

to appropriate governmental or industry officials.

Finally, there is a definite need for the debriefing of all personnel involved in transit accidents, which required the E&R of elderly and handicapped passengers, in order to gain additional information on the effectiveness of existing techniques and equipment and to identify newly developed methodologies and equipment. This needs to be done in concert with a technology-sharing program.

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## Funding of Demand-Responsive Transportation for the Elderly in Pennsylvania with State Lottery Funds

MICHAEL BROWN

#### ABSTRACT

The funding of demand-responsive transportation has taken a unique turn in Pennsylvania since the passage of Act 101 of 1980. Through Section 406 and a subparagraph of Section 203, funds have been made available for counties to plan, establish, and operate shared-ride demand-responsive transportation systems that are preferentially for the elderly and also open to the general public. Senior citizens age 65 and above ride at 25 percent of the established shared-ride fare, and the balance is paid by the Commonwealth of Pennsylvania through the State Lottery Fund. The general public rides at the regular fare. The lottery funding has provided a stable source of revenue for demand-responsive systems because there is no ceiling on operating funds. The program has strengthened existing providers and enabled new ones to begin service in previously un-

served areas, thereby making inexpensive transportation available to hundreds of thousands of elderly individuals. The development and details of the program are reviewed, and its evolution through the first 3 years of operation is summarized. Data on payments and ridership are included, as is a review of the impact that the program has had in its short history: making general public demand-responsive transportation services available in most areas of the state and contributing enormously to the mobility of Pennsylvania's citizens, particularly those in rural areas who had previously had very little public transportation service.

One of the major developments in transportation during the late 1960s and the 1970s was the rapid evolution of shared-ride demand-responsive services. Such services developed as a supplement or alterna-

tive to traditional fixed-route bus services and call and demand taxi services, and generally were created to provide service to those individuals without access to fixed-route services (e.g., residents of rural areas) or who found it difficult or impossible to use fixed-route services (e.g., handicapped or poor individuals).

During this period a long series of studies and demonstration programs examined and experimented with the numerous variations of demand-responsive services that had come into being worldwide. By the end of the seventies, all the studies and demonstrations pointed to several areas of major concern that would have to be addressed if demand-responsive services were going to be able to help alleviate the problems of the transportation disadvantaged. The major problem was lack of a consistent funding base on which providers could depend. Efforts to generate interest in demand-responsive services at the local level continually floundered on that point. The demonstration programs illustrated the problem most clearly because they made money available for short periods of time, usually a year or two, then required the services to support themselves. Because operating revenues could not support the service and because the local tax base was generally unable or unwilling to do so, the services were cut back or discontinued altogether. Only those services that were directly associated with client transportation for specific social service agencies were able to operate successfully. Here also the quality and quantity of service fluctuated according to the results of the annual budgeting process at the federal, state, and local levels.

Without the commitment of government to fund the operating deficits of demand-responsive service as it did urban fixed-route systems, such services continued to be marginal at best. To make things worse, in Pennsylvania as in so many other places, the high inflation of the late seventies, coupled with a slowdown in government's ability to absorb rapidly expanding social service program costs, began to eat away at the social service transportation network as well.

#### ACT 101

It was in this general atmosphere that, in 1980, the Pennsylvania legislature took up the task of consolidating numerous state laws governing transportation. Representatives of predominantly rural areas had for a number of years been complaining of the inequities of one program in particular, the Free Transit Program for Senior Citizens. The Free Transit Program provided fixed-route operators who participated in the program with 75 percent of the average fare for each senior citizen they allowed to ride free during nonpeak operating hours.

Rural legislators pointed out that fixed-route bus service existed almost exclusively in urban and suburban areas and, as a result, their constituents contributed to the lottery fund by buying tickets but were denied any corresponding benefits because transportation services did not exist for them to use. Realizing that fixed-route transit service could not be successful in rural areas, the legislature added provisions to the new law making lottery funds available to plan, develop, and operate shared-ride demand-responsive transportation systems that would be primarily for senior citizens but also open to the general public. The consolidation bill passed and was signed into law by Governor Thornburgh as Act 101 in October 1980. For the first time a continuing source of funds was made available to sup-

port demand-responsive transportation services. The Pennsylvania Department of Transportation was given overall responsibility for the administration of the program after consultation with the Department of Aging on the operating guidelines to be implemented.

