



Transit



Multi-Modal Trip Planning System: Northeastern Illinois Regional Transportation Authority

Final Report

Background

In 2004, the Federal Transit Administration entered into a Cooperative Agreement with the Northeastern Illinois Regional Transportation Authority (RTA) to develop and operationally test a Multi-Modal Trip Planning System (MMTPS.) RTA is the third-largest public transportation system in North America, providing more than two million rides per day. Its system covers 7,200 route miles in the 6-county region that includes the greater Chicago metropolitan area and covers a population of more than 8 million. RTA serves as a financial and budgetary oversight agency for three separate public transit agencies in the region (CTA, Metra, and Pace), fulfills a regional planning role, and sometimes initiates regional technology initiatives such as the MMTPS.

Objectives

The project included several functional objectives for the MMTPS:

- Provides door-to-door travel options with transit treated as a single system regardless of how many separate agencies provide service for a given trip.
- Includes at least transit, driving, walking (e.g., walking to transit), and multi-modal travel (e.g., driving to transit) as options, but may also include options for bicycling, carpooling, intercity bus/rail transportation, or other modes.
- Includes parking information where applicable.
- Incorporates accessibility information and features of the transportation network (e.g., street types, pedestrian signals, curb cuts, accessible transit locations) and accommodates customer preferences and constraints (e.g., minimum walking distance, fastest trip, rail only, accessible features and locations).
- Uses historical or real-time data/information on travel times to enable travel choices throughout the metropolitan region based on typical or real-time transit and driving travel conditions.
- Uses historical or real-time driving data/information to recommend a route for an auto trip and to compute the estimated travel time.
- Uses schedule travel time data on transit routes to compute the estimated travel time for a transit trip; incorporates real-time information on transit incidents and delays, and provides alerts of these incidents and delays and/or uses this information in the recommendation of routes and estimation of travel times.

FTA further envisioned that Intelligent Transportation Systems (ITS) standards would be used by the MMTPS for data exchange between system components.

Findings and Conclusions

RTA's MMTPS allows users to view the systems of three distinct transit agencies as a seamless unified transit system.

After seven years, the original functionality envisioned for the MMTPS system was ultimately achieved or surpassed. The system is serving a large portion of the regional population and is likely having a positive effect on ridership. The tool allows users to view the systems of three distinct transit agencies as a seamless unified transit system. Users who might have been intimidated or discouraged from taking public transit because their routes involved complex bus/rail transfers or disconnected route maps and schedules may now feel more comfortable choosing public transit. Use of the system is substantial despite minimal marketing efforts. If RTA were to undertake some of the marketing activities it had considered in the past, usage levels and effects on ridership could increase even further.

As an operational test for the application of ITS/XML data exchange standards, the project did not satisfy its objectives. After significant analysis, RTA concluded that the cost of converting pre-existing systems to use largely incompatible ITS standards would have added more than \$1 million to the cost of the MMTPS. The project did show that the General Transit Feed Specifications (GTFS) data formats promoted by Google, Inc. and adopted by CTA could be successfully used for multi-agency transit system integration.

As a model for other transit agencies, the project offers a solution that is certainly viable but potentially too costly to justify. In theory, if another agency reused the system integration efforts of RTA as a starting point, the project could be reproduced on a much shorter timeline and much smaller budget. But the RTA solution was dependent on the pre-existing Illinois Transit Hub database, which had its own costs outside of the MMTPS project budget.

The MMTPS can be accessed at www.goroo.com.

Benefits

RTA's MMTPS is the only all-modal trip planner that serves the entire region, and it may be the only system in the U.S. that nearly matches the original functional objectives envisioned by FTA. The RTA MMTPS will continue to serve the Northeast Illinois region and promote increased ridership by making the multi-agency transit system more approachable and easier to use.

Project Information

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