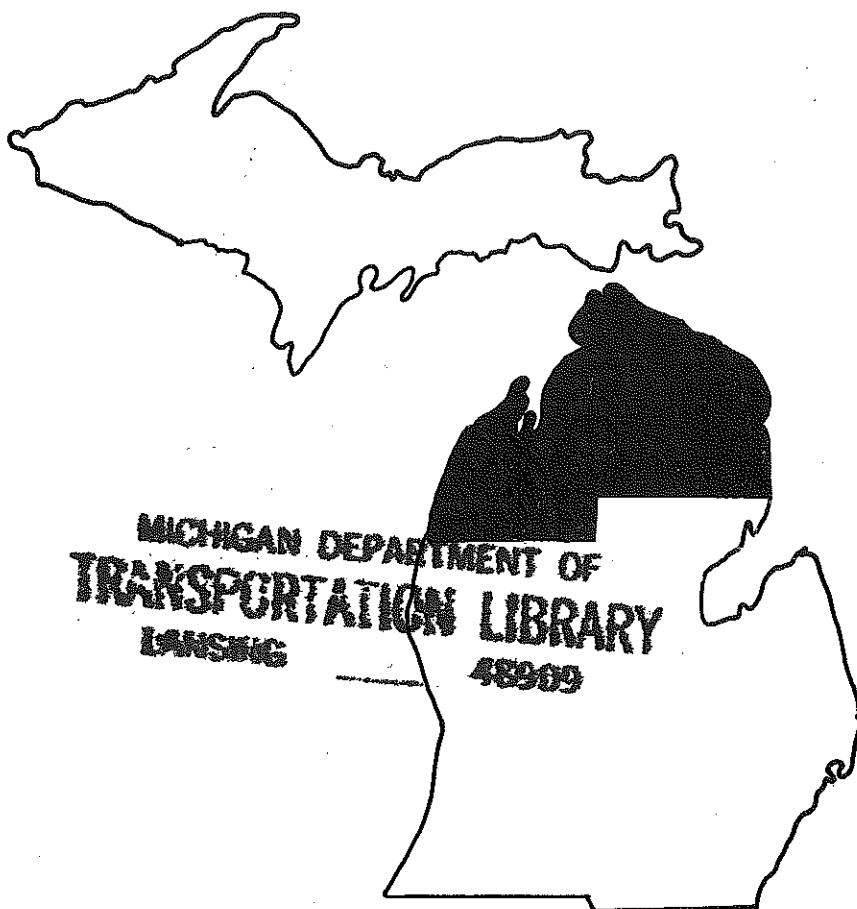


ME
370
.075
P4
1978

MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

PETOSKEY AREA
External
Origin and Destination
Survey
Factual Data Report
March 1978



MICHIGAN DEPARTMENT
OF
STATE HIGHWAYS AND TRANSPORTATION

PETOSKEY AREA
External
Origin and Destination
Survey
Factual Data Report
March 1978

STATE HIGHWAY COMMISSION

Peter B. Fletcher
Chairman

Carl V. Pellonpaa
Vice Chairman

Hannes Meyers, Jr.
Commissioner

Weston E. Vivian
Commissioner

DIRECTOR

John P. Woodford

STATE OF MICHIGAN



HIGHWAY COMMISSION

PETER B. FLETCHER
CHAIRMAN
Ypsilanti

CARL V. PELLONPAA
VICE CHAIRMAN
Ishpeming

HANNES MEYERS, JR.
COMMISSIONER
Zeeland

WESTON E. VIVIAN
COMMISSIONER
Ann Arbor

WILLIAM G. MILLIKEN, GOVERNOR

DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

STATE HIGHWAYS BUILDING, 425 WEST OTTAWA PHONE 517-373-2090
POST OFFICE BOX 30050, LANSING, MICHIGAN 48909

JOHN P. WOODFORD, DIRECTOR

April 3, 1978

Mr. S.F. Cryderman, Deputy Director
Bureau of Transportation Planning

Dear Mr. Cryderman:

The Multi-Regional Planning Division of the Bureau of Transportation Planning has documented the results of the Petoskey Origin-Destination Survey conducted in August of 1977. The purpose of the survey was two-fold. First, it was necessary in order to determine traffic patterns in the area to serve as a basis for planning an efficient transportation system. And secondly, the data serves as an important update of an earlier survey conducted in 1967.

The report was prepared through the cooperative efforts of J.C. Bard, Randy Goers, Burt Smith and James Zimmerman. Direct guidance was provided by Thomas Pickens, Transportation Planner for the North Region Planning Section, managed by John B. Ouderkirk.

Sincerely,

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

Richard J. Lilly, Acting Administrator
Multi-Regional Planning Division



PREFACE

The results of the weekday origin and destination survey conducted during August of 1977, are contained herein. This report is a presentation of the expanded data in tabular form developed from the survey information and does not purport to speculate, hypothesize or forecast any alternative or master plan. This document is designed, however, to provide a tool whereby those involved in such activities may utilize it in attaining such ends.

Appendix "B" contains tables comparing the data from this study with a similar study conducted in this area in 1967.

In addition to the weekday survey, an experimental weekend survey was also conducted in August of 1977. Approximately 25,000 postcards were handed out, of which about 9,500 have been returned. The results of this weekend traffic survey are being prepared in a separate report.

TABLE OF CONTENTS

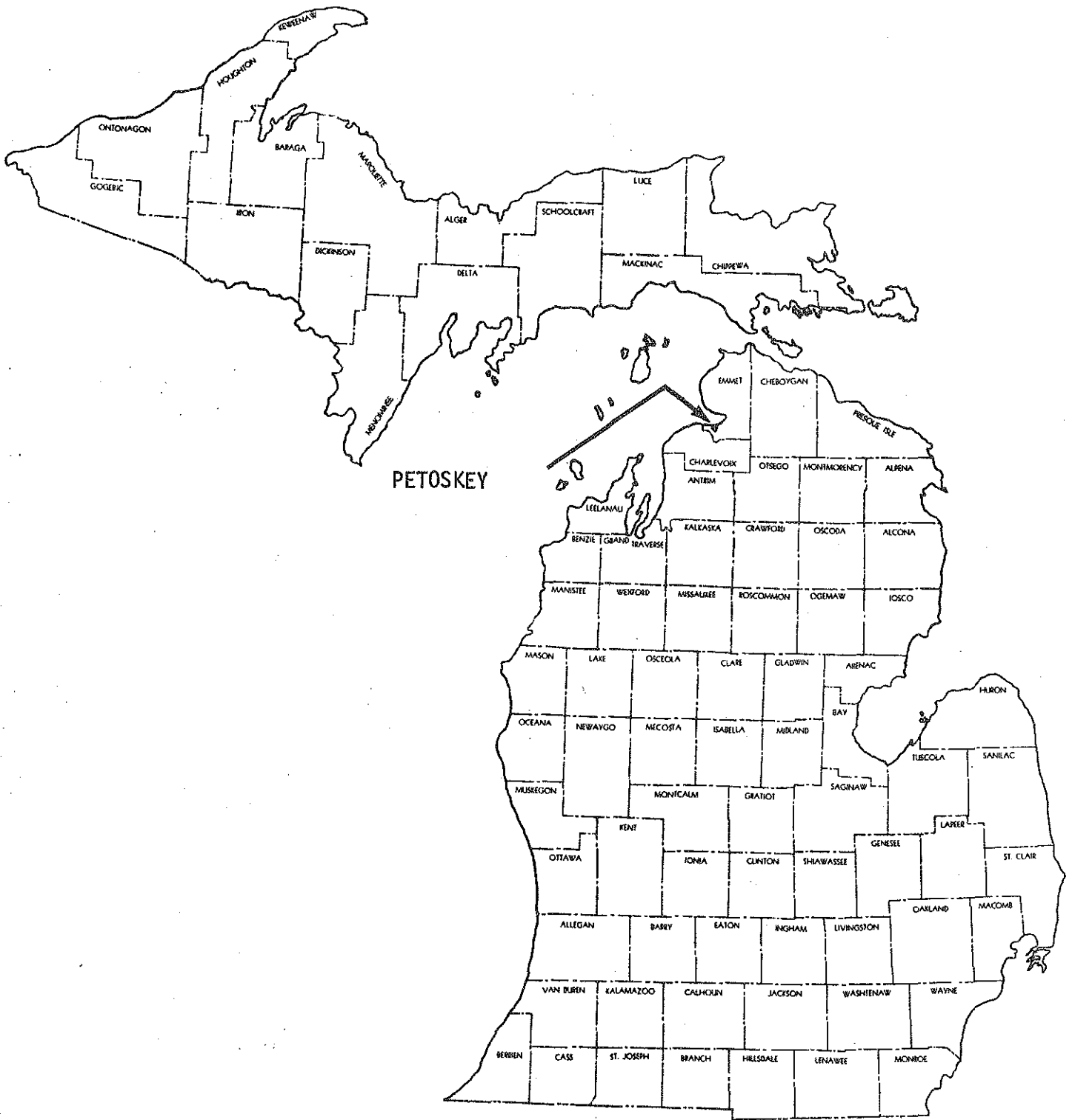
Table of Contents	1
Study Location	2
Terminology and Definitions	4
PART I. DATA COLLECTION	
Field Procedure	7
Station Locations	9
Trip Data Comparison By Station	12
Expanded Vehicle Trips By Station	13
PART II. STRATIFIED STUDY RESULTS	
<u>All</u> Stations	17
Station 1, M-131 North	25
Station 2, US-31 East	35
Station 3, Mitchell Street	45
Station 4, River Road	55
Station 5, US-131 South	65
Station 6, US-31 West	75
Station 7, Pickeral Lake Road	85
PART III. APPENDICES	
Appendix "A" (Forms)	97
Appendix "B" (1967 Vs 1977)	103

STUDY LOCATION

The City of Petoskey is located in the southwest portion of Emmet County near the eastern point of Little Traverse Bay. Petoskey's 1970 population was 6,342. Due to the highly recreational nature of this area, the population increases several times during the summer months. This is true to a degree during the winter months as well with the rapidly growing interest in winter sports.

The area is abundant in Michigan's official stone which bears the city's name.

State trunklines servicing this area are US-31, US-131 and M-131.



TERMINOLOGY AND DEFINITIONS

The following terms may be mentioned in the context of this report.

A brief definition of each should provide a better understanding of the processes and concepts involved in this Origin-Destination Study.

Central Business District (CBD) --- The Zone or zones comprising the concentrated commercial and retail business center of a city.

Classification Counts --- A survey of vehicles in which those passing through the study area are placed in categories (passenger cars, single unit trucks, etc.).

Cordon Line --- An imaginary line around the area under study.

Destination --- The place where a trip ends.

External Station --- A point on a route crossing the cordon line at which the drivers of vehicles are interviewed and classification counts are taken.

Origin-Destination Survey --- 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.

Origin - Destination Zone --- (Analysis Zone) a basic subdivision of the study area having a single or dominant land use, designed as such for purposes of tabulation and analysis.

Screenline --- A line through the study area on a natural or artificial division such as a river or railroad where all traffic crossing it is counted and classified for comparison with expanded survey data.

Study Area --- The geographical area selected for the origin and destination study.

Terminal Trip --- A trip with one end outside the study area and the other end inside the study area. (Beginning or ending at one of the internal analysis zones).

Through Trip --- A trip passing through the study area. (Both ends of the trip outside the cordon line).

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.

PART I.
DATA COLLECTION

FIELD PROCEDURE

Field work for the Petoskey Area Origin-Destination Study was conducted during August of 1977. The purpose of the study was to collect traffic movement data interchanging with and passing through the Petoskey area during a typical summer weekday.

A cordon line was drawn around the greater Petoskey area enclosing the area to be studied. Where the cordon line crossed a road, an external station was established. Several of the established stations were not operated since preliminary counts indicated that traffic at these was minimal when compared to the seven stations that were operated. A description of the seven stations that were operational can be found on page 9.

The study area, having been defined by the cordon line, was then sub-divided into analysis zones for the purpose of tabulating trip data (see map). Various abbreviations were used initially to identify each zone for ease in coding an origin and destination. Zone identification is changed to a numerical designation when field work is completed for ease in tabulation of trip data (see diagram on page 11).

Each of the seven interview stations was operated on a fourteen hour interview schedule (6:00 A.M. to 8:00 P.M.). During these hours, vehicles were stopped and drivers interviewed as to the origin, destination and purpose of the trip. These interviews were made of drivers traveling in each direction (inbound and outbound). In addition, manual vehicle classification counts were taken during the interviewing period as well as during the "off" interview hours (8:00 P.M. to 6:00 A.M.) to account

for a 24-hour day. Classifications are the control totals and allow the sample interviews to be expanded to a 24-hour day. Sample interview and vehicle classification forms can be found in Appendix "A".

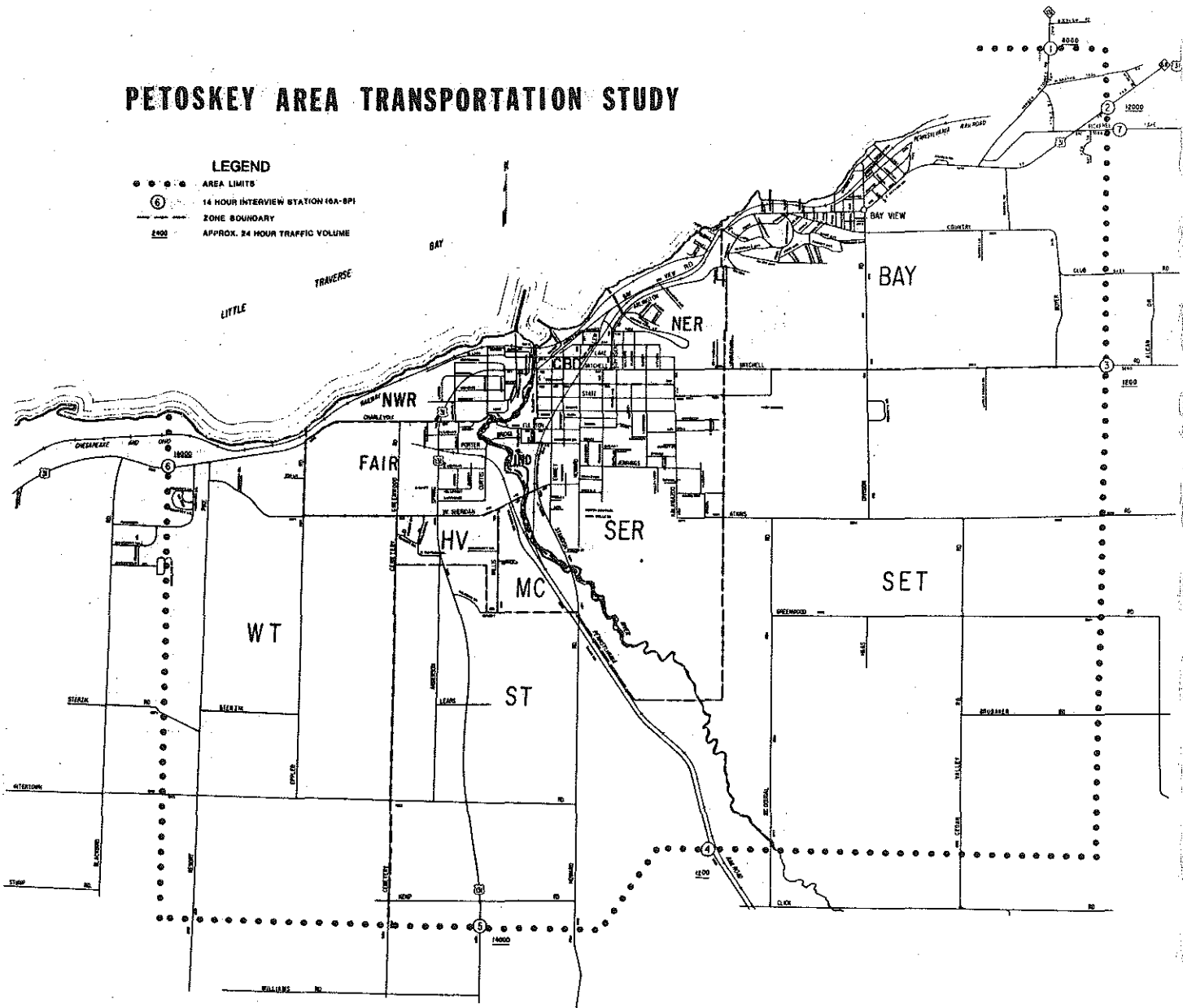
After the field work was completed all data was edited, expanded and processed according to standard origin-destination procedure. The tabular results follow.

