UMTA-AL-06-0003-83-1
DOT-TSC-UMTA-83-5

U.S. Department
of Transportation
**Urban Mass
Transportation
Administration**

User-Side Subsidies for Taxis and Buses in Montgomery, Alabama

Final Report
February 1983

UMTA/TSC Project Evaluation Series
Service and Management Demonstrations Program

NOTICE

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

NOTICE

The United States Government does not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the object of this report.

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
UMTA-AL-06-0003-83-1		

4. Title and Subtitle	5. Report Date
USER-SIDE SUBSIDIES FOR TAXIS AND BUSES IN MONTGOMERY, ALABAMA	February 1983
	6. Performing Organization Code: DTS-64
7. Author(s)	8. Performing Organization Report No.: DOT-UMTA-TSC-83-5
9. Performing Organization Name and Address: Charles River Associates Incorporated* 200 Clarendon Street Boston, MA 01226	10. Work Unit No. (TRAIS): UM327/R3688
	11. Contract or Grant No.: DOT-TSC-1757
12. Sponsoring Agency Name and Address: U.S. Department of Transportation Urban Mass Transportation Administration Office of Technical Assistance Washington DC 20590	13. Type of Report and Period Covered: Final Report 1977-1981
	14. Sponsoring Agency Code: URT-30

15. Supplementary Notes

*Under contract to: U.S. Department of Transportation
Research and Special Programs Administration
Transportation Systems Center
Cambridge MA 02142

16. Abstract

The Montgomery User-Side Subsidy Demonstration began operation in August 1977. This was one of four demonstrations of the user-side subsidy concept conducted under the UMTA Service and Management Demonstration Program, and involved the provision of reduced fare shared-ride taxi and fixed-route bus service to the elderly and handicapped with the primary objective of increasing their mobility. Eligible individuals who registered with the subsidy program were able to obtain a 50 percent discount on taxi rides through the use of vouchers, and could use tickets to ride buses for free during off-peak hours and for half fare during the peak hours. After vouchers and tickets were used by registrants to pay for rides, service providers redeemed them with the city for full value. This report summarizes the findings of an independent evaluation of the Montgomery project that was sponsored by the U.S. Department of Transportation. User-side subsidies were found to be generally feasible, although a number of specific design and implementation problems were identified, and are described in this report. Project subsidies were utilized principally by the most mobility-disadvantaged segments of the eligible population. These individuals, who typically had low incomes and/or few travel alternatives, used the project to increase slightly their frequency of total tripmaking, and to make some trips that otherwise would have been made by less preferred means. Overall, the Montgomery project provides evidence that user-side subsidies can be a viable and practical technique for facilitating the mobility of the elderly and handicapped.

17. Key Words	18. Distribution Statement
User-Side Subsidy, Elderly and Handicapped Transportation, Shared-Ride Taxis, Fixed-Route Buses, Service and Management Demonstrations	DOCUMENT IS AVAILABLE THROUGH SUPERINTENDENT OF DOCUMENTS U.S. GOVERNMENT PRINTING OFFICE WASHINGTON DC 20402

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	234	

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

PREFACE

This evaluation of the Montgomery User-Side Subsidy Demonstration Project was prepared in the Boston, Massachusetts, office of Charles River Associates Incorporated (CRA) for the Transportation Systems Center (TSC) of the U.S. Department of Transportation (DOT) under Contract Number DOT-TSC-1406, as part of the Service and Management Demonstrations (SMD) Program, sponsored by the Urban Mass Transportation Administration (UMTA). Michael Nelson served as CRA's evaluation manager and principal investigator. Bruce Spear of TSC served as technical advisor and monitor for the evaluation while Larry Bruno was the UMTA Project Manager.

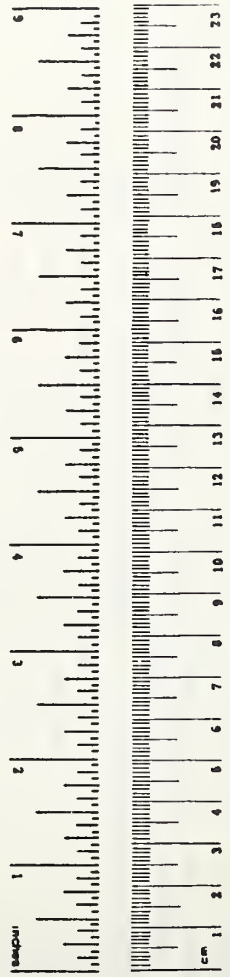
Many individuals contributed to the development of this evaluation report. Within CRA, Michael Nelson directed the evaluation and was the principal author of this report. J. Richard Kuzmyak, former CRA evaluation manager, designed the evaluation strategy, supervised most of the data collection effort, and contributed many valuable insights. Jane Piro supervised data processing, conducted data analyses, and contributed draft material throughout the report. Stephen Hendrick conducted or was responsible for data processing, while Priscilla Gebre-Medhin organized and edited the final report. Other major CRA contributors included Robert Scheier and Kathryn Davenport, publications; Susan Simons, graphic arts; and Ruthellen O'Brien, secretarial. The efforts of all of these individuals were supervised by Daniel Brand, CRA's officer-in-charge of work conducted for the SMD program, who provided overall guidance and many helpful suggestions.

Although CRA accepts full responsibility for the information and conclusions presented in this report, the evaluation would not have been possible without the cooperation and assistance of many other individuals. In particular, Mark Dorfman, Debra Astin, Tina Wood, Steve Williams, and Dawn Glascock of the Montgomery project staff were very helpful in providing needed information from the site. Bruce Spear (TSC) provided numerous insightful observations and coordinated the UMTA/TSC review of the draft final report. Significant contributions to the successful completion of this evaluation were also made by Simon Prensky and Donald Kendall, former TSC technical monitors for the project, and Bruce Winston, Mark Imhoff, and Kenneth Cone, former CRA study team members.

METRIC CONVERSION FACTORS

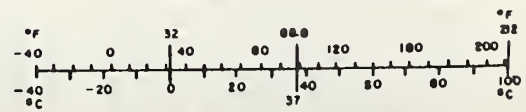
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

EXECUTIVE SUMMARY

INTRODUCTION

The Montgomery User-Side Subsidy Demonstration began operation in August 1977, and involved the provision of reduced-fare taxi and transit service to the elderly and handicapped with the primary objective of increasing their mobility. To be eligible for the subsidy program, called FARE/SHARE, a person had to be at least 65 years of age and/or handicapped, as well as a resident of Montgomery. Eligible individuals who registered with the program were able to obtain a 50 percent discount on regular taxi rides through the use of vouchers, and could use tickets to ride conventional transit for free during off-peak hours or for half fare during the peak. After vouchers or tickets were used by registrants to pay for rides, service providers redeemed them for full face value. This application of a public subsidy to provide discounts directly to travelers for their use of conventional transit and private taxicab service was the major innovation involved in this demonstration.

A project innovation of secondary importance involved changes in the regulations governing the practice of sharing taxi rides (i.e., riders or groups of riders with different origins and destinations traveling together in the same cab). Before the demonstration began, the Montgomery City Code did not address the issue of shared-ride taxi service, either for the purpose of delineating the circumstances under which such practices were permissible, or to establish the appropriate method for computing fares.* As part of the demonstration, the Code was amended to explicitly allow shared-riding, and a grid-type zonal fare structure was established for the purpose of computing fares for project and shared rides.

The principal goal of this project was to demonstrate the cost-effectiveness of user-side subsidies in a multimodal environment as a means to improve the mobility of the elderly

---

*The mileage-based fare structure contained in the Code would generally be inappropriate for shared-ride service, which is likely to involve circuitous routes for some passengers. A change in the method of computing fares was therefore needed to support the prospective changes in shared-riding activity associated with the project.

and handicapped. This demonstration was conducted simultaneously with demonstrations in Kinston, North Carolina, Lawrence, Massachusetts, and Danville, Illinois, which examined variations of the user-side subsidy concept in different settings.

This type of subsidy has drawn interest among policy makers because it places the travel decision -- i.e., whether or not to travel and by what mode -- in the hands of the consumer. In contrast with conventional "provider-side" subsidies, users can choose among service providers. Operators cannot take the subsidy for granted, and only receive benefits under the subsidy to the extent that they carefully sense the travel needs of the public and offer levels of service that are competitive with alternatives. It is therefore hypothesized that user-side subsidies may provide greater incentives for the efficient provision of transportation services, while providing funding agencies with a good deal of flexibility concerning the types of individuals and/or trips that are to be subsidized.

By reducing the price of travel, the user-side subsidy program could be expected to lead to increased rates of trip-making, or to increased temporal and spatial travel alternatives, by making some trips feasible that would previously have been beyond an individual's budget limitations. Alternatively, participants could choose to continue old travel habits with reduced expenditures, and thus use the subsidy to reduce the cost of transportation.

If the effective reduction in taxi fare led to increased patronage, the productivity of taxi operations could improve. This improvement could be further enhanced by the formal adoption of shared-riding as part of the project and, in turn, could stimulate changes in the supply of taxi service. Likewise, increases in transit patronage could improve transit vehicle productivity and lead to service changes as well. Broader, external effects (e.g., on social service agencies) could also result from the program and its effects on travel behavior.

The purpose of this evaluation is to determine the extent to which and the reasons why any of these effects did or did not occur in Montgomery as a result of this user-side subsidy program. This enables the circumstances under which the concept could most beneficially be applied elsewhere to be determined. In addition, since the application of the user-side subsidy concept itself is a major innovation, evaluation of results must include an assessment of the operational and

administrative feasibility of the concept in general, and how it may vary in different settings.

RESEARCH ISSUES AND DEMONSTRATION FINDINGS

Specific research issues and demonstration findings, which are described in detail below, fall into the following general categories:

1. The operational and administrative feasibility of the user-side subsidy concept;

2. The impact of the user-side subsidy on the mobility of the target group;

3. The impact of the user-side subsidy on the supply of transportation services; and

4. The impact of the user-side subsidy on social service agencies.

Concept Feasibility

In large part, the feasibility of the user-side subsidy concept depends upon the acceptance and cooperation of transportation service providers. This particular demonstration involved the participation of a relatively large number of taxi operators, each of whom was required to satisfactorily fill out project vouchers, submit them to the subsidy program, and wait for reimbursement. Similarly, the bus operator had to keep track of large numbers of tickets, submit them to the subsidy program, and wait for reimbursement. The ability of the Montgomery subsidy program to forge a practical working relationship between transport suppliers (many of whom may have been leery of government intervention) and the requirements of the concept for regulatory adherence and accountability is an important indicator of basic concept feasibility.

It must be noted, however, that the program was only able to maintain the participation of two of Montgomery's 16 taxi companies. While these companies were the largest two taxi operators in Montgomery (Red and Yellow Cab), and represented over 25 percent of all taxis in the city, the impact of the project was generally limited by the low level of operator

participation, particularly in minority neighborhoods.* This low level of operator participation may be traced to a number of causes (described below), virtually all of which relate to unique features of the Montgomery environment or shortcomings in the design, implementation, and operation of the Montgomery demonstration, per se, rather than in the user-side subsidy concept itself.

Concept feasibility is also determined by the level of administrative effort and cost needed to support a user-side subsidy program. The subsidy manager (in this case the City of Montgomery) must account for project usage (subject to various auditing and verification checks), resolve all billing inconsistencies, and see to the timely repayment of transport suppliers. In addition, the manager has the responsibility of screening and registering users, answering their complaints, enforcing the rules and restrictions of the program, and identifying and removing any potential for fraud on the part of users or service providers.

Overall, these administrative requirements were met satisfactorily by the Montgomery project staff, though the specific administrative actions required to implement and manage the Montgomery demonstration entailed a considerable labor effort.** A number of nonlabor expenses, such as advertising costs and office rental, were also incurred. Project management costs can be divided into those associated with specific phases of administrative activity, those that are essentially overhead, and those that form the subsidy payments themselves, as follows:

---

*Many minority neighborhoods were served (illegally) by jitney-type operations that offered shared-ride service at reduced cost.

**Additional effort was expended by staff from the Urban Institute, who assisted the Montgomery project staff during the planning phase of the project. Some difficulties were encountered during this phase, particularly concerning establishment of the appropriate base fare for project rides. The project planning staff wanted to set base fares at a lower level ($.80 vs. $1.00 regular fare for first half-mile) to account for expected productivity improvements to be realized through the project's promotion of shared-riding. This conflicted with the views of taxi operators, who did not agree with the planners about the potential for shared-riding in Montgomery. This dispute caused considerable acrimony in the early phases of the project.

ONGOING PROJECT MANAGEMENT COSTS*

ACTIVITY	COST (1977 DOLLARS) CONSTANT PER MONTH	ADDITIONAL PER REGISTRANT	ADDITIONAL PER TAXI RIDE	ADDITIONAL PER BUS RIDE
Administrative Support	764	3.13[a]		
Taxi Voucher Processing			.44[b]	
Bus Ticket Distribution/ Redemption				.021
Overhead	1,783			
Subsidy			1.22	.162
TOTAL	$2,547	+ $3.13/ registrant	+ $1.66/ taxi ride	+ $.183/ bus ride

[a]Includes registration interview conducted for evaluation purposes.

[b]Using a computer, the preferred method out of four methods tested.

Based on this summary, expected administrative costs for similar user-side subsidy projects (in terms of administrative support, voucher system, taxi fares, subsidy levels, etc.) can be estimated.** For example, the annual cost for an operation

---

*Does not include preoperational planning and start-up costs. Those costs were high in Montgomery (on the order of $15,000 or more) due to a number of extraordinary delays and barriers encountered during the planning phase.

**Administration procedures in Montgomery were designed with a high degree of concern for identifying and removing the potential for user and provider fraud. Administrative procedures that are less detailed and costly may be applicable at other sites.

of this type that averages approximately 70 new registrants, 2,800 project taxi rides, and 25,000 project bus rides per month at equilibrium (i.e., after all start-up activities have been undertaken and the initial wave of project registration has taken place) can be estimated as follows:

$$\text{Annual cost (1977 dollars)} = 12 \times \text{monthly cost}$$
$$= 12 \times (2547 + (70 \times 3.13) + (2{,}800 \times 1.66) + (25{,}000 \times .183)) = \$143{,}869$$

including the cost of the subsidy itself. This breaks down to $55,776 for taxi rides (@$1.66), $54,900 for bus rides (@$.183) and $33,193 in costs that are essentially invariant to ridership (administrative support and overhead). Allocation of these latter costs to project trips would, of course, increase the cost per ride figures.

In general, the cost and complexity of administering a transportation subsidy program in which reimbursements to providers are based on an accounting of trips made by eligible users can be expected to be significant, especially if potential fraud is perceived to be an important issue. Indeed, such administrative requirements may be as important as the direct (e.g., travel behavior) impacts resulting from the subsidies themselves when the applicability of this concept is considered in other settings. However, the overall costs per trip observed in the Montgomery project are quite low, particularly in the taxi portion of the program relative to alternative doorstep-type services. This tends to confirm the basic feasibility of the user-side subsidy concept.

Mobility of Project Users

The user-side subsidy concept is targeted at people whose ability to travel when and where they desire is often severely limited by their economic situation or physical condition. Elderly and handicapped individuals generally have less income and fewer transportation alternatives than other individuals, and often require physical assistance. Reduced-cost transit service may be highly attractive for target-group individuals with low incomes, particularly the able-bodied. Reduced-cost taxis may also be quite beneficial, as they offer the door-to-door service quality of automobiles and entail a minimal effort or wait on the part of the rider.

It should also be noted, however, that costs are not the only attribute of transportation services that may be affected by a user-side subsidy program. Specifically, the Montgomery project caused significant changes in some non-cost attributes of transportation services. For example, project taxi riders experienced a higher level of shared-riding and an increase in wait time caused by a project policy of allowing participating companies to delay project service requests (in order to more effectively group rides). Such changes must be considered along with the changes in out-of-pocket costs when the impacts of user-side subsidies on registrant mobility are examined.

Overall, the amount and character of travel by the elderly and handicapped may change in a number of important ways as a result of the cumulative effects of a user-side subsidy program. Evaluation of these effects in Montgomery focuses on four fundamental issue areas: 1) the attractiveness of the program to the target group (i.e., project registration); 2) the beneficiaries of the program (i.e., project use); 3) the types of travel benefits that accrue to users; and 4) secondary (nontravel) benefits.

Project Registration

The first issue area involves the extent to which the user-side subsidy program was sufficiently desirable to attract target individuals to register. In total, approximately 6,000 individuals, or about 24 percent of the estimated eligible market of 24,987 elderly and/or handicapped residents of Montgomery, had registered for the subsidy program by 1979.

Project registrants generally had fewer travel handicaps than nonregistrants and made less use of mobility aids. Registrants contained a disproportionate representation of females and blacks, and tended to come from smaller households (46 percent lived alone) with lower incomes. Of particular relevance to the project, most project registrants did not have a driver's license, an automobile, or an available driver in their household, while more than 50 percent of the nonregistrants had a license, more than 75 percent of the nonregistrants had at least one automobile, and more than 85 percent of the nonregistrants had at least one available driver in their household.

Reasons cited by nonregistrants for their lack of participation in the program reinforce the importance of auto availability that is evident in registrant/nonregistrant

comparisons. Nearly 50 percent of all nonregistrants indicated that the availability of alternative ride sources made it unnecessary for them to register for the program. In addition, nearly 50 percent of all nonregistrants lacked information about the program or intended to register for it. While these latter reasons tend to show a lack of need for or interest in the program, there appears to exist at least some potential for expansion of the program among these nonregistrants. However, most other nonregistrants would not be likely to join the program under any circumstances.

Project Use

The second issue area involves the extent to which different types of registered individuals made use of the project. From the beginning of operations in August 1977, the project experienced a steady growth in taxi ridership to a peak of slightly over 3,000 rides per month. Project transit ridership also increased to a peak of approximately 27,000 rides per month after its beginning in November 1978.

Among registrants there was wide variation in the extent to which project discounts were utilized for each mode. Some 24.4 percent of all registrants utilized the taxi portion of the subsidy program but not the bus portion, 21.8 percent used bus but not taxi, 13.2 percent used both, and 40.6 percent used neither.

Differences in modal utilization appear to be related to a number of registrant characteristics. The group of bus users and users of both bus and taxi had the lowest incomes and fewest ride sources (driver's licenses, available drivers, and vehicles in household). On the other hand, the group of taxi (only) users tended to have higher incomes and more ride sources and contained a disproportionate representation of women, whites,* and individuals requiring aids to travel. As might be expected, individuals who did not utilize project discounts at all had the highest incomes and most ride sources of all registrants.

---

*To some extent, this reflects the low level of project participation by taxi operators in minority neighborhoods. Residents of many minority neighborhoods had access to reduced cost taxi-type transportation outside of the project in the form of (illegal) jitney services. These neighborhoods were also served extensively by MATS buses.

Within each mode, there was also a wide variation in the extent to which project discounts were utilized that appears to be related to a number of registrant characteristics. The group of intensive taxi users contained a disproportionate representation of whites and nonelderly handicapped individuals (handicapped individuals were eligible to apply for a waiver of the nominal project use limit of $7.50 worth of project subsidies per registrant per month). These individuals tended to be workers, and therefore had higher incomes than other registrants, although they had the fewest ride sources of any group. It should also be noted that many nonambulatory project registrants (i.e., those requiring wheelchairs) were able to use the taxi portion of the project at least intermittently, and some were among the most intensive project users. Overall, however, the most significant characteristic of the intensive project taxi users may be their scarcity. Less than 12 percent of all project registrants averaged even one project taxi trip per month, while nearly 20 percent of all registrants used the project vouchers a few times to pay for taxi rides, but did not use the taxi portion of the project on a consistent basis. Among registrants that chose to utilize the taxi portion of the project to at least some extent, the average trip rate was approximately 1.5 project taxi trips per month.

On the other hand, the bus portion of the project, which offered free fares during off-peak hours and half-fares during peak hours, was much more intensively utilized. Nearly 35 percent of all project registrants made project bus trips at least once a month. Intensive bus users contained a disproportionate representation of males, blacks, and nonelderly handicapped individuals. As was the case with taxi, the most intensive users tended to be workers and had the fewest available ride sources, but in this case they also had the lowest incomes. Also in contrast to the taxi portion of the program, nonambulatory project registrants (i.e., those confined to wheelchairs) were unable to use the bus portion of the program, for which service was provided by nonlift-equipped transit buses. Overall, among registrants who chose to utilize the bus portion of the project to at least some extent, the average trip rate was approximately 13.2 project bus trips per month.

Travel Benefits

The third issue area involves the various ways in which users derived travel benefits from the project. The subsidy

may allow more trips to be made than would have been made without the subsidy. These may be new trips or trips that would have been made using a different mode. Alternatively, if the same total number of trips were made without significant mode changes, an income effect may result. The subsidy may also permit travel to more preferred destinations or for additional trip purposes. Furthermore, with an improvement in available travel alternatives, individuals may have greater discretion over the scheduling of trips and travel at more convenient times of the day, week, or month. Since improved mobility for the elderly and handicapped is the primary objective of this demonstration, a detailed assessment of these diverse effects is particularly important.

For the purpose of this analysis, changes in travel behavior can usefully be categorized into effects on overall travel frequency, trip purpose, mode, destination, and timing. Changes of each of these types that are attributable to the subsidy project are described below.

Travel Frequency - Changes in overall travel frequency that occurred because of the program are extremely significant because they represent both the primary measure of changes in registrant mobility and a cause of changes in the total volume of travel handled by service providers. In the taxi portion of the program, it is estimated that 14.3 percent of all trips made by project registrants would not have been made in the absence of the subsidy program. This is the equivalent of .23 project-induced taxi trips per taxi-using registrant per month, a figure that tends to suggest that the increase in overall trip-making attributable to the taxi portion of the program was extremely modest.

Of course, the effect of the taxi subsidy on the mobility of individual registrants may have been significantly higher. For example, most taxi users averaged less than one project trip per month, while some 5 percent of taxi users averaged eight or more project trips per month. Given the concentration of project taxi usage among relatively few registrants, it is reasonable to assume that increases in mobility may have been more substantial for selected individuals than would otherwise be indicated by the .23 trips per month figure. Overall, however, the effect of the taxi portion of the program on registrant mobility tended to be small, but positive.

The bus portion of the program also had at least some effects on registrant mobility. It is estimated that up to

26 percent of project bus trips would not have been made in the absence of the subsidy program. This is the equivalent of 3.4 project-induced bus trips per bus-using registrant per month. Overall, it appears that the bus portion of the project produced a somewhat greater increase in average user mobility than the taxi portion of the project, though both increases appear modest relative to likely total travel rates.

Trip Purpose - Project taxi rides tended to be for shopping, personal business and medical trips. This is consistent with the opinions of project registrants, who indicated that shopping, personal business, and medical trips were the principal types of taxi trips they made more frequently because of the FARE/SHARE program.

Project bus rides tended to be for shopping, visiting friends and relatives, etc. This is consistent with the opinions of project registrants, who indicated that shopping and personal business were the principal types of bus trips they made more of because of the FARE/SHARE program.

Overall, project registrants made disproportionately greater use of taxis for medical trips, while buses were used more for shopping and other types of personal business. It is important to note, however, that given the difference in total volume between bus and taxi usage rates (approximately 25,000 versus 2,800 project trips per month, respectively), a greater number of trips were made by bus for each trip purpose than were made by taxi.

Mode - Increases in total taxi and transit usage resulting from the subsidy program include trips that were diverted to the project modes from other methods of travel. Such trips do not represent an increase in total trip-making by project registrants, but would tend to indicate that the project subsidies have enabled at least some registrants to substitute more preferred modes for less convenient methods of travel. It is estimated that some 31.5 percent of project taxi trips would have been made before the program by MATS bus, driving or riding as a passenger in an automobile, or other means. This yields a total increase in taxi usage that is attributable to the project of 46.7 percent of all project trips. This is consistent with the extremely supportive attitudes expressed toward the project by the largest participating taxi operators.

For bus, it is estimated that up to 37 percent of project trips would have been made before the program by riding as a passenger in an automobile, taxi, or walking. This yields a total increase in bus usage that is attributable to the project of up to 63 percent of all project bus trips. This is consistent with an observed increase in the percentage that elderly and handicapped riders formed of total bus ridership after the beginning of the demonstration.

