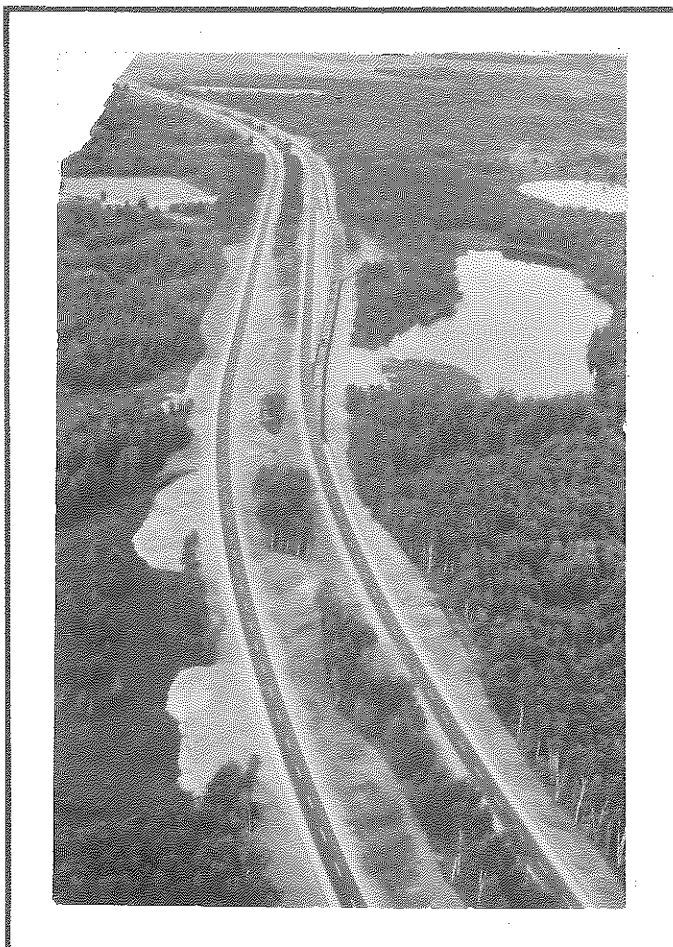


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# 1967 MICHIGAN REST AREA STUDY

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Prepared by:

TRANSPORTATION SURVEY & ANALYSIS SECTION  
TRANSPORTATION PLANNING DIVISION  
BUREAU OF ENGINEERING  
MICHIGAN DEPARTMENT OF STATE HIGHWAYS

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U. S. Department of Transportation  
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## REST AREA STUDY 1967

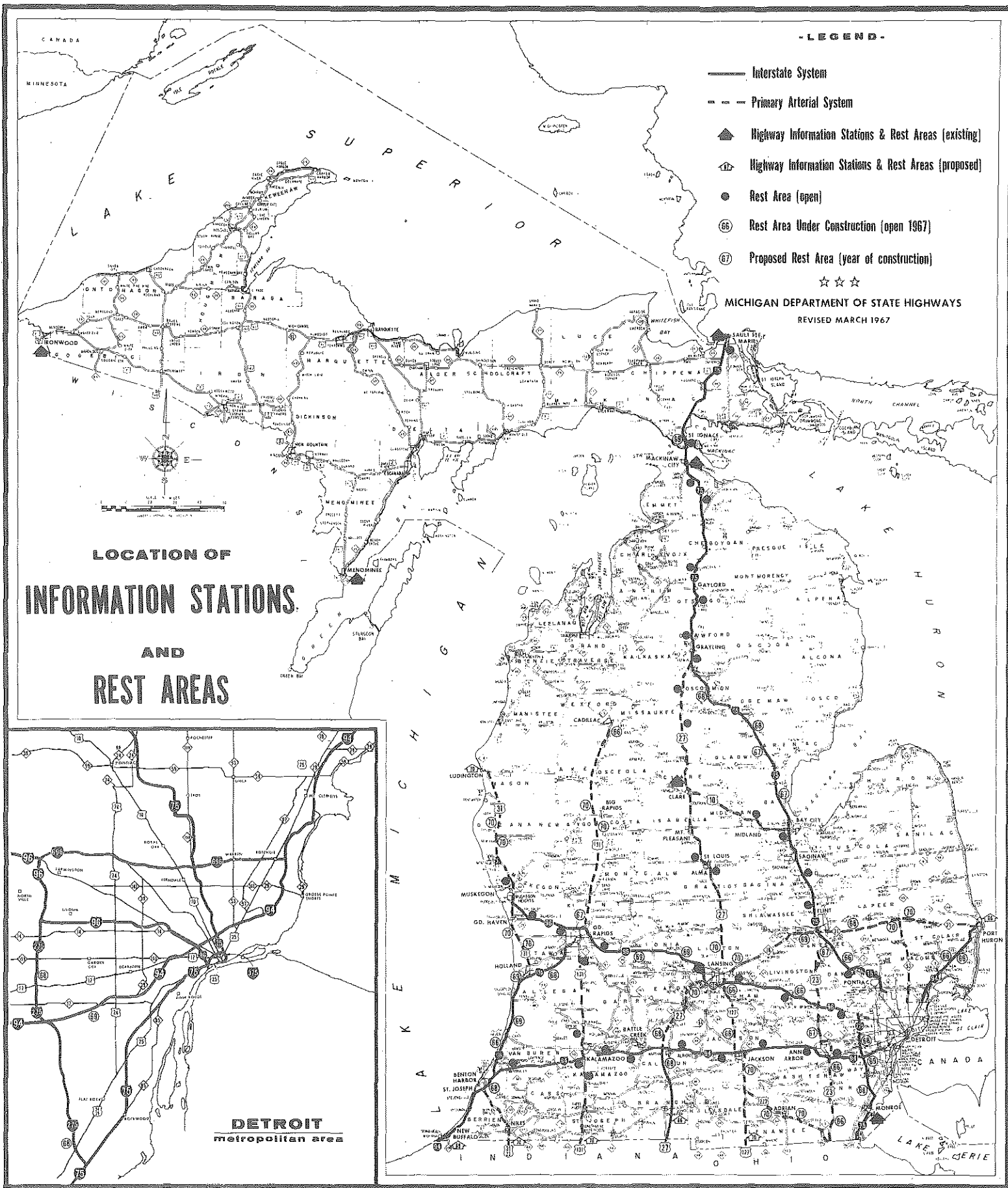
In the Fall of 1961, Michigan placed into operation three Rest Areas on the Interstate System. To best determine the extent and type of use these original Rest Areas were receiving, a Rest Area Use Study was conducted during 1961. The information obtained was used for future Rest Area planning and design.

By 1967, the Michigan Department of State Highways had opened 51 complete Rest Areas on the freeway system of which 21 were equipped with modern flush type toilet facilities. The ultimate long range Rest Area program calls for a total of 96 Rest Areas of which 66 will be provided with modern toilet facilities.

To better recognize the desires and demands of the traveling public using the Rest Areas, a follow up to the 1961 survey was conducted during the summer of 1967.

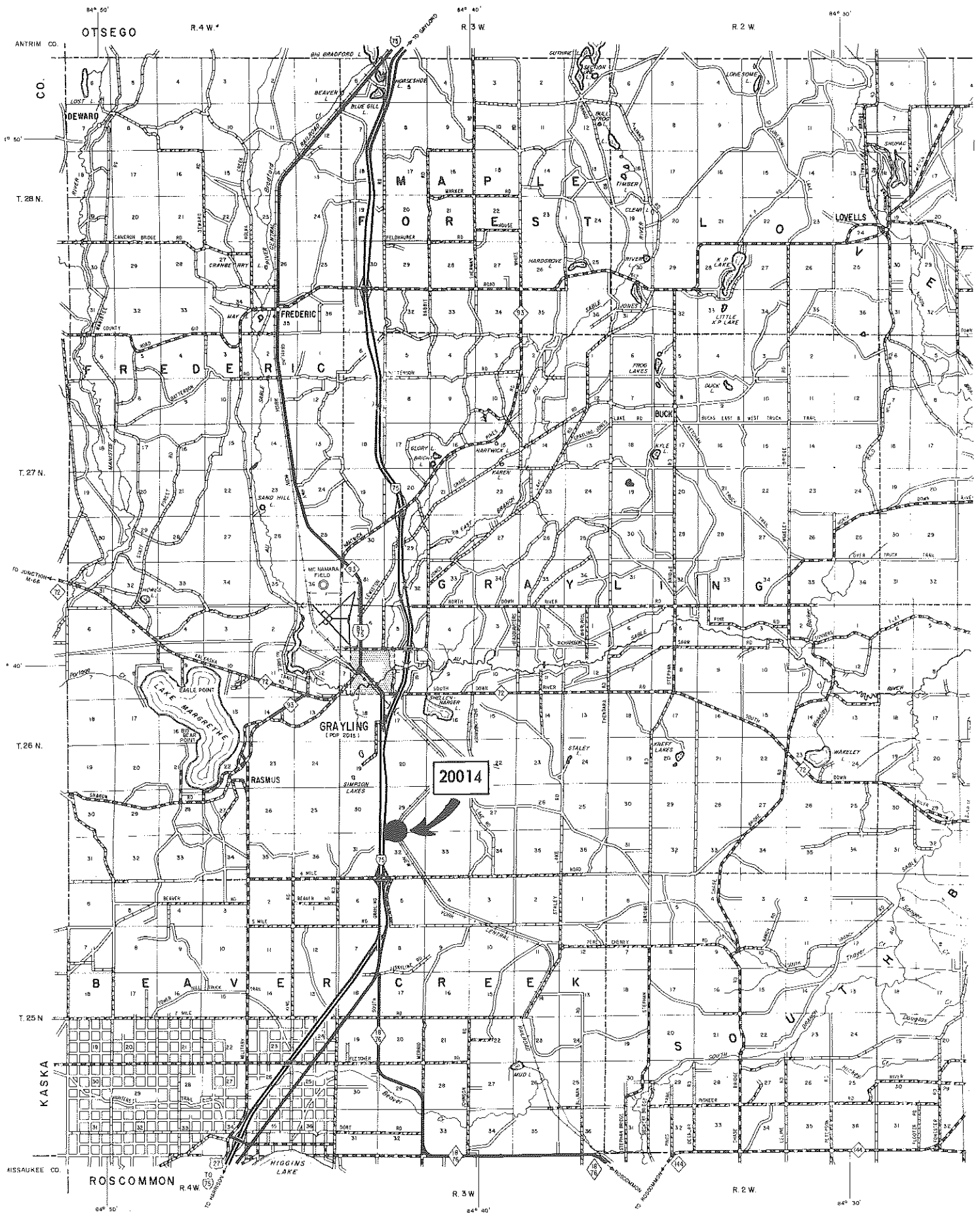
It is the intent of the Michigan Department of State Highways to continue to conduct periodic Rest Area Surveys to determine use changes which may occur as the Rest Area program approaches completion.

Every effort is being made to locate, design, and construct future Rest Areas as an integral part of a "complete highway system" offering economy, utility, safety, and beauty to the traveling public.



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20014

SOUTH OF GRAYLING

( 2 0 0 1 4 )

TRAFFIC VOLUMES BY DAY			
	From: 8/2/67		To: 8/9
	Expressway	Rest Area	%
SUNDAY	7,607	883	11.6
MONDAY	7,286	751	10.3
TUESDAY	5,815	655	11.3
WEDNESDAY	5,569	593	10.6
THURSDAY	5,964	609	10.2
FRIDAY	10,909	937	8.6
SATURDAY	13,020	1,368	10.5
TOTAL	56,170	5,776	10.3

HOURLY DISTRIBUTION

% Entering R.A.		% Entering R.A.	
12 PM-1	13.4	12 N-1	10.5
1-2	15.2	1-2	10.7
2-3	12.6	2-3	9.7
3-4	16.1	3-4	10.8
4-5	12.2	4-5	9.5
5-6	12.7	5-6	8.7
6-7	10.3	6-7	6.0
7-8	10.0	7-8	6.8
8-9	11.0	8-9	8.2
9-10	10.3	9-10	9.0
10-11	11.0	10-11	7.9
11-12	13.2	11-12	10.2

CLASS OF VEHICLE	VOLUME ON EX-WAY	VOLUME TURN- IN	AVERAGE LENGTH- OF- STAY	NUMBER OF PERSONS PER VEHICLE		
				MALE	FEMALE	CHILD
1	1948	256	15	1.4	1.4	0.1
2	48	6	15	1.3	0.3	0.0
3	38	12	21	2.5	1.8	0.1
6	13	6	16	1.3	1.0	0.3
7	177	48	20	2.0	2.0	0.3

CARDS REJECTED

TOTALS	2224	334	16	1.5	1.5	0.1
--------	------	-----	----	-----	-----	-----

Average Persons Per  
Vehicle: 3.32

REST AREA VISITORS' COMMENTS

	<u>TOTAL</u>
Unsanitary	1
Washing Facilities Required	21
More Rest Areas Needed	6
Flush Toilets Required	13
Rest Area Satisfactory	87
Rest Area Good	24
Refreshments Required	6
Facilities Unsatisfactory	2
No Comment	25
Larger Rest Rooms Required	6

CORRELATION COEFFICIENTS BETWEEN EXPRESSWAY TRAFFIC VOLUMES AND VOLUME OF TRAFFIC ENTERING REST AREA:

<u>DAY OF WEEK</u>	<u>r</u>
Monday	.97
Tuesday	.90
Wednesday	.93
Thursday	.87
Friday	.92
Saturday	.94
Sunday	.97

The correlation coefficient given above was obtained from the hourly traffic volumes by day of week.

The correlation coefficient between total traffic per day and daily total entering rest area is: .88

Out-Of-State Vehicles

36 out-of-state vehicles stopped at the rest area during the 4-hour study.

The average length-of-stay in the rest area of these vehicles was 19 minutes.

This is in comparison with the average length-of-stay for all vehicles, which was 16 minutes.

Rest Room Usage by Sex

157 males out of a total of 263 used the rest rooms, giving a male's percentage usage of 59.7.

144 females out of a total of 258 used the rest rooms, giving a female's percentage usage of 55.8.

31 children under 5 years of age entered the rest area.