#### Section 406

The funding of demand-responsive transportation services is embodied in two separate sections of Act 101, and each section has a somewhat different approach. Section 406 is a county entitlement program and makes a specific amount of lottery money available to each county (except Allegheny and Philadelphia counties). The amount is based on a formula involving the number of senior citizens in each county, and no county is eligible for more than \$600,000 or less than \$37,500. The county commissioners from each county have to be the applicants for the funds. The funds will lapse only if the county fails to develop some kind of system within 5 years, and they can be used in a variety of ways (Table 1):

TABLE 1 Summary of Applications and Approvals for Section 406 Funds as of March 31, 1984<sup>a</sup>

Type	No. of Applications	No. Approved	Funds Requested (\$)	Funds Approved (\$)
Planning	42	42	567,481.00	567,481.00
New or expanded (capital funds)	76	73	5,274,422.00	4,198,707.67
Revenue replacement	39	39	1,393,992.00	1,393,992.00
County transportation systems	<u>16</u>	<u>16</u>	<u>507,346.91</u>	<u>507,346.91</u>
Total	173	170	7,743,242.58	6,667,527.58

<sup>a</sup>Sixty-one counties applied.

1. For counties wishing to establish or expand shared-ride demand-responsive transportation services, Section 406 funds up to 100 percent of the cost of planning.

2. Section 406 also pays up to 100 percent of eligible capital and start-up costs. Section 406 funds have been used by counties to purchase a wide variety of capital equipment, such as vehicles, radios, computers, office furniture, buildings, mechanics' tools, and copiers. Start-up costs paid for have included radio and newspaper advertising, driver and staff training, telephone installation, wages and benefits, and printing. More than \$4 million in capital or start-up grants have been approved, and more than \$2 million in payments were made through December 1983.

3. In addition, Section 406 funds can be used for revenue replacement. Each senior citizen age 65 and above riding on shared-ride demand-responsive services must pay 25 cents or 25 percent of the regular adult fare, whichever is greater. This senior citizen payment may also be made by a third party, such as an area agency on aging. The remainder of the fare is paid with state lottery funds. The general public rides at the regular adult rate.

4. Counties also have the option of developing their own system, totally owned and operated by county personnel and using county equipment. Senior citizens ride free and the lottery fund pays 75 percent of the total operating costs. The county is responsible for the balance of operating costs. A fare

structure may be established for general public riders if the county desires.

Section 406 requires that counties become directly involved in the planning process for demand-responsive services. It requires that an integrated transportation network be developed and that the services not compete with existing forms of transportation. In addition, as mentioned previously, Allegheny and Philadelphia counties were specifically excluded from the provisions of Section 406. This was done to emphasize the desire that the more rural counties develop shared-ride systems.

### Section 203

Allegheny and Philadelphia counties were not altogether excluded from the program, however. The other part of Act 101 that relates to demand-responsive transportation is Section 203, and providers in Allegheny and Philadelphia counties were eligible for Section 203 funds immediately, whereas providers in Pennsylvania's other 65 counties had to wait until July 1, 1982, to become eligible. The following list is a summary of Section 203 applications and payments for fiscal year 1983-1984, as of March 31, 1984.

Total applicants	78
Total contracts approved	82
Applications pending	12
Total funds applied for	\$15,448,272.00
Total funds approved	12,577,110.00
Total payments made (1983-1984)	7,232,819.16
Total payments made (1982-1983)	4,529,479.65

The use of the term "providers" indicates a major difference between Sections 203 and 406. Whereas Section 406 is a county entitlement program, under Section 203 any eligible provider can apply directly for a grant. Eligible providers are defined as any one of the following:

1. Any private carrier certified by the Pennsylvania Public Utility Commission to provide shared-ride or paratransit service;
2. Any county or local government;
3. Private nonprofit corporations that are "substantially under county control"; this means that the county commissioners approve all fares and services and any changes to either; and
4. Public transit authorities that provide shared-ride service.

Clearly, grants under Section 203 could be made to a variety of providers. In addition, there was no requirement in Section 203 that service provision be coordinated. As the two programs got going, this was to become a significant issue.