Destination - Changes in trip destinations are potentially important impacts of a subsidy program of this type, since they could affect the characteristics of the demand encountered by operators and the activity levels of different establishments, as well as indicate a quantum improvement in the mobility of project riders. Conversely, since the project's taxi voucher use limits involved costs, and not the number of trips per se, users may have experienced incentives to take shorter trips, at least when using taxis.

In the taxi portion of the program, registrants indicated that over 92 percent of their trips involved the same destinations as they did prior to the program. Most changes in destination that did occur were related to changes in the level of registrant need for the services available at different destinations, or the closing of previous destinations, rather than an enhancement of registrant mobility that is attributable to the project. It is therefore concluded that project-related new taxi trips did not involve destinations that were not previously visited for a given trip purpose. This is consistent with the fact that project subsidies could generally only be used for trips within the city limits.

Similarly, it is unlikely that the bus portion of the subsidy program induced travel by registrants to any destinations that were not previously visited for a given trip purpose. This is because the bus fare was essentially invariant to distance, or "flat," so that changes in absolute fare levels associated with the project could not affect the relative attractiveness of different destinations, at least for trips that would not have been made previously, or trips that would have been made previously using transit. It is noted that for trips that would have been made previously using a mode other than transit, some changes in destination choice could take place. Overall, however, it is concluded that the program did not affect destination choice to a significant degree.

Trip Timing - Effects of the project on trip timing may serve to indicate significant mobility changes, as the higher volume of travel produced by the project could provide registrants with a greater amount of temporal "coverage" and flexibility for trip purposes of all types. This may be particularly true for the taxi portion of the program, given the relatively small number of taxi trips taken by registrants during any given week or even month. However, project registrants indicated that over 80 percent of their taxi trips were made at the same general time of day, etc., as before the demonstration. Most changes in timing that did occur were related to changes in registrant needs and time availability (e.g., employment status), and did not involve substantial changes in registrant mobility. It is therefore concluded that the project itself did not have a significant effect on trip timing.

Nontravel Benefits

Aside from the travel benefits described above, users of project subsidies received two distinct types of nontravel benefits as a result of the program. First of all, there was a gain in welfare experienced by individuals who increased their modal travel frequency and would have been willing to pay more than the subsidized fare (but less than the unsubsidized fare) to make the new trip(s). For these individuals, the project created new travel opportunities, which, when taken advantage of, made the individuals better off.

The second, and somewhat more tangible, benefit received by project participants was the reduction in fares for trips they would have made anyway. This was essentially a transfer payment that increased the users' disposable income net of travel. On the order of 50 percent or more of the project subsidy payments amounted to such income transfers. These may have been significant income supplements for some project registrants.

Friends, relatives, and cohabitants of project users received indirect benefits from the project. To the extent that registrants used the project discount to take trips that previously would have been taken as a passenger in someone else's auto, for example, the project reduced the requirements placed on those other ride sources.

Transport Supply

The user-side subsidy program had the potential to substantially affect transportation service providers in Montgomery in a number of ways. For example, operator costs could be increased by program administrative requirements. Conversely, vehicle productivity and profitability could change with changes in registrant travel behavior. Effects of all of these types on Montgomery's taxi and transit operators are described below.

Taxi

The impacts of the subsidy program on the Montgomery taxi industry varied widely among taxi companies. Only two firms, Red and Yellow, consistently handled a significant volume of project ridership. As a result, project-related increases in taxi use were concentrated in the operations of these two firms, accounting for approximately 5 percent of their total revenues. While the profitability of project rides may have been limited somewhat by the "rigor" imposed by the grid-fare system in comparison to the largely driver-determined fares for nonproject trips, project rides were generally comparable to nonproject rides in terms of overall resources required and therefore appear to have been profitable to handle. This is reflected in the fact that participation in the program by Red and Yellow drivers increased from approximately 50 percent at the beginning of the project to virtually 100 percent by August 1979.

In general, the program was perceived to be beneficial by the two large companies, who thought that it improved their image in the eyes of their customers and enhanced customer mobility. Of course, some drivers did complain about specific features of the program, such as the time needed to fill out vouchers or the requirement that two vouchers be filled out for a round trip. Also, it should be noted that the total number of cabs in service did not increase measurably due to the program. Indeed, the total number of cabs in service in the participating companies declined after the project started, continuing a longer-term trend that had been in evidence prior to the demonstration. Overall, however, the two large companies were very enthusiastic about the project and found that its benefits greatly exceeded its administrative costs and requirements.

Contrasting with these essentially positive attitudes are the reactions of virtually all of the other operators that ever

participated in the project. The inability of the project to maintain the cooperation of these operators, which were typically small, served minority neighborhoods, and utilized owner-drivers indicates clearly that the benefits of the project for these operators did not outweigh its costs and requirements. Furthermore, most Montgomery cab companies never participated in the program at all.

Nonparticipating taxi operators cited a number of specific problems with the project, including the following:

1. The vouchers took too long to fill out.

2. The fare calculations were too difficult.

3. Many taxi passengers, particularly those making medical trips, were too sick, or were otherwise unwilling to sign the vouchers. A substantial percentage of the ridership of nonparticipating firms was unable to sign vouchers at all due to literacy problems.

4. Payment for project vouchers was often delayed and uncertain at the beginning of the program. Drivers objected strenuously to the project policy of not paying for incorrectly-completed vouchers.

5. Drivers were resentful of the $.80 "flag-drop" initially used by the program, even though a "voucher processing fee" of $.20 was later added to effectively equalize base fares for project and nonproject trips. Some drivers suspected that the city had been making money (at their expense) from the difference in fares.

Perhaps even more important, however, was a general fear on the part of the nonparticipating operators of government involvement with their operations. Some drivers tacitly admitted that they underreported revenues for income tax purposes. The documentation associated with project rides necessitated that they be reported to the IRS, implying that revenue from project rides would necessarily be taxed.

Of particular interest is the fact that at least some of the nonparticipating operators were firms that historically had provided the (illegal) jitney-type services in the minority neighborhoods. With the introduction of a user-side subsidy program of this type, such firms would seemingly have had an

opportunity to increase their revenues by inducing their patrons to join the program. The firms would then have been able to realize higher revenues per trip, while maintaining user fares at an attractively low level and operating much the way that they had previously. Furthermore there was no enforcement mechanism to preclude such operators from foregoing the full amount of the cash payment that was supposed to accompany the project voucher as payment for project trips (though the project documentation associated with such a transaction would raise the driver's tax liability to the level associated with full user-share fare payment). This would have been a powerful inducement for the clientele of such firms, whose poverty and consequent sensitivity to full exclusive-ride taxi fares motivated the development of the jitney services in the first place.

Unfortunately, it is not known exactly why these operators did not participate in the program. It is highly likely that at least some of the reasons relate to the fact that the jitney-type operations provided by some such firms (including reduced user fares and some shared-riding) historically had been illegal, and that such firms, partly in an effort to conceal these practices, had developed a long-standing aversion to contact with government agencies. It is also possible that such firms were taking advantage of laxity in Montgomery's regulatory enforcement in other areas of the taxi code that they did not want discovered, or that racial factors played a role (all nonparticipating firms were minority owned, and may not have trusted a city-sponsored program of this type). These possibilities are accentuated by the fact that nearly half of Montgomery's taxi firms failed to attend the major project planning meetings or respond to project staff efforts to communicate with them by phone or by mail. Finally, it is also possible that the failure of these firms to participate is due to their extreme sensitivity to the project's administrative problems described above. This possibility is reinforced by the fact that a number of minority firms did join the project, but dropped out after gaining experience with its administrative procedures.

Overall, the burdens of the project appear to have outweighed the benefits of increased revenues and ridership for virtually all of the small taxi companies in Montgomery. Most of these burdens appear to have been caused by operator wariness of government involvement in their operations or by administrative difficulties caused by or related to the use of vouchers and the grid-fare system used to calculate project fares. The nonparticipation of these firms, combined with the

reluctance of the large participating firms to provide service in some minority neighborhoods, led to significant gaps in service coverage and/or degradations in service quality for at least some project users.

Transit

In contrast to the experience of the small taxi companies, the FARE/SHARE project had a generally positive effect on the Montgomery Area Transit System (MATS). Project-induced bus trips were particularly beneficial to MATS, since 70 to 80 percent of project ridership typically took place during off-peak hours, when the marginal cost of serving additional passengers was extremely low. Furthermore, the photo IDs associated with the project enabled MATS to overcome a pre-existing fraud problem related to unauthorized utilization of the 50 percent fare discount already offered to elderly and handicapped riders during off-peak hours.

The costs of the project to MATS were generally very low. Administrative requirements averaged approximately 6 hours per week, principally for ticket handling, and the opportunity cost of much of this time was perceived to be low. MATS revenues, on the other hand, increased by up to $700 per week due to the ridership changes associated with the project. Overall, the effects of the project on MATS were almost entirely beneficial.

Social Service Agencies

It was originally anticipated that social service agencies might perceive the user-side subsidy program as an efficient and desirable alternative to their own transportation services, and consequently use the program to supplement or replace those services. Furthermore, for social service agencies that provided no transportation services, the user-side subsidy program was expected to promote access to the agency by its clientele, resulting in increased agency activity levels. In response, the agencies might assist their clients in arranging or paying for project trips, or even provide financial support for the program itself.

At the beginning of the demonstration, agency attitudes toward the program were generally positive, and there was a broad consensus that the mobility of the elderly and handicapped in general, and agency clients in particular, would

be improved by the project. Agencies indicated that they would definitely consider providing support for user-side subsidy program promotion and registration activities. However, active involvement in trip scheduling was viewed as much less attractive, and very little potential for financial support was indicated.

Once the demonstration began, agency support was somewhat less than originally envisioned. Some agency clients were referred to FARE/SHARE or provided information about the program, but only one agency had a productive association with the project.

Given the original expectations concerning the role of social service agencies in the context of the subsidy program, it is important to account for this general lack of agency participation. For agencies that did not provide their own transportation services, participation in the program would have required new expenditures. Budget limitations may have precluded these additional expenditures, or the higher levels of agency activities that could be caused by project-induced trips. For agencies that did provide transportation services, the true cost per trip might have been lower using the subsidy program. However, agency transportation providers may have utilized donated labor and vehicles that were nontransferable to other agency activities. Lack of rigorous cost accounting may also have contributed to agencies' lack of awareness of cost differentials.

Other potential causes for the lack of agency participation include the following:

1. Service -- The clients of some agencies had specialized service requirements in terms of equipment or responsiveness (e.g., ambulances) that could not be met by ordinary taxis. Direct agency control over the selection and operation of equipment ensured that these requirements were met.

2. Nondiscrimination -- The service areas of many of the agencies were larger than the area covered by the subsidy program. Agency support of the project or project trips would therefore have amounted to a differential in the overall quality of service offered to agency participants.

3. User cost -- Even with a 50 percent subsidy, the cost to the users of conventional taxi service was still

often greater than that of agency transportation, which in many cases was provided free.

4. Marketing -- Agencies that provided transportation services may have placed a value on the positive effects that service had on the attitudes of clients towards the agency and may not have wanted to forego that benefit.

GENERAL CONCLUSIONS

From the experience of the Montgomery user-side subsidy demonstration, a number of important general conclusions can be drawn.

1. In Montgomery, the aversion of some firms to contact with government agencies was extremely strong (due to such factors as preexisting violations of the taxi code, racial mistrust, etc.) and would likely have required fairly drastic action (e.g., threatening to suspend operating rights or empound vehicles) to overcome. Such action would normally be undertaken only with strong political support from the city, which was not forthcoming during the detailed project planning phase.

   At other sites, particularly those with stronger regulatory enforcement, there may be less aversion to government contact, making it possible for more operators to participate in a subsidy program of this type. Of course, it is not necessary for a user-side subsidy program to achieve a 100 percent participation rate among local taxi firms. As long as there is reasonable coverage of the areas where project registrant trips originate, the subsidy program will likely be effective whether or not all operators choose to participate. Nonparticipation only becomes an important problem when it causes significant gaps in service coverage and/or degradations in service quality for project users, such as occurred in Montgomery. Therefore, at other sites, the importance of breaking down barriers to project participation that do exist, particularly barriers between project planners and the carriers that handle the majority of taxi trips made by the most disadvantaged individuals in the eligible population, should not be underestimated.

2. The organization and characteristics of many of Montgomery's taxi companies made it difficult for them to take advantage of the user-side subsidy program. Much of the Montgomery taxi supply consisted of small firms utilizing owner-drivers who worked largely on a cash-only basis in informally-limited neighborhoods or geographical service areas. Firms that operate a small number of vehicles in a small service area, particularly those with limited dispatching capabilities, may be at a serious disadvantage relative to larger firms in terms of their ability to dynamically group rides for shared-riding under the project, or utilize dispatcher resources to fulfill project administrative requirements. Likewise, owner-drivers that operate on a cash-only basis may be severely restricted in their willingness and ability to use the project due to delays and uncertainties involved in project reimbursements.

   In Montgomery, various efforts were made to circumvent these problems, including an experimental $50 cash advance to drivers, and project reimbursement payments were eventually made more timely and more reliable. However, many of these limitations appear to be inherent, given the characteristics of the pre-existing taxi supply.

   At other sites, it should be anticipated that different firms will differ in terms of their ability to take advantage of the potential benefits of a user-side subsidy project. Cash-only drivers may require special actions (e.g., petty cash accounts, possibly administered by their taxi companies, from which advances can be drawn upon submission of completed vouchers prior to their formal processing by the program), or at least quick turnaround, if they are to be willing and able to take advantage of user-side subsidy programs to any great extent. Likewise, if the initiation of shared-riding is made part of a user-side subsidy project, it must be recognized from the outset that all firms are not equally capable of grouping rides in real time. Such considerations are important if the experience of Montgomery, where there were significant numbers of nonparticipating firms, is to be avoided.

3. To the extent that such factors as the low level of enforcement of the pre-existing Montgomery taxi code enabled operators to charge excessive fares and/or underreport their revenues, the subsidy program may have appeared unattractive to operators in a number of ways. For example, the tolerance of broken odometers by regulatory officials, and consequent reliance on drivers to estimate the proper fares, produced at least some opportunities for operators to charge excessive fares. The rigor imposed by the project's grid-fare system eliminated such opportunities for project rides and made them correspondingly less attractive. The "audit trail" created by the project's vouchers was also found to be unattractive by independent drivers who historically may have underreported their incomes for tax purposes.

   These problems serve to highlight two of the fundamental requirements of user-side subsidy programs in general. First, it is necessary that a reasonably consistent, objective and reliable method exist for determining at least an upper bound on taxi fares for individual trips. If such a method does not exist, obvious opportunities are created for fraudulent use of subsidy funds through the simple inflation of fares for subsidized trips. Second, it is necessary that there exist sufficient documentation of project trips for a subsidizing agency to be able to determine the proper amounts and recipients of project reimbursements.

   In Montgomery, the actions taken to fulfill these requirements (institution of grid-fare system; use of vouchers) limited the clandestine opportunities available to taxi operators to enhance their revenues and profitability. These actions must generally be viewed as the inevitable result of the conflict between the administrative requirements of the user-side subsidy concept, and the preproject practices of at least part of the taxi industry in Montgomery.

   At other sites, it is not unreasonable to expect that this conflict will reappear to some degree. The severity of the problem will be related to such factors as the level of rigor in the existing fare structure and practices, the existence and administrative enforcement of requirements for "driver

logs" that document all taxi vehicle activities and revenues, and even the nature of company/driver relationships.

4. Montgomery's taxi fare structure, being based on mileage travelled, was generally incompatible with the requirements of shared-riding (i.e., the need to determine consistent and equitable fares when individual passengers may experience substantial circuity). At the same time, the taxi operators who participated in the project planning process did not want the project fare structure to differ materially from the existing mileage-based structure. The grid-fare system that was eventually implemented fulfilled these needs, but proved to be extremely difficult for many operators to use in practice. This system entailed calculation of fares from a network of over 200 zones. Many drivers did not see or read well enough to use the detailed grid-fare maps or found it difficult to use them in the front seat of a cab.

   For the two cab companies that played dominant roles in the project planning process, this problem was not insurmountable, since they envisioned that the dispatchers, rather than the drivers, would compute the zone-to-zone fare for project and shared-ride trips. However, for the smaller companies that lacked dispatching capabilities and/or received much of their business from non-dispatch sources, this was a significant obstacle.

   In Montgomery, it would have been very difficult to avoid these problems by changing the design of the project. While user-side subsidies are not incompatible with mileage-based fares per se, it was necessary for the project to provide a reasonably objective, reliable and consistent method for calculating fares and subsidy payments that could be used for both single and shared-rides.

   Given these requirements, a grid-fare system of the general type used in Montgomery was a logical approach. However, the level of detail required in the grid-fare system to retain comparability with the pre-existing mileage-based fare structure proved to be excessively complex for some firms to utilize in practice.

At other sites, it is evident that a taxi fare structure (either in place or feasible to establish) that is both tamper-proof and comprehensible is a prerequisite for successful application of user-side subsidies. If shared-riding is not to be offered, mileage-based fares would likely be acceptable if the meters were checked for accuracy, and efforts were undertaken to ensure that excessive circuity and idle time were not induced by the subsidy. If shared-riding is to be offered, a zonal-type fare structure is preferable, particularly one with a reasonably small number of zones that can easily be understood by drivers and passengers alike. Alternatively, some form of centralized dispatching and/or fare calculation for project trips could be offered. To the extent that these conditions exist or can easily be introduced at other sites, the types of problems encountered in Montgomery related to the implementation and use of the grid-fare system can be minimized.

5. The voucher slips used to administer the subsidy were found by drivers to be difficult and time-consuming to fill out. Literacy problems inhibited the participation of a number of potential passengers and drivers. These problems were exacerbated by the high level of detail of information required in the Montgomery vouchers to aid in fraud detection. However, even with a simpler instrument, disability or illiteracy among passengers and drivers can be expected to present at least some problems in an administrative control mechanism (i.e., the voucher) that relies on documentation of one type or another provided by each of these groups for each ride taken.

   Of course, at other sites, these problems may be less significant than they were in Montgomery, resulting in greater acceptability of the voucher mechanism. However, to the extent that these problems exist at all, they must be viewed as exogenous to a user-side subsidy program, and they will tend to limit the applicability of the voucher mechanism relative to less documentation-intensive administrative procedures (e.g., scrip or tickets). If vouchers are to be used at other sites, methods for circumventing these problems, such as making greater use of

dispatchers and/or dispatcher logs for project documentation, should be considered and planned in advance.

6. The fact that the base fare was initially lower for project rides than for nonproject rides caused service providers to begin the project by taking advantage of every reasonable opportunity for grouping rides, even at the expense of substantially increased passenger wait times. Such service degradations were especially pronounced in minority neighborhoods not normally served by the two principal participating companies, where shared-riding might substantially reduce "deadheading" mileage. These service degradations continued after the fares for project and nonproject rides were effectively equalized, reflecting in part a lack of desire on the part of the two large participating companies to develop business in the minority neighborhoods that they did not routinely serve.

   In retrospect, the differentiation of base fares did not make a positive contribution to the viability of the subsidy program. Rather, this policy simply reflected a planning decision that the taxi companies should not receive the financial benefits resulting from increased vehicle productivity accruing from the removal of restrictions on shared-riding (i.e., that revenues should decline with the costs of providing service, just preserving net revenues). In fact, initial assumptions concerning the likely level of shared-riding were found in practice to be excessively optimistic, leading to adverse financial impacts that only served to alienate the participating companies.

   An initial determination to leave the base fare for project trips at $1.00 would have avoided much of the acrimony that characterized the early phases of the project, as well as compensated somewhat (from the operator viewpoint) for the higher level of rigor and effort involved in the calculation of project fares (see above). These factors might have led to somewhat higher levels of operator participation and service quality in the Montgomery program.

   At other sites, extreme care should be taken in any effort to lower the fare structure for project rides

based on the anticipated beneficial impacts of the project on operating efficiency, etc. Planners and operators naturally tend to support differing estimates of such impacts, and the furore involved in reconciling these differences serves no real purpose, given that sample data become available soon after the beginning of the project. Particularly in cases where there are no demonstrable excess profits prior to the project, it is more beneficial from the point of view of the project to make adjustments that are accurate, but after-the-fact, rather than timely, but sources of major controversy.

7. Poor communication by project planners with the taxi operators led to a number of problems. For example, it was at one point assumed that operator failure to respond to a letter describing a proposed taxi ordinance change constituted implicit operator approval. This assumption was proven to be erroneous by subsequent events, and led to needless delays and misunderstandings in project implementation. Similarly, a failure of project planners to initially convey the project's fare structure to all operators, or respond to deeply-felt and frequently-repeated operator opinions regarding the impracticality of discount fares for shared-riding in Montgomery, only created additional problems and delays during the early phases of the project.

   The impacts of these communication problems generally diminished over time, and were not major determinants of subsequent project events. However, another form of communications difficulty did have a more lasting effect. Specifically, the inability of the project planners to establish any communication with nearly 50 percent of Montgomery's taxi firms, or to communicate regularly with some others, produced a situation where the two large firms dominated the taxi industry's inputs into the project planning process. Under these circumstances it is not surprising that, for example, the grid-fare system that emerged from the planning process was most easily used by large firms with centralized dispatching, while smaller firms found it difficult and tedious to use.

   Of course, the aversion of those small companies to contact with government personnel was not the fault

of the planners. Nevertheless, in light of the large potential benefits of the project for these taxi firms and their clientele, it seems likely that a communications strategy that relied more on informal methods of identifying operator reservations (and less on certified letters and group meetings) could have induced at least some of the nonparticipants to contribute in some small way to the planning process and/or join the project on an experimental basis.

At other sites, the implementation and operation of a user-side subsidy project can obviously be jeopardized or handicapped by poor communications. Care should be taken to avoid these types of communication difficulties whenever possible.

Overall, despite all of the problems outlined above, the Montgomery project produced at least modest mobility improvements for individuals who were able to use it, was generally well-received by the transit operator and the two large participating taxi companies and their drivers, and entailed low costs per trip. It therefore should not be concluded that the results of the Montgomery demonstration in any way cast doubt on the viability of the user-side subsidy concept. However, numerous aspects of the design, implementation and operation of this project may be subject to improvement, and a number of issues related to the general transferability of the user-side subsidy concept remain open to further investigation.

1. DEMONSTRATION BACKGROUND AND OBJECTIVES

1.1 INTRODUCTION

The mobility needs of special user groups (e.g., the elderly and handicapped) have come to light in recent years as a significant public policy issue. Within cost constraints, the Urban Mass Transportation Administration (UMTA) and other governmental agencies have adopted a general policy of attempting to satisfy the transportation needs of these groups. A number of alternatives are available for providing such services, though these alternatives vary substantially in terms of their costs and other impacts. Public agencies are therefore often put in the position of having to make difficult trade-offs among these services and their attributes before a preferred, cost-effective service concept is found.

One type of alternative commonly proposed to meet the transportation needs of mobility-disadvantaged user groups consists principally of modified conventional (fixed route and schedule) transit. Unfortunately, a heavy reliance on conventional transit usually encounters a number of serious difficulties. The most obvious of these involve the expenses and technical problems associated with the development of new hardware (e.g., wheelchair lifts, "kneeling" buses) and/or the retrofitting of existing facilities and equipment. While user costs may be maintained at an attractively low level through subsidies given to the transit provider, the need for most transit patrons to walk a significant distance and wait prior to boarding the transit vehicle, walk again from the transit vehicle to the final destination, and possibly transfer en route, is likely to be particularly onerous for the elderly and handicapped, yielding low utilization rates. As a result, the cost-effectiveness of strategies for enhancing the mobility of this target group that rely solely on conventional transit may be questionable.

Another alternative type of service concept involves the direct provision of at least partially demand-responsive specialized transportation services for the elderly and handicapped. Through vehicle purchase or contractual arrangement, agencies may provide free or low-fare doorstep-type transportation services to any given target group. However, because of the relatively small number of

vehicles typically employed, these services may be limited to certain times, destinations, or trip purposes. Furthermore, the restriction of service to use by a particular clientele may lead to low vehicle utilization (passengers per vehicle-hour) and consequent high unit costs. Once again, therefore, the cost-effectiveness of such services may be cast in doubt.

It is important to note, however, that both of the above service concepts involve the payment of subsidies directly to non-profit service providers. When such subsidies are given without regard to patronage or user satisfaction, but rather are based mainly on costs, there are few incentives for the service provider (conventional or specialized) to improve economic efficiency or service quality. To some extent, this lack of positive incentives may be a cause of the low levels of cost-effectiveness typically associated with such services.

