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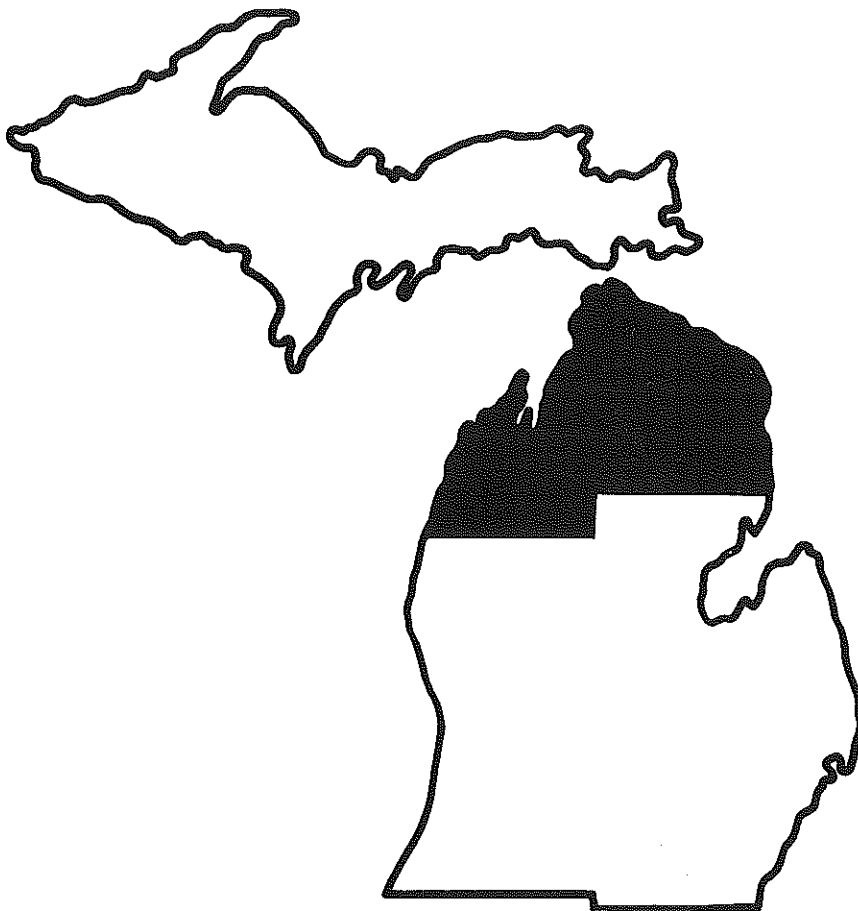
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M-72 SINGLE STATIONS  
ORIGIN-DESTINATION SURVEY

CRAWFORD COUNTY  
1978

FACTUAL DATA REPORT



MICHIGAN  
DEPARTMENT OF TRANSPORTATION

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ORIGIN-DESTINATION SURVEY

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1978

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JOHN P. WOODFORD, DIRECTOR

June 10, 1980

Mr. Sam F. Cryderman  
Deputy Director  
Bureau of Transportation  
  Planning  
Michigan DOT  
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-72 Single Station Origin-Destination Survey conducted in 1978. The purpose of this survey was to determine volumes and patterns of traffic using M-72 through Grayling and to update a survey conducted in 1972.

The report was prepared by Patricia A. Eodchick, Transportation Planner Trainee with technical assistance provided by Vhybert Cameron, Engineer-in-Training. Supervision was provided by Robert M. Kirkbride, Region 10 Coordinator. All are, or were, assigned to the North Planning Section, managed by John B. Ouderkerk.

Sincerely,

A handwritten signature in cursive script that reads "R. J. Lilly".

R. J. Lilly, Administrator  
Multi-Regional Planning Division



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## PREFACE

The primary purpose of this study is to provide data regarding the east-west flow of traffic on M-72 among the northern counties of lower Michigan. This is in response to numerous questions which arose during the course of the regional studies. A secondary purpose was to compile data for updating information obtained in the Grayling External Origin-Destination Survey conducted in 1972.

This report shows the expanded data in tabular form as developed from the surveys. It does not in any way intend to speculate, hypothesize or forecast alternatives or plans. It does, however, serve as a tool for those involved in attaining such ends.

Comparisons of data obtained from both the 1972 and 1978 surveys are presented in Appendix A.

## TERMINOLOGY & DEFINITIONS

Classification Counts	A survey of vehicles in which those passing through the study area are placed in categories (passenger cars, single unit trucks, buses, 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 are interviewed regarding their 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 summation 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 is on either side of it.
Through Trip	A trip passing through the study area.
Terminal Trip	A trip with one end outside the study area and the other end inside the study area.

## STUDY AREA

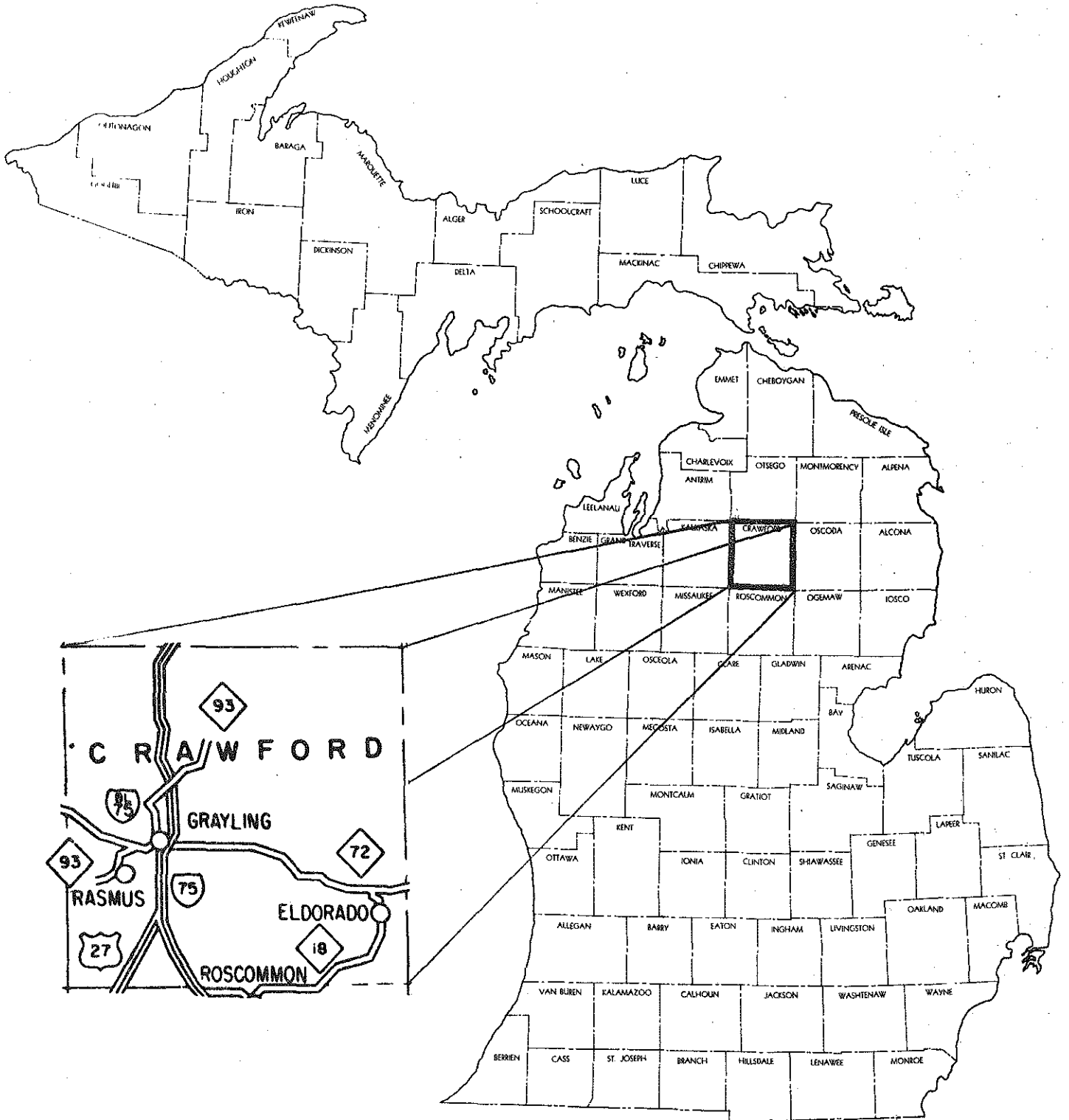
The City of Grayling (1970 Census Population 2,143) is centrally located within Crawford County in Northern Lower Michigan (see map on Page 2).

Grayling offers service, professional and health facilities to its trade area as well as Camp Grayling, home of the Michigan National Guard. Recreational attractions, primarily canoeing along the AuSable River, bring tourists in and through the study area.

Three state trunklines--I-75, M-72 and M-93--serve the Grayling area. M-93 is a short facility providing service to Camp Grayling to the southwest and Hartwick Pines State Park to the northeast. I-75 serves north-south traffic in the area.

The primary east-west route is M-72. To the east of Grayling M-72 is classified as a regional arterial; to the west it is classified as a statewide arterial.

# STUDY AREA LOCATION





## FIELD PROCEDURE

Two interview stations were established on M-72. Station 1 was located 0.5 mile east of the east city limits of Grayling. Station 2 was located 1.5 miles west of the west city limits.

Traffic information was obtained at the stations during May and July of 1978. Interviews and some classification counts were taken from May 8 to May 11 (Monday-Thursday).

Interviews were conducted between the hours of 6:00 a.m. and 8:00 p.m. Both inbound and outbound vehicles were surveyed. Vehicles were stopped and drivers interviewed regarding the origin, destination and purpose of their trip.

