

# **NATIONAL SMART TRANSPORTATION ARCHIVE RESEARCHER**

## **BACKGROUND**

At the 2004 Transportation Research Board meeting, the Association for Commuter Transportation (ACT) identified as its top need the collection of data and case studies reflecting the effectiveness of transportation demand management (TDM) strategies. There existed neither a central source to find reliable information nor a shared systematic way for transportation planning professionals to document baseline conditions and report results of trip reduction programs.

The Florida Department of Transportation had worked with Urbantrans, a Colorado-based consulting firm, and the USF Center for Urban Transportation Research (CUTR), to develop the Florida Smart Transportation Archive Researcher (FSTAR), a case study archive for the state of Florida. However, more case studies were needed, in addition to a means for making the information available to practitioners in Florida and nationwide.

## **OBJECTIVES**

Specific objectives of this research included the following:

- Review the FSTAR system design and available literature to locate sources of case study information and to evaluate alternatives for computer systems, designs used in transportation-related case study databases, and options for graphical user interfaces that are easy to search.
- Classify and organize case study data against performance criteria to determine which case studies are most valuable, and seek input from expert peer reviewers.
- Develop the database system and graphical user interface, recruit case study information, and enter the data into the database.
- Conduct extensive interviews with representatives of the top performing selected work site trip reduction programs (up to 12) and prepare detailed case studies. Prepare a Best Practices report, and disseminate findings through net-conferencing and professional conferences.

## **FINDINGS AND CONCLUSIONS**

Researchers evaluated several possibilities for making the TDM case studies available online. Licensing issues and start-up/maintenance costs rendered some options infeasible (e.g., customized software solutions). The most practical and cost-effective solution was to utilize HelpDesk, a self-serve technical assistance support website that provides

- extensive search, browse, and display capabilities to accommodate different levels of users
- subject-related information and an option to be notified when data is updated
- question and answer capabilities (questions are answered by the Clearinghouse and incorporated into the database, making the TDM Case Studies Database customer-driven and up-to-date)
- the ability for users to rank case studies by usefulness and provide feedback
- the capacity to generate usage statistics that can be used to monitor and improve the system

Case studies are organized by the categories with which users are most familiar: the North American Industry Classification System is the basis for categories and sub-categories. Case studies were actively recruited through Florida's transportation management associations and commuter assistance programs. The system was populated with case studies from the Washington State Department of Transportation Commute Trip Reduction Program, the Association for Commuter Transportation, the Environmental Protection Agency's Best Workplaces for Commuters, the Federal Highway Administration, South Florida Commuter Services, and the United Kingdom Department of Transport. All of the case studies in the database provide a high level of detail, especially the 56 case studies from Washington state, which provide baseline and performance data covering a period of ten years to enable trend analysis.

Researchers identified twelve top-performing programs and interviewed the employee transportation coordinators at each, in addition to gathering additional information to perform a detailed study of the influence of both internal and external conditions upon the performance of work site trip reduction programs. The study showed that external conditions (outside the work site's control) generally have a more significant affect on a worksite trip reduction program than do internal conditions (within the work site's control) in a policy environment of voluntary program participation. However, internal work site conditions can overcome adverse or unsupportive external conditions if the program is explicitly supported by work site management and the nature of the business supports program success.

The most influential internal factors include the following.

- The nature of the work of the organization that is implementing a commute trip reduction program does not restrict employees from using alternative modes.
- Presence of moderate and lower wage employees seeking transportation cost savings.
- Top and middle management support, especially for alternative transportation subsidies.
- Limited on-site parking.

## **BENEFITS**

The database developed through this research is intended to increase the adoption of TDM strategies by employers and localities by providing employers with useful data on successful TDM programs at other similar employment sites. It contains more than 100 detailed case studies that indicate that properly conceived and implemented work site commute trip reduction programs can reduce vehicle miles traveled and single occupant vehicle mode share. The case studies, online at <http://www.nctr.usf.edu/clearinghouse/>, provide reliable information useful for crafting new trip reduction programs and increasing the effectiveness of existing programs. The database is easily searchable and updatable. New case studies will be added and existing case studies will be updated periodically. The adoption and improvement of trip reduction programs will ultimately increase benefits to businesses, commuters, and communities by helping to reduce traffic congestion and emissions.

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