1.2 PROJECT INNOVATIONS

In an effort to circumvent some of the problems associated with the "provider-side" subsidy approach, the demonstration project conducted in Montgomery focused on the concept of "user-side" subsidies for both conventional transit and privately-operated door-to-door taxi service to bring about improved mobility for elderly and handicapped individuals. Instead of providing an operator with a guaranteed subsidy to cover the cost of service, user-side subsidies involve the direct reimbursement to individuals of some or all of the costs of their local trips. Specifically, under a user-side subsidy arrangement, target group individuals are able to use vouchers, prepurchased scrip or tickets, or some other medium to purchase transportation services from existing suppliers for a reduced out-of-pocket cost. The subsidy medium (ticket, voucher, etc.) is typically collected from the user by the service provider at the time of each delivered trip, and returned to the subsidizing agency for reimbursement.

In recent years, UMTA's Service and Methods Demonstration (SMD) Program has examined a number of applications of the user-side subsidy concept through both demonstrations and case-study evaluations. The Montgomery demonstration can therefore be viewed as one in a series of tests of the merits and applicability of different variations of this concept in different settings.

This type of subsidy has drawn interest among policy makers because it places the travel decision -- i.e., whether or not to travel and by what mode -- in the hands of the consumer. Operators cannot take the subsidy for granted and only receive benefits under the subsidy to the extent that they carefully sense the travel needs of the public and offer levels of service that are competitive with alternatives. It is therefore hypothesized that user-side subsidies may provide greater incentives for the efficient provision of transportation services, while providing funding agencies with a good deal of flexibility concerning the types of individuals and/or trips that are to be subsidized. This application of a public subsidy to provide discounts directly to travelers for their use of conventional transit and private taxicab service in Montgomery is consistent with the U.S. Department of Transportation's general goal of using existing public and private transportation resources more effectively, and was the major innovation involved in this demonstration.

A project innovation of secondary importance involved changes in the regulations governing the practice of sharing taxi rides. Before the demonstration began, the Montgomery City Code did not address the issue of shared-ride taxi service, either for the purpose of delineating the circumstances under which such practices were permissible, or to establish the appropriate method for computing fares.* As part of the demonstration, the Code was amended to explicitly allow shared-riding, and a grid-type zonal fare structure was established for the purpose of computing fares for project and

---

*The mileage-based fare structure contained in the Code would generally be inappropriate for shared-ride service, which is likely to involve circuitous routes for some passengers. Pure mileage-based fares could be quite inequitable in some shared rides, where the actual distance travelled with a given passenger in the vehicle may substantially exceed the length of the most direct route between that passenger's origin and destination. Conversely, there may be substantial practical problems involved in assigning or allocating fares to individual riders in a shared-ride situation, unless (inequitable) full mileage-based fares are used. Thus a change in the method of computing fares was needed to support the prospective changes in shared-riding activity associated with the project.

shared rides. Regardless of their other effects and/or merits, the changes were needed to qualify Montgomery's taxi service as a form of mass transit that was eligible for Federal subsidies, since UMTA does not fund services in which individuals can reserve vehicles for their own exclusive use.

1.3 PROJECT OBJECTIVES AND EVALUATION ISSUES

The principal goal of this project was to demonstrate the cost-effectiveness of user-side subsidies in a multimodal environment as a means to improve the mobility of the elderly and handicapped. A secondary objective was to increase transit vehicle productivity. These goals correspond directly to stated objectives of the Service and Methods Demonstration (SMD) Program, and are significant in the context of local priorities as well. By reducing the price of travel, the user-side subsidy program could be expected to lead to increased rates of trip-making, or to increased temporal and spatial travel alternatives, by making some trips feasible that would previously have been beyond an individual's budget limitations. Alternatively, participants could choose to continue old travel habits with reduced expenditures and thus use the subsidy to reduce the cost of transportation.

If the effective reduction in taxi fare led to increased patronage, the productivity of taxi operations could improve. This improvement could be further enhanced by the formal adoption of shared-riding as part of the project and, in turn, could stimulate changes in the supply of taxi service. Likewise, increases in transit patronage could improve transit vehicle productivity and lead to service changes as well. Broader, external effects (e.g., on social service agencies) could also result from the program and its effects on travel behavior.

Overall, the purpose of this evaluation is to enhance the understanding of operational issues and factors that determined the impacts of this user-side subsidy program and, consequently, the circumstances under which this concept could most beneficially be applied elsewhere. Specific research issues addressed in this effort, which are described in detail below, fall into the following general categories:

1. The operational and administrative feasibility of the user-side subsidy concept as demonstrated in the project;

2. The impact of the user-side subsidy on the mobility of the target group;

3. The impact of the user-side subsidy on the supply of transportation services; and

4. The impact of the user-side subsidy on social service agencies.

1.3.1 Concept Feasibility

In large part, the feasibility of the user-side subsidy concept depends upon the acceptance and cooperation of transportation service providers. This particular demonstration involved the participation of a relatively large number of taxi operators, each of whom was required to satisfactorily fill out project vouchers, submit them to the subsidy program, and wait for reimbursement. Similarly, the bus operator had to keep track of large numbers of tickets, submit them to the subsidy program, and wait for reimbursement. The ability of the subsidy program to forge a practical working relationship between transport suppliers (many of whom may be leery of government intervention) and the requirements of the concept for regulatory adherence and accountability is an important evaluation issue.

The subsidy manager, in this case the City of Montgomery, must account for project usage (subject to various auditing and verification checks), resolve all billing inconsistencies, and see to the timely repayment of transport suppliers. In addition, the manager has the responsibility of screening and registering users, answering their complaints, and enforcing the rules and restrictions of the program. The potential for fraud is of particular concern in the administration of user-side subsidies.

In general, the cost and complexity of administering a transportation subsidy program in which reimbursements to providers are based on an accounting of trips made by eligible users are expected to be significant. Such administrative requirements may be as important as the direct (e.g., travel behavior) impacts resulting from the subsidies themselves when the applicability of this concept is considered in other

settings. It is therefore essential that differences in administrative feasibility and impacts that are attributable to different subsidy mechanisms (i.e., tickets vs. vouchers) be identified and investigated.

The feasibility and acceptability of the user-side subsidy concept as evidenced in the Montgomery demonstration may be further influenced by various factors related to the transition from the historical mileage-based fare structure to the project's grid-fare system. The grid-fare system divided the Montgomery taxi service area into over 200 zones, each of which was approximately one-half mile square. Under this system, fares were calculated on the basis of the number of horizontal and vertical "grid-steps," and were designed to approximate the fares that would have resulted from the mileage-based system for passengers receiving direct service. However, grid-fare systems differ from mileage-based systems in terms of, for example, the requirements placed on drivers in the calculation of fares. The nature and magnitude of such differences may affect the feasibility of using grid-fare systems to facilitate shared-riding by project users.

1.3.2 Mobility of Project Users

The user-side subsidy concept is targeted at people whose ability to travel when and where they desire is often severely limited by their economic situation or physical condition. Elderly and handicapped individuals generally have less income and fewer transportation alternatives than the general public, and often require physical assistance. Reduced-cost transit service may be most attractive for individuals with the lowest incomes, particularly the able-bodied. Taxis may also be quite beneficial, as they offer the door-to-door service quality of automobiles and entail a minimal effort or wait on the part of the rider. The sole exception may be wheelchair-confined individuals, who may find it difficult or impossible to utilize vehicles such as conventional buses or taxicabs that are not specially equipped to board and transport severely handicapped patrons.

It should also be noted that the project may be expected to cause changes in some non-cost attributes of transportation services. For example, average in-vehicle travel time may increase as the frequency of shared-riding increases. The nature and magnitude of such changes must be considered along with the changes in out-of-pocket costs when the impacts of user-side subsidies on registrant mobility are examined.

Overall, the amount and character of travel by the elderly and handicapped may change in a number of important ways when they are provided with user-side subsidies. Evaluation of these effects focuses on three fundamental issues: 1) the attractiveness of the program to the target group; 2) the beneficiaries of the program; and 3) the types of benefits that accrue to users.

The first issue involves the extent to which the user-side subsidy program was sufficiently desirable to attract target individuals to register. Unlike other potential demonstrations, where the project service would constitute a new and untried alternative, Montgomery residents had access to the project modes, taxi and bus, in the predemonstration environment. This familiarity may have reduced the need for the project to provide introductory or explanatory information to potential users, and may have enhanced registration in comparison to the provision of a totally new service. However, many people may not have found it in their interest to make use of the project, and it is of interest to see how they differed from project registrants. Nonparticipation may reflect a lack of need for project services in general due to the availability of travel alternatives, or a lack of need for subsidies (e.g., due to high incomes). Other factors, such as aversion to taxi or bus service, may also be significant, and their importance must be established. Another reason for nonparticipation, lack of information, is particularly important in assessing the transferability of the concept to other sites.

The second issue involves the extent to which different types of registered individuals made use of the project. Users with different characteristics may have had dramatically different rates of overall project utilization, as well as project utilization by mode. Indeed, the mode choice behavior of project users, given the option of using either bus or taxi at discount rates, is a topic of considerable interest. It may be possible to draw inferences from the characteristics of users and nonusers of the bus and taxi subsidies to make projections of the potential demand for subsidized service at other sites.

The third issue focuses on the various ways in which users derived benefits from the project. The subsidy may allow more trips to be made than would have been made without the subsidy. These may be new trips or trips that would have been made using a different mode. Alternatively, if the same total number of trips were made without significant mode changes, an income effect may result. The subsidy may also permit travel to more preferred destinations or for additional trip purposes. Furthermore, with an improvement in available travel alternatives, individuals may have greater discretion over the scheduling of trips and travel at more convenient times of the day, week, or month. Since improved mobility for the elderly and handicapped is the primary objective of this demonstration, a detailed assessment of these diverse effects is particularly important.

1.3.3 Transport Supply

Changes in travel frequency and mode choice resulting from the user-side subsidy program may have significant effects on the supply of transportation services. Because a given level of conventional transit service can generally be provided even in the presence of significant variations in demand, the effects of project-related transit volume changes are likely to be reflected primarily as changes in transit operator revenue and productivity. However, service changes directed at the elderly and handicapped market could also result.

In contrast to conventional transit service, though, the quality of taxi service is often highly sensitive to the relationship between the number of taxicabs available, and the number and characteristics of individual service requests made at any given time. Therefore, any changes in travel behavior that occur because of the subsidy program may have significant effects on the entire taxi industry. These effects may involve the overall taxi market structure in Montgomery, or the operations and profitability of individual firms.

The overall market structure could be affected if the project leads to a change in the number or relative size of firms in the market. Also it is important to determine whether firms participating in the project experience greater or lesser benefits than those that do not. If the level of service to

nonproject riders drops as a result of a firm's participation in the project, nonproject riders could shift to nonparticipating firms. It is of particular interest to examine whether firms shift into or out of the project market over time, whether project or nonproject firms increase or decrease in size during the project, and whether these shifts parallel trends in subsidized or nonsubsidized ridership.

The subsidy program could affect the structure and profitability of the individual firm in several ways. If ridership grows, taxi firms may have to increase their effort in vehicle dispatching or maintenance. Company managers may also initiate new service or operating policies to alter their competitive position in the elderly and handicapped travel market. Such changes could include increases or decreases in the wait time experienced by individuals in target markets, improved service at particular trip generators, and advertising directed at potential project riders. If these changes result in cost increases, taxi firms could seek greater rents from drivers, eventually leading some drivers to shift from one firm to another or start new firms for themselves.

For individual operators participating in the project, general improvements in service productivity (and hence profitability) should occur as overall demand tends to increase and shared riding is formally initiated. These improvements may be tempered somewhat if project-induced trips require extra resources (e.g., driver assistance), involve destination areas not routinely served by taxis, or yield lower gratuities. If productivity and profitability do increase, operators may expand vehicle utilization by working longer hours or hiring additional drivers. It is of considerable interest to establish whether such changes were made in Montgomery as a result of the demonstration project.

1.3.4 Social Service Agencies

Because the demonstration project was designed to benefit many of the clients of social service agencies, these organizations might be expected to participate in the implementation and operation of the user-side subsidy program.

Many social service agencies in Montgomery already provide transportation assistance to their clients, ranging from simple cost-sharing to service contracts with transport suppliers to operate entire fleets of vehicles. For these agencies, the user-side subsidy program may offer the opportunity for significant cost reductions, and enhance the range and overall productivity of agency services. For agencies that do not offer transportation services, coordination of transportation needs with the user-side subsidy project could also lead to increased agency participation and growth in the number and variety of agency programs. Changes in the cost, attendance, or scope of agency service programs associated with the project are therefore of considerable interest.

If the project produces substantial benefits for agencies or their clients, those agencies might provide funds for continuation of the project beyond the demonstration stage. While some incentives may exist for noncooperation with the project (e.g., promotional advantages of agency-managed transportation services, or problems involved in interagency coordination), the extent to which social service agencies respond and become involved should provide some indication of the potential for agency benefits resulting from user-side subsidy programs.

1.4 EVALUATION OVERVIEW

The information and analysis presented throughout this report is based on a series of data collection efforts conducted by the City of Montgomery that were designed to monitor all of the potential effects of the demonstration project described above. To a great extent, the data collection was structured in a "before and after" framework to identify changes that took place with the implementation of the demonstration. The before and after observations have been supplemented by monitoring exogenous events and indicators of site activity to facilitate the interpretation of before/after changes, and enhance the credibility of findings. Descriptions of each specific data collection activity, along with survey instruments and sampling plans as appropriate, are presented in Appendix A.

1.5 ORGANIZATIONAL ROLES

Organizations involved in the Montgomery User-Side Subsidy Demonstration Project and its evaluation are described below.

URBAN MASS TRANSPORTATION ADMINISTRATION (UMTA)

SMD project sponsor with overall supervisory and management responsibility.

URBAN INSTITUTE

Provided preliminary design of the user-side subsidy project under contract to UMTA, along with technical assistance and support during the project planning and implementation phases.

CITY OF MONTGOMERY

Service and Methods Demonstration grant recipient, also referred to as the grantee.

MONTGOMERY DEPARTMENT OF PLANNING AND DEVELOPMENT

Delegated responsibility by the Mayor of Montgomery for overall project administration. In charge of project and subsidy management, user registration, and data collections used to support monitoring and evaluation activities.

MONTGOMERY CITY FINANCE OFFICE

Responsible for project accounting and disbursing subsidy payments to transportation providers.

MONTGOMERY AREA COMMITTEE ON AGING AND MONTGOMERY CHAPTER OF NATIONAL ASSOCIATION OF HANDICAPPED PERSONS

Assisted Department of Planning and Development in outreach and registration of eligible individuals and marketing of project bus and taxi services.

TRANSPORTATION SYSTEMS CENTER (TSC)

Supervised project evaluation.

CHARLES RIVER ASSOCIATES (CRA)

Assumed overall responsibility for monitoring and evaluating the demonstration project under contract to TSC.

2. DEMONSTRATION SETTING

Evaluation of the effects of the Montgomery user-side subsidy demonstration requires an understanding of the project's environment. Important background conditions, including geographic, demographic and transportation characteristics, must be understood for interpretation of changes that took place after implementation of the demonstration. Therefore, in this chapter, the predemonstration setting is described, along with exogenous changes in key characteristics that took place during the project.

2.1 SITE DESCRIPTION

2.1.1 Predemonstration

The City of Montgomery is situated on level terrain in the center of Alabama and serves as the state's capital (see Figure 2-1). Montgomery's 1977 population was estimated to be 156,333, approximately 70 percent of the total population of Montgomery County and more than 95 percent of the county's urbanized population. Montgomery, the only city in its Standard Metropolitan Statistical Area with a population in excess of 50,000, had a land area of 50.94 square miles in 1977. Its median income of $8,462 (1970) is somewhat below that of the nation but it is higher than that of the rest of the state.

2.1.1.1 Land Use - Montgomery's central downtown area is located on the northwestern side of the city and consists of a variety of government offices and commercial establishments. In addition, the southern fringe of the central business district is experiencing a change in land-use characteristics, from primarily residential to various forms of commercial use. As shown in Figure 2-2, a significant amount of commercial development is also occurring outside the central business district area.

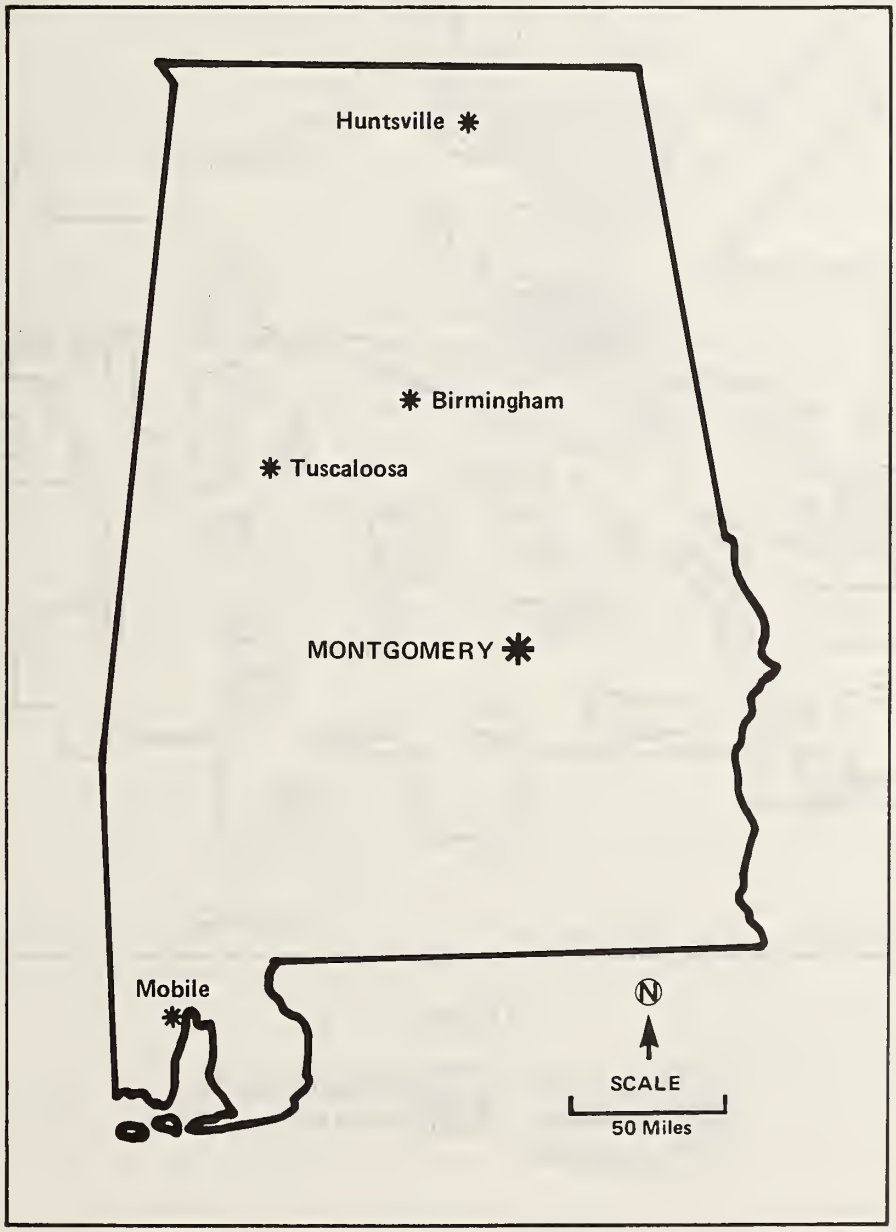


Figure 2–1. LOCATION OF MONTGOMERY, ALABAMA

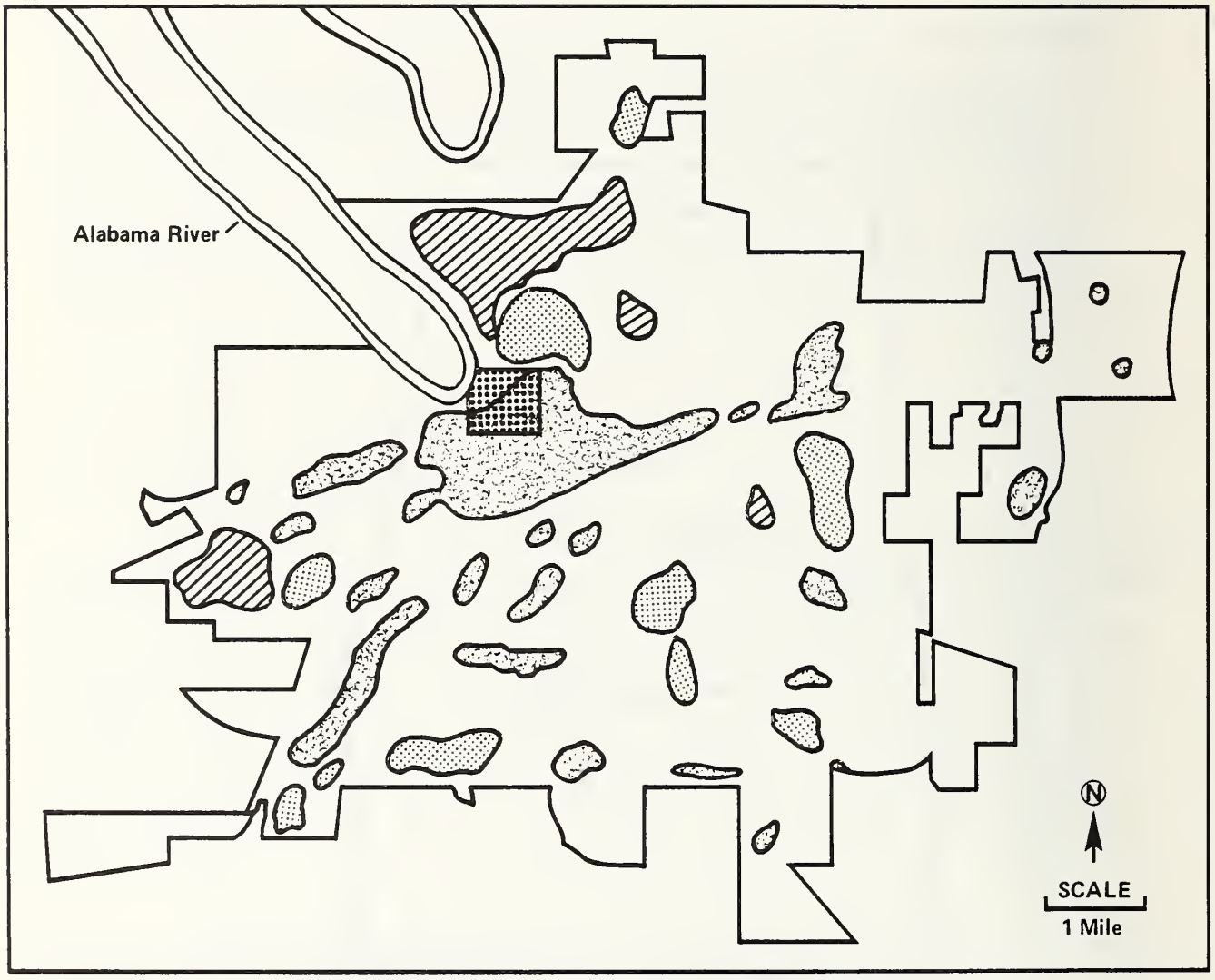


Figure 2–2. LAND-USE DISTRIBUTION IN MONTGOMERY, 1974

Residential development accounts for 45 percent of Montgomery's total land use and is concentrated in the southern and eastern areas of the city. Shopping and medical facilities, once primarily located in the downtown area, have gradually relocated to outlying areas, although most social service agencies continue to be located downtown. The City of Montgomery exercises extraterritorial planning and zoning jurisdiction for a distance of three miles outside the city limits, and serves as the Metropolitan Planning Organization (MPO), whose functions are carried out by the Department of Planning and Development.

2.1.1.2 Economic Base - In 1977, the Montgomery area was classified by the U.S. Department of Labor as an area of moderate labor shortage, meaning unemployment was between 3 and 6 percent of the labor force. The retail trade sector is the largest in the local economy, as Montgomery serves as the wholesale-retail trade center for 13 counties in central Alabama. As the state capital, it also serves as the center of state government. Montgomery is the home of Maxwell Air Force Base, the Air University, and Gunther Field. Montgomery's public airport is Dannelly Field, located approximately 6 miles southwest of the central downtown area. The Alabama River, on the northwest side of the city, is completely navigable to the Gulf of Mexico.

