Proportionate Use of Maine Turnpike by Traffic Through Portsmouth-Portland Corridor

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SURVEYS conducted in the immediate vicinity of the Maine Turnpike in 1947, 1948, and 1950 provide detailed data indicating the character, volume, and other features of the traffic electing to use the toll highway in preference to parallel free highway US 1, between Portsmouth, New Hampshire, and Portland, Maine. Volume counts on both highways show the seasonal variation in traffic for the four years, and the monthly percentages of total traffic using the toll highways.

For August 1950, traffic is segregated into groups of through traffic, traffic from points outside the area to the area, and local traffic between points inside the area under study. The purpose of the trip (work or business, social and recreational, and vacation) is used as a controlling element in the classification of traffic. Trip frequencies are tabulated in conjunction with the other characteristics of the traffic to develop an indication of the volumes that may be expected to use a toll highway.

●THE financial success or failure of a toll highway project is dependent in large measure upon the volume and character of traffic attracted to the highway. In the design of any new public highway, prediction of traffic usage is one of the difficult phases of the operation. Imposition of toll charges complicates the procedure.

Experience is a valuable aid in estimating probable traffic volumes on a new route. Cooperative studies are being conducted in states where toll highways are in operation to develop detailed information on this subject. The Maine Turnpike traffic study is the first of several in which an origin-and-destination study was made before the toll highway was opened to traffic December 13, 1947, and repeat surveys were made in the same way after the highway was placed in operation.

Origin-and-destination surveys were made in August and October of 1947 and 1948 and in August 1950. Supplementing these surveys traffic-volume data have been accumulated for 5 yr., 1947 through 1951. This report will include a summary of the volume data and important findings from the 1950 origin-and-destination survey.

Figure 1 shows the location of the turnpike as related to US 1 between Portsmouth, New Hampshire; and Portland, Maine. The area served includes some of the best ocean beaches along the Atlantic Coast. Vacation and recreation are two of the important reasons for summertime trips to this region.

Three interview stations were established on US 1 to measure and classify the traffic on this route. These stations were located so as to provide traffic data to compare with that on the major subdivisions on the toll highway. Station O1 at York provides information on US 1 comparable to that on the turnpike between Kittery and Wells, where there are no interchange points on the toll highway. Station O2 at Wells was selected to provide information for the area between Wells and the Biddeford-Saco interchanges. At the time of the original layout of the survey the Kennebunk interchange was not included in the turnpike plans. Station O3 at Scarboro provides information comparable to that between Saco and South Portland on the toll highway. This section of the turnpike is ordinarily without access except at the ends. However, in 1949 a race track was opened at Scarboro Downs and the turnpike has provided a temporary interchange, 2 mi. south of the South Portland toll house, which is operated in the summer during the racing season.

The length of the route via US 1 from its junction with the turnpike at Kittery to St. John Street and Park Avenue in Portland is 47.4 mi. The turnpike routing between these two termini is 47.26 mi.

TRAFFIC VOLUMES

At North Kennebunk there is a permanent traffic recorder on US 1 designated as AR 15. This recorder is located on a section of US 1 at the low point of traffic in the region under study. Records of this recorder were used to develop monthly and annual statistics of volume of traffic. Comparable data on the toll highway were developed from the turnpike authority records for the section between Kennebunk and Biddeford. During August 1950, the AR 15 traffic volume was the minimum of all the counts along US 1, but on the other hand, the volume on the corresponding section of the turnpike was higher than the average for the entire length of the toll highway. A comparison of volume counts on the two routes is given in Table 1 and Figure 2. The importance of summertime traffic is illustrated by the volume peaks in July and August. In all the tables and charts the volumes have been reduced to average daily traffic for the month or year indicated.

The unbroken top line indicates the total traffic through the corridor which in 1947, before December 13 when the toll road was opened, was carried on US 1. The dashed line shows the volumes on US 1 subsequent to the opening of the turnpike. The difference in volumes between the two lines on the chart represents the traffic on the turnpike, which later will be shown in better form on Figure 4.

The increase in traffic through the corridor during the 5 yr. from 1947 to 1951 is illustrated. For the peak traffic the average yearly increase is 1,601 vehicles per day, which is 11 percent of the average peak traffic. The annual average daily traffic through the corridor increased from 6,406 in 1947 to 10,435 in 1951, which is an annual increase of 1,007, 12 percent of the average for the 5 yr. These per centages are about double the percentage of increase of traffic on the other important highways of the state, 6 percent for 1948, 1949, and 1951 and 8 percent for 1950.

The variation in proportional use of the turnpike by traffic through the corridor is included in Table 1 and illustrated in Figure 3. The percentage use of the turnpike is larger than the average for the year in the summer months during periods of high volume traffic through the corridor. It will be noted, how-

