

CHAPTER EIGHT: WORK TRIP TRAVEL TIMES

Key Findings

- Travel surveys place the average travel time for all workers at varying values, but roughly in the range of 20 minutes, with approximately 70 percent of workers taking less than half an hour.
- The NPTS shows improvement in travel times in all geographic sectors: central city, suburban, and nonmetropolitan, despite increasing average trip lengths. Improvements are a product of improved personal vehicle times as transit travel times got longer.
- There are some indications that workers are departing for work earlier in order to circumvent the peak of traffic problems.



One of the critical measures of transportation, along with safety, cost, and reliability, is travel time. Work trips, in particular, are closely watched for changes in travel times or speeds. Travel times are variously measured as either average or median, the middle item in a distribution. The median is used to avoid the distorting effects that a few very long trips would have on the average. It would be expected that the average will exceed the median.

The AHS measured work travel times as having a median of 19 minutes in 1985 (with a corresponding *average* of 20.9 minutes) and a median of 20 minutes in 1989. The NPTS data for 1990 indicate an *average* travel time of 19.7 minutes, down from 20.4 in 1983. In 1980, the *average* travel time to work was observed by the Decennial Census to be 21.7 minutes. Early results

of the 1990 Decennial Census show a slight increase in *average* travel times to 22.4 minutes, with indications that some areas have increased and others have declined.

Another factor in improved travel times is the shift of travel from the city centers to the suburbs, where typical speeds tend to be higher. Given greater average work trip lengths, even stable travel times suggest an improvement in average speeds.

The AHS does provide a long-term trend pattern from a consistently defined source. The survey travel time observations are presented in Figure 43 for homeowners and renters for the period from 1974 to 1989. The trends in the figure would suggest that average travel times have improved in recent years, which appears to contradict a lot of individual personal experience. It is entirely possible that the statistics and the personal experiences could both be correct. Travel times would improve as shifts documented elsewhere took place from slower to faster modes. The period identified

in Figure 43 was one in which major shifts occurred from walking and transit to personal vehicle-based

