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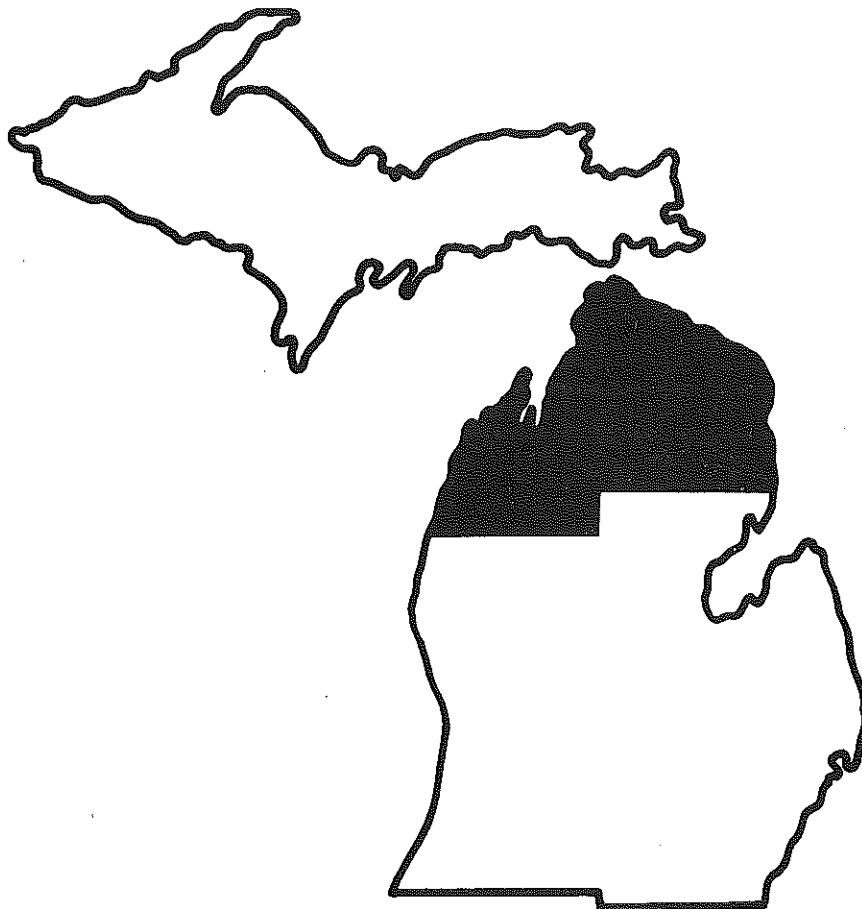
# MICHIGAN DEPARTMENT OF **TRANSPORTATION**

M-68 SINGLE STATIONS  
ORIGIN-DESTINATION SURVEY

CHEBOYGAN COUNTY

1978

FACTUAL DATA REPORT



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

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JOHN P. WOODFORD, DIRECTOR

Mr. Sam F. Cryderman  
Deputy Director  
Bureau of Transportation  
Planning  
Michigan Department of  
Transportation  
P.O. Box 30050  
Lansing, Michigan 48909

Dear Mr. Cryderman:

The Multi-Regional Planning Division of the Bureau of Transportation Planning has documented the results of the "M-68 Two Single Stations Origin and Destination Survey". It will provide, particularly if used with similar surveys taken simultaneously on M-72 and M-32 either side of I-75, a tool to evaluate east-west traffic movements across the northern portion of the lower peninsula.

This report was prepared by Kathy Rhynard, Transportation Planner Trainee, with technical assistance provided by James Daavettila, Engineer in Training. Supervision was provided by Larry Miller, Region 9 Coordinator. All are, or were, assigned to the North Region Planning Section, managed by John B. Ouderkirck. Special assistance was also provided by John Stone of the Urban Transportation Planning Procedures Section.

Sincerely,

A handwritten signature in cursive script, reading "Larry K. Burton".

