

Jalan memegang peran penting dalam pengelolaan sumber daya alam, perdagangan dan mobilitas manusia maupun secara langsung mempengaruhi pertumbuhan ekonomi dan konektivitas antar wilayah secara nasional. Walaupun demikian, sering terdapat permasalahan tidak optimalnya transportasi barang dan jasa yang mengakibatkan biaya transportasi menjadi tinggi. Ruas jalan nasional (061), Provinsi Jawa Tengah Sidareja – Simpang 3 Jeruk Legi merupakan akses vital penunjang PKN Kabupaten Cilacap dan juga konektivitas jalur lintas selatan Jawa. Namun, kondisi eksisting ruas jalan kurang mantap serta persilangan dengan rel kereta api membuat ruas jalan tersebut menjadi jenuh dan rawan terjadi kecelakaan tunggal.

Penelitian ini bertujuan untuk menganalisis kelayakan aspek teknik lalu lintas dan aspek ekonomi terkait pembangunan *flyover* menjadi perlintasan tidak sebidang jalan rel dengan ruas jalan nasional (061), Provinsi Jawa Tengah (Sidareja – Simpang 3 Jeruk Legi di KM 57+000). Dalam penelitian ini digunakan data volume lalu lintas kendaraan, data panjang antrian dan angka kecelakaan. Analisis kelayakan aspek teknis lalu lintas dilakukan pada kondisi eksisting maupun kondisi peramalan dengan menggunakan bantuan software pemodelan VISSIM. Sedangkan, analisis kelayakan aspek ekonomi menilai manfaat penurunan biaya operasional kendaraan (BOK) dengan metode Departemen Pekerjaan Umum dan RUCM, penghematan nilai waktu dan pengurangan biaya kecelakaan apabila dibangun *flyover*.

Hasil analisis pemodelan dengan software VISSIM setelah pembangunan menunjukkan kinerja lalu lintas semakin baik seperti : peningkatan kecepatan kendaraan, penurunan tundaan, penurunan waktu tempuh serta hilangnya panjang antrian. Validasi hasil pemodelan dilakukan dengan uji GEH. Hasil perhitungan analisis kelayakan aspek ekonomi menunjukkan nilai positif seperti : *Benefit Cost Ratio* (BCR) $3.022 > 1$, *Net Present Value* (NPV) = Rp. 195.909.652.367,00 > 0 dan *Internal Rate and Return* (IRR) 12,15 %. Analisis pembangunan *flyover* secara aspek teknis lalu lintas dan aspek ekonomi dinyatakan layak.

Kata kunci : Kelayakan *Flyover*, VISSIM, Biaya Operasional Kendaraan, BCR.

ABSTRACT

Roads play an important role in natural resource management, trade and human mobility as well as influencing economic growth and connectivity between regions nationally. Even so, there are often problems that are not optimal in the transportation of goods and services which result in high transportation costs. The national road segment (061), Central Java Province Sidareja – Simpang 3 Jeruk Legi is a vital access to support PKN in Cilacap Regency and also the connectivity of the Southern Java crossroads. However, the existing condition of the road section is not stable and the intersection with the railroad tracks makes the road section saturated and prone to single accidents.

This study aims to analyze the feasibility of traffic engineering aspects and economic aspects related to the construction of a flyover into a non-railway crossing with the national road (061), Central Java Province (Sidareja – Simpang 3 Jeruk Legi at KM 57+000). In this study, data on vehicle traffic volume, queue length data and accident rates were used. The feasibility analysis of the technical aspects of traffic is carried out in both existing and forecasting conditions using the VISSIM modeling software. Meanwhile, the feasibility analysis of the economic aspect looks at the benefits of reducing vehicle operating costs (BOK) using the Ministry of Public Works and RUCM methods, saving time value and reducing accident rates if a flyover is built.

The results of the analysis of modeling with VISSIM software after construction show that traffic performance is getting better, such as: increasing vehicle speed, decreasing delays, decreasing travel time and losing queue lengths. Validation of the modeling results was carried out with the GEH test. The results of the calculation of the feasibility analysis of the economic aspect show positive values such as: Benefit Cost Ratio (BCR) $3,022 > 1$, Net Present Value (NPV) = Rp. 195.909.652/367,00 > 0 and the Internal Rate and Return (IRR) 12,15 %. Analysis of flyover construction in terms of technical aspects of traffic and economic aspects is declared feasible.

Key Words : *Flyover Feasibility, VISSIM, Vehicle Operating Cost , BCR*