

# **M**EAURES AND RANKINGS WITHIN POPULATION GROUPS— WHICH MEASURE SHOULD BE USED?

We recommend that several measures, as well as the trend in the measures over several years, be considered before any “official rank” is determined. Just as the report indicates there is no single “solution” to the mobility problems in most areas, there is also no single “best” measure. The measures illustrate different aspects of the congestion problems and improvement strategies.

There is a temptation to choose one measure to make the interpretations and message easy. As a minimum two of the “intensity” measures and one “magnitude” measure should be used to assess the mobility situation at an areawide level. At the corridor level, where solutions are implemented, more measures and more detailed analyses are needed to identify the most appropriate solution and evaluate the resulting effects. The measures reflect travel time concerns and can be applied to a variety of strategies. More information on these measures is available on the website: <http://mobility.tamu.edu>.

- **Travel Time Index**—the ratio of peak period travel time to free-flow travel time. The TTI expresses the average amount of extra time it takes to travel in the peak relative to free-flow travel. A TTI of 1.3, for example, indicates a 20-minute free-flow trip will take 26 minutes during the peak travel periods, a 6-minute (30 percent) travel time penalty. Free-flow travel speeds are used because they are an easy and familiar comparison standard, not because they should be the goal for urban transportation system improvements.
- **Delay per Traveler**—the hours of extra travel time divided by the number of urban area peak period travelers. This is an annual measure indicating the sum of all the extra travel time that would occur during the year for the average traveler. All urban travelers are used as the comparison device to better relate the delay statistics to those affected on the roadways.
- **Cost of Congestion**—the value of the extra time and fuel that is consumed during congested travel. The value of time for 2007 is estimated for passenger vehicles and trucks. The fuel costs are the per-gallon average price for each state. The value of a person’s time is derived from the perspective of the individual’s value of their time, rather than being based on the wage rate. Only the value of truck operating time is included; the value of the commodities is not. The value of time is the same for all urban areas.
- **Change in Congestion**—not a particular measure, but a concept used in many analyses. The trends in congestion are often more important than the absolute mobility levels, because they indicate if the right projects are selected and the proper amount of improvement is being funded to achieve the goals.

The mobility performance measures and the rankings based on them are useful for a variety of purposes. They are especially good at identifying multi-year trends and in comparing relative levels of congestion. As evidenced by the continual refinement of the measures, estimation procedures and data, however, this series of reports is still a “work-in-progress.” One element of this uncertainty is that the measure values have an element of variation in them. All estimation procedures have simplifying assumptions that are not correct for every situation. And traffic data reflects the day-to-day variation in activity that affects traveler experiences. There are also locations or corridors in each urban area, especially those over one million population, where mobility levels are much lower than any average value. Those who frequently travel in these places may get a biased view of the urban areawide mobility level.