STATION LOCATIONS

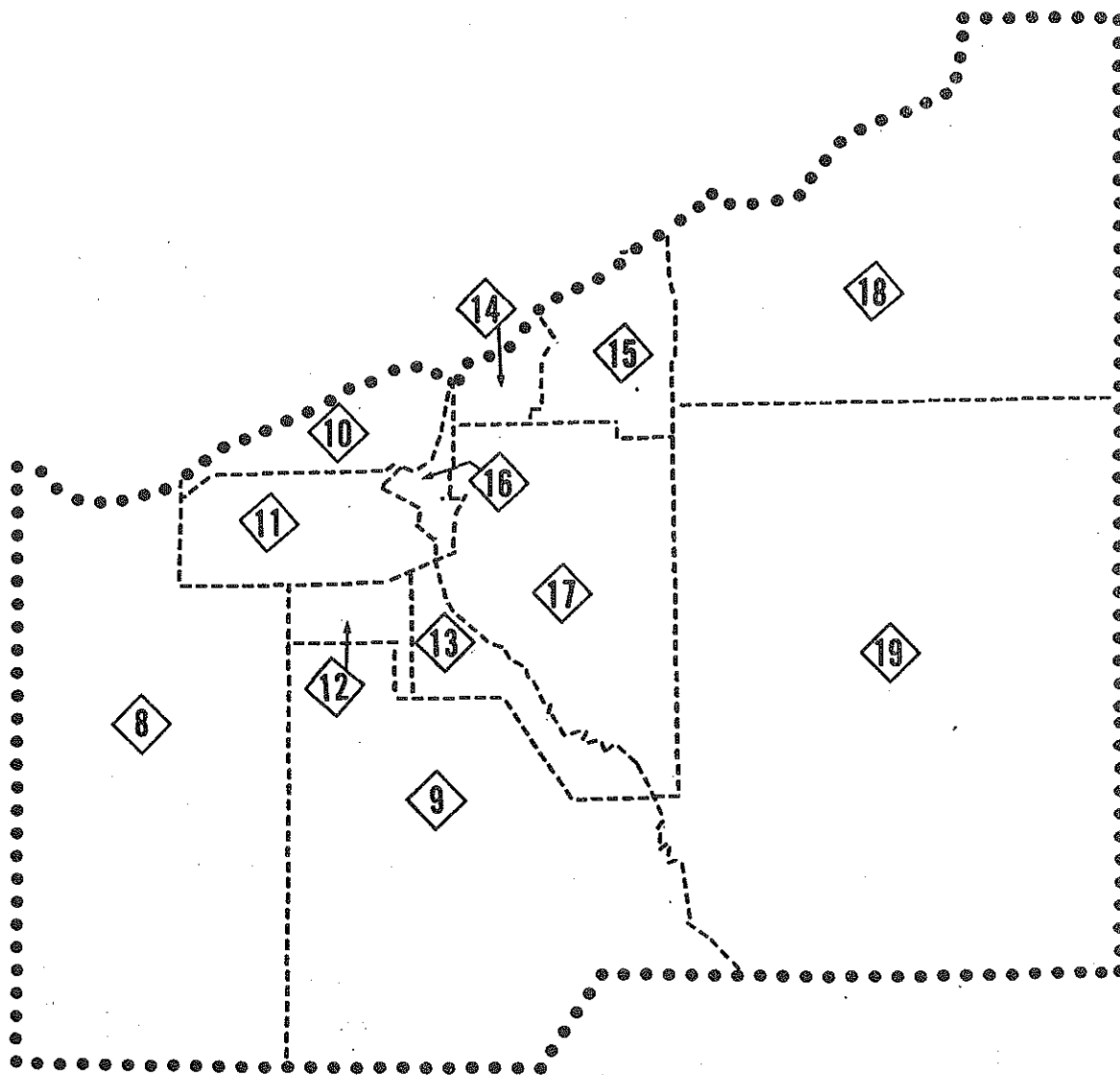
<u>STATION NUMBER</u>	<u>ROUTE</u>	<u>LOCATION</u>
1	M-131 North	1.3 miles north of US-31
2	US-31 East	0.1 mile northeast of Pickeral Lake Road
3	Mitchell Street	0.2 miles east of Boyer Street
4	River Road	0.4 miles northwest of Click Road
5	US-131 South	0.1 mile south of Kemp Road
6	US-31 West	0.2 miles west of Resort Pike Road
7	Pickeral Lake Road	0.6 miles east of US-31

PETOSKEY AREA TRANSPORTATION STUDY

- LEGEND**
- ● ● ● ● AREA LIMITS
 - ⑤ 14 HOUR INTERVIEW STATION (6A-BP)
 - ZONE BOUNDARY
 - 1000 APPROX. 24 HOUR TRAFFIC VOLUME



PETOSKEY AREA
INTERNAL ZONES



- LEGEND
- CORDON LINE
 - ZONE LIMITS
 - ◇ 00 INTERNAL ZONES

TRIP DATA COMPARISON BY STATION
(CLASSIFICATIONS, INTERVIEWS AND EXPANDED TRIPS)

STATION	24-HOUR VEHICLE CLASSIFICATIONS ^{1/}	14-HOUR INTERVIEWS	PERCENT INTERVIEWED	EXPANDED VEHICLE TRIPS ^{2/}	EXPANDED DATA AS PERCENT OF 24-HOUR CLASSIFICATIONS
1	10,693	2,493	23.3	10,691	100.0
2	11,596	2,233	19.3	11,607	100.1
3	1,476	1,151	78.0	1,482	100.4
4	780	576	73.8	782	100.3
5	7,057	2,480	35.1	7,057	100.0
6	10,310	2,434	23.6	10,318	100.1
7	<u>1,212</u>	<u>913</u>	75.3	<u>1,212</u>	100.0
TOTAL VEHICLE TRIPS	43,124	12,280	28.5	43,149	100.1

STATION	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	TOTAL
MOTORCYCLES	62	98	22	3	51	48	9	293
BICYCLES	<u>72</u>	<u>15</u>	<u>4</u>	<u>19</u>	<u>0</u>	<u>13</u>	<u>1</u>	<u>124</u>
TOTAL	134	113	26	22	51	61	10	417

¹Motorcycles and bicycles have been removed and appear by station above. These two vehicle types are not interviewed so therefore cannot be expanded and do not appear in expanded vehicle trips.

²Due to the convention of certain computer programs, expanded trips may not correspond exactly with 24-hour classification counts. This results because of truncation and rounding in each record cell in order to format an expanded trip matrix.

EXPANDED VEHICLE TRIPS BY STATION
(THROUGH, TERMINAL AND TOTAL)

<u>STATION</u>	<u>EXPANDED VEHICLE TRIPS</u>	<u>PERCENT OF TOTAL TRAFFIC</u>	<u>TERMINAL TRIPS</u>	<u>PERCENT TERMINAL</u>	<u>THROUGH TRIPS</u>	<u>PERCENT THROUGH</u>
1	10,691	24.8	8,103	75.8	2,588	24.2
2	11,607	26.9	7,512	64.7	4,095	35.3
3	1,482	3.4	1,288	86.9	194	13.1
4	782	1.8	694	88.7	88	11.3
5	7,057	16.4	4,892	69.3	2,165	30.7
6	10,318	23.9	6,343	61.5	3,975	38.5
7	<u>1,212</u>	2.8	<u>941</u>	77.6	<u>271</u>	22.4
TOTAL VEHICLE TRIPS	43,149		29,773		13,376	
ADJUSTED VEHICLE TRIPS ^{1/}	36,461	100.0	29,773	81.7	6,688	18.3

¹ A through trip is counted both at the station of entrance and exit. To adjust for this double counting, it was necessary to half-factor through trips.

PART II.
STRATIFIED STUDY RESULTS

ALL STATIONS

<u>LOCATION:</u>	Seven Points on the Cordon Line
<u>CLASSIFICATION:</u>	State Trunklines (4) and County Roads (3)
<u>TOTAL TRIPS:</u>	36461
<u>MAJOR VEHICLE TYPE:</u>	Passenger car 29698 (81.5%)
<u>MAJOR TRIP PURPOSE:</u>	Work 12214 (33.5%)
<u>TRIP DISTRIBUTION:</u>	Terminal 29773 (81.7%) Through 6688 (18.3%)
<u>MAJOR TERMINAL TRIP ATTRACTOR:</u>	Zone 18, 7307 (24.5%)
<u>LONGEST TRIP:</u>	18 Hrs. 20 Min.
<u>AVERAGE TRIP LENGTH:</u>	57 Min.

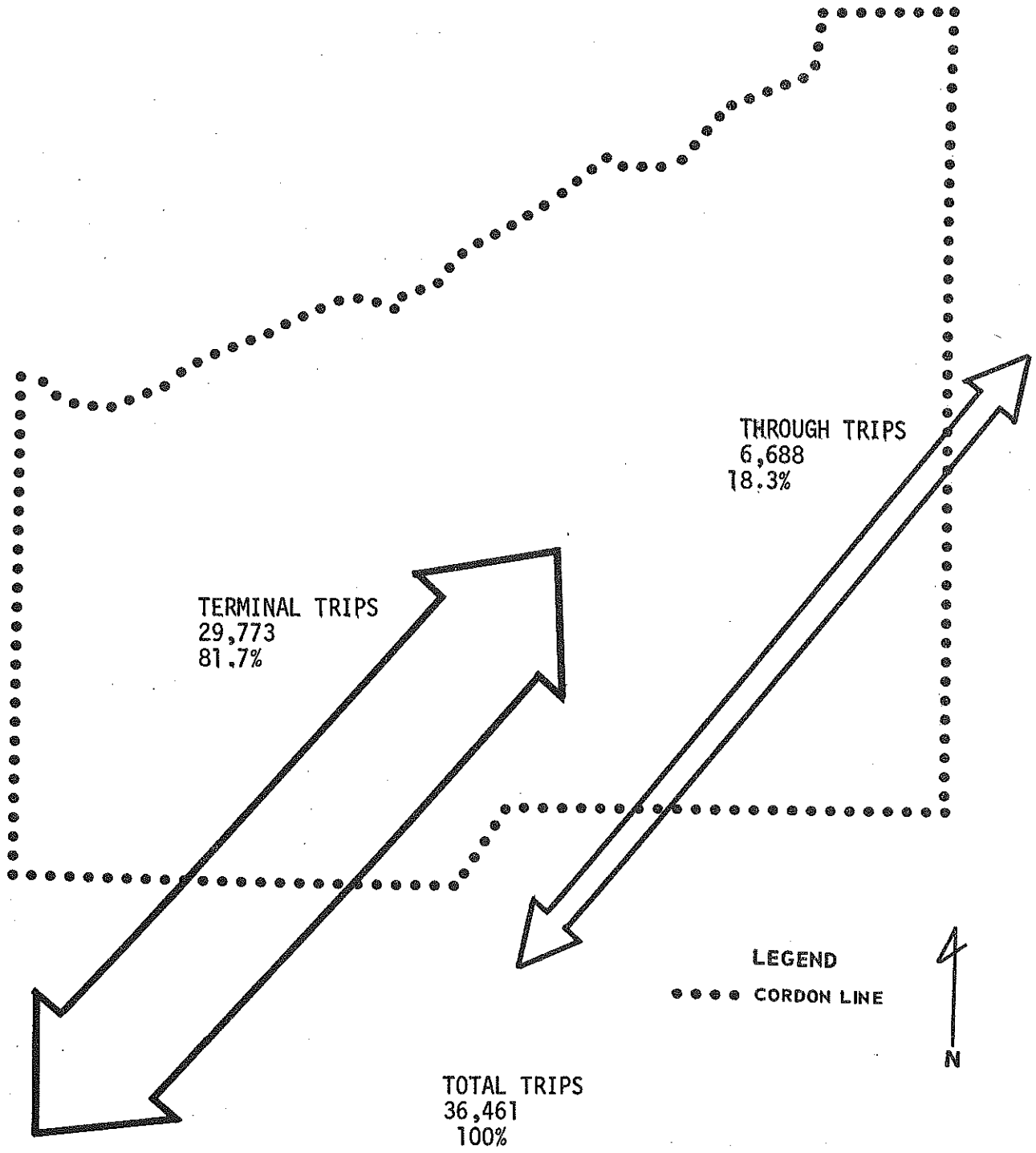
ALL STATIONS

VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	Percent of <u>Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	29698	81.5	24608	82.9	5090	17.1
Passenger Car with Trailer	380	1.0	166	43.7	214	56.3
Panel or Pickup	4534	12.4	3717	82.0	817	18.0
Panel or Pickup with Trailer	170	0.5	71	41.8	99	58.2
Other Single Unit Trucks	1212	3.3	899	74.2	313	25.8
Combinations and Trucks with Trailers	467	1.3	312	66.8	155	33.2
TOTAL	36,461	100.0	29,773	81.7	6,688	18.3

<u>Trip Purpose</u>	<u>Vehicles</u>	Percent of <u>Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	12214	33.5	10428	85.4	1786	14.6
Personal Business	2393	6.6	2189	91.5	204	8.5
Shopping	6572	18.0	6346	96.6	226	3.4
Vacation	5573	15.3	2584	46.4	2989	53.6
Other Soc. or Rec.	5650	15.5	4523	80.1	1127	19.9
All Other	4059	11.1	3703	91.2	356	8.8
TOTAL	36,461	100.0	29,773	81.7	6,688	18.3