Sheet 1 of 2 Date 8/2-8/9 19 67

Remarks Machine Counts

HOURLY TRAFFIC VOLUMES

STATION NO.	1 NB																
DAY	Wed.	Thurs.	Fri.	Sat.	Sun.	Mon.	Tues.	Wed.									
DATE	8-2	8-3	8-4	8-5	8-6	8-7	8-8	8-9									
TIME																	
12-1 A.M.		42	88	271	129	59	58	57									
1-2		46	67	179	80	37	41	38									
2-3		35	50	175	91	48	29	32									
3-4		40	45	172	76	32	32	31									
4-5		45	67	139	57	48	32	37									
5-6		52	68	157	55	62	49	50									
6-7		108	118	233	74	106	72	91									
7-8		144	199	426	129	169	171	147									
8-9		217	242	570	257	307	263	204									
9-10		357	366	890	410	397	444	344									
10-11		571	539	1184	644	601	539	531									
11-12		464	567	1231	735	774	555	529									
12-1 P.M.		460	628	1112	724	728	504	492									
1-2		486	592	1055	725	750	517	507									
2-3		426	640	1093	646	698	536	495									
3-4	417	415	712	872	563	606	472										
4-5	325	418	738	748	506	483	366										
5-6	316	368	770	594	437	396	293										
6-7	221	314	702	500	367	292	221										
7-8	210	266	855	414	283	244	236										
8-9	168	219	900	346	242	161	137										
9-10	132	225	780	251	164	118	102										
10-11	109	147	735	232	137	98	80										
11-12	86	99	441	176	76	72	66										
TOTAL	1984	5964	10909	13020	7607	7286	5815	3585									
		.9322	Road 8658	.9200	.9390	.9663	.9732	.9036									

Sta. No.	Direction	Type	Width (ft.)	Route	Location	C.S. No.
1	NB	Bit.	26	I-78	South of Grayling	

1  
-  
9

STATE OF MICHIGAN  
DEPARTMENT OF STATE HIGHWAYS

City -  
Village  
or Twp. \_\_\_\_\_ County Crawford

Sheet 2 of 2 Date 8/2-8/9 19 67

Location I-75 - Rest Area (South of Grayling)

Remarks Machine Counts

HOURLY TRAFFIC VOLUMES

STATION NO.	2 NB																			
DAY	Wed.	Thurs.	Fri.	Sat.	Sun.	Mon.	Tues.	Wed.												
DATE	8-2	8-3	8-4	8-5	8-6	8-7	8-8	8-9												
TIME																				
12-1A.M.		17	16	26	11	8	8	8												
1-2		6	7	28	7	7	6	13												
2-3		6	2	19	15	7	4	5												
3-4		3	12	18	4	4	9	19												
4-5		2	6	24	7	6	0	7												
5-6		8	7	19	4	18	8	8												
6-7		2	3	41	12	8	9	8												
7-8		7	15	37	16	16	37	11												
8-9		20	25	81	37	31	21	13												
9-10		29	31	111	45	37	43	34												
10-11		48	54	140	76	71	74	48												
11-12		75	70	149	105	94	84	62												
12-1P.M.		55	60	102	106	88	70	65												
1-2		50	60	100	86	88	48	64												
2-3		54	70	85	70	68	41	50												
3-4	39	63	72	76	66	60	64													
4-5	33	44	63	81	50	42	28													
5-6	23	26	55	55	59	28	29													
6-7	12	11	48	25	26	21	13													
7-8	17	15	60	29	19	20	11													
8-9	15	27	63	32	16	15	10													
9-10	20	14	46	38	18	2	22													
10-11	9	10	53	17	16	9	8													
11-12	10	17	39	15	12	3	8													
TOTAL	178	609	937	1348	883	751	655	415												

Sta. No.	Direction	Road		Route	Location	C.S. No.
		Type	Width (ft.)			
2	N Bd.	Bit.	18	I-75 Ramp	Entrance to Rest Area - South of Grayling	

NOTES ON CHARACTERISTICS OF REST AREA  
SOUTH OF GRAYLING

This rest area is equipped with electricity and drinking water but its rest rooms are without lavatories and flush toilets. There are seventy-four parking spaces for cars as well as twenty-four separate truck spaces. Likewise, twenty picnic tables and 5 separate cooking facilities can be found. As an added convenience, general tourist information is available. This rest area is about 6 acres in size.

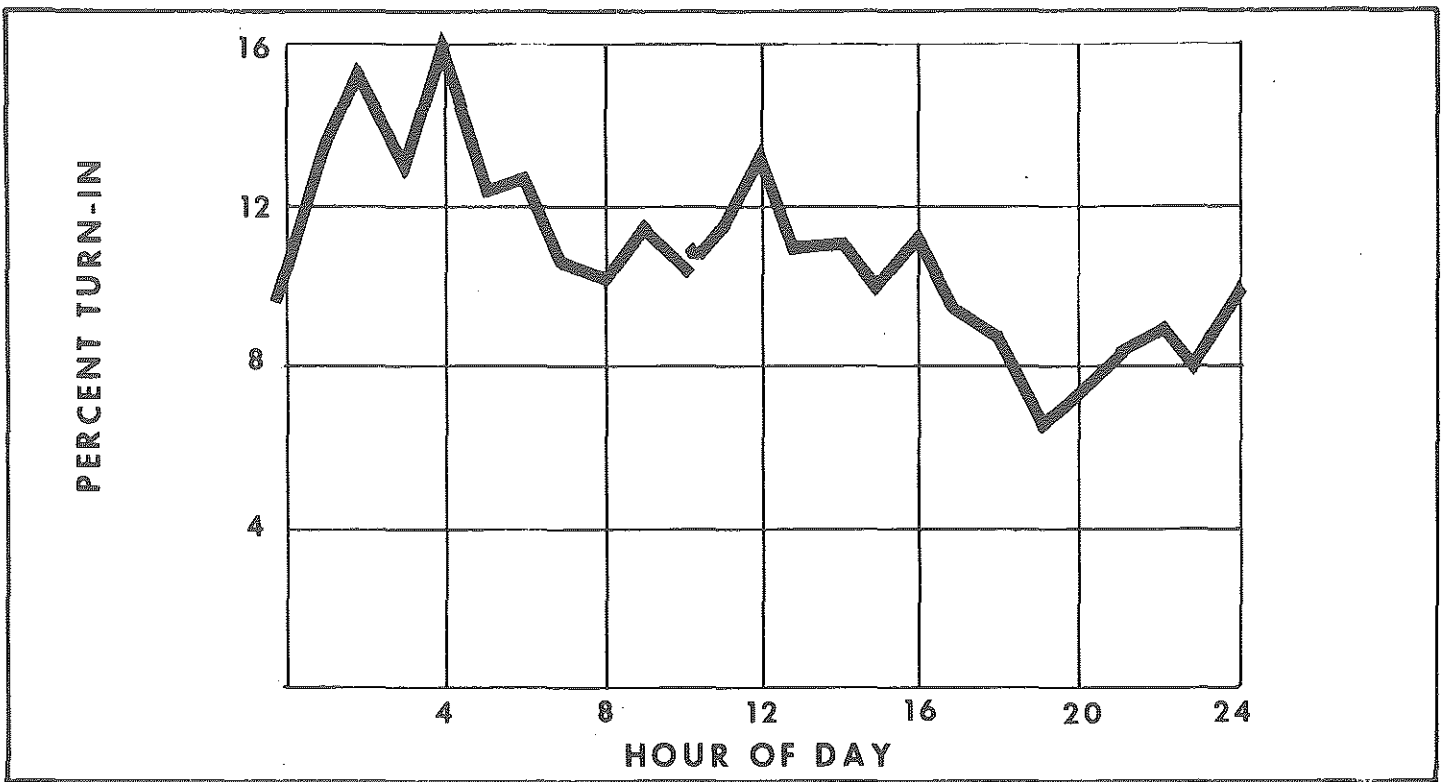
This rest area has a reasonably constant percentage turn-in by day of the week, except for Friday when a lower percentage turn-in is encountered. The expressway volume increased on Friday and Saturday although percentage turn-in usually increases as expressway volume decreases. The reason for the somewhat abnormal pattern of usage of this rest area was that the type of traffic was very largely recreational.

The correlation between daily expressway volume and daily turn-in is reasonably high.

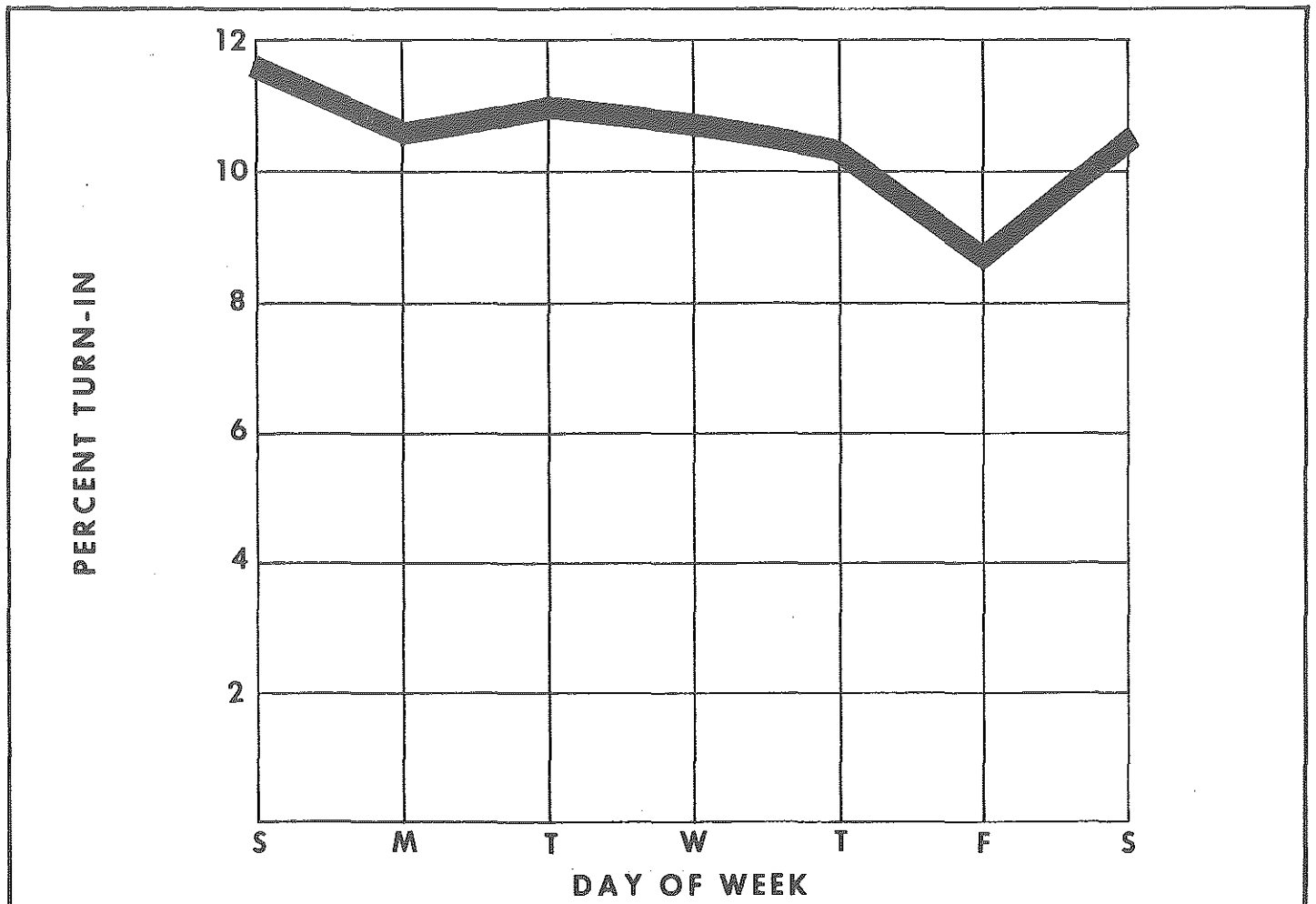
The average length-of-stay of out-of-state vehicles is slightly longer than the average length-of-stay of all vehicles.

The rest area visitors are distributed equally between males and females.