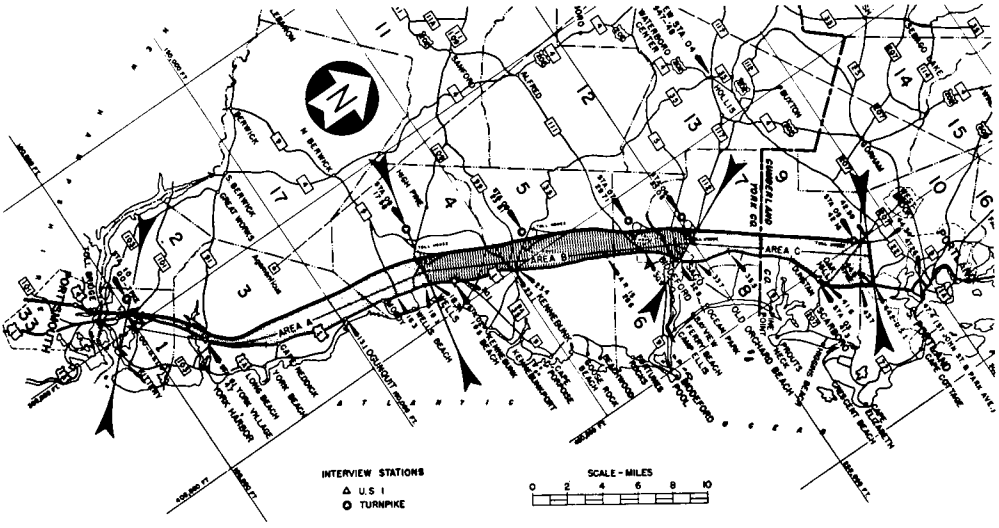

Figure 1. Maine Turnpike traffic study, August 1950.

ever, that in 1948 and 1949 the largest percentage of toll road use is in November. This may be due to the influence of vacation traffic during the hunting season. It will be noted that the change in the yearly percentage is not large and is at an increasing rate each year from 1948 through 1951.

TABLE 1
COMPARABLE USE OF TOLL AND NONTOLL FACILITIES BASED ON AVERAGE 24-HR. CLASSIFIED TRAFFIC
Maine Turnpike Traffic between Kennebunk and Biddeford Interchanges from Toll Records US 1 Traffic at Annual Traffic Recorder 5.2 Miles North of Kennebunk Adjusted for Multiple Axle Trucks

Month	1947	1948			1949			1950		
	US 1	US 1	Turnpike	% Turnpike	US 1	Turnpike	% Turnpike	US 1	Turnpike	% Turnpike
TOTALS										
January	3370	2557	1068	29.46	3045	1859	37.91	2857	1852	39.33
February	3966	2959	1522	33.97	3092	2170	41.24	2750	2083	43.10
March	4331	3362	1739	34.09	3402	2347	40.82	3710	2493	40.19
April	5495	3927	2618	40.00	3984	3189	44.46	5112	3432	40.17
May	6446	4104	3186	43.70	4381	3893	47.05	4418	3839	46.49
June	7246	4912	3700	42.96	5228	4172	44.38	5234	4936	48.53
July	11334	6097	6117	50.08	7732	7213	48.26	7846	8355	51.57
August	11073	6524	6450	49.23	7768	6922	47.12	7751	7962	50.67
September	7122	5244	4987	48.74	5368	5328	49.81	6158	5955	49.16
October	6541	3941	3724	47.03	4279	3799	47.03	5085	4309	45.87
November	5721	3114	3406	52.24	3274	3389	50.86	4644	3882	45.53
December	3560	3139	2389	43.22	3210	2364	42.41	4439	2978	40.15
Annual	6406	4194	3416	44.89	4577	3900	46.01	5038	4356	46.37
PASSENGER CARS										
January	2393	1675	926	35.60	2115	1628	43.49	1947	1573	44.69
February	2939	2034	1362	40.11	2158	1905	46.89	1857	1781	48.96
March	3282	2394	1573	39.65	2433	2051	45.74	2719	2109	43.68
April	4410	2911	2412	45.31	2961	2854	49.08	4038	3004	42.66
May	5351	3076	2943	48.90	3333	3547	51.56	3370	3382	50.09
June	6146	3844	3414	47.04	4151	3811	47.86	4156	4428	51.58
July	10110	5156	5784	52.87	6627	6813	50.69	6740	7812	53.68
August	9785	5440	6074	51.93	6643	6482	49.39	6573	7376	52.88
September	6026	4169	4624	52.59	4285	4907	53.38	5017	5419	51.93
October	5222	2889	3379	51.80	3186	3412	51.71	3970	3847	49.21
November	4566	2179	3071	58.50	2319	3010	56.48	3552	3441	49.21
December	2575	2190	2065	48.53	2263	1993	46.83	3358	2524	42.91
Annual	5288	3205	3143	49.51	3552	3547	49.96	3983	3907	49.52
TRUCKS										
January	920	836	140	14.34	877	227	20.56	860	274	24.16
February	964	873	156	15.16	881	258	22.65	844	294	25.83
March	983	911	164	15.26	912	290	24.13	931	376	28.77
April	1011	954	202	17.47	960	328	25.47	1002	418	29.44
May	1018	964	235	19.60	981	335	25.46	981	447	31.30
June	1022	997	277	21.74	1004	352	25.96	1005	497	33.09
July	1122	864	316	26.78	1028	378	26.88	1028	520	33.59
August	1204	1000	353	27.22	1042	417	28.58	1110	561	33.57
September	1018	1002	349	25.83	1009	406	28.69	1062	522	32.95
October	1254	982	339	25.68	1051	382	26.66	1042	455	30.39
November	1103	881	329	27.19	900	373	29.30	1021	435	29.88
December	926	895	320	26.34	892	365	29.04	1012	446	30.59
Annual	1048	928	266	22.28	962	343	26.28	987	438	30.74
BUSSES										
January	57	46	2	4.17	53	4	7.02	50	5	9.09
February	63	52	4	7.14	53	7	11.67	49	8	14.04
March	66	57	2	3.39	57	6	9.52	60	8	11.76
April	74	62	4	6.06	63	7	10.00	72	10	12.20
May	77	64	8	11.11	67	11	14.10	67	10	12.99
June	78	71	9	11.25	73	9	10.98	73	11	13.10
July	102	77	17	18.09	77	22	22.22	78	23	22.77
August	84	84	23	21.50	83	23	21.70	68	25	26.88
September	78	73	14	16.09	74	15	16.85	79	14	15.05
October	65	70	6	7.89	42	5	10.64	73	7	8.75
November	52	54	6	10.00	55	6	9.84	71	6	7.79
December	59	54	4	6.90	55	6	9.84	69	8	10.39
Annual	71	64	8	11.11	63	10	13.70	67	11	14.10

