

Artit Malithong 2010: Traffic Impact Assessment of Suvarnabhumi Airport Rail Link by using Paramics Program: A Case Study of City Air Terminal. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Pongsak Suriyavanagul, Ph.D. 105 pages.

The purpose of this study is to assess the impact of Suvarnabhumi Airport Rail Link (ARL) on peak hour traffic in the road network around City Air Terminal (CAT, Makkasan / Asoke Station). Paramics is a microscopic computer simulation program was used to evaluate the traffic conditions of the following six scenarios: 1) no ARL service in 2010 2) with ARL service in 2010 3) provisions of direct access from the north to CAT in 2012 via a) overpass connecting Asoke-Dindaeng and b) U-turn underneath 2nd state expressways. 4) without the direct accesses to CAT (as in scenario 3) in 2012 5) provision of direct accesses (as in scenario 3) in 2017 and 6) without the direct accesses (as in scenario 3) in 2017. The simulations reveal that increasing vehicular traffic from ARL users cause longer delays in the road network especially to south bound traffic at Rama 9 and Asok-Phet intersection where the delays in 2012 and 2017 will be 652.6 and 1,107.8 seconds respectively. However, the implementations of scenarios 3 and 5 will shorten delays and hence reduce road user cost in 2012 and 2017 of the whole road network in study area by 43,033,429 and 131,731,089 baht respectively.

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