

Transit Cooperative Research Program

RESEARCH RESULTS DIGEST

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Transit Operations for Individuals with Disabilities

A TCRP digest on the progress of [Project B-1](#), "Transit Operations for Individuals with Disabilities," prepared by Russell Thatcher, EG&G Dynatrend, Inc., Burlington, MA. The project will provide information on available options and enhancements that will allow transit providers to improve the effectiveness and efficiency of services to persons with disabilities.

INTRODUCTION

Passage of the Americans with Disabilities Act of 1990 (ADA) fundamentally changed the relationship between paratransit and fixed-route service. Paratransit is no longer considered a substitute for accessible fixed-route service--both are required. Paratransit is now a complementary service to be provided whenever fixed-route service is unable to or not appropriate to meet a customer's needs.

The ADA has also changed the way in which individuals are determined to be eligible for public paratransit service. Eligibility is no longer to be based solely on a person's particular disability or on the type of mobility aid that a person uses (e.g., "those who use wheelchairs are eligible for paratransit"). Instead, ADA paratransit eligibility is determined based on a person's ability to use the fixed-route system, given that system's current characteristics and other related factors. Persons determined to be eligible for ADA paratransit are not necessarily granted access to the paratransit service for all travel needs. The fixed-route system is to be used whenever possible and appropriate.

There are a number of important implications of this new relationship

between paratransit and fixed-route service. First, provision of the most efficient and effective transportation now requires that paratransit and fixed-route service be designed, developed, and operated as one system rather than as separate systems. Thus, the expressed demand for paratransit service should be taken into consideration in the design and redesign of a total public transit program. Options and enhancements that better integrate fixed route and paratransit need to be considered.

Second, the transit industry's ability to successfully implement the ADA may depend on its ability to maximize the use of fixed-route services and develop integrated paratransit and fixed-route systems. Many transit providers project significant increases in travel demand by customers with disabilities. Expanding paratransit systems to meet this need will require significant increases in funding. Better use of available fixed-route capacity could, however, greatly reduce the financial impact of this aspect of the law.

Third, transit systems that are likely to incur significant financial burdens meeting the paratransit requirements of the ADA must look for the most efficient and appropriate integration of paratransit and fixed-route service. Before an undue financial

burden can be claimed, however, providers must demonstrate that paratransit service is being provided only when it is needed and required. Costs associated with the provision of paratransit for trips that could have been accommodated on the fixed-route system cannot be counted in any calculation of undue financial burden. Thus, it is vital in these instances that all appropriate service options be explored for meeting the needs of ADA-paratransit-eligible individuals in the most integrated, cost-effective way.

As a result, interest in service options that better integrate fixed-route and paratransit systems, and programs that can enhance fixed-route systems, has risen since the passage of the ADA. A significant number of ADA paratransit plans include travel-training programs, on-call lift-bus programs, expanded marketing efforts, and other improvements. The development of service options and enhancements has also been promoted and facilitated by programs such as Project ACTION, by demonstration programs and policies established by Transport Canada, and by workshops and seminars sponsored by the Federal Transit Administration (FAT), industry associations, and state transit agencies.

Technical information and research on the many types of service options and enhancements are limited. For certain types of enhancements--such as travel training, marketing, and employee training--local experiences are described in recent Project ACTION reports. For other types of service options--such as route deviation services, feeder services, and service routes--few detailed studies exist that describe costs, benefits, and implementation issues. Available information is limited in many cases to promotional materials and articles in industry journals describing the efforts

on specific providers. Without the benefit of research and detailed information, many providers are implementing programs without adequate knowledge of the likely costs, benefits, or impacts on existing services and riders.

RESEARCH OBJECTIVES AND METHODOLOGY

The goal of this research project is to develop information to assist local transit providers in the implementation of appropriate service options and enhancements to serve individuals with disabilities. The specific research objective, consistent with this goal, is the development of a methodology for transit managers and planners to design and evaluate integrated transit systems that

1. provide accessible integrated service complying with the ADA;
2. facilitate the appropriate use of paratransit service; and
3. support service or system enhancements to encourage travel on accessible fixed routes by individuals with disabilities.

Research is being conducted in two phases. Phase I, which was completed in fall 1993, identified service options and described enhancements. To develop a comprehensive listing of options and enhancements and to compensate for the limited body of knowledge that currently exists, a three-step approach was used. The first step involved an extensive literature review. Second, using readily available mailing lists, a brief survey was mailed to 548 public transit providers in the United States and to 76 public transit providers in Canada. Providers were asked to indicate if they have implemented or plan to implement certain service options and enhancements. Responses were received from

309 of the providers contacted. Third, based on the information received from the mailing, follow-up telephone calls were made to 95 transit providers that indicated relative success with one or more options/enhancements. More detailed information about experiences and local system characteristics was collected.

Based on the findings of the literature review and survey, the research team identified those options/enhancements that were most appropriate for further review. These options will be the subject of in-depth case studies to be conducted in Phase II of the project. Consideration in the selection was given to the relationship of the option to the goals of the study, the interest in the option expressed in the survey, and the likely benefit to the industry of more detailed study. Onsite visits will be conducted to collect data, to interview key provider staff, and to obtain customer reaction to the service option or enhancement.