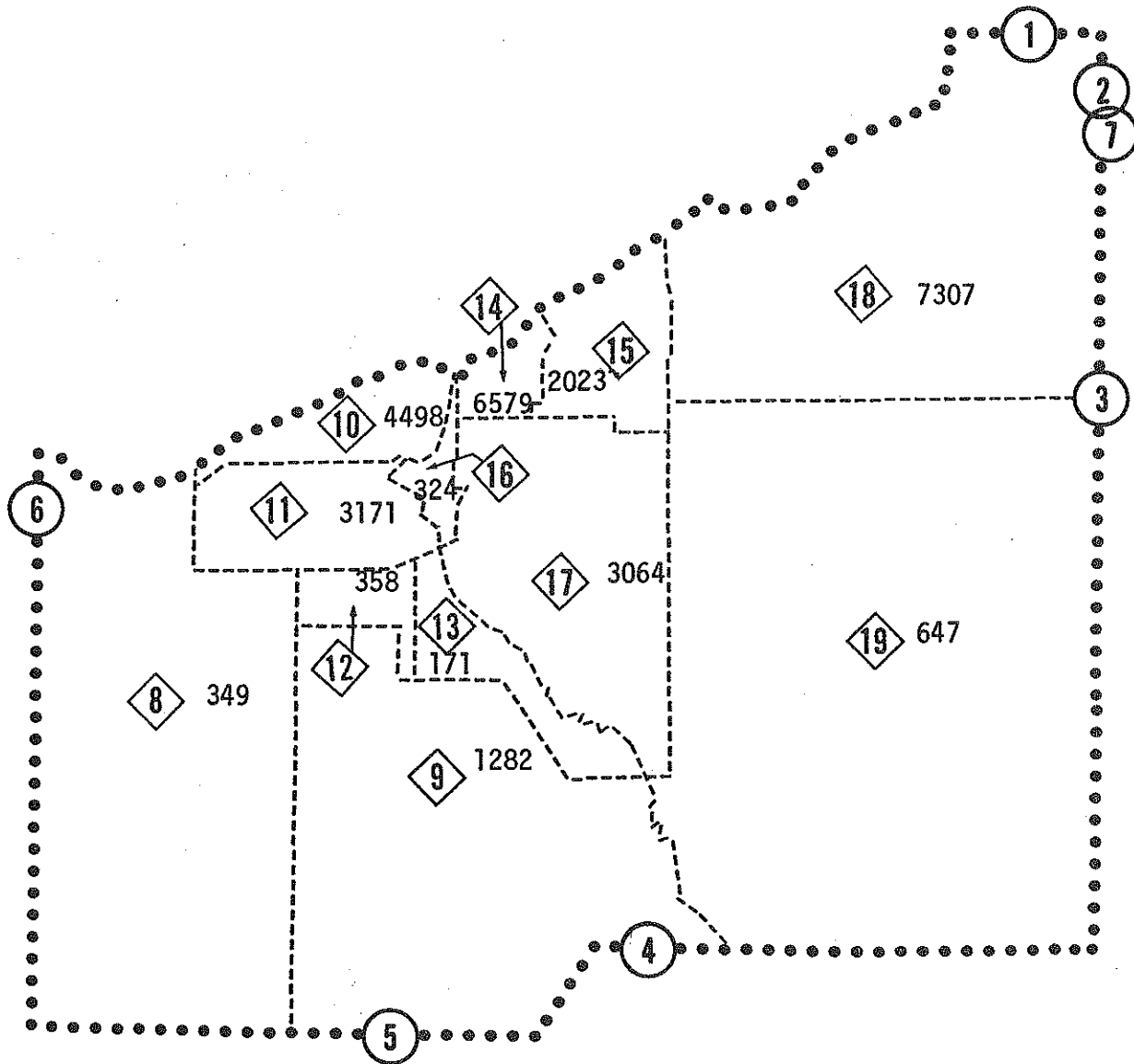
ALL STATIONS
TRIP MOVEMENTS



ALL STATION TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	349	1.2
9	1282	4.3
10	4498	15.1
11	3171	10.6
12	358	1.2
13	171	.6
14	6579	22.1
15	2023	6.8
16	324	1.1
17	3064	10.3
18	7307	24.5
19	647	2.2
	<hr/>	<hr/>
TOTAL	29,773	100.0

ALL STATION TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- - - ZONE LIMITS
- ◇ 00 INTERNAL ZONES

ALL STATIONS
TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	2292	6.3
10 - 20	14288	39.1
20 - 30	3151	8.6
30 - 40	4372	11.9
40 - 50	2911	8.0
50 - 60	2515	6.9
60 - 80	952	2.6
80 - 100	1227	3.4
100 - 120	638	1.7
120 - 150	543	1.5
150 - 180	732	2.0
180 - 300	1592	4.4
300 - 420	820	2.2
420 - 540	246	.7
540 - 660	102	.3
660 - 780	56	.2
780 - 900	21	.1
900 - 1020	0	.0
1020 - 1100	<u>3</u>	<u>.1</u>
TOTAL	36,461	100

* Longest Trip = 18 Hrs. 20 Min.

Average Trip Length = 57 Min.

* Median Trip Length = 20 - 30 Min.

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

STATION 1, M-131 NORTH

<u>LOCATION:</u>	1.3 Miles North of US-31 (100 Feet East Northeast of Hiawatha Trail)
<u>CLASSIFICATION:</u>	State Trunkline
<u>TOTAL TRIPS:</u>	10691
<u>MAJOR VEHICLE TYPE:</u>	Passenger car 8867 (82.9%)
<u>MAJOR TRIP PURPOSE:</u>	Work 3283 (30.7%)
<u>TRIP DISTRIBUTION:</u>	Terminal 8103 (75.8%) Through 2588 (24.2%)
<u>MAJOR THROUGH TRIP ATTRACTOR:</u>	Station 5, US-131 South 1280 (49.4%)
<u>MAJOR TERMINAL TRIP ATTRACTOR:</u>	Zone 18, 3022 (37.3%)
<u>LONGEST TRIP:</u>	11 Hrs. 20 Min.
<u>AVERAGE TRIP LENGTH:</u>	39 Min.

STATION 1, M-131 NORTH

VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	8867	82.9	6792	76.6	2075	23.4
Passenger Car with Trailer	116	1.1	39	33.6	77	66.4
Panel or Pickup	1246	11.7	964	77.4	282	22.6
Panel or Pickup with Trailer	33	0.3	20	60.6	13	39.4
Other Single Unit Trucks	385	3.6	280	72.7	105	27.3
Combinations and Trucks with Trailers	44	0.4	8	18.2	36	81.8
TOTAL	10,691	100.0	8,103	75.8	2,588	24.2

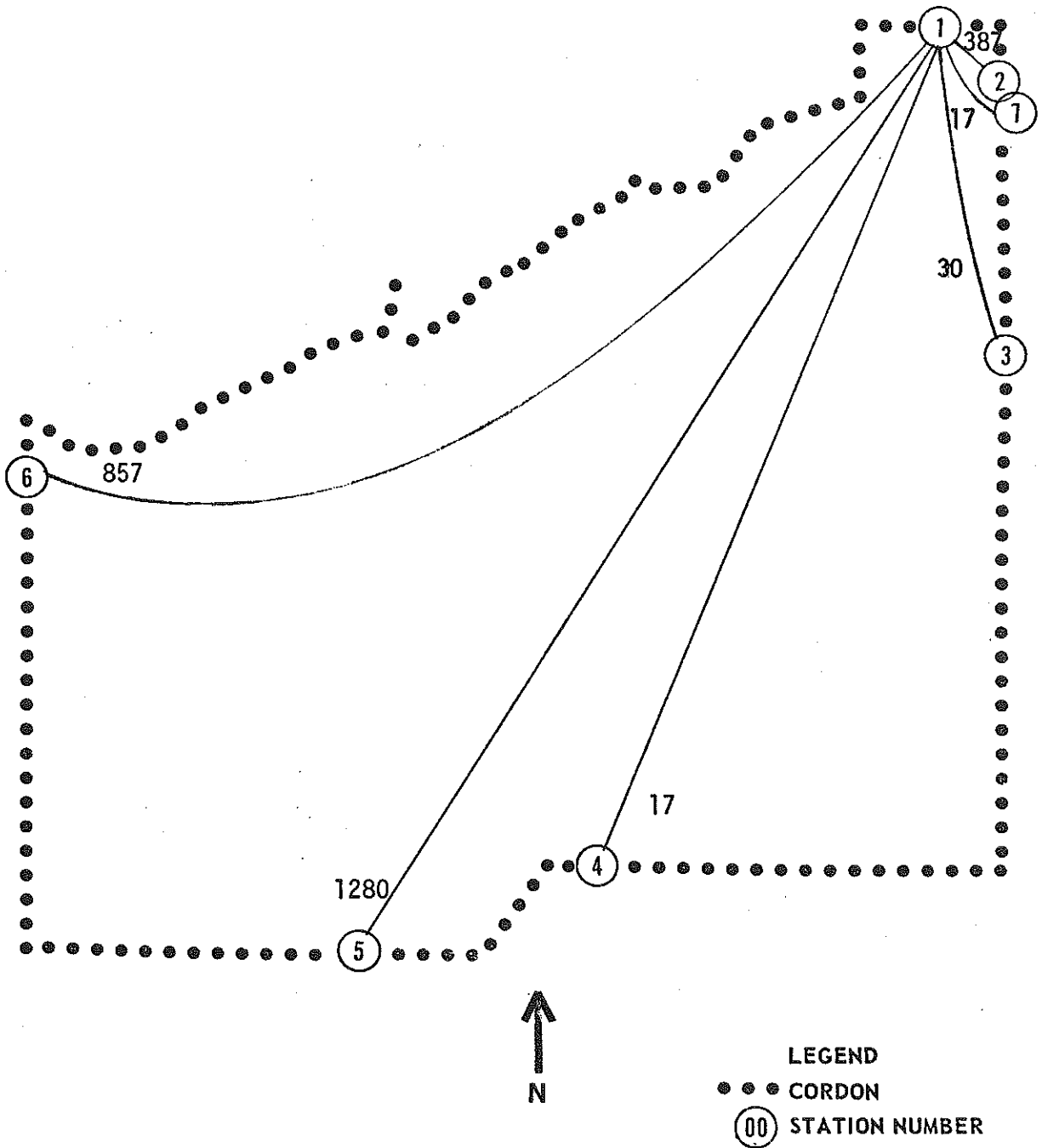
<u>Trip Purpose</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	3283	30.7	2583	78.7	700	21.3
Personal Business	558	5.2	519	93.0	39	7.0
Shopping	1920	18.0	1801	93.8	119	6.2
Vacation	1538	14.4	568	36.9	970	63.1
Other Soc. or Rec.	2324	21.7	1692	72.8	632	27.2
All Other	1068	10.0	940	88.0	128	12.0
TOTAL	10,691	100.0	8,103	75.8	2,588	24.2

STATION 1, M-131 NORTH

THRU TRIPS INTERCHANGING WITH EXTERNAL STATIONS

<u>EXTERNAL STATION</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
1. M-131 North	—	—
2. US-31 East	387	14.9
3. Mitchell Street	30	1.2
4. River Road	17	.7
5. US-131 South	1,280	49.4
6. US-31 West	857	33.1
7. Pickeral Lake Road	17	.7
TOTAL	2,588	100.0

STATION 1, M-131 NORTH
TRAFFIC INTERCHANGING WITH EXTERNAL STATIONS

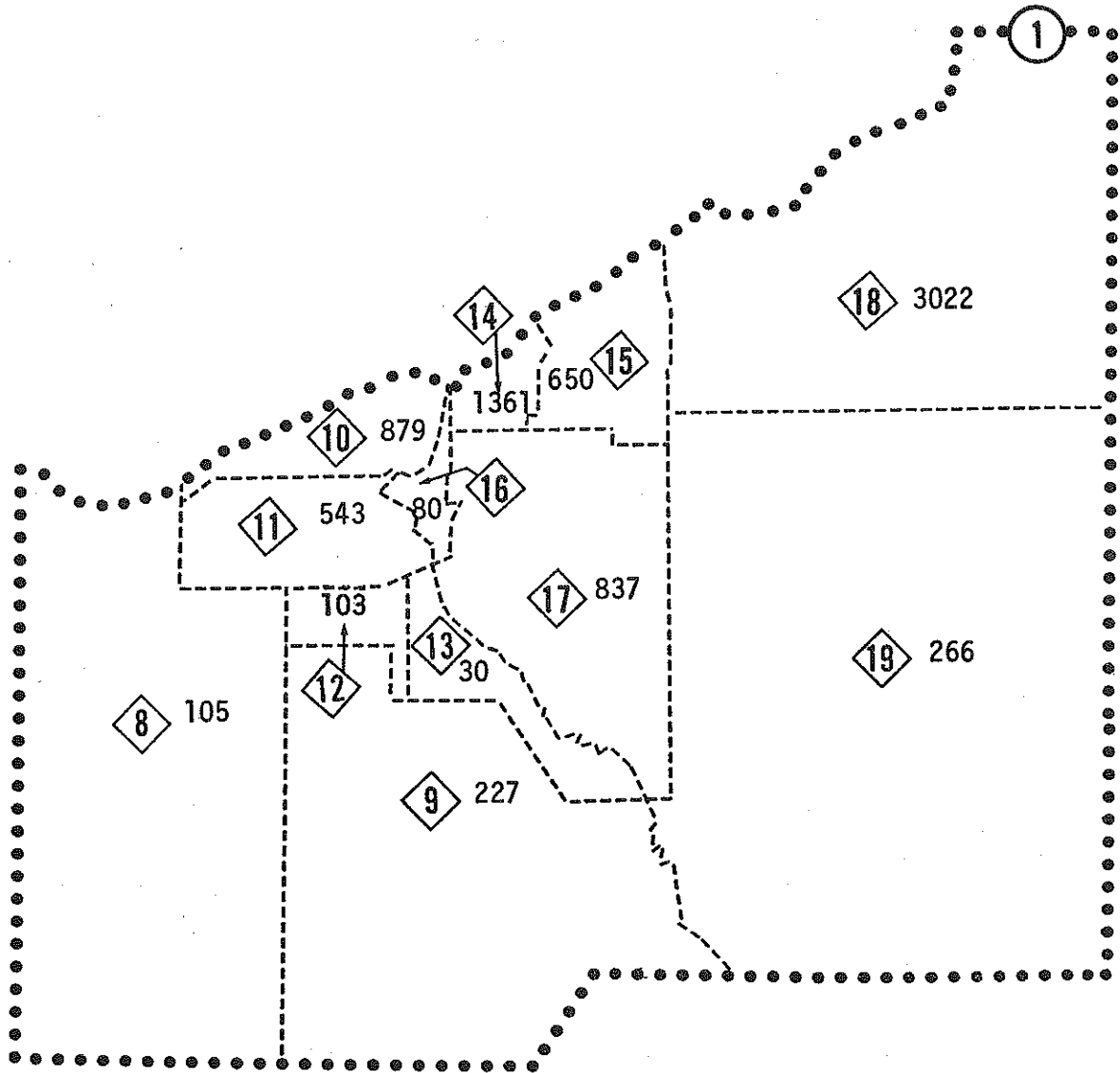


STATION 1, M-131 NORTH

TERMINAL TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	105	1.3
9	227	2.8
10	879	10.8
11	543	6.7
12	103	1.3
13	30	.4
14	1361	16.8
15	650	8.0
16	80	1.0
17	837	10.3
18	3022	37.3
19	266	3.3
 	<hr/>	<hr/>
TOTAL	8,103	100.0

STATION 1, M-131 NORTH
TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- - - ZONE LIMITS
- ◇ 00 INTERNAL ZONES

STATION 1, M-131 NORTH

TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	626	5.9
10 - 20	7249	67.7
20 - 30	0	.0
30 - 40	442	4.1
40 - 50	472	4.4
50 - 60	547	5.1
60 - 80	342	3.2
80 - 100	137	1.3
100 - 120	194	1.8
120 - 150	86	.8
150 - 180	102	1.0
180 - 300	270	2.5
300 - 420	163	1.5
420 - 540	53	.5
540 - 660	4	.1
660 - 680	4	.1
TOTAL	10,691	100

* Longest Trip = 11 Hrs. 20 Min.

