

# The Role of Private Enterprise in Elderly and Handicapped Transportation in Canada

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Presented in this paper is Canadian experience with successful partnerships between public agencies and private carriers to deliver special transit service for the elderly and the handicapped, often called "E&H transportation" by North American agencies. The policies and initiatives that encouraged these partnership arrangements are described, as well as two examples of the implementation of new or restructured service organizations. The examples provided include the Brokerage Demonstration Project in the city of Edmonton, Alberta, and experience in the province of Quebec with specialized taxi services for the more ambulatory handicapped. The development of the system in Edmonton, which involves the distribution of trips among a multiplicity of carriers depending on the user needs, is described in some detail. The discussion includes Edmonton's successful experience with a challenge from the Amalgamated Transit Union and in the selection of carriers that were able to perform under the new brokerage organization. The paper concludes with a discussion of current trends with respect to the use of private and public partnerships to deliver E&H transportation services in Canada.

With few exceptions, the Canadian approach to the delivery of urban transit service to the elderly and the disabled has been based on two nationally accepted but generally unwritten policies:

- That the conventional transit services should be made as accessible as possible for the ambulatory portions of the elderly and disabled population, and
- That parallel or special separate transit services should be operated for the exclusive use of the mobility-impaired.

By December 1986, this approach had resulted in the implementation of some 350 special transit systems, many of which operate in parallel with conventional transit service, serving about 75 percent of the urban population of Canada. The aggregate characteristics of these systems are presented in Table 1. The quality of service provided by these special transit systems has been very good, with the result that there have been few demands to provide full accessibility to the conventional transit systems.

Many of these special transit systems were initiated by community agencies and associations of the elderly and the handicapped. About one-third of the systems are operated by

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municipal government agencies. The remaining two-thirds are operated by a variety of nonprofit agencies and through contractual arrangements with private enterprise. Examples of these partnerships can be found in every province in Canada.

TABLE 1 AGGREGATE CHARACTERISTICS OF SPECIAL TRANSIT SERVICES IN CANADA (1)

Characteristic	1986 Data
Total number of systems	350
Total number of communities served	720
Estimated annual ridership (one-way trips)	4,500,000
Estimated vehicle fleet	1,300 to 1,400
Estimated annual operating cost (\$)	64,000,000
Estimated annual capital amortization (\$)	7,000,000
Estimated average total annual cost (\$)	71,000,000
Average operating cost per trip (\$)	14.00
Average user charge (fare) (\$)	1.00
Average system productivity (rides per vehicle hour)	2.3

## FUNDING RESPONSIBILITIES

The provision of urban transit services in Canada is a joint municipal and provincial responsibility. Eight of the ten provinces in Canada have funding programs for transit service to the disabled. Most municipalities of 25,000 or more persons have special transit systems for the disabled. The federal government is supportive of the delivery process through research and development and demonstration projects but has not been involved in developing service policies. Federal initiatives are discussed later in this paper. There are substantial variations in municipal and provincial funding levels and service policies across Canada.

In spite of these variations, reciprocity between systems for the disabled is generally good, so that visitors with identification cards from another community can access the local service. On a national basis, operating funds for transit systems for the disabled are derived from the following sources:

Operating Fund Source	Percentage
Provincial funding	52
Municipal funding	38
Fares	8
Other local sources	2

Capital funds are effectively derived, on average, from the following sources:

<i>Capital Fund Source</i>	<i>Percentage</i>
Federal	7
Provincial	75
Municipal	18

### SERVICE GAPS AND OPERATOR NEEDS

A number of gaps in the provision of service to the elderly and disabled that could provide opportunities for private enterprise have been identified by both federal and provincial agencies. These service gaps exist partly because initial priorities directed most of the available funding toward the improvement of urban mobility. More recently identified needs include

- Making the interurban transportation systems more accessible,
- Improving pedestrian access to both urban and interurban transport modes,
- Developing multipurpose systems for small communities and rural areas where conventional transit often does not exist, and
- Providing more cost-effective services.

A national survey of operator needs undertaken by the Canadian Urban Transit Association in 1985 for Transport Canada identified an approaching crisis with respect to the management of ridership growth on the parallel systems (1). The national growth rate, which averaged 13 percent in both 1984 and 1985, had placed a severe burden on service and system expansion at a time when economic conditions were placing constraints on funding. Among the most critical management needs identified by the operators were

- Management and organization strategies to cope with growth and change,
- Funding strategies to cope with capacity constraints, and
- Computer-assisted scheduling systems.