### PROGRAM DEVELOPMENT

Because guidelines on Section 406 were developed first, that portion of the program got started first. It quickly became evident that there was great potential and a great necessity for flexibility in the program. The Department of Transportation in its administration of the program developed program guidelines that emphasize three basic requirements:

1. The service had to be demand responsive,

2. Reimbursement was only for senior citizens age 65 and above, and

3. The service had to be open to the general public.

Many counties began by using a part of their entitlement for planning purposes, and to date over half of the 65 eligible counties have done some planning, and \$500,000 have been committed statewide for that purpose.

Because the law said nothing about who was responsible for the planning effort, each county was free to draw on whoever was capable of performing the work. A great many counties hired consultants who were experienced with transit planning; other counties did the work through their transit authorities and planning commissions. Still other counties did no planning at all. The latter have systems in place that already meet the eligibility criteria. They began using their entitlement monies for improvements, expansion, and service provision.

Counties have used the largest portion of their entitlement funds for capital and start-up costs. When counties had developed and submitted an acceptable plan, they were free to purchase goods and equipment to be used to meet the requirements for service as set forth in the plan. As long as the kind of service to be provided was eligible for funding, any capital and start-up costs associated with its development, improvement, or expansion were fundable at 100 percent through Section 406.

The operational part of the program has been most challenging, both during the early phases of the program and on a continuing basis. The requirement that local transportation services had to be coordinated led to some interesting and troublesome developments in several counties. Because of the variables, such as the history of transportation in the county and the working relationships between the county commissioners, the social service agencies, and any private and public carriers, every county's system developed in a unique way.

Because the law did not prescribe in detail how systems were to be organized, who should run them, and who was to be in charge, those questions had to be answered in the local planning process. On numerous occasions the Department of Transportation program administrators were asked to referee local disputes of various kinds, but the administrators took the position that this was not an appropriate role. The department took the position that all eligible providers had to be given the opportunity to participate and in some instances had to insist that some agencies or private providers who were being excluded be given that opportunity. The degree of participation and the overall structure of the system, however, were ultimately local decisions. Because it is a county entitlement program, decisions about the structure of the system ultimately rest with the county commissioners. As a result, every county's demand-responsive system has developed in a slightly different fashion from every other county's. A sample of the differing setups includes

1. Service operated directly by the county in county owned and operated vehicles. These are usually run through a designated lead agency, such as an area agency on aging, a community action agency, or a county transportation office.

2. Service contracted to private carriers (bus and taxi companies).

3. Service provided by public carriers (transit authorities).

4. Services provided by private and public nonprofit corporations, such as community action agencies, YMCA.

5. Services provided by social service agencies (area agencies on aging) but open to the general public.

6. Services provided by various combinations of the aforementioned provider types.

Except for a very few instances, all these services, including those operated by social service agencies, were open to the general public and charged a fare. As might be expected, there was a good deal of initial reluctance, particularly among many social service agencies, to open the service to the general public. The fear was expressed that general public ridership might clog the social service delivery system and make agencies' service to their respective clients more difficult. However, because only senior citizens were entitled to discounted fares and the general public had to pay full fare for trips, the Department of Transportation was fairly certain that a large percentage of general public ridership was extremely unlikely. In spite of the fact that more general public ridership would be desirable, it has not yet materialized to any substantial degree. Vehicles crowded with businessmen and students while agency clients are left behind have proven to be a theoretical rather than an actual problem.

In light of the historical difficulties of getting social service agencies to participate in coordinated transportation efforts, it is worth emphasizing that the carrot in Pennsylvania's demand-responsive program is the 75 percent reimbursement for senior citizen trips. Most senior citizen transportation in Pennsylvania is provided by local or regional area agencies on aging, which generally have the largest and most sophisticated of the social service transportation systems, particularly in rural areas. Agency concerns for their clients notwithstanding, the obvious advantage of having clients age 65 and above transported at only 25 percent of the former cost attracted directors of services for the aging and county commissioners. The law expanded service not only by making each local dollar stretch nearly four times as far but also by stipulating that the service had to be available to all senior citizens. This had the effect of eliminating income and other restrictions (such as car ownership) that had made some senior citizens ineligible for transportation services in some places.