Turnpike traffic volumes are charted on Figure 4 for the four years from 1948 through 1951. Peak traffic increased at the average

annual rate of 844 per day, 11 percent of the average annual volume. Annual average traffic increased 12 percent, the same rate as for the total traffic through the corridor. Note that the vertical scale of traffic is twice that used on Figure 2.

In all these volume tabulations and charts, the comparisons are made at the location of the permanent traffic recorder AR 15 at North

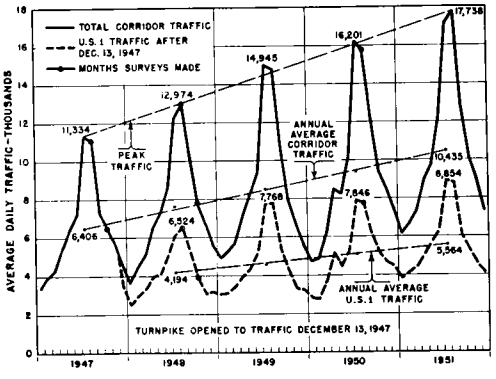

Figure 2. Total of average daily traffic through the corridor.

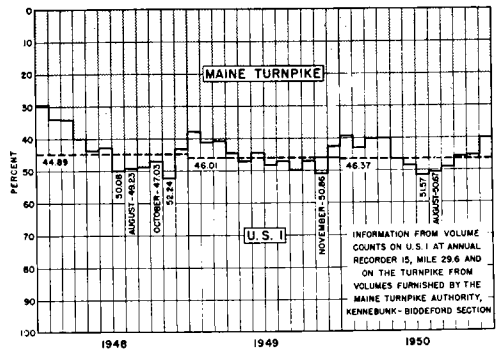

Figure 3. Percentage usage of the Maine Turnpike by traffic in the Portsmouth-Portland corridor.

Kennebunk and do not represent the average volume over the entire length of the region.

AUGUST 1950 ORIGIN-AND-DESTINATION SURVEY

Automatic recorders were installed at 10 locations during all the periods of survey. Records of these counters are given in Table 2 and, for the August 1950 survey, are graphically indicated in Figure 5. It will be noted that the volume at the permanent counter AR 15 is 7,751, the smallest volume of all the 11 locations. The average daily traffic on US 1 for the entire length of the highway from Kittery to South Portland was 9,550 vehicles. On the turnpike the average daily volume was 7,735 and the percentage usage was 44.75, as compared to 50.67 for the section at counter AR 15. The percentage of use of the turnpike in the three areas is shown as 37.80 for Area C, 45.52 for Area A, and 50.04 for Area B. These percentages are influenced by the amount of local traffic which is large in Area C and smaller in Area B.

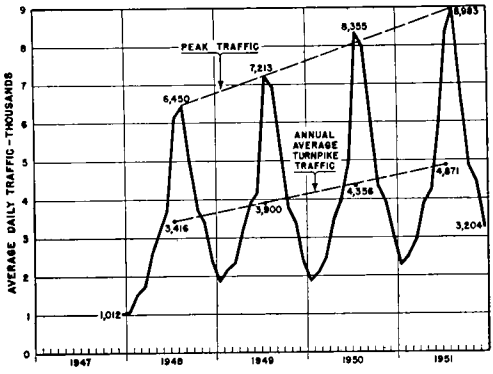

Figure 4. Total average daily traffic on the turnpike between Kennebunk and Biddeford.

In an origin-and-destination survey of this character there are three distinct categories of traffic: (1) through traffic, (2) traffic from outside the region to points within it, and (3) local traffic between points within the region. All traffic figures represent the sums of trips in both directions between the origins and destinations indicated.

Total average daily traffic in the region in August 1950 as measured on US 1 and on the three sections of the turnpike varied from 19,130 trips in Area B to 22,861 trips in Area C. Through traffic on both routes was 8,607 trips. Seventy-two percent of these trips used the turnpike and 28 percent used US 1. Ninety percent of the total through traffic was passenger cars and 75 percent of these cars used the turnpike. Heavy trucks made up 53 percent of the total through truck traffic and only one third of these heavy trucks used the turnpike.

