# Estimating the Impact of Flyover on Vehicle Delay, Fuel Consumption, and Emissions—A Case Study


**Lenjisa Bedada, Mukti Advani, Satish Chandra, and Jayesh Juremalani**

**Abstract** Road Over Bridges (ROB or flyover as it is popularly called in India) are considered as a solution to reduce the delay at an oversaturated at-grade signalized intersection. However, this provision of flyover remains a short-term solution, as it is seen that flyover also reaches to the same congestion level after a few years due to increased personalized vehicular traffic. To analyze the effect of a flyover over the years, vehicular delay, fuel consumption, and emission for the range of traffic volume are estimated. One intersection, Bhikaji Cama Place intersection in New Delhi, is considered as a case study. This is a four-legged signal-controlled intersection. Three scenarios are considered. Scenario A is the existing condition of flyover and signal phasing plan, Scenario B is with flyover and with proposed signal phasing plan, and Scenario C is without the flyover and proposed signal phasing plan. Scenario B includes comparison of alternate signal phasing plans to obtain the best signal design for existing traffic to minimize the delay. Delay estimation, fuel consumption, and emission estimation have been carried out by existing methods for all the three scenarios.

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