Average Trip Length = 39 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.

STATION 2, US- 31 EAST

<u>LOCATION:</u>	0.1 Miles East of Pickeral Lake Road
<u>CLASSIFICATION:</u>	State Trunkline
TOTAL TRIPS:	11607
<u>MAJOR VEHICLE TYPE:</u>	Passenger car 9411 (81.1%)
<u>MAJOR TRIP PURPOSE:</u>	Work 3458 (29.8%)
<u>TRIP DISTRIBUTION:</u>	Terminal 7512 (64.7%) Through 4095 (35.3%)
<u>MAJOR THROUGH TRIP ATTRACTOR:</u>	Station 6, US-31 West 1936 (47.3%)
<u>MAJOR TERMINAL TRIP ATTRACTOR:</u>	Zone 18, 2081 (27.7%)
<u>LONGEST TRIP:</u>	18 Hrs. 20 Min.
<u>AVERAGE TRIP LENGTH:</u>	1 Hr. 27 Min.

STATION 2, US-31 EAST
VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	9411	81.1	6265	66.6	3146	33.4
Passenger Car with Trailer	177	1.5	52	29.4	125	70.6
Panel or Pickup	1290	11.1	852	66.0	438	34.0
Panel or Pickup with Trailer	99	0.9	26	26.3	73	73.7
Other Single Unit Trucks	423	3.6	214	50.6	209	49.4
Combinations and Trucks with Trailers	207	1.8	103	49.8	104	50.2
TOTAL	11,607	100.0	7,512	64.7	4,095	35.3

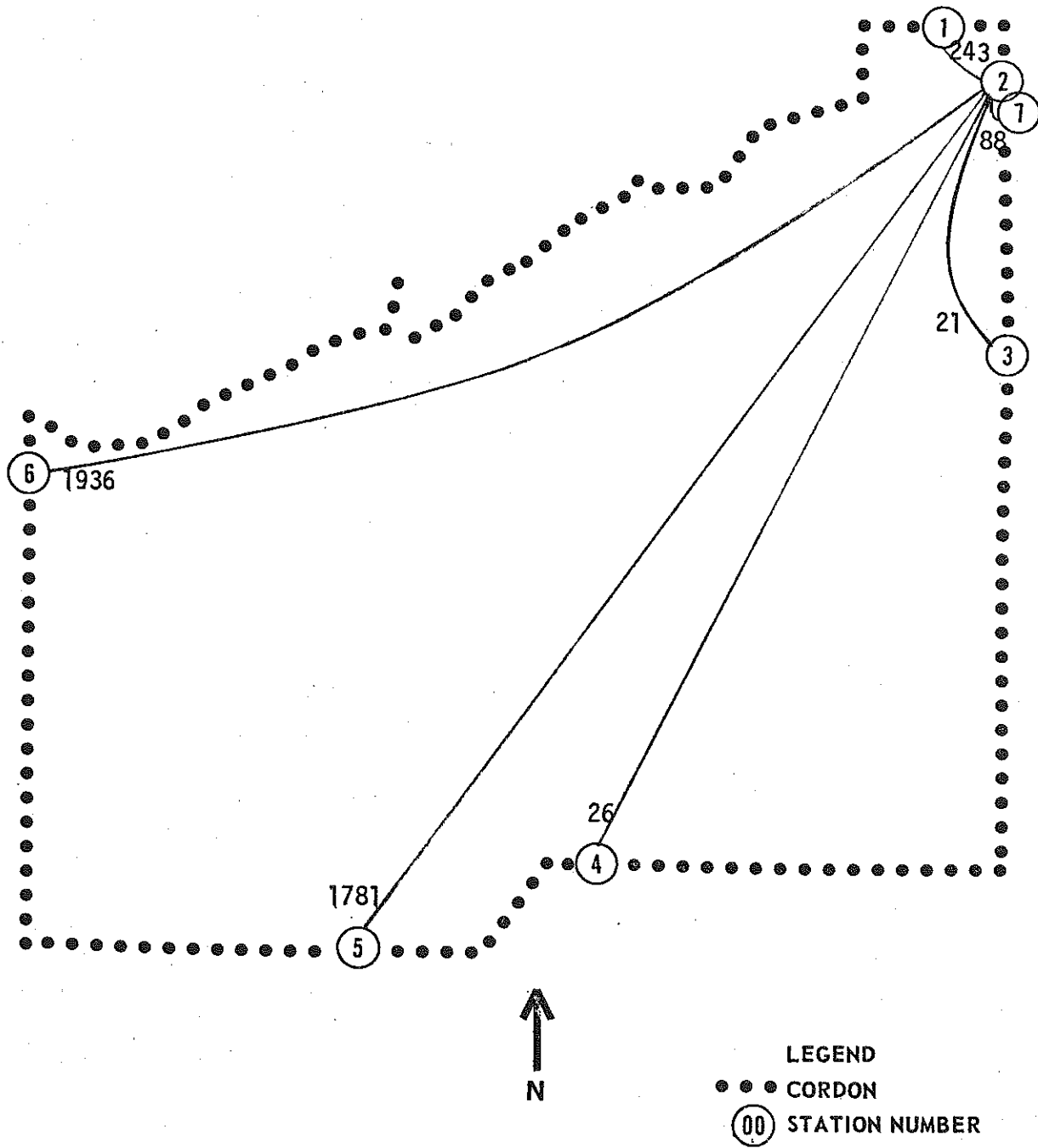
<u>Trip Purpose</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	3458	29.8	2492	72.1	966	27.9
Personal Business	716	6.2	563	78.6	153	21.4
Shopping	1637	14.1	1450	88.6	187	11.4
Vacation	2859	24.6	783	27.4	2076	72.6
Other Soc. or Rec.	1587	13.7	1060	66.8	527	33.2
All Other	1350	11.6	1164	86.2	186	13.8
TOTAL	11,607	100.0	7,512	64.7	4,095	35.3

STATION 2, US-31 EAST

THRU TRIPS INTERCHANGING WITH EXTERNAL STATIONS

<u>EXTERNAL STATION</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
1. M-131 North	243	5.9
2. US-31 East	—	—
3. Mitchell Street	21	.5
4. River Road	26	.6
5. US-131 South	1,781	43.6
6. US-31 West	1,936	47.3
7. Pickeral Lake Road	88	2.1
TOTAL	<u>4,095</u>	<u>100.0</u>

STATION 2, US-31 EAST
TRAFFIC INTERCHANGING WITH EXTERNAL STATIONS

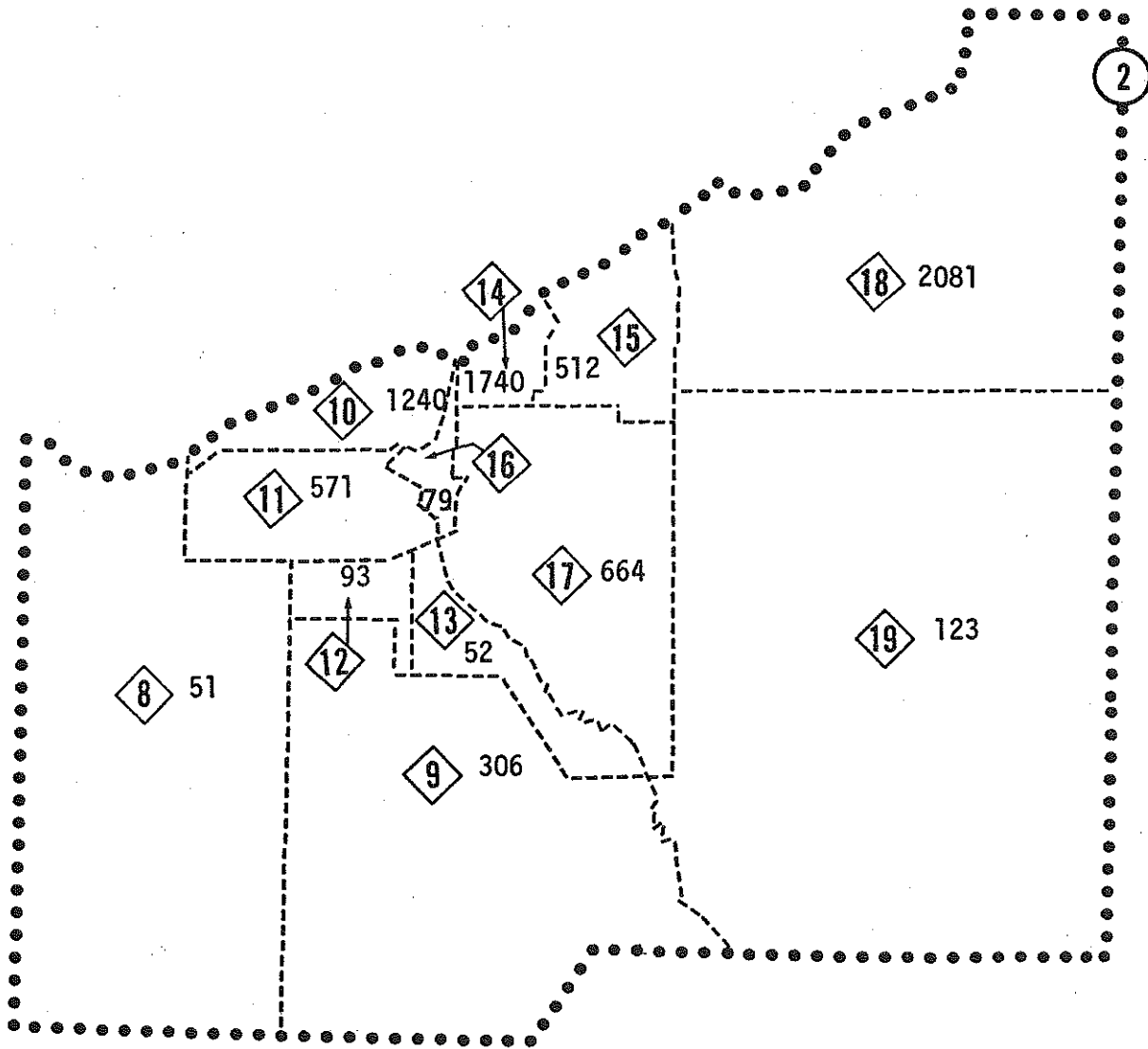


STATION 2, US-31 EAST

TERMINAL TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	51	.7
9	306	4.1
10	1240	16.5
11	571	7.6
12	93	1.2
13	52	.7
14	1740	23.2
15	512	6.8
16	79	1.1
17	664	8.8
18	2081	27.7
19	123	1.6
 	<hr/>	<hr/>
TOTAL	7,512	100.0

STATION 2, US-31 EAST
 TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- ZONE LIMITS
- ◇ 00 INTERNAL ZONES

STATION 2, US-31 EAST
TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	561	4.8
10 - 20	4186	36.0
20 - 30	5	.1
30 - 40	476	4.1
40 - 50	927	8.0
50 - 60	1798	15.4
60 - 80	296	2.6
80 -100	626	5.4
100 -120	262	2.3
120 -150	351	3.0
150 -180	553	4.8
180 -300	660	5.7
300 -420	584	5.0
420 -540	165	1.4
540 -660	96	.8
660 -780	41	.4
780 -900	15	.1
900 -1020	0	.0
1020 -1100	<u>5</u>	<u>.1</u>
TOTAL	11,607	100

* Longest Trip = 18 Hrs. 20 Min.

Average Trip Length = 1 Hr. 27 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 3, MITCHELL STREET

<u>LOCATION:</u>	0.2 Miles East of Boyer Street
<u>CLASSIFICATION:</u>	County Road
<u>TOTAL TRIPS:</u>	1482
<u>MAJOR VEHICLE TYPE:</u>	Passenger car 1164 (78.5%)
<u>MAJOR TRIP PURPOSE:</u>	Work 549 (37.0%)
<u>TRIP DISTRIBUTION:</u>	Terminal 1288 (86.9%) Through 194 (13.1%)
<u>MAJOR THROUGH TRIP ATTRACTOR:</u>	Station 6, US-131 West 72 (37.1%)
<u>MAJOR TERMINAL TRIP ATTRACTOR:</u>	Zone 14, 367 (28.5%)
<u>LONGEST TRIP:</u>	10 Hrs. 30 Min.
<u>AVERAGE TRIP LENGTH:</u>	28 Min.

STATION 3, MITCHELL STREET

VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	1164	78.5	1027	88.2	137	11.8
Passenger Car with Trailer	8	0.5	7	87.5	1	12.5
Panel or Pickup	266	18.0	226	85.0	40	15.0
Panel or Pickup with Trailer	4	0.3	3	75.0	1	25.0
Other Single Unit Trucks	27	1.8	21	77.8	6	22.2
Combinations and Trucks with Trailers	13	0.9	4	30.8	9	69.2
TOTAL	1,482	100.0	1,288	86.9	194	13.1