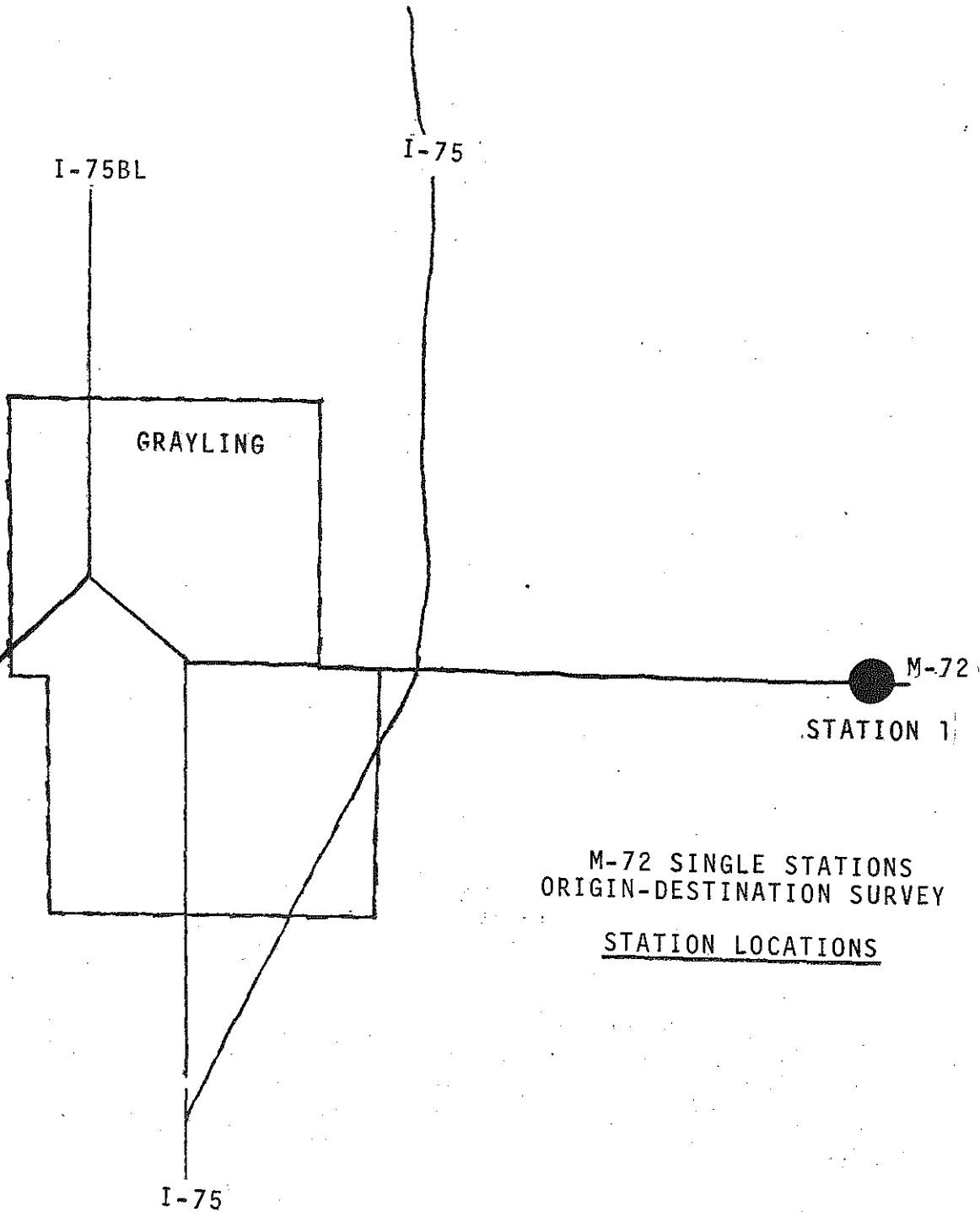
Manual classification counts were taken in conjunction with the interviews during those hours of station operation. For the remainder of the 24-hour period (8:00 p.m. to 6:00 a.m.) classification counts were obtained on July 13 and July 14 (Thursday and Friday).

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

PART I  
DATA COLLECTION SUMMARY

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M-72 SINGLE STATIONS  
ORIGIN-DESTINATION SURVEY  
STATION LOCATIONS

4  
7

TRIP DATA COMPARISON  
BY STATION

<u>STATION</u>	<u>24-HOUR<sup>1</sup> VEHICLE CLASSIFICATIONS</u>	<u>14-HOUR INTERVIEWS</u>	<u>% INTERVIEW</u>	<u>EXPANDED<sup>2</sup> VEHICLE TRIPS</u>	<u>EXPANDED DATA AS % OF 24-HOUR CLASSIFICATIONS</u>
(1)	2,471	1,471	59.5	2,473	100.0
(2)	4,384	1,372	31.3	4,374	99.8
Total	6,855	2,843	41.5	6,847	99.9

<sup>1</sup>Motorcycles, buses and bicycles have been removed from the above data and appear below. These vehicles are not interviewed and, therefore cannot be included in the expanded data.

	<u>STATION 1</u>	<u>STATION 2</u>	<u>TOTAL</u>
MOTORCYCLES	6	37	43
BUSES	24	19	43
BICYCLES	1	0	1
TOTAL	31	56	87

<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.

PART II  
STRATIFIED STUDY RESULTS

SUMMARY

STATION 1

LOCATION: M-72, 0.5 Mile East of Grayling East  
City Limits, Crawford County

TOTAL TRIPS: 2,473

MAJOR VEHICLE TYPE: Passenger Car 1,691 (68.1%)

MAJOR TRIP PURPOSE: Work 1,080 (43.7%)

TRIP DISTRIBUTION: Terminal 1,834 (74.2%)  
Through 639 (25.8%)

\*LONGEST TRIP: 14 Hrs. 10 Min.

AVERAGE TRIP LENGTH: 55 Min.

\*MEDIAN TRIP LENGTH: 10-20 Mins.

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

## STATION 1

M-72, 0.5 MILE EAST OF GRAYLING EAST CITY LIMITS

VEHICLE TYPE & TRIP PURPOSE  
ALL VEHICLES

## VEHICLE TYPE

VEHICLE TYPE	VEHICLES	% OF TOTAL	TERMINAL	% VEHICLE TYPE	THROUGH	% VEHICLE TYPE
Passenger Car	1,691	68.1	1,305	77.2	386	22.8
Passenger Car w/Trailer	20	.8	13	65.0	7	35.0
Panel or Pickup	586	23.8	435	74.2	151	25.8
Panel or Pickup w/Trailer	11	.5	5	45.5	6	54.5
Other Single Unit Trucks	96	3.9	60	62.5	36	37.5
Combinations & Trucks w/Trailers	69	2.9	16	23.2	53	76.8
Total	2,473	100.0	1,834	74.2	639	25.8

## TRIP PURPOSE

TRIP PURPOSE	VEHICLES	% OF TOTAL	TERMINAL	% TRIP PURPOSE	THROUGH	% TRIP PURPOSE
Work	1,080	43.7	742	68.7	338	31.3
Personal Business	222	8.9	177	79.7	45	20.3
Shopping	353	14.3	340	96.3	13	3.7
Vacation	35	1.4	17	48.6	18	51.4
Other Social or Recreational	379	15.4	237	62.5	142	37.5
All Other	404	16.3	321	79.5	83	20.5
Total	2,473	100.0	1,834	74.2	639	25.8

## VEHICLE OCCUPANCY

VEHICLE OCCUPANCY (# OF PERSONS)	VEHICLES	% OF TOTAL	TERMINAL	%	THROUGH	%
1	1,433	57.9	1,071	74.7	362	25.3
2	736	29.8	540	73.4	196	26.6
3	173	7.0	129	74.6	44	25.4
4	106	4.3	76	71.7	30	28.3
5	20	.8	15	75.0	5	25.0
6	5	.2	3	60.0	2	40.0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
TOTAL	2,473	100.0	1,834	74.2	639	25.8

STATION 1

M-72, 0.5 MILE EAST OF GRAYLING EAST CITY LIMITS

TRIP LENGTHS

MINUTES	# OF TRIPS	PERCENT OF TOTAL
01-10	74	2.9
10-20	1,264	51.0
20-30	160	6.5
30-40	38	1.5
40-50	28	1.1
50-60	27	1.1
60-80	381	15.4
80-100	100	4.2
100-120	32	1.3
120-150	114	4.6
150-180	60	2.4
180-210	82	3.3
210-240	33	1.3
240-300	40	1.6
300-420	43	1.7
420-850	7	.1
Total	2,483	100.0

\*Longest Trip 14 Hrs. 10 Min.

Average Trip Length 55 Min.

\*Median Trip Length 10-20 Min.

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





SUMMARY

STATION 2

LOCATION: M-72, 1.5 Miles West of Grayling West  
City Limits, Crawford County

TOTAL TRIPS: 4,374

MAJOR VEHICLE TYPE: Passenger Car 3,184 (72.8%)

MAJOR TRIP PURPOSE: Work 1,978 (45.3)

TRIP DISTRIBUTION: Terminal 2,349 (53.7%)  
Through 2,025 (46.3%)

\*LONGEST TRIP: 11 Hrs.

AVERAGE TRIP LENGTH: 1 Hr. 39 Min.

\*MEDIAN TRIP LENGTH: 60-70 Mins.

