



Florida Department of Transportation Research Comparison of Methods for Measuring Travel Time at Florida Free- ways and Arterials BDV32-977-02

Travel time is an important measure of a highway's efficiency. A driver's travel time expectation is a major reason one route is chosen over another. However, from a traffic operations point of view, accurately measuring travel time is not straightforward, and many methods are used with varying results.

In this project, University of Florida researchers collected field data along several highways to evaluate travel time measurements from several sources: STEWARD, BlueTOAD, INRIX, and HERE. STEWARD (Statewide Transportation Engineering Warehouse for Archived Regional Data) is a central repository maintained by the Florida Department of Transportation (FDOT), which collects data from FDOT Traffic Management Centers. STEWARD's flow and speed data can provide travel times based on spot measurements. BlueTOAD (Bluetooth Travel-time Origination and Destination) is technology that detects anonymous Bluetooth signals from passing vehicles; detection of the same signal by two widely spaced BlueTOAD units can be used to obtain travel times. INRIX is a company that collects traffic information worldwide as the basis for a number of applications related to road travel; INRIX can provide real-time or archived travel time data. HERE, formerly NAVTEQ, is a product of the communications company Nokia; HERE brings together a number of mapping services, including data collection services. HERE data include real-time data from GPS, smart phones, and consumer and commercial sources, using proprietary methods to derive information, including travel times.

In previous work, the researchers had developed a number of models related to travel time. In this work, they looked at travel time data more broadly, collecting data in the field and comparing it with data from the sources already listed and with model data. Through various analyses, the accuracy of the various methods and sources was evaluated.



Travel time is an important measure of the operational quality of a highway.

Any project that collects data from various sources must make significant efforts to make sure that data can be reasonably compared. For example, to be directly comparable, data had to be drawn from the same highway segments in similar timeframes – time of day, year, etc. Data were collected on both urban freeways and arterials. Collection locations were determined by identifying overlapping sections from the various travel time data sources. The researchers focused on heavily traveled corridors in Jacksonville and Tampa.

In field work, travel times were collected using an instrumented vehicle owned by the University of Florida Transportation Institute (UFTI). The vehicles were equipped with a mobile digital recording system which uses forward- and rear-facing cameras to capture video of both traffic and highway features. A portable GPS receiver documented travel routes and times.

Travel time analysis is critical in evaluating the efficiency of existing highways and as a basis for planning. Projects like this one provide a more reliable basis for those efforts and help to ensure that Florida's highways will keep up with Florida's growth.