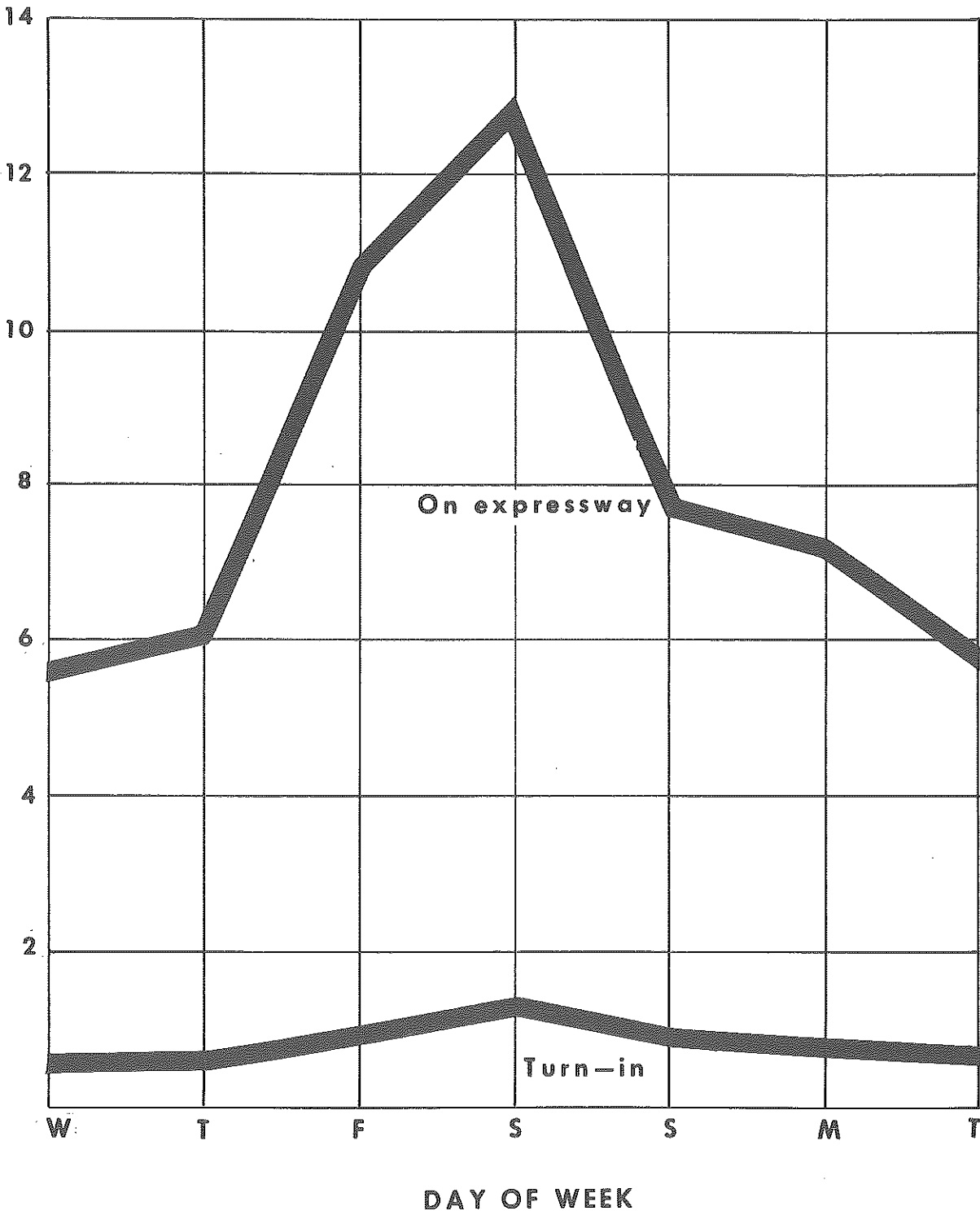


**Graph I**



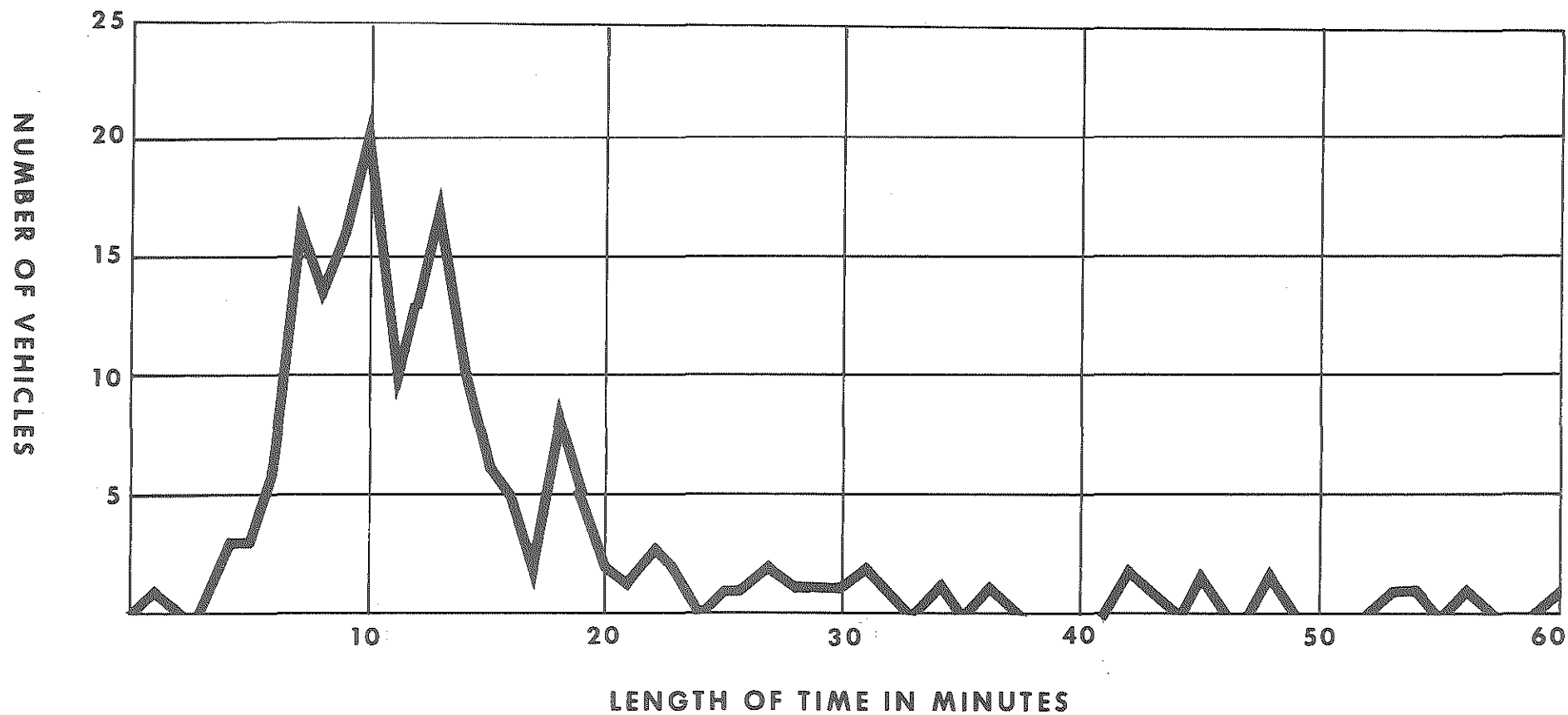
**Graph II**

TRAFFIC VOLUME  
(in thousands)



**Graph III**

### DISTRIBUTION OF LENGTH OF STAY



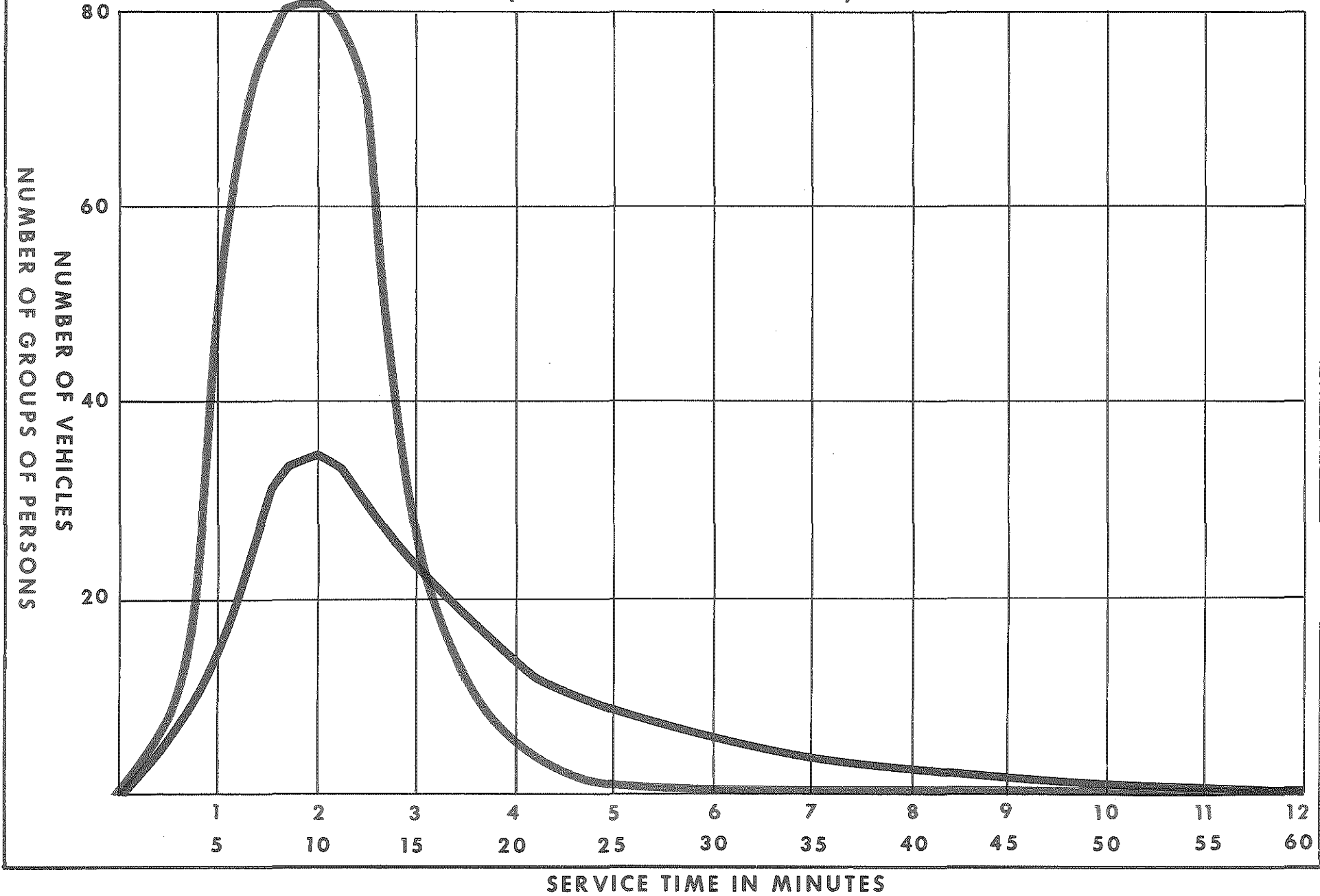
# SERVICE TIME DISTRIBUTIONS

(Person-Groups in rest rooms)

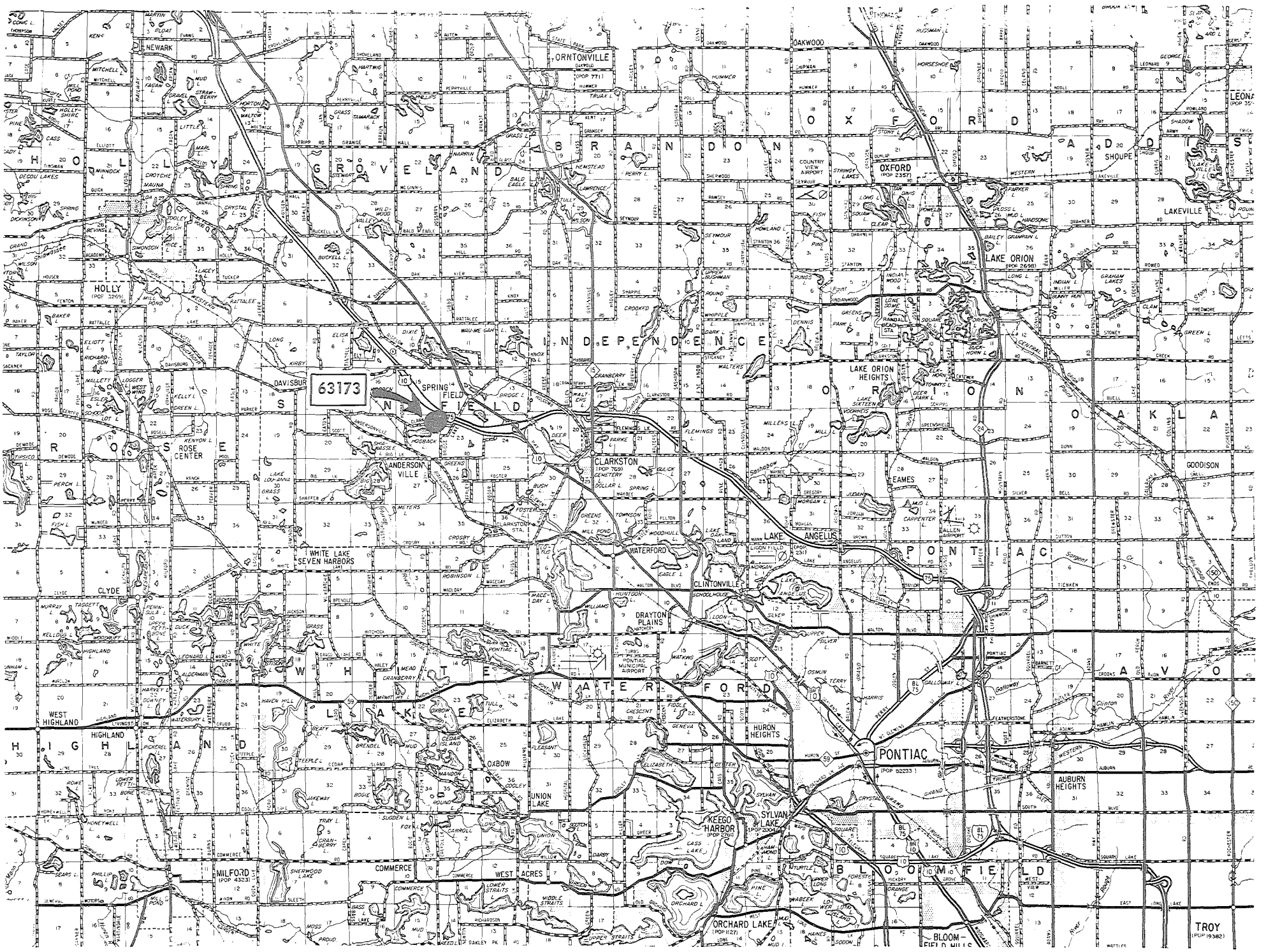
(Vehicles in rest area)

REST ROOM USAGE TIME

CAR PARKING TIME







63173

TROY (POP 19,982)

PONTIAC (POP 82,233)

ORCHARD LAKE (POP 112)

MILFORD (POP 43,331)

CLARKSTON (POP 700)

LAKE ORION (POP 26,840)

ORRONTONVILLE (POP 771)

OXFORD (POP 23,571)

HOLLY (POP 32,000)

NEWARK

LEONARDVILLE (POP 350)

LAKEVILLE

GOODISON

AVO

AUBURN HEIGHTS

BLOOMFIELD HILLS

NORTH OF CLARKSTON

( 6 3 1 7 3 )

TRAFFIC VOLUMES BY DAY			
		From: 8/3/67	To: 8/8
	Expressway	Rest Area	%
SUNDAY	16,877	1,041	6.2
MONDAY	11,762	727	6.2
TUESDAY	5,970	396	6.6
WEDNESDAY	-----	---	---
THURSDAY (3P-12P)	4,465	263	5.9
FRIDAY	9,836	708	7.2
SATURDAY	10,343	622	6.0
TOTAL	59,253	3,757	6.3

HOURLY DISTRIBUTION

	% Entering R.A.		% Entering R.A.
12 PM-1	7.8	12 N-1	7.4
1-2	7.6	1-2	6.8
2-3	6.4	2-3	7.2
3-4	9.3	3-4	6.5
4-5	14.3	4-5	8.4
5-6	5.4	5-6	5.8
6-7	3.7	6-7	5.3
7-8	3.4	7-8	6.1
8-9	3.9	8-9	5.2
9-10	7.8	9-10	4.3
10-11	6.4	10-11	3.8
11-12	6.4	11-12	7.1

CLASS OF VEHICLE	VOLUME ON EX-WAY	VOLUME TURN- IN	AVERAGE LENGTH- OF-STAY	NUMBER OF PERSONS PER VEHICLE		
				MALE	FEMALE	CHILD
1	1341	56	11	1.2	0.8	0.3
2	158	32	17	1.0	0.0	0.0
7	36	3	6	1.6	1.3	0.0
CARDS REJECTED		3				
TOTALS	1535	94	13	1.1	0.5	0.2
				Average Persons Per Vehicle: <u>1.84</u>		



LIBRARY  
 michigan department of  
 state highways  
 LANSING

REST AREA VISITORS' COMMENTS

	<u>TOTAL</u>
Unsanitary	0
Washing Facilities Required	4
More Rest Areas Needed	9
Flush Toilets Required	8
Rest Area Satisfactory	30
Rest Area Good	22
Refreshments Required	5
Facilities Unsatisfactory	0
No Comment	20
Larger Rest Rooms Required	3

CORRELATION COEFFICIENTS BETWEEN EXPRESSWAY TRAFFIC  
 VOLUME AND VOLUME OF TRAFFIC ENTERING REST AREA:

<u>DAY OF WEEK</u>	<u>r</u>
Monday	.83
Tuesday	.69
Wednesday	
Thursday	.89
Friday	.81
Saturday	.90
Sunday	.97

The correlation coefficient given above was obtained from the hourly traffic volumes by day of week.

The correlation coefficient between total traffic per day and daily total entering rest area is: .99

#### Out-Of-State Vehicles

10 out-of-state vehicles stopped at the rest area during the 4-hour study.

The average length-of-stay in the rest area of these vehicles was 7 minutes.

This is in comparison with the average length-of-stay for all vehicles, which was 13 minutes.

#### Rest Room Usage by Sex

66 males out of a total of 113 used the rest rooms, giving a male's percentage usage of 58.4.

38 females out of a total of 51 used the rest rooms, giving a female's percentage usage of 66.7.

10 children under 5 years of age entered the rest area.

STATE OF MICHIGAN  
DEPARTMENT OF STATE HIGHWAYS

City -  
Village \_\_\_\_\_  
or Twp. \_\_\_\_\_ County Oakland

Sheet 1 of 1 Date 9-1 19 67

Location I-75 Rest Area

Remarks Machine Counts

HOURLY TRAFFIC VOLUMES

(North of Clarkston)

STATION NO.	1 SB	2 SB																	
DAY	Fri.	Fri.																	
DATE	9-1	9-1																	
TIME																			
12-1 A.M.																			
1-2																			
2-3																			
3-4																			
4-5																			
5-6																			
6-7																			
7-8																			
8-9																			
9-10																			
10-11	269	34																	
11-12	319	36																	
12-1 P.M.	312	40																	
1-2	351	49																	
2-3																			
3-4																			
4-5																			
5-6																			
6-7																			
7-8																			
8-9																			
9-10																			
10-11																			
11-12																			
TOTAL	1257	159																	

Sta. No.	Direction	Road		Route	Location	C.S. No.
		Type	Width (ft.)			
1	S Bd.	conc	36	I-75	N. of Clarkston	
2	S Bd.	Conc	16	I-75 Ramp	Entrance to Rest Area -- North of Clarkston	

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Sheet 1 of 1 Date 7/26-7/27 19 67

Location I-75 Rest Area

Remarks Machine Counts.