2.1.1.3 Climate - Montgomery is located on generally-level terrain and has no local topographic features that appreciably influence weather and climate. The average January temperature is 49 degrees (Fahrenheit) and the average July temperature is 82 degrees. From June through September temperature and humidity generally show little change from day to day. During the coldest months (December, January, and February) there are frequent shifts between mild and moist air from the Gulf of Mexico and dry, cool continental air. Hard freezes are infrequent during winter months, and severe heat is infrequent during summer.

From late June through the first half of August nearly all precipitation is from local thundershowers that mainly occur during the afternoon and vary widely in intensity across different parts of the Montgomery area. In late August and in September summer temperature and humidity conditions persist, but local thundershowers become less frequent. Rains during October and November are nearly always showers or thundershowers occurring ahead of temperature drops, which become more frequent and more pronounced as winter approaches. All types and intensities of rain may occur at any time from December through March or early April, and river flooding is correspondingly most frequent during this period. Rain becomes less frequent as summer approaches, and it is during this spring season as well as during the late summer and early autumn that droughts sometimes occur. Snow in Montgomery is very rare.

2.1.1.4 Demographic Composition - As shown in Table 2-1, Montgomery's 1970 population of 133,386 represented a drop of .7 percent since 1960. However, this trend has reversed in the 1970s. Montgomery's estimated 1977 population of 156,333 is 17.2 percent above the 1970 level, although this change includes individuals who resided in the 4.54 square miles of land annexed during the intervening period.

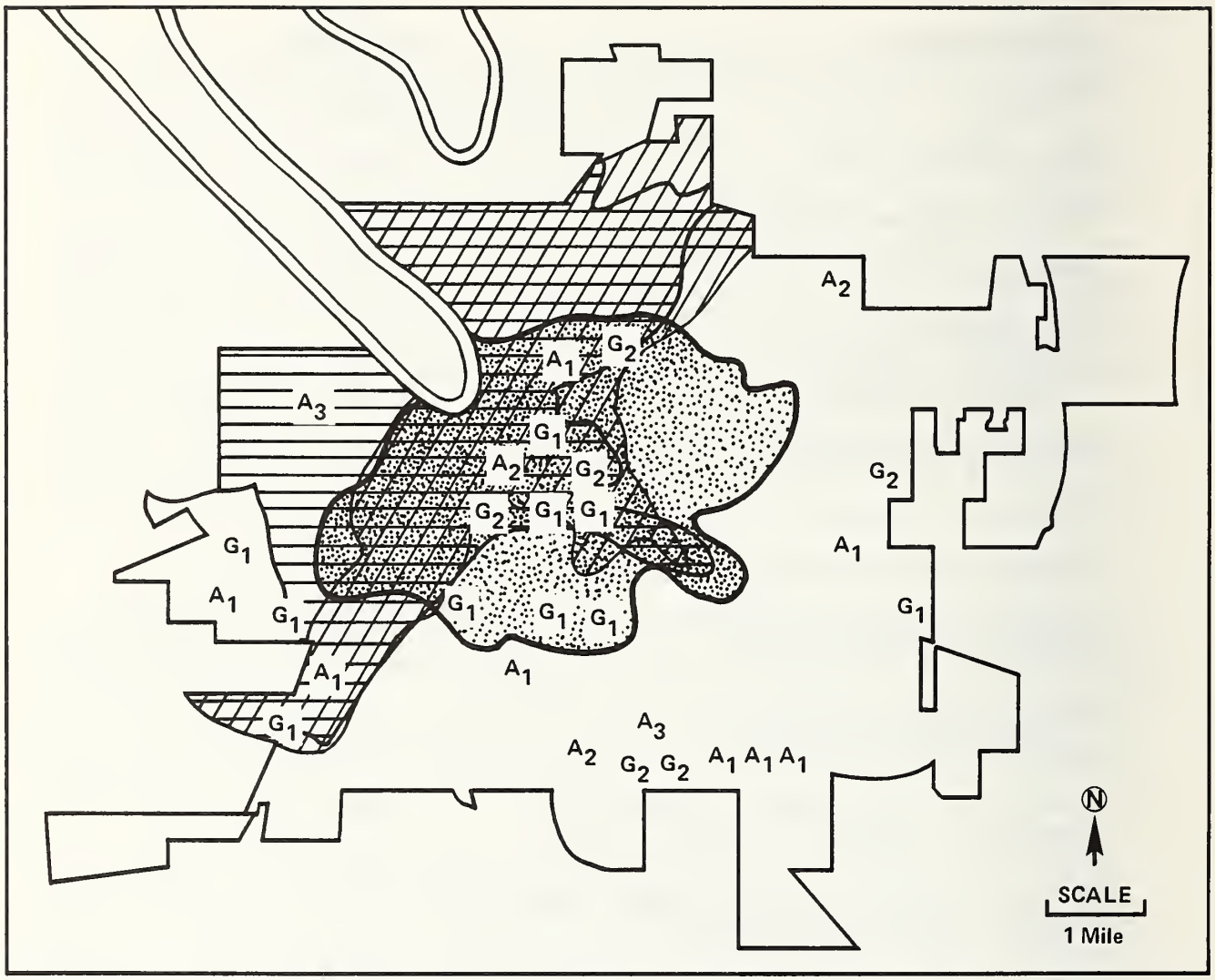
Montgomery comprises a relatively large area, implying that some intracity travel distances may be relatively long. The city also has a low median income and automobile ownership rate, indicating a large population that may be dependent on taxis or transit for its mobility.

Within the City of Montgomery, there tend to be distinct geographical distributions for different demographic groups. For example, the city's black population (approximately 31.8 percent of the total population) resides mainly in the northwestern part of the city and is concentrated in two separate clusters immediately to the east and southwest of the central business district. Families with incomes below the poverty level occupy much of the northern and western part of the city. This corresponds roughly to the concentration of substandard housing units in the city as well as to the area of lowest automobile ownership (see Figure 2-3).

TABLE 2-1. CHARACTERISTICS OF MONTGOMERY, 1970

CHARACTERISTIC	CITY OF MONTGOMERY
Population	133,386
Area (square miles)	46.4
Density (persons per square mile)	2,875
Median Age	27.9
Age Distribution	
(percent below 18)	35.7
(percent above 65)	9.3
Median Years Schooling	12.2
Total # of Households	33,442
Percent with Female Head	17.5
Percent with Own Children Under Six Years	25.0
Average Number of Persons per Household Unit	3.2
Central City Population (percent SMSA population residing in central city)	66.3
Central City Retail Sales (percent SMSA retail sales in central city)	85.6
Income (median family income)	8,462
Income Distribution	
(percent below $5,000)	28.3
(percent above $15,000)	17.8
Number of Persons in Labor Force	54,254
Modal Split (percent workers using public transit for work trip)	8.0
Auto Ownership (percent households with one or more autos)	78.5
Growth Rate (percent change in population, 1960-1970)	-.7

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1970 Census.



LEGEND

Greater than 9.27% elderly (city average)
Incomes 15% or more below poverty level
30% or more of households have no automobile

G_1 = Public Housing
G_2 = Private Nursing Home
A_1 = Hospital or Medical Service Centers
A_2 = Shopping Areas
A_3 = Destinations of Handicapped Persons

Figure 2–3. GEOGRAPHICAL DISTRIBUTIONS OF POPULATION SUBGROUPS, AND LOCATIONS AND MAJOR TRIP GENERATORS AND ATTRACTORS FOR THE ELDERLY AND HANDICAPPED IN MONTGOMERY

Of particular importance in this demonstration are the elderly and handicapped residents of Montgomery. According to the 1970 Census, 9.3 percent (12,366 individuals) of Montgomery's population was over 65 years of age. The same percentage applied to Montgomery's estimated 1977 population of 156,333 implies that there were 14,539 elderly individuals in Montgomery at the start of the project.

Within the city, the elderly tend to reside in the central area, as shown in Figure 2-3. Figure 2-3 also shows the locations of various shopping and medical centers, which are likely to be major trip attractors, in relation to the residential locations and concentrations of Montgomery's elderly population. Most of the major generators of elderly travel (G1 and G2) are near medical facilities (A1), and none are more than 3 miles away. Conversely, many of the elderly live as far as 6 or 7 miles from a major shopping facility (A2).

The 1970 Census also indicates that 6.4 percent (8,590 individuals) of Montgomery's population consisted of nonelderly individuals who were handicapped. The same percentage applied to Montgomery's estimated 1977 population implies there were 10,005 nonelderly handicapped individuals in Montgomery at the start of the project. According to the Census, nearly half of Montgomery's nonelderly handicapped population are in the labor force, and more than one-third have been disabled for 6 months or more.

Figure 2-3 shows the locations of two major trip attractors for handicapped individuals (A3), the Central Alabama Rehabilitation Center and Goodwill Industries. In addition, several of the trip attractors for the elderly also serve as major trip attractors for the handicapped.

Based on the estimates of the numbers of nonelderly handicapped and elderly individuals in Montgomery presented above, the total population of Montgomery that was eligible for the project in 1977 is estimated to be 24,544. This contrasts slightly with the demonstration project staff's estimate of 21,000, with most of the discrepancy attributable to the fact that this lower estimate was based on 1970 population figures. Also, it should be noted that the Census definition of handicapped may be less restrictive than the criteria used to establish travel handicaps for project eligibility purposes (see Chapter 3).

2.1.1.5 Political/Institutional Environment - An important factor in the selection of Montgomery as a user-side subsidy demonstration site was the strong local support for the project. The Mayor during the period of the grant application was enthusiastic about the demonstration and pledged to aid in interesting the community in the project and in effecting important institutional changes necessary for its succesful implementation (see Chapter 3). This enthusiasm spread to the community, and residents of Montgomery inquired about the program even before taxi operators had been informed about it.

Unexpectedly, the Mayor and a number of other officials resigned during a local political scandal in February 1977 before the project's prerequisite institutional changes had been made. As outlined in Chapter 3, the resignation of the mayor had a significant effect on the demonstration, since the person who was appointed Acting Mayor until an election could be held was an active opponent of the user-side subsidy project.

2.1.2 Exogenous Changes During Project

In order to distinguish the impacts of the user-side subsidy program from external, unrelated shifts, it is necessary to account for various changes in background conditions that occurred during the project. Exogenous influences may have effects similar to those of the subsidy program (e.g., on travel behavior) that could serve to invalidate conclusions drawn solely on the basis of "before and after" comparisons. External changes in site conditions that have the potential to influence observed project results are detailed below.

2.1.2.1 Economic Base - Various indicators of economic activity tend to show that there was modest economic growth in Montgomery during the demonstration. For example, the labor force increased by 5.3 percent from August 1977 to November 1979, while the unemployment rate in 1978 and 1979 was generally lower than 1977 levels. Retail sales increased by 12.3 percent from August 1977 to August 1979, although this may simply reflect general price inflation.

2.1.2.2. Climate - Temperatures remained fairly close to normal throughout the project period with few exceptions. The winter of 1977-78 was colder than usual, especially in the months of January and February, when the average temperatures were at least seven degrees below normal. Overall, precipitation also remained close to normal, although the April/May periods of both 1978 and 1979 experienced unusually heavy rainfall, followed by a relatively dry period lasting through the rest of the year.

2.1.2.3 Demographic Composition - In January 1980, the land area of Montgomery more than doubled (from 50.94 to approximately 128 square miles) as the result of a major annexation. To a great extent, the annexed land was already developed, principally for residential purposes. However, because an increase of this magnitude was not anticipated in the project budget, residents of the annexed area were not allowed to register for the project, and project taxi vouchers could not be used for travel to or from the area.

No other significant changes in Montgomery's land area occurred during the demonstration. By 1979, the population of the nonannexed portion of the city increased to an estimated 159,156, an increase of less than 2 percent over the predemonstration population of 156,333. Using the predemonstration proportion of eligible individuals in the population, it is estimated that the number of individuals who were eligible for the project increased from 24,544 in 1977 to 24,987 in 1979.

2.2 TRANSPORTATION CHARACTERISTICS

Public transportation in Montgomery is provided by both taxis and conventional fixed-route buses. In addition, a significant number of elderly and handicapped individuals obtain transportation services through social service agency programs.

The predemonstration characteristics of each of these service providers are presented below. Exogenous changes in these characteristics that took place during the demonstration are then summarized.

2.2.1 Predemonstration

2.2.1.1 Taxi - The Montgomery Taxi Code gave the city power to set fares, grant licenses, certify drivers, and inspect vehicles. The code was enacted in 1952 and, prior to the demonstration, had never undergone major revision. Under the code, fares were established on the basis of a fixed base rate plus a mileage charge. At the beginning of the demonstration, fares were computed to be $1.00 for the first one-half mile, plus increments of $.25 for each additional one-half mile. Group rides were charged an additional $.25 per person. The city also required that each taxicab be separately licensed and meet basic safety and insurance liability requirements.

Responsibility for enforcing regulations developed under the code had historically been shared by the Montgomery Police Department and Licensing Department. The Police Department employed one officer full time as "Fleet Safety Director" whose responsibility was to enforce the city's taxi ordinance, while the licensing of taxi drivers and vehicles occurred at the Licensing Department at City Hall. This arrangement produced a number of complaints from taxi operators, who had to make separate trips to the Police Department for inspections and to City Hall for licenses. As a result, starting January 1, 1977, authority for licensing was moved from City Hall to the Police Department, thus consolidating all authority for taxi regulation under the equivalent of approximately 1.15 full-time officers.

Although the Safety Director worked in the field to check for ordinance violations, taxi vehicles prior to the demonstration were generally in poor condition. Because fines levied in court for equipment defects were typically small in comparison to the cost of making repairs, repairs were seldom made. Among equipment failures, broken odometers were quite common. As a result, fares based on mileage were often calculated using the driver's estimate of trip length.

Another byproduct of the relatively weak regulation of taxicabs in Montgomery was the existence of a significant number of illegal, jitney-type operations that served minority neighborhoods. Because such operators typically offered fare discounts and special services (e.g. shared-riding) not allowed by the taxi code, they were often able to exert considerable competitive pressure on the legally-operating taxi market.

At the beginning of the demonstration, 16 licensed taxicab companies, operating a total of 168 vehicles, provided service in Montgomery. Of these, 5 companies, operating a total of 84 vehicles, joined the FARE/SHARE project (see Table 2-2). Two of the participating companies, Red and Yellow Cab, were white-owned, and were substantially larger than most of the other firms (participating and non-participating), which were all minority-owned.

The operations of each Montgomery cab company can generally be classified into one of two distinct categories. Some of the larger firms own their cabs and pay their drivers on a commission basis. The other firms operate using an "owner-driver" system where the drivers own their own cabs and pay all maintenance, insurance, and operating costs, largely on a cash-only basis. The owner-drivers typically use the company's license and dispatcher in return for a flat franchise fee paid to the company.

TABLE 2-2. NUMBER OF VEHICLES OPERATED BY PARTICIPATING MONTGOMERY TAXI FIRMS PRIOR TO DEMONSTRATION

FIRM	NUMBER OF VEHICLES
Yellow Cab	21
Red Cab	22
New Deal Cab	21
Deluxe Cab	16
Original Queen Cab	4
	84

SOURCE: Taxi operator profiles, June 1977.

The two systems require very different responsibilities from the companies. The firms that employ drivers often have bookkeepers, full-time managers, and mechanics. Conversely, those firms that operate using owner-drivers usually have only part-time managers who also drive, and no clerical or maintenance personnel. It is noted here that since many of the smaller firms lack full-time dispatching capabilities, such firms may experience difficulty in dynamically grouping trips for shared-riding.

This overview of the taxi industry serves to illustrate the divergent practices of different firms in Montgomery prior to the demonstration project. For the 5 firms that initially agreed to participate in the project, important characteristics that define the unique features of each firm's operations and provide a baseline for identification of any changes during the project are described below. These characteristics include the following:

a. Vehicles and facilities;

b. Staffing;

c. Operating policies;

d. Service policies; and

e. Financial data.

This information is derived from interviews of taxi operators conducted in June 1977.

a. Vehicles and Facilities. Yellow Cab Company operated 21 for-hire cabs, of which 17 were company-owned cabs, 2 were company-owned "limousines," and 2 were driver-owned cabs. These vehicles ranged in vintage from 1966 to 1971. Red Cab Company had 22 cabs, all company-owned, which dated from 1963 to 1970. New Deal Cab Company had 21 driver-owned cabs dating from 1965 to 1972. Deluxe Cab Company had 16 driver-owned cabs, the latest of which was a 1974 model. Finally, Original Queen Cab Company had 4 driver-owned cabs, ranging in vintage from 1966 to 1972.

All of the vehicles were equipped with two-way radios, and a few in each company had air conditioning. Only Yellow and Original Queen had meter-equipped cabs. None of the companies had any specialized equipment for serving elderly or handicapped riders.

Yellow and Red had by far the most elaborate base facilities. Yellow had a 3-room office with 3 adding machines, 3 typewriters, and 5 telephone lines. Yellow also had a 2-stall garage with a lift, a pick-up truck modified for towing, and a company car. Red had a 2-room office with 2 adding machines and 5 telephone lines. Red also had a maintenance garage with a lift. The 3 remaining companies all had 1-room offices with no office machines, except for

telephones. New Deal had 2 phone lines, Original Queen had 1, and Deluxe had 4. None of the 3 had maintenance facilities. All 5 of the participating companies had single-channel base-dispatching radios.

b. Staffing. Yellow had 23 payroll drivers, 1 of whom worked part time and 5 or 6 of whom worked slightly less than full time. Payroll drivers received a 40 percent commission or at least $2.30/hour.* In addition, 3 drivers rented cabs from Yellow for a daily charge. Yellow paid all expenses on company-owned cabs, performed maintenance on rented but not on driver-owned cabs, and paid insurance on all cabs. Yellow also employed 1 part-time and 2 full-time dispatchers, 2 full-time mechanics, 1 full-time and 2 part-time office workers, and a general manager.

Red Cab Company employed the drivers needed to operate their 22 company-owned cabs. In addition, Red employed 3 full-time dispatchers, 1 payroll clerk, 3 mechanics, and 1 full-time general manager.

New Deal had 21 drivers, all of whom worked full time. The drivers paid all of their own expenses and paid a weekly fee to the company. New Deal also employed 1 full-time and 2 part-time dispatchers, and a general manager who did some driving and dispatching.

Deluxe had between 16 and 18 drivers, most of whom worked full time. (Since owner-drivers often arrange with substitute drivers to fill in for them, the number of drivers may vary somewhat.) The drivers paid all of their cabs' expenses along with a weekly fee to the company. Deluxe also employed 5 dispatchers, all of whom worked 34 hours a week, a general manager/owner who did some driving, and a small number of other individuals who performed custodial tasks.

Original Queen had 5 full-time and 2 part-time drivers. Again, the drivers paid all vehicles expenses plus a weekly fee. Original Queen also employed 1 driver-dispatcher-manager and 1 full-time dispatcher.

---

*Yellow was forced to meet federal minimum wage standards since its revenues exceeded $250,000/year.

All of the companies allowed their drivers to keep any tips they received. However, tips were not an important source of income in Montgomery.

c. Operating Policies. Operating policies include dispatching hours, operating hours, the method of calculating fares, the method of assigning trips to drivers, and the method of scheduling driver hours. All of the participating operators except Original Queen provided service 24 hours per day, 7 days per week. Original Queen operated from 5 a.m. to 2 a.m., although the general manager answered calls at night (the dispatching phone also rang at his home).

Most of the operators calculated fares from their odometers, since only Yellow and Original Queen had meter-equipped cabs. The operators all claimed that their odometers worked correctly.

Original Queen assigned rides first on the basis of driver location, then by position on a wait list. Specific trip assignment methods for the other operators are not known. All of the companies required their dispatchers to log incoming calls. Yellow and Red, since they used employee-drivers, also required the drivers to keep origin-destination logs. These logs aided the companies in detecting fraud by their drivers. The companies all basically allowed the drivers to choose their own hours, although Red Cab required drivers to stick to one set of hours.

d. Service Policies. Service policies include company approaches to subscription service, reservation service (time calls), shared-riding, group riding and market segmentation, as well as marketing strategies and special policies toward elderly and handicapped users.

Prior to the demonstration, all 5 operators estimated that 90 to 95 percent of their rides were requested over the phone. Each reported a small amount of walk-up business at cabstands and almost no hailing on the street. None of the companies did any cruising, and all drivers returned to a stand after trips.* The companies would all accept advance reservations,

---

*The Yellow Cab airport limousine was an exception to this method of operation. The limousine offered regular service between the airport and major hotels at a reduced price. Yellow paid the city $.25 per trip for the limousine franchise.

but received very few such requests. None of the companies reported any substantial amount of group riding (i.e., multiple passengers travelling as a single party between a given origin and destination), shared-riding (i.e., multiple passengers forming more than one party that are in the same cab at the same time, and (usually) traveling between different origins and destinations), or subscription service. Yellow Cab did report some "pick-up" traffic, where riders paid $.50 to have an additional rider picked up.

Overall, Yellow estimated that it received about 220 calls per day and had perhaps an additional 25 limousine passengers per day. Red's daily ridership was estimated at between 300 and 400 rides, while New Deal estimated 175 to 200 and Deluxe estimated 200. These figures are quite approximate and varied considerably by time of month.

Most of the operators limited their marketing effort to the telephone book, although Yellow ran ads in local magazines and newspapers. Yellow also distributed calendars and stickers at hotels and had direct telephone lines to the Midtown Holiday Inn and the Downtowner Hotel. None of the operators directed any special advertising toward the elderly and handicapped, or offered any special service to such individuals. However, all operators indicated that their drivers served wheelchair users.

Market segmentation policies are difficult to document. The companies all claimed that they would carry both black and white passengers upon request, and that they would answer calls anywhere. In practice, however, the three smaller companies (New Deal, Deluxe and Original Queen) primarily served black customers in fairly well-defined neighborhoods. The larger cab companies, especially Red Cab, carried significant numbers of both blacks and whites. However, Red Cab refused to serve some areas of the city at night. In general, the taxi operators may have had informal geographical limits on where they would travel, and had an established clientele.

e. Financial Data. Accurate financial data for most companies are not available, since the smaller companies typically do not maintain detailed records. However, financial data for the year preceding the start of the project indicate that Red Cab suffered a net loss of 2.8 percent of total

revenues in calendar year 1976, and that Yellow Cab also lost money between January 1977 and June 1977.*

Overall, prior to the demonstration, the Montgomery taxi industry did not appear to be as financially healthy and viable as it had been 4 or 5 years before. Indeed, the larger firms in Montgomery, which were operating fleets of approximately 20 vehicles, claimed to have operated 60-vehicle fleets less than 5 years before, implying that the industry as a whole had undergone a severe downturn in the period immediately preceding the demonstration.

2.2.1.2 Transit - The Montgomery Area Transit System (MATS), owned and operated by the City of Montgomery, began operation in October 1974, replacing the privately-owned system that had been operated by National City Lines. The city-owned service is managed by the American Transit Corporation on a contract basis.

a. Equipment. In March 1976 the Montgomery transit system took delivery of 31 new General Motors Model 4523 buses, acquired under a Federal capital grant. These 44-seat buses were air-conditioned, equipped with power steering, and cost $62,000 each. In addition, MATS retained for standby use 4 1967-vintage 35-passenger buses.

b. Routes. As of May 1976 the Montgomery Area Transit System operated 17 routes over 107.3 one-way route miles. All lines operated on a local, all-stop basis, with no express or limited-stop operations. The average one-way route length was 5.6 miles, with the longest route being 10 miles and the shortest 2 miles.

c. Fare Policies. Prior to the demonstration, the fare structure was as follows:

Basic cash fare	$ .30
Weekly pass	$3.00
Students	.15
Elderly and handicapped (off-peak)	.15
Transfer charge	.05

---

*Yellow "leased" cabs from two "paper" companies, Black and White Ambulance and White Cab Co.. All 3 companies were owned by the same person, and the loss indicated is a total for all 3 companies.

