INVENTORY AND ANALYSIS OF ADVANCED PUBLIC TRANSPORTATION SYSTEMS IN FLORIDA

PROBLEM STATEMENT

One element of the U.S. Department of Transportation's initiative on Intelligent Transportation Systems (ITS) is the Federal Transit Administration's Advanced Public Transportation Systems (APTS) program. This program was established to encourage the use of technology to improve the quality and usefulness of public transportation and ridesharing services.

The 1999 Florida ITS Strategic Plan was developed to guide the Florida Department of Transportation (FDOT), Florida Metropolitan Planning Organizations, and local governments in the planning, programming, and implementation of integrated multi-modal ITS elements to help maximize the safety and efficiency of Florida's transportation system. A major provision of the ITS Strategic Plan called for the FDOT to proactively support the development, coordination, and deployment of public transportation ITS technology. However, it became apparent during the development of the Strategic Plan that there was no comprehensive information at the state level regarding the deployment and operability of APTS in Florida. This situation arose because much of the current APTS activity in Florida has been initiated and implemented at the local level. As a result, the FDOT retained the Center for Urban Transportation Research (CUTR) at the University of South Florida to develop and analyze an inventory of APTS in Florida for the purpose of establishing baseline information on APTS activities around the state.

OBJECTIVES

The primary task of this effort was to develop an inventory of current and planned Florida APTS projects based on the results of several surveys and stakeholder meetings and to compile the thoughts and comments of transit agency personnel and various statewide stakeholders regarding APTS in Florida. In addition, the project included two supplementary tasks related to the implementation of APTS technologies. The first task involved examining, through a literature review, ten of the major issues that transit properties around the country have encountered during the development and/or deployment phases of their projects and then analyzing the Florida properties' experiences with these issues based on their survey responses. The second task involved conducting an assessment of APTS benefits for a few selected transit agencies utilizing a benefits analysis spreadsheet tool (i.e., Screening Analysis for ITS, or SCRITS) and documenting the results of the assessments in order to provide an evaluation example for other agencies to follow as they continue to develop and deploy APTS technologies.

FINDINGS AND CONCLUSIONS

The results of the initial inventory survey found that many technologies were still in the planning stages for many of the transit agencies at the time of the survey. Automated paratransit and advanced communications systems were the most popular technologies, with fourteen transit agencies either in the planning, implementation, or fully operational stage. The findings of the follow-up survey indicated that the majority of the respondents expect a "very high" level of efficiency from APTS. In addition, funding was mentioned as the primary impediment to the deployment of APTS. The importance of funding to the successful implementation of APTS was echoed in many of the stakeholder meetings. Further, all of the stakeholders believe that APTS has the potential to improve transit operations.

The literature review revealed that the decision to utilize a particular APTS technology is only the first step of an extensive and often challenging process that runs from development to deployment, and finally, to the operation and maintenance of the chosen technology. Therefore, a lot of planning and forethought must go into the development and implementation of any APTS technology. Agencies considering the deployment of such technology first will want to understand a host of issues, including the National ITS Architecture (or any state or local architecture that has been established), institutional arrangements, stakeholder involvement, capital and operations funding options, procurement, awareness and involvement of public officials and the general public, regional service and system integration (e.g., transportation management centers), potential application for rural transportation purposes, and benefits analysis and performance measurement.

Finally, the overall benefits analysis process showed that SCRITS, despite its relative simplicity when compared to similar analysis tools, is still somewhat difficult to understand and use. This tool's other drawbacks are that (1) it is extremely limited with regard to the number of APTS-specific technologies it is designed to evaluate, and (2) it can estimate only the time-savings benefits that accrue to a transit agency's passengers, not any of the potential benefits that might be realized by the agency. Nevertheless, the SCRITS tool is readily available, free of charge, and a decided step in the right direction of establishing a standardized benefits analysis process that is easily transferable between systems, regardless of size or operating environment/characteristics. Additionally, SCRITS produces results that can be understood and compared across technologies and/or agencies.

The individual system analyses found that the majority of the APTS deployments at the case study systems have indeed benefited passengers of those agencies, in terms of annual time savings. The resulting benefit-to-cost ratios have been positive, as well. Unfortunately, the analyses also helped to identify at the systems a number of issues related to data collection and information availability, estimation of user inputs for the SCRITS analysis, lack of experience with APTS technologies, and comparability of analysis results across systems. Despite these issues, however, and based on the research experience with the case study transit systems, personnel at the systems appear to be aware of the importance of benefits assessment and measuring the performance of APTS technologies. They understand the need for establishing verifiable benefits related to APTS deployment so that this information can be used to help sell their systems' potential future APTS applications to their boards, local officials, and stakeholders. The ability to demonstrate positive performance of existing technologies will help in this regard, as well. In addition, the transit industry itself will be well served by the additional APTS evaluation information that will be available to be shared.

This research will provide FDOT with baseline information on APTS activities in Florida and will shed light on a number of policy, planning, and operational issues surrounding APTS. Knowledge of these issues will help FDOT to improve APTS planning, training, deployment, and coordination around the State.

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