#### MAINTENANCE OF EFFORT

Because of the obvious financial incentives for aging services participation in the Section 406 program, there was a fear in the Department of Transportation that agencies would use the program to transfer the burden of funding senior citizen transportation from their own budgets to the Section 406 program. Agencies, it was believed, would continue to provide the same levels of transportation as before and steer their 75 percent savings into other aging programs that were being squeezed by tighter budgets and increasing demand. The Section 406 program would then ironically become one which subsidized other aging services rather than transportation. As a result of these concerns the department developed what was called a maintenance-of-effort requirement. Social service agencies that were providing transportation to aging clients before their participation in the Section 406 program were required, as a condition of participation, to dedicate an equal percentage of their total budget to transportation after their entry into the 406 program.

Almost immediately, however, a movement was begun to have the requirement eliminated or modified. Area

agencies on aging claimed that the requirement handcuffed them in their efforts to allocate diminishing resources efficiently. They also tended to think that the rule interfered with agency directors' control of their own resources. While the issue was being discussed, however, the requirement was enforced.

The Section 203 program necessitated a reappraisal of the requirement. Because Section 406 is a county entitlement program for which the county commissioners are the applicants and because most local aging programs were to some degree under county control (either directly by virtue of being county agencies or indirectly by virtue of receiving county money for local matching requirements and other needs), some direct enforcement leverage was possible: County commissioners would have the responsibility of seeing that the requirement was met through their contract with the commonwealth. Such was not necessarily the case under Section 203. Under Section 203, any eligible provider could apply directly for a grant, so there was not necessarily any direct relationship between social service agencies funding transportation services for their aging clients and the providers of those services. Under Section 203, a taxi company could provide services for an area agency on aging but would have no right or power to enforce a maintenance-of-effort requirement on the agency. Moreover, because the reimbursement is paid directly to the contractee (in this case, the taxi company), there would be no way to recover grant monies from an agency that did not meet the maintenance-of-effort requirement. This practical difficulty, plus the assurances of the Department of Aging that federal regulations required area agencies on aging to continue to provide funding for client transportation, led the Department of Transportation to drop the maintenance-of-effort requirement in July 1982.

#### RELATIONS WITH THE PUBLIC UTILITY COMMISSION

The participation of private carriers in the Section 406 and 203 programs also necessitated a new working relationship between the Department of Transportation and the Pennsylvania Public Utility Commission (PUC). Transportation for hire in Pennsylvania is regulated by the PUC, and providers must obtain a tariff that specifies their rates, service territory, and the kind of service to be provided.

Shared-ride demand-responsive service was being provided by private carriers with PUC certification before the Section 406 and 203 programs originated. However, there is no precise definition of this kind of service in PUC law. The operating rights issued were variously titled paratransit, nonexclusive call and demand, and special operations. But they are defined negatively: Shared-ride demand-responsive services are anything that is not exclusive call and demand, group and party, or scheduled fixed-route service. This category came into being chiefly as a response to the desire of private carriers to provide service to social service agencies. At the beginning of the Section 406 program, the PUC had a file of about 40 carriers who were providing shared-ride demand-responsive services.

If these carriers and others who wanted to participate in the program had been able to do so with the existing tariff format, things would have been much simpler. But there was a catch: Most of the tariffs in existence had been developed to facilitate the movement of groups of individuals to and from social service agencies, and rates had been established almost exclusively on an hourly or a per mile basis. The wording of Section 406 and Section 203, however, is very specific. It says that each

senior citizen must pay 25 cents or 25 percent of the regular adult fare (whichever is greater) for being transported on shared-ride demand-responsive services. It was clear that, to be eligible for the program, providers had to establish a fare structure on a per person basis.

Some early meetings with the PUC on coordinating the program seemed to create more misunderstandings than they resolved. The PUC's initial reaction to the department's informing potential participants that they had to have a per person fare structure was that the department was usurping PUC regulatory responsibilities. Some members of the PUC staff questioned the legality of private carrier participation because the PUC law had not been amended to bring it into conformity with Sections 406 and 203.