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

## STATION 2

M-72, 1.5 MILES WEST OF GRAYLING WEST CITY LIMITS

VEHICLE TYPE AND TRIP PURPOSE  
ALL VEHICLES

## VEHICLE TYPE

VEHICLE TYPE	VEHICLES	% OF TOTAL	TERMINAL	% .		
				VEHICLE TYPE	THROUGH	
Passenger Car	3,184	72.8	1,740	54.7	1,444	45.3
Passenger Car w/Trailer	35	.8	2	5.7	33	94.3
Panel or Pickup	744	17.0	468	63.0	276	37.0
Panel or Pickup w/Trailer	47	1.1	12	25.5	35	74.5
Other Single Unit Trucks	155	3.5	88	56.8	67	43.2
Combinations & Trucks w/Trailers	209	4.8	37	17.7	172	82.3
Total	4,374	100.0	2,349	53.7	2,025	46.3

## TRIP PURPOSE

TRIP PURPOSE	VEHICLES	% OF TOTAL	TERMINAL	% .		
				TRIP PURPOSE	THROUGH	
Work	1,978	45.3	1,088	55.0	890	45.0
Personal Business	369	8.4	156	42.3	213	57.7
Shopping	502	11.5	456	90.8	46	9.2
Vacation	92	2.1	19	20.7	73	79.3
Other Social or Recreational	919	21.0	358	39.0	561	61.0
All Other	514	11.7	272	52.9	242	47.1
Total	4,374	100.0	2,349	53.7	2,025	46.3

## VEHICLE OCCUPANCY

VEHICLE OCCUPANCY (# OF PERSONS)	VEHICLES	% OF TOTAL	TERMINAL	% .		
				THROUGH	%	
1	2,524	57.7	1,472	58.3	1,052	41.7
2	1,226	28.1	569	46.4	657	53.6
3	313	7.2	164	52.4	149	47.6
4	203	4.6	95	46.8	108	53.2
5	65	1.5	34	52.3	31	47.7
6	19	0.4	12	63.1	7	36.9
7	21	0.4	3	14.3	18	85.7
8	3	0.1	0	0	3	100.0
9	0	0	0	0	0	0
Total	4,374	100.0	2,349	53.7	2,025	46.3

STATION 2

M-72, 1.5 MILES WEST OF GRAYLING WEST CITY LIMITS

TRIP LENGTHS

MINUTES	# OF TRIPS	PERCENT OF TOTAL
01-10	150	3.4
10-20	1,237	28.3
20-30	183	4.1
30-40	351	8.0
40-50	75	1.7
50-60	94	2.1
60-80	424	9.6
80-100	362	8.3
100-120	159	3.9
120-150	199	4.5
150-180	172	4.0
180-210	203	4.6
210-240	171	3.7
240-300	457	10.4
300-420	111	2.8
420-850	26	.6
TOTAL	4,374	100.0

\*Longest Trip 11 Hrs.  
 Average Trip Length 1 Hr. 39 Min.  
 \*Median Trip Length 60-70 Min.

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



APPENDIX A

COMPARISON  
OF  
1972 & 1978 O-D RESULTS  
M-72 NEAR GRAYLING

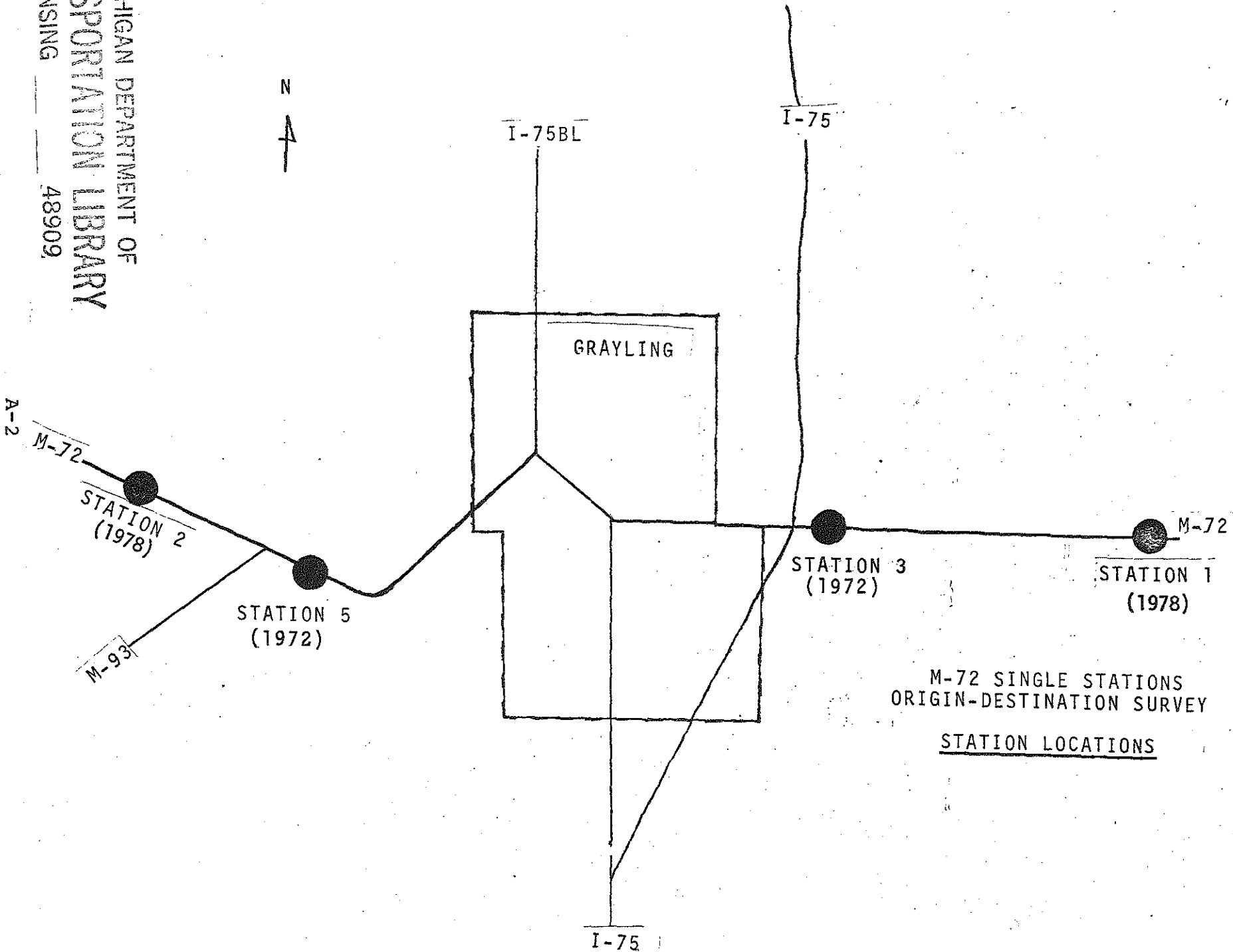
The following pages show statistical data comparisons of the 1972 and 1978 area studies. Interviews for the 1972 study were taken on June and July weekdays. The 1978 interviews were taken on May weekdays. A total of 2,843 interviews were taken at Stations 1 and 2 in 1978, while 5,988 interviews were taken at Stations 3 and 5 in 1972.

It is important to note the differences of the station locations for the two years (see map, Page A-2). In 1972, for instance, Station 3 is located just east of the I-75/M-72 junction. There are no major roads between Stations 3 and 1 and both, therefore, reflect most traffic east of the Grayling east city limits.

Station 5 is located on M-72 just east of M-93. By comparison, Station 2 is located just west of M-93. Station 2 (1978) does not consider all traffic west of the west Grayling city limits.

Vacation trip purposes east of Grayling show considerable differences between the 1972 and 1978 data. A total of 235 vehicles traveled for vacation purposes in 1972. In 1978 only 35 vehicles traveled for vacation purposes.

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COMPARISON DATA

M-72 EAST OF GRAYLING

1972-1978

1 9 7 2

1 9 7 8

VEHICLE TYPE	1 9 7 2						1 9 7 8					
	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %	THROUGH %	THROUGH %	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %	THROUGH %	
PASSENGER CAR	1,862	70.2	1,192	64.0	670	36.0	1,691	68.1	1,305	77.2	386	22.8
PASSENGER CAR w/TRAILER	34	1.3	14	41.2	20	58.8	20	.8	13	65.0	7	35.0
PANEL OR PICKUP	412	15.5	289	70.1	123	29.9	586	23.8	435	74.2	151	25.8
PANEL OR PICKUP w/TRAILER	15	.6	14	93.3	1	6.7	11	.5	5	45.5	6	55.5
OTHER SINGLE UNIT TRUCKS	248	9.4	191	77.0	57	23.0	96	3.9	60	62.5	36	37.5
COMBINATIONS & TRUCKS w/TRAILERS	82	3.0	13	15.9	69	84.2	69	2.9	16	23.2	53	76.8
TOTAL	2,653	100.0	1,713	64.6	940	35.4	2,473	100.0	1,834	74.2	639	25.8

TRIP PURPOSE	1 9 7 2						1 9 7 8					
	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %	THROUGH %	THROUGH %	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %	THROUGH %	
WORK	1,099	41.4	689	62.7	410	37.3	1,080	43.7	742	68.7	338	31.3
PERSONAL BUSINESS	309	11.7	205	66.3	104	33.7	222	8.9	177	79.7	45	20.3
SHOPPING	414	15.6	380	91.8	34	8.2	353	14.3	340	96.3	13	3.7
VACATION	235	8.9	78	33.2	157	66.8	35	1.4	17	48.6	18	51.4
OTHER SOCIAL RECREATION	389	14.7	215	55.3	174	44.7	379	15.4	237	62.5	142	37.5
ALL OTHER	207	7.7	146	70.5	61	29.5	404	16.3	321	79.4	83	20.5
TOTAL	2,653	100.0	1,713	64.6	940	35.4	2,473	100.0	1,834	74.2	639	25.8

A-3

COMPARISON DATA

M-72 WEST OF GRAYLING

1972-1978

1 9 7 2 \*

1 9 7 8

VEHICLE TYPE	1 9 7 2 *				1 9 7 8							
	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %				
PASSENGER CAR	5,948	77.0	3,664	61.6	2,284	38.4	3,184	72.8	1,740	54.7	1,444	45.3
PASSENGER CAR w/TRAILER	193	2.5	26	13.5	167	86.5	35	.8	2	5.7	33	94.3
PANEL OR PICKUP	831	10.8	520	62.6	311	37.4	744	17.0	469	63.0	275	37.0
PANEL OR PICKUP w/TRAILER	27	.4	3	11.1	24	88.9	47	1.1	12	25.5	35	74.5
OTHER SINGLE UNIT TRUCKS	553	7.1	306	55.3	247	44.7	155	3.5	88	56.8	67	43.2
COMBINATIONS & TRUCKS w/TRAILERS	171	2.2	23	13.5	148	86.5	209	4.8	37	17.7	172	82.3
<b>TOTAL</b>	<b>7,723</b>	<b>100.0</b>	<b>4,542</b>	<b>58.8</b>	<b>3,181</b>	<b>41.2</b>	<b>4,374</b>	<b>100.0</b>	<b>2,349</b>	<b>53.7</b>	<b>2,025</b>	<b>46.3</b>

