

## **2000 Travel Behavior Inventory HOME INTERVIEW SURVEY, 13 RING COUNTIES**

### **About the Survey**

The Home Interview Survey is one of several studies that make up the 2000 Travel Behavior Inventory (TBI). The TBI is a comprehensive survey of travel in the Twin Cities area, conducted jointly by the Metropolitan Council and the Minnesota Department of Transportation about every 10 years.

For the Home Interview Survey, a total of 6,219 randomly selected households successfully completed 24-hour travel diaries for each of five weekdays. Of these households, 5,032 were in the seven core counties of the region and 1,187 were in the 13 “ring” counties surrounding the region.

In the diaries, household members (5 years of age and older) recorded locations of trip origins and destinations, travel mode (such as auto, bus or bicycle), the times that trips started and ended, and activities at trip destinations. This is the first TBI where both motorized and non-motorized (walking and bicycling) modes were included in the travel diaries.

### **About this Briefing Memo**

This memo focuses on home interview survey data from households in the 13 ring counties surrounding the seven-county Twin Cities area. The ring counties include: Chisago, Goodhue, Isanti, Le Sueur, McLeod, Mille Lacs, Rice, Sherburne, Sibley and Wright in Minnesota; and Pierce, Polk and St. Croix in Wisconsin. Where the ring-county data differ significantly from the core-county data, comparisons are made here. A separate memo enumerates the data from the core counties.

The data from the survey focus primarily on person trips. A person trip is a one-way journey between two points taken by one person. For example, a trip taken by a person in a car from home directly to work constitutes one person trip. A similar trip to work, but with an intervening stop at a coffee shop, constitutes two person trips.

This memo is one of a series that describes data from the 2000 TBI. An upcoming memo will feature data from the External Station Survey, which measured travel into and out of the seven-county area. A previous memo (publication no. 35-03-039) compared data from the 1990 TBI and the current one.

### **Data Highlights**

#### **Fewer trips in ring counties have home at one end**

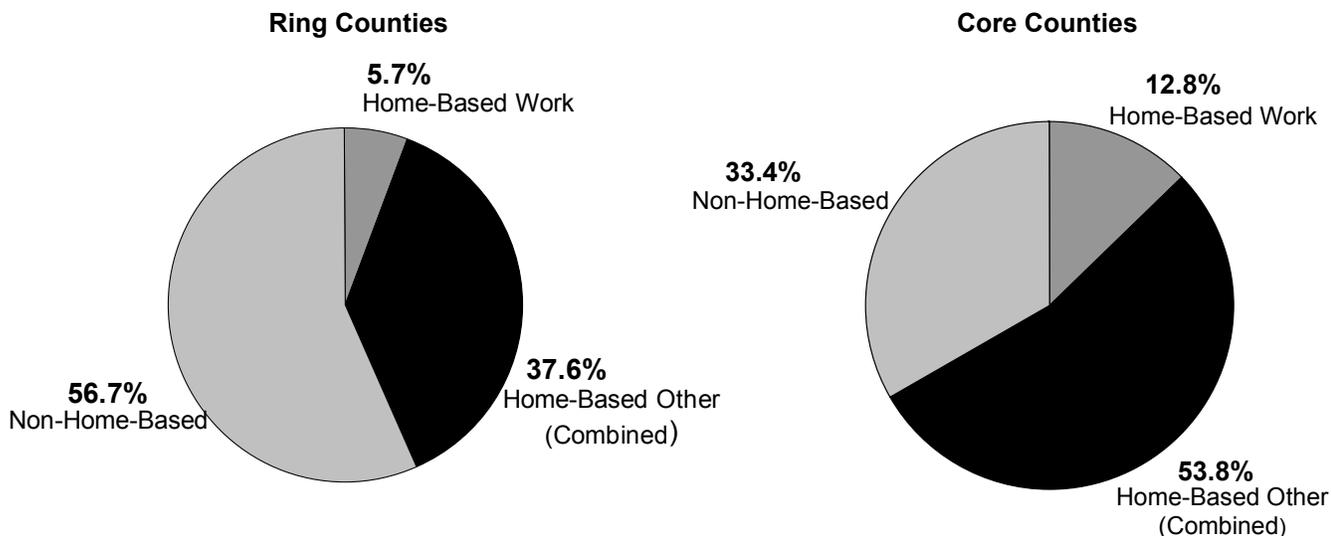
The TBI tracked the destination activity and general purpose of each person trip to determine which activities and trip purposes generate the most trips. This information helps in forecasting future traffic growth and planning transportation improvements.

