

ABSTRACT

PERFORMANCE ANALYSIS OF SIGNALLED INTERSECTIONS USING PTV SOFTWARE VISSIM STUDENT VERSION 8.0 (CASE STUDY SIMPANG TIGA, PONDOK PUCUNG)

The problems that occurred in the Pondok Pucung Interchange area resulted in complaints from residents around the area because the installation of traffic signaling devices (APILL) actually increased the length of the queues at the intersection, causing congestion. This research aims to optimize the performance of the Pondok Pucung Interchange with calculations referring to the Indonesian Road Capacity Guidelines (2023) and simulations using PTV Vissim software. The existing condition of the Pondok Pucung intersection has less than optimal performance with a value of the degree of saturation (D_j) of the intersection of 1.37, and the service level index (ITP) of the intersection is included in category F (very bad) with an intersection delay value (T) of 169.9 det/smp. Apart from that, the results of the intersection simulation in existing conditions using the PTV Vissim software obtained a service level index of F (very bad). Therefore, it is necessary to re-plan the intersection to optimize intersection performance. After re-planning the intersection, the most optimal results were obtained, namely resetting signal times, geometric changes and diverting traffic direction. The results obtained are a degree of saturation (D_j) of 0.75 and a service level index of C (medium) with an average delay value of 19 sec/pcu. Then the simulation results obtained are category B (good) service level.

Keywords: Existing Intersection Performance, Indonesian Road Capacity Guidelines, Degree of Saturation Value, Intersection Performance Solutions, PTV Vissim.

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