Weekly passes were introduced in January 1975, while half-fares for the elderly and handicapped during off-peak hours began on August 15, 1975.

d. Service Policies. Service is provided 6 days a week, with no operation on Sundays or generally-observed holidays. On weekdays all routes are operated at least 12 hours, with a few lines running 13 or 14 hours. Basic service hours are 6:30 a.m. to 6:30 p.m. On Saturdays the bus miles and bus hours operated are about 74 percent of weekday levels.
MATS had no special service policies for the elderly and handicapped, apart from reduced fares. In fact, MATS officials had experienced serious reservations about providing special assistance for elderly and handicapped riders in boarding because of their concern about liability in the event of an accident. As a result, drivers would wait as long as necessary, but often did not provide physical assistance to passengers experiencing difficulty in boarding.

e. Level of Service. Weekday service on 2 lines operated at 20-minute headways in both directions during both peak and off-peak periods. Eight routes operated at 30-minute headways during peaks and 60-minute headways off-peak, while the remaining 7 routes operated at 60-minute headways throughout the day.

The average scheduled speed among lines ranged from a low of 9.8 miles per hour to a high of 16.3 miles per hour. In general, the lines with highest speeds were the ones with lowest ridership. This may be because less time is required for boarding and alighting passengers, and fewer service stops are made. Also, low density areas that generate low ridership levels are likely to be uncongested and therefore may be most conducive to higher travel speeds.

f. Ridership. MATS ridership tends to exhibit distinct seasonal patterns with pronounced spring and fall peaks. During the year prior to the demonstration, ridership also experienced a secular increase. For example, July 1977 ridership was 216,584 compared to the July 1976 total of 204,037, a 6.1 percent increase.* However, July 1977 ridership

---

*MATS tabulates total ridership on the basis of unlinked trips (initial fares plus transfers). Since approximately 20 percent of the rides on the system are transfers, the number of linked trips would be approximately 20 percent less. However, this difference does not affect relative comparisons.

represented a decline from the May 1977 level of 257,138, a reflection of the usual summer decline from the spring seasonal peak.

For elderly and handicapped riders, a modest secular increase is also apparent. However, elderly ridership is particularly sensitive to weather conditions. For example, when snow fell in January 1977, MATS carried only 8,448 elderly and handicapped off-peak riders, a 19.2 percent decline from the previous month. (MATS does not compile peak-hour elderly and handicapped ridership figures because no fare discount is offered during this period).

Overall, demand is greatest on weekdays, but for some routes, including the one to the Montgomery Mall, this trend is not so pronounced. Time-of-day peaking is also evident. On a system-wide basis the peak hours are between 7 and 8 a.m. and between 3 and 4 p.m.

g. Financial Data. MATS operating revenue and cost trends are displayed in Figure 2-4 and follow ridership trends closely. However, revenues deviate somewhat from ridership because of the seasonal nature of charter bus revenue, which peaks in December, April, and May.

Also, there appears to be a secular trend toward increasing costs, although costs tend to decline in the summer when ridership drops.

Major capital costs have included the purchase of 31 new buses with an 80-20 capital grant under Section 3 of the Urban Mass Transportation Act of 1964, as amended. In addition, the Five Year Capital Improvements Program developed by the Department of Planning and Development for the transit system included $15,000 for the purchase and installation of bus stop signs in Fiscal Year 1976-1977.

h. Marketing. As a normal operating procedure, MATS regularly undertakes a number of basic marketing activities, encompassing dissemination of route timetables, telephone information services, bus stop signs, distinctive markings for the transit system, and passenger amenities.

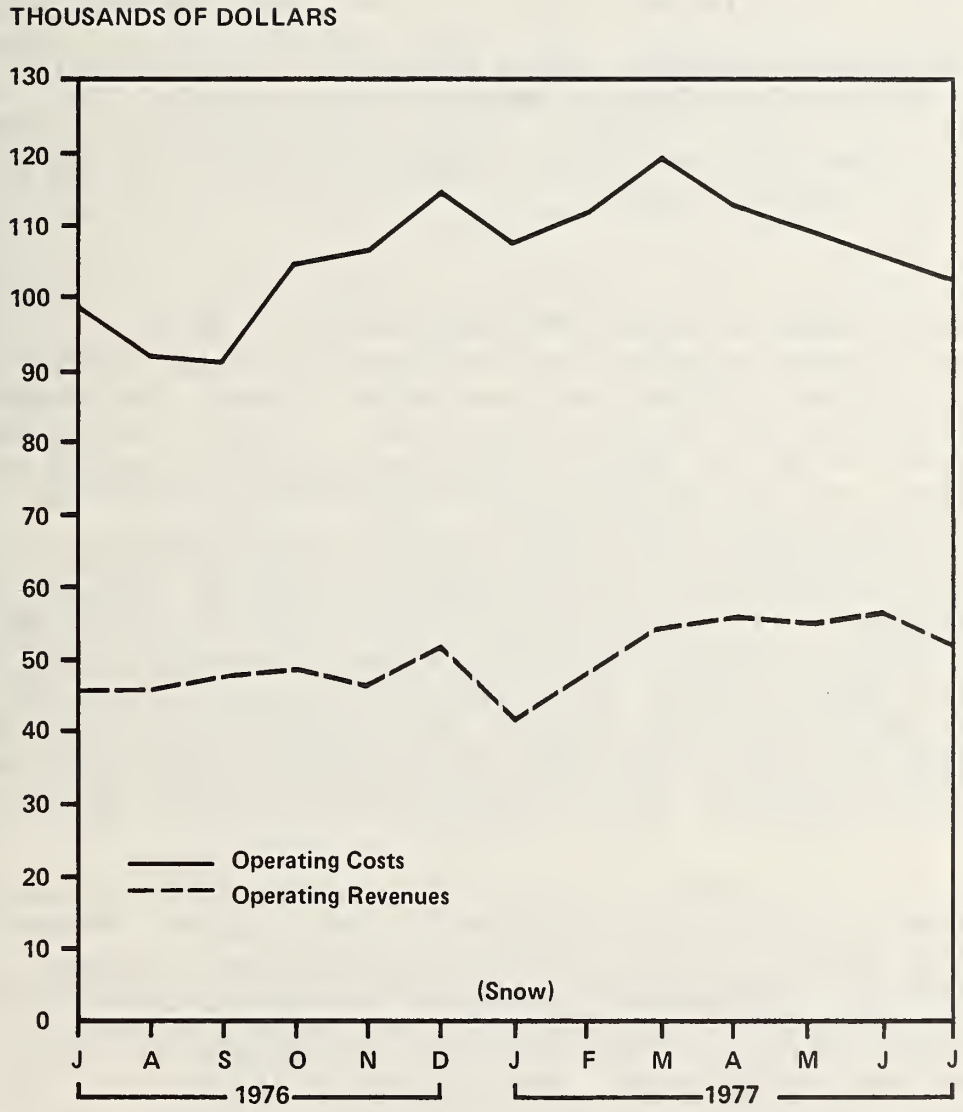


Figure 2–4. MONTGOMERY AREA TRANSIT SYSTEM (MATS)
OPERATING REVENUE AND COST TRENDS, JULY 1976 – JULY 1977

Before the demonstration project, buses stopped on flag. While convenient for regular riders, there was no visible evidence to the new or casual rider as to where he should stand to board a bus, or even if a bus line operated on a particular street at all. To alleviate this problem, 300 bus stop signs were to be placed throughout the city. As the project began, 100 signs had been erected. Also before the demonstration began, the Transit Development Program included the construction of 14 bus shelters at a cost of $55,000, or $3,900 each. Site selection and shelter specifications were to be developed at a future date.

2.2.1.3 Social Service Agency Transportation - To a considerable extent, specialized transportation services for the elderly and handicapped are available through the programs of Montgomery's social service agencies. A large number of agencies provided social services in Montgomery prior to the demonstration, and 21 agencies had direct contact with or provided transportation services for the elderly and handicapped (see Appendix B, Table B-1). Many of these agencies were part of an organizational hierarchy headed by the Alabama Commission on Aging, within which the Central Alabama Aging Consortium, at the second tier, was responsible for developing a comprehensive coordinated network of services for the elderly in the central Alabama region and held contracts with a number of other agencies. This agency's function was strictly administrative, and it did not provide client services directly.

Eight of the 21 agencies providing transportation services were selected at random for detailed investigation. These agencies tend to be located in the area with the highest concentration of elderly residents in Montgomery, although they encompass a broad range of activities and clients, and different approaches to their clients' transportation needs (see Appendix B, Table B-3). The Central Alabama Rehabilitation Center was a major provider of specialized transportation services, operating a fleet of 3 vans and 4 wheelchair lift-equipped buses. The Department of Parks and Recreation operated 4 vans, 1 of which had a wheelchair lift, and owned 10 school buses that were used as necessary. The other sample agencies had smaller fleets of 1 or 2 vehicles each, which totaled to 1 bus and 9 vans, 3 of which were equipped with wheelchair lifts or other aids for the handicapped.

Eligibility requirements for use of agency transportation services varied considerably. Most agencies tended to furnish services to participants in particular programs or with special needs, with many agencies catering primarily to individuals with low incomes.

Overall, the 8 agencies served some 3,300 passengers per week. The costs to the agencies of providing these transportation services varied widely. For some agencies, transportation-related costs were relatively low, since many of the agencies' vehicles were purchased by the Central Alabama Aging Consortium or were outright gifts, while drivers were either volunteers or paid with Comprehensive Employment and Training Act (CETA) monies. However, for 3 of the sample agencies, transportation costs exceeded 40 percent of the total agency budget.

2.2.2 Exogenous Changes During Project

Two significant exogenous changes involving the levels of taxi and bus fares occurred in the Montgomery transportation system during the demonstration. In April 1978, the City Council granted a taxi fare increase of $0.10 per half-mile or grid-step,* so that for each additional half-mile or grid-step a rider was charged $0.35 instead of $0.25. In May 1980, bus fares were raised from 35¢ to 40¢. However, FARE/SHARE project riders were not affected by this latter change, since the FARE/SHARE program increased the level of project subsidies to absorb the difference in fare.

---

*Fares for all shared and project rides were calculated using the grid system. Fares for nonshared, nonproject rides continued to utilize the mileage-based fare structure.

3. DEMONSTRATION IMPLEMENTATION AND OPERATIONS

In this chapter, the administrative activities undertaken as part of the demonstration project are outlined. Demonstration project administrative activities can be classified into four distinct types, or phases: preoperational planning, administrative support, implementation of the taxi voucher processing system, and implementation of the bus ticket distribution/redemption system (see Figure 3-1). In the following section, specific activities in each of these phases are described in detail. The costs of these activities are then summarized.

3.1 ADMINISTRATIVE ACTIVITIES

3.1.1. Phase 1. Preoperational Planning

The preoperational planning phase began in January 1977* and was expected to last four months, with the formal start-up of the taxi phase of the discount program scheduled to take place on April 1. During this period prior to the initiation of service, the project staff was organized. The Montgomery Director of Planning and Development was officially responsible for the implementation of the demonstration project. However, a planner in that department, serving as deputy project manager, supervised the project staff, which consisted of a transportation coordinator, planning technician, project secretary (cashier), temporary clerks, and interviewers. These individuals were assisted by a city accountant and accountant clerk. The specific responsibilities of each of these individuals are outlined below.

---

*Prior to formal initiation of the preoperational planning phase in January 1977, other administrative activities were undertaken in support of the Urban Mass Transportation Administration (UMTA) demonstration grant application process. No noteworthy problems or obstacles were encountered in carrying out these tasks, and the project appeared to be generally well-received.

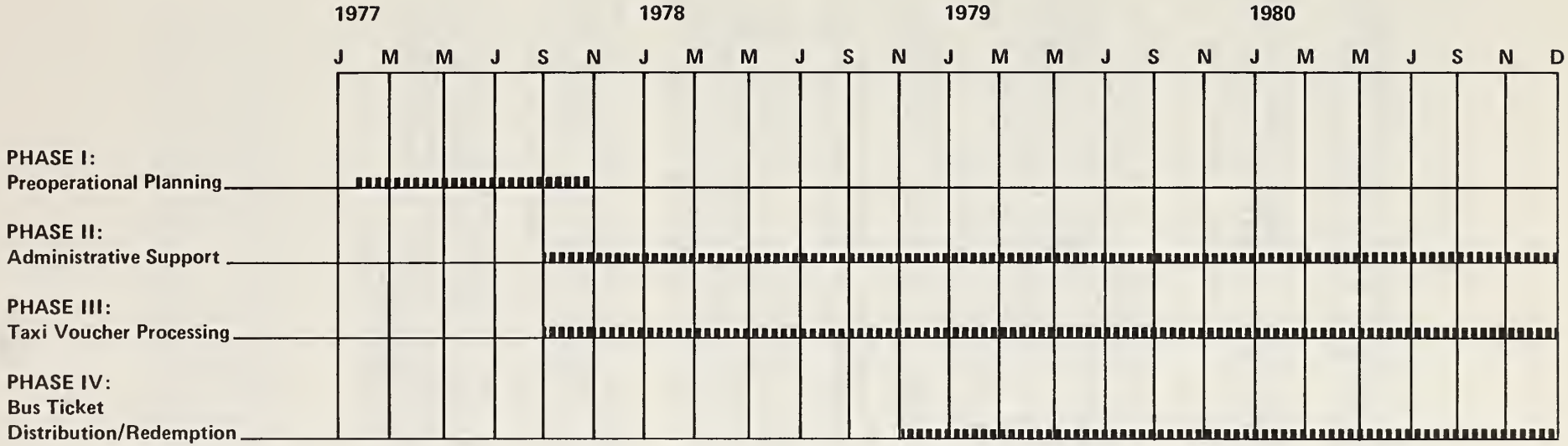


Figure 3–1. MONTGOMERY USER-SIDE SUBSIDY DEMONSTRATION PROJECT–
TIMING SCHEDULE BY TASK

3.1.1.1 Project Staff

1. Project Manager -- reported to the Mayor and City Council on the project's progress, maintained budgetary control, and hired new project personnel.

2. Deputy Project Manager -- supervised other project staff, responsible for preparing reports to the City and UMTA, coordinated project activities with other city departments.

3. Transportation Coordinator -- responsible for verifying voucher receipts, maintaining project records, responding to complaints of registrants and service providers, maintaining an inventory of project supplies, coordinating the marketing and promotion of the project, and performing other duties related to day-to-day operations.

4. Planning Technician -- assisted in voucher processing and verification and in processing data collected for evaluation purposes beyond the scope of normal project administration (see Appendix A).

5. Project Secretary (Cashier) -- responsible for project-related secretarial duties, maintaining project bills and disbursements, conducting registration interviews, assisting in project promotion, and distributing bus ticket books.

6. Temporary Clerks -- provided assistance when the amount of clerical work involved in processing registrations and marketing the program exceeded the resources of the regular project staff.

7. Interviewers -- conducted data collections supporting evaluation efforts beyond the scope of normal project administration (see Appendix A) and assisted in the registration process during the first month of project operation.

Participating City Employees

8. Accountant -- responsible for disbursing subsidy payment checks and maintaining financial records and accounts for the project.

9. Accountant Clerk -- assisted accountant in maintaining financial records and accounts.

It was initially planned that the project team would attend to each of the following tasks prior to the beginning of the active phases of the project:

1. Coordination with taxi operators -- Project staff were to meet with each of the taxi firms, reach agreement on terms of the project, and elicit letters of intent to participate followed by formal contracts with the city. Once operators were involved with the project, project staff would conduct formal training programs with drivers and managers concerning project administrative methods and requirements.

2. Plans for transit discount program -- The phase of the project that would allow project-eligible individuals to ride at reduced fare on public transit was expected to start exactly one year following implementation of the taxi discount program, or April 1978. However, plans for implementing this phase of the demonstration were to be developed at the outset.

3. Plans for registering users -- Registration during the first month of project operation was to take place at 18 sites scattered throughout the city in areas where the target populations were concentrated. Each of these sites was to be visited by one or both of two roving teams of interviewers (6 each) on two separate days. After the first month, registration locations were to be consolidated at a single site at City Hall, with transportation furnished from any of the initial sites by the particular organization located there.

   The registration sites would also provide briefings and distribute promotional and user guide materials on the project. A procedure incorporating a waiting room and group orientation using a film or slides and a moderator was considered for development.

4. Plans for involving social service agencies -- A panel whose membership comprised representatives of 16 of the principal social, medical, and welfare agencies serving the target group was to be formulated as the Transportation Coordinating Council. This group's function was to aid in the planning of the user-side subsidy project, arriving at a program that would best meet the specialized needs of the target group and the needs of the agencies.

5. Plans for marketing and promotion -- All of the major media, including radio, television, and newspapers, were to be involved in marketing the project. Social service agencies, banks, and other public locations would be used as locations for distribution of promotional materials. An attempt would also be made to obtain public endorsement by one or more major political figures during the early period of the project, particularly on or near the first day of project operation.

In addition to these project-related tasks, a number of innovative regulatory and procedural arrangements had to be implemented before the demonstration could begin. One such innovation involved the introduction of shared-riding (i.e., allowing riders or groups of riders with different origins and destinations to share the same cab), at least as a formally available project service, if not as an industry-wide practice. As outlined in Chapter 1, shared-riding did exist before the project, although it was not provided for in the existing taxi regulatory code. This change in the code was needed to qualify Montgomery's taxi service as a form of mass transportation that was eligible for UMTA subsidies.

A factor complicating the implementation of shared-riding and of the subsidy program in general was the lack of consistency in industry fare calculation and record-keeping. Most drivers did not keep logs, and mileage-based fares were often computed in an ad hoc fashion because of malfunctioning odometers (see Chapter 2). To formalize fare calculation and facilitate assignment of individual fares in the case of shared-riding, a grid-fare system developed by the Urban Institute was to be introduced. This grid system was a substantial project innovation in itself, and partitioned the city into a grid of over 200 half-mile squares (see Figure 3-2). Fares were calculated from the grid by summing the number of horizontal and vertical (not diagonal)

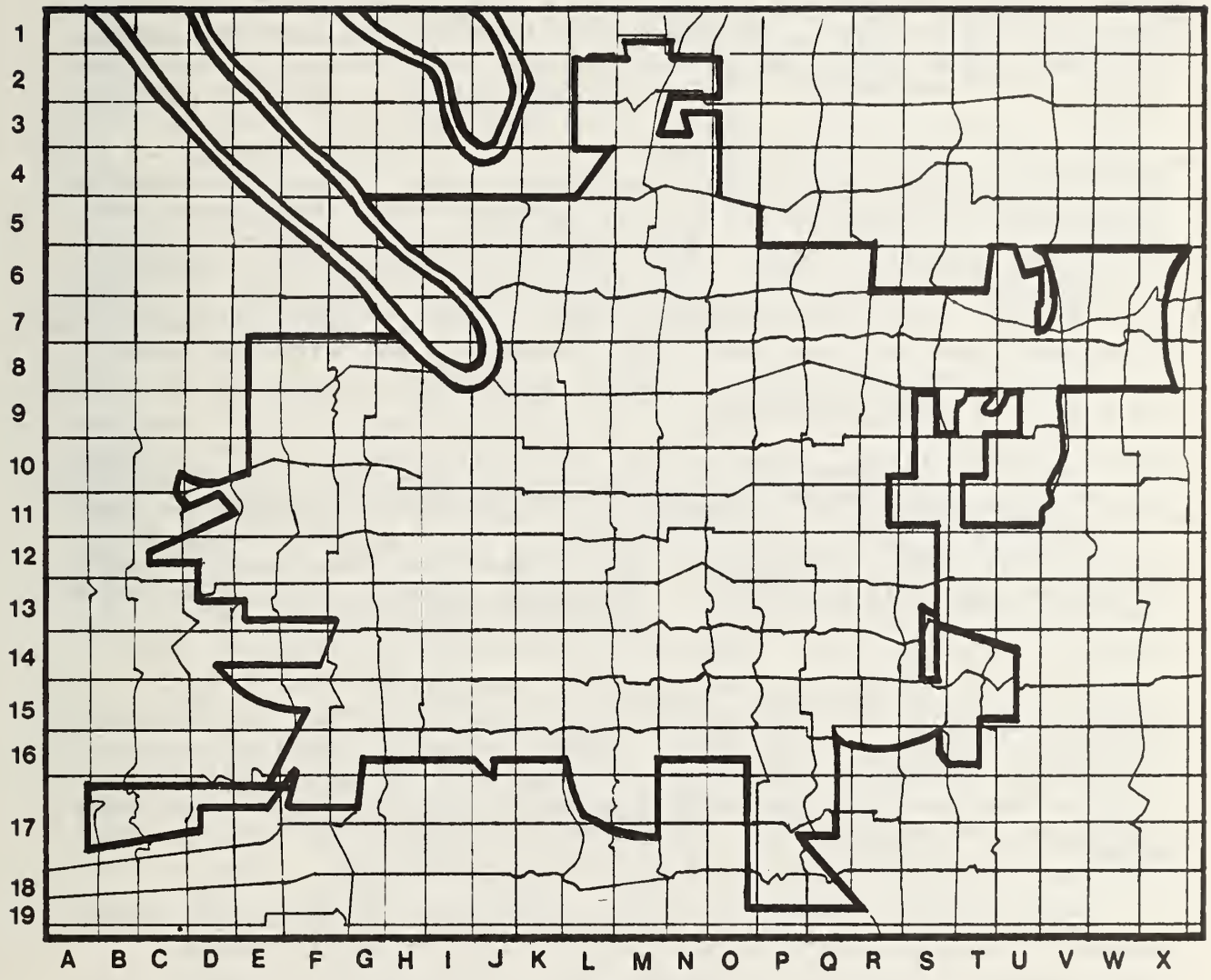


Figure 3–2. PROJECT GRID-FARE MAP

"grid-steps" between a given trip's origin and destination. Each grid-step taken increased the fare by the equivalent of one-half mile under the mileage-based fare system (i.e., by $.25 at the beginning of the demonstration). These grid-step charges were added to a base fare that was applicable to travel within the first grid-square. The fine level of detail in the grid-fare system was considered to be a way of maintaining the prevailing mileage-based fare structure (which was based on half-mile increments), as well as protecting shared-riding customers from the costs that would be incurred in a purely mileage-based system when route deviations were made to pickup or drop off additional passengers. A map of the grid was to be furnished not only to each taxi operator, but also to each registered project user to enable predetermination of the cost of any trip being planned.

A third innovation was the planned use of a "voucher" slip as the mechanism for transacting the user-side subsidy. Under the voucher system, the project user would pay one-half the calculated fare and sign a voucher slip for the remainder at the time the trip was made. The taxi company would then submit the voucher to the project staff for reimbursement of the remaining 50 percent. Because the voucher slip would also require information to be recorded describing the characteristics of the ride (such as origin, destination, time of day, and service provider), the voucher mechanism was thought to provide a very important level of protection against fraud, particularly given the general lack of formal existing operator record keeping. The information on the voucher would permit validation of each fare to be reimbursed.

In January 1977 the formal preoperational planning phase began on schedule with the hiring of the Transportation Coordinator to supervise day-to-day activities. However, as outlined in Chapter 2, the Mayor and a number of other city officials resigned from office in February 1977 as a result of a local political scandal. This caused a delay in the hiring of additional project staff and in the planned April 1 start-up date for a number of reasons. First, the various prerequisite changes in the taxi code related to the project (i.e, the introduction of shared-riding and the grid-fare system) required the passage of an ordinance by the City Council. It was originally contemplated that this ordinance would be relatively sweeping in nature, extending the grid-fare system

to all rides (project and nonproject, shared and nonshared) and increasing record-keeping requirements for the industry. These changes had been endorsed by the previous Mayor, who had then expected to be able to overcome any opposition from the City Council or the taxi industry.*

However, the new Acting Mayor (previously the President of the City Council), who took power upon the resignation of the previous mayor, had taken an active stand against the project and the sweeping regulatory changes, voting against them on two separate occasions. In general, the Acting Mayor was only willing to support regulatory changes that were endorsed by the taxi industry.

As a result, the scope of the regulatory changes was reduced, on at least an interim basis, to the level needed to support the implementation of the project itself (i.e., formal recognition of shared-ride services, establishment of project fare structure). However, the scheduled submission date of the regulatory ordinance to the City Council was delayed until after a special mayoral election (scheduled for May 22), when it could be determined whether or not the Acting Mayor would remain in office (which he did).

For these reasons, the scheduled start date of the taxi program was set back two months, from April 1 to June 1, which presumably would give the Council enough time after the May 22 election to vote on the new ordinance. Consistent with this timetable, it was planned to schedule for April 21 the formal meeting with taxi operators to reach agreement on the terms of the project. Various delays caused this meeting to be delayed until May 5, with the result that the project start-up was delayed once again, this time until July 1.