FIGURE 43

**Travel Time to Work
AHS Survey Trends**

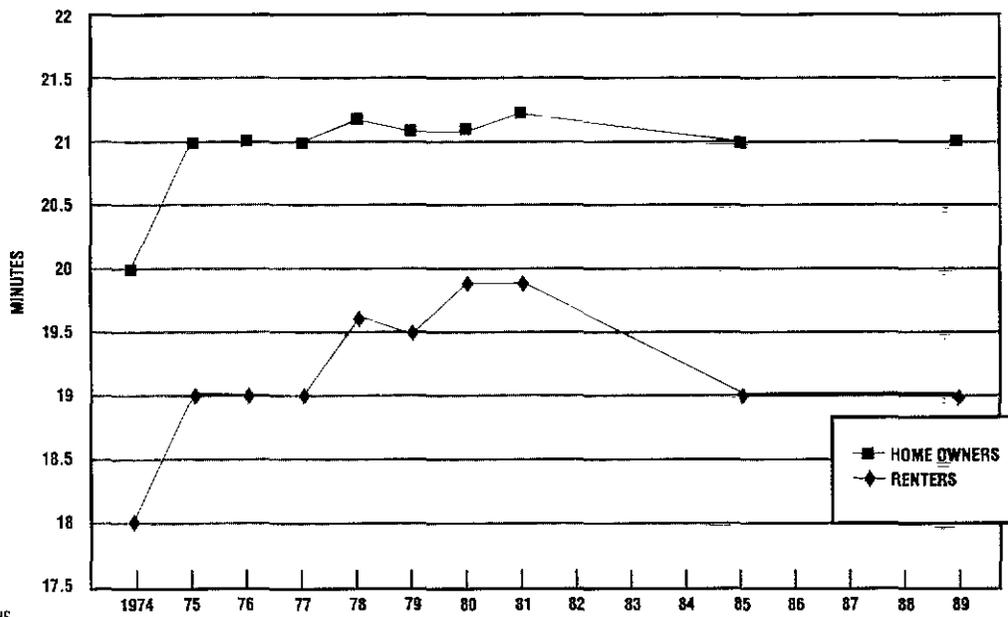
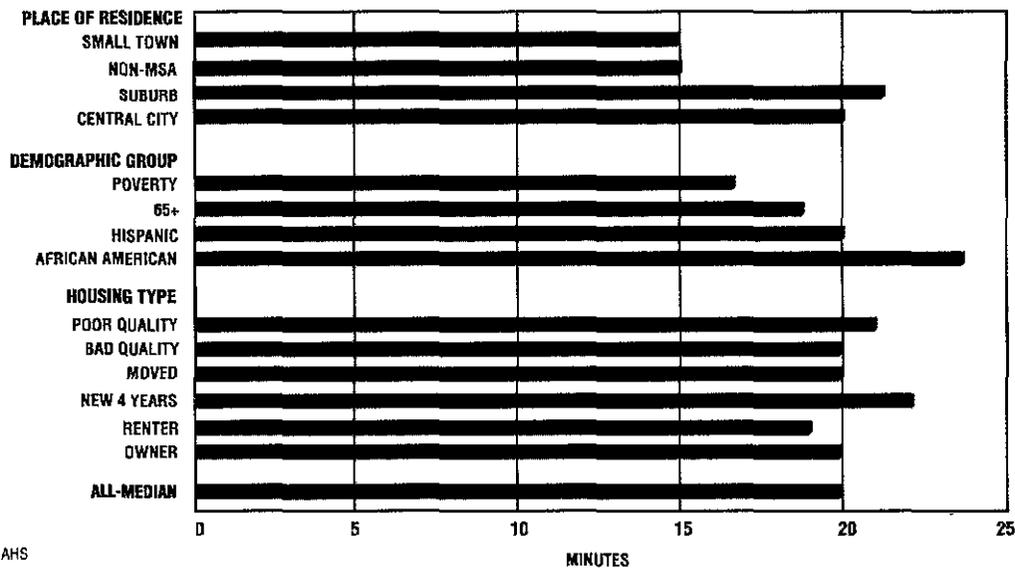


FIGURE 44

**Travel Time to Work
Selected Demographic Groups
1989**



The increase in average work trip speed does not necessarily mean that highway speeds have improved, but rather reflects the improvement in individual speeds obtained by shifts to the single occupant vehicle from carpooling, mass transit, and walking.

TABLE 4

Work Trip Travel Time, Length, and Speed by Household Location

	Central Cities	Suburbs	Non-MSA	All
Work Travel Time (minutes):				
1983	20.5	21.5	18.4	20.4
1990	19.2	21.4	17.2	19.7
Work Trip Length (miles):				
1983	8.0	11.1	10.6	9.9
1990	8.9	11.9	10.9	10.7
Calculated Speed (mph):				
1983	23.4	31.0	34.6	29.1
1990	24.8	33.4	38.0	32.3

modes. Another factor in improved travel times, discussed later, is the shift of travel from the city centers to the suburbs, where typical speeds tend to be higher. Given greater average work trip lengths, even stable travel times suggest an improvement in average speeds.