Of all person trips made by ring-county residents, only a small portion (5.7%) are made directly from home to work or from work to home, with no stops in between. This represents fewer than half of the portion of home-based work trips made by residents in the seven core counties (12.8% of all trips). In fact, home is at one end of only 43.3% of the all person trips made in the ring counties, compared with 66.6% of all person trips in the seven core counties.

Conversely, more than half (56.7%) of all person trips in the ring counties do not involve home at one end or the other compared to only one-third in the seven core counties. These include, for example, trips made between a coffee shop and the feed mill, from work to the dry cleaners, from one shopping stop to another, or from a restaurant to a bowling alley.

The most likely explanation is that, in the less densely populated ring counties, home is often farther away from the other destinations. This makes people more deliberate about combining a number of stops (say, to the supermarket, hardware store and the doctor’s office) than in the core counties.

Activities at home (not including working at home) had the largest share (21.8%) of the destination activities of all person trips in the ring counties. But right behind was shopping (21%), personal business (18.1%), picking up or dropping someone off (7.4%), and eating a meal outside the home (6.9%).



*More than half of all person trips in the ring counties do not have home at one end or the other, compared to only one-third in the core counties.*

### **Trips to work in ring counties start earlier**

Compared with the Twin Cities area, travel directly to work from home or vice versa in the 13 ring counties is less concentrated in the morning and afternoon peak periods (6:45 AM to 9:45 AM and 2:30 PM to 5:59 PM). For example, just over half (51%) of all home-based-work trips in the ring counties occur during the peak periods, compared with 63.5% in the seven core counties.

As might be expected, home-based work trips, on average, start earlier in the ring counties than in the core counties, reflecting the fact that many workers have farther to drive. The hour with the most home-based-work trip starts (motorized modes) in the ring counties is 5:45 AM to 6:45 AM, compared with 7:00 AM to 7:59 AM in the core counties.

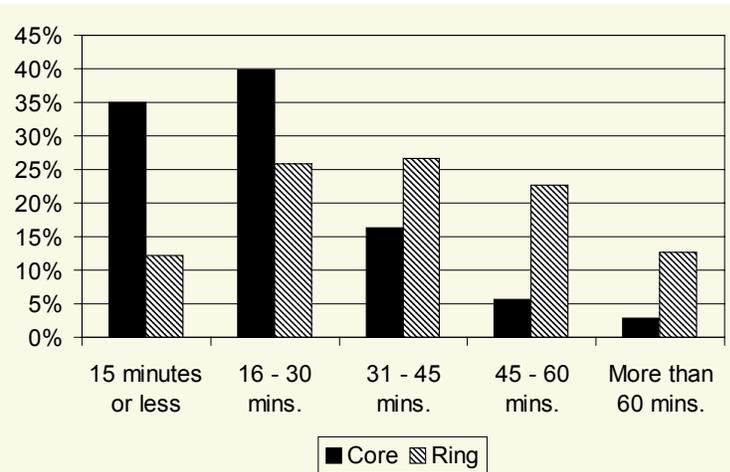
In general, a higher percentage of trips in every time period are non-home-based in the ring counties than in the core counties. Again, this likely reflects that ring-county residents more often combine several destinations on a longer overall trip to save time and travel distance.

### **Ring-county trips take longer than in core counties**

Because this is the first TBI to collect home survey data from the region's ring counties, it is not possible to make comparisons with previous surveys. Comparisons between the ring and core county data, however, reveal some interesting, if not unexpected, results.

For example, the average home-based work trip in the ring counties takes 40.8 minutes, compared with 25.6 in the core counties (includes all modes). Only 12.1% of ring-county commutes were 15 minutes or less, compared to 35% for core counties. One-fourth (25.8%) were between 16 and 30 minutes long, compared to 40% in the core. Nearly two-thirds (62.1%) were longer than 30 minutes, compared to only 25% in the core counties.

Other trip purposes show much less variation in duration, though core-county trips tend to be a little shorter. The exception is home-based-school trips, which average 13.3 minutes in the ring counties and 18.9 minutes in the core counties.

