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## AUTOS ON FRIDAY/Transportation; Do Additional Roads Increase Congestion?

By MATTHEW L. WALD

FACED with a chronically congested two-lane road, many highway departments send in construction crews to expand it. Within a few years, they have a chronically congested four-lane road instead.

As congestion increases, many people are calling for bigger roads and bridges, but some engineers and researchers who oppose highway construction say those new miles of lanes will draw new traffic, in a phenomenon that they call 'induced travel.'

Dozens of transportation experts from around the country spent three hours debating the topic at the recent annual meeting here of the Transportation Research Board. They argued about definitions and about what was the cause and what was the effect. They did not agree on how much of a problem induced travel really is. They did, however, lay out reasons to suspect that it is a problem.

In theory, a new lane is good, because it reduces the cost of travel. This is because, according to one paper presented at the meeting, a new road or new miles of lanes reduce congestion.

"At some level of congestion, any given driver will choose to avoid dealing with that congestion, either in favor of an alternative route, an alternative mode, changing the departure time of the trip, a shorter trip to a similar activity, or avoiding the trip entirely," said the paper by Lewis M. Fulton, a researcher at the International Energy Agency in Paris, and three colleagues, two American and one British. But if the "cost" of that travel is reduced, they wrote, it is like cutting the price of an item in a supermarket; demand for it will suddenly rise.

Or, as a Kevin Costner movie once surmised in a different context, "If you build it, they will come."

Lawrence Barr, of the Volpe National Transportation Systems Center, a Transportation Department research office in Cambridge, Mass., said census data showed that of the time drivers saved with new roads, they spent 30 to 50 percent of it driving farther.

In their study, Mr. Fulton and his colleagues used figures on the growth in road-miles and the growth in vehicle-miles traveled in Maryland, Virginia, the District of Columbia and North Carolina. Deciding which is the cause and which is the effect is complicated, the authors acknowledged, because roads are built either in anticipation of new traffic or as a result of increased traffic. Or the roads may themselves stimulate more development, leading to congestion.

But the study found that in the short run, adding lanes would increase demand for road space by 20 to 60 percent. In the long run, it could raise demand by 100 percent.

One result, Mr. Fulton said, is that a city that expands a road to eliminate an area of stop-and-go traffic -- where idling cars produce extra pollution -- may be taking the wrong tack. "You're not going to reduce either emissions or congestion as much as you think, because you're going to trigger this additional travel," he said.

But others suggested that if a new road filled quickly with traffic, it could be relieving congestion elsewhere, and that no road in a network could be examined in isolation.

Some highway engineers doubt that the induced-travel phenomenon exists, or say that if it does, it is not a big cause of congestion. The number of miles driven rises by 2 or 3 percent a year, but beyond roads there are many other reasons, including population growth, more women in the work force and an economic boom that has raised the number of cars in each household.

Two researchers at the University of North Carolina at Charlotte, David T. Hartgen and Daniel O. Curley, studied the 65 largest metropolitan areas from 1990 to 1997, to see which had built beltways in that period. Beltways are often linked to sprawl, but the researchers found no links between beltway construction and traffic growth.

"No-belt and partial-belt cities have grown faster in area, population and employment than full-belt and mostly belt cities," Mr. Hartgen said. All of the cities, with beltways or without, became less densely populated, meaning that people were dispersing to a larger area.

One speaker from outside academia, Neil J. Pederson, planning director of the Maryland State Highway Administration, said that induced travel clearly was taking place, but that recent experience showed this could not be used as a tool for development. Maryland had built improved roads in its western panhandle, the part squeezed between West Virginia and Pennsylvania, to try to stimulate economic growth there, but the growth failed to follow. "Providing highway capacity will not in and of itself cause growth to occur if there is not latent demand," he said.

And the county in his state that has shown the greatest growth in the last 10 years, St. Mary's, south of Washington, has had no new highways at all.

Over all in the state, travel is growing twice as fast as the population and about 10 times faster than the number of lane-miles, he said. One factor driving growth was a loss of jobs in Baltimore and growth in the Washington area, leading people to drive between the two urban areas.

Mr. Pederson said that Maryland backed "smart growth," an effort to limit congestion and encourage a balanced transportation system, but he gave two reasons that growth must include new roads. One is that if the highways in an urban area become too congested, developers will start building farther and farther out, which will make people drive even more. The other, he said, is that developers would not build offices and shops near transit

stations unless they also had highway access, since the commercial buildings have to be served by trucks.

### Teenagers Just Say 'Whoa'

Norwegian officials say they have found a way to cut teenage highway deaths substantially: teach them to be back-seat drivers.

A campaign called Speak Out urges young passengers to complain if the driver goes too fast or behaves recklessly. Studying a rural coastal county, Sogn og Fjordane, which began the program in 1993, researchers found that the number of passengers from 16 to 19 years old who were killed or injured fell by about 30 percent. The number of drivers in that age group who were killed or injured did not change, however.

The program, including videos, lectures and T-shirts and key rings with the Speak Out slogan, is a version of "Friends don't let friends drive drunk," but focuses on how people behave once they are in cars.

Rune Elvik, a researcher at the Institute of Transport Economics in Oslo, said that the campaign might have made some drivers act more prudently and might have persuaded some teenage passengers not to ride with drivers who take risks.

Mr. Elvik, in an e-mail reply to the question of whether it was difficult to encourage teenagers to criticize each other or older drivers, said that they were quite willing.

"The campaign did not preach morals," he said. "It simply appealed to the fact that many young girls are afraid of riding with slightly drunk boys who drive very fast. The girls are not impressed by such behavior, contrary to what many boys think."

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#### **Organizations mentioned in this article:**

Transportation Research Board

#### **Related Terms:**

Roads and Traffic; Delays (Transportation)

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