

ABSTRACT

Unsignalized intersections are intersections that consist of multiple road streams without traffic signals or traffic lights. The purpose of this study is to analyze the performance of intersections based on the calculation of MKJI 1997 and determine the level of service (LOS) at the unsignalized roundabout intersection at the entrance of Airmadidi market.

Based on the research results, the total peak hour traffic volumes on Tuesday morning were 1949 pcu/hour, Tuesday afternoon 1297 smp/hour, Tuesday evening 1548 smp/hour, Thursday morning 2038 smp/hour, Thursday afternoon 1386 smp/hour, Thursday evening 1625 smp/hour, Saturday morning 1444 smp/hour, Saturday afternoon 1031 smp/hour, Saturday evening 1289 smp/hour. The road capacity values (C) are as follows: Tuesday morning: 3033 smp/hour, Tuesday afternoon: 3037 smp/hour, Tuesday evening: 3109 smp/hour, Thursday morning: 2984 smp/hour, Thursday afternoon: 3042 smp/hour, Thursday evening: 3093 smp/hour, Saturday morning: 2951 smp/hour, Saturday afternoon: 2899 smp/hour, Saturday evening: 3104 smp/hour. The intersection is classified as good flow with the Degree of Saturation (DS) values: Tuesday morning = 0.64, Tuesday afternoon = 0.43, Tuesday evening = 0.5, Thursday morning = 0.68, Thursday afternoon = 0.46, Thursday evening = 0.53, Saturday morning = 0.49, Saturday afternoon = 0.36, Saturday evening = 0.42. Intersection Delay (D) values: Tuesday morning = 10.53 sec/smp, Tuesday afternoon = 8.28 sec/smp, Tuesday evening = 8.94 sec/smp, Thursday morning = 11.05 sec/smp, Thursday afternoon = 8.52 sec/smp, Thursday evening = 9.24 sec/smp, Saturday morning = 8.93 sec/smp, Saturday afternoon = 7.65 sec/smp, Saturday evening = 8.02 sec/smp. Queue Probability (QP %) values: Tuesday morning = 17-30, Tuesday afternoon = 8-14, Tuesday evening = 11-18, Thursday morning = 19-34, Thursday afternoon = 9-16, Thursday evening = 12-20, Saturday morning = 11-18, Saturday afternoon = 6-11, Saturday evening = 8-14. And the level of service (LOS) at the unsignalized roundabout intersection at the entrance of Airmadidi market obtained the highest value during the 3-day peak hour period, specifically on Thursday morning with 11.05 sec/smp, Therefore, the obtained LOS falls into the category of service level B, which represents a stable flow with moderate traffic volume, and the speed starts to be limited by traffic conditions.

Keywords: Intersection Performance, Unsignalized Intersection, Level of Road Service.

ABSTRAK

Simpang tak bersinyal merupakan persimpangan yang terdiri atas beberapa arus jalan yang tidak memiliki tanda sinyal lalu lintas atau lampu lalu lintas. Tujuan dari penelitian ini adalah untuk menganalisis kinerja simpang berdasarkan perhitungan MKJI 1997, dan menentukan tingkat pelayanan jalan (LOS) pada simpang tak bersinyal bundaran akses masuk pasar airmadidi.

Berdasarkan hasil penelitian yang didapatkan menunjukkan volume lalu lintas total jam puncak pada hari Selasa pagi 1949 smp/jam, Selasa siang 1297 smp/jam, Selasa sore 1548 smp/jam, Kamis pagi 2038 smp/jam, Kamis, siang 1386 smp/jam, Kamis sore 1625 smp/jam, Sabtu pagi 1444 smp/jam, Sabtu siang 1031 smp/jam, Sabtu sore 1289 smp/jam. Untuk nilai kapasitas Jalan (C) : Selasa pagi : 3033 smp/jam, Selasa siang : 3037 smp/jam, Selasa sore : 3109 smp/jam, Kamis pagi : 2984 smp/jam, Kamis siang : 3042 smp/jam, Kamis sore : 3093 smp/jam, Sabtu pagi : 2951 smp/jam, Sabtu siang : 2899 smp/jam, Sabtu sore : 3104 smp/jam. Untuk simpang tergolong arus baik dengan nilai derajat Kejenuhan (DS) : Selasa pagi = 0,64, Selasa siang = 0,43, Selasa sore = 0,5, Kamis pagi = 0,68, Kamis siang = 0,46, Kamis sore = 0,53, Sabtu pagi = 0,49, Sabtu siang = 0,36, Sabtu sore = 0,42. Tundaan Simpang (D) : Selasa pagi = 10,53 det/smp, Selasa siang = 8,28 det/smp, Selasa sore = 8,94 det/smp, Kamis pagi = 11,05 det/smp, Kamis siang = 8,52 det/smp, Kamis sore = 9,24 det/smp, Sabtu pagi = 8,93 det/smp, Sabtu siang = 7,65 det/smp, Sabtu sore = 8,02 det/smp. Peluang Antrian (QP %) : Selasa pagi = 17-30, Selasa siang = 8-14, Selasa sore = 11-18, Kamis pagi = 19-34, Kamis siang = 9-16, Kamis sore = 12-20, Sabtu pagi = 11-18, Sabtu siang = 6-11, Sabtu sore = 8-14. Dan tingkat pelayanan simpang (LOS) pada simpang tak bersinyal pada simpang bundaran akses masuk pasar airmadidi didapat nilai terbesar selama 3 hari pada periode jam puncak yaitu hari Kamis pagi 11,05 det/smp (5,1-15), sehingga didapat LOS pada kategori tingkat pelayanan B yaitu arus stabil dengan volume lalu lintas sedang dan kecepatan mulai dibatasi oleh kondisi lalu lintas.

Kata Kunci : Kinerja Simpang, Simpang Tak Bersinyal, Tingkat Pelayanan Jalan

