DRISI

Caltrans Division of Research, Innovation and System Information

Research Results

Improving Planning for Airport Ground Access Projects

The Intermodal Airport Ground Access Planning Tool promotes a consistent method to analyze projects for airport ground access

Modal

DECEMBER 2013

Project Title:
A Combined Quantitative and Qualitative Approach to Planning for Improved Intermodal Connectivity at California Airports, Phase II

Task Number: 1910

Start Date: June 15, 2011

Completion Date: May 15, 2013

Product Category: New decision support tool, model, and algorithm (software)

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WHAT WAS THE NEED?

Transportation to and from airports encompasses a wide range of modes—private vehicles, taxis, shared-ride vans, rental cars, public transit, and scheduled airport bus services—and many of these modes are not represented in regional travel demand models. Airport ground access projects are equally diverse, ranging from extending urban rail systems, such as the Bay Area Rapid Transit (BART) extension to the San Francisco International Airport, building automated people-mover links to nearby rail stations, such as the elevated Oakland Airport Connector, to expanding airport access roadways and parking facilities. Caltrans, airport authorities, and regional transportation planning agencies need an efficient and consistent method to simplify and standardize the process of analyzing airport ground access projects for effective decision-making regarding selection and funding.

WHAT WAS OUR GOAL?

The goal was to develop a user-friendly planning tool that provides a transparent and consistent approach to planning and analyzing airport ground access projects.

Oakland Airport Connector—an automated people-mover link from the BART Coliseum/ Oakland Airport station
Source: bart.gov

Caltrans

DRISI provides solutions and knowledge that improve California's transportation system.

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WHAT DID WE DO?

Caltrans, in partnership with the University of California, Berkeley Partners for Advanced Transportation Technology (PATH) program, developed the Intermodal Airport Planning Tool (IAPT), which allows planners to define multiple projects and project variants, predict changes in mode use from intermodal airport ground access projects, and compare their performance in terms of passenger trips by mode, vehicle miles of travel, and air quality emissions. The core of the IAPT is a model that typifies airport ground access mode choice by air passengers. The IAPT provides an intuitive user interface to perform the analysis and manage the large amount of data required. Users can select the airports to include in the analysis and specify projects at each airport. To analyze a project, users can view how the choice of access mode changes based on the service levels of different modes, such as transit fares, driving costs, and travel time. This mode choice model can be customized for different airports or regions.

The resulting data can be exported in a comma-separated value format and opened in spreadsheet or database management programs for further analysis or incorporation in reports. Project definitions and other data entered by the user are stored as text files so that they can be used in other applications.

IAPT helps transit agencies plan and analyze airport ground access projects.

WHAT WAS THE OUTCOME?

The IAPT facilitates managing the extensive data required for analysis. Different projects and scenarios across airports can be compared and assessed how they can potentially impact traffic as part of regional airport system planning. The IAPT, which runs on Microsoft Windows XP and Windows 7, is available to airport authorities, transportation planning agencies, consulting firms, and other interested parties. It includes test data and mode choice model specification files for the San Francisco Bay Area with which users can test the software.

WHAT IS THE BENEFIT?

The IAPT reduces the work involved in analyzing airport ground access projects, allowing more project scenarios to be evaluated. It provides more consistent and systematic analysis of different projects, leading to better project design and selection decisions. The tool is available to encourage use by planning agencies.

LEARN MORE

To view the complete report:
www.dot.ca.gov/research/researchreports/reports/2013/final_report_65a0421_task_1910.pdf