Project #	RES2013-45
Project Title	TDOT Vehicle Probe Based Real-Time Travel Information Study
Purpose	To better serve the motoring public and provide reliable travel information, TDOT needs accurate real-time travel time/speed data with good geographical coverage. This study examines the accuracy of a number of real-time travel data from probe vehicles (INRIX and NAVTEQ), currently deployed ITS infrastructure (TDOT's SmartWay detector stations), emerging technologies (Bluetooth), Internet data sources (Google Map), and ALPR-based license plate tracking technology developed at the University of Tennessee (UT). The results will help TDOT as well as other agencies to make technology investment decisions in the future.
Scope/Significance	Typically, travel time and travel speed data are challenging to obtain and even more difficult to evaluate because the lack of ground truth. This study uses license plates to automatically track vehicles in all lanes at different locations to establish the actual travel time and, hence, travel speed of each tracked vehicle to obtain a set of very accurate ground truth. Multiple sites were selected based on the existing TDOT SmartWay detector station locations and the availability of probe vehicle data. All data are collected in the field when the study sites are. Link based travel data, from probe vehicles and Bluetooth, as well as lane based data, from SmartWay stations and license plate tracking are collected and used for comparisons. This is an important study also because TDOT is required to provide real-time travel information in compliance to SAFETEA-LU. The selection of the data source(s) of best quality and best value is based on this study.
Outcomes	Multi-source concurrent real-time data were collected at study sites in Nashville, TN. Subsequent analyses suggest NAVTEQ data out-performing the other probe vehicle data in accuracy and value. TDOT's SmartWay data are most accurate for the fast lane traffic. Internet data for the study site and study duration did not compare favorably. Detailed results of this study are published in the form of two *Transportation Research Record* papers by TRB in 2016.
Time/Status	The study began in fall 2013 and has completed in early 2015.
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