

NEW METHODS AND TECHNOLOGIES FOR COLLECTING ORIGIN-DESTINATION DATA

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Data and information on the origin and destination of travel and human activity is a core component in transportation planning and modeling. Origin-destination (O-D) data are needed and used in a wide variety of transportation planning studies such as external surveys, household surveys, corridor studies, freight movement studies, and studies on long distance travel and population flows.

The methods used to collect O-D data have been changing and evolving over about the past decade. Over the past 6 to 8 years, new technology methods such as Bluetooth (BT), cellular data mining, and analysis of secondary GPS data have emerged as new methods for collecting and/or capturing O-D data. During this time, a considerable amount research and studies have been conducted using these new methods to collect and estimate O-D data for various types of studies. More recently, the use of Wi-Fi technology is now also being studied as a possible source to obtain O-D data.

The purpose of this paper/presentation is to provide an overview of the state-of-the-practice in new technology and methods to collect and develop O-D data for transportation planning and modeling purposes. The work will provide insights and guidance to public and private agencies considering purchasing and using this data for surveys, studies, and policy analyses. The synopsis will include the following.

- The capabilities and limitations of cellular, private sector GPS, and BT O&D data considering each technology's positional accuracy, sampling/ping frequency and continuity, and penetration/saturation.
- The suitability of new/emerging methods/technologies in relation to different types of studies or travel data needs such as external O-D surveys, corridor studies, and long distance travel.
- How trips and trip ends are estimated and defined in each technology and measures or processes used to anonymize data to retain confidentiality.

The paper/presentation will also include summary results, insights, and lessons learned from the latest research in this area, from various O-D studies across the country that have used new technology, and from field studies conducted by TTI designed to compare the results between these new technologies.