TRIP PURPOSE	1 9 7 2 *				1 9 7 8							
	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %	TOTAL VEHICLES	% TOTAL	TERMINAL %	THROUGH %				
WORK	2,748	35.6	1,622	59.0	1,126	41.0	1,978	45.3	1,088	55.0	890	45.0
PERSONAL BUSINESS	773	10.0	450	58.2	323	41.8	369	8.4	156	42.3	213	57.7
SHOPPING	1,306	17.0	1,197	91.6	109	8.4	502	11.5	456	90.8	46	9.2
VACATION	1,006	13.0	205	20.4	801	79.6	92	2.1	19	20.7	73	79.3
OTHER SOCIAL RECREATION	1,260	16.3	640	50.8	620	49.2	919	21.0	358	39.0	561	61.0
ALL OTHER	630	8.1	428	67.9	202	32.1	514	11.7	272	52.9	242	47.1
<b>TOTAL</b>	<b>7,723</b>	<b>100.0</b>	<b>4,542</b>	<b>58.8</b>	<b>3,181</b>	<b>41.2</b>	<b>4,374</b>	<b>100.0</b>	<b>2,349</b>	<b>53.7</b>	<b>2,025</b>	<b>46.3</b>

\*1972 Station (#5) located east of 1978 Station (#2) and includes M-93 traffic.

TRIP LENGTH  
COMPARISON DATA  
1972-1978

M-72 EAST OF GRAYLING  
1972 Station (#2), 1978 Station (#1)

MINUTES	1 9 7 2		1 9 7 8	
	TRIPS	% TOTAL	TRIPS	% TOTAL
0-20	1,443	55.0	1,338	53.9
20-40	308	11.7	198	8.0
40-60	79	3.0	55	2.2
60-90	282	10.8	431	17.4
90-120	95	3.6	82	3.3
120-180	222	8.5	174	7.0
180-240	89	3.4	115	4.6
240-880	104	4.0	90	3.6
Total	2,622	100.0	2,483	100.0

1972 Longest Trip 16 Hrs. 40 Min.  
 1978 Longest Trip 14 Hrs. 10 Min.  
 1972 Average Trip Length 1 Hr. 1 Min.  
 1978 Average Trip Length 55 Min.

M-72 WEST OF GRAYLING  
1972 Station (#5), 1978 Station (#2)

MINUTES	1 9 7 2		1 9 7 8	
	TRIPS	% TOTAL	TRIPS	% TOTAL
0-20	3,702	47.9	1,387	31.7
20-40	1,202	15.6	534	12.2
40-60	312	4.0	169	3.8
60-90	553	7.2	605	13.8
90-120	331	4.3	340	7.8
120-180	540	7.0	371	8.5
180-240	332	4.3	374	8.6
240-880	753	9.7	594	13.6
Total	7,725	100.0	4,374	100.0

1972 Longest Trip 13 Hrs. 40 Min.  
 1978 Longest Trip 11 Hrs.  
 1972 Average Trip Length 1 Hr. 18 Min.  
 1978 Average Trip Length 1 Hr. 39 Min.

APPENDIX B

## USE OF GENERAL PURPOSE SUMMARY TABLES

The table on page B-3 shows the distribution of trips passing through the station by vehicle type and trip purpose.

The vehicle type codes are:

- 1 = Passenger Car Without Trailer
- 2 = Passenger Car With Trailer
- 3 = Panel or Pickup Truck Without Trailer
- 4 = Panel or Pickup With Trailer
- 5 = Other (Larger) Single Unit Trucks
- 6 = Truck Combinations
- 7 = Busses
- 8 = Motorcycles

The trip purpose codes are:

- 1 = Work
- 2 = Personal Business
- 3 = Shopping
- 4 = Vacation
- 5 = Other Social Recreation
- 6 = All Other

The sample cell outlined represents 250.66 trips which were shopping (3) trips made by passenger cars (1). This first figure in each cell will always be the raw number of trips. The second figure indicates that 70.95 percent of the trips with trip purpose 3 were passenger cars. The third figure indicates that 14.80 percent of the trips made by type 1 vehicles were shopping trips. The last figure in the cell indicates

that 10.12 percent of all trips in the table are of this type (i.e., vehicle type = 1 and trip purpose = 3). The row total at the right shows that 353.28 trips, or 14.26 percent were shopping trips. The column total at the bottom shows that 1693.45 trips, or 68.34 percent were passenger cars. The total number of trips (2477.88) in this table is indicated at the lower right. There will be a table for each station for each interview date.

STATION NUMBER # 01

VEHICLE TYPE

RANGES		1	2	3	4	5	6	TOTAL
		1	2	3	4	5	6	TOT %
T	1 1	633.21	1.84	284.95	8.18	88.63	67.52	1084.33
	ROW %	58.40	0.17	28.28	0.75	8.17	6.23	43.76
	COL %	37.39	9.24	48.44	71.63	92.72	97.48	
	TOT %	25.55	0.07	11.50	0.33	3.38	2.72	
R	2 2	152.27	1.33	65.33	1.49	1.53	0.00	221.95
	ROW %	60.61	0.60	29.43	0.67	0.69	0.00	8.96
	COL %	8.99	6.68	11.11	13.05	1.60	0.00	
	TOT %	6.15	0.05	2.64	0.06	0.06	0.00	
P	3 3	250.66	6.14	94.73	1.75	0.00	0.00	353.28
	ROW %	70.95	1.74	28.81	0.50	0.00	0.00	18.26
	COL %	14.60	30.84	16.10	15.32	0.00	0.00	
	TOT %	10.12	0.25	3.82	0.07	0.00	0.00	
U	4 4	26.72	0.00	7.90	0.00	0.00	0.00	34.62
	ROW %	77.18	0.00	22.82	0.00	0.00	0.00	1.68
	COL %	1.58	0.00	1.34	0.00	0.00	0.00	
	TOT %	1.08	0.00	0.32	0.00	0.00	0.00	
O	5 5	302.31	8.86	61.93	0.00	4.20	1.74	379.04
	ROW %	79.76	2.34	16.34	0.00	1.11	0.46	19.30
	COL %	17.85	44.50	10.53	0.00	4.39	2.51	
	TOT %	12.20	0.36	2.50	0.00	0.17	0.07	
E	6 6	328.28	1.74	73.41	0.00	1.23	0.00	404.66
	ROW %	81.12	0.43	18.14	0.00	0.30	0.00	16.33
	COL %	19.39	8.74	12.48	0.00	1.29	0.00	
	TOT %	13.25	0.07	2.96	0.00	0.05	0.00	
TOTAL		1693.45	19.91	588.25	11.42	95.59	69.26	2477.88
TOT %		68.34	0.80	23.74	0.46	3.86	2.80	

ROW TOTALS

353.28  
18.26

COLUMN %

TOTAL %

TOTAL TRIPS

COLUMN TOTALS

B-3

STATION NUMBER a 01

VEHICLE TYPE

RANGES		1	2	3	4	5	6	TOTAL TOT %
		1	2	3	4	5	6	
I	1	633.21	1.84	284.95	8.18	88.63	67.52	1084.33
	ROW %	58.40	0.17	26.28	0.75	8.17	6.23	43.76
	COL %	37.39	9.24	48.44	71.63	92.72	97.49	
T	TOT %	25.55	0.07	11.50	0.33	3.58	2.72	
R	2	152.27	1.33	65.33	1.49	1.53	0.00	221.95
	ROW %	68.61	0.60	29.43	0.67	0.69	0.00	8.96
I	COL %	8.99	6.08	11.11	13.05	1.60	0.00	
P	TOT %	6.15	0.05	2.64	0.06	0.06	0.00	
P	3	250.66	6.14	94.73	1.75	0.00	0.00	353.28
	ROW %	70.95	1.74	26.81	0.50	0.00	0.00	14.26
	COL %	14.60	30.84	16.10	15.32	0.00	0.00	
P	TOT %	10.12	0.25	3.82	0.07	0.00	0.00	
U	4	26.72	0.00	7.90	0.00	0.00	0.00	34.62
	ROW %	77.18	0.00	22.82	0.00	0.00	0.00	1.80
R	COL %	1.58	0.00	1.34	0.00	0.00	0.00	
P	TOT %	1.08	0.00	0.32	0.00	0.00	0.00	
O	5	302.31	8.86	61.93	0.00	4.20	1.74	379.04
	ROW %	79.76	2.34	19.34	0.00	1.11	0.46	18.30
	COL %	17.85	44.50	10.53	0.00	4.39	2.51	
S	TOT %	12.20	0.36	2.50	0.00	0.17	0.07	
E	6	328.28	1.74	73.41	0.00	1.23	0.00	404.66
	ROW %	81.12	0.43	18.14	0.00	0.30	0.00	16.33
	COL %	19.39	8.74	12.48	0.00	1.29	0.00	
	TOT %	13.25	0.07	2.96	0.00	0.05	0.00	
=====								
	TOTAL	1693.45	19.91	588.25	11.42	95.59	69.26	2477.88
	TOT %	68.34	0.80	23.74	0.46	3.86	2.80	