The meeting of May 5 occurred as scheduled, with representatives of UMTA, the Urban Institute, the Montgomery Department of Planning and Development, and owners of several cab companies in attendance. Owners of all 16 cab companies in the City of Montgomery had been invited to attend this meeting.

---

*Industry opposition could be counted upon, given, for example, the higher level of rigor associated with the grid-fare system relative to the mileage-based system described earlier.

However, only 6 attended: Yellow, Red, Town Service, Quick Service, Good Service, and Original Queen Cab Companies. The discussion at the meeting addressed in detail the proposed amendment to the code, the mechanics of the grid system and the related fare structure, shared-riding, and other general project rules and procedures.

During this meeting, some of the operators expressed disappointment with the delay of the project and skepticism over the shared-riding policy, since they felt that Montgomery taxi users would not share rides. Also, the operators raised two points of contention concerning the proposed shared-riding system. First, the operators felt that it would be unfair to force them to give any type of shared-ride discount if a shared ride did not in fact take place. Second, they felt that drivers working on a commission basis would be unwilling to do anything to lower fares or change dispatching methods to accommodate a shared-ride system.

There is some question as to whether operators at this meeting fully understood the resolution of the discussions concerning the level of the base fare. They should have been informed that the base fare was to be 80¢ for project rides. However, it appears that some operators believed after the meeting that the base fare would be $1.00.

The group was informed that a letter describing the proposed operating code changes would be mailed to them, and that their comments and opinions would be requested. This letter was mailed to all 16 companies on May 12. These companies were subsequently contacted by telephone to schedule a personal interview with a representative of the Department of Planning and Development.

Eight companies -- Scott, Red, Deluxe, Watts, Yellow, Original Queen, Checker, and Quick Service Cab Companies -- were visited and signed a letter stating that they were in agreement with the amendment. The remaining 8 companies were contacted again by phone for their responses. After no responses were obtained from phone calls, a certified letter was mailed to each, explaining in detail the proposed amendment and requesting their response. The letter stated that if no response was given concerning the proposed amendment, it would be assumed that they were in agreement. Companies that received certified letters included Lane, New Deal, Peoples, Town Service, Dependable, and City Cab Companies. Good Service Cab Company refused its certified letter.

On May 31, 1977, the proposed amendment (see Figure 3-3) to Ordinance 41-12 was presented before the City Council and was passed unanimously. This amendment provided for an 80¢ base fare for project trips and a $1.00 base fare for all shared nonproject trips, with total fares of both types to be calculated from the half-mile grid-fare structure (25¢ additional for each grid-step). No cab company owners were present at the Council session, giving the impression, at least after the letter campaign, that they were in agreement with the amendment.

However, passage of an act of the Council is accompanied by a 30-day waiting period during which the public may appeal the decision. On June 7, 1977, the owners of Red and Yellow Cab Companies withdrew their support for the demonstration. Their principal complaint was that the proposed fare structure would cause them to lose money on each project ride that they carried. Since they did not believe that Montgomery taxi users would agree to share rides, they foresaw that their drivers would have to give exclusive rides at discount rates.

The walk-out by Red and Yellow came as a surprise to the project, since these companies had seemingly been in agreement with the amendment presented before the Council.* As a result of the disagreement, however, the project was locked in a stalemate situation, because Red and Yellow, which acted as "leader" firms in the cab industry, could cause the other smaller firms to drop out of the project as well.

The issue of the equity of the 80¢ base fare for project rides was the subject of continuous correspondence between the cab owners, UMTA, the Urban Institute, and the City from June 7 to June 13. On June 13, the owners of Red and Yellow Cab Companies met with the project staff to formally discuss the situation. The project staff explained in detail how the grid-fare system with the 80¢ base fare could yield a substantial profit if rides were shared and that, in fact, a

---

*It is noted here that the letter sent to taxi companies to explain the taxi ordinance did not specify the base fare. The ordinance may therefore have come as a surprise to operators who mistakenly believed after the May 5th meeting that the base fare would be $1.00 for all rides.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF MONTGOMERY, ALABAMA, that Chapter 41, Section 12, Code of the City of Montgomery, Alabama, 1964, as last amended, be and the same is hereby further amended to read in words and figures as follows:

"Section 1. The following schedule of rates shall be and is hereby adopted and established and no taxicab shall charge less nor in excess of said rates, to-wit:

"On traveled distances from zero (0) to and including one-half (1/2) mile a charge of One Dollar ($1.00) and for each additional one-half (1/2) mile or fraction thereof the additional sum of twenty-five cents (25¢).

"Stops in transit: fifty cents (50¢) per stop, with five-minute limitation; and ten cents (10¢) for each additional minute over five.

"Rate per hour waiting time: Seven Dollars ($7.00), with ten-mile limit on each hour, plus an additional sum of seventy cents (70¢) per mile for each mile traveled over ten (10) miles per hour of travel.

"Five (5) persons shall ride for the price of one, if from the same origin to the same destination, with a twenty-five cent (25¢) per person charge for each additional person over one.

"All rates shall be computed from point of origin, which is defined to be the place at which the passenger enters the cab.

"Section 2. Taxicabs may offer shared-ride service, in which a taxicab may provide transportation for more than one person, and for persons not traveling together from the same origin to the same destination. Taxicabs offering shared-ride service may deviate from the most direct route, in order to pick up or drop off additional passengers. The fare for a shared-ride taxicab trip shall be based on the number of grid steps which must be used in order to move horizontally and/or vertically in the most direct manner from the trip origin to the trip destination, according to the Grid System Map which is attached hereto and made a part hereof.

Figure continued on following page.

Figure 3–3. PROPOSED AMENDMENT TO MONTGOMERY TAXI CODE

"The following schedule of rates under the shared-ride service shall be and is hereby adopted and established and no taxicab shall charge less nor in excess of said rates under the shared-ride service, to-wit:

"For those fares charged pursuant to the Elderly and Handicapped User subsidy program, commonly referred to as the 'fare share' program, the single passenger fare shall be eighty cents (80¢) for the initial grid step, plus twenty-five cents (25¢) for each additional grid step crossed. The fare for groups traveling together from the same origin to the same destination shall be the corresponding single passenger fare, plus twenty-five cents (25¢) for each additional passenger. Such shared rides shall be for elderly and handicapped persons, as defined in said program, under the terms of the contract between the City of Montgomery and the taxicab companies.

"For those fares charged under the shared-ride service but not governed by the 'fare share' program, the rates shall be the same as specified above for the fare share program, except that the single passenger fare for the initial grid step shall be One Dollar ($1.00) in lieu of eighty cents (80¢).

"All taxicab companies desiring to offer a share-ride service shall file written notice with the City Clerk ten (10) days prior to the commencement of offering shared-ride service. Said notice shall state the number of taxicabs owned by the company. Each taxicab company offering shared-ride service in accord with the provisions of this section shall be equipped with a Grid System Map, which shall be conspicuously displayed at its principal office.

"Passengers utilizing shared-ride service may refuse to share a taxicab with intoxicated or unruly persons.

"No taxicab company nor taxicab can offer shared-ride service except as provided for in this section.

"Section 3. This ordinance shall take effect as provided by law, after passage, approval and publication."

Figure 3–3 (continued). PROPOSED AMENDMENT TO MONTGOMERY TAXI CODE

higher rate of $1.00 would effectively constitute a fare increase. They also offered the option of delaying project user requests by as much as an hour to improve the ability of operators to group project rides for the purposes of shared-riding. However, the company owners remained adamant that all base fares be raised to $1.00 before they would participate.

On June 15, an idea referred to as the "no-risk clause" was proposed. This policy, which would apply for a period of 3 months, would back up the project managers' claim that the cab companies would not lose money under the project. Under this policy, the project would guarantee (as part of the reimbursement process) that operators would receive the current mileage-based fare if, for the aggregate number of trips carried in a month, the fare computed by the mileage formula for those trips exceeded that yielded by the grid-fare system with the 80¢ base fare. While the cab owners were receptive to the idea, and it appeared that the project could get underway on the scheduled date of July 1, the City Attorney vetoed the idea on the grounds that the city could in effect be subsidizing the cab companies through such an agreement. The idea was officially rejected on June 20, followed by a decision to issue letters of ultimatum to the companies to decide whether they would participate in the project under the previously stated terms. Before the letters were issued, however, continuing discussions with the operators broke the impasse and secured under the original terms* the tentative participation of four cab companies: Red, Yellow, Original Queen, and Deluxe. New Deal Cab Company also joined the project a short while later.

The agreements with the operators occurred on June 28. However, because numerous other events that had to take place in order to prepare for project startup had been delayed as a result of the uncertainties with the operators, it was impossible to begin service on July 1 as planned. As a result, August 1 was chosen as the new scheduled start date.

---

*Including the option to delay project user requests by as much as one hour to facilitate shared-riding.

As the active phases of the project began, the operators once again complained that fares were inadequate and that it was impossible to group rides to increase net revenues. Also, substantial problems surfaced regarding the use by drivers of the project's administrative mechanisms, notably the grid-fare map and the fare vouchers. Most vouchers submitted to the city for reimbursement were found to be deficient in some important way, including the following:

1. Origin and destination information would be missing, making it impossible to validate fares;

2. User name, ID number or signature would be missing, also making validation difficult; or

3. Fares would be computed incorrectly.

Fare computation itself became a major problem. Drivers were often unable to find origins and destinations on the grid-fare map, or were then unable to calculate the fare correctly using the zones. Often the old mileage formula was used by drivers for fare calculation. This meant that the project staff had to verify the fare on each submitted voucher before reimbursement, requiring a separate map look-up for each trip. Since drivers were not recording the zonal coordinates from the grid-fare map, the project staff requested that at least the nearest intersection be coded on the vouchers to facilitate the map work. This suggestion created a further problem, since the nearest intersection frequently did not lie in the correct zone on the grid-fare map. In these cases, attempts to validate the fare charged were meaningless and caused disputes between the project staff and the cab companies.

The cab company and driver protests and resistance to the project paperwork requirements had two essential impacts. First, the project staff was forced to perform an unexpectedly high volume of remedial and audit work on voucher slips to ensure that charges were correct and that fraud by either users or providers was not taking place. These activities consumed a large portion of available staff resources, and either delayed or prevented other important activities from taking place. For example, it was difficult to process the subsidy reimbursements to the operators on time, and this further eroded relations with the operators.

The second effect was related to operator cooperation and spirit. As the paperwork and other administrative requirements became clearer, operators at first began to refuse service requests on a selective basis. In particular, certain drivers (who retained the right not to participate in the project even if their company agreed to) refused to acknowledge project service requests. If users did not identify themselves before the ride was dispatched, the possibility existed that they could be riding with a driver that was not participating in the project, and who would refuse their request for discount. Alternatively, there might be no drivers available to answer project requests even if a user called with proper identification, since only a limited number of drivers were participating. (In the 3 smaller firms, an average of only 1 driver was still carrying project rides after the first month of operation.) Another type of service refusal, also characteristic of the smaller firms, was the failure to answer requests from another "neighborhood." Because the smaller companies, which were black-owned, normally confined their operations to relatively small geographical areas, and because only a small number (3 of 14) were participating, many registered persons were without a "participating operator" in their neighborhoods. Calls for service made to participating operators some distance away were often not answered under these circumstances.

In October, the third month of project operation, fare equity and shared-riding potential was analyzed to evaluate whether the continuing operator grievances were justified. The analysis showed that operators experienced a 14 percent revenue loss when the grid-fare system was used instead of the mileage-based system for individual trips, and that shared-riding was only making up 4 percent of the difference. As a result, in November, the FARE/SHARE office began to offer a $0.20 bonus to drivers for every voucher turned in that was filled out correctly. This had the effect of increasing the base fare to the level requested by the taxi operators, but still gave the rider a shared-ride discount. The quality of the vouchers received also improved greatly.

For the most part, other planning activities were completed by the project staff prior to the commencement of subsidized service. These included developing eligibility criteria and registration procedures; designing and obtaining

identification cards for project users; establishing procedures for voucher processing and reimbursement for participating taxi operators; designing a publicity and outreach program; planning for the implementation of the transit discount program; identifying local registration areas; and establishing procedures for reporting and investigating complaints, monitoring project usage, and organizing monthly ridership data. The administrative policies and procedures resulting from this planning effort are described in the following sections.

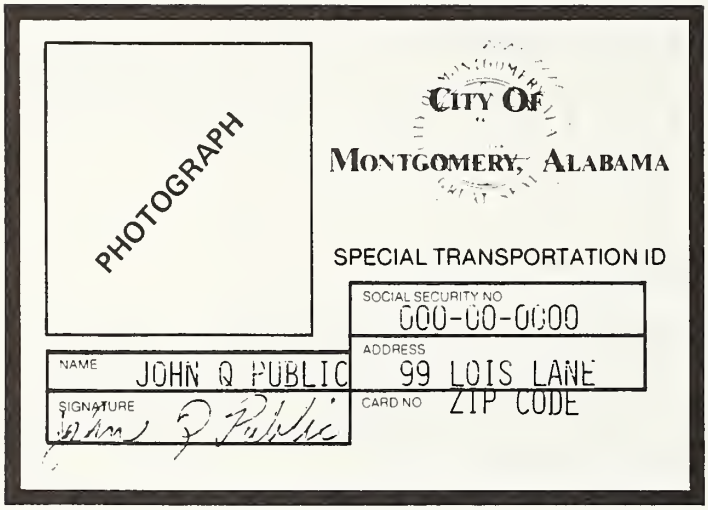
3.1.2 Phase II. Administrative Support

A variety of administrative activities were undertaken to provide indirect support for the implementation and operation of the subsidy program. These activities, which can be subdivided into project registration/monitoring and program promotion, are described in detail below.

3.1.2.1 Project Registration/Monitoring - Eligible individuals were required to register with the program in order to benefit from the subsidy. To be eligible a person had to be a resident of the city of Montgomery, and be at least 65 years of age and/or handicapped (see Appendix C). Registration took place in the program office at City Hall or, during the first month of the active phase of the demonstration, at any of four satellite locations.* Registration consisted of a brief personal interview to ensure that the eligibility criteria were met. Registrants were then given a photo identification card that entitled them to sign vouchers valid for payment of taxi fares for half of their face value or, later in the project, to acquire (at no charge) tickets valid for free bus fares during off-peak hours and 15¢ fares during peak hours (see Figure 3-4).

---

*The original plans, which called for 18 part-time registration sites for the first month, were modified for logistical reasons. No special arrangements were made for transportation of potential registrants from the four satellite locations to the program office after the first month. However, throughout the project, staff were made available on request to register groups of eligible individuals outside of the program office.



NOTE: Blue background on I.D. card indicates bearer is 65 years of age or older; red background indicates under 65 and handicapped.

Figure 3–4. SAMPLE IDENTIFICATION CARD AND BUS TICKETS

To protect the project somewhat from unauthorized use of vouchers and high costs caused by excessive use, individuals could only obtain project subsidies on $15 worth of taxi fares ($7.50 worth of subsidies) per month. To ensure that the limit was observed, the project staff maintained records of voucher use by each registrant and checked these records for any violations. In this manner, it was virtually impossible for an individual to exceed the subsidy limit without the knowledge of the project staff.

Shortly after the project began, it became apparent that some registrants needed to use taxis more frequently than the budget limit would allow. For example, several registrants who could not qualify for drivers' licenses because of travel handicaps used taxis on a regular basis to travel to and from work. Because of these needs the project manager instituted a formal policy whereby handicapped registrants could apply for a waiver of the budget limit if they had special travel requirements. The individual had to sign a form to qualify for the exemption (see Appendix D) and trip purposes were restricted to work, school, therapy or medical for those exceeding the limit. Approximately 75 registrants (1.2 percent of all registrants) took advantage of this policy. As might be expected, this group contained a disproportionate number of nonelderly handicapped individuals and workers employed full-time in comparison to registrants who did not obtain the waiver. These individuals tended to use the project much more frequently than other registrants. Those allowed to exceed the budget waiver took an average of 7.6 project taxi trips per month, while other registrants averaged 0.4 project taxi trips per month.

During the month of March 1979, FARE/SHARE began to take action against those individuals who were exceeding the budget limit without having been formally authorized to do so. All users who exceeded the $15 limit were sent notices documenting their overuse. This monthly practice helped deter abuse of the subsidy and helped the FARE/SHARE office locate people who were actually eligible for the waiver, but had not as yet applied for it. When a user exceeded the limit for more than 3 months despite reminders and warnings, FARE/SHARE privileges were cancelled for 1 month. Privileges could be reinstated after the registrant signed a certificate agreeing to comply with the budget limit. Occasionally a user who had had the limit waived was sent a reminder that their trips were only for work, school, or medical purposes (exceptions were determined from the destination zones reported on vouchers). Their privileges were also cancelled for 1 month if they continued to exceed the nominal project use limit for trips other than those specified.

It can therefore be seen that the adoption of the limit waiver policy by the project staff did not necessarily allow all registrants to make all of the trips they would have liked using project discounts. Indeed, the fact that in 2 sample months over 30 percent of the registrants who exceeded the budget limit were not authorized to do so despite the project staff's enforcement efforts tends to indicate that the purchase limit acted as a significant constraint on project trip-making.

3.1.2.2 Program Promotion - Program promotion entailed a variety of administrative activities undertaken to facilitate the implementation and acceptance of the project. For example, taxi drivers had to be instructed in the handling of vouchers and the computation of fares using the grid-fare system (see Phase III, below). Also, project-related information was often requested by registrants and potential registrants over the telephone.

The largest component of program promotion involved marketing and outreach activities. Beginning in the middle of July 1977, an intensive advertising and promotional effort was undertaken to encourage all eligible citizens of Montgomery to register with the program and obtain the identification card that would allow them to receive discount fares. Organizations and agencies with elderly and/or handicapped clients and members were asked to assist in registration, and provisions were made for those who could not register in person. Local media were contacted, and advertisements appeared on the radio and television and in newspapers.

After the first month of project operation, public relations activities continued at a lower level of effort, primarily involving contacts with social service agencies and periodic media announcements. Local churches were contacted and promotional materials were sent to the Montgomery Committee on Aging, the Retired Senior Citizen Volunteer Program, and the National Association for Handicapped Persons. A newsletter was published in June 1978 and distributed to social service agencies. This newsletter was also supplied to each cab participating in the program.

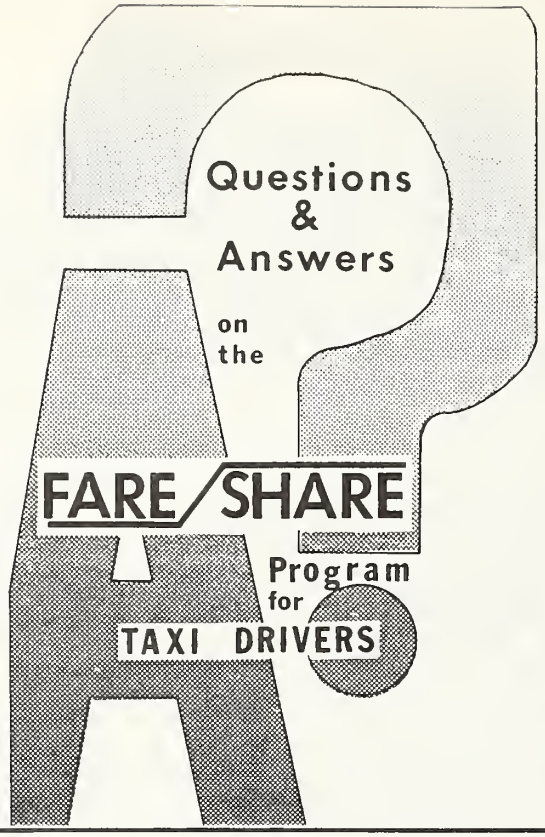
In August 1978 an effort was made to promote the program with minority drivers. To induce their participation and cooperation, an offer was made that included a $50 advance (to be paid back) on project voucher reimbursements, improved reimbursement turnaround times of 3 to 4 days, and checks made out directly to the drivers. In addition, a pamphlet was sent out to 15 black-owned cab companies and distributed at taxi stands (see Figure 3-5). This special promotion was discontinued after 3 drivers disappeared after receiving the $50 advance.

To announce the start of the transit program in September 1978, packets were mailed to each of the approximately 4,500 individuals who had already registered for the taxi portion of the program. These packets contained a cover letter explaining the new discount service, a new edition of the FARE/SHARE newsletter, and 15 tickets to use as an introduction to the new bus service.

In October 1978 the FARE/SHARE staff opened an exhibit and registration site for five days at the South Alabama Fair. Special attention was given to Handicap Day and Senior Citizen Day that week, since many social service agencies brought groups on those days and the exhibit gave the program extra exposure to caseworkers, senior citizen aides, and placement specialists.

Beginning November 7, 1978, FARE/SHARE undertook a 6-month joint promotional venture with the Eastdale Mall Merchants Association. In exchange for FARE/SHARE promotional work, 54 merchants gave a 10 percent discount to registrants each Tuesday from 10:00 a.m. to 2:00 p.m. Using the exhibit from the fair, the FARE/SHARE staff also conducted registrations at the Mall during this time.

Both the discount taxi and bus services were advertised in two general circulation newspapers, as well as a minority newspaper. Public service announcements, each lasting 30 seconds, were run on both radio and television stations. In December 1978, 10 placards advertising the program were placed on Montgomery Area Transit System (MATS) buses, and 5,000 shopping bags with the FARE/SHARE logo were produced for distribution. The FARE/SHARE staff continued to work with social service agencies and held workshops and 1-day registration sessions at agency centers. A final advertising effort was made in January 1979 when posters were distributed to 48 merchants and social service agencies.



QUESTIONS & ANSWERS ON
THE FARE/SHARE PROGRAM
FOR TAXI DRIVERS

Q: What is FARE/SHARE?
A: A Program providing reduced taxi and bus fare for the elderly and handicapped of Montgomery.

Q: How can I become a FARE/SHARE driver?
A: Contact the FARE/SHARE Office at City Hall, 262-4421, ex. 283 or 211. We will be glad to show you a sample contract and explain it. If you choose to sign the contract you will be eligible to carry FARE/SHARE passengers.

Q: Why would I want to be a FARE/SHARE driver?
A: There is a large number of elderly and handicapped who are not now riding cabs, riding very little, or riding with other companies because they cannot get a ride with their neighborhood taxis. Your trips would probably increase, and your profits. You would also be helping the people in your own community.

Q: How would I get started?
A: The City is offering each individual who signs a contract a $50.00 advance, to be paid back in small amounts.

Q: If the passenger pays half fare, how long do I have to wait for my money from the City?
A: Checks are issued within two to four days of receiving vouchers.

Q: What if my company is not on the Program? Can I still be a FARE/SHARE driver?
A: Yes. The City will contract with individuals as well as companies.

Q: What about the paperwork? What If I make mistakes?
A: The FARE/SHARE Program is actively seeking drivers to participate, and will help you in any way they can with fares and vouchers. We will work with you to eliminate mistakes.

Q: Will the government have to know all my business?
A. No. The FARE/SHARE Program is concerned only with FARE/SHARE rides, and will not pry into your private business.

Q: What is the 20¢ Bonus?
A: For each correct voucher turned in, in addition to the reimbursement, 20¢ is paid for each one filled in correctly.

Q: Can I group rides on FARE/SHARE?
A: Yes. Shared rides are legal on the FARE/SHARE Program, but illegal outside the Program.

Figure 3–5. TAXI DRIVER PROMOTIONAL PAMPHLET

Overall, despite the high level of promotion and marketing activity, registration for the program was relatively modest. After an initial registration of 2,269 people in the first month, registration declined to a slow but steady rate. The only exceptions to this trend occurred in late 1978, when the bus portion of the subsidy program began and the transit system began to require that all senior citizens obtain the FARE/SHARE identification card as proof of age. After December 5, 1978, half-fare rides during off-peak hours were only given to individuals holding the special project ID card, whether or not they used project tickets to pay for the ride.

A summary of new project registration by month from August 1977 through July 1980 is presented in Table 3-1. Approximately half of these individuals decided to register after hearing about the program from a friend or relative. Promotional newspaper and television advertisements and social service agencies were also significant information sources.