HOURLY TRAFFIC VOLUMES

(North of Clarkston)

STATION NO.	1 SB			2 SB (Ramp)										
DAY	Wed.	Thurs.		Wed.	Thurs.									
DATE	7-26	7-27		7-26	7-27									
TIME														
12-1 A.M.		101			5									
1-2		56			1									
2-3		38			1									
3-4		36			7									
4-5		49			1									
5-6		168			8									
6-7		305			14									
7-8		361			12									
8-9	234	304		20	19									
9-10	280	298		16	30									
10-11	319	284		29	14									
11-12	337	436		42	41									
12-1 P.M.	400	493		36	41									
1-2	465	540		48	51									
2-3	595	627		41	48									
3-4	641			78	48									
4-5	677			49										
5-6	661			33										
6-7	563			30										
7-8	427			18										
8-9	322			17										
9-10	228			14										
10-11	143			10										
11-12	112			9										
TOTAL	6404	4096		490	341									

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Sta. No.	Direction	Road		Route	Location	C.S. No.
		Type	Width (ft.)			
1	S Bd	Conc	36	I-75	North of Clarkston	
2	S Bd	Conc	15	I-75 Ramp	Entrance to Rest Area -- North of Clarkston	

NOTES ON CHARACTERISTICS OF REST AREA  
NORTH OF CLARKSTON

This rest area is equipped with electricity and drinking water but its rest rooms are without lavatories and flush toilets. There are fifty parking spaces for cars as well as twenty separate truck spaces. Likewise, twenty picnic tables and 5 separate cooking facilities can be found. As an added convenience, tourist information is available. This rest area is located in a high and natural wooded area with a lovely view to the South and West.

Also, this rest area has a low percentage turn-in. The reason for this is that the traffic consists mainly of business or commercial vehicles, the rest area being located in an urban area. The percentage turn-in by day of week is fairly constant, being only slightly higher on Friday.

The hourly percentage turn-in reaches a peak around 4 AM and another at about 4 PM, but there is no wide variation over the twenty-four hours.

The average number of persons per vehicle is low reflecting the fact that the traffic does not consist of many vehicles on social, recreational trips.

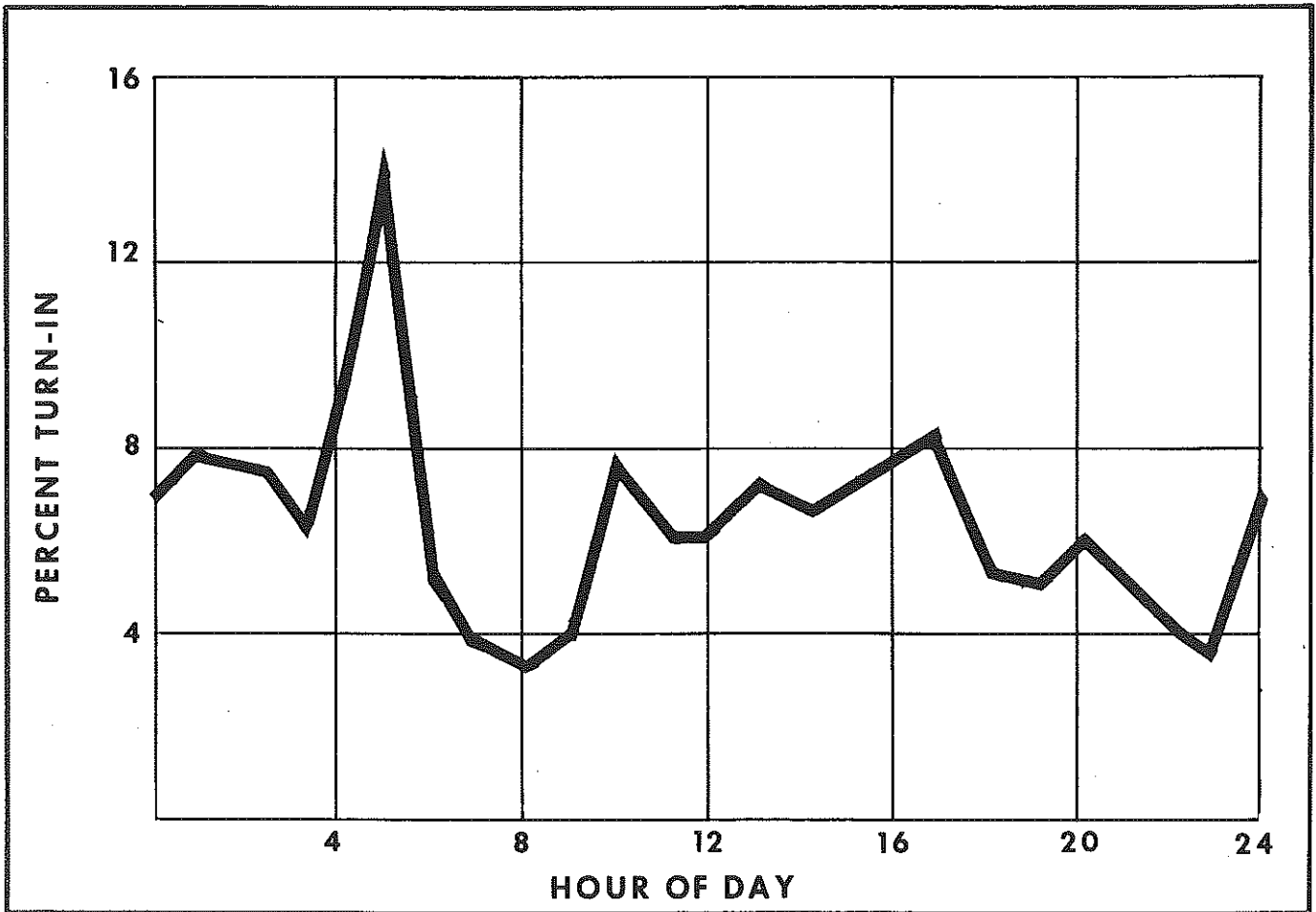
The correlation between expressway volume and volume turn-in by day of week is reasonably high especially at the weekend.

The correlation between total traffic per day and daily total entering rest area is extremely high.

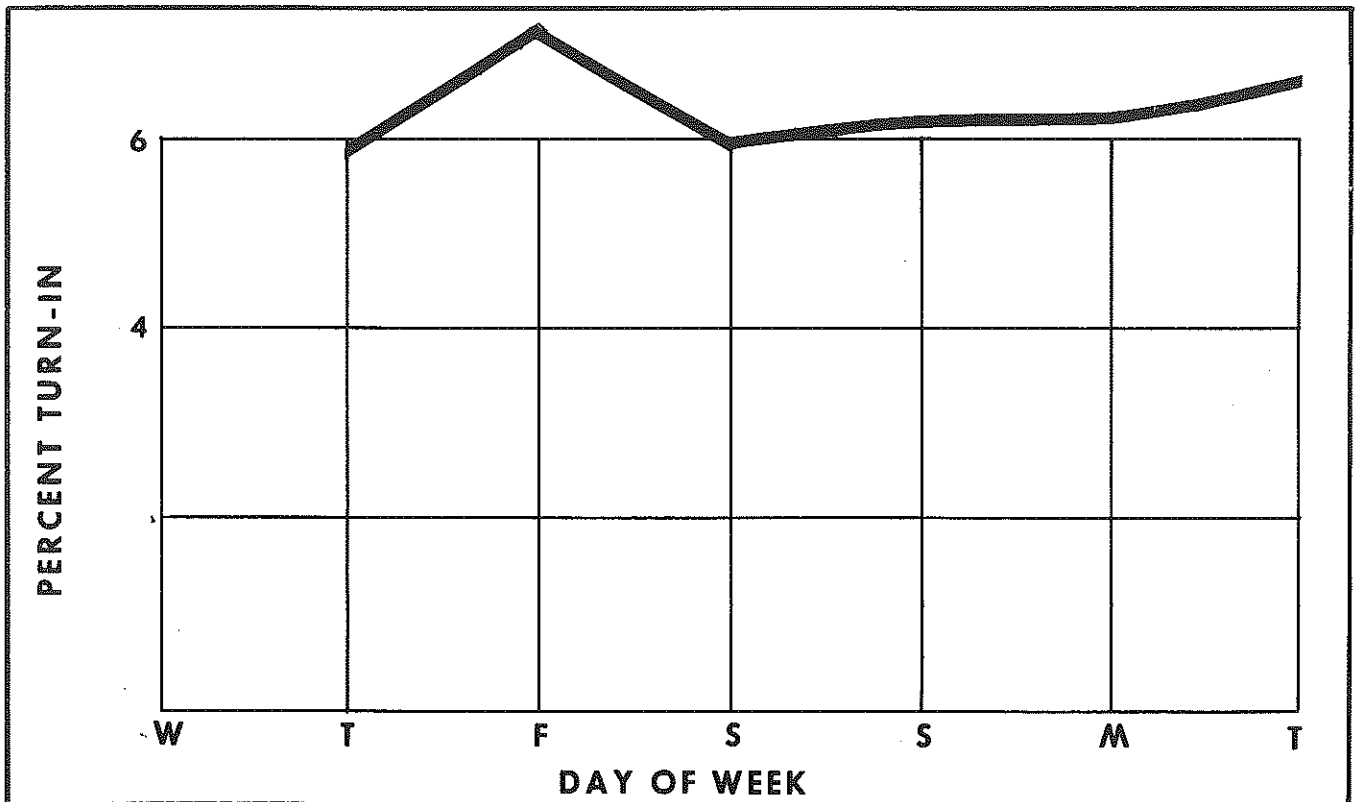
Only ten out-of-state vehicles stopped at the rest area during the 4-hour study. The average length-of-stay of these vehicles was considerably less than that of the overall average length-of-stay. However, with such a small number of out-of-state vehicles, this figure is not very reliable.

Percentage rest room usage is high, particularly for females.

The comments concerning the rest area were favorable with only a few persons requiring flush toilets or an increase in the number of rest areas.

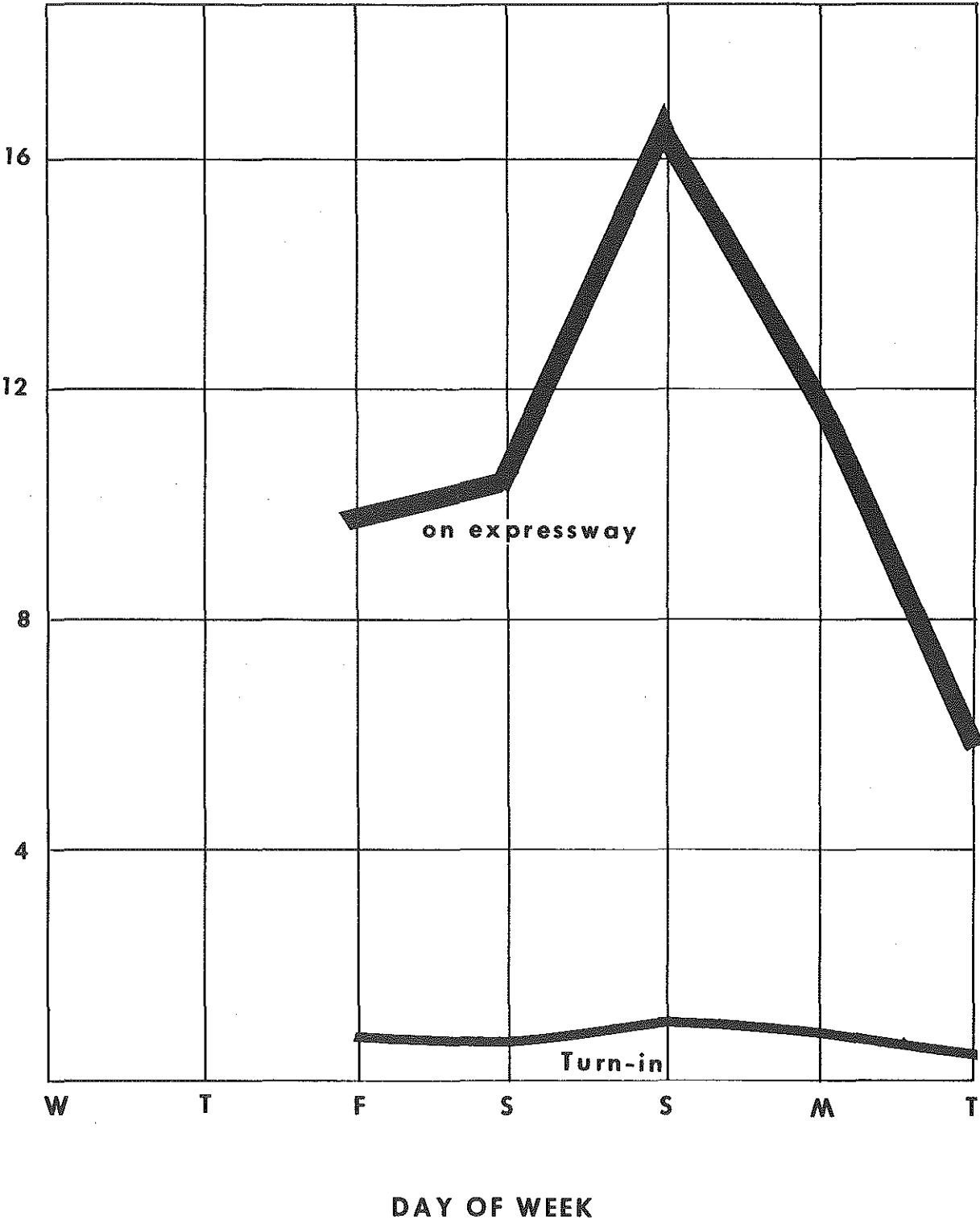


**Graph I**



**Graph II**

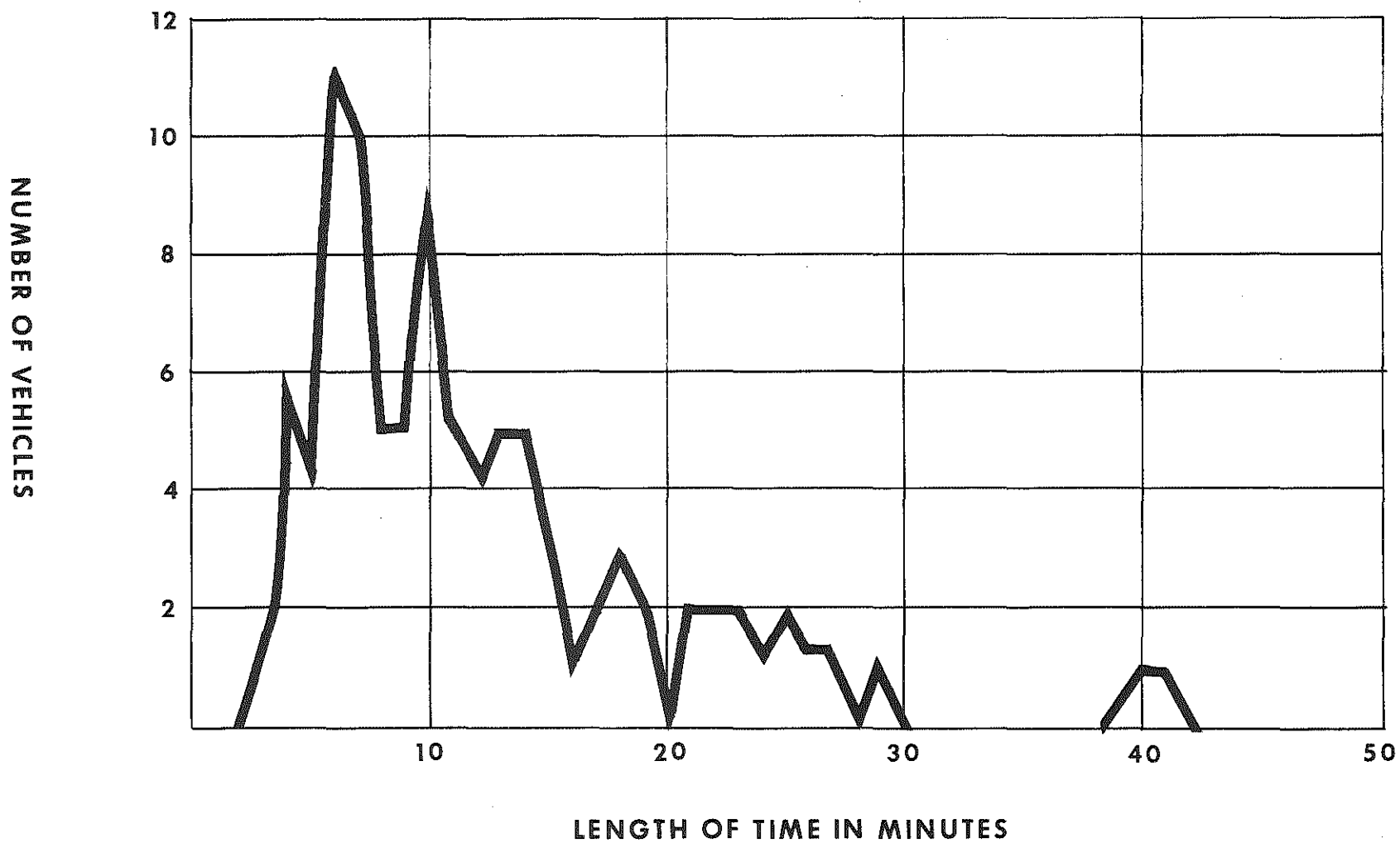
TRAFFIC VOLUME (in thousands)