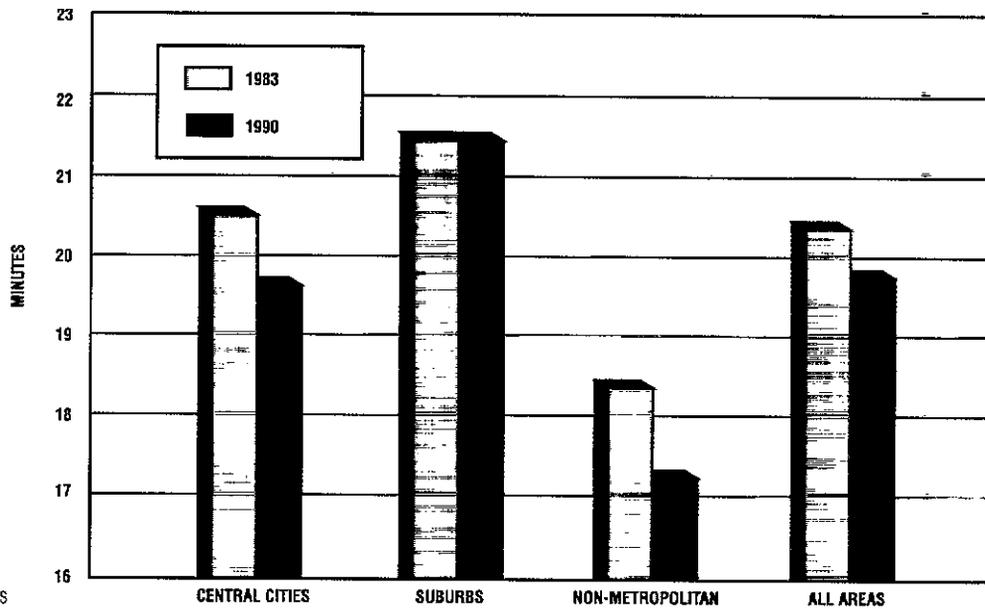
The AHS also provides insight into the variation in travel times by area, housing type, and demographic group. Figure 44 shows the median travel times for selected groups as measured in 1985 by the AHS. The AHS preliminary data for 1989 show little notable change. Effective interpretation of these data depends on examining a number of factors.

First, understanding the comparable travel distances involved sheds light on the speeds observed. For example, while suburban workers have slightly longer travel times than central city workers, their travel distances are far greater, indicating that their travel speeds are superior. Workers in small towns enjoy short travel times primarily because of short distances to work rather than because of high speed services. Small town workers also walk more, thereby lowering their average speeds.

Travel time data from the NPTS suggest a similar picture, with a slight decrease in work trip travel times from 20.4 minutes in 1983 to 19.7 minutes in

FIGURE 45

**Travel Time to Work
by Place of Residence
1983 & 1990**



Source: NPTS

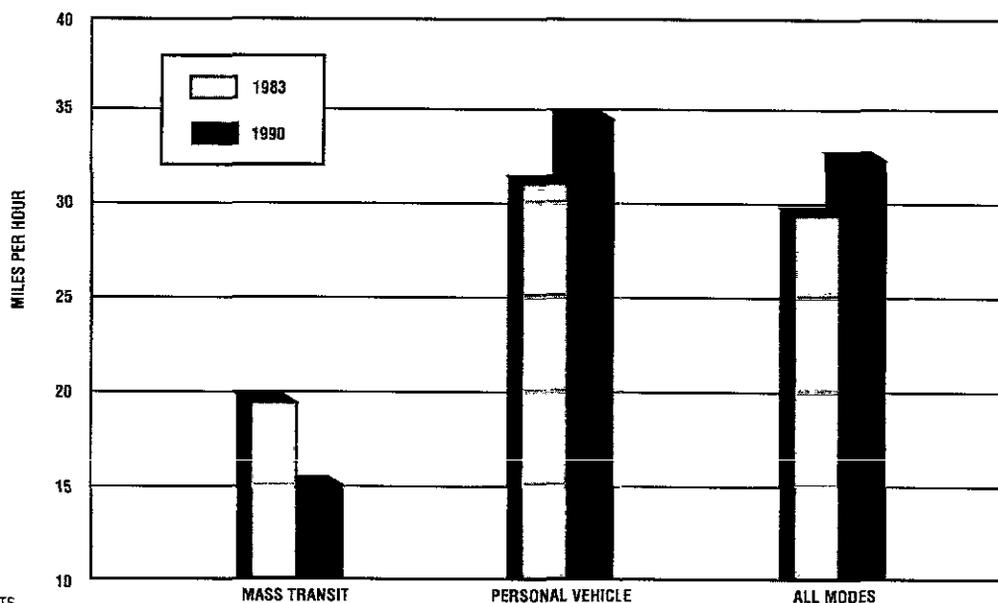
TABLE 5

**Work Trip Travel Time, Length, and Speed
by Mode**

	POV	Transit	Walk	All
Work Travel Times (minutes):				
1983	19.3	46.1	8.9	20.4
1990	19.0	49.9	9.6	19.7
Work Trip Lengths (miles):				
1983	10.2	15.1	0.4	9.9
1990	11.0	12.6	0.5	10.7
Calculated Speed (mph):				
1983	31.7	19.7	2.7	29.1
1990	34.7	15.2	3.1	32.3