Acting Administrator  
Multi-Regional Planning Division

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## PREFACE

East-west data of traffic movements across the northern lower peninsula (Regions 9 and 10) were desired. It was determined that two single station origin and destination surveys taken at each east-west trunkline on either side of I-75 would provide the necessary data. These trunklines are M-72, M-32 and M-68.

Such a survey was ordered by Director Woodford on behalf of Gaylord officials to study truck movements through that community (on M-32). With survey crews already in that area, it became feasible to also survey the relatively nearby M-72 and M-68 locations at the same time.

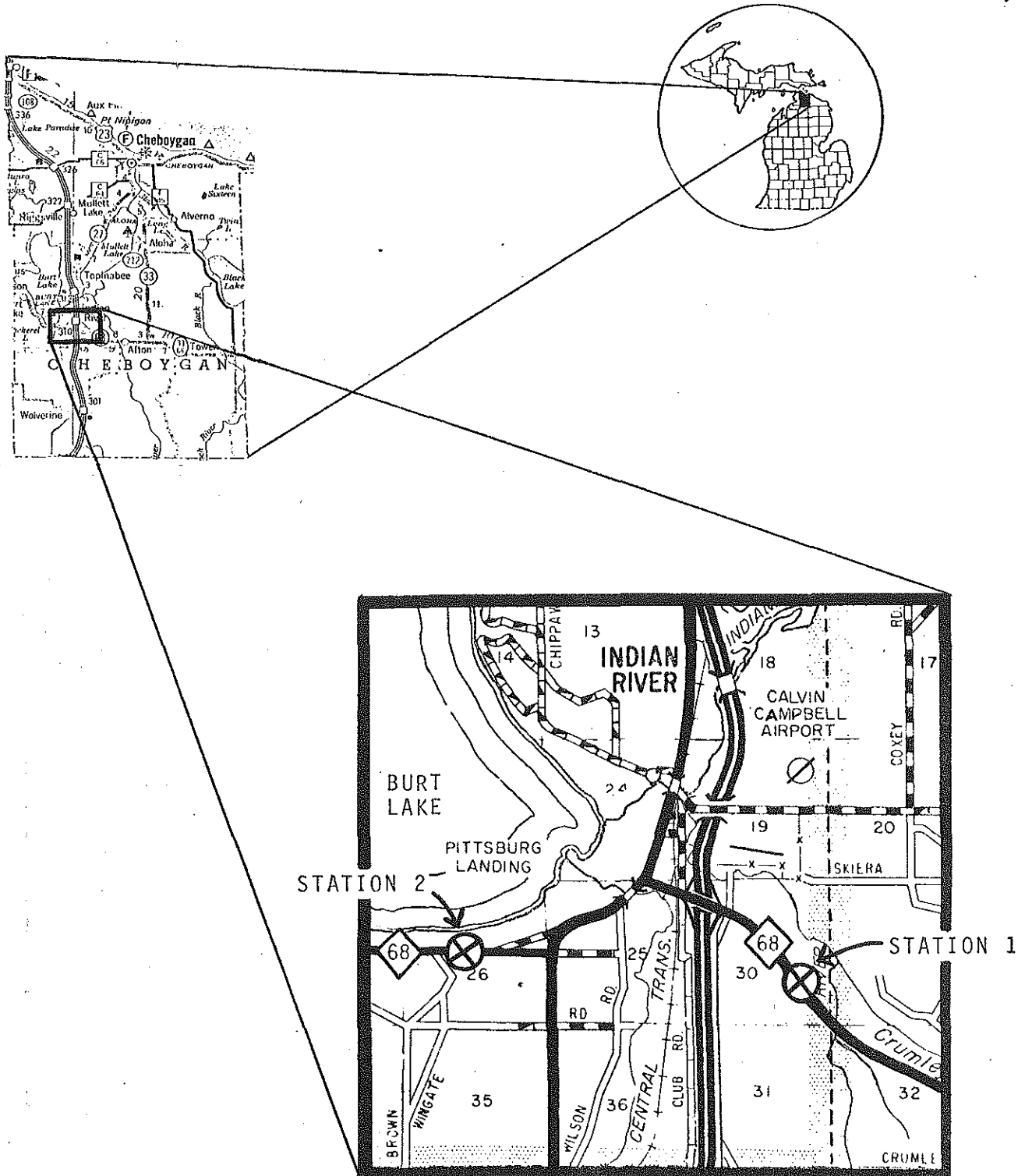
This report gives the results of the survey on M-68 taken in May and July, 1978. It presents the data developed from the survey information and does not attempt to speculate, hypothesize or forecast future conditions. No plans or alternative solutions are proposed. The findings of the survey will, however, be useful to those who do become involved in these activities in attempting to resolve the issues raised.