**Graph III**

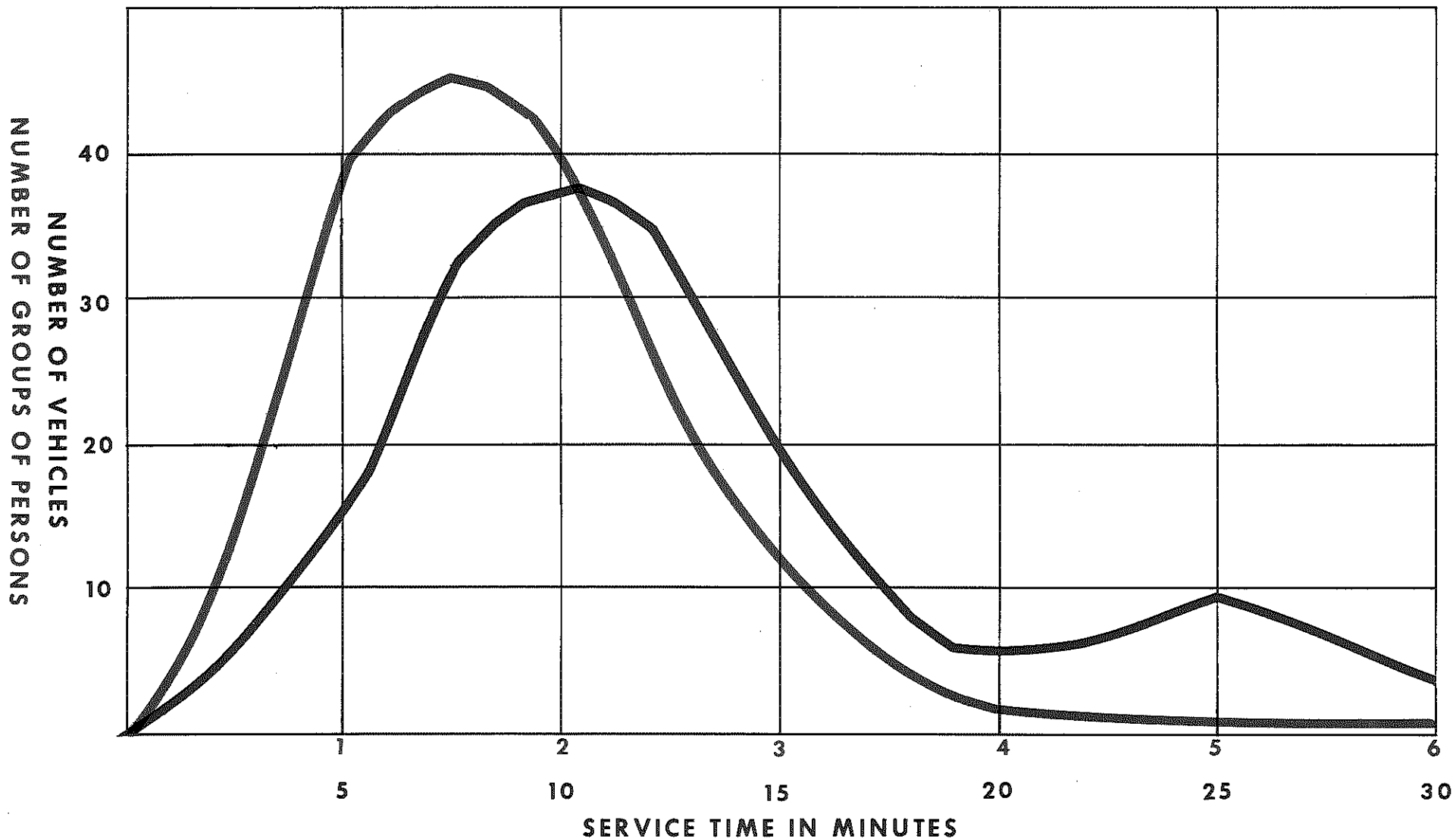


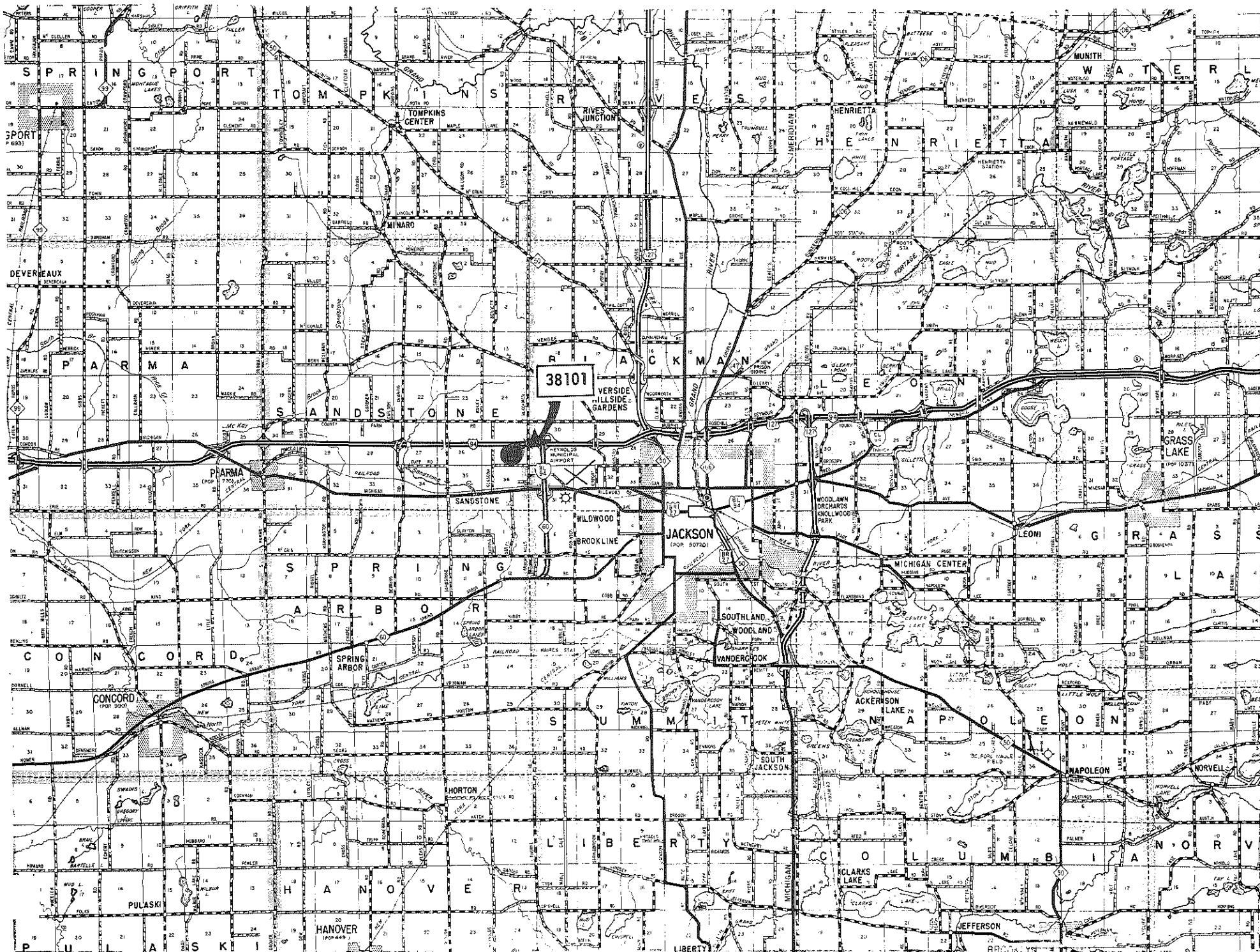
# DISTRIBUTION OF LENGTH OF STAY



**SERVICE TIME DISTRIBUTIONS**  
(Person—Groups in rest rooms)  
(Vehicles in rest area)

REST ROOM USAGE TIME  
CAR PARKING TIME





WEST OF JACKSON

( 3 8 1 0 1 )

TRAFFIC VOLUMES BY DAY		From: 8/3/67	To: 8/10
	Expressway	Rest Area	%
SUNDAY	11,587	894	8.5
MONDAY	10,448	925	8.9
TUESDAY	9,903	844	8.5
WEDNESDAY	10,244	860	8.4
THURSDAY	5,690	651	11.4
(Except 6P-12P)			
FRIDAY	8,298	701	8.4
(Except 12P-11A)			
SATURDAY	11,302	1,055	9.3
TOTAL	67,472	6,020	8.9

HOURLY DISTRIBUTION

	% Entering R.A.		% Entering R.A.
12 PM-1	9.9	12 N-1	11.6
1-2	11.8	1-2	10.7
2-3	10.3	2-3	8.7
3-4	8.8	3-4	10.2
4-5	10.1	4-5	8.4
5-6	9.4	5-6	7.8
6-7	6.8	6-7	6.8
7-8	6.4	7-8	7.0
8-9	7.2	8-9	7.1
9-10	6.6	9-10	6.7
10-11	8.5	10-11	7.9
11-12	10.7	11-12	10.2

CLASS OF VEHICLE	VOLUME ON EX-WAY	VOLUME TURN- IN	AVERAGE LENGTH- OF-STAY	NUMBER OF PERSONS PER VEHICLE		
				MALE	FEMALE	CHILD
1	2835	168	13	1.4	1.6	0.3
2	75	5	11	1.6	1.2	0.0
3	35	3	42	2.0	2.6	0.0
4	4	1	9	1.0	0.0	0.0
6	1	1	32	4.0	5.0	4.0
7	108	8	18	2.3	1.5	0.1

CARDS REJECTED

TOTALS	3058	186	13	1.6	1.6	0.3
--------	------	-----	----	-----	-----	-----

Average Persons Per  
Vehicle: 3.57

REST AREA VISITORS' COMMENTS

	<u>TOTAL</u>
Unsanitary	11
Washing Facilities Required	28
More Rest Areas Needed	24
Flush Toilets Required	26
Rest Area Satisfactory	74
Rest Area Good	23
Refreshments Required	14
Facilities Unsatisfactory	14
No Comment	26
Larger Rest Rooms Required	12

CORRELATION COEFFICIENTS BETWEEN EXPRESSWAY TRAFFIC VOLUME AND VOLUME OF TRAFFIC ENTERING REST AREA:

<u>DAY OF WEEK</u>	<u>r</u>
Monday	.88
Tuesday	.87
Wednesday	.69
Thursday	.40
Friday	.32
Saturday	.85
Sunday	.95

The correlation coefficient given above was obtained from the hourly traffic volumes by day of week.

The correlation coefficient between total traffic per day and daily total entering rest area is: .88

#### Out-of-State Vehicles

41 out-of-state vehicles stopped at the rest area during the 3-hour study.

The average length-of-stay in the rest area of these vehicles was 11 minutes.

This is in comparison with the average length-of-stay for all vehicles, which was 13 minutes.

#### Rest Room Usage by Sex

96 males out of a total of 300 used the rest rooms, giving a male's percentage usage of 32.0.

85 females out of a total of 309 used the rest rooms, giving a female's percentage usage of 27.5.

57 children under 5 years of age entered the rest area.

Sheet 1 of 2 Date 8/3-8/10 19 67

Location I-94 Rest Area

Remarks Machine Counts.

HOURLY TRAFFIC VOLUMES

(West of Jackson)

STATION NO.	1 EB														
DAY	Thurs.	Fri.	Sat.	Sun.	Mon.	Tues.	Wed.	Thurs.							
DATE	8-3	8-4	8-5	8-6	8-7	8-8	8-9	8-10							
TIME															
12-1A.M.		207	307	172	271	215	121	244							
1-2		203	178	195	223	163	184	199							
2-3		208	185	129	184	223	182	189							
3-4		207	145	102	151	166	158	234							
4-5		255	183	68	205	201	257	208							
5-6		276	149	79	231	258	229	283							
6-7		337	224	120	384	338	371	408							
7-8		481	336	163	471	385	481	440							
8-9	468	417	471	218	438	467	577	481							
9-10	463	558	565	343	478	478	503	465							
10-11	579	580	717	482	550	554	582	590							
11-12	563	643	765	626	628	587	541	511							
12-1P.M.	453	595	759	623	594	580	479								
1-2	458	601	721	541	560	527	549								
2-3	605	688	777	642	648	632	615								
3-4	627	745	750	746	755	659	617								
4-5	665	852	706	827	721	712	659								
5-6	677	814	784	959	721	539	706								
6-7	542	743	680	1028	562	485	569								
7-8	450	647	513	1062	427	448	455								
8-9	396	597	434	899	391	356	402								
9-10	317	515	397	695	348	376	331								
10-11	322	450	319	481	280	331	349								
11-12	214	408	237	387	227	223	216								
TOTAL	7799	12027	11302	11587	10448	9903	10224	4252							

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Sta. No.	Direction	Road		Route	Location	C.S. No.
		Type	Width (ft.)			
1	E Bd	Conc	24	I-94	West of Jackson	



STATE OF MICHIGAN  
DEPARTMENT OF STATE HIGHWAYS

City -  
Village  
or Twp. \_\_\_\_\_ County Jackson

Sheet 2 of 2 Date 8/3-8/10 19 67

Location I-94 Rest Area

Remarks Machine Counts.

