

Median Strip Mass Transit and Related Traffic Characteristics on Congress Expressway

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The new Chicago Transit Authority rapid transit service operating in the median strip of Congress Expressway was opened to the public on June 22, 1958. This service is a replacement of the Garfield Park rapid transit line. The Congress CTA line runs in the median of the Congress Expressway from Halsted Street to Laramie Avenue, a distance of about six miles. West of Laramie the service is the same as the old Garfield Park line.

The Cook County Highway Department has maintained traffic counts on Congress Expressway for several years. There has been considerable speculation as to what effect, if any, the opening of the new CTA facility would have upon traffic patterns and characteristics on Congress Expressway. To determine these effects the Cook County Highway Department conducted a post card survey several weeks after the opening of the new facility.

This survey was accomplished by distributing almost 10,000 post card questionnaires to persons entering the Congress CTA between the Des Plaines Avenue station on the west and the Medical Center station on the east during the hours from 6:00 A. M. to 1:00 P. M. on July 17, 1958 (see Fig. 1).

Congress Expressway is not a continuous facility. The portion of the expressway between Laramie Avenue and First Avenue is under construction. Figure 2 illustrates the Congress Expressway and the route of the Congress CTA.

When Congress Expressway is completed the median strip CTA rapid transit facility will extend all the way to the Des Plaines Avenue terminal. The full impact of this service may not be realized until such time as the facility has been completed.

●THE SURVEY yielded over 3,700 completed post cards, and the results of these returns are tabulated and evaluated in the following sections of this report.

Table 1 shows the distribution by station, of the cards given out and the cards received. The percentage of return varies quite markedly among the several stations. The stations at the west end of the facility showed the highest return and those at the east end the lowest. The highest single rate was from the Ridgeland Avenue station with a 49.6 percent return, and the lowest was from the California Avenue station with an 18.2 percent return. In actual number the Des Plaines Avenue station produced the largest return of 991 cards.

Previous Modes of Travel

One of the questions on the post card inquired as to the mode of transportation used prior to the opening of the Congress CTA facility. The answers to this question are shown in Figure 3 and Table 2. This table shows the distribution by previous mode of travel for both loop destined and non-loop trips.

Of the total returns, 74.2 percent indicated elevated rapid transit as the mode of travel used prior to the opening of the Congress median strip rapid transit facility. This is not at all surprising since this new facility replaces the Garfield Park rapid transit line. Of the total users 8.6 percent switched from various CTA surface lines.

Those previously using automobile accounted for 12.5 percent of the patrons, 9.2 percent from Congress Expressway and 3.3 percent from other routes. Of the CTA patrons 2.6 percent were drawn from the railroads, and the balance from all other modes. From the percentage of patrons who previously used automobile travel it is apparent

DEPARTMENT OF HIGHWAYS

COOK COUNTY ILLINOIS

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Dear Patron:

This survey is being conducted by the Cook County Highway Department as a part of the tremendous program in the evaluation of transportation problems for this area. Your cooperation is greatly needed and will be sincerely appreciated.

Please answer all questions, and then mail lower portion of card as soon as possible.

All information obtained will be accorded confidential treatment and will be used in statistical tabulation only.

Thank you!

(Detach Here)

1. What was the starting time for this trip? _____ AM, PM

2. What was the origin of this trip?

_____ address

_____ city

3. What is the destination of this trip?

_____ address

_____ city

4. What is the purpose of this trip?

work _____, shopping _____, personal business _____, recreational _____

5. At what station will you leave this branch of the CTA?

6. How many times per month do you make this trip? _____ Times

7. Is a transfer required for this trip? Yes _____, No _____

8. What mode of transportation did you use for this trip before the Congress Street CTA began operations?

Train (specify line) _____

Elevated Garfield Pl _____, Lake St _____, Douglas Pl _____,

CTA surface line _____,

Automobile; via Congress Expressway _____,

via other route _____,

Other (specify)

00051

Figure 1. Post card questionnaire-Congress Expressway, median strip, rapid transit.

that improved service such as this can have a significant influence on the choice of mode of travel. Since cost factors have remained constant, the influencing factor is most likely the one involving time required for the trip.