VEHICLE TYPE VS. TRIP PURPOSE

M-72, 0.5 MILES EAST OF  
GRAYLING EAST CITY LIMITS

TOTAL TRIPS

B-4



STATION NUMBER = 01

AUTO OCCUPANCY

RANGES		1	2	3	4	5	6	7	8	9	TOTAL TOT %
		1	2	3	4	5	6	7	8	9	
1	1	795.68	225.34	34.37	18.02	5.07	2.85	0.00	0.00	0.00	1084.33
	ROW %	73.66	20.78	3.17	1.66	0.47	0.26	0.00	0.00	0.00	43.78
	COL %	55.65	30.51	19.88	16.96	24.85	60.77	0.00	0.00	0.00	
	TOT %	32.23	9.09	1.39	0.73	0.20	0.12	0.00	0.00	0.00	
R 2	2	115.68	77.31	15.37	11.61	1.98	0.00	0.00	0.00	0.00	221.95
	ROW %	52.12	34.83	6.92	5.23	0.89	0.00	0.00	0.00	0.00	8.96
	COL %	8.06	10.47	8.89	10.93	9.71	0.00	0.00	0.00	0.00	
	TOT %	4.67	3.12	0.62	0.47	0.08	0.00	0.00	0.00	0.00	
P 3	3	149.85	168.68	18.06	16.69	0.00	0.00	0.00	0.00	0.00	353.28
	ROW %	42.42	47.75	5.11	4.72	0.00	0.00	0.00	0.00	0.00	14.26
	COL %	10.44	22.84	10.45	15.71	0.00	0.00	0.00	0.00	0.00	
	TOT %	6.05	6.81	0.73	0.67	0.00	0.00	0.00	0.00	0.00	
U 4	4	9.59	21.71	0.00	3.32	0.00	0.00	0.00	0.00	0.00	34.62
	ROW %	27.70	62.71	0.00	9.59	0.00	0.00	0.00	0.00	0.00	1.40
	COL %	0.67	2.94	0.00	3.13	0.00	0.00	0.00	0.00	0.00	
	TOT %	0.38	0.88	0.00	0.13	0.00	0.00	0.00	0.00	0.00	
O 5	5	159.71	134.72	50.42	23.89	10.30	0.00	0.00	0.00	0.00	379.04
	ROW %	42.14	35.54	13.30	6.30	2.72	0.00	0.00	0.00	0.00	15.30
	COL %	11.13	16.24	29.17	22.49	50.49	0.00	0.00	0.00	0.00	
	TOT %	6.45	5.44	2.03	0.96	0.42	0.00	0.00	0.00	0.00	
E 6	6	201.70	110.72	54.64	32.71	3.05	1.84	0.00	0.00	0.00	404.66
	ROW %	49.84	27.36	13.50	8.08	0.75	0.45	0.00	0.00	0.00	16.33
	COL %	14.05	14.99	31.61	30.79	14.95	39.23	0.00	0.00	0.00	
	TOT %	8.14	4.47	2.21	1.32	0.12	0.07	0.00	0.00	0.00	
-----											
TOTAL	1435.21	738.48	172.86	106.24	20.40	4.69	0.00	0.00	0.00	0.00	2477.86
TOT %	57.92	29.80	6.98	4.29	0.82	0.19	0.00	0.00	0.00	0.00	

AUTO OCCUPANCY VS. TRIP PURPOSE

M-72, 0.5 MILES EAST OF  
GRAYLING EAST CITY LIMITS

TOTAL TRIPS

B-5

STATION NUMBER = 01  
 DESTINATION ZONE = 0101 TO 0101

VEHICLE TYPE

RANGES		1	2	3	4	5	6	TOTAL
		1	2	3	4	5	6	TOT %
1	1	206.96	0.00	96.76	1.57	30.99	5.96	342.24
	ROW %	60.47	0.00	28.27	0.46	9.06	1.74	39.18
	COL %	33.19	0.00	46.21	47.29	92.20	100.00	
T	TOT %	23.70	0.00	11.08	0.18	3.55	0.68	
R	2	79.15	1.33	26.32	0.00	0.00	0.00	108.80
	ROW %	72.75	1.22	26.63	0.00	0.00	0.00	12.86
I	COL %	12.09	21.52	14.11	0.00	0.00	0.00	
P	TOT %	9.06	0.15	3.24	0.00	0.00	0.00	
P	3	121.02	2.87	34.92	1.75	0.00	0.00	160.56
	ROW %	75.37	1.79	21.75	1.09	0.00	0.00	18.36
	COL %	19.41	46.44	17.40	52.71	0.00	0.00	
P	TOT %	13.86	0.33	4.00	0.20	0.00	0.00	
U	4	7.62	0.00	1.75	0.00	0.00	0.00	9.37
	ROW %	81.32	0.00	18.68	0.00	0.00	0.00	1.07
R	COL %	1.22	0.00	0.87	0.00	0.00	0.00	
P	TOT %	0.87	0.00	0.20	0.00	0.00	0.00	
O	5	81.13	1.98	14.69	0.00	1.39	0.00	99.19
	ROW %	81.79	2.00	14.81	0.00	1.40	0.00	11.36
	COL %	13.01	32.04	7.32	0.00	4.14	0.00	
S	TOT %	9.29	0.23	1.68	0.00	0.16	0.00	
E	6	127.77	0.00	24.26	0.00	1.23	0.00	153.26
	ROW %	83.37	0.00	15.83	0.00	0.80	0.00	17.55
	COL %	20.49	0.00	12.09	0.00	3.66	0.00	
	TOT %	14.63	0.00	2.78	0.00	0.14	0.00	
=====								
	TOTAL	623.65	6.18	200.70	3.32	33.61	5.96	873.42
	TOT %	71.40	0.71	22.98	0.38	3.85	0.68	

B-6

VEHICLE TYPE VS. TRIP PURPOSE

M-72, 0.5 MILES EAST OF  
 GRAYLING EAST CITY LIMITS

INBOUND TERMINAL TRIPS

STATION NUMBER = 01

ORIGIN ZONE = 0101 TO 0101

VEHICLE TYPE

RANGES		1	2	3	4	5	6	TOTAL
		1	2	3	4	5	6	TOT %
1	1	253.49	1.84	109.18	1.57	23.61	9.94	399.63
	ROW %	63.43	0.46	27.32	0.39	5.91	2.49	81.61
	COL %	37.28	28.86	46.64	100.00	89.36	100.00	
	TOT %	26.40	0.19	11.37	0.16	2.46	1.04	
R 2	2	45.33	0.00	23.11	0.00	0.00	0.00	68.44
	ROW %	66.23	0.00	33.77	0.00	0.00	0.00	7.13
	COL %	6.65	0.00	9.87	0.00	0.00	0.00	
	TOT %	4.72	0.00	2.41	0.00	0.00	0.00	
P 3	3	122.26	3.27	53.06	0.00	0.00	0.00	178.59
	ROW %	68.46	1.83	29.71	0.00	0.00	0.00	18.60
	COL %	17.94	47.74	22.66	0.00	0.00	0.00	
	TOT %	12.73	0.34	5.53	0.00	0.00	0.00	
U 4	4	6.90	0.00	1.49	0.00	0.00	0.00	8.39
	ROW %	82.24	0.00	17.76	0.00	0.00	0.00	0.87
	COL %	1.01	0.00	0.64	0.00	0.00	0.00	
	TOT %	0.72	0.00	0.16	0.00	0.00	0.00	
P 5	5	110.92	0.00	23.89	0.00	2.81	0.00	137.62
	ROW %	80.60	0.00	17.36	0.00	2.04	0.00	18.33
	COL %	16.28	0.00	10.20	0.00	10.64	0.00	
	TOT %	11.55	0.00	2.49	0.00	0.29	0.00	
E 6	6	142.53	1.74	23.38	0.00	0.00	0.00	167.65
	ROW %	85.02	1.04	13.95	0.00	0.00	0.00	17.46
	COL %	20.92	25.40	9.99	0.00	0.00	0.00	
	TOT %	14.84	0.18	2.43	0.00	0.00	0.00	
=====								
TOTAL	681.43	6.85	234.11	1.57	26.42	9.94	960.32	
TOT %	70.96	0.71	24.38	0.16	2.75	1.04		

VEHICLE TYPE VS. TRIP PURPOSE

M-72, 0.5 MILES EAST OF  
GRAYLING EAST CITY LIMITS

OUTBOUND TERMINAL TRIPS

B-7

STATION NUMBER = 01

DESTINATION ZONE = 0101 TO 0101

AUTO OCCUPANCY

RANGES	1	2	3	4	5	6	7	8	9	TOTAL
	1	2	3	4	5	6	7	8	9	TOT %
I 1	244.47	77.85	11.31	5.91	1.39	1.31	0.00	0.00	0.00	342.24
ROW %	71.43	22.75	3.30	1.73	0.41	0.38	0.00	0.00	0.00	39.18
COL %	48.77	29.41	20.00	14.88	14.17	100.00	0.00	0.00	0.00	
TOT %	27.99	6.91	1.29	0.68	0.16	0.15	0.00	0.00	0.00	
R 2	57.00	36.80	10.16	2.86	1.98	0.00	0.00	0.00	0.00	108.80
ROW %	52.39	33.82	9.34	2.63	1.82	0.00	0.00	0.00	0.00	12.46
COL %	11.37	13.90	17.97	7.20	20.18	0.00	0.00	0.00	0.00	
TOT %	6.53	4.21	1.16	0.33	0.23	0.00	0.00	0.00	0.00	
P 3	73.82	68.80	9.87	8.07	0.00	0.00	0.00	0.00	0.00	160.56
ROW %	45.98	42.85	6.15	5.03	0.00	0.00	0.00	0.00	0.00	18.38
COL %	14.73	25.99	17.46	20.32	0.00	0.00	0.00	0.00	0.00	
TOT %	8.45	7.88	1.13	0.92	0.00	0.00	0.00	0.00	0.00	
U 4	4.70	4.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.37
ROW %	50.16	49.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07
COL %	0.94	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOT %	0.54	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S 5	40.17	34.46	10.86	8.57	5.13	0.00	0.00	0.00	0.00	99.19
ROW %	40.50	34.74	10.95	8.64	5.17	0.00	0.00	0.00	0.00	11.36
COL %	8.01	13.02	19.21	21.58	52.29	0.00	0.00	0.00	0.00	
TOT %	4.60	3.95	1.24	0.98	0.59	0.00	0.00	0.00	0.00	
E 6	81.16	42.14	14.34	14.31	1.31	0.00	0.00	0.00	0.00	153.26
ROW %	52.96	27.50	9.36	9.34	0.85	0.00	0.00	0.00	0.00	17.55
COL %	16.19	15.92	25.36	36.83	13.35	0.00	0.00	0.00	0.00	
TOT %	9.29	4.82	1.64	1.64	0.15	0.00	0.00	0.00	0.00	
-----										
TOTAL	501.32	264.72	56.54	39.72	9.81	1.31	0.00	0.00	0.00	873.42
TOT %	57.40	30.31	6.47	4.55	1.12	0.15	0.00	0.00	0.00	

AUTO OCCUPANCY VS. TRIP PURPOSE

M-72, 0.5 MILES EAST OF  
GRAYLING EAST CITY LIMITS

INBOUND TERMINAL TRIPS

B-8

20MAY80

GRAYLING 1978 - 2 SINGLE STATIONS \*\*TRIP PURP. VS. AUTO OCC.