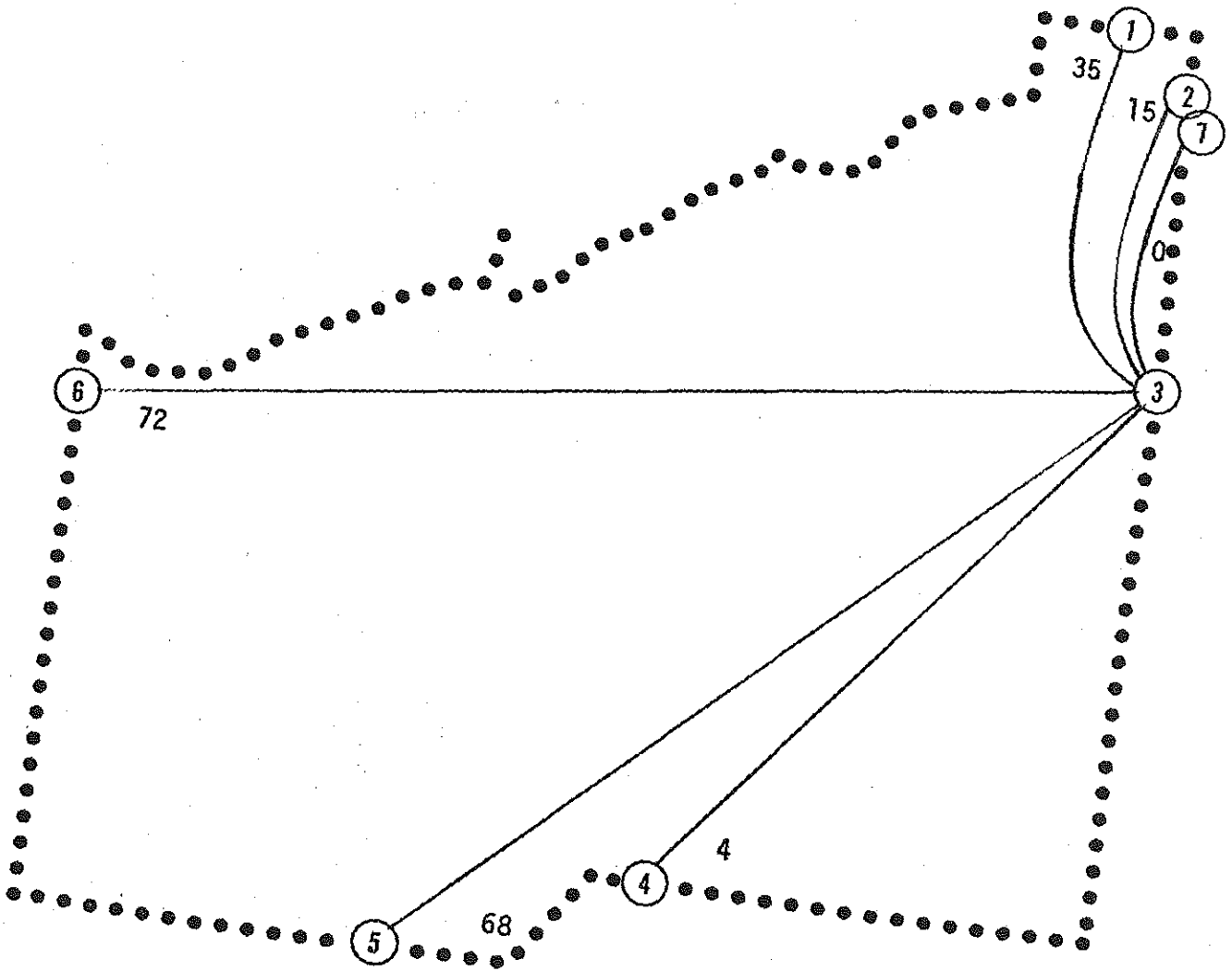
<u>Trip Purpose</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	549	37.0	462	84.2	87	15.8
Personal Business	157	10.6	151	96.2	6	3.8
Shopping	278	18.8	273	98.2	5	1.8
Vacation	55	3.7	28	50.9	27	49.1
Other Soc. or Rec.	259	17.5	205	79.2	54	20.8
All Other	184	12.4	169	91.8	15	8.2
TOTAL	1,482	100.0	1,288	86.9	194	13.1

STATION 3, MITCHELL STREET

THRU TRIPS INTERCHANGING WITH EXTERNAL STATIONS

<u>EXTERNAL STATION</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
1. M-131 North	35	18.0
2. US-31 East	15	7.7
3. Mitchell Street	—	—
4. River Road	4	2.1
5. US-131 South	68	35.1
6. US-31 West	72	37.1
7. Pickeral Lake Road	0	.0
TOTAL	<u>194</u>	<u>100.0</u>

STATION 3, MITCHELL STREET
TRAFFIC INTERCHANGING WITH EXTERNAL STATIONS



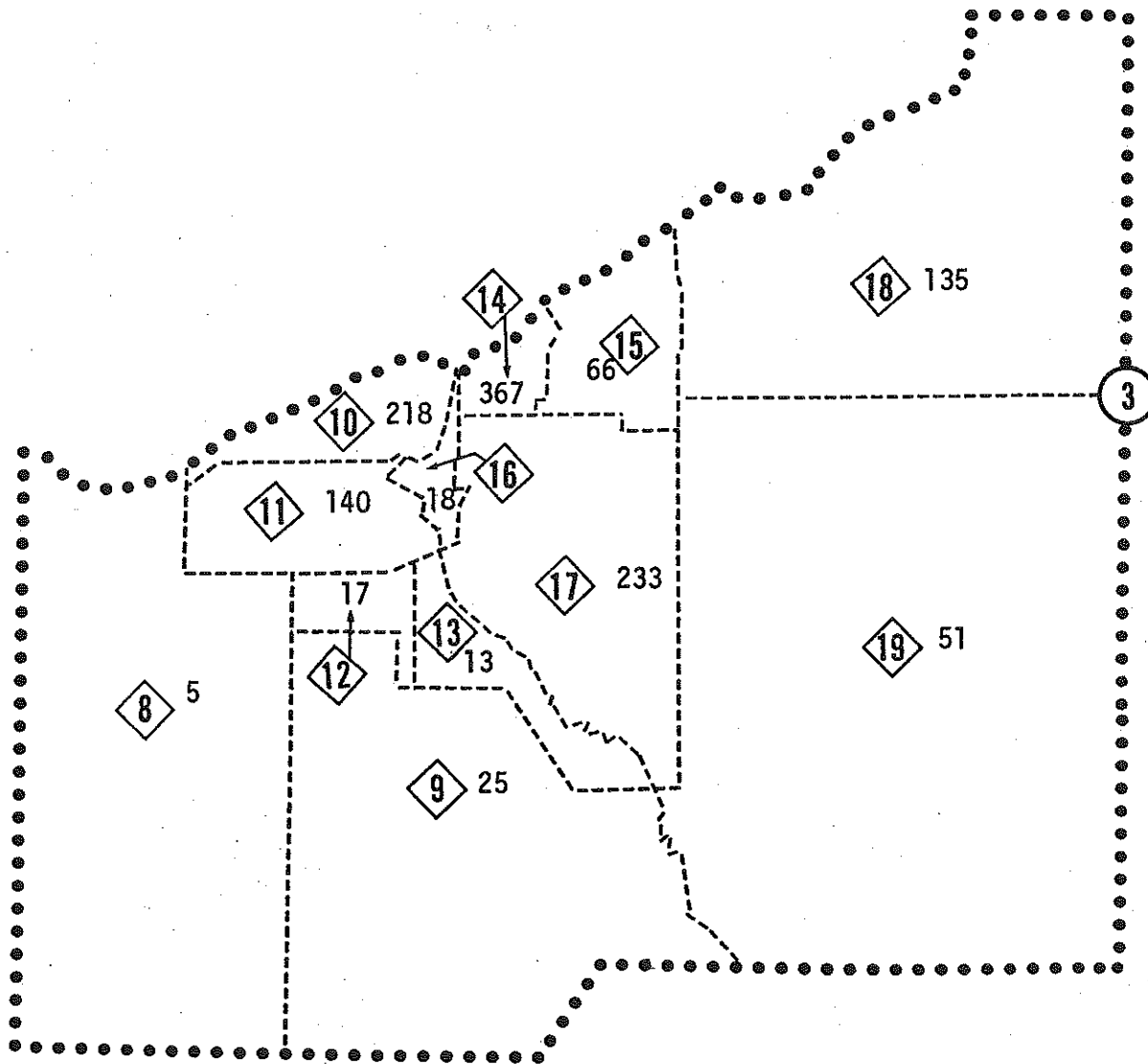
LEGEND
●●●● CORDON
①① STATION NUMBER

STATION 3, MITCHELL STREET

TERMINAL TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	5	.4
9	25	1.9
10	218	16.9
11	140	10.9
12	17	1.3
13	13	1.0
14	367	28.5
15	66	5.1
16	18	1.4
17	233	18.1
18	135	10.5
19	51	4.0
	<hr/>	<hr/>
TOTAL	1,288	100.0

STATION 3, MITCHELL STREET
TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- ZONE LIMITS
- ◇ 00 INTERNAL ZONES

STATION 3, MITCHELL STREET

TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	187	12.6
10 - 20	812	54.9
20 - 30	42	2.8
30 - 40	107	7.2
40 - 50	240	16.3
50 - 60	28	1.9
60 - 80	17	1.1
80 -100	9	.6
100 -120	5	.3
120 -150	4	.3
150 -180	2	.1
180 -300	24	1.6
300 -420	3	.2
420 -540	0	.0
540 -630	<u>2</u>	<u>.1</u>
TOTAL	1,482	100

* Longest Trip = 10 Hrs. 30 Min.

Average Trip Length = 28 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.

STATION 4, RIVER ROAD

LOCATION: 0.4 Miles Northwest of Click Road

CLASSIFICATION: County Road

TOTAL TRIPS: 782

MAJOR VEHICLE TYPE: Passenger car 566 (72.4%)

MAJOR TRIP PURPOSE: Work 368 (47.1%)

TRIP DISTRIBUTION: Terminal 694 (88.7%)
Through 88 (11.3%)

MAJOR THROUGH TRIP ATTRACTOR: Station 6, US-131 West 43 (48.8%)

MAJOR TERMINAL TRIP ATTRACTOR: Zone 17, 155 (22.4%)

LONGEST TRIP: 14 Hrs.

AVERAGE TRIP LENGTH: 21 Min.

STATION 4, RIVER ROAD
VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	566	72.4	513	90.6	53	9.4
Passenger Car with Trailer	4	0.5	3	75.0	1	25.0
Panel or Pickup	170	21.7	144	84.7	26	15.3
Panel or Pickup with Trailer	0	0.0	0	0.0	0	0.0
Other Single Unit Trucks	39	5.0	32	82.1	7	17.9
Combinations and Trucks with Trailers	3	0.4	2	66.7	1	33.3
TOTAL	782	100.0	694	88.7	88	11.3

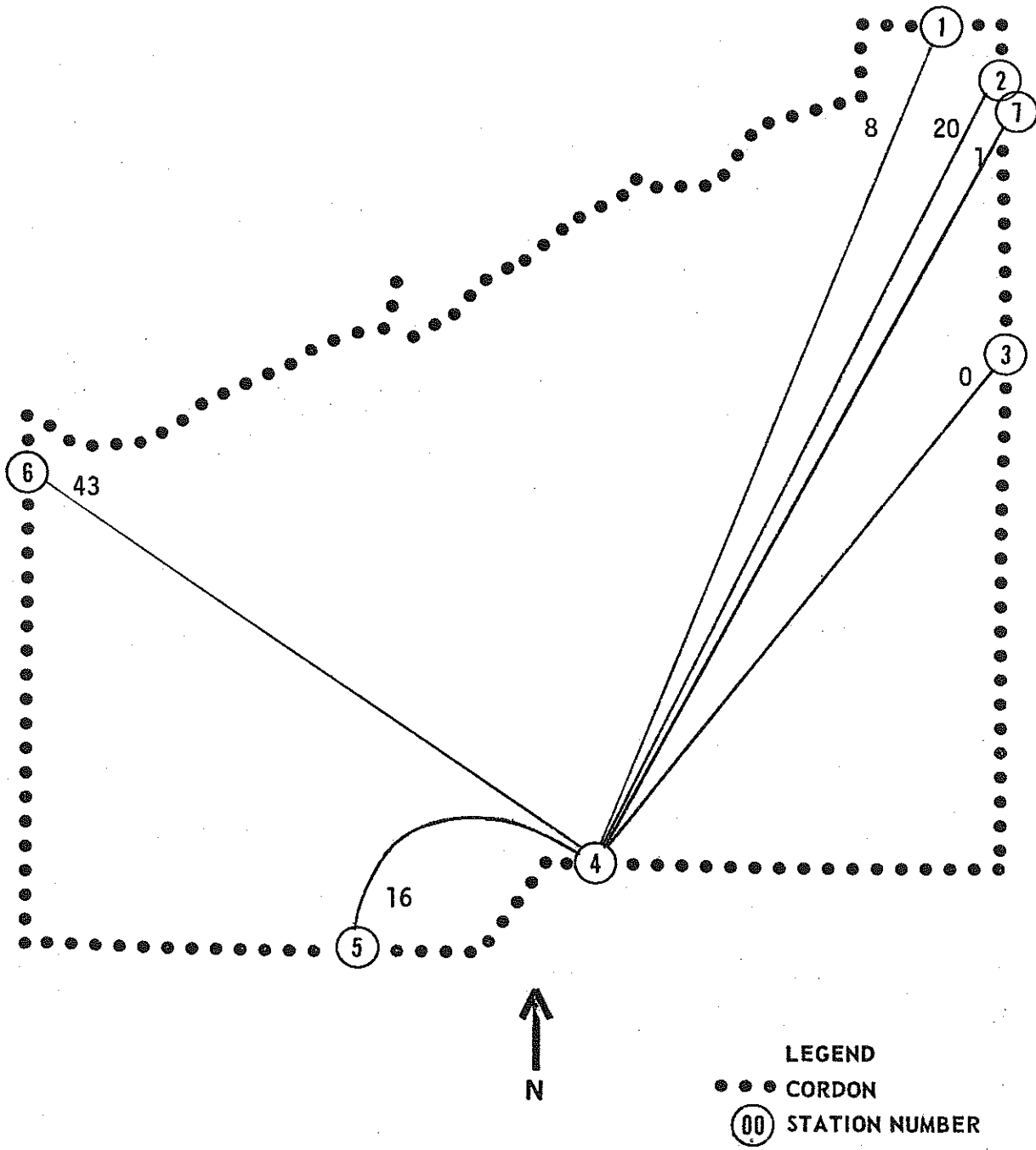
<u>Trip Purpose</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	368	47.1	314	85.3	54	14.7
Personal Business	40	5.1	34	85.0	6	15.0
Shopping	112	14.3	111	99.1	1	0.9
Vacation	13	1.7	10	76.9	3	23.1
Other Soc. or Rec.	149	19.1	137	91.9	12	8.1
All Other	100	12.7	88	88.0	12	12.0
TOTAL	782	100.0	694	88.7	88	11.3

STATION 4, RIVER ROAD

THRU TRIPS INTERCHANGING WITH EXTERNAL STATIONS

<u>EXTERNAL STATION</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
1. M-131 North	8	9.1
2. US-31 East	20	22.8
3. Mitchell Street	0	.0
4. River Road	—	—
5. US-131 South	16	18.2
6. US-31 West	43	48.8
7. Pickeral Lake Road	1	1.1
TOTAL	88	100.0

