

A Comparison of Alternative Traffic Controls for Interchange Ramp Areas Using Synchro Software

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Abstract : An Interchange is the most important component of freeway and highway facilities. It is working as a connector between the highway's elements. The main goal of designing interchanges is to provide an acceptable level of service and delay to make vehicles move smoothly when they are entering and exiting the interchange. There are many factors that can have a significant impact on level of service, the main factors are traffic volumes, and type of interchange. This paper will discuss in interchange with roundabout under various values of traffic volumes to determine the level of service of the interchanges that will be studied in this paper and replace the system of interchange from roundabout to traffic signal to make a significant compression between these systems. A secondary goal is to propose improvements for scenarios where the level of service is deemed unacceptable. This will be achieved using Synchro traffic simulation software, which facilitates the simulation and optimization of interchanges to enhance operational efficiency and safety.

Keywords : interchange, roundabout, traffic signal, Synchro, delay, level of service, traffic volumes, vehicles, simulation, optimization, adjustment

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