

Quantifying the Impact of Intermittent Signal Priority given to BRT on Ridership and Climate-A Case Study of Ahmadabad

Authors : Smita Chaudhary

Abstract : Traffic in India are observed uncontrolled, and are characterized by chaotic (not follows the lane discipline) traffic situation. Bus Rapid Transit (BRT) has emerged as a viable option to enhance transportation capacity and provide increased levels of mobility and accessibility. At present in Ahmadabad there are as many intersections which face the congestion and delay at signalized intersection due to transit (BRT) lanes. Most of the intersection in spite of being signalized is operated manually due to the conflict between BRT buses and heterogeneous traffic. Though BRTS in Ahmadabad has an exclusive lane of its own but with this comes certain limitations which Ahmadabad is facing right now. At many intersections in Ahmadabad due to these conflicts, interference, and congestion both heterogeneous traffic as well as transit buses suffer traffic delays of remarkable 3-4 minutes at each intersection which has become an issue of great concern. There is no provision of BRT bus priority due to which existing signals have their least role to play in managing the traffic that ultimately call for manual operation. There is an immense decrement in the daily ridership of BRTS because people are finding this transit mode no more time saving in their routine, there is an immense fall in ridership ultimately leading to increased number of private vehicles, idling of vehicles at intersection cause air and noise pollution. In order to bring back these commuters' transit facilities need to be improvised. Classified volume count survey, travel time delay survey was conducted and revised signal design was done for whole study stretch having three intersections and one roundabout, later one intersection was simulated in order to see the effect of giving priority to BRT on side street queue length and travel time for heterogeneous traffic. This paper aims at suggesting the recommendations in signal cycle, introduction of intermittent priority for transit buses, simulation of intersection in study stretch with proposed signal cycle using VISSIM in order to make this transit amenity feasible and attracting for commuters in Ahmadabad.

Keywords : BRT, priority, Ridership, Signal, VISSIM

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