Loop and Non-Loop Trips

It can be seen that the percentage of trips previously made by elevated is less for

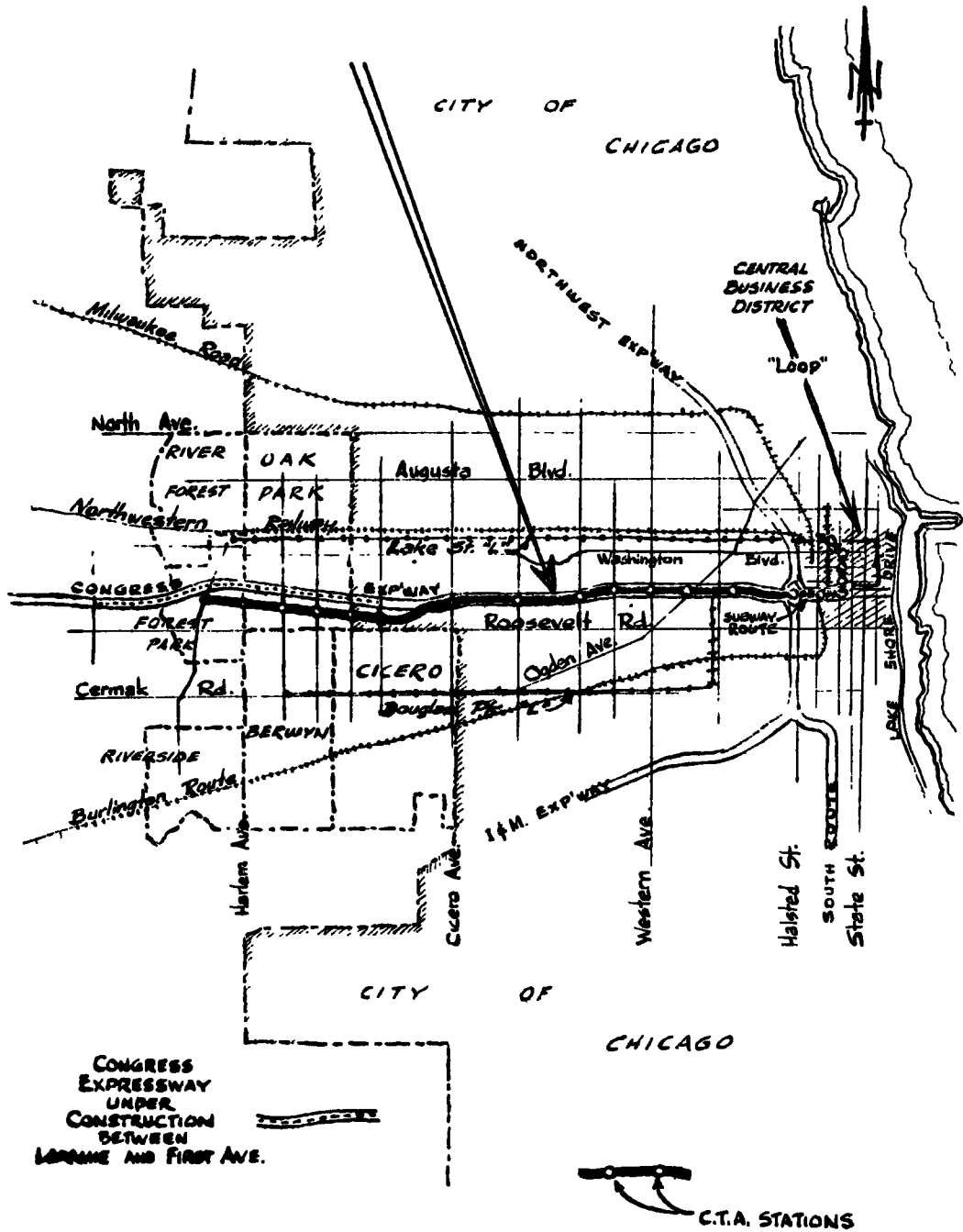


Figure 2. Route of the Congress Expressway rapid transit line.

non-loop trips than for loop trips. Also the percentage of trips previously made by CTA bus as well as that for those made by automobile is considerably greater for non-loop trips than it is for loop trips. This observation could very well lead to some pertinent hypotheses regarding the relative attractiveness of this facility for loop as opposed to non-loop trips. The scope of this survey does not permit the evaluation of such hypotheses.