Figure 6 represents the through traffic on the two routes. The eastern part of Massachusetts, centered on Boston, and the Atlantic Coast area north of Portland, centered on Bar Harbor, are the areas contributing the largest volumes of through traffic. The percentages shown represent the proportionate usage of the turnpike. It may be noted that the traffic between Portsmouth and Portland, the cities at the ends of the tunrpike, does not use the turnpike in as large proportion as traffic from more remote areas. Analysis of the traffic between Portsmouth and Portland indicates that only 38 percent of the through traffic between these two cities uses the turnpike. Vacation trips made up 69 percent of all

TABLE 2
SUMMARY OF VOLUMES ALONG US 1

Average Daily Volumes, Total Traffic

Station	Mile	Aug. '47	Oct. '47	Aug. '48	Oct. '48	Aug. '50	
16D	0.4	14,257	7,931	8,738	4,346	9,382	
16A	4.7	14,257	6,241	8,104	3,770	8,730	Interview Station, York
L8	5.0	15,266	5,734	8,804	3,988	9,673	
16E	18.2	16,971	7,178	8,716	3,512	9,315	
Area A	(18.3)	15,610	6,628	8,667	3,834	9,374	Average traffic over Area A
207	18.5	12,988	6,714	7,559	3,318	8,777	
16B	20.1	12,988	6,123	7,071	3,442	7,855	Interview Station, Wells
AR15	28.9	11,073	6,541	6,524	3,941	7,751	Annual traffic recorder, control station
Area B	(14.5)	11,984	6,516	6,829	3,840	7,937	Average traffic over Area B
16G	35.5	12,231	8,015	7,039	5,453	8,821	
3C	41.3	18,313	9,373	11,949	6,814	15,173	Interview Station, Scarborough
L7	41.7	18,129	9,114	11,270	6,759	14,751	
3H	43.7	20,905	10,229	12,734	7,889	14,602	
Area C	(11.4)	15,591	8,720	9,544	6,208	11,881	Average traffic over Area C
Total length	44.2	14,416	7,131	8,290	4,448	9,550	
% count at AR15		130.19	109.0	127.1	1.129	123.1	

Average Daily Volumes, Passenger Cars

16D	0.4	12,983	6,235	7,689	3,350	8,146
16A	4.7	12,983	4,929	7,140	2,876	7,705
L8	5.0	13,906	4,528	7,763	3,041	8,419
16E	18.2	15,636	5,661	7,695	2,702	8,116
Area A	(18.3)	14,283	5,228	7,643	2,937	8,174
207	18.5	11,577	5,438	6,557	2,476	7,673
16B	20.1	11,577	4,963	6,117	2,591	6,834
AR15	28.9	9,869	5,287	5,525	2,959	6,641
Area B	(14.5)	10,663	5,295	5,833	2,871	6,860
16G	35.5	10,669	6,755	5,874	3,928	7,713
3C	41.3	15,988	7,887	10,038	4,897	13,345
L7	41.7	15,825	7,670	9,480	4,821	12,964
3H	43.7	18,251	8,605	10,695	5,708	12,834
Area C	(11.4)	13,617	7,331	8,003	4,473	10,419
Total length	44.2	12,923	5,792	7,142	3,312	8,322
% count at AR15		130.95	109.6	129.3	111.9	125.46

Truck and bus traffic may be obtained by subtracting the figures in the lower table from those in the top table. For the three areas the average volumes are as follows:

Average Daily Volumes—Trucks and Busses

Area A	18.3	1,327	1,400	1,024	897	1,200
Area B	14.5	1,321	1,221	996	969	1,077
Area C	11.4	1,974	1,389	1,541	1,735	1,462
Total length	44.2	1,493	1,339	1,148	1,136	1,228
% count at AR15		124.00	106.8	114.9	115.7	110.63

the through traffic on both highways. Seventy-eight percent of these trips used the turnpike.

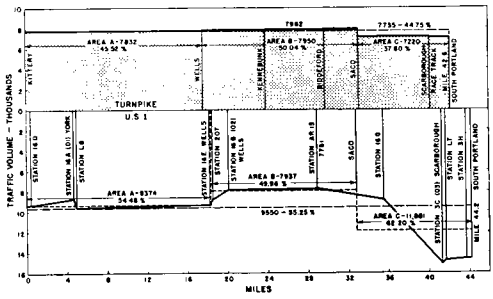

Figure 5. Average daily traffic, August 1950.

ness trips were made by 14 percent, of which 72 percent used the turnpike.

North-bound traffic on the turnpike at the Boston and Maine Railway overpass near Wells is shown in Figure 7. Four lanes with a raised, sodded median and stabilized shoulders is the general type.

Figure 8 representing traffic originating at or destined to points south of Kittery and starting or terminating trips in the three areas within the region under study, provides a comparison of the volumes by purpose of trip. It will be noted that social or recreational traffic to Area A shows the largest volume of the three purposes, whereas to