## TERMINOLOGY AND DEFINITIONS

Classification Counts	A survey of vehicles in which those passing through the study area are placed in categories (passenger cars, single unit trucks, etc.).
Destination	The place where a trip ends.
Interview Counts	A survey of vehicles in which those passing through the study area are stopped and drivers interviewed regarding the origin, destination and purpose of the trip.
Origin	The place where a trip begins.
Trip	One-way travel between an origin and destination.
Trip Ends	Each trip has two ends--an origin and a destination.
Trip Length - Average	The value that is determined by summing all of the recorded trip lengths and dividing by the number of trips.
Trip Length - Median	The value that is determined by dividing the trip length distribution so that an equal number of trips are on either side of it.

## STUDY LOCATION

Two interview stations were established on M-68. Station 1 was located 0.7 miles east of I-75. Station 2 was located 0.6 miles west of Old US-27. Both stations were located in southern Cheboygan County, just south of the village of Indian River.



## FIELD PROCEDURE

Traffic information was obtained at the stations during May and July of 1978. Interviews and some classification counts were taken from May 16 to May 19 (Tuesday-Friday).

Interviews were conducted between the hours of 6 A.M. and 8 P.M. Both inbound and outbound vehicles were surveyed. Vehicles were stopped and drivers interviewed regarding the origin, destination and purpose of their trip.

Manual classification counts were taken in conjunction with the interviews during those hours of station operation. For the remainder of the 24-hour period (8 P.M. to 6 A.M.) classification counts were obtained on July 11 and July 12 (Tuesday and Wednesday).

A sample copy of the interview form and the classification count form are shown in the Appendix.



STATION 1

VEHICLE TYPE & TRIP PURPOSE

VEHICLE TYPE	VEHICLES	PERCENT OF TOTAL
Passenger Car	1,579	68.0
Passenger Car w/Trailer	19	0.8
Panel or Pickup	457	19.7
Panel or Pickup w/Trailer	23	1.0
Other Single Unit Trucks	147	6.3
Combination & Trucks w/Trailers	98	4.2
Total	2,323	100.0

TRIP PURPOSE	VEHICLES	PERCENT OF TOTAL
Work	1,034	44.5
Personal Business	146	6.3
Shopping	211	9.1
Vacation	49	2.1
Other Social or Recreation	478	20.6
All Other	405	17.4
Total	2,323	100.0