HOURLY TRAFFIC VOLUMES

(West of Jackson)

STATION NO.	2 EB																	
DAY	Thurs.	Fri.	Sat.	Sun.	Mon.	Tues.	Wed.	Thurs.										
DATE	8-3	8-4	8-5	8-6	8-7	8-8	8-9	8-10										
TIME																		
12-1 A.M.			26	20	27	23	25	20										
1-2			28	22	22	9	25	29										
2-3			20	14	31	9	14	25										
3-4			13	4	5	15	24	23										
4-5			16	11	20	18	22	26										
5-6			22	7	18	11	26	31										
6-7			17	7	39	18	18	26										
7-8			21	20	25	28	27	25										
8-9	25		34	15	34	50	31	35										
9-10	22		27	37	44	34	24	32										
10-11	50	*	55	39	50	52	45	42										
11-12	64	59	89	62	71	66	57	59										
12-1 P.M.	60	59	120	59	72	50	53											
1-2	68	55	75	50	52	66	59											
2-3	61	50	70	48	61	46	65											
3-4	48	94	80	69	74	58	78											
4-5	36	74	81	75	64	56	46											
5-6	12	91	62	92	64	44	42											
6-7	*	45	46	86	35	31	35											
7-8		49	36	67	21	41	35											
8-9		36	36	64	23	25	35											
9-10		40	25	39	21	23	30											
10-11		25	29	36	30	39	16											
11-12		24	27	41	22	32	28											
TOTAL	446	701	1055	984	925	844	860	373										

Sta. No.	Direction	Road Type	Width (ft.)	Route	Location	C.S. No.
2	E Bd	B.T.	16	I-94 Ramp	Entrance to Rest Area	
* Hose up.						

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NOTES ON CHARACTERISTICS OF REST AREA  
WEST OF JACKSON

This rest area is equipped with electricity and drinking water but its rest rooms are without lavatories and flush toilets. There are seventy parking spaces for cars as well as twenty separate truck spaces. Likewise, twenty-four picnic tables and 4 separate cooking facilities can be found. As an added convenience, tourist information is available.

The percentage of expressway traffic which turns into the rest area is constant by day of the week. (Thursday's figures will give a high percentage since the hours from 6 PM to 12 PM were not tabulated and these hours have a lower than average percentage turn-in.)

The hourly percentage turn-in is also reasonably constant. This is explained by the high volume of traffic on the expressway, even during the night - this part of the expressway being used by a large percentage of commercial vehicles.

The fact that the vehicle occupancy is high is accounted for by the fact that the survey was carried out from 4 PM to 7 PM on a Sunday.

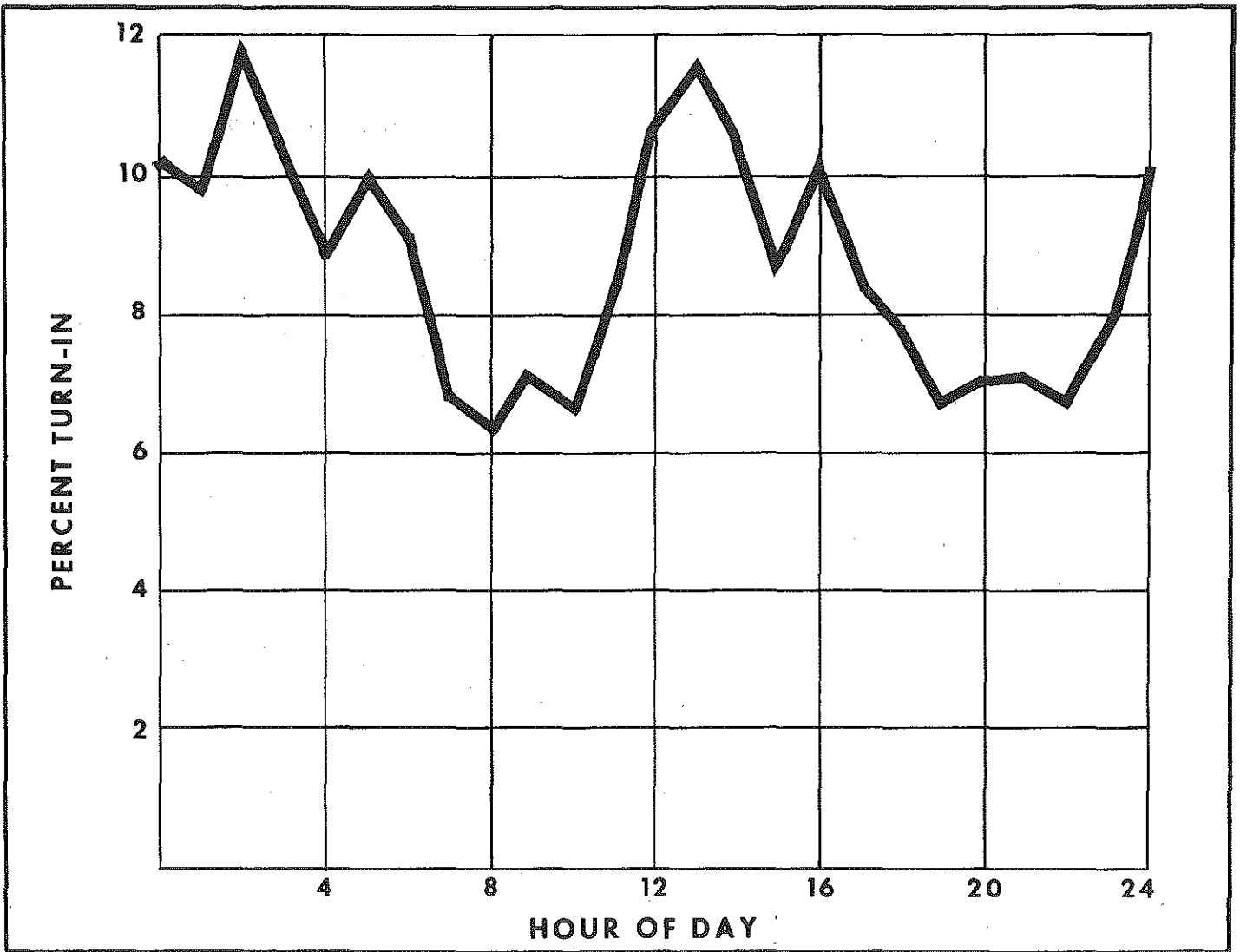
Almost exactly fifty percent of the visitors were male.

The correlation between expressway volume and volume turn-in by hour of the day is reasonably good except for Thursday and Friday. This is mainly due to the fact that traffic counts for the whole twenty-four hours were not available for these two days.

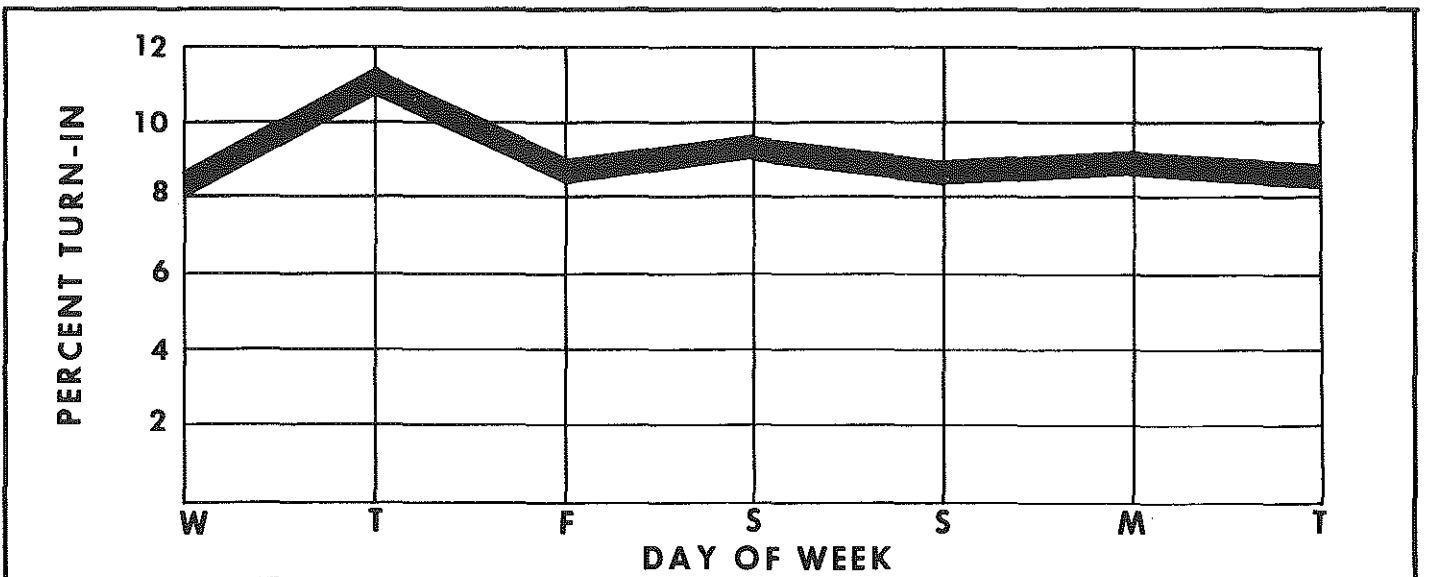
The correlation between daily expressway volumes and daily turn-in is meaningless without more complete counts.

The rest room usage is low. This is because we have high vehicle occupancy and also a large number of vehicles using the rest area. The large number of children under 5 years old indicates that the traffic was largely recreational, tying in with the high vehicle occupancy.

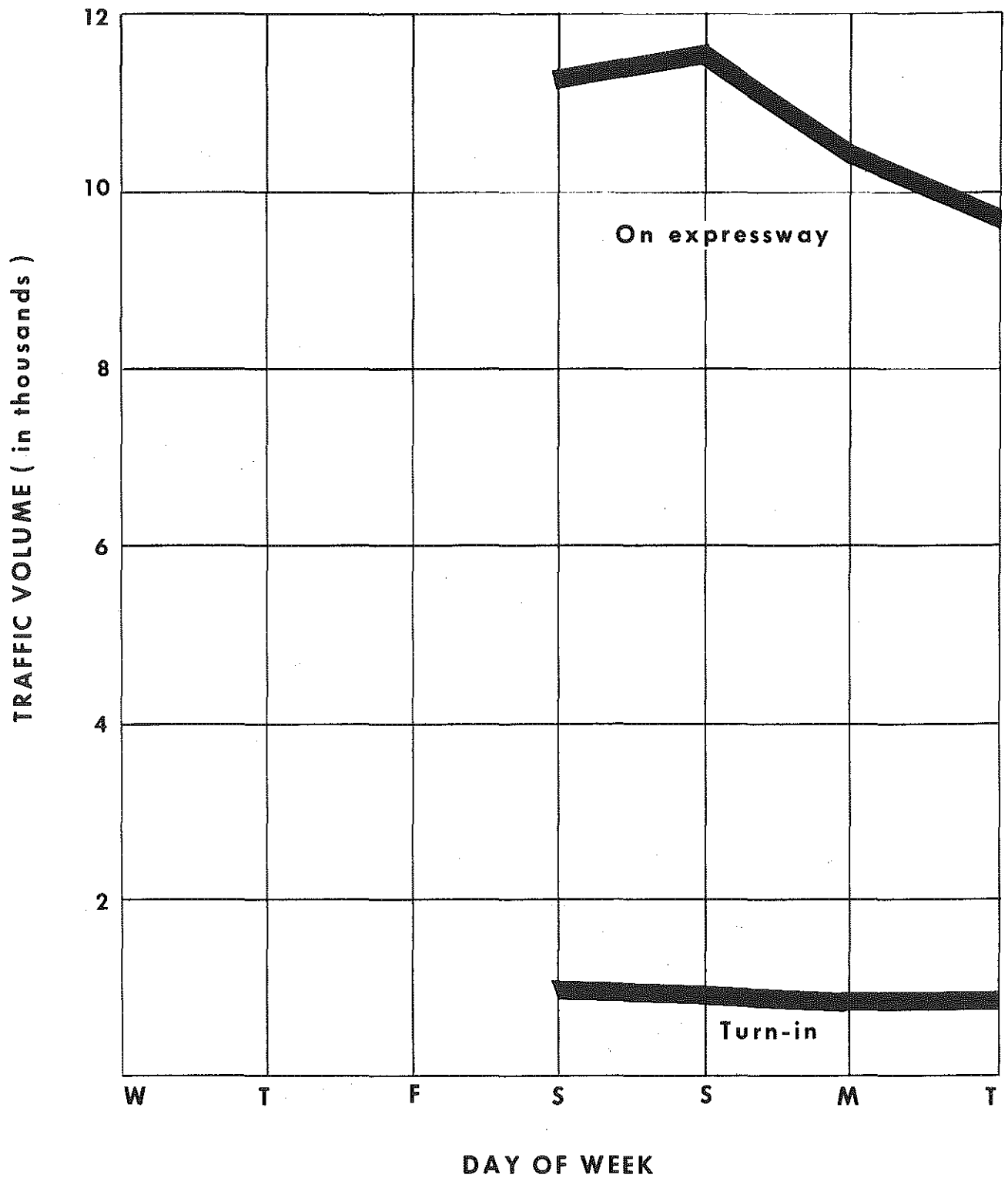
A significant number of persons using the rest area were dissatisfied with the condition of the rest rooms, many of them requiring flush toilets. This would also, in part, account for the low percentage usage of the rest room facilities.