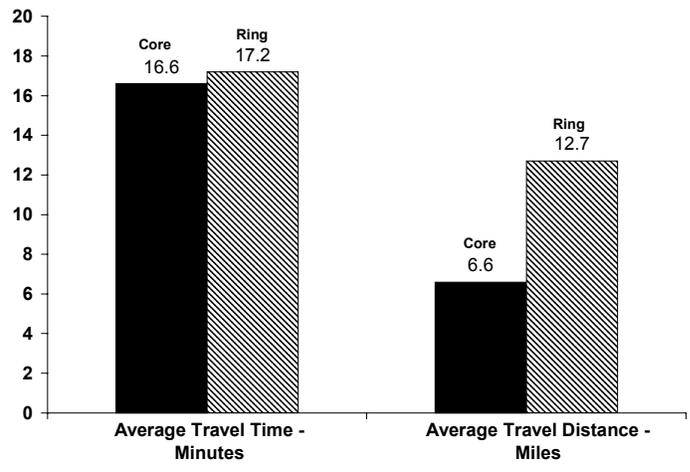


*Ring-county residents have longer commutes than residents of the seven-county area. Only 38% of ring-county commutes were 30 minutes or less, compared to 75% of commutes in the core counties.*

**Ring-county trips made at higher speeds**

Looking at trips by duration and distance reveals that, while ring-county trips are longer, they are traveled at a higher speed. For example, the average distance of home-based-work trips was 31.4 miles in the ring counties (average duration 40.8 minutes), compared with 10.6 miles (and 25.6 minutes) in the core counties. So while home-based work trips average three times the distance in the ring counties than in the core, they take less than twice the time.

The same holds true for average trip time for all purposes and all modes. The average travel time for all trips in the ring counties is 17.2 minutes, and the average distance is 12.7 miles, compared with 16.6 minutes (nearly the same) in the core at an average distance of only 6.6 miles. Clearly, travelers in the ring counties contend with a combination of less congestion and higher average speed limits.



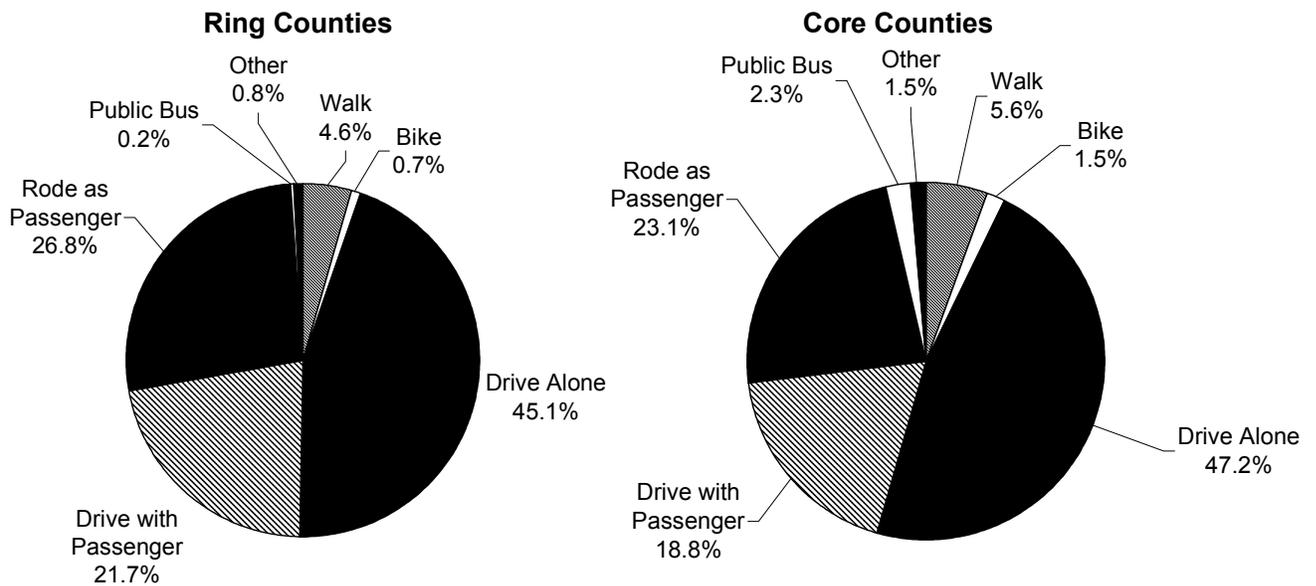
*The average distance of all person trips in the ring counties is nearly twice that of trips in the core counties, but the duration of the trips is nearly the same.*

**Number of trips per household comparable in ring and core counties**

Weekday person trips in the 13 ring counties totaled 2,226,500 in 2001, for an average of 10 weekday person trips per household. This compares with 11,672,434 weekday person trips in the core counties, for an average of 11.1 trips per household.

