

ANALISIS TEKNIK LALU LINTAS KINERJA SIMPANG TAK BERSINYAL

(STUDI KASUS : SIMPANG TIGA SUKUR-LIKUPANG, LIKUPANG-GIRIAN, MINAHASA UTARA)

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ABSTRAK

Persimpangan merupakan bagian yang penting dari jalan. Pada Kecamatan Likupang, Kabupaten Minahasa Utara, merupakan salah satu kawasan wisata yang berkembang di Sulawesi Utara. Pertumbuhan ini membawa dampak positif bagi perekonomian lokal, namun juga meningkatkan volume lalu lintas di jalan-jalan utama, termasuk pada persimpangan. Permasalahan lalu lintas di wilayah Likupang perlu di perhatikan lagi, terutama wilayah likupang ini memiliki pusat-pusat kegiatan seperti tempat wisata dan area pekerjaan (Lokasi Pertambangan) yang nantinya akan terus berkembang seiring waktu. Tujuan dari penelitian ini untuk menganalisis kinerja simpang berdasarkan perhitungan MKJI 1997, dan menganalisis kinerja simpang lima tahun mendatang, dan menentukan pelayanan jalan (LOS) serta memberikan penanganan pada simpang tak bersinyal. Penelitian ini dilakukan selama 7 hari pada hari senin, selasa, rabu, kamis, jumat, sabtu, dan minggu pada pukul 06:00 sampai pukul 19:00. Berdasarkan hasil penelitian Kapasitas (C) = sabtu pagi : 2288, sabtu siang : 2095, sabtu sore : 2331. Derajat Kejenuhan (DS) = sabtu pagi : 0,18, sabtu siang : 0,21, sabtu sore : 0,13, Tundaan Simpang (C) = sabtu pagi : 6,34 det/smp, sabtu siang : 6,74 det/smp, sabtu sore : 6,10 det/smp, Peluang Antrian (QP%) = sabtu pagi : 2-4, sabtu siang : 3-5, sabtu sore : 2-3, hari sabtu merupakan Tundaan tertinggi. Analisis pertumbuhan 5 tahun kedepan (Tahun 2029) = Kapasitas (C) = 2219, Derajat Kejenuhan (DS) = 0,52, Tundaan Simpang (C) = 9,66, peluang antrian = 12-20. Tingkat pelayanan simpang B, Kriteria penentuan pengaturan simpang yaitu masih dalam grafik simpang prioritas.

Kata Kunci : Simpang Tak Bersinyal, Pertumbuhan Lalulintas, Simpang Tiga, MKJI 1997

**TRAFFIC PERFORMANCE ANALYSIS OF UNSIGNALIZED
INTERSECTIONS
(CASE STUDY: UNSIGNALIZED INTERSECTION OF SUKUR-
LIKUPANG, LIKUPANG-GIRIAN DISTRICT, MINAHASA UTARA)**
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ABSTRACT

Intersections are crucial parts of roads. In Likupang District, North Minahasa Regency, it is one of the developing tourist areas in North Sulawesi. This growth has brought positive impacts to the local economy but has also increased traffic volume on main roads, including at intersections. Traffic issues in the Likupang area need attention, especially since it hosts activity centers such as tourist spots and work areas (mining locations) that will continue to grow over time. The aim of this study is to analyze intersection performance based on MKJI 1997 calculations, forecast intersection performance over the next five years, determine Level of Service (LOS), and propose improvements for unsignalized intersections. The study spanned 7 days from Monday to Sunday, from 06:00 to 19:00. According to the research findings, Capacity (C) during Saturday mornings was 2.288, Saturday afternoons 2.095, and Saturday evenings 2.331. The degree of Saturation (DS) during Saturday mornings was 0.18, Saturday afternoons 0.21, and Saturday evenings 0.13. Intersection Delay (C) during Saturday mornings was 6.34 sec/veh, Saturday afternoons 6.74 sec/veh, and Saturday evenings 6.10 sec/veh. Queue Probability (QP%) ranged from 2-4 during Saturday mornings, 3-5 during Saturday afternoons, and 2-3 during Saturday evenings, with Saturday showing the highest delays. Analysis for the next 5 years (by 2029) indicates Capacity (C) will be 2219, Degree of Saturation (DS) 0.52, Intersection Delay (C) 9.66 sec/veh, and queue probability 12-20. The intersection is classified as Service Level B, and criteria for determining intersection control indicate it remains within the priority intersection graph.

Keywords: Unsignalized intersection, traffic growth, three-way junction, MKJI 1997