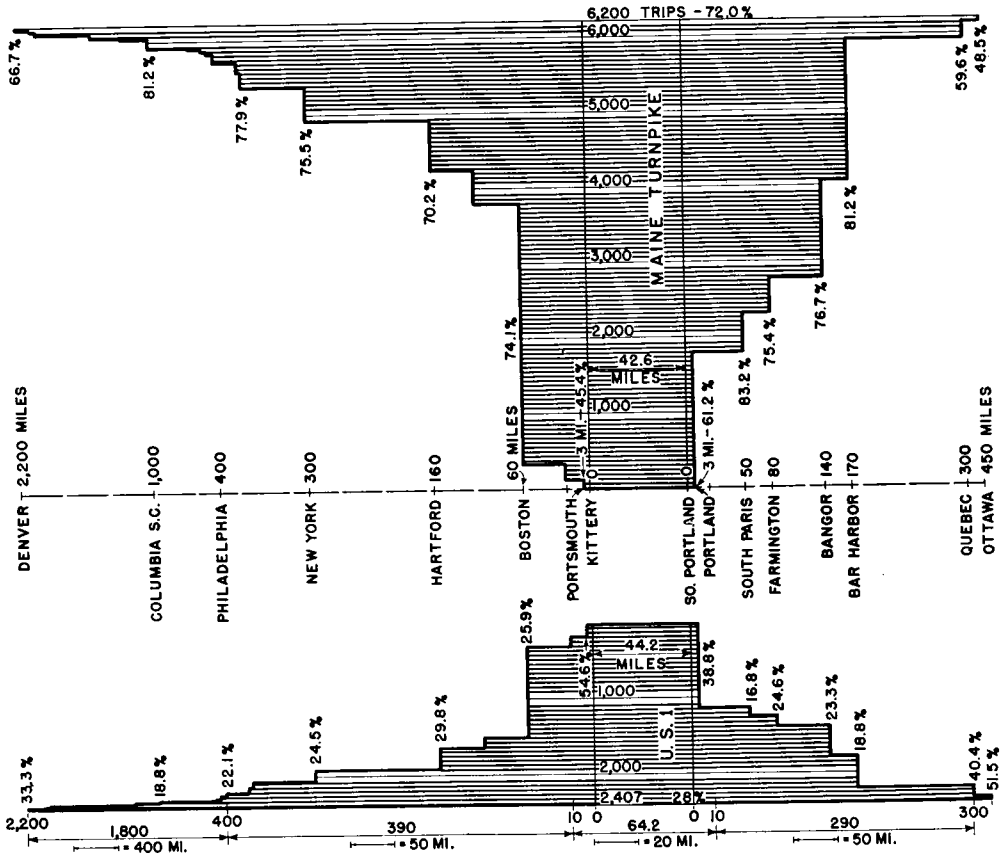

Figure 6. Through traffic, all vehicles, August 1950, average daily traffic percentage usage, Turnpike 8, US 1.

Social or recreation purposes were indicated by 16 percent of all the through traffic and 63 percent used the turnpike. Work or business trips were made by 14 percent, of which 72 percent used the turnpike.

Areas B and C, vacation traffic is larger than social or recreational or work or business.

The traffic represented in Figure 8 may

choose to follow the turnpike or US 1 if it is destined to points north of Wells. Trips to points in the southern part of Area A cannot use the turnpike without doubling back after leaving the toll highway at Wells. It was corresponding areas in the region. One reason for this difference may be the relative difficulty of access to the turnpike by south-bound traffic as compared to the ease of access at Kittery for north-bound traffic.

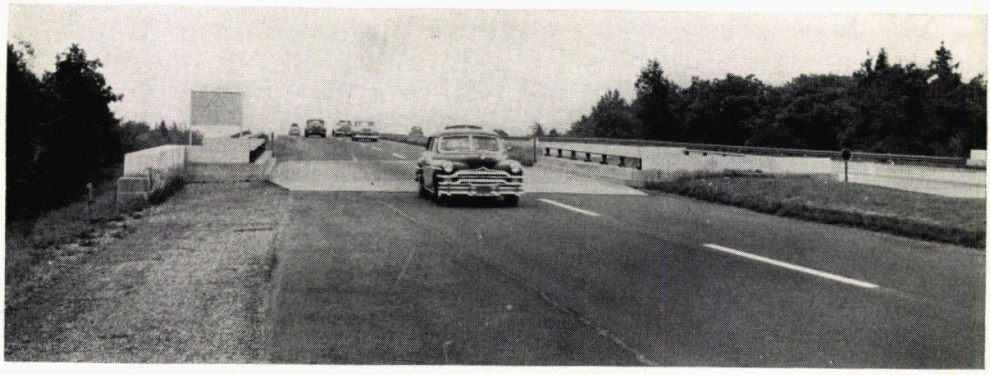

Figure 7. Northbound traffic on the Maine Turnpike at the Boston and Maine Railway overpass near Wells.

found that of those trips having a choice of routes to Area B, 41 percent used the turnpike. Similarly for the traffic bound to Area C at Scarboro, 54 percent used the turnpike.

Old Orchard Beach, in Area C, is a recreational area which attracts vacation and recreational traffic. Figure 9 shows this beach on a Sunday afternoon. The July and August peaks in the traffic curve are influenced by the existence of resorts of this character in the region served by the turnpike and US 1.

Figure 10 represents traffic from north of the northern terminus of the turnpike to points in Areas C, B, and A. The scale of traffic volumes shown on Figure 10 is 2000 vehicles as compared to 1000 in Figure 8. Work or business and social or recreational trips make up the majority of the volume in all three areas, whereas the vacation bound trips reduced as should be expected.

