

UTC Project Information	
Project Title	Evaluation of Bus Transit Reliability in the District of Columbia (Former title: The Reliability of Bus Transit Schedule in Washington DC)
University	Howard University Mineta National Transit Research Consortium
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Funding Source(s) and Amounts Provided (by each agency or organization)	Research and Innovative Technology Administration University Transportation Centers Program (\$100,000) Howard University (\$73,000)
Total Project Cost	\$173,000
Agency ID or Contract Number	DTRT12-G-UTC21
Start and End Dates	January 2012 – November 2013
Brief Description of Research Project	Several performance metrics can be used to assess the reliability of a transit system. These include on-time arrivals, travel-time adherence, run-time adherence, and customer satisfaction, among others. On-time arrival at bus stops is one of the performance metrics of the Washington Metropolitan Transit Authority (WMATA). A bus is considered to be on time by WMATA if it arrives at most two minutes earlier or seven minutes later than the scheduled arrival times, with a performance goal of 78%. Most regional transit agencies consider arrivals that fall within one minute earlier or five minutes later than the scheduled arrival times as being on time. The goal of this project was to determine the on-time performance and their statistical significance based on WMATA's advertised threshold and the industry standard for on-time arrivals. Fifteen bus routes in Washington DC with several stops were studied in this research. WMATA's published bus schedules provided expected arrival times. An on-board manual survey was conducted from June 2012 through June 2013 for peak morning and afternoon travel on those routes during which the actual arrival times at the bus stops were noted and compared with the scheduled arrival times. For WMATA's two-minutes-early and seven-minutes-late arrival threshold, the buses were found to be on time approximately 82% of the time, on average, during the morning. In the evening, for the same threshold, only 68% of the buses on average were

considered to be on time. This results in an overall on-time performance of 75%, which is a modest improvement over the 2010 on-time performance of 74%. Based on the one-minute-early and five-minutes-late arrival threshold used by several regional transit agencies, the buses were found to be on time approximately 67% of the time during the morning and 55% in the evening, resulting in an overall performance of 61%.

Describe Implementation of Research Outcomes (or why not implemented)

A paper from this research has been published in the International Journal of Traffic and Transportation Engineering:

Stephen A. Arhin, Errol C. Noel, Olaoluwa Dairo, Bus Stop On-Time Arrival Performance and Criteria in a Dense Urban Area, *International Journal of Traffic and Transportation Engineering*, Vol. 3 No. 6, 2014, pp. 233-238.

url: <http://article.sapub.org/10.5923.j.ijtte.20140306.01.html>

Place Any Photos Here



Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links <ul style="list-style-type: none">• Reports• Project Website	Final report (MNTRC Website): http://transweb.sjsu.edu/project/1139.html Final report (TRB Website): http://trid.trb.org/view/2013/M/1290326