3.1.3 Phase III. Taxi Voucher Processing System

The taxi user-side subsidy was administered through vouchers that could be used for partial payment of taxi rides made within Montgomery by eligible individuals who registered for the program and obtained a project identification card using the procedures described in Phase II (above). When a registrant paid for a taxi trip using a voucher (see Figure 3-6), the identification card had to be shown. This discouraged unauthorized individuals from trying to take advantage of the subsidy. All the data on the voucher were filled in by the driver, including the date, time, origin and destination, origin and destination zone codes, user ID number, driver and company code, total fare and user's share, and total mileage. Using a handbook supplied by FARE/SHARE, the driver had to determine the correct codes for the origin and destination zones and then calculate the fare and the customer's share of it. Waiting time, package charges, and tips were not included on the voucher and were the responsibility of the user.

Vouchers were in triplicate, with separate copies given to the user, the taxi company, and the FARE/SHARE office (for reimbursement). These latter copies were turned in periodically (typically every week) for verification and eventual payment.

TABLE 3-1. NEW PROJECT REGISTRATIONS

	MONTH ONLY	CUMULATIVE TOTAL
1977		
August	2,269	2,269
September	283	2,552
October	213	2,765
November	485	3,250
December	457	3,707
1978		
January	112	3,819
February	89	3,908
March	93	4,001
April	70	4,071
May	73	4,144
June	54	4,198
July	40	4,238
August	63	4,301
September	61	4,362
October	71	4,433
November	271	4,704
December	184	4,888
1979		
January	149	5,037
February	134	5,171
March	141	5,312
April	105	5,417
May	108	5,525
June	112	5,637
July	89	5,726
August	89	5,815
September	100	5,915
October	74	5,989
November	72	6,061
December	51	6,112
1980		
January	66	6,178
February	52	6,230
March	44	6,274
April	55	6,329
May	58	6,387
June	52	6,439
July	49	6,488

SOURCE: Project records.

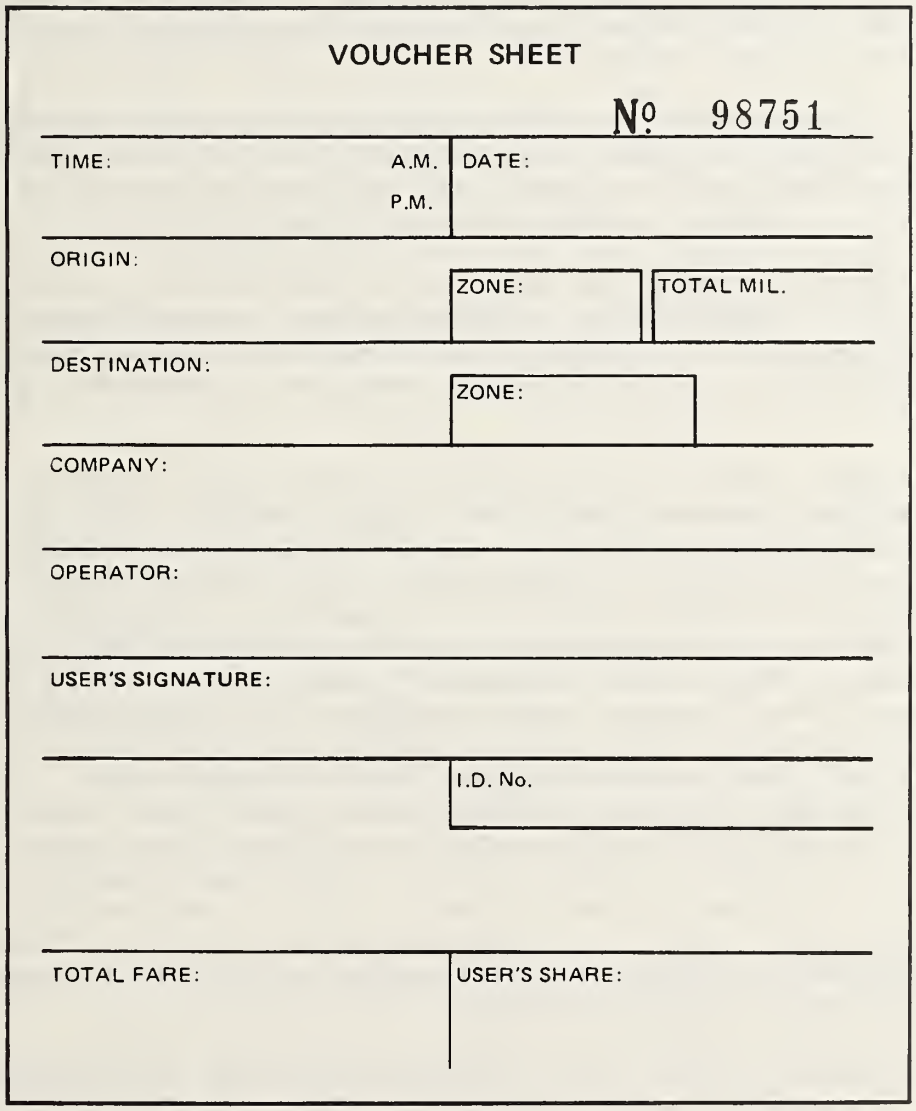


Figure 3–6. MONTGOMERY TAXI VOUCHER SHEET

Several methods of processing the vouchers were used by the project staff during the demonstration. The first method utilized manual worksheets. After each batch of vouchers was logged in, separated by date and time, and counted, all information on the voucher was entered by hand on a worksheet. For each trip, the project staff then calculated the correct fare and the user's share.

The reimbursement was calculated by subtracting the amount the user was charged from the total correct fare and adding $.20 for each correct voucher. All of this information was then transferred to coding sheets to be keypunched.

The second method was similar to the first, but eliminated the use of the worksheets. All calculations were made directly on the coding sheets. This eliminated the tedious task of manually copying information and combined processing and coding in one step.

The third method involved the use of hand-held calculators to compute the correct fares and reimbursement. It was found that the calculations could be made much faster if the letters of the origin-destination zone codes (which correspond to the horizontal axis of the grid-fare system) were changed to numbers, leaving the original zone code numbers (vertical axis) as they were. The zones, number of passengers, total fare charged, and user's share were entered, and the correct fare and the correct user fare were printed by the calculator. The fares charged, the correct fares, and the over- or under-charges for all the vouchers from that date were then totalled. In addition, the total user fare, the correct user fare, and any over- or under-charges were calculated. Because all of this information was printed out, it was easier to correct erroneous entries. However, each of these three initial methods involved approximately seven-day turnaround times for operator reimbursement.

By February 1979, the voucher processing reimbursement system was computerized, eliminating the need for separate manual calculations. This method enabled FARE/SHARE to provide back-up documentation to both the taxi operators and the city office, and provided the most efficient service. The system permitted five-day turnaround times, and each taxi operator was given a complete listing of all the trips taken during that period for the company's records.

3.1.4 Phase IV. Bus Ticket Distribution/Redemption System

The bus portion of the Montgomery user-side subsidy demonstration began in November 1978 and was administered through the distribution of tickets that could be used for payment for bus rides during both peak and off-peak hours by eligible individuals who registered for the program and obtained a project identification card using the same procedure as registrants utilizing the project taxi subsidies. Project registrants with proper identification could acquire at no cost tickets that would give them free rides during off-peak hours (9:00 a.m. to 3:00 p.m., after 6:00 p.m., and all day Saturday) and half-fare (15¢) rides during the peak (start of service to 9:00 a.m., and 3:00 p.m. to 6:00 p.m.). Tickets could be acquired at the time a person registered at the FARE/SHARE office at City Hall or (for individuals who had already registered) by telephoning in a request and receiving them in the mail.

To take advantage of the bus portion of the subsidy program, project riders simply had to show their photo-ID cards to the driver and present one of the project subsidy tickets (plus 15¢ during peak hours) as payment. Drivers punched holes in the tickets during off-peak hours (the project supplied a removable farebox sign to remind off-peak riders to have their tickets punched) and tickets were collected from fareboxes daily by MATS personnel and placed in an envelope labeled with the date. Periodically, MATS submitted the tickets to FARE/SHARE, which provided reimbursement checks based on a subsidy level of 20¢ for peak-period rides and 15¢ for off-peak rides, along with summary statistics describing peak and off-peak project ridership.

Overall, it appears that the unauthorized use of project tickets was extremely limited. Since ID cards had to be displayed to bus drivers when the fare was paid (by ticket alone or by ticket plus 15¢), there was little opportunity for an individual who was not registered with the program to benefit from the possession of unauthorized tickets.

3.2 ADMINISTRATIVE COSTS

The administrative actions described above that were required to implement and manage the Montgomery user-side subsidy demonstration entailed a considerable effort on the part of the project staff. A number of nonlabor expenses, such as advertising costs and office rental, were also incurred. Project management costs can be divided into those associated with the specific phases of administrative activity described above, those that are essentially overhead, and those that form the subsidy payments themselves, as follows.

3.2.1 Phase I. Preoperational Planning

Preoperational planning activities were carried out almost entirely by the deputy project manager and the transportation coordinator. In the month of July 1977 alone, the planning effort amounted to 224.5 hours and $1,516 (1977 dollars) in direct time and labor cost. Given that project staff members worked for a total of nearly 11 months (January through November 1977) on planning activities, and that much planning effort, such as development of the taxi grid-fare system, was undertaken by nonproject personnel (in this case, by the Urban Institute), it is readily apparent that planning activities for this project involved a major commitment of resources (on the order of $15,000 or more).

These costs could obviously be expected to be much lower at a site where the unexpected delays and barriers to implementation were less numerous. Indeed, completely exogenous events, such as the resignation of the Mayor (described previously), played a major role in lengthening the planning period. Likewise, there were numerous problems in Montgomery, such as the inexplicable failure to adequately communicate information to the taxi operators concerning the level of the base fare for project rides, that would most likely not be repeated at other sites. Therefore, it is reasonable to assume that overall preoperational planning costs for a similar demonstration would be somewhat lower at other sites, although planning requirements would still be significant, and a number of activities that must be undertaken to implement a user-side subsidy program, such as solicitation of operating funds, were undertaken in Montgomery prior to the preoperational planning phase and are not accounted for here.

3.2.2 Phase II. Administrative Support

Administrative support activities involved virtually all of the project staff and can be divided into costs for user registration, general program support, and specific activities undertaken to support the taxi program and the bus program, as follows:

1. User registration was carried out by virtually all project staff members at one time or another, and included the administration of a relatively extensive interview for project evaluation purposes (see Appendix A). Registration required an average of .7 hours and $2.50* (1977 dollars) in direct time and labor cost per registrant. Under the assumption that fringe benefits and other nondirect charges add approximately 25 percent to direct labor costs, project registration is estimated to cost $3.13 per registrant. Of course, a portion of this cost may be attributable to evaluation activities, so the total amount should not necessarily be considered an administrative cost of the project itself.

2. General program support included project marketing, promotion and information dissemination, handling of service complaints, and other general project management activities not related specifically to the taxi or bus programs. These activities involved the efforts of virtually all project staff members at one time or another, and required an average of 45 hours and $256** (1977 dollars) in direct time and labor costs per month. Under the assumption that fringe benefits and other nondirect charges add approximately 25 percent to direct labor costs, general program support labor is estimated to cost $320 per month. In addition, direct expenses for advertising, etc. averaged approximately $200 per month, for an overall average general program support cost of $520 per month. As might be expected, this cost was somewhat higher around the times that the taxi and bus portions of the subsidy program began.

---

*Calculated from administrative cost data tabulated for 3 sample months.

**Calculated from administrative cost data tabulated for 2 sample months.

3. Taxi program support included taxi operator and driver training programs, fraud investigations, monitoring user budgets for overruns, and general coordination with taxi operators or related to the taxi program. These activities were conducted primarily by the transportation coordinator, and required an average of 30.9 hours and $195* (1977 dollars) in direct time and labor costs per month. Under the assumption that fringe benefits and other nondirect labor charges add approximately 25 percent to direct labor costs, taxi program support is estimated to cost $244 per month.

4.. Bus program support included general coordination with MATS not related to the reimbursement process per se. Because the bus program operated smoothly once established, these costs were insignificant on an average monthly basis.

3.2.3 Phase III. Taxi Voucher Processing System

Administrative costs related to taxi voucher processing and validation activities varied widely, depending upon the specific method used. As outlined above, vouchers were processed at various times using four distinct methods: two manual worksheets; single manual worksheet; hand-held calculator; and computer. Overall, voucher processing costs can be expected to vary in proportion to project taxi ridership, and, as shown in Table 3-2, ranged from $0.36 to $1.66 per ride (in 1977 dollars), depending upon the voucher processing method used.

3.2.4 Phase IV. Bus Ticket Distribution/Redemption System

Administrative costs related to the bus ticket distribution/redemption system can also be expected to vary in proportion to project ridership. Direct labor costs for the bus ticket system averaged $.017 per ride (in 1977 dollars). Under the assumption that fringe benefits and other nondirect labor charges add approximately 25 percent to direct labor

*Calculated from administrative cost data tabulated for 4 sample months.

TABLE 3-2. TAXI VOUCHER PROCESSING COSTS

	METHOD			
	TWO MANUAL WORKSHEETS	SINGLE MANUAL WORKSHEET	HAND-HELD CALCULATOR	COMPUTER
Direct Labor Cost per Trip	$1.26	.41	.22	.26
Direct Nonlabor Cost per Trip[a]	.32	.10	.06	.07
Keypunch Cost per Trip	.08	.08	.08	—
Computer Time Cost per Trip	--	--	--	.11
Total	$1.66	$0.59	$0.36	$.44[b]

[a]Assumed to equal 25 percent of direct labor cost. Includes fringe benefits.

[b]Computer provided analysis capabilities and services (e.g., to detect project overruns by individual registrants) not available with other methods.

SOURCE: Project records.

costs, the overall cost of administering the bus ticket distribution/redemption system is estimated to be $.021 per ride.

3.2.5 Overhead

Overhead costs include those project costs that are not attributable to any specific aspect of project activity (e.g., office space) and are summarized in Table 3-3.

TABLE 3-3. MONTHLY OVERHEAD EXPENSES

ITEM	COST PER MONTH
Office and equipment use	$ 665
Telephone	$ 29
Photocopying	$ 14
Allocation from city support departments (accounting, purchasing, personnel, auditing, etc.)	$1,075
TOTAL	$1,783

SOURCE: City of Montgomery records.

Overall, these costs averaged $1,783 per month (1977 dollars). It should be noted that some overhead expense items, such as office equipment use, required a substantial initial cash outlay for acquisition (e.g., typewriters), although these items were not "consumed" until later in the project.

3.2.6 Subsidy

The cost of the subsidy itself was determined by the number and characteristics of project rides. This cost averaged approximately $1.25 per project taxi ride (1977 dollars) after the policy of offering drivers a $.20 bonus for properly-completed vouchers was instituted in November 1977. For project bus riders, the subsidy averaged $.162 per ride.

3.3. PROJECT MANAGEMENT COST SUMMARY AND FUNDING ISSUES

The ongoing project management costs (exclusive of start-up costs) described above are summarized in Table 3-4.

TABLE 3-4. ONGOING PROJECT MANAGEMENT COSTS

	COST (1977 DOLLARS)			
ACTIVITY	CONSTANT PER MONTH	ADDITIONAL PER REGISTRANT	ADDITIONAL PER TAXI RIDE	ADDITIONAL PER BUS RIDE
Administrative Support	764	3.13[a]		
Taxi Voucher Processing			.44[b]	
Bus Ticket Distribution/ Redemption				.021
Overhead	1,783			
Subsidy			1.22	.162
TOTAL	$2,547	+ $3.13/ registrant	+ $1.66/ taxi ride	+ $.183/ bus ride

[a]Includes registration interview conducted for evaluation purposes (see Appendix A).

[b]Using the computer. See Table 3-2 for costs of alternative methods.

Based on this summary, expected administrative costs for similar user-side subsidy projects (in terms of administrative support, voucher system, taxi fares, subsidy levels, etc.) can be estimated. For example, the annual cost for an operation of this type that averages approximately 70 new registrants, 2,800 project taxi rides, and 25,000 project bus rides per month at equilibrium (i.e., after all start-up activities have been undertaken and the initial wave of project registration has taken place) can be estimated as follows:

Annual cost (1977 dollars) = 12 x monthly cost

= 12 x (2547 + (70 x 3.13) + (2,800 x 1.66) + (25,000 x .183)) = $143,869

including the cost of the subsidy itself. This breaks down to $55,776 for taxi rides (@$1.66), $54,900 for bus rides @$.183) and $33,193 in costs that are essentially invariant to ridership (administrative support and overhead). Allocation of these latter costs to project trips would of course increase the cost per ride figures. For example, if all of the administrative support and overhead costs were allocated to the taxi portion of the program, the average project cost per project taxi trip would increase by $1.09, from $1.66 to $2.75. Alternatively, if all of these costs were allocated to the bus portion of the program, the average cost per project bus trip would increase by $.111, from $.183 to $.294. Allocations of these costs between the two portions of the program would produce lesser increases in the average project cost per trip for each project mode.

In Montgomery, these costs were covered primarily by the UMTA demonstration grant, which was depleted at the end of December 1980. At that time, the project ceased operating, with no prospects found for continuation under local funding. A very limited van program that utilizes a combination of volunteer labor and provider-side subsidies has since been initiated for a small number (approximately 75) of severely handicapped individuals. Other elderly and disabled individuals continue to be eligible to receive preproject transit discounts, and are issued project-type photo ID cards for this purpose.

4. LEVEL-OF-SERVICE CHANGES

The user-side subsidy demonstration in Montgomery had the potential to affect a variety of transportation supply attributes. The direct, primary effects of the demonstration involved the fare and level of shared-riding. Secondary effects involved changes in other level-of-service attributes that were associated with the primary effects and operator reactions to the project. All of these effects are described in detail below.

4.1 PRIMARY EFFECTS

4.1.1 Fare

The most important single change in transportation supply attributes and, indeed, the focus of the entire demonstration, involved the reduction of taxi and bus fares for elderly and handicapped residents of Montgomery. As outlined in Chapter 3, eligible individuals who registered for the FARE/SHARE program were able to obtain a 50 percent subsidy for taxi fares through use of vouchers, and could obtain tickets to ride conventional transit for free during off-peak hours or for approximately half-fare during the peak. Because of purchase limitations, the taxi discount was only effective for a maximum of $15 worth of rides per month and only applied to trips within Montgomery. However, given the magnitude of the subsidies, and the fact that the budget limit was not a binding constraint for many registrants, these changes in travel costs as perceived by the user were expected to have significant effects on registrant mobility.

4.1.2 Shared-Riding

As outlined earlier, taxi shared-riding existed only informally in Montgomery prior to the demonstration and was not addressed in the city's taxi operating code. When the project started, the taxi code was modified to formally establish shared-riding (at least for project trips) and the grid-fare system needed for consistency in the calculation of shared-ride fares.*

---

*The grid-fare system also caused at least marginal secondary changes in the fare structure itself (see below).

The practical effects of these changes were not significant on an aggregate basis. Most participating taxi operators believed that their customers would not share rides to a degree that would justify the lower base fare, and took advantage of their option under the revised taxi ordinance to provide shared-ride service to project users only. As a result, changes in overall levels of shared-riding were extremely small. For example, among firms that participated in the project, the proportion of all rides that were shared with either the previous or subsequent ride increased from approximately 2.9 percent* to approximately 4.8 percent** after the project began. Even this latter percentage was lower than the proportion that shared rides formed of the ridership of nonparticipating firms prior to the demonstration (6.5 percent).*** Thus it can be seen that the effect of the project on total shared-riding activity by participating firms was modest in comparison to the range of shared-riding activity found at different (participating and nonparticipating) firms in Montgomery.

For project riders, however, the increase in shared-riding associated with the project was more pronounced. A total of 12 percent of project rides were shared with the previous or subsequent ride, a statistically significant increase† over the 3.4 percent of the elderly and handicapped ridership of firms that participated in the project who shared rides prior to the start of the demonstration. Conversely, only 1.4 percent of the nonproject rides were shared, a percentage that is slightly†† lower than preproject levels. These figures tend to indicate that only project riders experienced an increase in shared-riding, despite the formal recognition of shared-riding for the general population contained in the revised taxi code.

---

*Taxi on-board survey, June 1977.

**Taxi on-board survey, August 1979.

***Taxi on-board survey, August 1977. Nonparticipating firms tended to be smaller than participating firms, but concentrated their operations in particular neighborhoods and served a more homogeneous and possibly more familiar clientele, accounting for this higher level of shared-riding activity.

†At the 95 percent level of confidence.

††Not statistically significant.

4.2 SECONDARY EFFECTS

The voucher system used in Montgomery created opportunities for taxi operator discrimination in the treatment of project and nonproject trips, since an individual was required to formally identify him/herself as a project participant before service had been rendered (i.e., when requesting a ride). In addition, a portion of the traffic of each taxi firm in Montgomery involved regular passengers who were recognized by dispatchers and/or drivers. Therefore, it was possible in practice for operators to distinguish between project and nonproject trips and differentiate the quality of service offered. In addition, the primary effects described above, particularly the change in shared-riding and the concurrent implementation of the grid-fare system, had effects on other level-of-service attributes. Secondary effects of these types are described below.

4.2.1 Wait Time

As part of the formal implementation of shared-ride service under the project, taxi operators were allowed to delay their responses to immediate service requests* by up to one hour to facilitate the grouping of rides by dispatchers. The measurable effect of this change was relatively small, although both the mean and variance of wait time for project service requests appear to be slightly higher than comparable statistics for nonproject service (means = 6.1 min. vs. 5.5 min.; standard deviations = 4.1 min. vs. 4.0 min).** However, over 40 percent of project registrants perceived that project rides at least occasionally involved longer wait times.*** Given that project registrants who only utilized transit may not have had the opportunity to become fully aware of the project's effect on taxi service quality, it appears that the

---

*Immediate service requests accounted for approximately 95 percent of all Montgomery taxi rides and are the principal focus of interest in this section. For immediate service requests, wait time includes the difference between pick-up and service request times, while for advanced requests it includes only the difference between actual and scheduled pick-up times.

**Differences are not statistically significant.

***Survey of project registrants, August 1979.

perceived responsiveness of taxi service declined to a significant degree for project users as a result of the shared-riding policy.*

4.2.2 Ride Time

Given the incentives for taxi operators to provide direct and efficient service once a passenger has been picked up, it is extremely unlikely that operators would attempt to differentiate the service quality of project and nonproject trips beyond the degree necessary to implement the increased level of shared-riding for project trips. In fact, ride times of project and nonproject trips did not differ significantly (means of 9.7 and 9.2 minutes, respectively), and the variability of nonproject trips was higher than it was for project trips (standard deviations of 10.6 and 7.8 minutes, respectively.)** Furthermore, project registrants were unanimous in their opinion that project rides took no longer than nonproject rides, and 93 percent of registrants believed that project ride times were no more variable than nonproject ride times.*** These findings are consistent with the low levels of shared-riding actually achieved for project trips, and indicate that the effect of the project on ride times was minor.

---

*It is noted here that the removal of formal restrictions on shared-riding in most other settings would be expected to lead to decreases, rather than increases, in wait time due to its likely beneficial effects on vehicle productivity. Put another way, the fact that occupied taxis could also handle requests for service should effectively expand the "fleet" of vehicles potentially able to handle a given service request, and decrease the time between the service request and pick-up.

**Taxi on-board survey, August 1979. Nonproject trips could be expected to be slightly longer than project trips, since project vouchers could only be used to pay for trips within Montgomery. Therefore, the difference between mean ride times may be greater than shown here for comparable project and nonproject trips. The difference in the composition of nonproject trips may also contribute to the higher observed variance of nonproject trip ride times.

***Survey of project registrants, August 1979.

4.2.3 Courtesy/Assistance

As shown in Table 4-1, there were differences in the amount of assistance offered by drivers on project and nonproject trips.

TABLE 4-1. DRIVER ASSISTANCE OFFERED TO PASSENGERS (percent)

	AT TRIP ORIGIN		AT TRIP DESTINATION	
	PHYSICAL ASSISTANCE	HELP WITH DOORS, PACKAGES	PHYSICAL ASSISTANCE	HELP WITH DOORS, PACKAGES
Project (n=59)	0.0	6.8	3.2	9.7
Nonproject Total (n=153)	0.0	11.1	0.0	10.5
Eligible (n=38)	0.0	10.5	0.0	15.0
Noneligible (n=115)	0.0	11.3	0.0	9.0

SOURCE: Taxi on-board survey, August 1979.