Tables were prepared to show the traffic through Area C enroute to Area B and, separately, to Area A through Areas C and B. Seventeen percent of the trips to Area B which had a choice of route through Area C used the turnpike. Similarly, of the trips to Area A through Areas C and B, 46 percent used the turnpike. It may be noted that the percentage use of the turnpike by trips from north of South Portland is considerably less than for the trips from south of Kittery to

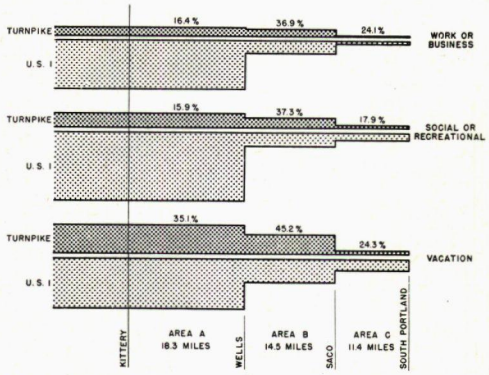

Figure 8. Percentage use of the turnpike by traffic from south of Kittery.

Figure 11, representative of local traffic, indicates the relatively small percentage using the turnpike. The traffic on US 1 includes many local trips which cannot conveniently use the toll highway. In assigning traffic to a new route this traffic would not ordinarily be considered unless there were numerous access points on the new route. The local trips congest US 1 and this congestion was one of the most important reasons for the development of a new route. Figure 12 shows local traffic on US 1 at Saco. There is ample capacity for additional traffic on the turnpike, as indicated

Figure 9. Old Orchard Beach on a Sunday afternoon in August. This is one of the attractions for vacation traffic.

in Figure 13 (which shows the toll highway on a week day in August).

Local traffic between the York Area A and Scarboro Area C may use US 1 or the turnpike. Thirty percent of this local traffic did use the turnpike. These trips were not inspired by saving in distance, time, or fuel. The distance from Wells via the turnpike to Saco on US 1 is 19.38 mi. On direct US 1 between these two points it is 14.50 mi.. a saving of 5 mi. The average time required to make the trip via US 1 is 5½ min. less than on the turnpike and the fuel saving via US 1 is 0.3 gal. The toll charge from Wells interchange to the Saco interchange for the turnpike in 1950 was 20 cents.

The percentage use of the turnpike for part length use increases with the length of section in the following order: 11 mi., 17 percent; 14 mi., 30 percent; 18 mi., 41 percent; 26 mi., 46 percent; 33 mi., 54 percent; and for through traffic, 44 mi., 72 percent.

INTERMEDIATE STOPS

One of the elements surveyed was the influence of intermediate stops on the use of the turnpike. For through traffic, it was found that 28 percent of the weekday, 19 percent of Saturday and 17 percent of the Sunday traffic on US 1 made stops that would influence the route of the trip. Twenty-eight percent of the through traffic used US 1, and it seems reasonable to assume that some of this traffic was influenced in selecting the free road by the necessity to stop at points along that route.

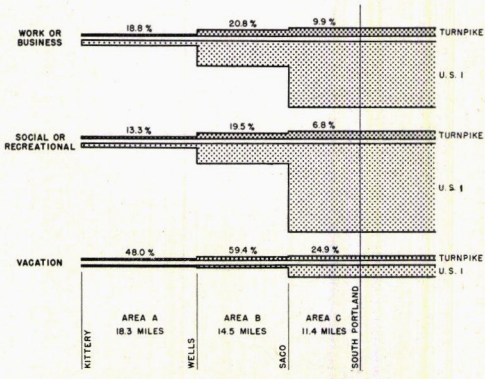

Figure 10. Percentage use of the turnpike by traffic from north of south Portland. Relative usage based on trip purpose.

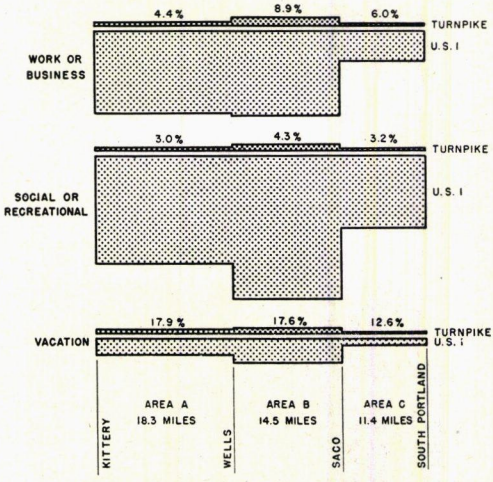

Figure 11. Percentage use of the turnpike, local traffic. Relative usage based on trip purpose.

TABLE 3
MAINE TURNPIKE TRAFFIC SURVEY
Group-to-Group Trip-Comparison
Average Daily Traffic, August 1950
Area "A" Kittery to Wells
Area "B" Wells to Saco
Area "C" Saco to Portland