STATION 1

TRIP LENGTHS - ALL VEHICLES

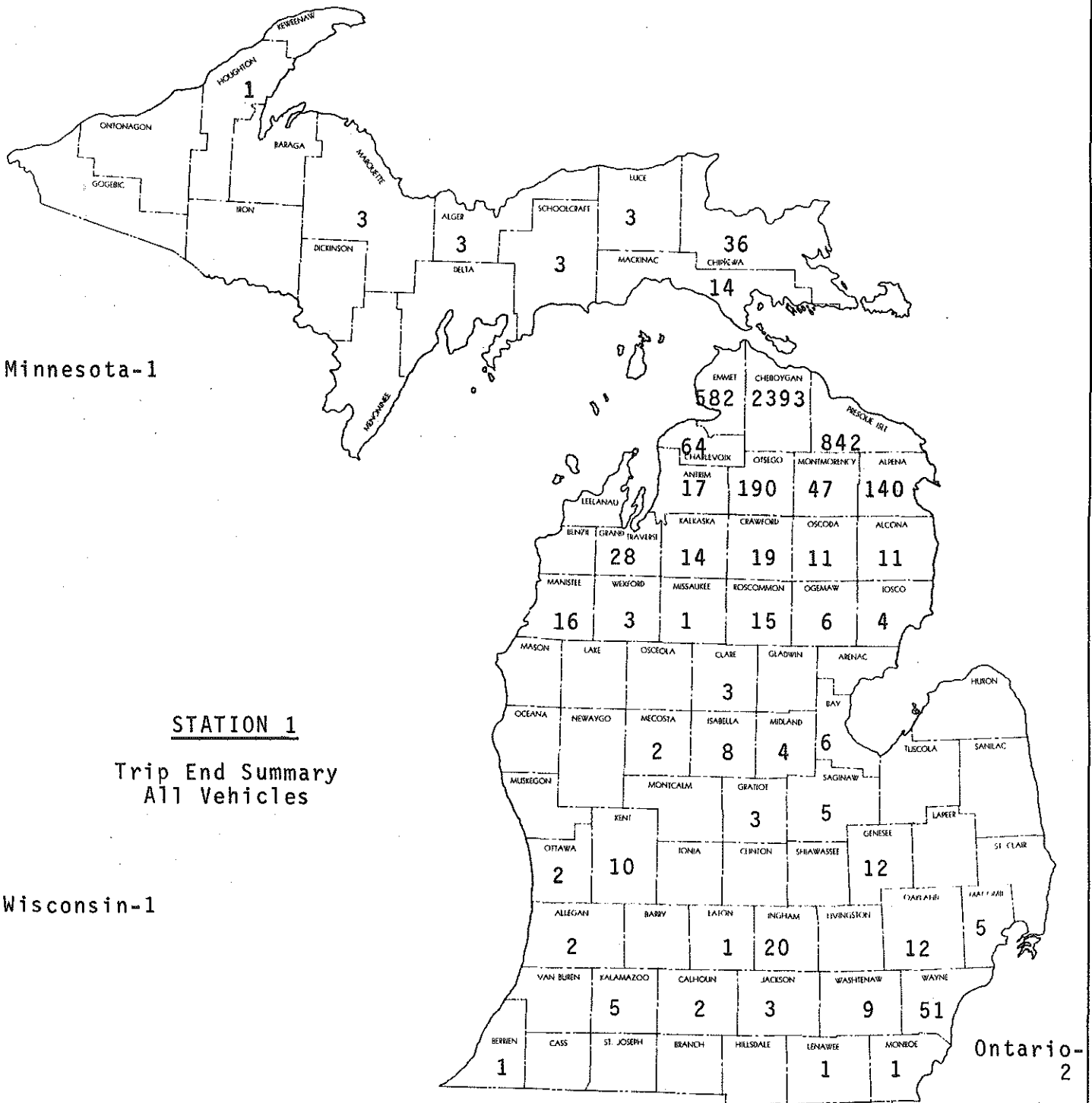
MINUTES	NUMBER OF TRIPS	PERCENT OF TOTAL
01-10	700	30.2
10-20	1	0.0
20-30	0	0.0
30-40	101	4.3
40-50	321	13.9
50-60	132	5.7
60-80	372	16.0
80-100	202	8.7
100-120	72	3.1
120-150	174	7.5
150-180	38	1.6
180-300	127	5.5
300-540	82	3.5
540-840	1	0.0
TOTAL	2,323	100.0

\*Longest Trip = 14 Hrs.

Average Trip Length = 1 Hr. 11 Min.

\*Median Trip Length = 50-60 Min.

\*Due to the convention of the computer program, these values can be approximated only in 10 minute intervals.



