3 or more units, common wall

two or more units high
4. 2-4 units attached (flats and incomes)
5. 5-8 units attached

multiple: nine or more units attached
6. 3 or less floors
7. 4-8 floors
8. 9 or more floors

9. Rooming or boarding house (5 or more roomers)
A. Hotel or Motel
B. Trailer
C. Other (specify):
D.
E.

Family 2	Family 3	Family 4
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

[ ][ ][ ]

Deck Number 5 1 3 (1 2 3)

Interview Number (4 5 6 7 8 9)

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WORK PLACE REPORT

Where does (each member of the household) work? What is the address?

Person Number	Location
0 1 W P	
0 2 W P	
0 3 W P	
0 4 W P	
0 5 W P	
0 6 W P	
0 7 W P	
0 8 W P	
0 9 W P	
1 0 W P	
1 1 W P	
1 2 W P	

10 11 12 13 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

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DETROIT REGIONAL TRANSPORTATION AND LAND USE STUDY—EXTERNAL INTERVIEW

INBOUND

Interviewer's Name _____ Sheet ____ of ____ Sheets

Deck No. 514 (1 2 3) Station Number (4 5) Travel Date (month) (date) (6 7 8 9) Hour-Period Beginning (10 11 12)

A. Interview Number	B. Veh. Type	C. No. in Veh.	ORIGIN D. At what address did this trip begin?	E. Trip Purpose	F. Land Use	DESTINATION G. At what address will trip end?	H. Trip Purpose	I. Land Use	J. Garaged at	Thru Tps. K. Rt. of Exit	Thru Tps. L. Pur. of Stop	TRUCKS M. Principal Commodity Carried
13 14 15	16	17	18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	37	38 39	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69		70 71	72	73	74	75 76 77 78

1. Passenger Car—Mich.
2. Passenger Car—Non Mich.
3. Pick-up, Panel or Single Unit—Single Rear Tire
4. Single Unit—Dual Rear Tires
5. Single Unit—Three or more Axles
6. Combinations
7. Bus
8. Taxi

PASSENGER CARS (Column E and H)
1. Home
2. Work
3. Pers. Bus.—Medical
4. Social—Recreation
5. Eat Meal
6. Shopping
7. School
8. Change Mode
9. Serve Passenger

TRUCK TRANSPORTATION (Column E, H and L)
1. Pick up Goods
2. Deliver Goods
3. Pick and Deliver Goods
4. Service and other work connected business
5. Garaging Address and Base of Operations
6. Base of Operations only
7. Garaging Address only
8. Personal Business
9. Shopping
A. Recreation (inc. Vacation)

1. Within Cordon
2. Outside Cordon at Origin
3. Outside Cordon at Destination
4. Other

PURPOSE OF STOP (Column L) for Passenger Cars
1. Course of Work
2. Pers. Business
3. Shopping
4. Vehicle Service
5. Secure Lodging
6. Serve Passenger
7. Eat Meal
8. Recreation

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DETROIT REGIONAL TRANSPORTATION AND LAND USE STUDY—EXTERNAL INTERVIEW

OUTBOUND

Interviewer's Name_____ Sheet_____ of_____Sheets

Deck No. 5 1 5 (1 2 3) Station Number (4 5) Travel Date (month) (date) (6 7 8 9) Hour-Period Beginning (10 11 12)

A. Interview Number	B. Veh. Type	C. No. in Veh.	ORIGIN D. At what address did this trip begin?	E. Trip Purpose	F. Land Use	DESTINATION G. At what address will trip end?	H. Trip Purpose	I. Land Use	J. Garaged at	Thru Tps. K. Rt. of Entrance	Thru Tps. L. Pur. of Stop	TRUCKS M. Principal Commodity Carried
13 14 15	16	17 18	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47		48 49	50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69		70 71	72	73 74	75	76 77 78

1. Passenger Car—Mich.
2. Passenger Car—Non Mich.
3. Pick-up, Panel or Single Unit—Single Rear Tire
4. Single Unit—Dual Rear Tires
5. Single Unit—Three or more Axles
6. Combinations
7. Bus
8. Taxi

PASSENGER CARS (Column E and H)
1. Home
2. Work
3. Pers. Bus.—Medical
4. Social—Recreation
5. Eat Meal
6. Shopping
7. School
8. Change Mode
9. Serve Passenger

TRUCK TRANSPORTATION (Column E, H and L)
1. Pick up Goods
2. Deliver Goods
3. Pick and Deliver Goods
4. Service and other work connected business
5. Garaging Address and Base of Operations
6. Base of Operations only
7. Garaging Address only
8. Personal Business
9. Shopping
A. Recreation (inc. Vacation)

1. Within Cordon
2. Outside Cordon at Origin
3. Outside Cordon at Destination
4. Other

PURPOSE OF STOP (Column L) for Passenger Cars
1. Course of Work
2. Pers. Business
3. Shopping
4. Vehicle Service
5. Secure Lodging
6. Serve Passenger
7. Eat Meal
8. Recreation

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DETROIT REGIONAL TRANSPORTATION AND LAND USE STUDY—COMMERCIAL AND SPECIAL VEHICLE INTERVIEW

(Confidential: The information obtained in this survey will be treated confidentially. Individual reports are for statistical purposes only.)