The Department of Transportation's response to these objections was that there was nothing in the program that was specifically inconsistent with PUC regulatory prerogatives, including the approval of per person tariffs. Such tariffs were legal even before the Section 203 program existed, and a few carriers already had them. In addition, participation in the Section 203 program is voluntary, so tariff changes are not being forced on carriers. It is still the PUC's job to approve tariffs. However, if rates are not expressed on a per person basis, the provider does not qualify for the program.

As the program has continued to evolve, relations between the Department of Transportation and the PUC have improved a great deal. There is much more mutual understanding about the requirements of the program as mandated by the law. Good communications have been established between PUC and Department of Transportation staff members.

#### RIDERSHIP AND AGE VERIFICATION

Along with having the right kind of tariff and providing the right kind of service, providers under both programs have been given the responsibility of developing age and trip verification methodologies. Because fare subsidies are only for those individuals age 65 and above, providers had to develop methods for assuring the Department of Transportation that each individual for whom reimbursement is being requested is at least 65 years of age and that the person actually made the trip. This has been the most difficult part of administering the program.

Because of the diversity of program participants, no attempt has been made to establish a uniform age and trip verification methodology. Each provider has been required to develop its own, and approval of the proposed methodologies is a prerequisite for approval of grants. Although providers had some initial difficulties establishing acceptable procedures, that has become much less of a problem as the program, and information about it, has spread. Many new applicants are using the same methodologies and forms that previously successful applicants have developed. Acceptable forms of age verification include (a) drivers' licenses, (b) Pennsylvania free and reduced fare transit ID cards, (c) birth certificates or baptismal certificates, and (d) ID cards issued by the provider. Trip verification methods vary also. The provider needs to demonstrate the existence of a paper trail that can be audited. Systems where the passenger signs a trip receipt or pays for the trip in scrip are recommended for trip verification purposes.

#### IMPACT OF THE PROGRAM

The first service using Section 406 funds began op-

eration in June 1981. In the 2.5 years that have passed since then, demand-responsive transportation service in Pennsylvania has expanded and flourished. During the 1981-1982 fiscal year, service was provided under Section 406 because Section 203 did not go into effect statewide until July 1, 1982. Beginning with the 1982 fiscal year, most providers began operating under, or switched their operations to, Section 203. Counties eligible for both sources of funds wished to conserve their remaining Section 406 funds for future capital purchases and service changes. As a result, ridership under Section 406 has remained quite low, with less than half a million rides provided in the 1981-1982 fiscal year, and about 380,000 in 1982-1983 as the Section 203 program began.

Ridership under Section 203 has experienced an explosive growth. The first Section 203 grant was approved in June 1982. The number of rides increased from 407 in 1981-1982 to 1,955,000 in 1982-1983 and is already over 1,600,000 for the first 6 months of 1983-1984 (Table 2). Of those nearly 3.6 million trips to date, about 2.8 million have been lottery-fund subsidized trips taken by senior citizens age 65 and above. Complete figures for the 1982-1983 fiscal year show that the average senior citizen trip cost \$4.45 of which \$3.33 was paid from state lottery funds.

TABLE 2 Ridership Summary: Shared-Ride Demand-Responsive Transportation

Fiscal Year	Senior Citizens <sup>a</sup>	General Public	Justified Payments <sup>b</sup> (\$)	Average Cost/ Senior Citizen Trip <sup>c</sup> (\$)
1981-1982				
Section 203	407	0	4,657.69	15.259
Section 406	<u>333,813</u>	<u>143,839</u>	<u>726,812.57</u>	<u>2.903</u>
Total	334,220	143,839	731,470.26	2.919
1982-1983				
Section 203	1,244,718	323,693	4,529,479.85	4.852
Section 406	<u>259,737</u>	<u>123,721</u>	<u>490,069.34</u>	<u>2.516</u>
Total	1,504,455	447,414	5,019,549.19	4.448
1983-1984 <sup>d</sup>				
Section 203	1,186,862	416,047	4,644,346.97	5.217
Section 406	<u>60,544</u>	<u>46,591</u>	<u>149,979.72</u>	<u>3.302</u>
Total	1,247,406	462,638	4,794,326.69	5.125

<sup>a</sup> Age 65 and above.

<sup>b</sup> Justified payments are up to 75 percent of full fare for each senior citizen age 65 and above transported.