**Graph I**

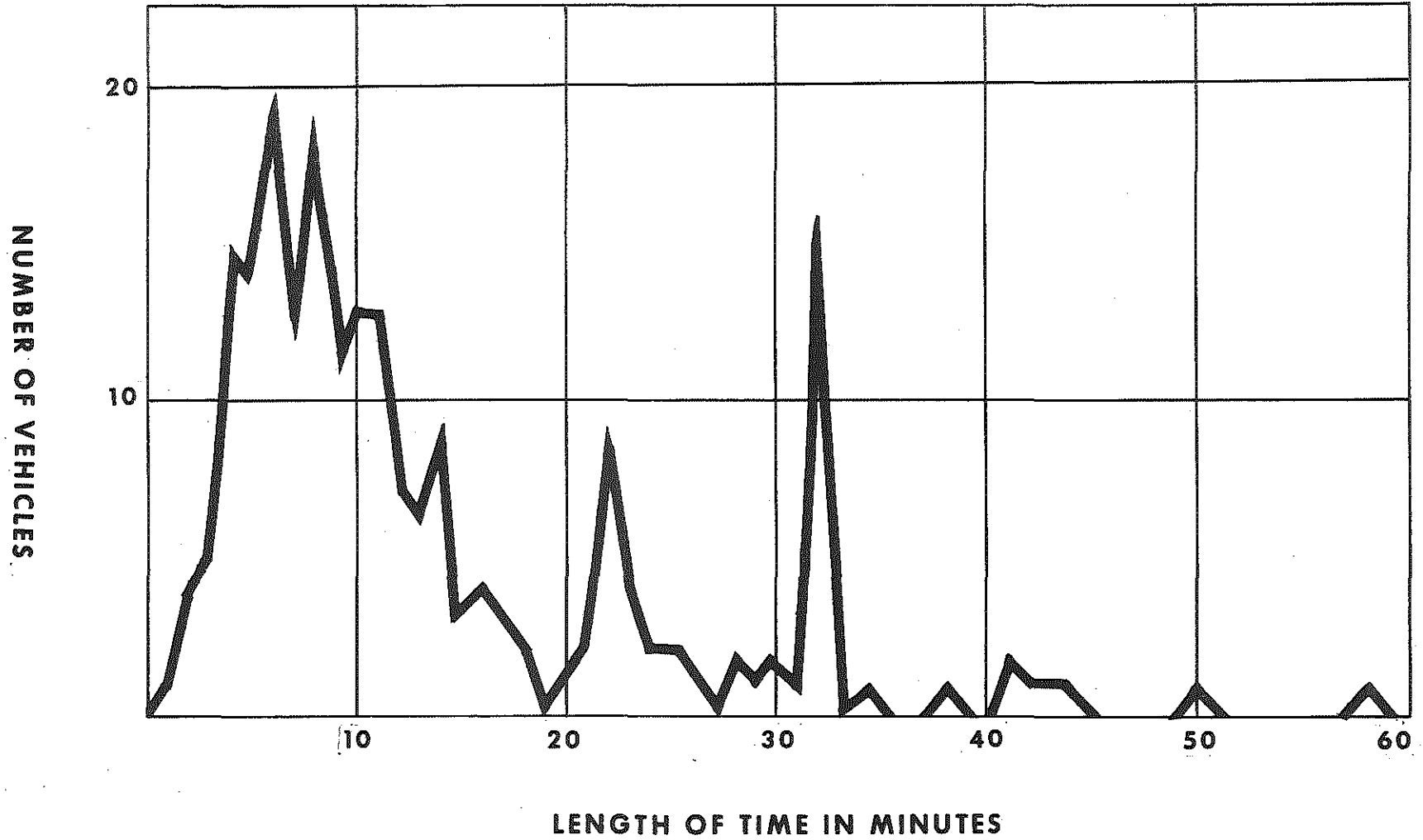


**Graph II**



**Graph III**

# DISTRIBUTION OF LENGTH OF STAY



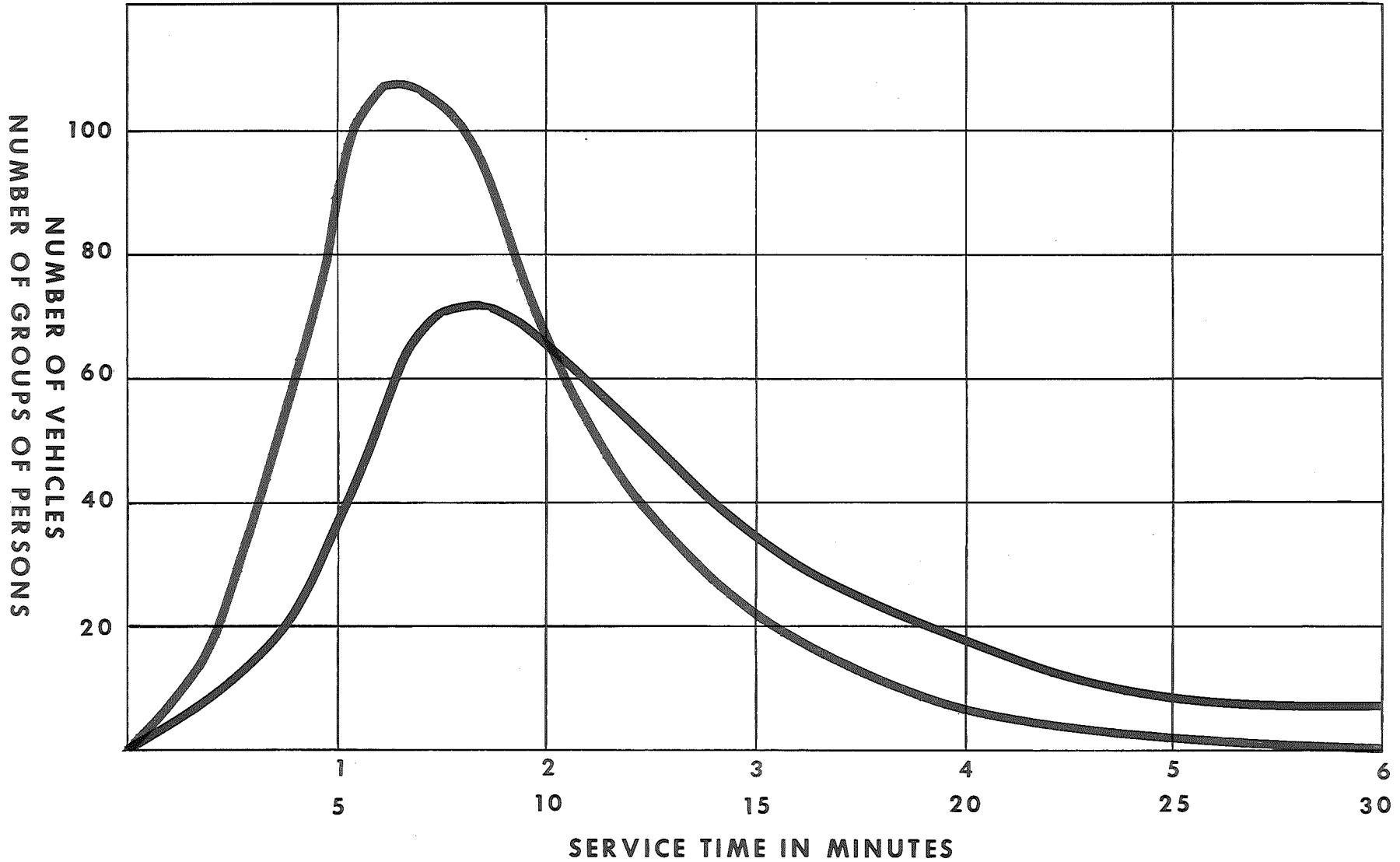
# SERVICE TIME DISTRIBUTIONS

(Person—Groups in rest rooms)

(Vehicles in rest area)

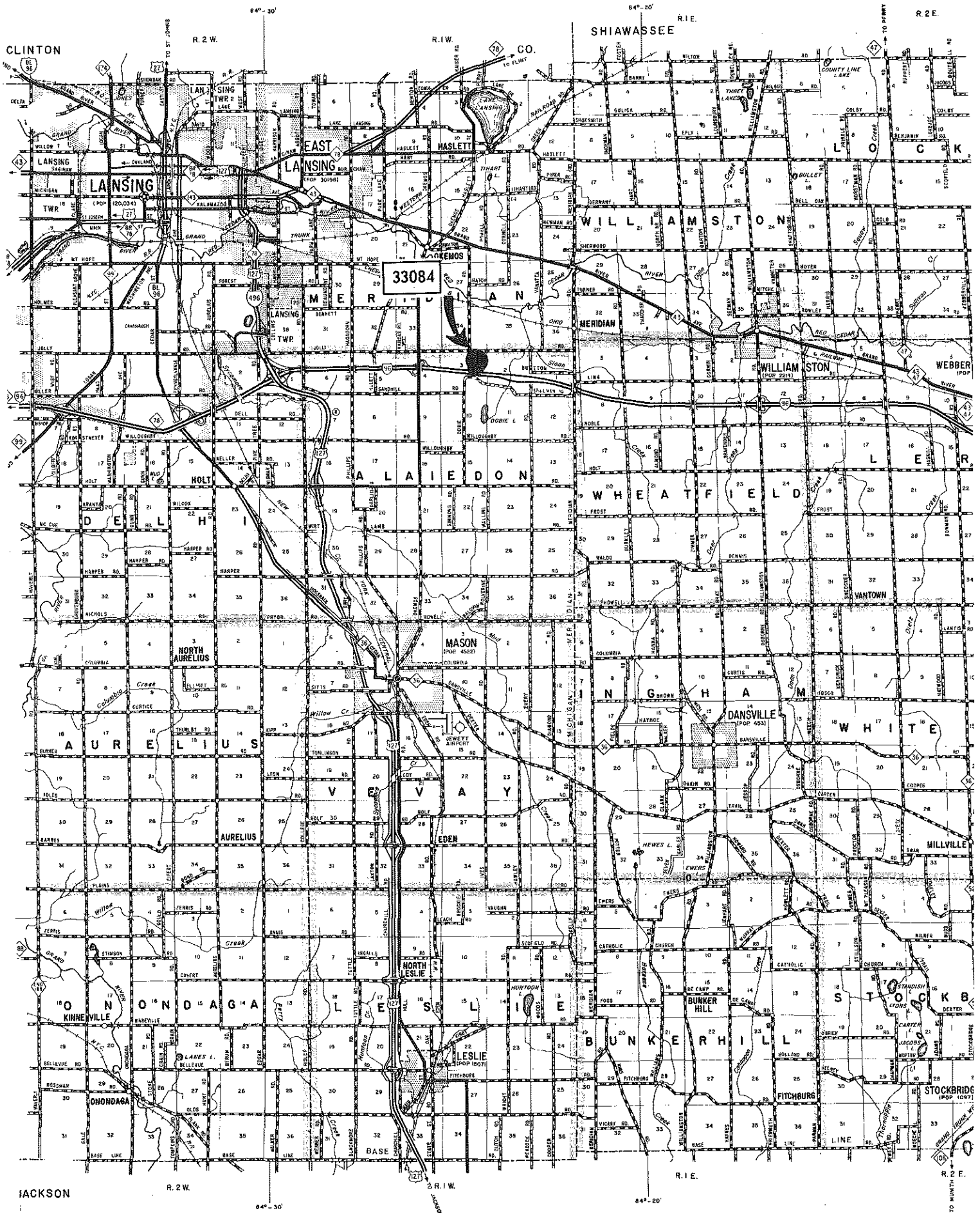
REST ROOM USAGE TIME

CAR PARKING TIME









33084

EAST OF LANSING

( 3 3 0 8 4 )

TRAFFIC VOLUMES BY DAY		From: 8/2/67 To: 8/8	
	Expressway	Rest Area	%
SUNDAY	7,640	888	11.6
MONDAY	7,555	922	12.2
TUESDAY (Except 6P-12P)	5,885	786	13.4
WEDNESDAY (Except 12-1P)	3,174	368	11.6
THURSDAY	6,733	1,071	15.9
FRIDAY	8,807	1,094	12.4
SATURDAY	7,362	992	13.5
TOTAL	47,156	6,421	13.6

HOURLY DISTRIBUTION

	% Entering R.A.		% Entering R.A.	
12 PM-1	14.0	12N-1	14.8	
1-2	14.6	1-2	14.7	
2-3	28.0	2-3	16.8	
3-4	22.2	3-4	12.6	
4-5	29.7	4-5	10.9	
5-6	29.3	5-6	11.7	
6-7	11.5	6-7	10.7	
7-8	10.4	7-8	8.9	
8-9	12.9	8-9	9.6	
9-10	14.1	9-10	9.8	
10-11	15.7	10-11	8.6	
11-12	14.1	11-12	11.4	

CLASS OF VEHICLE	VOLUME ON EX-WAY	VOLUME TURN- IN	AVERAGE LENGTH OF-STAY	NUMBER OF PERSONS PER VEHICLE		
				MALE	FEMALE	CHILD
1	2447	165	9	1.2	0.7	0.1
2	183	39	11	1.0	0.0	0.0
3	21	2	26	1.0	3.5	0.5
6	2	1	13	1.0	0.0	0.0
7	31	4	8	2.0	1.5	0.2

CARDS REJECTED

TOTALS	2684	211	10	1.1	0.6	0.0
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Average Persons Per  
Vehicle: 1.93

REST AREA VISITORS' COMMENTS

	<u>TOTAL</u>
Unsanitary	15
Washing Facilities Required	15
More Rest Areas Needed	32
Flush Toilets Required	24
Rest Area Satisfactory	47
Rest Area Good	27
Refreshments Required	12
Facilities Unsatisfactory	5
No Comment	65
Larger Rest Rooms Required	3

CORRELATION COEFFICIENTS BETWEEN EXPRESSWAY TRAFFIC  
VOLUME AND VOLUME OF TRAFFIC ENTERING REST AREA:

<u>DAY OF WEEK</u>	<u>r</u>
Monday	.86
Tuesday	.83
Wednesday	.75
Thursday	.75
Friday	.83
Saturday	.93
Sunday	.79

The correlation coefficient given above was obtained from the hourly traffic volumes by day of week.

The correlation coefficient between total traffic per day and daily total entering rest area is: .91

Out-Of-State Vehicles

20 out-of-state vehicles stopped at the rest area during the 4-hour study.

The average length-of-stay in the rest area of these vehicles was 9 minutes.

This is in comparison with the average length-of-stay for all vehicles, which was 10 minutes.

Rest Room Usage by Sex

121 males out of a total of 251 used the rest rooms, giving a male's percentage usage of 48.2.

58 females out of a total of 137 used the rest rooms, giving a female's percentage usage of 42.3.

21 children under 5 years of age entered the rest area.

Shee. 1 of 2 Date 8/2-8/8 19 67

Location I-96 Rest Area

Remarks Machine Counts.

HOURLY TRAFFIC VOLUMES

(East of Lansing.)

STATION NO.	1 WB														
DAY	Wed.	Thurs.	Fri.	Sat.	Sun.	Mon.	Tues.	Wed.	Thurs.						
DATE	8-2	8-3	8-4	8-5	8-6	8-7	8-8	8-9	8-10						
TIME															
12-1A.M.		92	113	142	139	143	92								
1-2		73	163	112	82	142	64								
2-3		56	72	80	65	48	86								
3-4		58	56	96	42	83	79								
4-5		69	74	56	28	72	78								
5-6		83	83	72	28	136	138								
6-7		207	247	160	57	263	306								
7-8		493	461	260	83	661	596								
8-9		484	244	458	166	508	614								
9-10		512	462	483	286	580	573								
10-11		505	446	638	364	532	582								
11-12		443	487	536	478	538	493								
12-1P.M.		342	448	439	490	413	377								
1-2	360	343	430	459	486	417	370								
2-3	353	364	496	432	432	359	365								
3-4	394	364	551	453	401	411	379								
4-5	398	459	606	401	420	407	373								
5-6	375	375	673	427	561	373	320								
6-7	306	331	711	417	605	397	*								
7-8	280	303	694	351	634	291									
8-9	206	250	525	311	603	271									
9-10	193	203	346	218	544	229									
10-11	165	177	229	218	415	161									
11-12	144	147	190	143	231	138									
TOTAL	3174	6733	8807	7362	7640	7555	5885								

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Sta. No.	Direction	Road		Route	Location	C.S. No.
		Type	Width (ft.)			
1	W Bd	Conc	24	I-96	East of Lansing	

STATE OF MICHIGAN  
DEPARTMENT OF STATE HIGHWAYS

City -  
Village  
or Twp. \_\_\_\_\_ County Ingham

Sheet 2 of 2 Date 8/2-8/10 19 67

Location I-96 Rest Area

Remarks Machine Counts.

HOURLY TRAFFIC VOLUMES

(East of Lansing)

STATION NO.	2 WB (Ramp)														
DAY	Wed.	Thurs.	Fri.	Sat.	Sun.	Mon.	Tues.	Wed.	Thurs.						
DATE	8-2	8-3	8-4	8-5	8-6	8-7	8-8	8-9	8-10						
TIME															
12-1 A.M.		12	9	23	14	30	13	5	27						
1-2		17	12	21	16	15	9	21	22						
2-3		22	20	15	13	24	20	31	18						
3-4		32	10	10	7	20	13	25	6						
4-5		34	22	17	2	28	9	9	14						
5-6		63	30	9	4	20	32	18	21						
6-7		17	20	27	10	33	35	22	23						
7-8		94	26	37	17	56	39	26	49						
8-9		65	52	71	27	53	50	31	43						
9-10		81	59	87	39	65	77	79	59						
10-11		74	67	105	76	73	86	46							
11-12		58	76	72	75	71	68	68							
12-1 P.M.		56	68	73	66	58	51	60							
1-2	60	66	50	65	54	62	63	62							
2-3	55	72	86	79	63	43	73	70							
3-4	38	66	64	57	47	48	53	59							
4-5	43	52	61	37	61	31	49	61							
5-6	34	35	78	55	59	55	46	50							
6-7	40	38	68	50	67	32	26	31							
7-8	23	26	66	38	43	30	23	26							
8-9	43	21	46	35	38	24	19	20							
9-10	17	31	43	30	27	22	16	24							
10-11	6	23	27	12	35	15	18	11							
11-12	9	16	34	12	28	14	16	22							
TOTAL	368	1071	1094	1037	888	922	904	877	282						

1 47 1

Sta. No.	Direction	Road		Route	Location	C.S. No.
		Type	Width (ft.)			
2	W Bd	B.T.	12	I-96 Ramp	Entrance to Rest Area -- East of Lansing	

NOTES ON CHARACTERISTICS OF REST AREA  
EAST OF LANSING

This rest area is equipped with electricity and drinking water but its rest rooms are without lavatories and flush toilets. There are seventy parking spaces for cars as well as twenty separate truck spaces. Likewise, twenty picnic tables and 3 separate cooking facilities can be found. As an added convenience, tourist information is available.