Evaluation methodologies have also been developed for each option/enhancement targeted for further study. These methodologies are designed to provide a framework for measuring the performance of each option/enhancement. In order to measure these options/enhancements according to the objectives noted above, the methodologies consider traditional measures of efficiency and effectiveness (cost/trip, productivity, total trips served by mode, etc.) as well as other criteria that relate to customer satisfaction and acceptance. Particular attention is given in the evaluation to the degree to which they meet the broader goals of the ADA--such as independence, integration, and the provision of service in a nondiscriminatory manner. Key implementation issues such as start-up costs and impacts

These Digests are issued in the interest of providing an early awareness of the research results emanating from projects in the TCRP. By making these results known as they are developed, it is hoped that the potential users of the research findings will be encouraged toward their early implementation. Persons wanting to pursue the project subject matter in greater depth may do so through contact with the Cooperative Research Programs Staff, Transportation Research Board, 2101 Constitution Ave., N.W., Washington, DC 20418.

on existing services are also considered. Local systems selected as Phase II case studies will be evaluated using these methodologies.

PHASE I FINDINGS

The literature review and industry survey identified 21 different service options and enhancements that are currently being used by transit providers in North America. These include **alternative operational models, alternative technologies, and support services.**

Alternative operational models are various approaches to the basic design and operation of fixed-route and demand-responsive systems. Options in this category include models and programs such as the following:

- service routes/community bus,
- on-call accessible fixed-route bus,
- route deviation,
- point deviation,
- feeder service,
- general public dial-a-ride,
- subscription bus, and
- flag stop and "request-a-stop" programs.

Alternative technologies include new vehicle designs and equipment technologies that specifically address the needs of customers with disabilities. Several specific technologies are described, including

- low-floor buses,
- accessible taxis, and
- automated information and communication technologies.

Finally, **support services** are activities and programs that supplement the basic services being provided. They promote, encourage, and facilitate the use of appropriate modes by persons with disabilities. The following support services were identified:

- travel training,
- facilitated transportation,

- fare incentive programs,
- fare simplification mechanisms,
- marketing,
- trip planning,
- service planning,
- accessible bus stop programs,
- vehicle identifier programs, and
- destination card programs.

A preliminary report, which includes detailed descriptions of each of the above options/enhancements, has been prepared. Each description contains a concise definition of the option, a discussion of the applicability of the option to specific situations and areas, and important implementation considerations. Certain descriptions also contain service information and cost data, if this was available in the literature or from survey respondents. Each section closes with a listing of the references and sources of information used in the preparation of the description.

If the option/enhancement described was included in the industry survey conducted as part of this study, information about its reported use and effectiveness is also provided. Charts of selected transit providers reporting the use of each option are contained in an appendix to the report. This information should facilitate peer-to-peer contact and information sharing.

Initial research findings indicate that a number of local transit agencies have been successful in encouraging individuals with disabilities to use fixed-route service through innovative operating models and support services. Some of the exemplary systems and successes described in the report include the following:

- Madison County Transit (Madison County, Illinois) reported an increase in general public ridership (from 4,000 to 6,500 trips per day) as well as a decline in reliance on paratransit service (from 12,000 trips per month to 7,000 trips per month) after establishing a network of service routes throughout the county. The service route program

was supported by a travel-training program and an aggressive marketing effort.

- Successful on-call accessible fixed-route bus systems have been implemented by the Massachusetts Bay Transportation Authority (Boston, Massachusetts), the Transit Authority of River City (Louisville, Kentucky), the Rogue Valley Transportation District (Medford, Oregon), the Washington Metropolitan Metropolitan Transportation Authority (Washington, D.C.), and the Southeastern Pennsylvania Transportation Authority (Philadelphia, Pennsylvania).

- After replacing a traditional radial fixed-route system with a sectorized-point deviation service, Transit Management of Hamilton, Inc. (Hamilton, Ohio) reported an increase in overall ridership and a 36 percent decrease in bus mileage.

- The Sacramento Regional Transit Authority (California) provides transportation for 350 clients of sheltered workshops using a fixed-route subscription bus service. Forty program participants have also been travel trained and also use other fixed-route buses.

- A growing number of systems are using full-size low-floor buses in fixed-route service; for example, systems in Victoria, British Columbia; Ann Arbor, Michigan; Champaign-Urbana, Illinois; Calgary, Alberta; and Kitchen, Ontario.

- BC Transit (Vancouver, British Columbia) has established an accessible taxi system to supplement its existing paratransit service. This "Taxi Saver" program provides a 50 percent user-side subsidy while the standard paratransit service is 92 percent subsidized. A total of 50,000 taxi rides are provided each year.

- Information about travel-training programs in 48 different public transit systems is provided. A variety

of different models, including individual versus classroom training and programs with full-time in-house trainers versus those that use local human service agencies, are presented.

- The Greater Bridgeport Transit District (Connecticut) initiated a free fare fixed-route service in May 1993 for those persons determined to be ADA paratransit eligible. Rides on the fixed-route system by eligible individuals have increased from 150 in the first month of the program to 5,000 trips in September 1993. The free fare program was supported by travel training, an aggressive marketing campaign, and a trip planning service.

The Phase I report also contains evaluation frameworks for the following

five service options that will be the subject of Phase II case studies: (1) service routes/community bus; (2) route deviation; (3) low-floor buses; (4) fare incentives; and (5) feeder service.

PHASE I REPORT

A limited number of Phase I reports are available for loan. To request a copy, contact:

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