Minnesota-1

**STATION 1**  
 Trip End Summary  
 All Vehicles

Wisconsin-1

Ontario-2

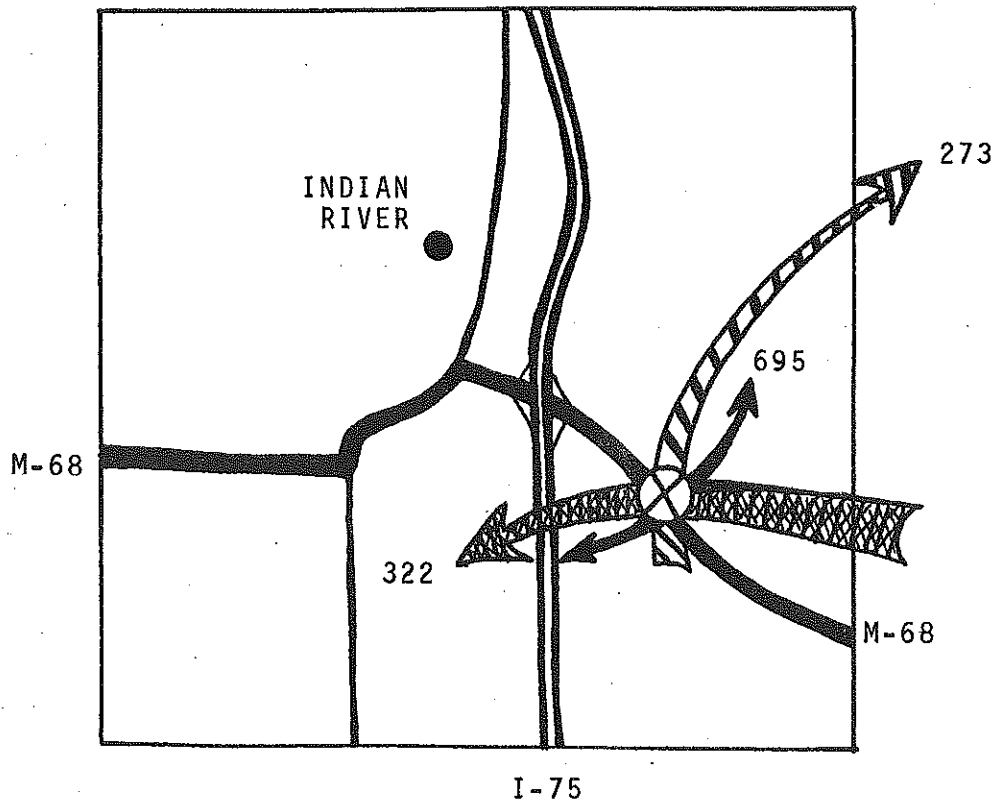
Illinois-1

Indiana-5

Ohio-2

STATION 1

Trips In, Out & Intra-Zonal  
Southern Cheboygan County  
(Zone 81, 547 Zone System)<sup>1</sup>



<sup>1</sup>Statewide Modeling System, Transportation Procedures Section

STATION 1

AUTO OCCUPANCY

OCCUPANTS PER VEHICLE	NUMBER OF VEHICLES	% OF TOTAL VEHICLES
1	1,208	52.00
2	764	32.89
3	182	7.83
4	113	4.86
5	35	1.51
6	12	0.52
7	6	0.26
8	3	0.13
TOTAL	2,323	100.00

STATION 2

VEHICLE TYPE & TRIP PURPOSE

VEHICLE TYPE	VEHICLES	PERCENT OF TOTAL
Passenger Car	2,312	72.8
Passenger Car w/Trailer	30	0.9
Panel or Pickup	563	17.7
Panel or Pickup w/Trailer	38	1.2
Other Single Unit Trucks	168	5.3
Combinations & Trucks w/Trailers	68	2.1
Total	3,179	100.0

TRIP PURPOSE	VEHICLES	PERCENT OF TOTAL
Work	1,292	40.6
Personal Business	230	7.2
Shopping	425	13.4
Vacation	72	2.3
Other Social or Recreation	657	20.7
All Other	503	15.8
Total	3,179	100.0

STATION 2

TRIP LENGTHS - ALL VEHICLES

MINUTES	NUMBER OF TRIPS	PERCENT OF TOTAL
01-10	611	19.2
10-20	0	0.0
20-30	0	0.0
30-40	61	1.9
40-50	1,138	36.0
50-60	562	17.7
60-80	278	8.7
80-100	132	4.2
100-120	38	1.1
120-150	145	4.5
150-180	44	1.4
180-300	103	3.2
300-420	54	1.7
420-630	13	0.4
TOTAL	3,179	100.0

\*Longest Trip - 10 Hrs. 30 Min  
 Average Trip Length = 1 Hr. 1 Min.  
 \*Median Trip Length = 40-50 Min.