PAGE 1

STATION NUMBER = 01

ORIGIN\_ZONE = 0101 TO 0101

AUTO OCCUPANCY

RANGES	1	2	3	4	5	6	7	8	9	TOTAL TOT %
	1	2	3	4	5	6	7	8	9	
I 1	287.45	88.67	16.46	5.21	1.84	0.00	0.00	0.00	0.00	399.63
ROW %	71.93	22.19	4.12	1.30	0.46	0.00	0.00	0.00	0.00	41.61
COL %	50.46	32.19	22.86	18.44	34.85	0.00	0.00	0.00	0.00	
T TOT %	29.93	9.23	1.71	0.54	0.19	0.00	0.00	0.00	0.00	
R 2	44.12	22.66	0.00	1.66	0.00	0.00	0.00	0.00	0.00	68.44
ROW %	64.47	33.11	0.00	2.43	0.00	0.00	0.00	0.00	0.00	7.13
COL %	7.74	8.23	0.00	4.60	0.00	0.00	0.00	0.00	0.00	
T TOT %	4.59	2.36	0.00	0.17	0.00	0.00	0.00	0.00	0.00	
P 3	73.97	89.56	6.44	8.62	0.00	0.00	0.00	0.00	0.00	178.59
ROW %	41.42	50.15	3.61	4.83	0.00	0.00	0.00	0.00	0.00	18.60
COL %	12.98	32.52	8.94	23.90	0.00	0.00	0.00	0.00	0.00	
T TOT %	7.70	9.33	0.67	0.90	0.00	0.00	0.00	0.00	0.00	
U 4	4.89	1.84	0.00	1.66	0.00	0.00	0.00	0.00	0.00	8.39
ROW %	58.28	21.93	0.00	19.79	0.00	0.00	0.00	0.00	0.00	0.87
COL %	0.86	0.67	0.00	4.60	0.00	0.00	0.00	0.00	0.00	
T TOT %	0.51	0.19	0.00	0.17	0.00	0.00	0.00	0.00	0.00	
O 5	68.63	39.02	19.64	8.63	1.70	0.00	0.00	0.00	0.00	137.62
ROW %	49.87	28.35	14.27	6.27	1.24	0.00	0.00	0.00	0.00	18.33
COL %	12.05	14.17	27.28	23.93	32.20	0.00	0.00	0.00	0.00	
T TOT %	7.15	4.06	2.05	0.90	0.18	0.00	0.00	0.00	0.00	
E 6	90.64	33.68	29.46	10.29	1.74	1.84	0.00	0.00	0.00	167.65
ROW %	54.07	20.09	17.57	6.14	1.04	1.10	0.00	0.00	0.00	17.46
COL %	15.91	12.23	40.92	28.53	32.95	100.00	0.00	0.00	0.00	
T TOT %	9.44	3.51	3.07	1.07	0.18	0.19	0.00	0.00	0.00	
-----										
TOTAL	569.70	275.43	72.00	36.07	5.28	1.84	0.00	0.00	0.00	960.32
TOT %	59.32	28.68	7.50	3.76	0.55	0.19	0.00	0.00	0.00	

AUTO OCCUPANCY VS. TRIP PURPOSE

M-72, 0.5 MILES EAST OF  
GRAYLING EAST CITY LIMITS

OUTBOUND TERMINAL TRIPS

B-9

		STATION NUMBER = 02						
		VEHICLE TYPE						
RANGES		1	2	3	4	5	6	TOTAL
		1	2	3	4	5	6	TOT %
I	1	1206.08	5.01	409.84	17.72	134.27	204.81	1977.73
	ROW %	60.98	0.25	20.72	0.90	6.79	10.36	45.22
	COL %	37.84	14.28	55.11	37.95	68.39	97.75	
T	TOT %	27.57	0.11	9.37	0.41	3.07	4.68	
R	2	298.43	2.83	67.55	0.00	0.00	0.00	368.81
	ROW %	80.92	0.77	18.32	0.00	0.00	0.00	6.43
I	COL %	9.36	8.06	9.08	0.00	0.00	0.00	
P	TOT %	6.82	0.06	1.54	0.00	0.00	0.00	
P	3	409.70	2.61	82.95	0.00	6.55	0.00	501.81
	ROW %	81.64	0.52	16.53	0.00	1.31	0.00	11.47
	COL %	12.86	7.44	11.15	0.00	4.31	0.00	
P	TOT %	9.37	0.06	1.96	0.00	0.15	0.00	
U	4	69.29	6.50	7.30	8.42	0.00	0.00	91.51
	ROW %	75.72	7.10	7.98	9.20	0.00	0.00	2.09
R	COL %	2.17	18.52	0.98	18.03	0.00	0.00	
P	TOT %	1.58	0.15	0.17	0.19	0.00	0.00	
O	5	748.96	18.14	118.11	20.55	8.90	4.71	919.37
	ROW %	81.46	1.97	12.85	2.24	0.97	0.51	21.02
	COL %	23.50	51.70	15.88	44.01	5.86	2.25	
S	TOT %	17.12	0.41	2.70	0.47	0.20	0.11	
E	6	454.46	0.00	57.96	0.00	2.19	0.00	514.61
	ROW %	88.31	0.00	11.26	0.00	0.43	0.00	11.77
	COL %	14.26	0.00	7.79	0.00	1.44	0.00	
	TOT %	10.39	0.00	1.33	0.00	0.05	0.00	
-----								
TOTAL		3186.92	35.09	743.71	46.69	151.91	209.52	4573.84
TOT %		72.86	0.80	17.00	1.07	3.47	4.79	

VEHICLE TYPE VS. TRIP PURPOSE

M-72, 1.5 MILES WEST OF  
GRAYLING WEST CITY LIMITS

TOTAL TRIPS

B-10  
 MICHIGAN DEPARTMENT OF  
 TRANSPORTATION LIBRARY  
 LANSING  
 48909

STATION NUMBER 8 02

A U T O O C C U P A N C Y

RANGES	1	2	3	4	5	6	7	8	9	TOTAL TOT %
	1	2	3	4	5	6	7	8	9	
1 1	1564.45	313.31	58.23	14.04	15.43	7.23	5.04	0.00	0.00	1977.73
ROW %	79.10	15.84	2.94	0.71	0.78	0.37	0.25	0.00	0.00	45.22
COL %	61.98	25.57	18.62	6.90	23.72	37.58	24.43	0.00	0.00	
T TOT %	35.77	7.16	1.33	0.32	0.35	0.17	0.12	0.00	0.00	
R 2	177.47	147.03	24.19	15.06	2.64	2.42	0.00	0.00	0.00	366.81
ROW %	48.12	39.87	6.56	4.08	0.72	0.66	0.00	0.00	0.00	8.43
I COL %	7.03	12.00	7.74	7.40	4.06	12.58	0.00	0.00	0.00	
P TOT %	4.06	3.36	0.55	0.38	0.06	0.06	0.00	0.00	0.00	
P 3	265.85	156.66	41.91	28.45	5.53	3.41	0.00	0.00	0.00	501.81
ROW %	52.98	31.22	8.35	5.67	1.10	0.68	0.00	0.00	0.00	11.47
COL %	10.53	12.78	13.40	13.99	8.50	17.72	0.00	0.00	0.00	
P TOT %	6.08	3.58	0.96	0.65	0.13	0.08	0.00	0.00	0.00	
U 4	19.89	45.09	8.65	17.88	0.00	0.00	0.00	0.00	0.00	91.51
ROW %	21.74	49.27	9.45	19.54	0.00	0.00	0.00	0.00	0.00	2.09
R COL %	0.79	3.68	2.77	8.79	0.00	0.00	0.00	0.00	0.00	
P TOT %	0.45	1.03	0.20	0.41	0.00	0.00	0.00	0.00	0.00	
P 5	313.79	402.89	88.99	74.66	23.45	3.20	12.39	0.00	0.00	919.37
ROW %	34.13	43.82	9.68	8.12	2.55	0.35	1.35	0.00	0.00	21.02
COL %	12.43	32.88	28.46	36.71	36.05	16.63	60.06	0.00	0.00	
8 TOT %	7.17	9.21	2.03	1.71	0.34	0.07	0.28	0.00	0.00	
E 6	182.71	160.54	90.70	53.29	17.99	2.98	3.20	3.20	0.00	514.61
ROW %	35.50	31.20	17.62	10.36	3.50	0.58	0.62	0.62	0.00	11.77
COL %	7.24	13.10	29.01	26.20	27.66	15.49	15.51	100.00	0.00	
T TOT %	4.18	3.67	2.07	1.22	0.41	0.07	0.07	0.07	0.00	
-----										
TOTAL	2524.16	1225.52	312.67	203.38	65.04	19.24	20.63	3.20	0.00	4373.88
TOT %	57.71	28.02	7.15	4.65	1.49	0.44	0.47	0.07	0.00	

