

# Optimization of Transportation Systems: Bus Rapid Transit (BRT) System in Delhi, A Mathematical Modeling Technique

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## ABSTRACT

The **Delhi Bus Rapid Transit System** is a bus rapid transit being introduced in Delhi. A city in which buses cater to sixty percent of the city's transportation needs. Together with Delhi Metro and soon to be introduced Delhi Monorail and Delhi Light Rail, it will be part of an integrated multi-modal transport system. Introduction of bus rapid transit was sped up in time for the 2010 Commonwealth Games in Delhi. Like other bus-rapid transit systems, Delhi BRT aims to make public transport more convenient. Delhi BRT is not grade-separated: the buses run at the same level as normal traffic and share the same traffic signals. We propose to employ methods developed in the Theory of Optimization to make better use of resources and existing technology. One way of optimization is better planning. We will point out that Discrete Mathematics provides a suitable framework for planning decisions within transportation systems. At present, mathematical methods contribute, in particular, to the solution of various problems of operational planning. We report about encouraging results achieved so far.

**Keywords:** Transportation Systems, Optimization, Discrete Mathematics, BRT