

Impact of Intelligent Transportation System on Planning, Operation and Safety of Urban Corridor

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Abstract : Intelligent transportation system (ITS) is the application of technologies for developing a user-friendly transportation system to extend the safety and efficiency of urban transportation systems in developing countries. These systems involve vehicles, drivers, passengers, road operators, managers of transport services; all interacting with each other and the surroundings to boost the security and capacity of road systems. The goal of urban corridor management using ITS in road transport is to achieve improvements in mobility, safety, and the productivity of the transportation system within the available facilities through the integrated application of advanced monitoring, communications, computer, display, and control process technologies, both in the vehicle and on the road. Intelligent transportation system is a product of the revolution in information and communications technologies that is the hallmark of the digital age. The basic ITS technology is oriented on three main directions: communications, information, integration. Information acquisition (collection), processing, integration, and sorting are the basic activities of ITS. In the paper, attempts have been made to present the endeavor that was made to interpret and evaluate the performance of the 27.4 Km long study corridor having eight intersections and four flyovers. The corridor consisting of six lanes as well as eight lanes divided road network. Two categories of data have been collected such as traffic data (traffic volume, spot speed, delay) and road characteristics data (no. of lanes, lane width, bus stops, mid-block sections, intersections, flyovers). The instruments used for collecting the data were video camera, stop watch, radar gun, and mobile GPS (GPS tracker lite). From the analysis, the performance interpretations incorporated were the identification of peak and off-peak hours, congestion and level of service (LOS) at midblock sections and delay followed by plotting the speed contours. The paper proposed the urban corridor management strategies based on sensors integrated into both vehicles and on the roads that those have to be efficiently executable, cost-effective, and familiar to road users. It will be useful to reduce congestion, fuel consumption, and pollution so as to provide comfort, safety, and efficiency to the users.

Keywords : ITS strategies, congestion, planning, mobility, safety

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