<sup>c</sup> Justified payments represent about 75 percent of the cost of the senior citizens' trips; this column represents the average total cost of a senior citizen trip.

<sup>d</sup> 1983-1984 numbers are for July through December only.

Many of the trips provided to senior citizens under the lottery program are not really new trips; they are trips that would have been taken under the preexisting social service and public transportation networks. Nevertheless, the Section 406 and Section 203 programs have dramatically increased the overall availability of transportation in Pennsylvania, not only for senior citizens but for the general public as well:

1. Many social service agencies providing transportation to elderly persons have been able to expand the scope of their services immensely because their transportation budgets now buy many more trips. Many agency directors have been able to liberalize restrictions on trip purposes and extend their services to more rural areas.

2. Rural transportation services have expanded the most dramatically. The major cripples of rural

transportation services, inadequate funding and high service costs, have both been remedied by the lottery program. Transportation services can be priced at the cost of service and still generate significant ridership because of the 75 percent lottery reimbursement for senior citizen riders.

3. The Section 406 and Section 203 programs have created rural transportation services available to the general public in many areas where no such services existed at all. Most rural service in Pennsylvania was formerly provided by social service agencies and was restricted to agency clientele. By law, program participants were required to open these services to the general public. Although the per trip cost is often quite high and general public riders are unsubsidized, the services now do exist and are available to everyone who needs them.

4. The programs have been of great benefit to private and public carriers who are eligible to participate. About half the program participants are taxi and paratransit companies and transit authorities, and they have collectively seen a substantial

increase in their senior citizen ridership and total revenues.

The services provided under the Section 406 and 203 programs are still in a stage of rapid growth, and it is difficult to predict where that growth will level out. In 1982-1983 about 50 providers participated in the program for at least part of the year. In 1983-1984 that number has risen to nearly 70 and is expected to go still higher. Although some providers that have been in the program for several years have seen their ridership stabilize, the newer ones are still experiencing a lot of growth as news of the program penetrates their service areas.

The good news about this kind of growth is that it is not rising toward a financial ceiling that will eventually curb further growth or even cause reductions in service as service costs increase or funds are cut. As long as the state lottery fund continues to be healthy (and to date it has been very healthy, with a current surplus of well over \$200 million) there will be no ceilings on the availability of funds for demand-responsive transportation in Pennsylvania.

## Number and Status of Mobility-Handicapped Persons in the Federal Republic of Germany

WERNER BRÖG and KARL RIBBECK

### ABSTRACT

In December 1980 a joint study, "Number and Status of Disabled Persons by Target Groups," was commissioned by the Ministry of Youth, Family and Health (that had the main responsibility for the study), the Ministry for Employment and Social Order, and the Ministry of Transport of the Federal Republic of Germany. A multistage survey concept was developed for the empirical part of the study. An initial gross sample of 66,000 persons was used (in various sampling stages) to determine the number of officially recognized disabled persons, as well as the number of disabled persons not officially registered. For a subgroup of approximately 6,400 disabled persons (gross) and a control group of about 2,300 nondisabled persons, data on mobility were also collected by having the target persons fill out diaries for a sample day. One of the basic aims of the project was to identify the sociodemographic structure of mobility-handicapped persons with special reference to those who hold the free travel passes provided by the government. A comprehensive picture of the actual number of mobility-

handicapped people in the Federal Republic of Germany and respective cross-tabulations are given. An outline of further evaluations of mobility and the underlying conceptual approach is also provided.

The empirical study of mobility-handicapped persons, which is the subject of this paper, incorporated not just one but several surveys. The research objectives, in fact, included surveys of mobility-handicapped people who needed nursing care and surveys of mobility-handicapped people who did not.

The research project began in 1978-1979 when a representative sample survey was carried out for the West German Federal Ministry of Youth, Family and Health to identify the number and status of persons who need nursing care and live at home. It was proposed that the data would make possible an estimate of the cost framework for the insurance and legal aspects of nursing care. The survey instrument used for this study collected all information necessary to differentiate between the healthy, the acutely ill, those in need of various levels of nursing care, and a threshold or borderline group made up of the "no longer healthy" who were at the same time "not yet in need of nursing care." One of the most