FIGURE 46

**Travel Speeds to Work
by Mode
1983 & 1990**



Source: NPTS

1990, depicted in Figure 45. The new NPTS data indicate an improvement in average travel times in central cities, suburbs, and nonmetropolitan areas. Table 4 shows these values along with the changes in average trip length observed in the survey. Given the increases observed in trip length, the data suggest average speed increases across all geographic areas. As noted earlier, this does not necessarily mean that highway speeds have improved, but rather reflects the improvement in individual speeds obtained by shifts to the single occupant vehicle from carpooling, mass transit, and walking.

Table 5 shows the changes in trip length and travel time by mode observed in the NPTS. Personally operated vehicles improved slightly in average travel time even though average trip lengths increased considerably. Mass transit travel times, already more than double private vehicle travel times, got longer even though average trip lengths decreased in transit work trips. These values are converted to speeds in Figure 46.

The three pie charts in Figure 47 show the shares

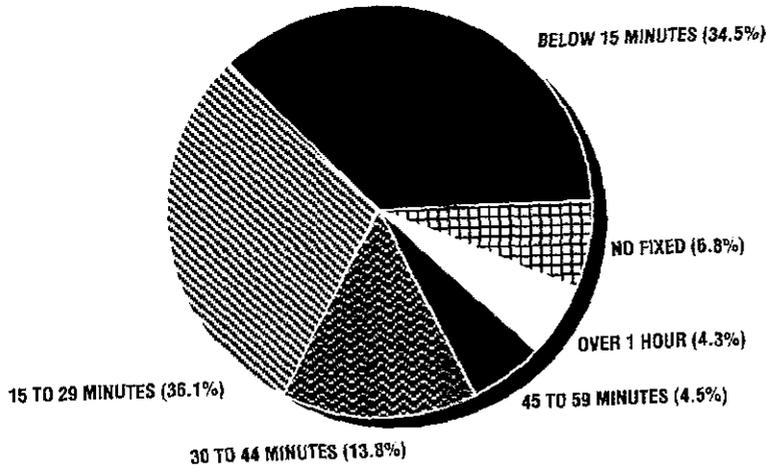
of commuters by travel time group for central city, suburban, and nonmetropolitan areas, so that travel times can be measured on a cumulative basis. For instance, in 1989 about 69 percent of all workers got to work in less than 30 minutes, as shown in Figure 48. That percentage had dropped by one percentage point from 1985. Evaluation of 1989 data indicates that in percentage terms the distribution of work trips by travel time group changed little since 1985. The most notable change was a small decline in those arriving at work within 15 minutes. There were significant declines in those who worked at home and significant increases in those with no fixed place of work, such as construction workers.

Another factor to be considered in evaluating work trip travel times is the start time of the trip. A number of considerations affect start times. Increasing congestion in the peak hour has the effect of pushing traffic off onto the shoulder periods, either before or after the peak. Changing job patterns, particularly the shift to services, have tended to move work trips away from traditional peak