### FEDERAL INITIATIVES

Although not directly involved in the provision of urban transit services for the disabled in Canada, the federal government has a substantial interest in accessibility for the disabled and an impact on the development of systems and services. For example, a new 5-year federal assistance program was introduced in 1985 to provide assistance for the acquisition of vehicles for the transportation of the handicapped in small urban or rural communities. This program, administered by the director general of surface policy and programs at Transport Canada, provided capital assistance to purchase vehicles for small communities in New Brunswick, the Northwest Territories, and Manitoba to date (2).

Within Transport Canada, the Transportation Development Center (TDC) has a long-term systematic effort in research and development (R&D) under way to bring about innovations and improvements in the transportation system. Emphasis is placed on R&D to achieve a higher level of transportation safety and efficiency, as well as to ensure accessibility for Canadians, including the elderly and the disabled (3). TDC has undertaken several projects designed to foster the development of technology in the form of equipment, systems, and procedures to

improve accessibility for elderly or handicapped persons with an emphasis on federally regulated transportation modes. TDC also sponsors projects that aid in the development and evaluation of accessible vehicles and transit services for the elderly and handicapped, comprising wheelchairs, automobiles, buses, and transfer vehicles.

Two major brokerage demonstration projects were implemented in 1985, one sponsored by BC Transit and one by the city of Edmonton. Both projects included contractual arrangements with private enterprise operators using computer-aided scheduling systems. Both received funding assistance from TDC. The British Columbia (BC) Transit project has been described in another paper (4). The Edmonton project is described later in this paper.

### NEW PROVINCIAL AND MUNICIPAL INITIATIVES

One of the most significant trends offering opportunities for private enterprise is the growth of special transit services in small urban populations (less than 5,000 persons) and rural communities. The province of Quebec has a unique approach of encouraging several adjacent small communities to share one system. This approach has provided service to more than 200 such communities. The province of Alberta introduced a grant program in 1979 that has resulted in the establishment of service in more than 40 small communities to date. This was followed by the province of Saskatchewan, which now has service in 37 such communities, and the province of Manitoba, where some 22 small urban and rural communities have service.

A growing concern over the high cost of transporting elderly and disabled passengers in lift-equipped vehicles is resulting in a shift to greater use of taxis. Experience in Hamilton, Calgary, and Edmonton has shown that for the ambulatory disabled and the elderly, taxi service can be provided at about 50 percent of the cost of lift-equipped bus services. Typical operating costs experienced by these systems in 1986 were \$8.00 per person trip by taxi versus \$16.00 by bus.

In British Columbia, in 1986, financial assistance was being provided for custom transit services in 12 communities and for paratransit service in another 10 communities. All of these systems were contracted out to either private enterprise operators or nonprofit organizations.

### THE QUEBEC EXPERIENCE

#### Responsibility for Service Delivery

Most parallel transit services for the disabled in the province of Quebec are delivered through local public transit systems or regional systems that provide service to several communities. These systems may operate the service themselves or contract with private enterprise for service.

Provincial funding is provided through the Quebec Ministry of Transport. The Provincial Government program provides grants to public transportation agencies and municipalities equal to 75 percent of the cost of transportation services for the disabled. The remaining 25 percent of the cost is obtained from municipal sources and user fares. The fares paid by the users

are equivalent to the fares charged for conventional transit services, covering about 5 percent of the cost of the special transit services.

Special transit services for the disabled offer on-demand, door-to-door service. The services generally use minibuses and require advanced registration. Some 55 transit delivery organizations for the disabled have been created since the inauguration of the program in 1979. Nearly 400 of Quebec's 1,500 municipalities are now served, covering almost 70 percent of the population. In 1985, the 20,000 disabled persons registered for the special transit services made over one million trips.

### Introduction of Taxi Operators

In January 1982, Transport Adapte du Quebec Metro, Inc., a specialized transport service and a subsidiary of the Quebec City Transit Commission, first introduced the use of taxis for transportation of disabled persons throughout the Quebec City metro area. This new measure substantially changed the operation of the Quebec City system, which had previously used lift-equipped small buses. The reported results of these changes were most positive for the corporation, its users, and the taxicab industry (5). The introduction of taxi service has accomplished the following:

- Service refusals were virtually eliminated.
- Costs per passenger trip were reduced by one-third.
- Travel times were substantially reduced.
- Advance reservation notice was reduced from 24 hr to 8 hr.
- Ability to provide service at time requested improved.
- Vehicle requirements were reduced.
- New sources of income were provided to the taxi industry.
- Overall, users were better served than by conventional transit service.

A majority of the corporation's clientele, such as the visually and mentally impaired and those persons using manually operated wheelchairs, are now transported by taxi. In addition, vehicles with ramps are used almost exclusively to transport users of motorized wheelchairs. In 1986, some 44 percent of the users were being transported by taxis and 56 percent by modified vans.

