



Florida Department of Transportation Research

Updating Multimodal Level of Service Calculations to Incorporate Latest FDOT Research since 2001 BD545-81

In 2000, the FDOT initiated a Multimodal Quality of Service Program to improve methodologies contained in the Quality Level of Service (QLOS) handbook and ARTPLAN software (a computerized planning tool that analyzes arterial roads) to better evaluate arterial Level of Service (LOS) from a multimodal perspective.

This initiative was motivated by several factors. The federal government enacted the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21). These acts reflect a national desire to know levels of service for transit users, pedestrians, bicyclists as well as automobile users. Also, the Florida Legislature enacted HB 17 which directed FDOT to develop multimodal assessment tools and implementation methodologies to assist local governments in measuring LOS for automobiles, bicycles, pedestrians, transit, and trucks.

To meet these requirements, FDOT conducted research to quantify LOS from the point of view of the user for each transportation mode and developed improved LOS models for each mode. This information was incorporated into the 2002 QLOS handbook and ARTPLAN. Researchers also identified additional areas to study. These included bicycle and pedestrian LOS model sensitivity as applied to arterials with high levels of motor vehicle traffic. Researchers also identified a need for recommendations concerning the application and implementation of the models into current FDOT multimodal planning tools used by practitioners.

Researchers found that while existing LOS models lack some sensitivity, especially for bicycle and pedestrians, they are effective in depicting the quality of the bicycle and pedestrian environment from the user's perspective, and recommend the bicycle segment model should be revised



Transit users in Orlando

to address low truck volumes. They found that more research was necessary on balancing safety, comfort and convenience of all users of the facility rather than the present emphasis on capacity needs for motor vehicles.

To achieve successful implementation, researchers recommend training for practicing engineers and planners in the use and application of the models at both the planning and design levels. The models could be incorporated into scopes for both Project Development and Environmental Study (PD&E), and construction projects and a best practices manual for multimodal LOS model use should be developed.

Overall the researchers found that the models held up well and that only minor modifications were necessary. FDOT has submitted the results of this research to the Transportation Review Board and has recommended that the bicycle segment model to address low truck volumes be included in the update of 2010 Highway Capacity Manual.

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For more information, visit <http://www.dot.state.fl.us/research-center>