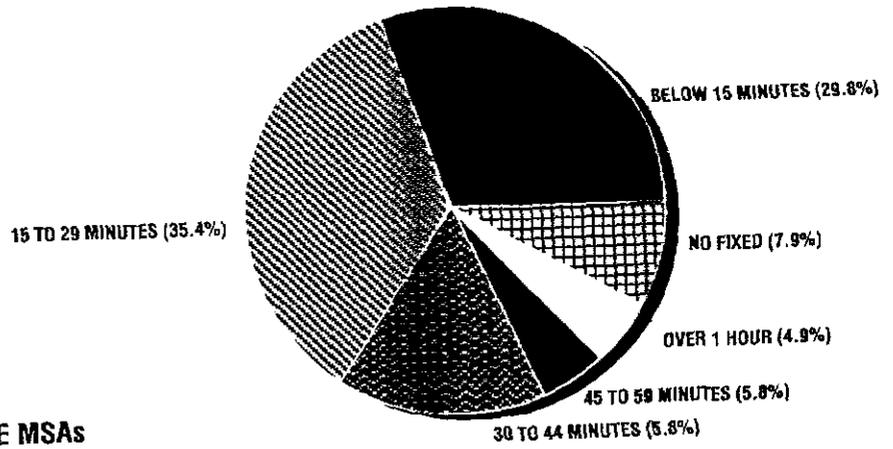
FIGURE 17

**Travel Time to Work
1989 AHS**

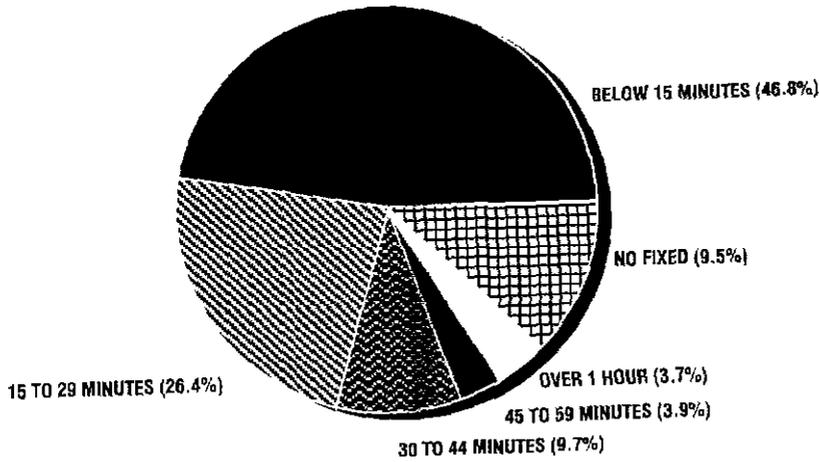
CENTRAL CITIES



SUBURBS



OUTSIDE MSAs

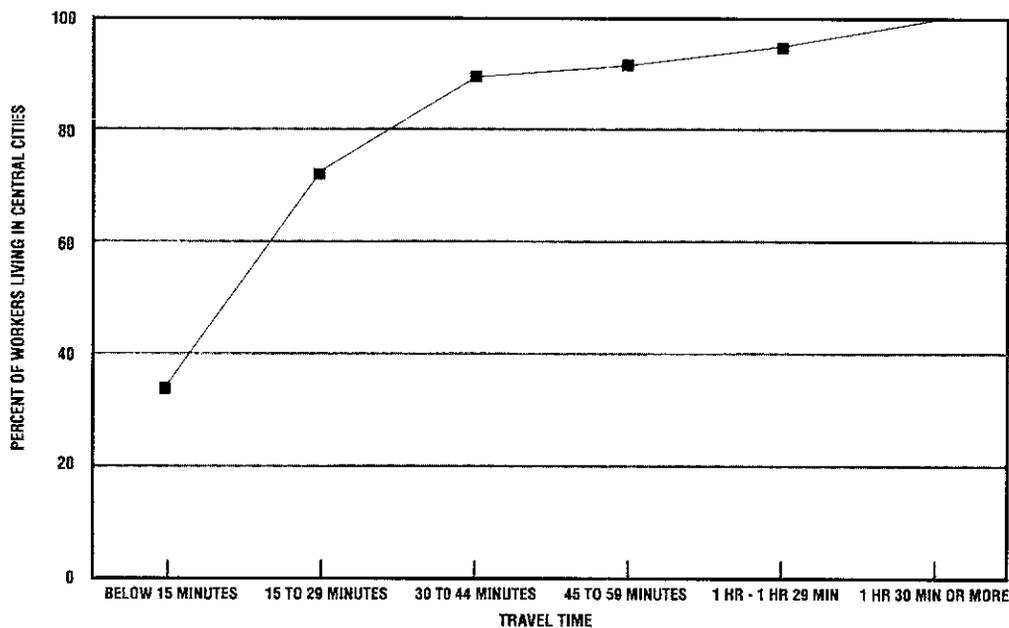


SOURCE: AHS

Changing job patterns, particularly the shift to services, have tended to move work trips away from traditional peak periods.

FIGURE 48

**Cumulative Travel Time to Work
Central Cities
1989**



periods. All of this has the effect of improving speeds. Figure 49 shows the numbers of workers by the start time of their commute trip in 1985 and 1989. Of the 4 million additional workers reporting in 1989, 1.3 million departed for work before 6 a.m., 1.1 million started in the 6 a.m. to 7 a.m. range, and another 1.1 million started in the 7 a.m. to 8 a.m. range, with only small increases spread throughout the rest of the day. The percentage distribution of traffic showed little