Character of Traffic	Traffic from and to Groups South of Kittery																			Total Through, Local Through, and Local			Traffic from and to Groups North of South Portland						
	219	218	217	216	215	214	213	212	211	210	209	208	207	206	205	204	203	202	201	Area "A"	Area "B"	Area "C"	101	102	103	104	105	106	107
WORK OR BUSINESS[a]																													
Through																													
US 1	4	3	1	0	3	1	3	1	0	4	2	1	3	22	35	65	492	40	75	755	755	755	453	50	142	10	73	25	2
Turnpike	5	1	5	1	4	1	4	1	0	28	1	8	9	50	45	103	812	55	45	1,178	1,178	1,178	480	176	286	25	144	65	2
Local Through																													
US																													
Southbound	0	0	0	0	0	0	0	0	1	0	1	0	2	4	17	63	354	250	816	(1,508)	381	85							
Northbound																				247	1,579	(4,154)	3,837	65	95	9	118	28	2
Turnpike																													
Southbound	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20	203	30	36	296	223	27							
Northbound																				57	415	457	370	15	35	4	27	5	1
Local																													
US 1																				1,032	1,110	391							
Turnpike																				50	108	25							
SOCIAL OR RECREATION																													
Through																													
US 1	1	1	1	1	1	0	3	2	1	5	3	1	7	12	19	70	223	46	55	452	452	452	263	59	62	11	32	22	3
Turnpike	1	1	0	0	0	0	1	1	1	5	2	7	6	22	42	123	480	36	29	757	757	757	300	134	158	6	72	86	1
Local Through																													
US 1																													
Southbound	0	0	1	1	0	0	0	0	2	11	4	3	12	14	24	208	820	473	572	2,145	502	206							
Northbound																				241	1,209	5,538	4,670	134	254	18	336	96	30
Turnpike																													
Southbound	0	0	0	0	0	0	0	0	0	0	3	1	1	2	9	46	268	40	35	405	299	45							
Northbound																				37	292	407	233	75	34	1	40	23	1
Local																													
US 1																				1,408	1,876	947							
Turnpike																				44	84	31							

VACATION																												
Through																												
US 1	7	18	14	8	23	13	20	7	8	72	26	25	49	110	85	149	478	31	28	1,171	1,171	1,171	418	320	178	124	43	59	29
Turnpike	8	40	28	23	50	17	28	17	8	103	132	79	193	372	348	437	2,118	100	55	4,156	4,156	4,156	983	1,541	816	184	235	367	30
Local Through																												
US 1																												
Southbound	3	7	3	7	18	3	13	5	12	87	24	14	50	82	118	252	641	132	125	1,596	732	357							
Northbound																				64	162	754	351	111	74	108	44	26	40
Turnpike																												
Southbound	2	2	2	1	8	0	5	2	4	6	11	8	13	47	58	118	505	42	31	865	604	113							
Northbound																				59	237	250	115	41	47	20	13	10	4
Local																												
US 1																				216	313	83							
Turnpike																				47	67	12							
OTHER																												
Through																												
US 1	0	0	1	0	1	0	1	0	0	1	1	0	1	1	1	3	15	2	1	29	29	29	10	3	8	2	5	0	1
Turnpike	0	0	1	0	1	0	1	0	0	1	3	1	1	2	12	13	53	17	3	109	109	109	41	16	25	2	18	7	0
Local Through																												
US 1																												
Southbound	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3	33	13	48	99	32	15							
Northbound																				16	63	267	239	6	9	4	7	0	2
Turnpike																												
Southbound	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	35	8	6	55	33	5							
Northbound																				1	49	52	40	5	3	0	2	2	0
Local																												
US 1																				123	131	31							
Turnpike																				5	22	2							
TOTAL																												
Through																												
US 1	12	22	17	9	28	14	27	10	9	82	32	27	60	145	140	287	1,208	119	159	2,407	2,407	2,407	1,144	432	390	147	153	106	35
Turnpike	14	42	34	24	55	18	34	19	9	137	138	95	209	446	447	676	3,463	208	132	6,200	6,200	6,200	1,804	1,867	1,285	217	469	525	33
Local through																												
US 1																												
Southbound	3	7	4	8	18	3	13	5	15	99	29	17	64	100	160	526	1,848	868	1,561	5,348	1,647	663							
Northbound																				568	3,013	10,713	9,097	316	432	139	505	150	74
Turnpike																												
Southbound	4	2	2	1	8	0	5	2	4	6	14	9	14	50	73	188	1,011	120	108	1,621	1,159	190							
Northbound																				154	993	1,166	758	136	119	25	82	40	6
Local																												
US 1																				2,829	3,430	1,452							
Turnpike																				146	281	70							
US 1	15	29	21	17	46	17	40	15	24	181	61	44	124	245	300	813	3,056	987	1,720	11,152	10,497	15,235	10,241	748	822	286	658	256	109
Turnpike	18	44	36	25	63	18	39	21	13	143	152	104	223	496	520	864	4,474	328	240	8,121	8,633	7,626	2,562	2,003	1,404	242	551	565	39
Grand Total	33	73	57	42	109	35	79	36	37	324	213	148	347	741	820	1,677	7,530	1,315	1,960	19,273	19,130	22,861	12,803	2,751	2,226	528	1,209	821	148

[a] Total trucks, all types, included with passenger cars under "work or business."

TRIP FREQUENCY

Drivers were asked: "How often do you make this trip?" Analysis of this element shows that 56 percent of all drivers interviewed on both routes made the trip yearly or less frequently and that 32 percent made the trip weekly or more often. On the turnpike 75 percent of the trips were made yearly or once only, and only 13 percent made the trip weekly or more frequently. Of the trips that were made yearly or less frequently, 55 percent used the turnpike, and of those who made the trip weekly or more frequently, 21 percent used the toll highway.