AUTO OCCUPANCY VS. TRIP PURPOSE

M-72, 1.5 MILES WEST OF  
GRAYLING WEST CITY LIMITS

TOTAL TRIPS

B-11

STATION NUMBER = 02

DESTINATION ZONE = 0101 TO 0101

AUTO OCCUPANCY

RANGES	1	2	3	4	5	6	7	8	9	TOTAL TOT %
	1	2	3	4	5	6	7	8	9	
I 1	465.41	84.16	11.46	5.84	0.00	2.61	0.00	0.00	0.00	569.48
ROW %	81.73	14.78	2.01	1.03	0.00	0.46	0.00	0.00	0.00	88.62
COL %	64.02	28.33	15.80	11.66	0.00	43.36	0.00	0.00	0.00	
T TOT %	39.73	7.18	0.98	0.50	0.00	0.22	0.00	0.00	0.00	
R 2	53.86	35.27	8.11	0.00	2.64	0.00	0.00	0.00	0.00	99.88
ROW %	53.92	35.31	8.12	0.00	2.64	0.00	0.00	0.00	0.00	8.53
I COL %	7.41	11.87	10.90	0.00	18.68	0.00	0.00	0.00	0.00	
P TOT %	4.00	3.01	0.69	0.00	0.23	0.00	0.00	0.00	0.00	
P 3	86.06	57.95	11.27	7.34	0.00	3.41	0.00	0.00	0.00	166.03
ROW %	51.83	34.90	6.79	4.42	0.00	2.05	0.00	0.00	0.00	18.17
I COL %	11.84	19.50	15.14	14.65	0.00	56.64	0.00	0.00	0.00	
P TOT %	7.35	4.95	0.96	0.63	0.00	0.29	0.00	0.00	0.00	
U 4	2.01	6.02	0.00	2.21	0.00	0.00	0.00	0.00	0.00	10.84
ROW %	24.08	55.54	0.00	20.39	0.00	0.00	0.00	0.00	0.00	0.93
R COL %	0.36	2.03	0.00	4.41	0.00	0.00	0.00	0.00	0.00	
P TOT %	0.22	0.51	0.00	0.19	0.00	0.00	0.00	0.00	0.00	
P 5	73.55	83.19	12.84	23.04	8.88	0.00	2.64	0.00	0.00	208.14
ROW %	36.03	40.75	6.29	11.29	4.35	0.00	1.29	0.00	0.00	17.43
I COL %	10.12	28.00	17.25	45.99	62.85	0.00	100.00	0.00	0.00	
B TOT %	6.28	7.10	1.10	1.97	0.76	0.00	0.23	0.00	0.00	
E 6	45.47	30.52	30.74	11.67	2.61	0.00	0.00	0.00	0.00	121.01
ROW %	37.58	25.22	25.40	9.64	2.16	0.00	0.00	0.00	0.00	10.33
I COL %	6.25	10.27	41.31	23.29	18.47	0.00	0.00	0.00	0.00	
P TOT %	3.88	2.61	2.62	1.00	0.22	0.00	0.00	0.00	0.00	
-----										
TOTAL	726.96	297.11	74.42	50.10	14.13	6.02	2.64	0.00	0.00	1171.38
TOT %	62.06	25.36	6.35	4.28	1.21	0.51	0.23	0.00	0.00	

AUTO OCCUPANCY VS. TRIP PURPOSE

M-72, 1.5 MILES WEST OF  
GRAYLING WEST CITY LIMITS

INBOUND TERMINAL TRIPS

B-12



STATION NUMBER = 02

ORIGIN ZONE = 0101 TO 0101

AUTO OCCUPANCY

RANGES	1	2	3	4	5	6	7	8	9	TOTAL TOT %
	1	2	3	4	5	6	7	8	9	
1 1	407.56	76.91	20.84	8.20	5.34	0.00	0.00	0.00	0.00	518.85
ROW %	78.55	14.82	4.02	1.58	1.03	0.00	0.00	0.00	0.00	64.06
COL %	54.73	28.26	23.09	18.13	27.11	0.00	0.00	0.00	0.00	
TOT %	34.61	4.53	1.77	0.70	0.45	0.00	0.00	0.00	0.00	
R 2	27.25	25.93	0.00	0.00	0.00	2.42	0.00	0.00	0.00	55.60
ROW %	49.01	46.64	0.00	0.00	0.00	4.35	0.00	0.00	0.00	4.72
COL %	3.66	9.53	0.00	0.00	0.00	43.06	0.00	0.00	0.00	
TOT %	2.31	2.20	0.00	0.00	0.00	0.21	0.00	0.00	0.00	
P 3	172.72	69.61	27.39	15.14	5.53	0.00	0.00	0.00	0.00	290.39
ROW %	59.48	23.97	9.43	5.21	1.90	0.00	0.00	0.00	0.00	28.66
COL %	23.19	25.58	30.34	33.47	28.07	0.00	0.00	0.00	0.00	
TOT %	14.67	5.91	2.33	1.29	0.47	0.00	0.00	0.00	0.00	
U 4	3.20	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.63
ROW %	41.94	58.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
COL %	0.43	1.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOT %	0.27	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
O 5	71.55	43.04	29.98	6.40	0.00	3.20	0.00	0.00	0.00	154.17
ROW %	46.41	27.92	19.45	4.15	0.00	2.08	0.00	0.00	0.00	15.09
COL %	9.61	15.82	33.21	14.15	0.00	56.94	0.00	0.00	0.00	
TOT %	6.08	3.65	2.55	0.54	0.00	0.27	0.00	0.00	0.00	
E 6	62.41	52.19	12.06	15.49	8.83	0.00	0.00	0.00	0.00	150.98
ROW %	41.34	34.57	7.99	10.26	5.85	0.00	0.00	0.00	0.00	12.82
COL %	8.38	19.18	13.36	34.25	44.82	0.00	0.00	0.00	0.00	
TOT %	5.30	4.43	1.02	1.32	0.75	0.00	0.00	0.00	0.00	
-----										
TOTAL	744.69	272.11	90.27	45.23	19.70	5.62	0.00	0.00	0.00	1177.62
TOT %	63.24	23.11	7.67	3.84	1.67	0.48	0.00	0.00	0.00	

B-13

AUTO OCCUPANCY VS. TRIP PURPOSE

M-72, 1.5 MILES WEST OF  
GRAYLING WEST CITY LIMITS

OUTBOUND TERMINAL TRIPS

STATION NUMBER = 02

DESTINATION ZONE = 0101 TO 0101

VEHICLE TYPE

RANGES	1	2	3	4	5	6	TOTAL TOT %
	1	2	3	4	5	6	
I 1	373.68	2.18	130.11	3.21	42.14	18.16	569.48
ROW %	65.62	0.38	22.85	0.56	7.40	3.19	46.62
COL %	42.00	100.00	60.25	100.00	100.00	100.00	
T TOT %	31.90	0.19	11.11	0.27	3.60	1.55	
R 2	87.02	0.00	12.06	0.00	0.00	0.00	99.88
ROW %	87.93	0.00	12.07	0.00	0.00	0.00	6.53
I COL %	9.87	0.00	5.58	0.00	0.00	0.00	
P TOT %	7.50	0.00	1.03	0.00	0.00	0.00	
P 3	132.60	0.00	33.43	0.00	0.00	0.00	166.03
ROW %	79.87	0.00	20.13	0.00	0.00	0.00	14.17
COL %	14.90	0.00	15.48	0.00	0.00	0.00	
P TOT %	11.32	0.00	2.85	0.00	0.00	0.00	
U 4	8.03	0.00	2.21	0.00	0.00	0.00	10.84
ROW %	79.61	0.00	20.39	0.00	0.00	0.00	0.93
R COL %	0.97	0.00	1.02	0.00	0.00	0.00	
P TOT %	0.74	0.00	0.19	0.00	0.00	0.00	
P 5	184.74	0.00	19.40	0.00	0.00	0.00	204.14
ROW %	90.56	0.00	9.56	0.00	0.00	0.00	17.43
COL %	20.76	0.00	8.98	0.00	0.00	0.00	
S TOT %	15.77	0.00	1.66	0.00	0.00	0.00	
E 6	102.27	0.00	18.74	0.00	0.00	0.00	121.01
ROW %	84.51	0.00	15.49	0.00	0.00	0.00	10.33
COL %	11.49	0.00	8.68	0.00	0.00	0.00	
TOT %	8.73	0.00	1.60	0.00	0.00	0.00	
-----							
TOTAL	889.74	2.18	215.95	3.21	42.14	18.16	1171.36
TOT %	75.96	0.19	18.44	0.27	3.60	1.55	

VEHICLE TYPE VS. TRIP PURPOSE

M-72, 1.5 MILES WEST OF  
GRAYLING WEST CITY LIMITS

INBOUND TERMINAL TRIPS

B-14

STATION NUMBER # 02

ORIGIN ZONE # 0101 TO 0101

VEHICLE TYPE

RANGES		1	2	3	4	5	6	TOTAL
		1	2	3	4	5	6	TOT %
I	1	298.30	0.00	155.04	6.80	40.16	18.55	518.85
	ROW %	57.49	0.00	29.88	1.31	7.74	3.58	44.06
	COL %	35.04	0.00	61.22	75.64	86.61	100.00	
T	TOT %	25.33	0.00	13.17	0.58	3.41	1.58	
R	2	40.30	0.00	15.30	0.00	0.00	0.00	55.60
	ROW %	72.48	0.00	27.52	0.00	0.00	0.00	4.72
I	COL %	4.74	0.00	6.04	0.00	0.00	0.00	
	TOT %	3.42	0.00	1.30	0.00	0.00	0.00	
P	3	246.34	0.00	40.03	0.00	4.02	0.00	290.39
	ROW %	84.83	0.00	13.78	0.00	1.38	0.00	28.66
	COL %	28.97	0.00	15.81	0.00	8.67	0.00	
P	TOT %	20.92	0.00	3.40	0.00	0.34	0.00	
U	4	7.63	0.00	0.00	0.00	0.00	0.00	7.63
	ROW %	100.00	0.00	0.00	0.00	0.00	0.00	0.65
R	COL %	0.90	0.00	0.00	0.00	0.00	0.00	
	TOT %	0.65	0.00	0.00	0.00	0.00	0.00	
P	5	116.89	0.00	35.09	2.19	0.00	0.00	154.17
	ROW %	75.82	0.00	22.76	1.42	0.00	0.00	13.09
	COL %	13.74	0.00	13.86	24.36	0.00	0.00	
	TOT %	9.93	0.00	2.98	0.19	0.00	0.00	
E	6	140.99	0.00	7.80	0.00	2.19	0.00	150.98
	ROW %	93.38	0.00	5.17	0.00	1.45	0.00	12.82
	COL %	16.58	0.00	3.08	0.00	4.72	0.00	
	TOT %	11.97	0.00	0.66	0.00	0.19	0.00	
-----								
	TOTAL	650.45	0.00	253.26	8.99	46.37	18.55	1177.62
	TOT %	72.22	0.00	21.51	0.76	3.94	1.58	

B-15

VEHICLE TYPE VS. TRIP PURPOSE

M-72, 1.5 MILES WEST OF  
GRAYLING WEST CITY LIMITS

OUTBOUND TERMINAL TRIPS

## USE OF TRIP LENGTH FREQUENCY DISTRIBUTIONS

A portion of a trip length frequency distribution graph is on the following page. The vertical axis represents travel time in tens of minutes while the horizontal axis is the percent of trips traveling this particular length of time. For example, 182 trips or 4.164 percent of the total were approximately 30 minutes in length. The percent of trips which were 30 minutes or less is 35.896.