STATION 4, RIVER ROAD
TRAFFIC INTERCHANGING WITH EXTERNAL STATIONS

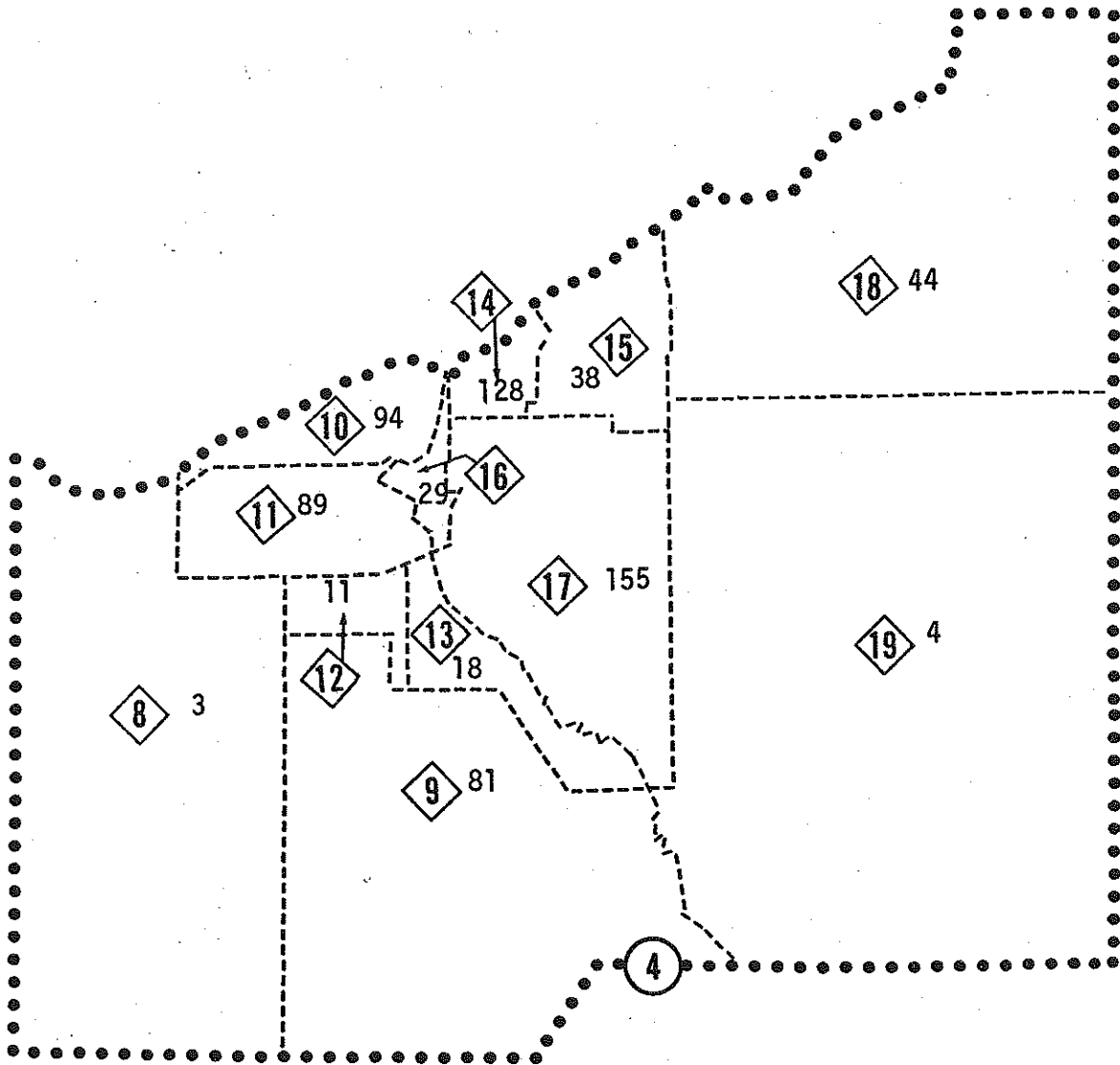


STATION 4, RIVER ROAD

TERMINAL TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	3	.4
9	81	11.7
10	94	13.5
11	89	12.8
12	11	1.6
13	18	2.6
14	128	18.4
15	38	5.5
16	29	4.2
17	155	22.4
18	44	6.3
19	4	.6
	<hr/>	<hr/>
TOTAL	694	100.0

STATION 4, RIVER ROAD
TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- ZONE LIMITS
- ◇ 00 INTERNAL ZONES

STATION 4, RIVER ROAD

TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	127	16.2
10 - 20	416	53.3
20 - 30	123	15.8
30 - 40	76	9.7
40 - 50	25	3.2
50 - 60	3	.4
60 - 80	5	.6
80 -100	1	.1
100 -120	2	.3
120 -150	1	.1
150 -180	0	.0
180 -300	1	.1
300 -420	1	.1
420 -540	0	.0
540 -660	0	.0
660 -780	0	.0
780 -840	1	.1
TOTAL	<u>782</u>	<u>100</u>

* Longest Trip = 14 Hrs.

Average Trip Length = 21 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.

STATION 5, US-131 SOUTH

<u>LOCATION:</u>	0.1 Miles South of Kemp Road
<u>CLASSIFICATION:</u>	State Trunkline
<u>TOTAL TRIPS:</u>	7057
<u>MAJOR VEHICLE TYPE:</u>	Passenger car 5556 (78.7%)
<u>MAJOR TRIP PURPOSE:</u>	Work 2363 (33.5%)
<u>TRIP DISTRIBUTION:</u>	Terminal 4892 (69.3%) Through 2165 (30.7%)
<u>MAJOR THROUGH TRIP ATTRACTOR:</u>	Station 2, US-31 East 1042 (48.1%)
<u>MAJOR TERMINAL TRIP ATTRACTOR:</u>	Zone 10, 994 (20.2%)
<u>LONGEST TRIP:</u>	14 Hrs. 20 Min.
<u>AVERAGE TRIP LENGTH:</u>	1 Hr. 43 Min.

STATION 5, US-131 SOUTH

VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	5556	78.7	4012	72.2	1544	27.8
Passenger Car with Trailer	101	1.4	23	22.8	78	77.2
Panel or Pickup	893	12.7	588	65.8	305	34.2
Panel or Pickup with Trailer	60	0.9	9	15.0	51	85.0
Other Single Unit Trucks	288	4.1	170	59.0	118	41.0
Combinations and Trucks with Trailers	159	2.2	90	56.6	69	43.4
TOTAL	7,057	100.0	4,892	69.3	2,165	30.7

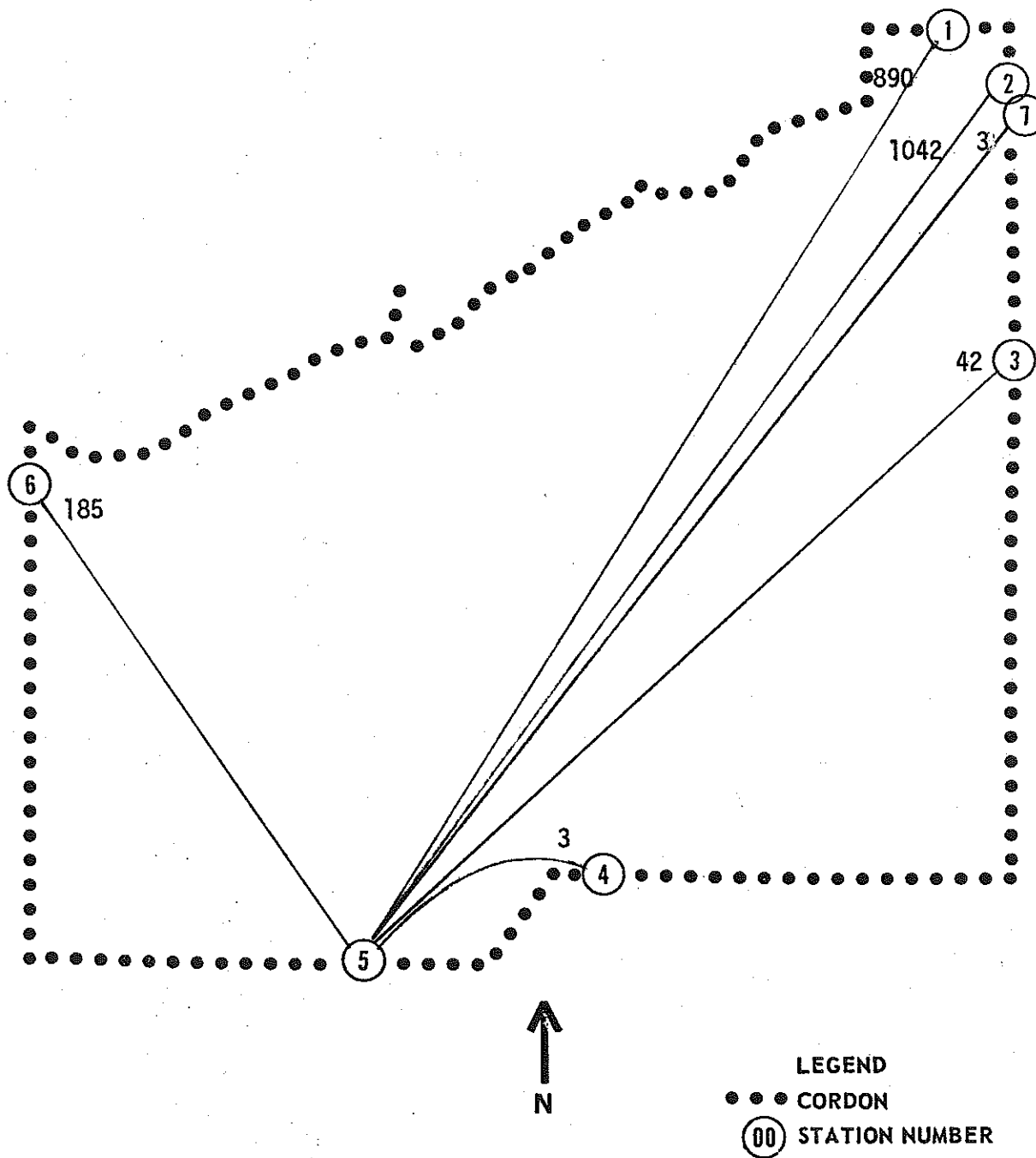
<u>Trip Purpose</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	2363	33.5	1694	71.7	669	28.3
Personal Business	509	7.2	419	82.3	90	17.7
Shopping	1087	15.4	1041	95.8	46	4.2
Vacation	1379	19.5	477	34.6	902	65.4
Other Soc. or Rec.	1020	14.5	640	62.7	380	37.3
All Other	699	9.9	621	88.8	78	11.2
TOTAL	7,057	100.0	4,892	69.3	2,165	30.7

STATION 5, US-131 SOUTH

THRU TRIPS INTERCHANGING WITH EXTERNAL STATIONS

<u>EXTERNAL STATION</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
1. M-131 North	890	41.1
2. US-31 East	1,042	48.1
3. Mitchell Street	42	2.0
4. River Road	3	.1
5. US-131 South	—	—
6. US-31 West	185	8.6
7. Pickeral Lake Road	3	.1
TOTAL	<u>2,165</u>	<u>100.0</u>

STATION 5, US-131 SOUTH
TRAFFIC INTERCHANGING WITH EXTERNAL STATIONS

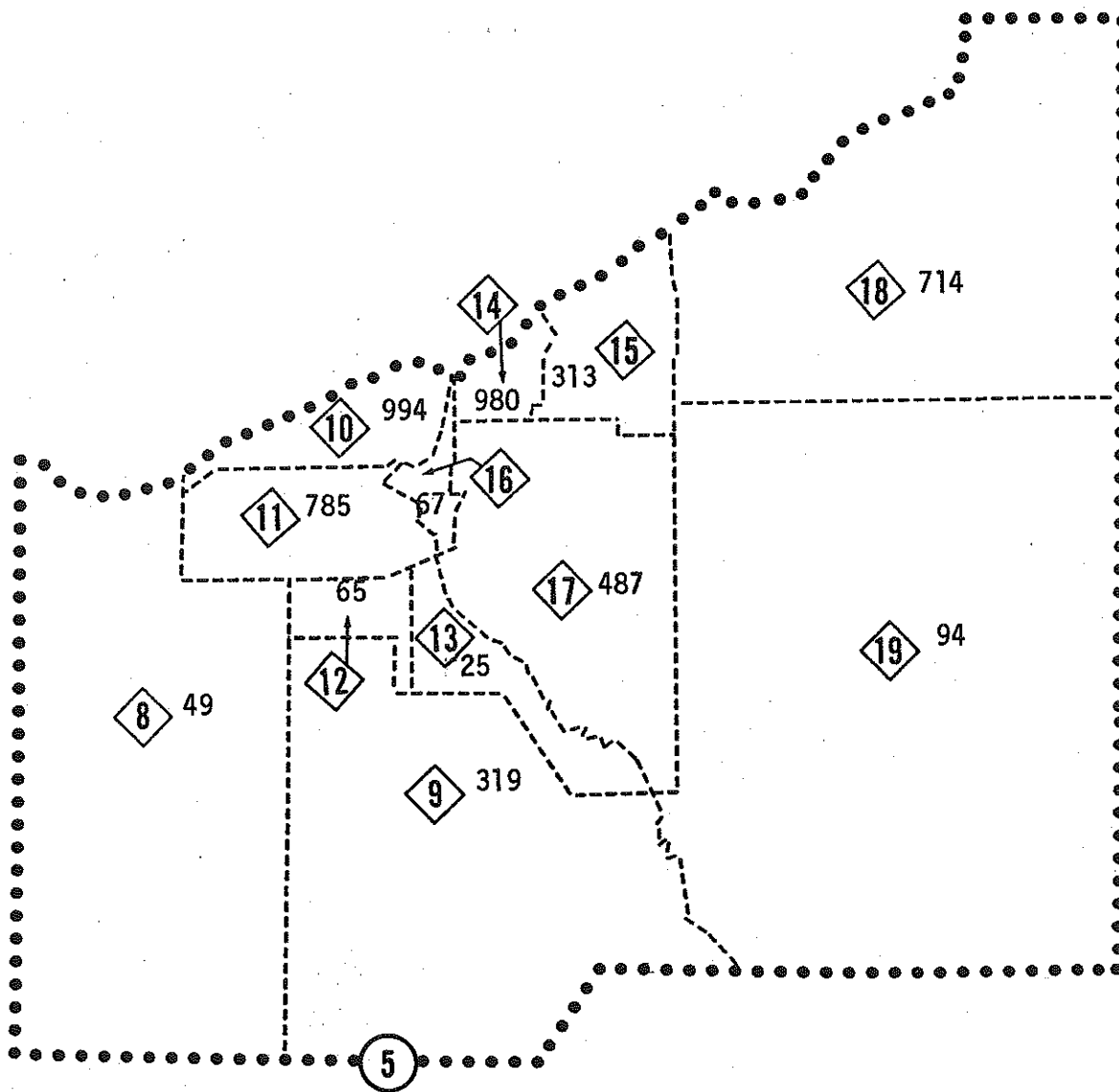


STATION 5, US-131 SOUTH

TERMINAL TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	49	1.0
9	319	6.5
10	994	20.2
11	785	16.3
12	65	1.3
13	25	.5
14	980	19.9
15	313	6.4
16	67	1.4
17	487	10.0
18	714	14.6
19	94	1.9
TOTAL	4,892	100.0

STATION 5, US-131 SOUTH
TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- ZONE LIMITS
- ◇ 00 INTERNAL ZONES

STATION 5, US-131 SOUTH

TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	197	2.8
10 - 20	585	8.3
20 - 30	957	13.6
30 - 40	1457	20.5
40 - 50	1215	17.2
50 - 60	259	3.7
60 - 80	221	3.1
80 -100	260	3.7
100 -120	140	2.0
120 -150	155	2.2
150 -180	145	2.1
180 -300	860	12.2
300 -420	394	5.6
420 -540	107	1.5
540 -660	48	.7
660 -780	48	.7
780 -860	<u>9</u>	<u>.1</u>
TOTAL	7,057	100

* Longest Trip = 14 Hrs. 20 Min.

