

ANALISIS KINERJA SIMPANG BERSINYAL

JL. IR. H. DJUANDA DEPOK

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ABSTRAK

Permasalahan lalu-lintas terutama kemacetan dan antrian di Kota Depok pada umumnya terjadi pada persimpangan. Salah satu persimpangan di Kota Depok yang sering mengalami permasalahan tersebut adalah simpang Jl. Ir. H. Djuanda Depok. Simpang tersebut merupakan titik bertemunya arus dari kendaraan dari beberapa ruas jalan yang berbeda. Untuk itu perlu dilakukan evaluasi kinerja simpang, yaitu dengan meneliti volume lalu lintas. Sehingga bisa didapatkan solusi untuk pemecahan masalah tersebut. Dalam penelitian ini, digunakan simulasi lalu-lintas dengan software PTV Vissim. Pengambilan data primer berupa survei yang dilaksanakan selama dua minggu selama 14 hari pada jam sibuk, nantinya akan dilakukan perbandingan hasil perhitungan Manual Kapasitas Jalan Indonesia (MKJI) 1997. Hasil analisis MKJI 1997 akan dibandingkan dengan hasil analisis software PTV Vissim untuk melihat apakah ada perbedaan yang signifikan Hasil analisis metode MKJI 1997 kondisi eksisting yaitu nilai arus lalu lintas total (Q_{tot}) = 6864 smp/jam, derajat kejenuhan (DS) = 0,96, panjang antrian (QL) = 350 meter, tundaan (D) = 67 det/smp. Hasil pemodelan software PTV VISSIM kondisi eksisting yaitu panjang antrian (Q_{len}) = 45,57 meter dengan tundaan (VEHdelay) = 62,51 detik, dan tingkat pelayanan (Level of Service) = LOS F atau sangat buruk. Dengan hasil kondisi eksisting tersebut maka direncanakan alternatif guna memperbaiki kinerja simpang yaitu alternatif 1 perancangan ulang waktu siklus dan alternatif 2 perancangan ulang fase dan alternatif 3 larangan kendaraan berat melewati simpang pada saat jam puncak. Perencanaan alternatif tersebut diterapkan pada kedua acuan MKJI 1997 dan PTV VISSIM.

Kata Kunci : Simpang, MKJI 1997, PTV Vissim, Derajat Kejenuhan, Panjang Antrian, Tundaan.

**ANALYSIS PERFORMANCE OF THE SIGNALIZED INTERSECTION
OF IR. H. DJUANDA DEPOK STREET**

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ABSTRACT

Traffic problems, especially congestion and queue in Depok City, generally occur at the intersection. One of the intersections in Depok City that often experiences these problems is the intersection of Jl. Ir. H. Djuanda Depok. The intersection is the meeting point of the current from vehicles from several different roads. For this reason, it is necessary to evaluate the intersection performance, namely by examining the volume of traffic. So you can get a solution to solve the problem. In this study, traffic simulations were used with PTV VISSIM software. Primary data collection in the form of a survey conducted for two weeks for 14 days during rush hour, and a comparison of the 1997 Indonesian Road Capacity Calculation (MKJI) will be made. The results of the 1997 MKJI analysis will be compared with the results of PTV Vissim's software analysis to see whether there are significant differences in the results of the 1997 MKJI method analysis, the total traffic flow value (Q_{tot}) = 6864 smp/hour, Degree of Saturation (DS) = 0.96, Queue length (QL) = 350 meters, delay (D) = 67 sec/smp. The results of the modeling of PTV VISSIM software existing conditions are the length of the queue (Q_{len}) = 45.57 meters with a delay (VehDelay) = 62.51 seconds, and the level of service (level of service) = LOS F or very bad. With the results of these existing conditions, an alternative is planned to improve the intersection of the intersection, namely the alternative 1 re-design of the cycle and alternative time 2 re-design phase, and alternative 3 heavy vehicle ban on the intersection during the peak hours. The alternative planning is applied to the two references to MKJI 1997 and PTV VISSIM.

Keywords: *Intersection, MKJI 1997, PTVVissim, Degrees of Saturation, Length of Queue, Delay.*