

# The Environmental Assault on Mobility

by John Semmens

I recently had the opportunity to attend a Federal Highway Administration workshop on air-quality analysis. This session was designed to train government bureaucrats to operate computer models for assessing a region's compliance with federal air pollution regulations. The experience was most enlightening.

Air-quality planning across the nation is heavily dependent on air-quality "models." Unfortunately, these models are insufficiently connected to reality to be reliable measures of actual air pollution in any metropolitan area. In the models, emission estimates for vehicles are based on a "standard trip" from a 1969 Los Angeles survey. Whether such a "trip" would be representative of the types of trips taken in other urban centers across America seems dubious. Whether the conditions pertaining in 1969 are relevant for today, some 25 years later, is also questionable. The specific amounts of emissions for each vehicle are based on a sample of cars taken in Indiana. Whether emissions for these types of vehicles might differ in the traffic and climatic conditions in other locations would seem a pertinent question, too.

Unfortunately, the federal bureaucrats in charge of this training session declined to address any of these questions. Even worse,

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an inquiry as to whether the air-quality monitoring program might be improved by a greater effort to actually measure quantities of pollutants was brushed aside. Apparently, the officials in charge of the air-quality monitoring program are not interested in attempting to actually measure pollution in the ambient air, nor to identify specific sources of emissions.

Within the models, the alleged pollution reductions to be achieved by various measures are not evaluated for net impacts. That is, there is no analysis of the potential offsetting negative consequences of implementing these measures. In the case of transit, for example, adding buses to the traffic stream would have some negative effects. The slower acceleration capabilities of buses and their frequent stops during peak-hour traffic significantly impede other traffic. This causes some increased vehicle emissions. But, since the model does not explicitly calculate or adjust for this effect, we do not know whether increasing the frequency and distances covered by buses decreases or increases pollution. During a question and answer session at the workshop, my inquiry on this issue was greeted with the cynical response that the data could be made to show whatever we wanted it to show. If this is true, then the models are useless as a guide to environmental policy-making.

Most of the emphasis in current air quality

planning is aimed at discouraging travel. Many environmental planners at this training session expressed a preference for making travel more inconvenient as a means of reducing trips and thereby cleaning the air. I find this approach discomfoting. Mobility has a positive value to people. The ability to cover large distances in short periods of time enables people to enjoy wider employment opportunities and more access to the amenities that make for a better standard of living. Government policies that set out to reduce travel will lessen these positive benefits.

Serving customers entails selling them what they want to buy. These customers should be charged a price that covers the full cost (including externalities, like pollution) to provide this service. While we want to promote cleaner air, a policy aimed at achieving this by reducing travel makes as much sense as a business seeking to reduce shoplifting by discouraging shoppers from entering the store. While restricting people's travel opportunities may satisfy the self-righteous dictatorial proclivities of many environmental planners, it also serves to undermine the highly valued mobility that comes from a well-constructed and efficiently managed highway system.

The potential impact of many of the "politically acceptable" trip-reduction, pollution-mitigation measures (like expanding the public transit system) is pitifully small. In the Phoenix metropolitan region, for example, fewer than one percent of trips are made on public transit. Since transit trips are typically shorter than auto trips, the share of person-miles of travel for transit is even smaller. Given transit's tiny market share of total travel, expanding bus service would have a minuscule impact on pollution. A doubling of Phoenix bus service would cost taxpayers another \$30 million per year. At best, this might lure one percent of drivers out of their cars.

The meager potential of efforts to *entice* people out of their cars inspires some environmental planners to promote ideas for *forcing* people out of their cars. Mandatory no-drive days are popular among bureau-

crats. So, too, are punitive parking fees. Strict land-use controls to compel people to live and work in high density zones are also viewed favorably. While these heavy-handed measures might have a greater impact on travel than subsidizing transit services, their cost, in terms of sacrificed travel benefits, is an overlooked consequence.

The good news is that we can make significant reductions in air pollution without restricting travel. Since it is likely that the worst 10 percent of the vehicles cause 50 percent of the pollution, a program to target these vehicles would appear to offer the best chance of meeting clean air goals. In this regard, mobile emissions testing is an obvious policy option. There is now a device on the market, the so-called "smog dog," designed to measure emissions from moving vehicles. This method of testing for emissions is less expensive and more effective than the scheduled annual vehicle emissions inspections commonly employed in most urban areas.

Governments seriously concerned about vehicle contributions to air pollution ought to implement this kind of technology. In 1993, the Arizona Legislature passed a law mandating a pilot test of a mobile emissions enforcement program in the Phoenix metropolitan area. This program took effect in January of 1995.

A second obvious policy option is to use pricing to clear peak-hour traffic jams. Over half the trips during the peak hour are classified as "discretionary" (i.e., non-work trips). When the explicit price of using the roads during peak hours is zero there is little incentive for people who place a low value on their time to make these discretionary trips at a different time of day. The result is a colossal waste of time and the creation of air pollution caused by rush-hour traffic tieups. This may have been excusable when we lacked the means to overcome the problem. Now, with the automatic vehicle identification technology that is available, we have the ability to charge peak-hour users a peak-hour price while offering an off-peak discount to those who use the roads during periods when traffic is light.

Transponders no bigger than a credit card could be carried in each vehicle. These devices would be "read" by roadside computers as the vehicles passed at highway speeds. The vehicle owners would receive a monthly bill similar to the ones they currently receive for their phone service. Charges for using the roads could be varied by time and place, just as long-distance phone rates are, to encourage people to shift their demand to less busy hours. This would lower the total cost of highways by promoting more efficient use of the existing capacity, and avoid the cost of having to build more lane miles of roadway.

A more efficient use of the roadways will also benefit the environment. As time-of-day pricing more evenly spreads out the traffic, fewer gallons of fuel will be burned by vehicles stuck in traffic jams. This will directly improve air quality by reducing noxious emissions. A more efficient use of existing capacity will eliminate the "need" to further disrupt the environment by constructing more lane-miles of highway.

We don't have to give up mobility in order to have clean air. The sooner this idea gets through to the government's environmental planners, the sooner we will be on our way to improving both mobility and air quality.

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