\*Due to the convention of the computer program, these values can be approximated only in 10 minute intervals.







STATION 2

AUTO OCCUPANCY

OCCUPANTS PER VEHICLE	NUMBER OF VEHICLES	% OF TOTAL VEHICLES
1	1,667	52.44
2	1,057	33.25
3	260	8.18
4	129	4.06
5	38	1.20
6	12	0.38
7	9	0.28
8	3	0.09
9	4	0.12
TOTAL	3,179	100.00

TRIP DATA COMPARISON BY STATION

(Classifications, Interviews & Expanded Trips)

STATION	24-HOUR <sup>1</sup> VEHICLE CLASSIFICATIONS	14-HOUR INTERVIEWS	PERCENT INTERVIEWED	EXPANDED <sup>2</sup> VEHICLE TRIPS	PERCENT EXPANDED OF 24-HOUR CLASSIFICATIONS
1	2,321	1,646	70.9	2,323	100.1
2	3,181	2,141	67.3	3,179	99.9
TOTAL	5,502	3,787	68.8	5,502	100.0

<sup>1</sup>Busses, motorcycles and bicycles have been removed and appear by station below. These three vehicle types are not interviewed so cannot be expanded and do not appear in expanded vehicle trips.

STATION	BUSSES	MOTORCYCLES	BICYCLES
1	23	13	1
2	25	33	4
TOTAL	48	46	5

<sup>2</sup>Due to the convention of certain computer programs, expanded vehicle trips may not correspond exactly with 24-hour classification counts. This results because of truncation and rounding in each cell of a matrix following expansion.

APPENDIX





DAY OF WEEK: Col. 17

STATION TYPE: Col. 20

Sunday	1	Thursday	5	Cordon Line Station	2
Monday	2	Friday	6	Screen Line Station	1
Tuesday	3	Saturday	7	Single Station	3
Wednesday	4			S. W. Winter Class.	4

DIRECTION OF TRAVEL: Cols. 23 - 24

Northbound	01	Westbound	07
Northeastbound	02	Northwestbound	08
Eastbound	03	North-South (2-Way)	09
Southeastbound	04	East-West (2-Way)	10
Southbound	05	Northeast-Southwest (2-Way)	11
Southwestbound	06	Northwest-Southeast (2-Way)	12

TIME ENDING: Cols. 25 - 28

<u>TIME</u>	<u>HOUR</u>		<u>MIN.</u>	
	<u>Cols. 25 - 26</u>		<u>Cols. 27 - 28</u>	
1:05 AM	01		05	
2:13 AM	02		13	
etc.				
12:00 Noon	12		00	
etc.				
3:15 PM	15		15	
etc.				
11:45 PM	23		45	
etc.				

**TRUCK IDENTIFICATION**

Panel and Pickup (2 axle, 4 tire)

Light 2-axle, 4-tire trucks of less than one ton rated capacity, including:

- a. Panel and pickups standard type, including mini-vans (Ford Econoline, Volkswagon, etc.)
- b. Pickup trucks carrying a cab high (sleeper style) camper.

All Other Single Unit Trucks

Heavy 2-axes or more (dual tires or super singles) equal to or greater than one ton rated capacity, including:

- a. All multistop or standup delivery trucks (primarily designed for moving rural and urban goods.)
- b. All large 4-tire trucks with flatbed, dump or other heavy cargo bodies.
- c. Pickups and panels, having heavy truck type hubs or axles, or are noticeably larger and longer than the standard type.
- d. Heavy 2-axle trucks with a higher than cab camper body.
- e. Truck tractor without trailer.

Truck Combinations

Truck and/or truck tractor (power unit) pulling semi-trailer or full trailer combinations.