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Research Results

Smart Travel Choices - Field Operational Tests

Investigate approaches to encourage and enable travelers to make choice decisions to select a mode or the time of commute in order to avoid peak-hour travel.

Modal

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Project Title:
Field Operational Test of Tools for Facilitating Smart Travel Choices Through Real-Time Information

Task Number: 2461

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Task Manager:
Nathan Loebs,
Transportation Engineer Electrical
nathan.loebs@dot.ca.gov

WHAT WAS THE NEED?

Despite the substantial improvements made through infrastructure upgrades and various congestion mitigation efforts, congestion on highways in metropolitan areas persists, costing travel time, fuel and money, hindering economic development, and negatively impacting the environment. On-going highway improvements and traffic management through deployment of intelligent transportation systems (ITS) technologies have improved services on existing roads. However, congestion persists because traffic demand in almost all metropolitan areas approaches or exceeds the available capacities of the highway systems. An alternative to continuously building highway capacity is to manage travel demand to reduce congestion.

WHAT WAS OUR GOAL?

The goal of the Smart Travel Choice (STC) project is to investigate approaches to encourage and enable travelers to make choice decisions to select a mode or the time of commute in order to avoid peak-hour travel, which subsequently would help to reduce traffic congestion, energy use and emissions, by reducing the number of single occupancy vehicles on highways.

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Integrated multimodal real-time traveler information effect on travelers' choices.

Research Results

WHAT DID WE DO?

- The project team has worked with the project sponsor, the California Department of Transportation (Caltrans), to analyze potential field operational sites and selected the metropolitan Los Angeles area because of the larger community of travelers, the availability of parallel transportation networks and the feasibility of measuring the effectiveness of how integrated multimodal traveler information may affect travelers' perception of transit service and encourage mode shift.
- The project team developed and implemented 'Trip2Go' – a multimodal traveler information system for the Los Angeles region. Trip2Go integrates a suite of mobile-phone-based and web-based applications to provide travelers with real-time, multimodal traveler information.
- With support of LACMTA and other stakeholder agencies in LA County, the project team conducted four rounds of recruitment for a field operational test (FOT) of Trip2go between February 2015 and September 2015, a total of three hundred sixteen people signed up to volunteer for the field test.
- Among these volunteers, sixty-five travelers participated in the entry survey and were invited to participate in the FOT. Thirty-seven users finished at least one daily survey. Eighteen volunteers completed at least ten trips. Among all participants, one thousand one hundred thirty five full trip activities were recorded.
- A statistical and quantitative evaluation was conducted to assess the usability and performance of the Trip2go system, the effectiveness of real-time multimodal information on travelers' behavior for improvement of travelers' perception of transit service and the likelihood of such information for encouraging mode shift.
- Daily surveys were also administered with each volunteer during the course of the field test period and added with more comprehensive surveys at the beginning and the conclusion of the field test.

WHAT WAS THE OUTCOME?

The results show that information provided to users by Trip2go has influenced their trip decisions. Particularly, nearly 40% of travelers changed their plans for non-commute trips after consulting with Trip2go, among which 50% of the changed trips involved a different travel mode. For commute trips, we found that real-time information has a larger influence on driving travelers adjusting their routes and departure time, and has more influence on the departure time for transit users. Survey results show that less than 20% of commuter trips are likely influenced by real-time information and most of the changes involve time and route adjustments as opposed to mode change. Only four of 327 trips changed mode from transit to driving. Of those involving time change (earlier or later by at least 15 minutes), 37% driving, 15% carpool, and 42% transit.

WHAT IS THE BENEFIT?

From the analysis of survey responses and model estimations, we may draw the conclusion that real-time information may change travelers' travel behavior by advising them to avoid incidental traffic congestion, subsequently helping to improve overall traffic flow conditions.

LEARN MORE

http://thesource.metro.net/2015/03/18/beta-testers-needed-for-new-commuter-app-trip2go/

http://www.dot.ca.gov/research/researchreports/reports/2015/CA15-2461_FinalReport.pdf

IMAGES

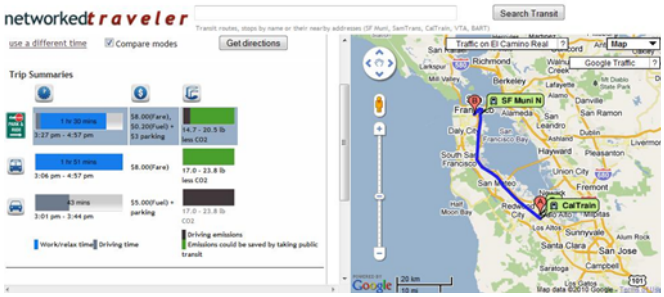

Image 1: Integrated multimodal traveler information user interface.

Image 2: Screenshot of comparison for recommended travel options by mode of travel