

CTS Research Brief 2011-02

Nonmotorized Transportation Pilot Program

Community-Wide Evaluation Study

Study Overview

The Nonmotorized Transportation Pilot Program (NTPP) is a congressionally mandated program (SAFETEA-LU Section 1807) that, since 2006, has provided roughly \$25 million each to four communities—Columbia, Missouri; Marin County, California; Minneapolis area, Minnesota; Sheboygan County, Wisconsin—to spur levels of walking and cycling via a variety of planning measures and enhanced conditions.

To evaluate impacts of the program, two community-wide surveys were conducted before (phase 1: 2006) and after (phase 2: 2010) the duration of the NTPP in each of the four pilot communities. Surveys were also administered in Spokane, Washington, which aimed to serve as a control community. The main goal of the evaluation component was to assess increases in the use of nonmotorized travel, in addition to several other aspects potentially affected by the investments. Further, the U.S. Congress requested a valuation of benefits resulting from walking and bicycling, in particular in terms of emission reduction, fuel savings, and health benefits, among others.

CTS led the community-wide evaluation study. Other NTPP team members conducted additional evaluations for individual projects; those results are described elsewhere.

Methodology

The survey in phase 1 consisted of a short mail-out questionnaire and a computer-assisted telephone interview (CATI) with respondents to the short questionnaire. In phase 2, the short questionnaire was integrated in the CATI and efforts were focused on directly recruiting participants for the full survey.

The final sample in phase 1 consisted of 1279 complete records, and in phase 2, 1807 complete records.

The surveys addressed a wide range of transportation-related questions and consisted of 54 variables in total. Distance traveled by trips of particular modes—a crucial variable for benefit calculations—was assessed by asking participants for origin and destination of a single reference



trip for each respondent (driving, transit, walking, cycling). To collect equal amounts of information on reference trips for each mode, sampling strategies and hierarchies were applied to assure sufficient records for each, in particular the less frequent modes such as transit and cycling.

Statistical analysis focused on evaluating differences of nonmotorized travel between the core variables measured in phase 1 and phase 2. Sampling weights were applied to adjust for the oversampling of rare modes.

Findings

The detailed analysis did not reveal any consistent or statistically significant differences between phase 1 and phase 2. It is important to point out that the inability to detect significant patterns of change is not synonymous to no change occurring. The report discusses some of the factors that make this type of research challenging.

The evaluation of a possible impact of the NTPP was difficult for a combination of reasons, some of which are specific to the design of the program and others inherent to analyses of changes in (travel) behavior over time.

Elements of NTPP's design—the short evaluation period, the selection of diverse communities and projects, and the



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relatively limited resources allocated to data collection and evaluation—have been most challenging to a successful scientific evaluation. This evaluation also revealed that without the availability of routinely collected key data on nonmotorized travel behavior—in particular, traffic counts—intervention evaluations of changes over time (such as this one) pose a scientific challenge too difficult to tackle with the typically available resources for this type of project.

Evaluating interventions that consist mainly of infrastructure projects aiming to target behaviors that are difficult to measure in the first place (such as walking and cycling) is an inherently challenging endeavor. The infrastructure projects require rigid planning, significant allocation of funds, and time to mature to be successful.

Notwithstanding the null-findings presented in this analysis, there are a number of lessons to be learned from this evaluation effort.

Lessons Learned

- Impacts of nonmotorized transportation (NMT) interventions are difficult to demonstrate scientifically unless adequate means, resources, and time are allocated. In particular, pre–post evaluations that employ probability-based samples are extremely challenging without the availability of routinely collected data, such as regularly conducted household travel surveys and traffic counts.
- Political and administrative considerations in the planning stage of a pilot program may not always underscore the importance of scientific evaluation. It is therefore suggested that a platform for robust evaluation be considered a critical part of the planning process for such projects from their conception.
- Scientific evaluation of the effectiveness of pilot programs requires adequate resources and evaluation, and it is important that such resources be considered in the planning process from the onset of such a program.
- Scientific evidence on the effectiveness of NMT interventions is growing rapidly. Before engaging in evaluation efforts, it is highly advisable to consider existing evidence to avoid unnecessary replication of efforts.
- The scientific community is advised to invest in the development of data-collection and evaluation methodologies that are practice-friendly, cost-effective, and robust.

- The federal government should seek an active role in advancing and coordinating routine data-collection efforts for NMT to track and evaluate performance of NMT nationwide, as is the case for other modes.

About the Research

The community-wide evaluation study was funded by the Federal Highway Administration (FHWA) under the Nonmotorized Transportation Pilot Program (NTPP).

The study was conducted by a CTS-led team that included Laurie McGinnis, director of CTS, as principal investigator, and Kevin J. Krizek, associate professor at the University of Colorado (formerly with the Hubert H. Humphrey School of Public Affairs at the University of Minnesota), as co-investigator.

Phase 1 was conducted by Krizek, Gary Barnes and Ryan Wilson of the Humphrey School, and former CTS director Robert Johns, with contributions from Ann Forsyth of the Metropolitan Design Center, University of Minnesota; Susan L. Handy, Institute of Transportation Studies, University of California, Davis; and Kelly J. Clifton, National Center for Smart Growth, University of Maryland.

Phase 2 was conducted by Krizek and Thomas Götschi, Institute of Social and Preventive Medicine at the University of Zurich.

The final report—*Nonmotorized Transportation Pilot Program Evaluation Study*—is available for download at www.cts.umn.edu/Publications/ResearchReports.

This study supported FHWA's submission of a final report to the United States Congress, which focuses on changes that took place over a four-year period and describes lessons learned.