Statewide Demand-Responsive Software Project

Executive Summary

Based on several public transportation and coordination research projects by David Kack of the Western Transportation Institute (WTI), it became apparent that many demand-responsive transit providers in Montana have inadequate software for tracking and managing their operations. Reports which could be automated are done by hand, in some instances taking up to nearly 40 percent of a dispatcher's or scheduler's day. Further, software would allow analysis of data to measure the effectiveness and efficiency of transit operations.

While off-the-shelf software exists, it often costs at least $40,000 to obtain such software. Small transportation providers in Montana and other rural states would typically rather invest in vehicles than technology. However, several studies have shown the benefits obtained by utilizing technology.

The Western Transportation Institute began a project to build a basic software program that could be used by smaller transit agencies around the state. The software was developed based on the needs identified from other research projects, and input from GALAVAN, an FTA Section 5310 provider operating in the greater Bozeman area.

GALAVAN became the initial test site for the CARDS© software which was developed by WTI. When creating the Computer-Aided Reporting, Dispatching and Scheduling (CARDS©) software, the goal was to produce a "user friendly" software system for demand-responsive transportation providers. The CARDS program has many advantages over older, DOS based systems, including:

- A user-friendly interface
- Databases to manage client and destination information
- The ability to track client types and trip purposes
- The capability to instantly print utilization and other reports

CARDS© employs user-friendly interfaces to make the job of scheduling rides easier for the organization's staff (Figure 1 and Figure 2).

Figure 1: Client Information Screen

Figure 1 shows the "Update an existing client" screen used to update a client's permanent information. This interface allows dispatchers/schedulers easy access to a client's personal information.

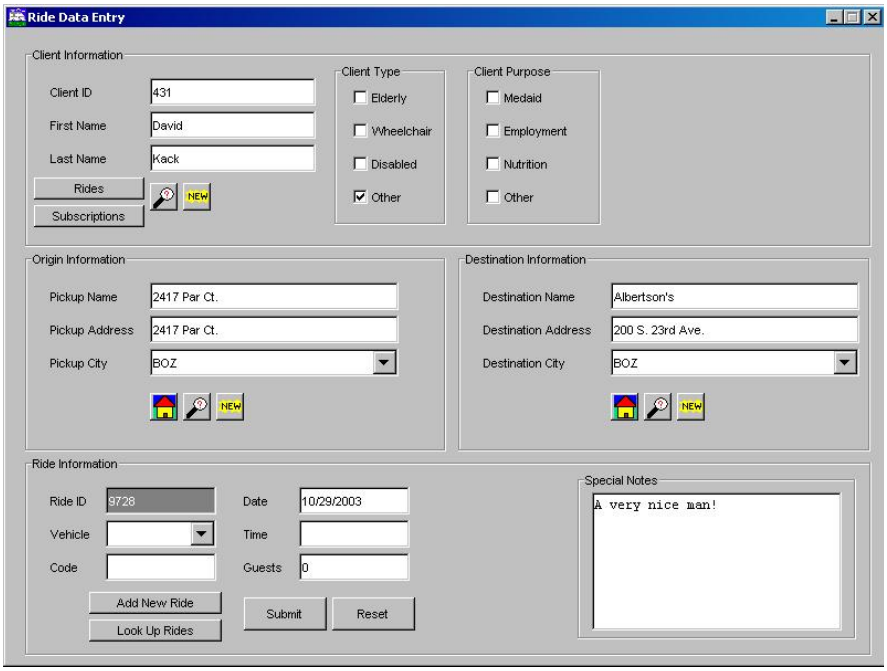

Figure 2: Ride Entry Screen

The Ride Entry screen allows dispatchers and schedulers to quickly process a customer's trip request. Auto text fill-in capabilities, along with "hot keys" allow the ride request to be completed with minimal effort.

After several revisions to the software based on the GALAVAN project, the Statewide Demand Responsive Software project was started to provide a one-year beta test using the CARDS software and two or three transportation providers recruited as partners. Those participating in the software test would recommend changes to the software the user believed would improve the flow, effectiveness, or efficiency of the software. It was anticipated that one revision to the software would occur during the beta test. Upon completion of the test, and after incorporating any final modifications based on input from the test sites, the CARDS© software would be provided to all applicable transit systems within the state.

As WTI prepared to implement the software at two test sites, we were informed the Montana Transit Association had developed similar software, and was marketing that software to its members. The Western Transportation Institute began discussions with the Montana Transit Association about integrating the two software packages into one system, therefore, providing one comprehensive system to all transportation providers in the state.

At the end of 2004, talks between the Western Transportation Institute and the Montana Transit Association continue on how to best develop a software solution which will aid the transportation providers in Montana. In addition, discussions (planning) have begun at both the Montana Department of Public Health and Human Services and the Montana Department of Transportation to develop a one-stop shop for transportation information within the state. These discussions may lead to further changes in developing a software system that could be used by all public and specialized transportation providers in Montana.

The ultimate goal of the Statewide Demand Responsive Software Project was to help transportation agencies utilize the power of technology to increase effectiveness and efficiency of their organization. This may be through the use of the CARDS© software developed by WTI, the software developed by the Montana Transit Association, or any new software which may be developed.

The Western Transportation Institute will continue to work with individual transportation agencies, along with state agencies to increase the effectiveness and efficiency of transportation providers in the state through the use of technology.