

Induced traffic

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The ever-increasing demand for travel raises various problems and issues including congestion. Nevertheless, it is also known that continuous construction of new infrastructure will not be a sustainable solution. One of the arguments is that building (or widening) roads may just induce more people to choose cars over public transport. Such phenomenon is known as 'induced traffic'¹.

Existing examples can be found rather easily around the world:

While China has expanded its expressway network from 16,300 km to around 70,000 km during the 2000s decade², they also saw the number of passenger vehicles rose to a record 154 million in 2014, making the motorcar the primary mode of transportation in China, replacing the motorcycle³. Specially, in Beijing, a 940-km highway circling the city has led the capital city having 63 passenger vehicles for every 100 households, which is more than double the national average of 25 cars in China¹. This results in the average commute time in Beijing for 2013 was 1 hour and 55 minutes, up 25 minutes from just the year before¹.

In Sydney, the Sydney Harbour Bridge was carrying a stable traffic volume of around 180,000 vehicles per day from 1986 to 1991. The Sydney Harbour Tunnel opened in 1992, and the total volume of traffic crossing the harbour increased in 1995 to almost 250,000 vehicles per day. This 38% increase in traffic can be attributed to induced demand and not to population growth (which was around 4% during this period)⁴.

Similar observations in which road closure led to improved traffic conditions have been observed in New York City, where upon closing 42nd street (a major crosstown street in Manhattan) it was observed that traffic was significantly less congested than average⁵.

¹ Goodwin, PB. Empirical evidence on induced traffic: A review and synthesis. *Transportation* 23, 1996, 35–54.

² <http://theconversation.com/do-more-roads-really-mean-less-congestion-for-commuters-39508>

³ <http://www.bloomberg.com/news/articles/2015-01-28/beijing-tops-vehicle-ownership-amid-urban-sprawl>

⁴ Mewton, R, Induced traffic from the Sydney Harbour Tunnel and Gore Hill Freeway, *Road and Transport Research*, 14(3), 2005, 24-33.

⁵ <http://www.nytimes.com/1990/12/25/health/what-if-they-closed-42d-street-and-nobody-noticed.html>