These trips included both motorized and non-motorized modes (biking and walking).

- 94.7% of the trips (9.5 trips per day per household) taken in the ring counties were by motorized vehicle, compared with 92.8% in the core counties (10.3 trips per day per household).
- 5.3% (0.5 trips per day per household) were by bicycle or walking. In the core counties, 7.2% were made by these non-motorized modes (.8 trips per day per household).



- Two-thirds (66.8 percent) of all person trips in the ring counties are made by auto drivers, about the same percentage as in the core counties. Another 26.8% are made by auto passengers, slightly higher figure than in the core counties (23.1%). Public transit accounted for a negligible share of person trips (0.2%).
- A slightly smaller percentage of all ring-county auto trips are made by solo drivers (48.1% vs. 53% in the core counties).
- Proportionately more auto trips are taken with at least one other person (51.9% vs. 47% in the core counties).
- However, a higher percentage of 13-county auto trips to work are solo drivers (80.5 % vs. 77.6% in the core counties).

### Bigger households, more trips

The trip rate per household in the ring counties shows a significant and direct correlation to household size. For example, one-person households average 4.6 trips per day and two-person households average 8.1 trips per day. Households with five or more people average 15.7 trips.

The trip rate per person doesn't vary much by household size. The highest trip rate is 4.6 for persons in one-person households. Overall, individuals make 3.7 trips per day (all modes) and 3.5 motorized trips per day.

### Higher income, more travel

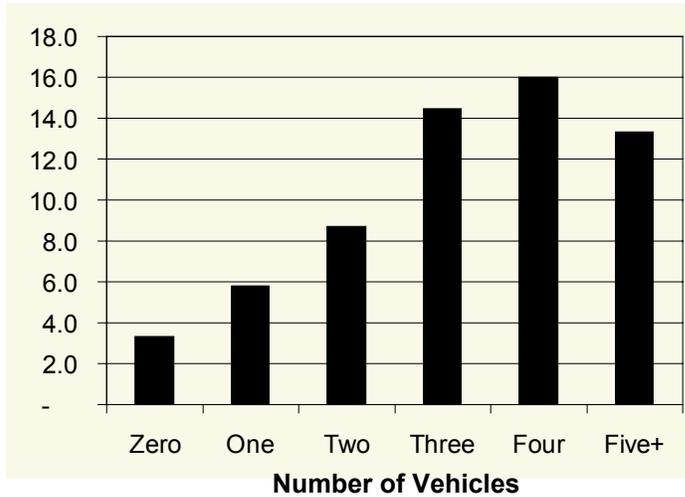
Household trip rates in the 13 ring counties generally increase, with some fluctuations, with household income. The trip rate for households in the lowest income group (less than \$15,000) is 6.0 trips (all modes) per day, while the trip rate for households earning between \$75,000 and \$100,000 is 16.1 trips per day. The average household trip rate is 10.

### More cars, more trips

The number of daily trips per household taken in motorized vehicles also increases with vehicle availability. Rates range from 3.3 motorized trips per day for households with no vehicles, to 16 trips for households with four vehicles.

Households in the 13 ring counties have, on average, 1.13 vehicles per licensed driver. The average number of licensed drivers per household is 1.86, while the average number of vehicles available to

the household is 2.1. Just over 1.5% of households have no vehicle, and less than 0.5% have no licensed driver.



*In general, the more vehicles a household has, the more trips household members will take. The highest rate is 16 trips per day for households with four vehicles.*

### **Wednesdays favored for trips**

While the average household trip rate is 10 trips per day (all modes) in the ring counties, the rate varies depending on the day of the week. Mondays are the lowest with 7.7 trips per day, while Wednesdays are the highest with 12.3 trips per day.

Household trip rates for biking and walking range from 0.1 to 1.1, with Wednesday being the most popular day to take a trip by biking or walking.

### **Driving alone dominant way to travel**

A vehicle trip is a one-way journey made by an auto, truck or bus, regardless of the number of people transported. Two-thirds of all vehicle trips in the ring counties (67.5%) are made in single-occupant vehicles, proportionately fewer than in the core counties (71.5%). The average passenger vehicle occupancy for all trip purposes is 1.4, slightly more than in the core counties (1.35).