Transfer and No Transfer

Table 3 shows, by previous mode, the percentage of persons who presently must make a transfer for their trips. Of all trips accounted for, 49 percent require transfers and 51 percent do not require transfers. These percentages vary markedly between previous modes. The average person who previously used automobile or railroad for his trip is significantly less apt to presently make a transfer than the over-all average rider, and persons previously using the surface lines are much more apt to make transfers than the average rider. Tables 4 and 5 indicate that this tendency was present for both loop and non-loop trips. The inference to be drawn is that persons using either automobile or railroad travel tend not to switch to a mode of travel that will require a transfer for their trips. A new mass transit facility must be highly competitive with automobile travel before it will attract a substantial volume of traffic from that mode.

STATION DISTANCE AND TRIP DISTANCE

Figure 4 shows the cumulative percentage of trips by distance to the CTA station for each of the previous modes of travel. The over-all average distance to the station is 2.2 miles. For trips previously made by the surface lines the average distance to the station is presently 1.2 miles; for trips previously made by elevated the average distance is 2.1 miles; for trips previously made by automobile on Congress Expressway the average station distance is 2.7 miles; for automobile by other routes the average station distance is 4.0 miles; and for all other previous modes the station distance averages 5.0 miles.

These averages indicate that persons who previously used automobile for their

TABLE 1
POST CARD RETURNS

Origin Station	Cards Given Out	Cards Returned	Percentage Returned
Des Plaines Ave	2,217	991	44.7
Harlem Ave	787	383	48.7
Oak Park Ave	982	475	48.4
Ridgeland Ave	700	347	49.6
Austin Ave	917	363	39.6
Central Ave	209	84	40.2
Cicero Ave	945	335	35.4
Pulaski Rd	1,236	291	23.5
Kedzie Ave	1,112	248	22.3
California Ave	231	42	18.2
Western Ave	301	70	23.3
Medical Center	300	87	29.0
Total	9,837	3,716	37.4

TABLE 2
MODE OF TRAVEL PRIOR TO CONGRESS STREET RAPID TRANSIT

Previous Mode	Loop Trips	% Loop Trips	Non-Loop Trips	% Non-Loop Trips	Total	% Total
Elevated						
Garfield Pk	1,829	61.6	415	55.6	2,244	60.4
Lake St	381	12.8	60	8.0	441	11.9
Douglas Pk	63	2.1	11	1.5	74	2.0
Total Elevated	2,273	76.5	486	65.1	2,759	74.2
CTA Bus	209	7.0	111	14.8	320	8.6
Automobile						
Via Congress	266	9.0	76	10.2	342	9.2
Other Routes	85	2.9	38	5.1	123	3.3
Total Automobile	351	11.9	114	15.3	465	12.5
Railroad	79	2.7	16	2.1	95	2.6
Other Modes	57	1.9	20	2.7	77	2.1
Total	2,969	100.0	747	100.0	3,716	100.0

trips travel substantially farther to the rapid transit stations than do the average riders. This definitely points to the competitive qualities of rapid transit service as opposed to automobile travel. If the service is improved substantially, a certain portion of those persons using automobile for their trips will change to the improved facility even though the change requires a greater than average journey to the station.

Figure 5 shows the cumulative percentage curves for all modes combined for both station distance and trip distance. As was already indicated the average station distance was found to be 2.2 miles, and this Figure shows the average trip distance to be 9.5 miles.

TRIP PURPOSE AND FREQUENCY

Because this survey was taken between the hours of 6:00 A.M. and 1:00 P.M. the trips were primarily for work purposes. The following table shows the frequency and percentage of trips for the various purposes.

Purpose	Frequency	Percent
Work	3,357	90.3
Shopping	83	2.2
Personal Business	140	3.8
Recreation	68	1.8
School	69	1.9
Total	3,717	100.0

The average monthly trip frequency was computed for each of the previous modes of travel, and it was found that these frequencies did not differ significantly between