### New Opportunities for Private Enterprise

The success of the Quebec City initiative has encouraged the Government of Quebec to broaden the role of the taxi industry in that province to permit taxi companies to offer new paratransit service (6). Although it is not official policy of the Quebec Ministry of Transport, municipalities applying for funding for special transit systems are encouraged to apply the least costly solutions that are appropriate to the mobility needs of the disabled. For example, the Montreal Urban Community Transportation Commission has developed a comprehensive plan to integrate taxi services into the existing system for the disabled (7).

## EDMONTON BROKERAGE DEMONSTRATION PROGRAM

### Responsibility for Service Delivery

The Transportation Department of the city of Edmonton, Alberta, has successfully implemented a new delivery organization for the Disabled Adult Transportation System (DATS). The new brokerage organization allows the city to manage and schedule a complex mix of privately operated paratransit services designed to meet specific needs of their disabled clientele. This mix of services includes lift-equipped dial-a-bus service, shared-ride taxis, and special bus and van services for group travel (8).

Edmonton, Alberta, is Canada's largest northern city. The 1981 census for the metropolitan area showed 657,000 persons. Edmonton is a unique self-contained city, providing city-operated public utilities and services including power, telephone, municipal airport, transportation, and public works services, as well as police and fire departments. Conventional transit and paratransit services for the disabled are provided through the Transportation Department of the city. The city's contribution toward the cost of providing paratransit services to the disabled is one of the largest of the municipal subsidies in Canada.

DATS has been operating in the city of Edmonton since April 1975. DATS evolved from a system initially operated by one taxi firm through several bus and van operators and through administrative and organizational structures. After 10 years of experience, DATS was well established with its target clientele, meeting specific and unique requirements of the adult disabled population in Edmonton.

### Introduction of the Brokerage Concept

In 1984, the Edmonton Transportation Department began a review of the "brokerage" concept as it applied to DATS. Brokerage implied that the agency dispatching the service was not necessarily the vehicle operator. This was found to be common with taxi firms in which the vehicles were owned by individuals and dispatched by a broker. It was found that substantial research was apparently under way in North America on the potential for computerized brokerage systems that could be considerably more cost-effective than the system then in use in Edmonton. As a result of this interest, consultants were engaged in January 1985 to review DATS and the feasibility of a brokerage demonstration project (9). At the same time, an application was made to the TDC of Transport Canada for the funding of a demonstration project. In April 1985, the Edmonton City Council concurred in the recommendations of the Public Affairs Committee that a brokerage demonstration project be undertaken.

### Restructured Organization

With financial support from TDC, a new delivery organization was established to direct the demonstration project. The objective of the 18-month demonstration project was to evaluate the brokerage concept as a means of achieving the coordinated assignment of trips with greater fiscal control. In addition, the project would develop and test a computer-assisted scheduling and management system. The 1986 DATS functional organization

is shown in Figure 1. DATS provides prebooked subscription trips for regular users, previous-day reservation trips for casual users, and on-demand trips for emergency travel.

The major features of the new brokerage organization included the following:

- The Brokerage Center was located in a city garage facility.
- The manager of the Brokerage Center was one of only four city employees in the administration.
- City and administrative staff handled the registration files, complaint investigations, and statistical analyses.
- The city-owned lift-equipped vehicles were maintained by the city but operated by a private bus contractor.
- Up to six taxi and limousine firms were involved in providing services for those persons who did not require a lift-equipped vehicle.
- The brokerage supervisor and dispatch staff (14 persons) were provided under a management contract.

All city-owned bus and van drivers reported for work to their own supervisor, who gave them their routing instructions, which the dispatcher had provided. After leaving the garage, the drivers were subject to instructions from the dispatcher on duty. In case of a problem between the dispatcher and a driver, the brokerage supervisor and the contractor supervisor would investigate and arrive at a solution. If these persons could not solve the problem, the manager of the brokerage center would be asked to make a decision.

The close proximity of the contractor supervisor and their employees to the city staff provided easy access for coordination and problem solving and a good learning environment. The only negative aspect of this close proximity was that policy decisions and instructions were often verbal rather than written, and complaint investigators often appeared in person requesting immediate answers, which interrupted the normal flow of work in the dispatch office.

### Contract Services

A summary of the services provided by private enterprise is presented in Table 2.

