



RESEARCH PROJECT CAPSULE [16-4SA]

July 2016

TECHNOLOGY TRANSFER PROGRAM

Pedestrians and Bicyclists Count: Developing a Statewide Multimodal Count Program

JUST THE FACTS:

Start Date:
July 1, 2016

Duration:
18 months

End Date:
December 31, 2017

Funding:
SPR: TT-Fed/TT-Reg

Principal Investigator:
Tara M. Tolford, MURP, AICP
Research Associate II
University of New Orleans
Transportation Institute

Administrative Contact:
Tyson Rupnow, Ph.D., P.E.
Associate Director, Research
225-767-9124

Technical Contact:
Elisabeta Mitran, Ph.D.
Research & Technical Assistance Manager
225-767-9129

Louisiana Transportation
Research Center
4101 Gourrier Ave
Baton Rouge, LA 70808

Sponsored jointly by the Louisiana
Department of Transportation and
Development and Louisiana State
University

POINTS OF INTEREST:

*Problem Addressed / Objective of
Research / Methodology Used
Implementation Potential*

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PROBLEM

Government agencies at all levels nationwide are increasingly interested in adopting a “complete streets” approach to infrastructure development by implementing or upgrading facilities for walking, bicycling, and transit use. The complete streets approach represents a substantive shift in how infrastructure is planned, constructed, and evaluated. Evaluation of the efficacy of these investments and planning and prioritizing future investments requires new and innovative approaches to data collection and analysis in order to effectively measure infrastructure demand and performance for all user groups, including pedestrians and bicyclists.

A critical component of such performance measures is the measurement of active transportation demand. Understanding how many people are traveling on foot or by bicycle on Louisiana’s roadways is critical to evaluating safety outcomes relative to rates of exposure, identifying appropriate context-sensitive complete streets infrastructure interventions, and understanding overall statewide and location-specific transportation trends that will impact long-range planning and investment.

Methods of collecting this data vary, and few states have developed coordinated statewide active transportation count programs in support of policy implementation and benchmarking. This study will identify opportunities to address existing gaps in the availability of data pertaining to pedestrian and bicycle activity, provide a methodological foundation for developing an efficient and effective program based on best practices, and advance the state’s complete streets policy implementation and performance measurement efforts, as directed by the state legislature.

OBJECTIVE

The purpose of this study is to research best practices and available methods/ technologies for measuring active transportation activity in order to provide the Louisiana Department of Transportation and Development (DOTD) with needed information in support of the development of an efficient, cost-effective pedestrian and bicycle count program. Specifically, the objectives of this study are: to research established and emerging methodologies for counting pedestrians and bicycles and identify best practices for statewide count programs, to evaluate available count technology equipment options and identify preferred alternatives suitable for statewide deployment, and identify potential funding sources for the implementation of a multimodal count program and opportunities to integrate active transportation counts into existing vehicular count programs.

METHODOLOGY

After conducting a comprehensive review of academic and applied literature pertaining to pedestrian and bicycle data collection and benchmarking, with focus on techniques for using count data to evaluate exposure rates and safety outcomes, the research team will perform a comparative analysis of manual and automated count methodologies.

Various electronic sensing devices (infrared, pneumatic, inductive-loop, etc.) will be evaluated. Evaluation of methods for collecting count data using video cameras will also be conducted, including a review of methodologies for capturing bicycles and pedestrians with video and an investigation into potential opportunities for using archived video for short-term counts.

The research team will consider how existing pedestrian and bicycle count programs are funded, and may identify additional funding sources such as requiring these counts from developers/local governments prior to granting access to state highways or integrating these counts with existing vehicular counting programs and traffic impact assessments.

In a final task prior to publication of a final report, the research team will develop and pilot a proposed methodology for measuring the impacts of complete streets-oriented infrastructure interventions on safety outcomes. A case study will be conducted using data from the New Orleans Regional Planning Commission's Bicycle and Pedestrian Program with new data collected as needed. Infrared and pneumatic tube sensors will be utilized, with additional technologies being pilot tested for suitability based on equipment cost and analysis findings.

For more information about LTRC's research program,
please visit our website at www.ltrc.lsu.edu.

IMPLEMENTATION POTENTIAL

There is a lack of clear consensus on preferred methods for non-motorized data collection in general, and an absence of data pertaining to the development of statewide multimodal monitoring programs in particular. This study will add to the emerging body of literature, synthesizing research findings, and providing practical tools for DOTD and other jurisdictions to support planning and data collection efforts.



*EcoMulti Infrared sensor and Loop Detector on the Jefferson Davis Parkway Trail, New Orleans
Photo Credit: Tara Tolford (2014)*



*EcoTubes Pneumatic Bicycle Counter on Baronne Street, New Orleans
Photo Credit: Tara Tolford (2015)*



*EcoTwin Infrared Sensor on Lafitte Greenway, New Orleans
Photo Credit: Tara Tolford (2016)*