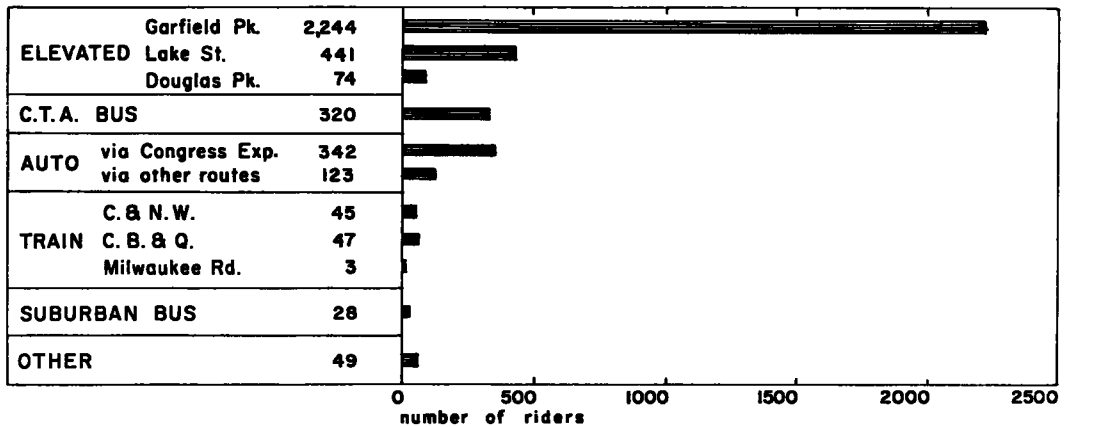


Figure 3. Previous mode of travel for congress rapid transit riders.

TABLE 3
PRESENT TRANSFER REQUIREMENTS DISTRIBUTED BY PREVIOUS MODE OF TRAVEL

Previous Mode	Make Transfer	Percent Transfer	Do Not Make Transfer	Percent Non-Transfer	Total
Elevated	1,307	47.4	1,452	52.6	2,759
CTA Bus	227	70.9	93	29.1	320
Automobile	197	42.4	268	57.6	465
Railroad	39	41.1	56	58.9	95
Other Modes	50	64.9	27	35.1	77
Total	1,820	49.0	1,896	51.0	3,716

modes. For all modes combined, the average frequency was about 20 trips per month. It is likely that variation, by previous mode, would have been found in these frequency comparisons if the survey had included all hours of the day, as well as Saturday and Sunday travel. Since work was so predominantly the trip purpose found in this survey, the 20 trip monthly average is entirely reasonable.

CONGRESS EXPRESSWAY TRAFFIC VOLUME COUNTS

Continuous machine volume counts were maintained on Congress Expressway before and after the opening of the new CTA rapid transit line. An analysis of these counts revealed no significant changes in total traffic volume characteristics on Congress Expressway. This analysis included hourly comparisons for average weekdays, Saturdays, and Sundays. It is likely that a certain amount of shifting has taken place, traffic removed from Congress by a shift to the CTA being replaced by traffic from parallel routes. This type of shifting is usually experienced when a new or improved facility is opened.

Lane Usage

A somewhat more qualitative approach to the study of traffic characteristics was obtained by manual counts of traffic by lanes as well as by direction of travel. The eastbound direction (inbound to the Chicago central business district) did not indicate

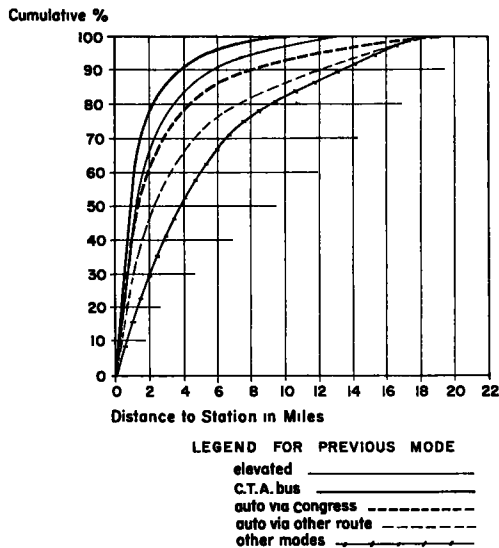


Figure 4. Cumulative percentage of trips by distance to the C.T.A. Station for each of the previous modes of travel.

any significant differences in lane usage in the before and after comparisons. The westbound direction (outbound) showed highly significant differences in lane usage. Figure 6 shows the percentage of total traffic using the median lane of the expressway before and after the opening of CTA. The Pulaski Road location is adjacent to a CTA station, while the Independence Avenue location is several blocks from the nearest station. In both cases there is considerably less traffic using the median lane after the opening of CTA than prior to its opening. The third portion of this Figure compares Independence Avenue to Pulaski Road after the CTA opening. This comparison shows that less traffic uses the median lane adjacent to the station than some distance away from one. These charts indicate that when traffic is relatively light there is a tendency to avoid the lane adjacent to the CTA facility, particularly in the vicinity of a station. When