DO NOT WRITE IN GRAY AREAS

Deck No. 5 1 (1 2 3) Int. No. (4 5 6 7 8) Interview Code (9) Vehicle Type (10)

Type A: Trips Possible	Type B: No Trips Possible
1. Complete	7. Moved out of Area
2. R	8. Junked—No Replacement
3. NH	9. Out of Area on Travel Date
4. Cannot Locate	A. Assigned Out of Area
5. Travel Date Past Due	B. Other (Specify)
6. Other (Specify)	

1. Pass. Car, Mich.
2. Pass. Car, Non-Mich.
3. Pick-Up, Panel or Single Unit—Single Rear Tire
4. Single Unit—Dual Rear Tires
5. Single Unit—3 or More Axles
6. Combinations
7.
8. Taxi

Name of Vehicle Owner

Street Address

City County Business Phone

Make Year

Body Style Empty Weight lbs.

Date Interview Was Taken

Interviewer's Name

Administrative Record

	Phone Calls		In Person Calls	
	Date	Time	Date	Time
1				
2				
3				
4				

Station	Initial	Date

Interviewer Remarks:

TO THE DRIVER: All the information on this form concerns the following vehicle.

Vehicle License Number Make Year Body Style Empty Weight

for Day Date 4:00 A.M. Time to Day Date 4:00 A.M. Time

Please fill in as carefully as you can all of the items below. Our interviewer will come by the day after the above to answer questions and pick up this form.

PLEASE PRINT ALL ANSWERS.

1. Name and Home Phone of Driver(s)

Last Name First Name Home Phone

Last Name First Name Home Phone

Last Name First Name Home Phone

2. What is the Business or Industry of Vehicle Owner? (Please Be Specific)

3. About how many miles were driven by this vehicle on above travel date? (Miles)

4. How many trucks are operated at owner's address? (Number)

5. Did this vehicle haul a trailer on above travel date? Check .....Yes .....No

6. If trailer(s) was hauled, what kind was it? (Kind(s) of Trailer)

7. What is the licensed capacity of this truck or tractor-trailer? ..... lbs.

8. Where was this vehicle garaged at start of travel date? Enter address on dotted line below.

Number and Street Address OR Nearest Streets that Cross City County

9. How many total trips did vehicle make on above travel date? (Number)

Body Style (11 12 13 14)
Empty Weight (15 16 17)
Trav. Date (18 19 (month) 20 21 (date))
Ind. (22)
Miles (23 24 25)
No. (26 27 28)
Trailer (29)
Tr. Desig. (30)
Lic. Cap. (31 32 33)
No. (63 64 65)

Deck Number [5][1] (1 2 3) Interview Number [ ][ ][ ][ ] (4 5 6 7 8)

COMMERCIAL AND SPECIAL VEHICLE TRIP REPORT

DO NOT WRITE IN GRAY AREAS

INSTRUCTIONS

We want to account for all the trips made by this vehicle starting at

4 A.M. ..... (Day) ..... (Date) and ending 4 A.M. ..... (Day) ..... (Date)

Be sure to record all trips made by this vehicle for the 24 hours specified. Please print on the dotted lines. DO NOT WRITE IN GRAY AREAS.

PURPOSE BOX
Use Correct Number for Each Trip

1. Pick Up Goods
2. Deliver Goods
3. Pick Up and Deliver Goods
4. Service and Other Work Connected Business
5. Garaging Address and Base of Operations
6. Base of Operations Only
7. Garaging Address Only
8. Personal Business
9. Shopping
A. Recreation (inc. vacation)

PLACE BOX
Be As Specific As Possible

For Example: Retail furniture store, junk yard, electroplating plant, etc.

GOODS BOX
Be As Specific As Possible

For Example: Eggs, dry goods, junk, auto engines. If mixed, list MAJOR goods carried.

0	START HERE — PRINT ADDRESS OF WHERE FIRST TRIP BEGAN — DO NOT WRITE IN GRAY AREAS		Number and Street Address OR Nearest Streets that Cross / City / County	What Was Purpose? Put No. From Purpose Box Here	What Kind of Place Was This? (See Place Box for Examples)	GO TO TRIP NUMBER 1 ON BEGINNING OF NEXT LINE		
TRIP NUMBER	When Did You Leave Above Address? Circle AM or PM — Hour Min.	When Did You Get To This Address? Circle AM or PM — Hour Min.	WHEN YOU LEFT THE ABOVE ADDRESS, WHERE DID YOU GO? Number and Street Address OR Nearest Streets that Cross / City / County	What Was Purpose? Put No. From Purpose Box Here	What Kind of Place Was This? (See Place Box for Examples)	What Goods Did You Carry? (See Goods Box for Examples)	What Was Total Weight of Vehicle and Goods? ..... lbs.	
1								Go To Trip Number 2
2								Go To Trip Number 3
3								Go To Trip Number 4
4								Go To Trip Number 5
5								Go To Trip Number 6
6								Go To Trip Number 7