

Highway Expansion Relieves Congestion – It’s a Myth!

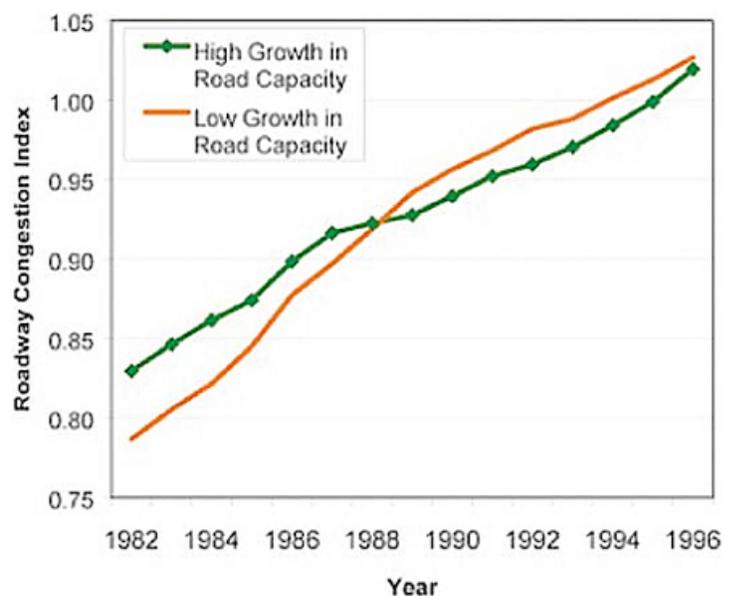
Roadway construction remains the most common traffic congestion management strategy. But, does this strategy work? Not according to the Surface Transportation Policy Project.

Reason dictates that if adding roadways relieves congestion, cities that invest heavily in building new roads, or expanding the capacity of existing ones, should benefit from less congestion, and lower costs associated with congestion, compared to cities that spend less on constructing additional capacity. In its 1998 report, the Surface Transportation Policy Project (STPP) sought to test this hypothesis by analyzing 15 years (1982 – 1996) of data from the Texas Transportation Institute’s (TTI) study of congestion in 70 U.S. metropolitan areas from 35 states. These 70 metropolitan areas were first ranked based on their growth in lane capacity and then divided into half – a “high growth” group in which the metro areas increased lane capacity by an average of 47%, and a “low-growth” group in which average growth was only 22%.

Four conventional transportation indicators were calculated from the data: congestion cost per capita, excess fuel used per capita, delay per capita and roadway congestion index. The two groups showed **no significant difference** in congestion cost per capita, **no difference** in excess fuel per capita and delay per capita **did not differ** between the two groups.

The two groups showed **no significant difference** in the mean roadway congestion index, a commonly-used parameter calculated from an area's daily volume of travel per lane of freeways and major streets. The “high growth” group spent \$22 billion more than the “low growth” group and the bottom line is the **“high growth” metropolitan areas did not achieve more congestion relief than the “low growth” areas** (See figure at right).

The STPP study did not control for factors such as changes in population, shifting demographics, economic activity or changes in land use. However, the large size of the data set (70 metropolitan areas), geographic range (35 states from every region of the U.S.) and the long study period (15 years) make it likely that the relationships that emerged from the analysis are real and not biased by any of these factors.



The results of the STPP analysis were not surprising in 1998, and are not surprising today. A large body of research documents the phenomenon of “induced traffic” (Noland, 1999). When road capacity is expanded near congested routes, drivers who did not use that route previously are attracted to the new route to save time, resulting in an increase in the traffic volume in the new route. An analysis of 17 years of data from 30 urban California counties by U.C. Berkeley researchers (Hansen and Huang, 1997) found that every 1% increase in new lane-miles generated a 0.9% increase in traffic in less than 5 years, effectively neutralizing the transient increase in capacity.

It is time for transportation officials to stop throwing good money after bad by repeating the same, expensive, one-size-fits-all approach to congestion relief – building more roads. This study demonstrates conclusively that highway construction is not the answer to providing congestion relief.

References:

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- Surface Transportation Policy Project, (1998): “An Analysis of the Relationship Between Highway Expansion and Congestion in Metropolitan Areas”. 12 pp.
- Noland, R.B., (1999): “Relationships between Highway Capacity and Induced Vehicle Travel”. *Transportation Research Board 78th Annual Meeting, January, 1999*.