TABLE 4
PRESENT TRANSFER REQUIREMENTS FOR LOOP TRIPS DISTRIBUTED BY PREVIOUS MODE OF TRAVEL

Previous Mode	Make Transfer	Percent Transfer	Do Not Make Transfer	Percent Non-Transfer	Total
Elevated	914	40.2	1,359	59.8	2,273
CTA Bus	133	63.6	76	36.4	209
Automobile	119	33.9	232	66.1	351
Railroad	27	34.2	52	65.8	79
Other Modes	31	54.4	26	45.6	57
Total	1,224	41.2	1,745	58.8	2,969

the traffic is heavy (as in the eastbound direction of this study) this tendency is apparently overcome by other factors. The lane usage at the Pulaski Road location for the westbound direction was rechecked four months later and the same tendency prevailed as is shown in the after portion of the chart. The purpose of this recheck was to determine if the avoidance of the median lane was a condition which would diminish with the passage of time.

CONCLUSIONS

- 1. One out of eight of the present Congress CTA patrons previously used automobile transportation for trips; about three out of four previously used some form of rapid transit; and the balance used surface lines, railroad, and miscellaneous other modes.
- 2. Of those trips previously made by automobile or by railroad there are significantly fewer transfers presently being made than there are for those trips previously made by rapid transit or surface lines.
- 3. For trips previously made by automobile or by railroad the average distance presently traveled to the CTA station is considerably greater than for those trips previously made by rapid transit or by the surface lines. This is indicative of the extended zone of influence of an improved mass transit facility.
- 4. No significant changes in the total traffic volume were observed on Congress Expressway following the opening of the new CTA rapid transit facility.

TABLE 5
PRESENT TRANSFER REQUIREMENTS FOR NON-LOOP TRIPS DISTRIBUTED BY PREVIOUS MODE OF TRAVEL

Previous Mode	Make Transfer	Percent Transfer	Do Not Make Transfer	Percent Non-Transfer	Total
Elevated	393	80.9	93	19.1	486
CTA Bus	94	84.7	17	15.3	111
Automobile	78	68.4	36	31.6	114
Railroad	12	75.0	4	25.0	16
Other Modes	19	95.0	1	5.0	20
Total	596	79.8	151	20.2	747

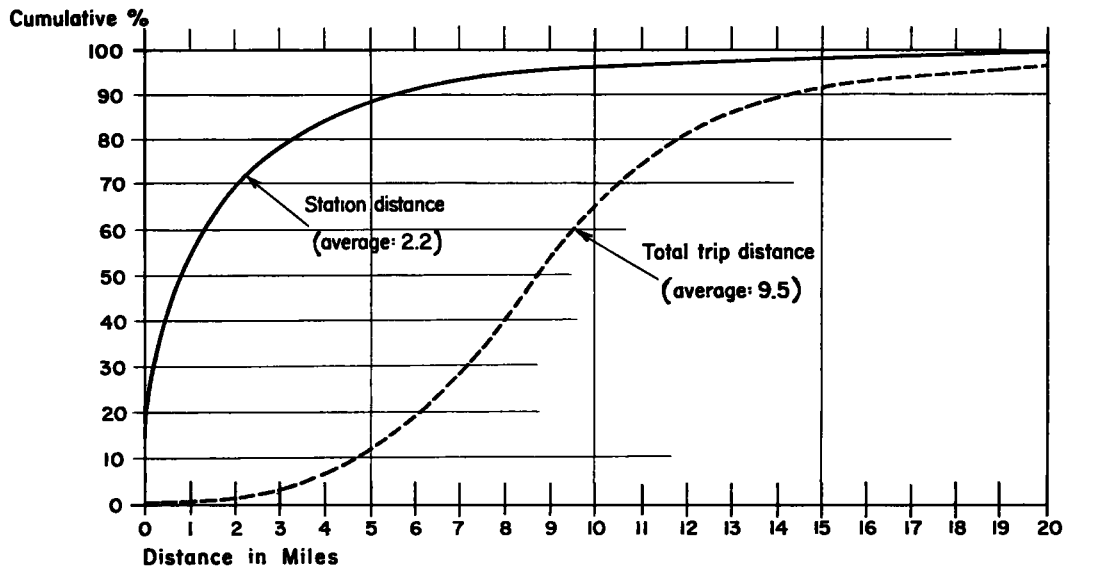


Figure 5. Cumulative percentage of trips by distance to the CTA station and by total trip distance for all combined previous modes.