TABLE 2 DATS CONTRACT SERVICES

Contractor	Payment Basis	Service Provided
Bus company	Hourly rate	Drivers and supervisors for city-owned vans and buses with lifts
Taxi company	Hourly rate	Shared-ride subscription trips
Taxi company	Flat rate	Van service for group trips
Taxi company	Flat rate	Shared-ride reservation trips
Consulting firm	Cost plus	Scheduling and dispatch staff

### Labor Relations Experience

The project team anticipated that a change in contractors and procedures could trigger jurisdictional challenges from one or more of the labor unions with which the city of Edmonton had labor agreements. What was not anticipated was a dispute between the taxi drivers and Yellow Cab, and a claim of succession bargaining rights by the Amalgamated Transit Union (ATU) for the employees of all contractors with the exception of the taxi drivers.

#### Taxi Dispute

In September 1985, a majority of the taxi operators withdrew their services. This affected the contracts for the hourly rate subscription service and the flat rate reservation service.

Since the dispute was between the drivers and the taxi contractor (not with the city) and the hourly service was pre-scheduled by the Brokerage Center, the brokerage supervisor

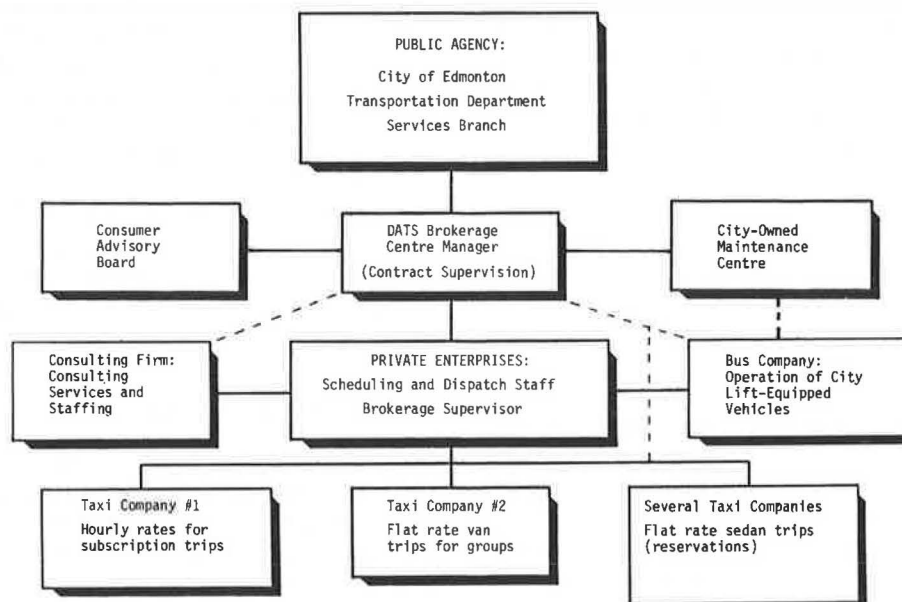


FIGURE 1 DATS functional organization (August 1986).

was able to maintain the service by contacting the taxi operators directly to supply their daily run sheets. Some vandalism occurred to the privately owned taxi vehicles that may have been perceived to be working in regular taxi service.

Because the flat rate taxi trip service had not been performing satisfactorily before the strike, the city invoked a labor dispute clause in the contract, effectively canceling this contract. The brokerage supervisor then negotiated a new flat rate service with two smaller taxi firms who had submitted tenders previously. One of these firms subsequently went into bankruptcy, with the result that new arrangements had to be made with larger firms.

### ATU Challenge

Previous to August 1, 1985, the dispatch staff, maintenance staff, and bus drivers for the city-owned bus and van service were members of Local 569 of the ATU. The employees of the one private contractor providing supplementary services were not members of a labor union. Effective August 1, 1985, the following changes applied:

- Existing bus drivers of the new contractor were members of a Teamster local.
- Maintenance of the DATS buses would be performed by city employees who were members of the Canadian Union of Public Employees.
- Dispatch staff were now employed by the contractor.

In August 1985, the ATU made applications to the Alberta Labor Relations Board for rulings that employees driving or working with or on the city-owned DATS buses were included in the scope of the 1978 certification of the ATU as bargaining agent for the city of Edmonton Transit System employees. A lengthy hearing was conducted, at which city staff and consultants gave evidence. In January 1986, the Labor Relations Board dismissed the several applications of the ATU on the basis that the public transportation system terminology in the 1978 ATU certification "did not, in our opinion, encompass DATS." This decision hinged on the definition of "paratransit" and on the fact that the city did not buy the private company.