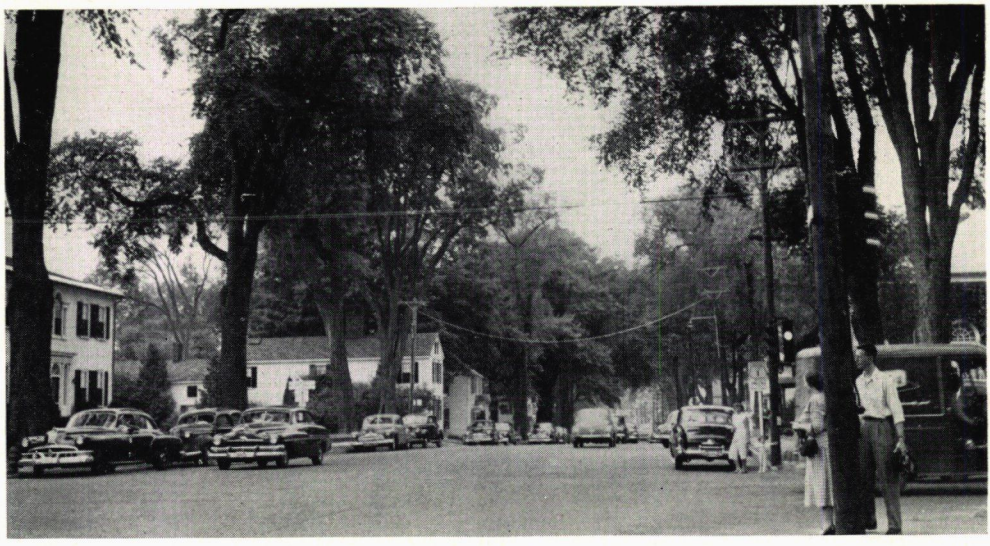

Figure 12. US 1 through Saco at the intersection with the access road right to the turnpike.

Figure 13. Maine Turnpike near the Saco interchange.

CONCLUSION

The information obtained from the August survey is representative of operation in the period of maximum revenue for the turnpike. For average year-round conditions it seems that the percentage of use of the toll highway should be less than is here indicated.

Table 1 shows traffic volumes computed on the basis of average daily traffic for each month of the years 1947, 1948, 1949, and 1950. The total traffic on US 1 was compiled from the records of the permanent recorder AR 15 at North Kennebunk Port. Passenger-car, truck, and bus volumes were computed using

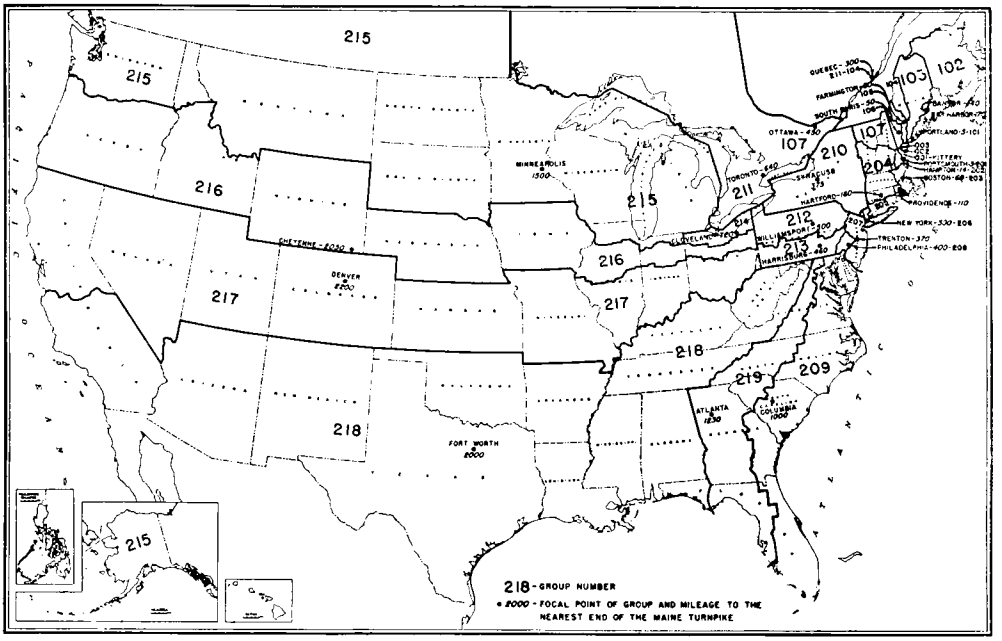

Figure 14. Group boundaries of Maine Turnpike traffic study, 1950.

This study indicates that 72 percent of the through traffic uses the turnpike and that 72 percent of the trips on the turnpike were vacation trips.

Of passenger-car traffic from outside the region to areas adjacent to the turnpike, 10 to 42 percent used the toll highway. Truck traffic used the toll road in the proportion of 11 to 28 percent.

Local traffic included a large number of trips which would not find it economical to use the toll highway. The percentage of all this traffic using the toll road ranged from 3 to 9 percent.

all available classification counts. The volumes on the turnpike were taken from the records of the Maine Turnpike Authority and are the actual volumes of passenger cars, trucks and buses as measured at the tollgates.

Table 2 gives traffic volumes as measured at the permanent counter AR 15 and 10 other stations where temporary counters were installed during the periods when origin-and-destination studies were under way.

Table 3 is a summary group-comparison tabulation obtained from an origin-and-destination survey made in August 1950. The group numbers as shown on this tabulation are indicated on the United States map (Fig. 14).