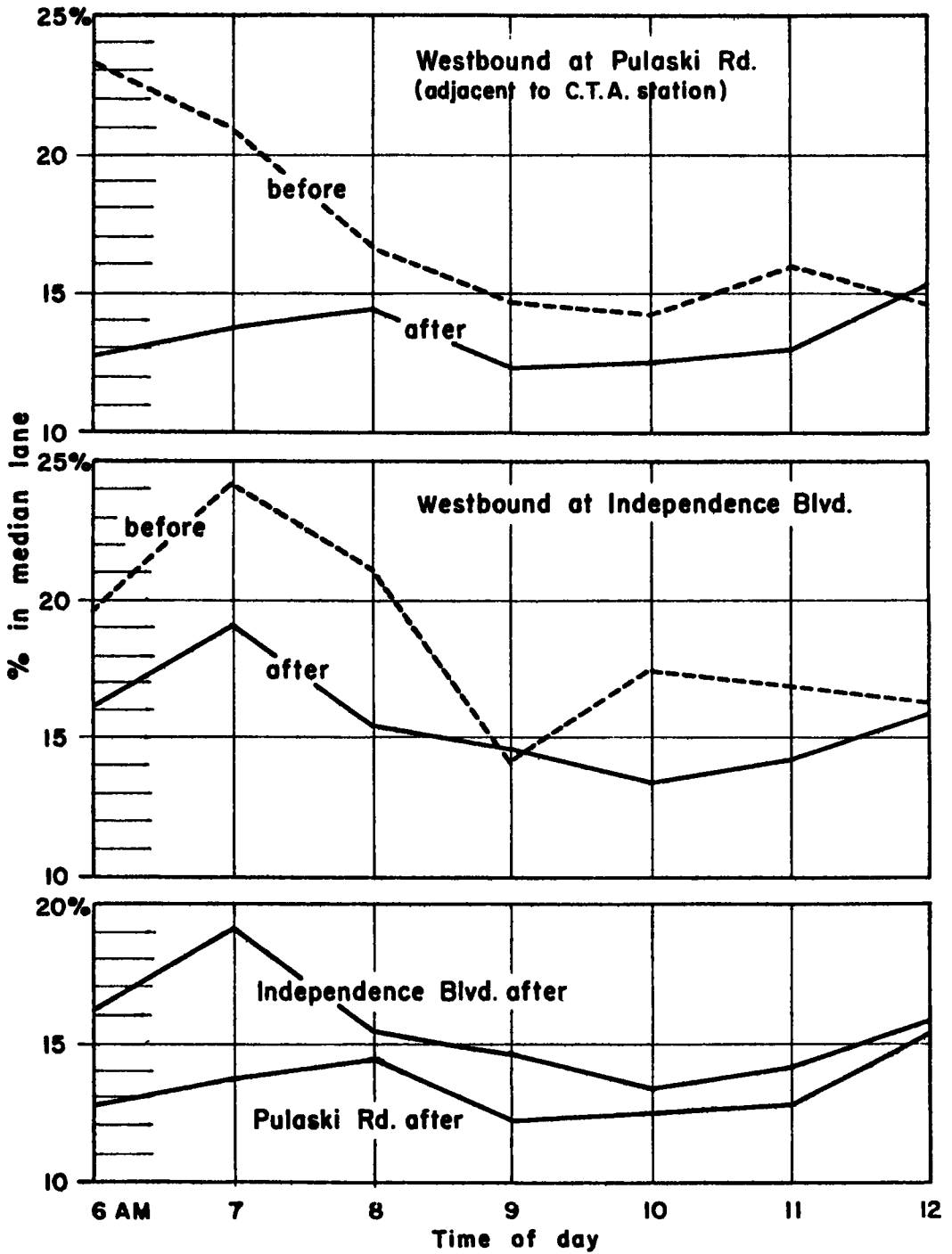


Figure 6. Lane usage on Congress Expressway before and after the CTA opening.

5. A pronounced tendency to avoid the median lane was found after the opening of the Congress CTA. This tendency was greater for the section adjacent to a CTA station than it was for the section some distance from a station. Indications of this tendency disappeared completely during periods of near capacity traffic volumes.