

# **H**OW MANY NEW CARPOOLS OR BUS RIDERS WOULD BE NEEDED IF THEY WERE THE ONLY SOLUTION?

Another method of examining the role and potential of public transportation is to examine the amount of service that would be required to address the growing delay problem if this were the only solution. Just as with the “roadway construction” only solution, this analysis will focus on the changes in occupancy level needed to accommodate travel growth. The results from this analysis show the increase in occupancy level in order to maintain existing congestion levels. But they are not intended to suggest that this is a realistic solution.

## **Conclusions**

The 85 urban areas in the Urban Mobility Study added more than 55 million additional miles of daily person travel in 2002. To accomplish a goal of maintaining a constant congestion level in these areas by only adding transit riders or carpoolers, there would have to be a substantial growth in these modes. The growth would be equivalent to an additional 3 or 4 percent of all vehicles becoming carpools, or expanding transit systems by more than one-third of the current ridership each year.

It may be very difficult to convince this many persons to begin ridesharing or riding transit. As indicated elsewhere in this report, some success with this solution, in conjunction with other techniques may give an urban area the opportunity to slow the mobility decline.

Vehicle travel volume growth is estimated with the annual growth rate for the previous five years. Passenger-miles of travel are estimated using the standard 1.25 persons per vehicle value used elsewhere in the study. The growth in demand is estimated and the number of added passenger-miles of travel is divided by a simple national average trip length to estimate the number of additional trips that would have to be made by carpool or transit. Average trip lengths vary by metropolitan area. The length of a trip can have an effect on how much exposure a traveler has to congestion. For purposes of comparison, however, this report assumes one trip length for all areas.

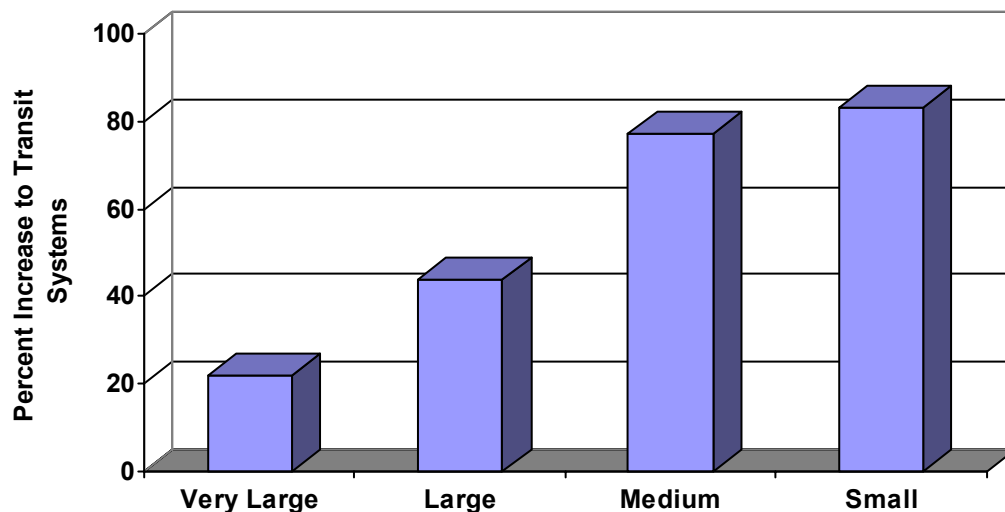
- 6.1 million trips per day would have to be made as carpools or bus trips in the 85 urban areas to handle the 55 million additional person-miles of travel if congestion levels are to remain constant.
- On average, the occupancy of each vehicle in the 85 urban areas would have to rise by about 0.03 persons or, in other words, 3 out of every 100 vehicles would have to become a new 2-person carpool to handle one year’s growth.

## ***How Many Trips Would be Needed on Transit?***

Transit, like ridesharing, park-and-ride lots and high-occupancy vehicle lanes, typically have a greater effect on the congestion statistics in a corridor, rather than across a region. Transit and these other elements “compete” very well with the single-occupant vehicle in serving dense activity centers and congested travel corridors. But it is also useful to examine the data at the urban area level. Ridership statistics were gathered for the 85 urban areas to determine how much more travel the systems would have to handle to offset congestion growth—again, if transit expansion was the only method to address travel growth. The additional passenger-miles of travel (or estimated trips) from the roadway were compared with the number of trips from existing transit service.

There are no other U.S. cities with ridership like New York City. Approximately one out of five U.S. transit trips are made in the New York area. Including these statistics would not present a useful comparison for typical cities over 3 million population; the New York data were removed from this comparison. The transit ridership increase that would be needed for each year in the remaining areas is shown in Exhibit 34.

**Exhibit 34. Increase in Existing Transit System to Hold Congestion Constant**



***Note: The New York urban area statistics have been removed from the calculation.***

- The Very Large urban areas would have to increase transit trips by over 20 percent to maintain a constant congestion level.
- The Large urban areas would have to add about half as many transit trips as they already have to maintain a constant congestion level.
- The Small and Medium urban areas would have to add at least three-quarters of their existing transit ridership to maintain their congestion level.