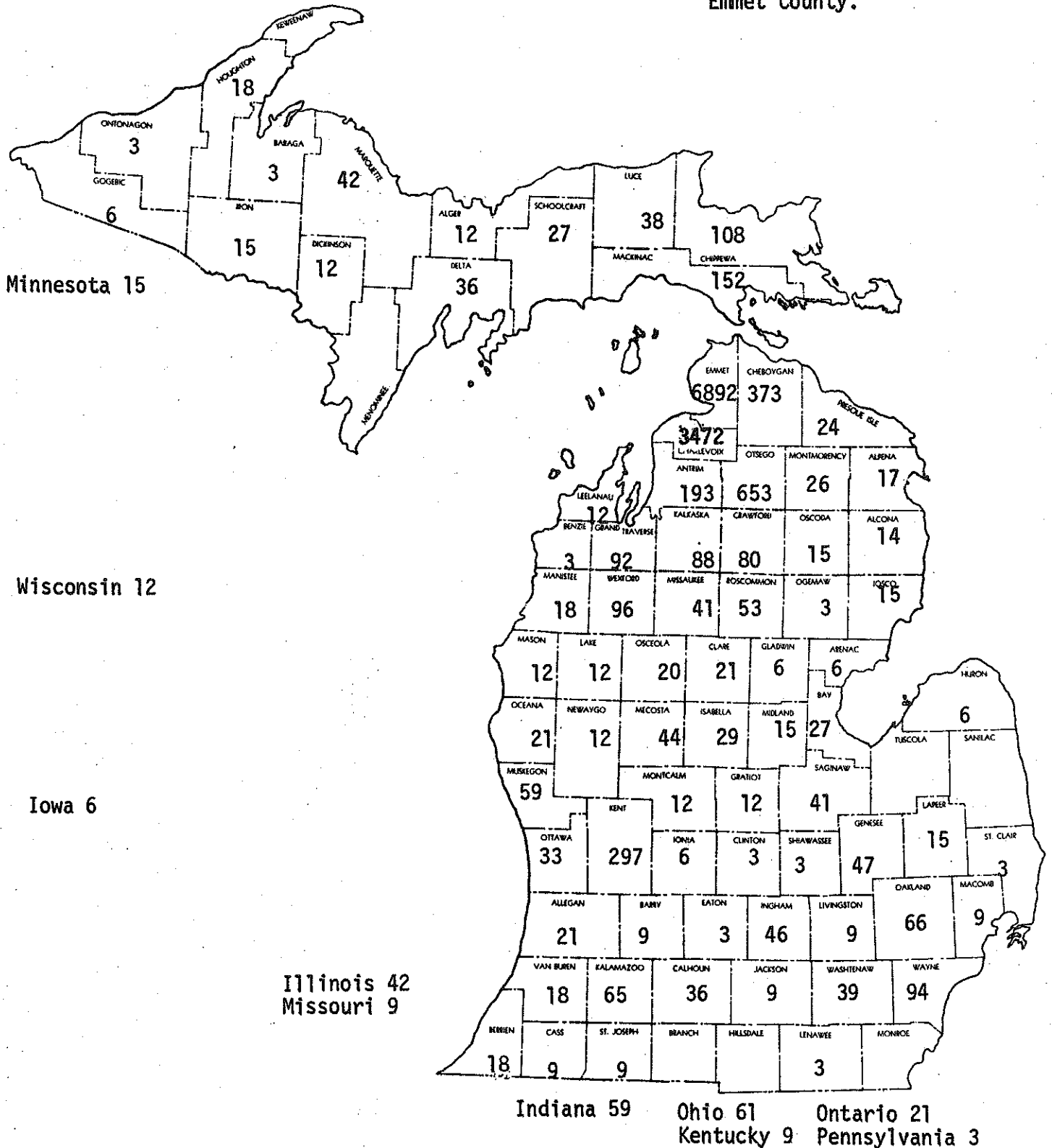
Average Trip Length = 1 Hr. 43 Min.

* 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 5, US-131 SOUTH
TRIP END SUMMARY

Total: 7,057 trips = 14,114
trip ends. 786 trips had their
origin and destination in
Emmet County.



STATION 6, US-31 WEST

<u>LOCATION:</u>	0.2 Miles West of Resort Pike Road (West of Parkview Drive)
<u>CLASSIFICATION:</u>	State Trunkline
<u>TOTAL TRIPS:</u>	10318
<u>MAJOR VEHICLE TYPE:</u>	Passenger car 8264 (80.1%)
<u>MAJOR TRIP PURPOSE:</u>	Work 3521 (34.1%)
<u>TRIP DISTRIBUTION:</u>	Terminal 6343 (61.5%) Through 3975 (38.5%)
<u>MAJOR THROUGH TRIP ATTRACTOR:</u>	Station 2, US-31 West 2585 (65.0%)
<u>MAJOR TERMINAL TRIP ATTRACTOR:</u>	Zone 14, 1822 (28.7%)
<u>LONGEST TRIP:</u>	14 Hrs. 30 Min.
<u>AVERAGE TRIP LENGTH:</u>	1 Hr. 21 Min.

STATION 6, US-31 WEST
VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	8264	80.1	5244	63.5	3020	36.5
Passenger Car with Trailer	181	1.8	39	21.5	142	78.5
Panel or Pickup	1288	12.5	794	61.6	494	38.4
Panel or Pickup with Trailer	70	0.7	12	17.1	58	82.9
Other Single Unit Trucks	326	3.1	155	47.5	171	52.4
Combinations and Trucks with Trailers	189	1.8	99	52.4	90	47.6
TOTAL	10,318	100.0	6,343	61.5	3,975	38.5

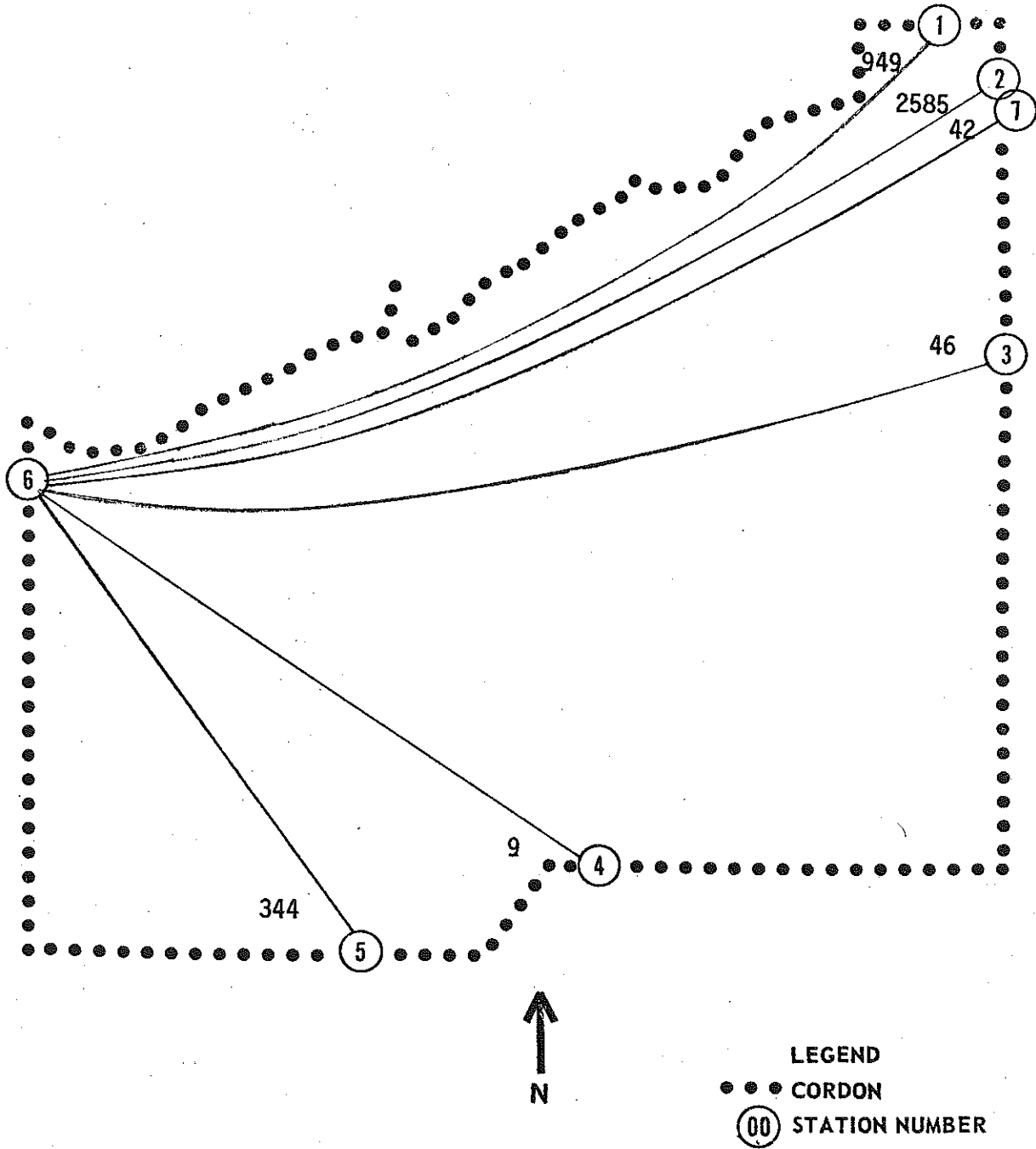
<u>Trip Purpose</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	3521	34.1	2522	71.6	999	28.4
Personal Business	522	5.1	431	82.6	91	17.4
Shopping	1460	14.1	1374	94.1	86	5.9
Vacation	2673	25.9	705	26.4	1968	73.6
Other Soc. or Rec.	1249	12.1	685	54.8	564	45.2
All Other	893	8.7	626	70.1	267	29.9
TOTAL	10,318	100.0	6,343	61.5	3,975	38.5

STATION 6, US-31 WEST

THRU TRIPS INTERCHANGING WITH EXTERNAL STATIONS

<u>EXTERNAL STATION</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
1. M-131 North	949	23.9
2. US-31 East	2,585	65.0
3. Mitchell Street	46	1.2
4. River Road	9	.2
5. US-131 South	344	8.6
6. US-31 West	—	—
7. Pickeral Lake Road	42	1.1
TOTAL	3,975	100.0

STATION 6, US-31 WEST
TRAFFIC INTERCHANGING WITH EXTERNAL STATIONS

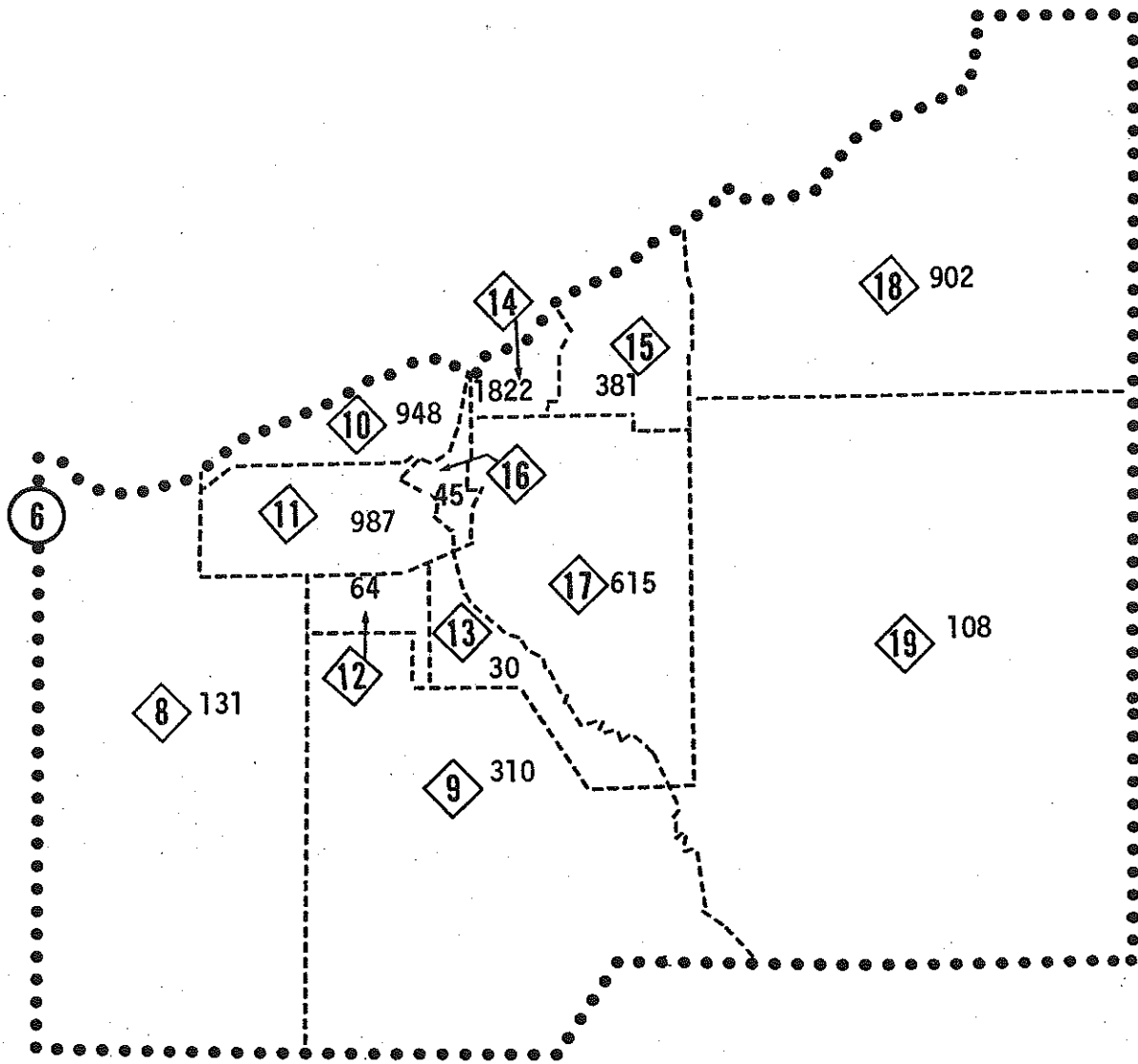


STATION 6, US- 31 WEST

TERMINAL TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	131	2.1
9	310	4.9
10	948	14.9
11	987	15.6
12	64	1.0
13	30	.5
14	1822	28.7
15	381	6.0
16	45	.7
17	615	9.7
18	902	14.2
19	108	1.7
	<hr/>	<hr/>
TOTAL	6,343	100.0

STATION 6, US-31 WEST
TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- ZONE LIMITS
- ◇ 00 INTERNAL ZONES

STATION 6, US-31 WEST

TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	447	4.3
10 - 20	907	8.8
20 - 30	2018	19.6
30 - 40	2525	24.4
40 - 50	748	7.2
50 - 60	204	2.0
60 - 80	290	2.8
80 - 100	800	7.8
100 - 120	347	3.4
120 - 150	278	2.7
150 - 180	525	5.1
180 - 300	704	6.8
300 - 420	328	3.2
420 - 540	124	1.2
540 - 660	41	.4
660 - 780	24	.2
780 - 870	8	.1
TOTAL	10,318	100

* Longest Trip = 14 Hrs. 30 Min.

Average Trip Length = 1 Hr. 20 Min.

* Median Trip Length = 30 - 40 Min.

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

STATION 7, PICKERAL LAKE ROAD

LOCATION: 0.6 Miles East of US-31

CLASSIFICATION: County Road

TOTAL TRIPS: 1212

MAJOR VEHICLE TYPE: Passenger car 960 (79.1%)

MAJOR TRIP PURPOSE: Work 458 (37.8%)

TRIP DISTRIBUTION: Terminal 941 (77.6%)
Through 271 (22.4%)

MAJOR THROUGH TRIP ATTRACTOR: Station 1, M-131 North 109 (40.2%)

MAJOR TERMINAL TRIP ATTRACTOR: Zone 18, 409 (45.5%)

LONGEST TRIP: 8 Hrs.