### Impact of Scheduling Technology

For several years before 1984, DATS sedan and bus operations had been contracted out but administered by the Edmonton Transit System. During this time a unique but somewhat cumbersome computer-scheduled system had been developed. In 1984 the operating contracts provided for the major bus contractor to perform the scheduling. For the demonstration project, the existing scheduling system was transferred to the new brokerage center. Subsequently, in October 1986, the city replaced the computer-aided system with a less sophisticated computer-aided scheduling system and assumed direct control over the scheduling and dispatch staff who became city employees on January 1, 1987. Following are unit scheduling cost per ride comparisons based on current and past experience with DATS and projections for similar large systems under private and public operation. The costs shown for public agency operation are about 25 percent higher because of shorter work weeks

and higher fringe benefit costs. Data are 1987 MANOP Services, Ltd. estimates.

Scheduling Options for Large System	Cost per One-Way Trip (\$)	
	Private Enterprise	Public Operation
Manual scheduling	2.00-2.25	2.25-2.75
Computer-aided	1.15-1.35	1.35-1.65
Computer-scheduled	0.90-1.10	1.15-1.35

### Impact of the Brokerage Organization

The impact of the DATS Brokerage Organization, as of August 1986, was as follows (10):

- About 57 percent of the passengers were being carried on the automobile services operated by the taxi firms compared to 31 percent previously.
- Average unit operating costs per ride had declined by about 20 percent (i.e., from about \$12.65 per ride in 1985 to \$10.05 in 1986).
  - Overall ridership increased by about 9 percent.
  - Operating budgets were being held constant.
  - Confidence in the service was generating new programs at activity centers.
  - Trip refusals declined significantly from about 20 percent to less than 5 percent.
  - Trip productivity was maintained at existing levels.
  - An ATU local in a neighboring city offered a lower wage scale for paratransit services to avoid the contracting out of transit feeder services.
  - Scheduling and dispatch center costs were expected to increase by about 35 percent in 1987.

### CONCLUSIONS AND TRENDS

The major conclusions from the Canadian experience with private and public partnerships to provide mobility to the disabled are as follows:

- Existing municipal agencies and transit organizations may not provide for the use of the most cost-effective mix of public and private service operators.
- The use of private enterprise contractors can significantly lower operating costs.
- Coordination of services requires good communications with the managers of the private companies. Coordinators must closely monitor the performance of the contractors.
- The major difficulty in contracting with private firms is to maintain the continuity and quality of service, particularly when ownership or key personnel change during the life of a contract.
- Since more than 50 percent of the disabled do not require lift-equipped vehicles, there is potential for greater use of automobile services at substantial cost savings. These savings can be used to meet some of the latent demand for service.
- Taxi companies can provide service at low unit trip cost because their existing overhead costs are already accounted for.
- There is no substitute for reliable and enthusiastic taxi service providers. Trial and error methods may be required to identify the best performers.

- The most important elements controlling the reliability and the cost-effectiveness of a special transit service for the disabled are the functions of vehicle scheduling and dispatching. Because of this, public agencies may elect to retain these functions even though they could be contracted out at a lower cost.

- Where scheduling is performed by a contractor who also operates some of the system vehicles, the contracting process must provide incentives for the scheduling contractor to be cost-effective, to monitor operations, and to provide the community with sufficient data to assess the reliability of the service.

- Special transit systems for the disabled, like most paratransit services, are management-intensive requiring dedicated management with good interpersonal skills, patience, and diplomacy.

- Organized labor is taking an increasing interest in the attempts of management to replace higher-cost bus services with lower-cost taxi services. Both the ATU and the Independent Canadian Transit Union (ICTU) have opposed the use of taxis as a substitute for conventional transit. In 1985 the ATU lost a dispute with the city of Edmonton over the new brokerage system, which makes substantial use of taxi service. Such challenges must be anticipated and a response planned in advance.

Following are the authors' projections based on current trends in Canada:

- Many special transit systems for the disabled are operating at capacity within tight budget constraints. This means that either new sources of funds must be found, higher fares charged, or less costly services or more efficient methods introduced to accommodate unsatisfied travel demands.

- About 20 percent of the existing special transit systems in Canada are using taxis to serve their more ambulatory clients. Some systems are unable or unwilling to include these lower-cost options because of institutional constraints. The substitution of about 40 percent of the existing trips to lower-cost automobile services on a national basis would save about \$5 million annually in Canada. In the short term, this would only accommodate 1 year's growth in demand. In the long term, the

shift would lower the cost curve for all funding agencies as average costs per trip declined.

- The coordination of a variety of private enterprise operators using the brokerage concept and employing computer-aided dispatching systems is likely to become more widespread.

- Should system operators fail to use these techniques to meet the continuing growth in demand, challenges can be expected under provincial and federal human rights legislation.

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