

INTISARI

Kehadiran Trans Jogja diharapkan dapat menjadi salah satu solusi untuk permasalahan transportasi yang berada di Kota Yogyakarta. Namun, dalam pelaksanaannya masih mengalami beberapa kendala dan tidak berjalan optimal. Salah satu penyebabnya, Trans Jogja sebagai angkutan umum beroperasi di jalur lalu lintas campuran (*mixed traffic*) sehingga tidak memiliki hak eksklusif di jalan, yang menyebabkan kecepatan yang rendah dan waktu tempuh yang lama. Untuk menyelesaikan masalah tersebut, diperlukan rekayasa lalu lintas terhadap bus Trans Jogja, salah satu solusinya adalah dengan memberlakukan *bus lane* yang dipisah dengan marka jalan.

Studi kasus dilakukan pada ruas Jalan Urip Sumoharjo yang menghubungkan Simpang Demangan dan Simpang Galeria di Kota Yogyakarta. Dalam tugas akhir ini, pemodelan simulasi dilakukan menggunakan perangkat lunak *Vissim* untuk mengetahui dampak implementasi *concurrent flow bus lane* terhadap kecepatan dan waktu tempuh Bus Trans Jogja, serta dampak yang ditimbulkan terhadap kinerja ruas Jalan Urip Sumoharjo. Desain *concurrent flow bus lane* yang dibuat, mengacu pada standar *Bus Rapid Transit volume 2: Implementation Guidelines* (2003) dan APTA (*America Public Transportation Association*), lajur bus digunakan saat jam puncak pagi pukul 07.15-08.15 WIB dan jam puncak sore 16.00-17.00 WIB. Data yang diperoleh dari perangkat lunak *Vissim*, kemudian diolah dalam Microsoft Excel dan dibandingkan antara kondisi *without bus lane* dan *with bus lane*.

Berdasarkan hasil pemodelan perangkat lunak *Vissim*, dampak penerapan *concurrent flow bus lane* pada ruas Jalan Urip Sumoharjo menyebabkan kecepatan bus Trans Jogja meningkat 9.12 % saat jam puncak pagi, sedangkan pada jam puncak sore kecepatan rata-rata bus meningkat 40.54% . Berdasarkan hasil yang didapat, implementasi *bus lane* pada Jalan Urip Sumoharjo tidak berdampak signifikan terhadap kerapatan dan kecepatan rata-rata kendaraan yang berada di Jalan Urip Sumoharjo meskipun lebar lajur bagian tengah berkurang 1 meter saat kondisi *with bus lane*. Hal ini disebabkan dari total keseluruhan kendaraan yang melintasi Urip Sumoharjo, jumlah kendaraan bus hanya 0,1 % , sehingga dampak penerapan *concurrent flow bus lane* terhadap kinerja ruas Jalan Urip Sumoharjo tidak signifikan.

Kata kunci : Trans Jogja, *Concurrent Flow Bus Lane*, *Mixed Traffic*, Kecepatan, *Vissim*

ABSTRACT

The presence of Trans Jogja is expected to be a solution for transportation problems in Yogyakarta. However, they still have some problems and not working optimally in implementation. One of the reasons is, Trans Jogja, as a public transportation running in the mixed traffic lane, so it does not have the exclusive right on the road, which causes low speed and long travel time. To solve this problem, traffic engineering is needed for Trans Jogja, one of that is the application of bus lane with road marking.

The case study was conducted on Urip Sumoharjo street that connects the Demangan and Galeria intersection in Yogyakarta City. In this final project, the simulation is carried out using Vissim software to determine the impact of implementing concurrent flow bus lane on the speed and travel time of Trans Jogja, as well as the impact on the performance of Urip Sumoharjo street.

The design of concurrent flow bus lane that made, referring to Bus Rapid Transit volume 2: Implementation Guidelines (2003) dan APTA (America Public Transportation Association), bus lane are used during the peak hour of the morning at 07.15-08.15 and peak hours of the afternoon at 16.00-17.00. Data that obtained from Vissim then processed in Microsoft excel and compared between without bus lane condition and with bus lane.

Based on the result of Vissim software, the impact of the application concurrent flow bus lane on Urip Sumoharjo street makes Trans Jogja Bus speed increase 9.12 % during morning peak hours, meanwhile during the afternoon peak hours, the averages speed of bus increase by 40.54 %. Based on the result obtained, the implementation of the bus lane on Urip Sumoharjo street did not have a significant impact on the density and average speed of the vehicles on Urip Sumoharjo street even though the width of the middle lane was reduced by 1 meter during the with bus lane conditions. This is due to the total number of vehicles passing Urip Sumoharjo, the number of bus vehicles is only 0.1%, so the impact of concurrent flow bus lane on the performance of Urip Sumoharjo street is not significant.

Kata kunci : Trans Jogja, Concurrent Flow Bus Lane, Mixed Traffic, Speed, Vissim