AVERAGE TRIP LENGTH: 17 Min.

STATION 7, PICKERAL LAKE ROAD

VEHICLE TYPE AND TRIP PURPOSE

<u>Vehicle Type</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Passenger Car	960	79.1	755	78.6	205	21.4
Passenger Car with Trailer	6	0.5	3	50.0	3	50.0
Panel or Pickup	198	16.4	149	75.3	49	24.7
Panel or Pickup with Trailer	2	0.2	1	50.0	1	50.0
Other Single Unit Trucks	38	3.1	27	71.1	11	28.9
Combinations and Trucks with Trailers	8	0.7	6	75.0	2	25.0
TOTAL	1,212	100.0	941	77.6	271	22.4

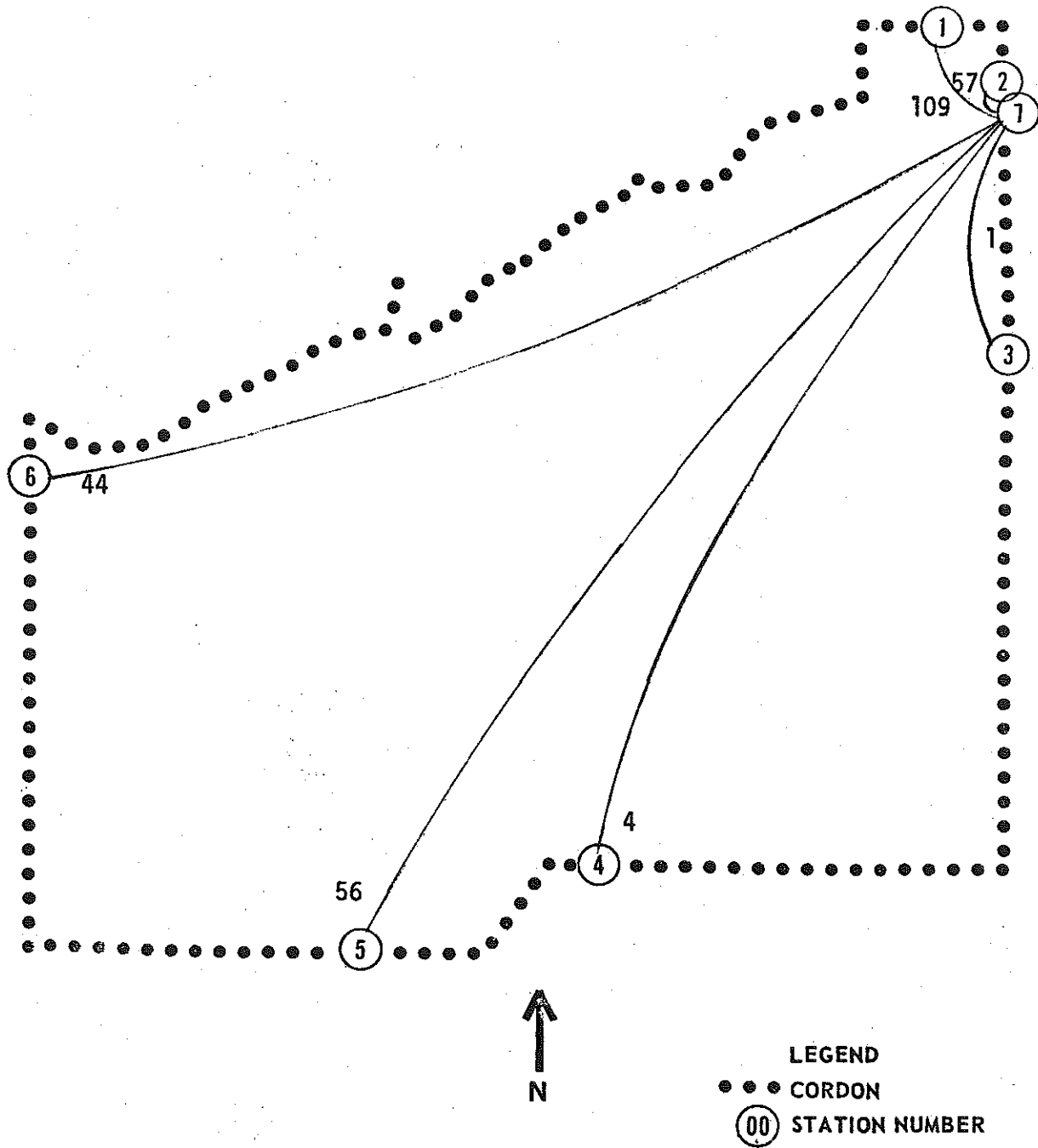
<u>Trip Purpose</u>	<u>Vehicles</u>	<u>Percent of Total</u>	<u>Terminal</u>	<u>%</u>	<u>Through</u>	<u>%</u>
Work	458	37.8	361	78.8	97	21.2
Personal Business	94	7.7	72	76.6	22	23.4
Shopping	304	25.1	296	97.4	8	2.6
Vacation	45	3.7	13	28.9	32	71.1
Other Soc. or Rec.	190	15.7	104	54.7	86	45.3
All Other	121	10.0	95	78.5	26	21.5
TOTAL	1,212	100.0	941	77.6	271	22.4

STATION 7, Pickeral Lake Road

THRU TRIPS INTERCHANGING WITH EXTERNAL STATIONS

<u>EXTERNAL STATION</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
1. M-131 North	109	40.2
2. US-31 East	57	21.0
3. Mitchell Street	1	.4
4. River Road	4	1.5
5. US-131 South	56	20.7
6. US-31 West	44	16.2
7. Pickeral Lake Road	<hr/>	<hr/>
TOTAL	271	100.0

STATION 7, PICKERAL LAKE ROAD
TRAFFIC INTERCHANGING WITH EXTERNAL STATIONS

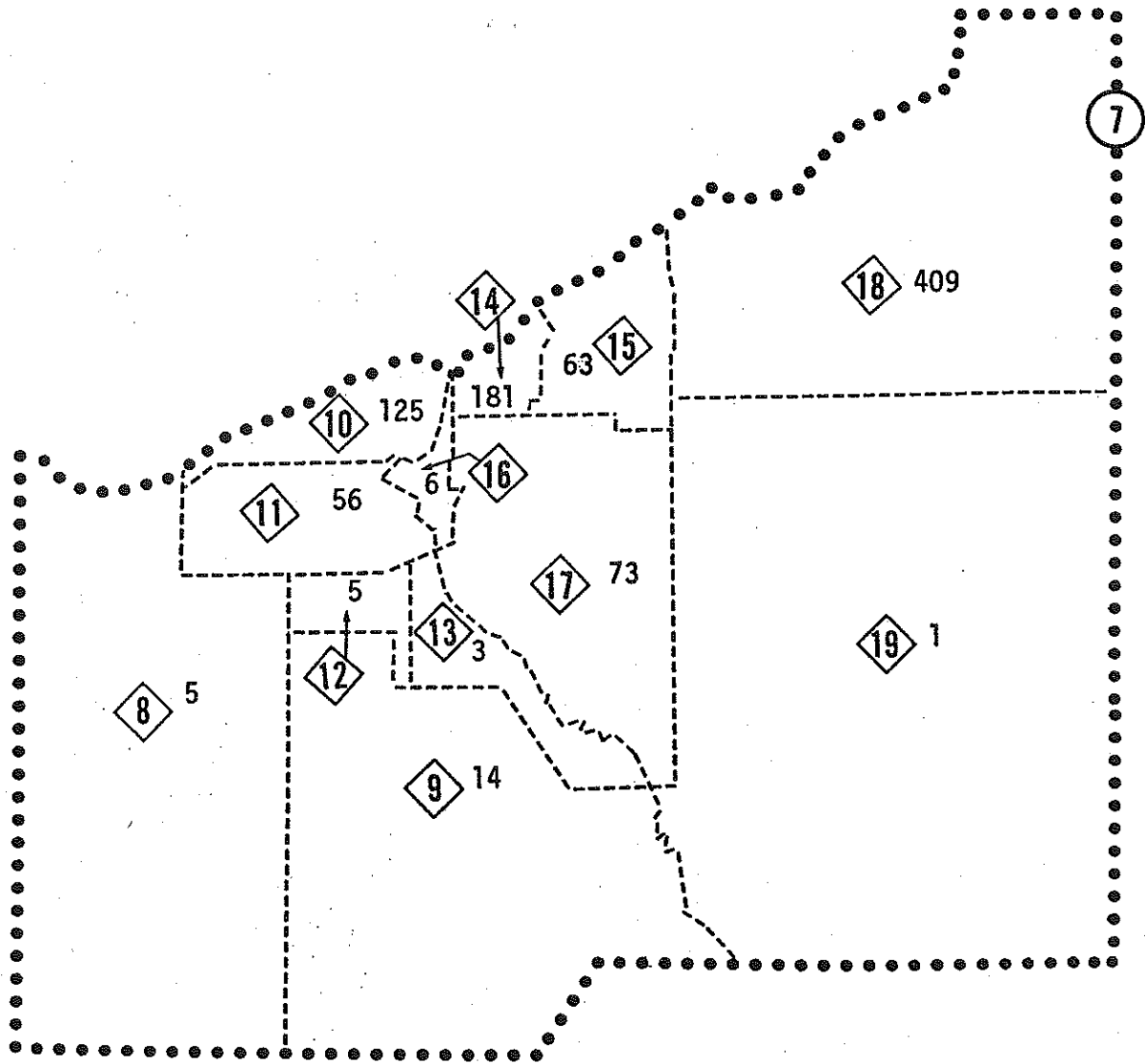


STATION 7, Pickeral Lake Road

TERMINAL TRIPS INTERCHANGING WITH INTERNAL ZONES

<u>INTERNAL ZONE</u>	<u>VEHICLES</u>	<u>PERCENT OF TOTAL</u>
8	5	.5
9	14	1.5
10	125	13.3
11	56	6.0
12	5	.5
13	3	.3
14	181	19.2
15	63	6.7
16	6	.6
17	73	7.8
18	409	43.5
19	1	.1
	<hr/>	<hr/>
TOTAL	941	100.0

STATION 7, PICKERAL LAKE ROAD
 TRAFFIC INTERCHANGING WITH INTERNAL ZONES



LEGEND

- CORDON LINE
- ZONE LIMITS
- ◇ 00 INTERNAL ZONES

STATION 7, PICKERAL LAKE ROAD

TRIP LENGTH

<u>Minutes</u>	<u>No. of Trips</u>	<u>Percent of Total</u>
0 - 10	440	36.3
10 - 20	611	50.4
20 - 30	2	.2
30 - 40	64	5.3
40 - 50	41	3.4
50 - 60	22	1.8
60 - 80	3	.2
80 -100	5	.4
100 -120	2	.2
120 -150	3	.2
150 -180	2	.2
180 -300	15	1.2
300 -420	1	.1
420 -480	<u>1</u>	<u>.1</u>
TOTAL	1,212	100

* Longest Trip = 8 Hrs.

Average Trip Length = 17 Mins.

* Median Trip Length = 10 - 20 Mins.

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

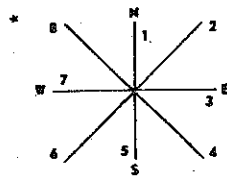
PART III.
APPENDICES

APPENDIX "A"

SINGLE STATION RURAL O-D STUDY

FORM NUMBER	6	COUNTY NUMBER		STATEWIDE NUMBER		HOUR PERIOD ENDING		* DIRECTION		DAY ** OF TRAVEL		MO.		DATE																																				
	1		2 3		4 5 6 7		8 9		10		11		12 13		14 15																																			
INTERVIEW NUMBER	VEH. TYPE	NO. IN VEH.	ORIGIN Where did this trip begin?														DESTINATION Where will this trip end?														WHERE IS VEHICLE GARAGED			ROUTE OF EXIT OR ENT.																
			Co. or State														Co. or State														0 0 0																			
																															0 0 0																			
-66-																															0 0 0																			
																															0 0 0																			
																															0 0 0																			
																															0 0 0																			
																															0 0 0																			
																															0 0 0																			
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	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

- VEHICLE TYPE**
- 1 PASSENGER CAR WITHOUT A TRAILER
 - 2 PASSENGER CAR WITH A TRAILER
 - 3 PANEL OR PICK-UP WITHOUT A TRAILER
 - 4 PANEL OR PICK-UP WITH A TRAILER
 - 5 OTHER SINGLE UNIT TRUCKS
 - 6 COMBINATIONS & TRUCKS WITH TRAILERS



- DAY OF TRAVEL ****
- SUNDAY 1 THURSDAY 5
 - MONDAY 2 FRIDAY 6
 - TUESDAY 3 SATURDAY 7
 - WEDNESDAY 4

- GARAGED**
- 1 ORIGIN
 - 2 DESTINATION
 - 3 OTHER

- TRIP PURPOSE**
- 1 WORK
 - 2 PERS. BUSINESS
 - 3 SHOPPING
 - 4 VACATION
 - 5 OTHER SOC. OR REC.
 - 6 ALL OTHER

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

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, Volkswagen, 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.

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.		

APPENDIX "B"

COMPARISON OF 1967 AND 1977 O-D STUDIES

The Cordon lines for each of the studies were nearly identical. Three stations operated during the 1967 study had slight changes in actual location during the 1977 study. However, this would not affect any comparison drawn between the studies' data. Also, one station that was not operated in 1967 due to low traffic volume was operated in 1977 due to increased volume.

The 1967 and 1977 studies were conducted during July and August respectively.

CORDON LINE STATIONS

<u>1977 STATION NUMBER</u>	<u>1967 STATION NUMBER</u>	<u>ROUTE</u>	<u>1967 LOCATIONS</u>
1	1	M-131 North	*1.1 miles north of US-31
2	2	US-31 East	.1 mile northeast of Pickeral Lake Road
3	3	Mitchell St.	.2 miles east of Boyer Street
4	4	River Road	.4 miles northwest of Click Road
5	5	US-131 South	* .1 mile south of Intertown Road
6	6	US-31 West	* .1 mile west of Pike Road
7	N.O.	Pickeral Lake Road	None

N.O. = Not Operated

* Indicates difference in exact location for the 1977 study.

See page 9 for comparison.

EXPANDED VEHICLE TRIPS BY STATION
1967 vs 1977

<u>ROUTE</u>	<u>1967</u>	<u>% OF TOTAL</u>	<u>1977</u>	<u>% OF TOTAL</u>	<u>% INCREASE 1967 to 1977</u>
M-131 North	4,710	19.7	10,691	24.8	127.0
US-31 East	6,879	28.7	11,607	26.9	68.7
Mitchell Street	779	3.3	1,482	3.4	90.2
River Road	384	1.6	782	1.8	103.6
US-131 South	5,172	21.6	7,057	16.4	36.4
US-31 West	6,027	25.1	10,318	23.9	71.2
Pickeral Lake Road	—	—	1,212	2.8	—
	—	—	—	—	—
	23,951	100.0	43,149	100.0	
* Adjusted Vehicle Trips	<u>- 5,176</u> 18,775	100.0%	<u>- 6,688</u> 36,461	100.0%	94.2%

* A through trip is counted both at the station of entrance and exit. To adjust for this double counting it was necessary to half-factor through trips.

TRIP MOVEMENTS
1967 Vs 1977