This rest area has a percentage turn-in which varies from 11.6 to 15.9. The highest percentage turn-in occurs on a Thursday and the lowest on a Sunday.

The hourly percentage distribution will be reasonably stable even through the hours of darkness since the traffic volumes are fairly high.

The average number of persons per vehicle reflects the fact that there were nearly twice as many males as females using the rest area during the survey.

The correlation between expressway volume and volume turn-in by hour of the day is only fairly good except for Saturday when the correlation coefficient was very good.

The correlation between daily expressway traffic and daily turn-in is very good.

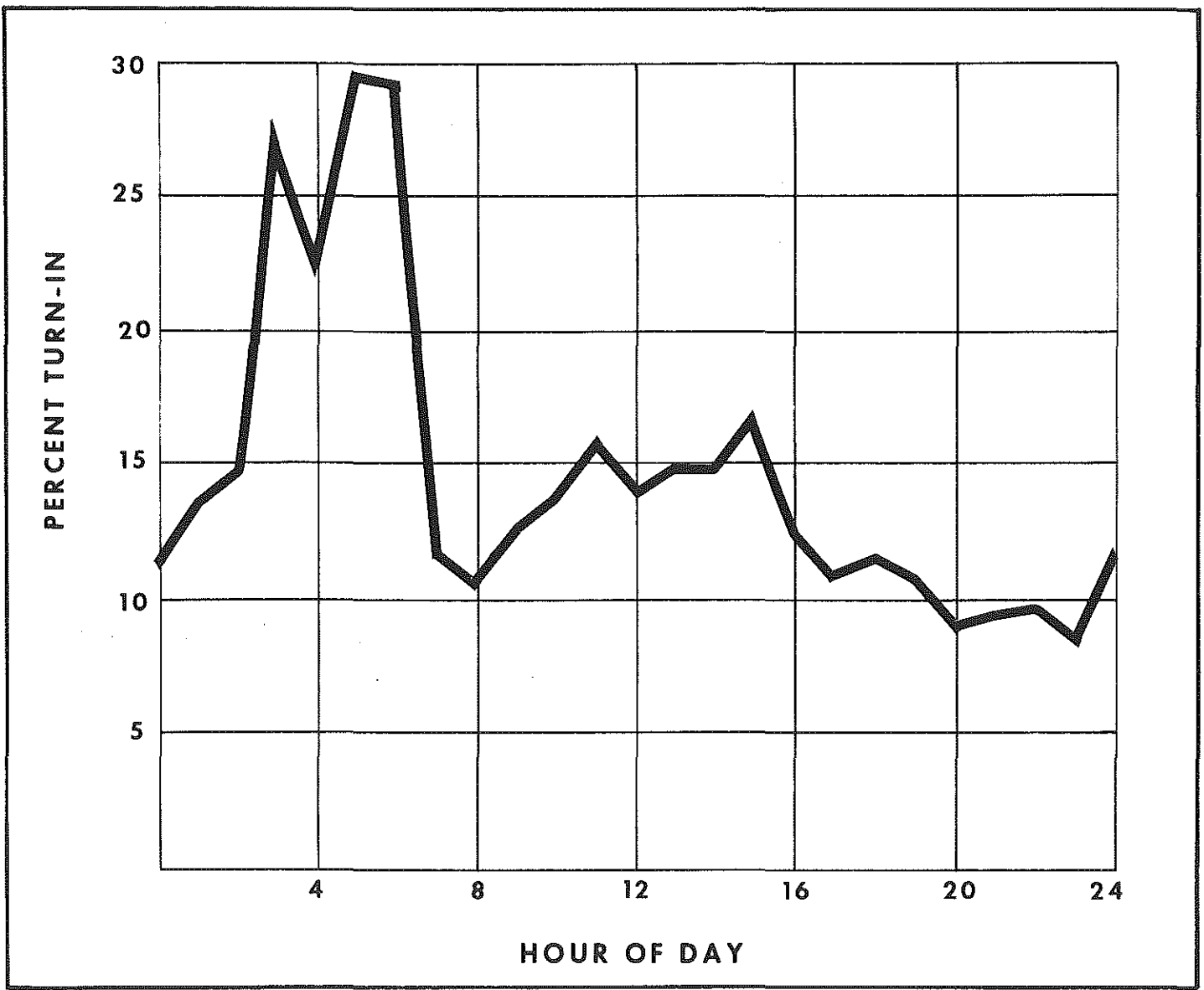
The average length-of-stay for out-of-state vehicles does not differ significantly from the overall average length-of-stay.

The percentage rest room usage is slightly higher for males than females.

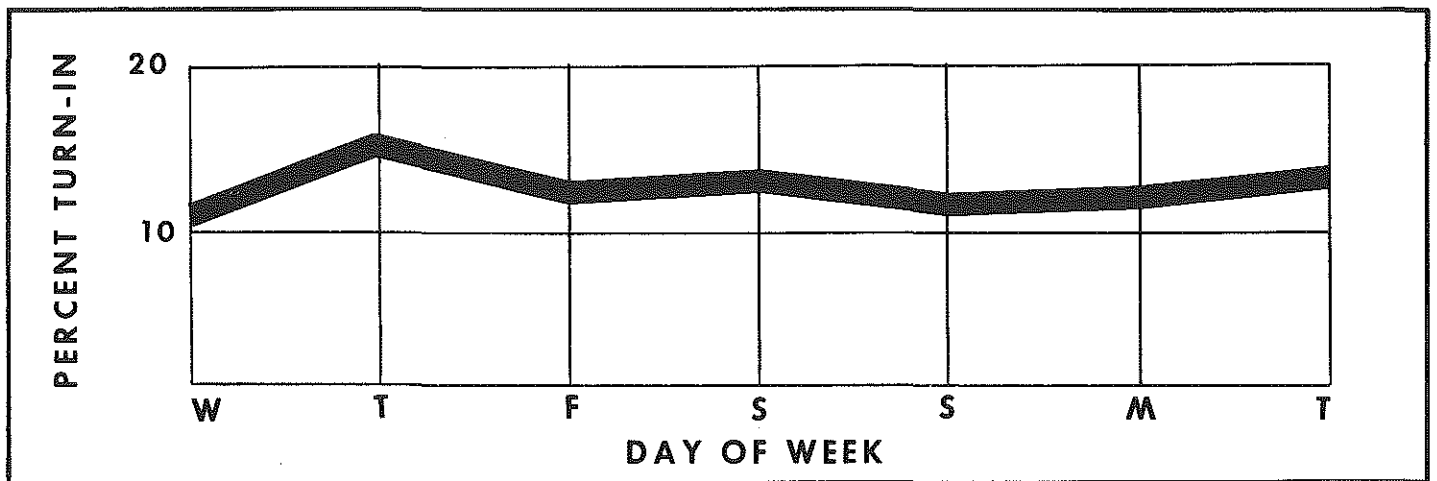


There were a significant number of adverse comments about the condition of the rest area. A large number of people required more rest areas but since the date of the survey, a new rest area has been opened east of Howell.

LIBRARY  
michigan department of  
state highways  
LANSING

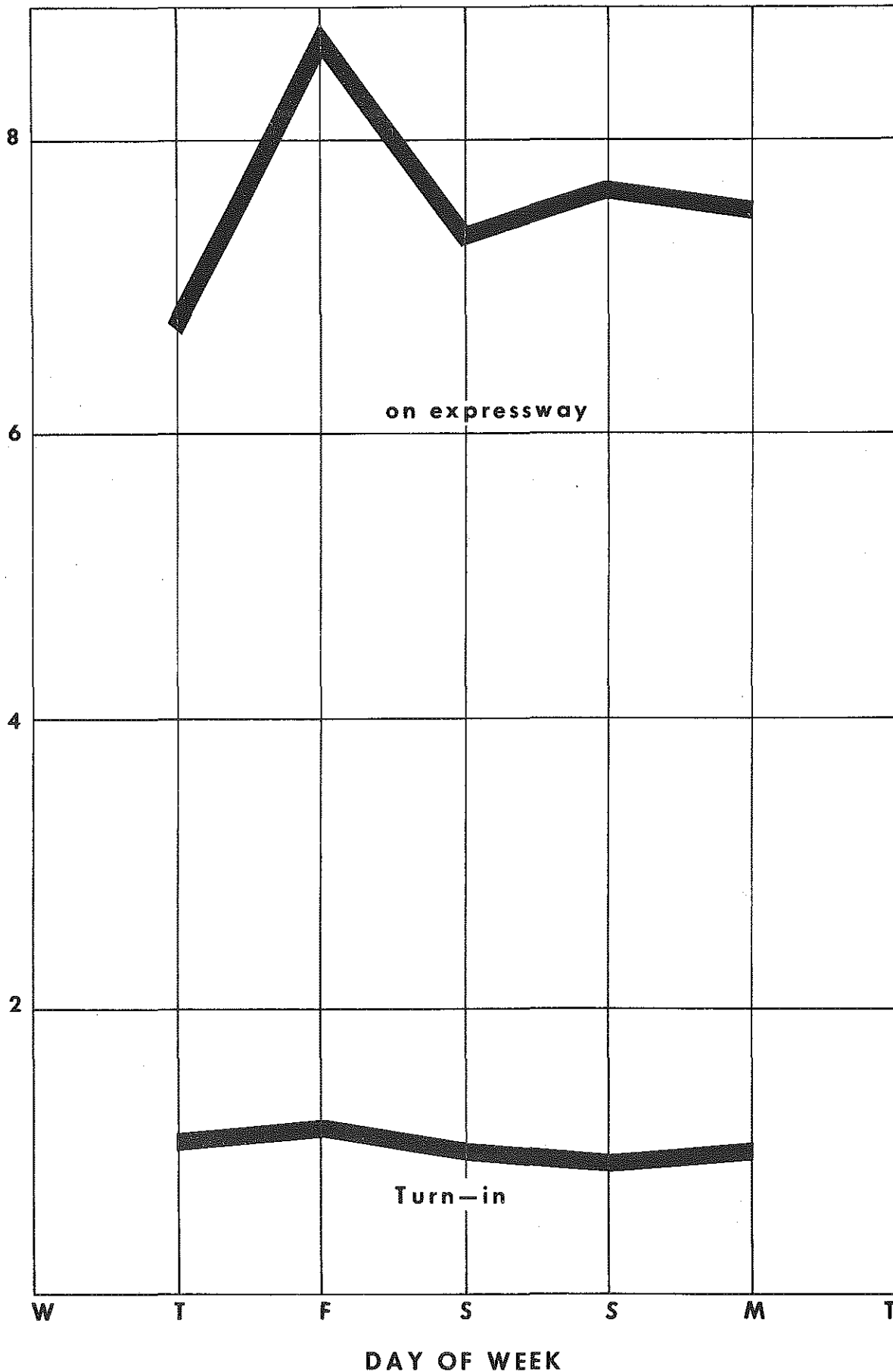


**Graph I**



**Graph II**

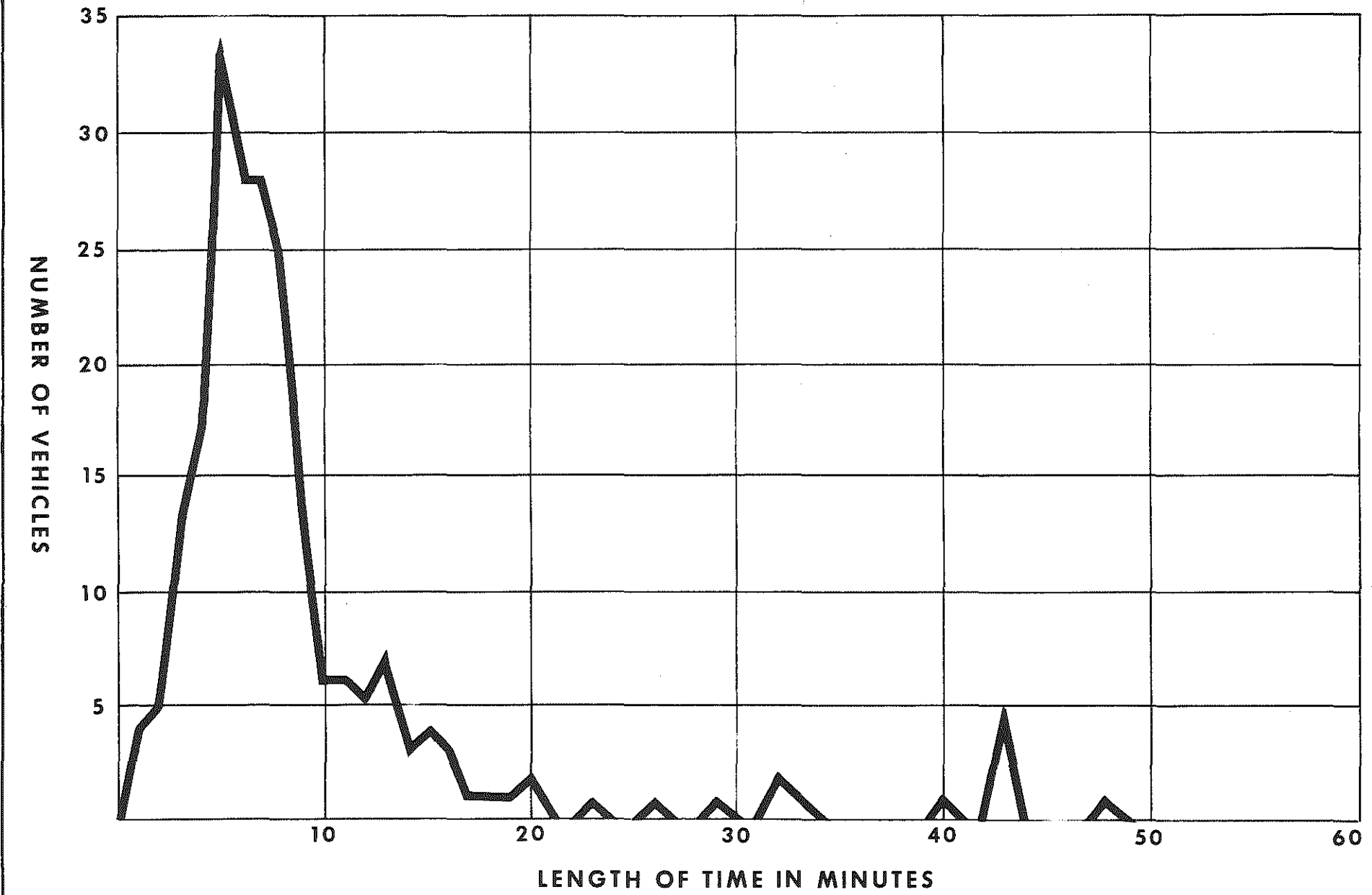
TRAFFIC VOLUME  
(in thousands)



DAY OF WEEK

**Graph III**

# DISTRIBUTION OF LENGTH OF STAY



# SERVICE TIME DISTRIBUTIONS

(Person—Groups in rest rooms)  
(Vehicles in rest area)

REST ROOM USAGE TIME  
CAR PARKING TIME