change other than a small 1 percentage point increase in the midnight to 6 a.m. category. There is in these data at least some reinforcement of the prediction of a tendency toward peak hour traffic shifting to the shoulder periods.

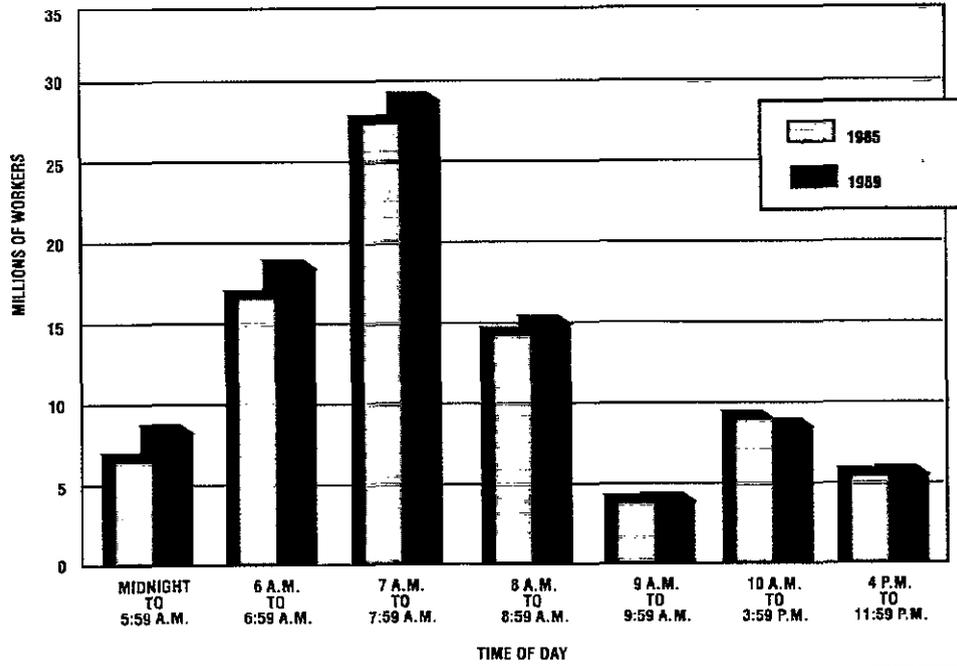
Further Work

The NPTS survey will permit analysis of the travel times of trips for nonwork purposes. This could provide valuable new insight into emerging patterns and trends.

In the work trip sector, the availability of the 1990 Decennial Census data, along with more detailed NPTS data, will open up opportunities for more serious treatment of work trip travel time analysis by highly refined geographic stratifications. Of particular importance will be the analysis of suburb to suburb travel time trends and examination of exurban-suburban travel patterns.

FIGURE 49

**Time of Departure for Work
1985 & 1989**



Source: AHS