Statistical information such as mean and standard deviation are printed at the end of each table. A similar graph for each station for each interview date will be presented.

	P.C.	CUM.	ACTUAL
10.....	3,432	3,432	150
20.....	28,300	31,732	1237
30.....	4,164	35,896	182
40.....	6,007	41,903	350
50.....	1,714	43,617	75
60.....	2,151	45,769	98
70.....	6,932	52,701	303
80.....	2,768	55,470	121
90.....	5,491	60,961	240
100.....	2,791	63,752	122
110.....	2,951	66,703	120
120.....	0,663	67,366	29
130.....	0,692	70,259	30
140.....	2,059	72,318	96
150.....	1,601	73,919	70
160.....	6,778	74,697	38
170.....	1,647	76,344	72
180.....	1,510	77,854	66
190.....	2,311	80,165	101
200.....	1,601	81,766	70
210.....	0,732	82,498	32
220.....	1,647	84,145	72
230.....	1,030	85,175	45
240.....	1,235	86,410	58
250.....	0,801	87,211	35
260.....	1,121	88,332	49
270.....	1,830	90,162	80
280.....	2,036	92,199	89
290.....	0,586	92,785	30
300.....	3,981	96,766	178
310.....	0,984	97,750	43
320.....	0,275	98,025	12
330.....	0,450	98,475	20
340.....	0,160	98,635	7
350.....	0,000	98,635	0
360.....	0,069	98,704	3
370.....	0,046	98,750	2
380.....	0,366	99,116	16
390.....	0,137	99,253	6
400.....	0,000	99,253	0
410.....	0,000	99,253	0
420.....	0,000	99,253	0
430.....	0,000	99,253	0
440.....	0,275	99,528	12
450.....	0,000	99,528	0
460.....	0,000	99,528	0
470.....	0,000	99,528	0
480.....	0,000	99,528	0
490.....	0,000	99,528	0
500.....	0,000	99,528	0
510.....	0,069	99,597	3
520.....	0,000	99,597	0
530.....	0,000	99,597	0
540.....	0,000	99,597	0
550.....	0,000	99,597	0
560.....	0,000	99,597	0
570.....	0,000	99,597	0
580.....	0,000	99,597	0
590.....	0,114	99,711	5
600.....	0,000	99,711	0
610.....	0,000	99,711	0
620.....	0,000	99,711	0

B-17

	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	
10.....																					
20.....																					
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580.....																					
590.....																					
600.....																					
610.....																					
620.....																					

P.C.	CUM.	ACTUAL
2.980	2,980	74
50.906	53,886	1268
6.448	60,330	160
1.530	61,861	16
1,128	62,988	28
1,087	64,076	27
13,854	77,930	344
1,490	79,420	37
2,416	81,836	60
1,011	83,847	40
0,403	83,850	10
0,886	84,736	22
1,933	86,669	48
1,973	88,643	49
0,685	89,327	17
0,886	90,213	22
1,248	91,462	31
0,282	91,744	7
1,450	93,194	36
1,047	94,241	26
0,805	95,046	20
0,524	95,570	13
0,648	96,218	16
0,161	96,375	4
0,000	96,375	0
1,007	97,382	25
0,081	97,463	2
0,443	97,906	11
0,081	97,986	2
0,201	98,188	5
0,000	98,188	0
0,483	98,671	12
0,081	98,752	2
0,524	99,275	13
0,161	99,436	4
0,000	99,436	0
0,040	99,476	1
0,000	99,476	0
0,242	99,718	6
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,000	99,718	0
0,201	99,919	5
0,000	99,919	0
0,000	99,919	0
0,000	99,919	0
0,000	99,919	0
0,000	99,919	0
0,000	99,919	0
0,000	99,919	0
0,000	99,919	0
0,000	99,919	0

B-18

TRIP LENGTH DISTRIBUTION

M-72, 0.5 MILES EAST OF GRAYLING EAST CITY LIMITS

630.  
640.  
650.  
660.  
670.  
680.  
690.  
700.  
710.  
720.  
730.  
740.  
750.  
760.  
770.  
780.  
790.  
800.  
810.  
820.  
830.  
840.  
850.

0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
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0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.000 99.919 0  
0.081100.000 2

REMAINING VALUES ARE ALL ZERO  
NUMBER OF OBSERVATIONS= 2483

SUM= 137898.

MEAN= 55.537

VAR= 5785.592

SD= 76.063

TOTAL TRIPS OVER MAXP = 0  
TOTAL TRIPS OVER 255 = 0  
VOLUME TABLE NUMBER = 201  
SKIM TREE NUMBER = 101

	P.C.	CUM.	ACTUAL
10.....	3.432	3,432	150
20.....	28.300	31,732	1237
30.....	4.164	35,896	182
40.....	6.007	41,903	350
50.....	1,716	45,619	75
60.....	2,151	47,769	94
70.....	6,932	54,701	303
80.....	2,768	57,470	121
90.....	5,491	62,960	240
100.....	2,791	65,752	122
110.....	2,951	68,703	120
120.....	0,663	69,366	29
130.....	0,892	70,259	39
140.....	2,059	72,318	90
150.....	1,601	73,919	70
160.....	0,778	74,697	38
170.....	1,647	76,344	72
180.....	1,510	77,854	66
190.....	2,311	80,165	101
200.....	1,601	81,766	70
210.....	0,732	82,498	32
220.....	1,647	84,146	72
230.....	1,030	85,175	45
240.....	1,235	86,410	58
250.....	0,601	87,211	39
260.....	1,121	88,332	49
270.....	1,830	90,162	80
280.....	2,036	92,199	89
290.....	0,686	92,885	30
300.....	3,981	96,866	174
310.....	0,984	97,850	43
320.....	0,275	98,124	12
330.....	0,458	98,582	20
340.....	0,160	98,742	7
350.....	0,000	98,742	0
360.....	0,069	98,810	3
370.....	0,046	98,856	2
380.....	0,366	99,222	16
390.....	0,137	99,359	6
400.....	0,000	99,359	0
410.....	0,000	99,359	2
420.....	0,000	99,359	0
430.....	0,000	99,359	0
440.....	0,275	99,634	12
450.....	0,000	99,634	0
460.....	0,000	99,634	0
470.....	0,000	99,634	0
480.....	0,000	99,634	0
490.....	0,000	99,634	0
500.....	0,000	99,634	0
510.....	0,069	99,703	3
520.....	0,000	99,703	0
530.....	0,000	99,703	0
540.....	0,000	99,703	0
550.....	0,000	99,703	0
560.....	0,000	99,703	0
570.....	0,000	99,703	0
580.....	0,000	99,703	0
590.....	0,114	99,817	5
600.....	0,000	99,817	0
610.....	0,000	99,817	0
620.....	0,000	99,817	0

TRIP LENGTH DISTRIBUTION

M-72, 1.5 MILES WEST OF GRAYLING WEST CITY LIMITS



000.  
640.  
650.  
000.

0.000 99.931 3  
0.000 99.931 0  
0.000 100.000 3

REMAINING VALUES ARE ALL ZERO  
NUMBER OF OBSERVATIONS 4371

SUMS 40976.

MEAN# 98.599

VAR# 10357.105

SD# 101.770

TOTAL TRIPS OVER MAXP = 0  
TOTAL TRIPS OVER 255 = 0  
VOLUME TABLE NUMBER = 202  
SKIM TREE NUMBER = 101

APPENDIX C



ROUTE \_\_\_\_\_ LOCATION DESCRIPTION \_\_\_\_\_ CITY \_\_\_\_\_

FORM	COUNTY				STATEWIDE STA. NO.				O-D STA. NO.		YEAR	MONTH	DATE	DAY	O-D CITY TYPE		SEQ.			
9																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

RECORDER \_\_\_\_\_

**DO NOT ACCUMULATE**

IN OUT	DIRECT OF TRAVEL			TIME ENDING				PASSENGER CAR				PANEL & PICK-UP (2 AXLE, 4 TIRE)				ALL OTHER SINGLE UNIT TRUCKS WITHOUT TRAILER (5)			ALL TRUCK COMB. AND SINGLE UNIT TRUCK WITH TRAILER (6)			(7) ALL BUSES		(8) MOTOR CYCLE		TOTAL				
	22	23	24	HOUR	MIN.			WITHOUT (1) TRAILER		WITH (2) TRAILER		WITHOUT (3) TRAILER		WITH (4) TRAILER		42	43	44	45	46	47	48	49	50	51			52	53	54
1																														
1																														
1																														
1																														
1																														
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2																														
2																														
2																														

C-2

DAY OF WEEK: Col. 17

Sunday	1	Thursday	5
Monday	2	Friday	6
Tuesday	3	Saturday	7
Wednesday	4		

STATION TYPE: Col. 20

Cordon Line Station	2
Screen Line Station	1
Single Station	3
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

TIME	HOUR	MIN.
	Cols. 25 - 26	Cols. 27 - 28
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-axles 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.