For example, project riders tended to receive slightly more physical assistance at trip destinations than nonproject riders, but less assistance with bags and doors at both origins and destinations.* Overall, however, indications are that the level of assistance offered by drivers depended upon the characteristics and needs of riders, rather than operator efforts to provide service quality differentials. Once again, this was confirmed by the opinion of project registrants, of whom over 95 percent found no difference in driver courtesy and assistance for project trips.**

---

*None of the observed differences are significant at the 95 percent level of confidence.

**Survey of project registrants, August 1979.

4.2.4 Fare Structure

Under the new grid-fare system, fares were calculated based on the sum of horizontal and vertical grid-steps taken between a passenger's origin and destination. Because movement between "diagonal" zones was counted as 2 grid steps (1 horizontal, 1 vertical), the possibility existed for grid based fares to exceed fares based on "straight-line" distances by over 40 percent under some circumstances. However, since most Montgomery streets were laid out in a grid pattern that paralleled the grid-fare system, "straight-line" travel on "diagonal" trips was usually not feasible. Therefore, this change in fare structure affected a relatively small and not significant number of riders and origin-destination pairs.

4.3 SUMMARY

Overall, the most significant supply change associated with the demonstration project involved the change in effective taxi and transit fares. Project taxi riders also experienced a higher level of shared-riding and an increase in wait time caused by the ability of participating companies to delay project service requests in order to more effectively group rides. Ride time and other service quality differentials associated with the project were generally not significant.

5. USER IMPACTS AND TRAVEL BEHAVIOR CHANGES

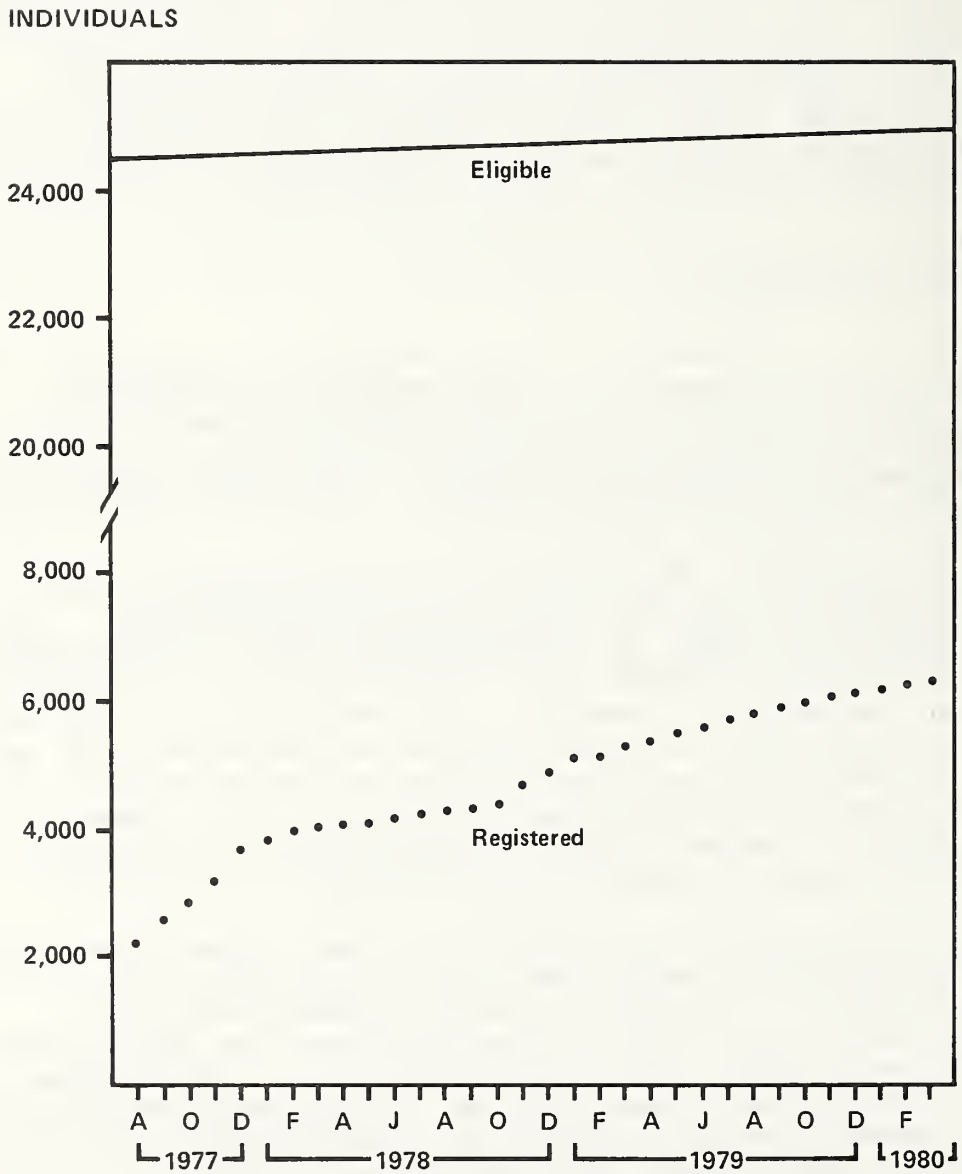
The effect of the taxi and transit fare discount program on the travel behavior of the elderly and handicapped in Montgomery constituted the principal impact of interest in this demonstration. The reductions in travel cost were expected to attract many eligible individuals to register for the program, and to have significant effects on the number and types of trips they made. In this chapter, the characteristics of project registrants and users are described in detail, and the effects of the program on their trip-making are analyzed.

5.1 PROJECT REGISTRATION

As outlined in Chapter 2, it is tentatively estimated that approximately 24,544 elderly or handicapped residents of Montgomery were eligible for the FARE/SHARE discount program in 1977, and that by 1979 this number had increased to 24,987. This change, and the cumulative pattern of project registration over time, are shown in Figure 5-1.

It is evident from this figure that the proportion of registered individuals in the eligible population was relatively stable for most of the project, with the exception of the period around November 1978, when the bus portion of the program began operation. However, the inclination of specific individuals to register for the program varied widely and was related to a number of sociodemographic characteristics. A comparison of the characteristics of project registrants and nonregistrants and the penetration achieved by the project in these different market segments are presented in Table 5-1.

Project registrants generally have fewer travel handicaps than nonregistrants and make less use of mobility aids. Registrants contain a disproportionate representation of females and blacks, and tend to come from smaller households (46 percent live alone), with lower incomes. Of particular relevance to the project, most project registrants do not have a driver's license, an automobile, or an available driver in their household, while more than 50 percent of the nonregistrants have a license, more than 75 percent of the nonregistrants have at least one automobile, and more than 85 percent of the nonregistrants have at least one available driver in their household.



SOURCE : Eligible population estimated in Chapter 2.

Registration statistics drawn from Table 3—1. These statistics may overstate the true number of registrants at any given time, since attrition among registrants has not been accounted for.

Figure 5—1. ELIGIBLE AND REGISTERED INDIVIDUALS

TABLE 5-1. COMPARISON OF PROJECT REGISTRANTS AND NONREGISTRANTS[a] (PERCENT)

	REGISTRANTS	ELIGIBLE NONREGISTRANTS	MARKET[b] PENETRATION
Age			
5-54	8.8	7.6	.28
55-64	6.8	10.8	.17
65-69	32.7	34.0	.24
70-74	24.3	24.0	.25
75-84	23.5	20.5	.27
85+	3.8	3.1	.29
Sex			
Male	29.8	35.7	.22
Female	70.2	64.3	.26
Race			
White	50.8	61.9	.21
Black	49.1	31.8	.34
Other	0.1	6.3	.01
Handicap Status			
No handicap	64.8	59.1	.27
Nonambulatory	0.7	0.7	.25[c]
Semiambulatory	20.0	28.8	.19
Sight	4.9	5.2	.24
Hearing	1.7	1.4	.29[c]
Incoordination/ Mental retardation/ Brain damage	4.2	1.4	.50[c]
Other[a]	3.7	3.5	.26
Aids			
Crutches	0.8	1.3	.17[c]
Wheelchair	0.5	2.6	.06
Walker	0.9	2.0	.13[c]
Cane	9.2	12.9	.19
Escort	0.8	2.3	.10[c]
Other	1.6	1.0	.35[c]
Total	13.8	22.1	.17
Current Driver's License			
Yes	33.1	57.7	.16
No	66.9	42.3	.34
Number of Vehicles In Household			
0	55.5	21.5	.46
1	36.8	56.2	.18
2	6.8	20.5	.10
3+	0.8	1.8	.13[c]
Household Size			
1	46.4	32.0	.32
2	38.8	47.7	.21
3	9.4	10.7	.22
4+	5.3	9.7	.15
Number of Drivers Available in Household			
0	53.2	14.4	.55
1	32.8	53.0	.17
2	12.6	31.5	.12
3	1.3	1.0	.30[c]

Table continued on following page.

TABLE 5-1. COMPARISON OF PROJECT REGISTRANTS AND NONREGISTRANTS[a] (PERCENT)

	REGISTRANTS	ELIGIBLE NONREGISTRANTS	MARKET PENETRATION
Employment Status			
Employed full-time	4.4	11.1	.12
Employed part-time	5.5	4.0	.31
Unemployed	4.2	3.1	.31
Retired	77.6	69.9	.27
Student	0.7	0.0	1.00[c]
Homemaker	7.6	11.9	.17
Household Income			
Less than $3,000	49.6	35.3	.32
$3,000 to $4,999	24.8	30.6	.21
$5,000 to $7,999	14.5	21.2	.18
$8,000 to $11,999	6.4	8.2	.20
$12,000 to $20,000	3.6	4.7	.20
$20,000 +	1.1	0.0	1.00[c]
	(n = 6,198)	(n = 303)	

[a]As of May 1980. Total number of registrants = 6,193. Total number of eligible nonregistrants = estimated eligible population (24,987, from Chapter 2) less number of registrants = (24,987 -6,198) = 18,789. The number of registrants and all related market penetration statistics may be slightly over-estimated, since attrition among registrants has not been accounted for.

[b]Calculated as (number of registrants in given stratum) ÷ ((number of registrants in given stratum) + (percent of eligible nonregistrants in given stratum x number of eligible nonregistrants)).

[c]Small sample size relative to incidence in population.

SOURCE: Survey of nonregistrants, August 1979, and registration interviews, August 1977-May 1980.

Reasons cited by nonregistrants for their lack of participation in the program reinforce the importance of auto availability that is evident in registrant/nonregistrant comparisons. As shown in Table 5-2, nearly 50 percent of all nonregistrants indicated that the availability of alternative ride sources made it unnecessary for them to register for the program. In addition, nearly 50 percent of all nonregistrants lacked information about the program or intended to register for it. While these latter reasons tend to show a lack of need for or interest in the program, there appears to exist at least some potential for expansion of the program among these nonregistrants. This potential could also be increased among some nonregistrants if the registration process itself were made more convenient. However, most other nonregistrants, such as those who cannot participate for health reasons or those who object to "charity," would not be likely to join the program under any circumstances.

New registrant characteristics changed somewhat over time. Later registrants tended to be made up more of individuals who had just become eligible for the project (i.e., age 65-69), and less of older individuals. Later registrants also consisted to a greater extent of handicapped individuals and had somewhat higher incomes than earlier registrants. Of particular relevance to the project, later registrants had significantly higher access to automobiles through drivers' licenses and/or vehicles owned by the household. This may be attributable to the more widespread proliferation and usage of automobiles among the younger, newly-eligible registrants, as well as an increased tendency for regular auto users to register for the program that may have been caused by problems of gasoline availability and price during 1979.

5.2 PROJECT USE

From the beginning of operations in August 1977, the project experienced a steady growth in taxi ridership to a peak of slightly over 3,000 rides per month. A summary of the project ridership carried each month by participating taxi firms is presented in Figure 5-2. Project transit ridership also increased to a peak after its beginning in November 1978, as shown in Figure 5-3.

Among registrants there was wide variation in the extent to which project discounts were utilized for each mode. As shown in Figure 5-4, 24.4 percent of all registrants utilized the taxi portion of the subsidy program but not the bus

TABLE 5-2. REASONS CITED BY NONREGISTRANTS FOR LACK OF PROGRAM PARTICIPATION

REASON	PERCENT OF ALL NONREGISTRANTS CITING REASON[a]
Have own car/transportation	46.7
Haven't heard of the program	38.9
Haven't had time to register	8.4
Inconvenience of registering	6.0
Health (nonambulatory)	6.0
Object to "charity"	4.2
Didn't think they were eligible	1.8
Just moved to Montgomery/just turned 65/ just became disabled	1.2
	(n = 167)

[a]Does not sum to 100 percent because of multiple responses.

SOURCE: Survey of nonregistrants, August 1979.

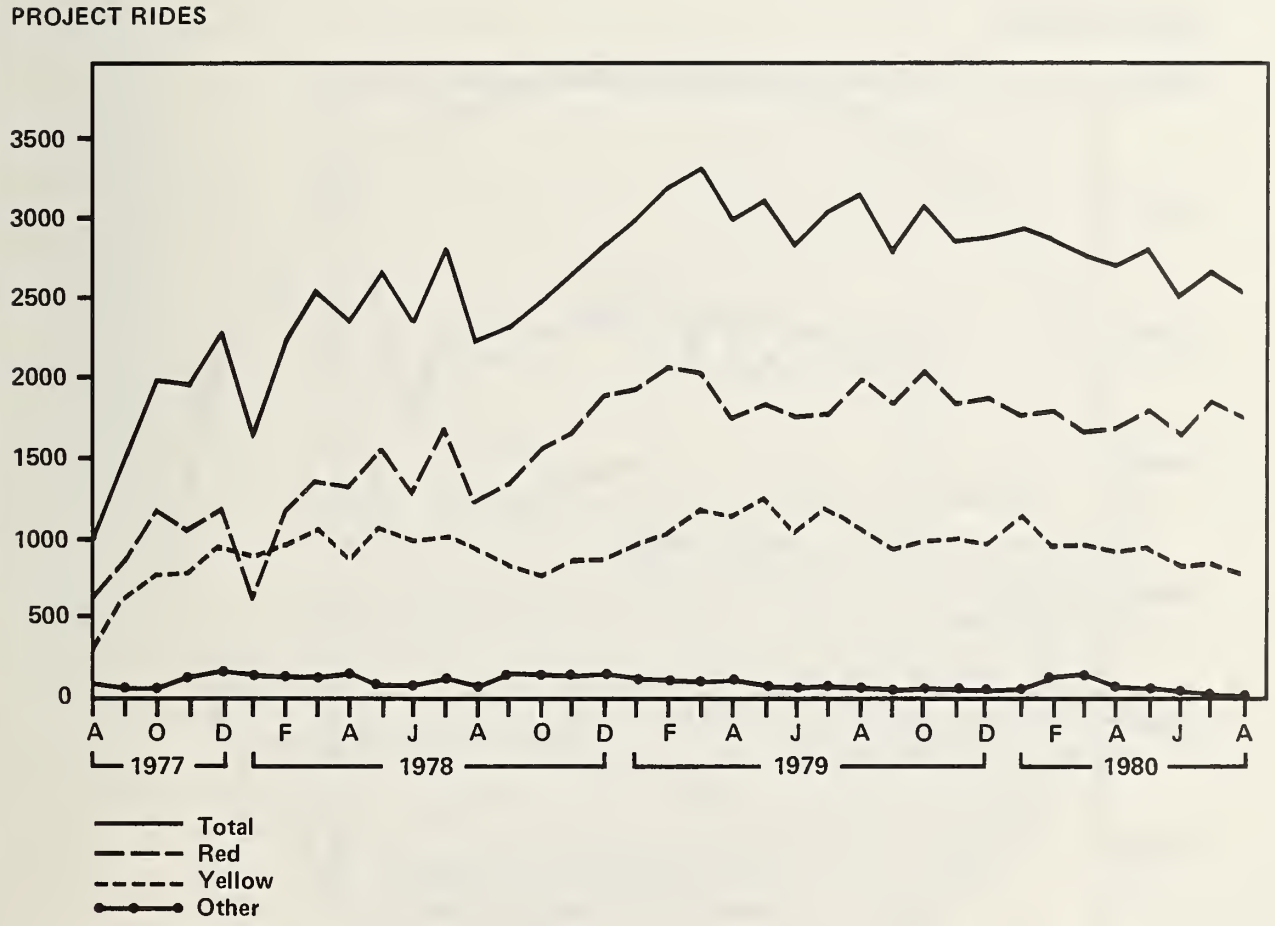
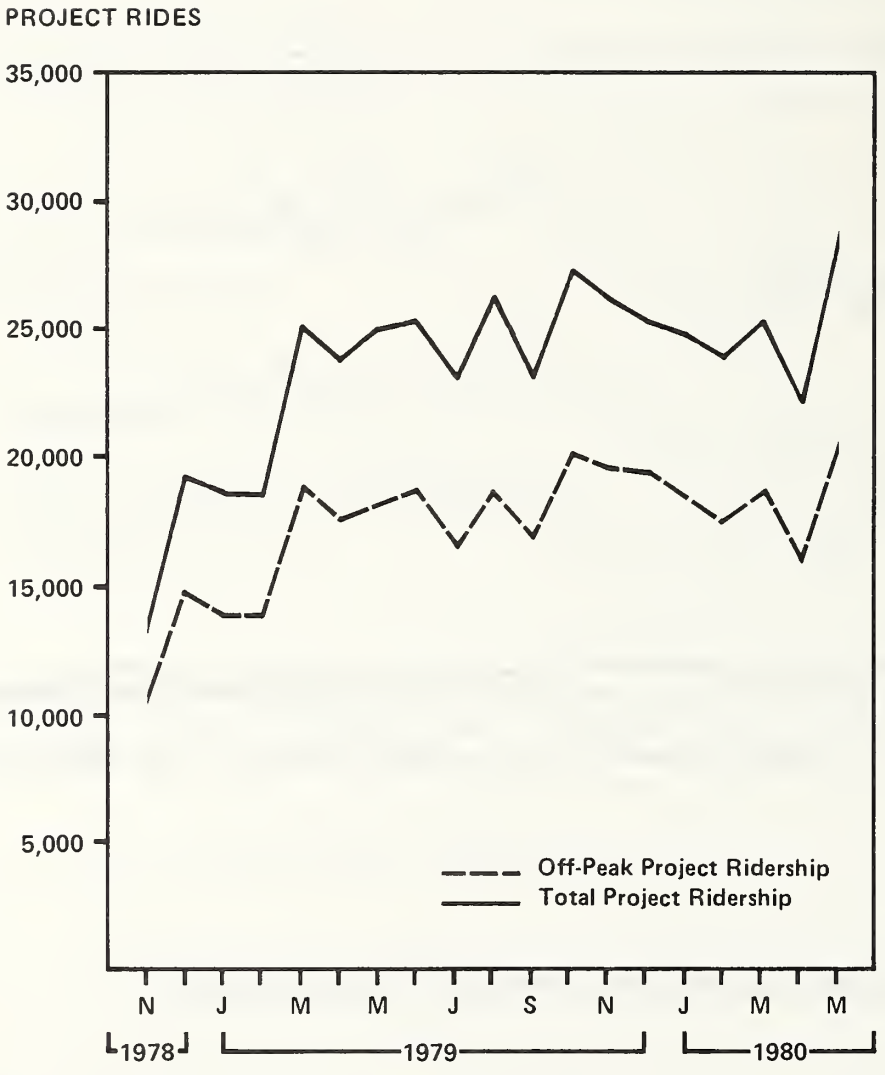
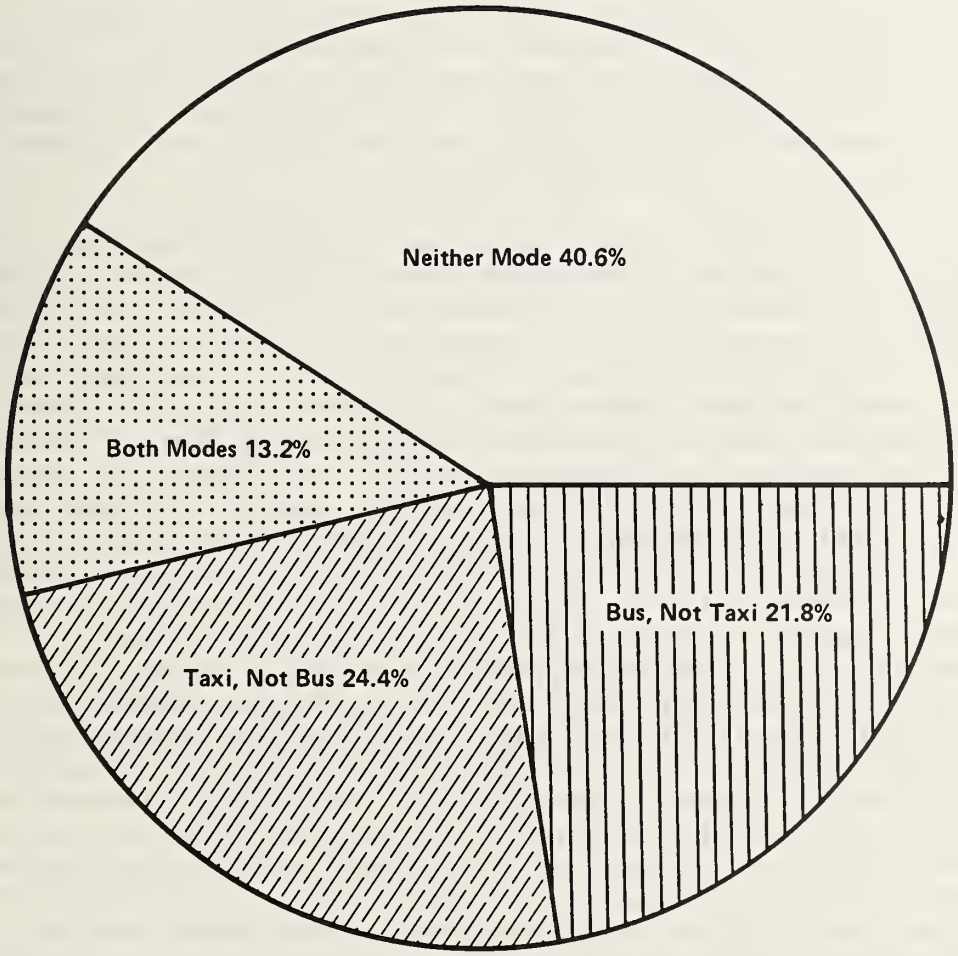


Figure 5–2. SUMMARY OF PROJECT TAXI RIDERSHIP



SOURCE: Project records.

Figure 5–3. SUMMARY OF PROJECT TRANSIT RIDERSHIP



(n = 5394)

SOURCE: Taxi voucher and bus ticket use records.

Figure 5—4. REGISTRANT UTILIZATION OF PROJECT SERVICES

portion, 21.8 percent used bus but not taxi, 13.2 percent used both, and 40.6 percent used neither. Differences in modal utilization appear to be related to a number of registrant charcteristics. As shown in Appendix E (Table E-1), the group of bus users and users of both bus and taxi had the lowest incomes and fewest ride sources (driver's licenses, available drivers, and vehicles in household). On the other hand, the group of taxi (only) users tended to have higher incomes and more ride sources and contained a disproportionate representation of women, whites, and individuals requiring aids to travel. As might be expected, individuals who did not utilize project discounts at all had the highest incomes and most ride sources of all registrants.

Within each mode, there was also a wide variation in the extent to which project discounts were utilized that appears to be related to a number of registrant characteristics. As shown in Appendix E (Table E-2), the group of intensive taxi users contained a disproportionate representation of whites and nonelderly handicapped individuals. (As outlined in Chapter 3, only handicapped individuals were eligible to apply for a waiver of the nominal project use limits.) These individuals tended to be workers, and therefore had higher incomes than other registrants, although they had the fewest ride sources of any group. It should also be noted that many nonambulatory project registrants (i.e., those requiring wheelchairs) were able to use the taxi portion of the project at least intermittently, and some were among the most intensive project users. Overall, however, the most significant characteristic of the intensive project taxi users may be their scarcity. Less than 12 percent of all project registrants averaged even one project taxi trip per month, while nearly 20 percent of all registrants used the project vouchers a few times to pay for taxi rides, but did not use the taxi portion of the project on a consistent basis. Among registrants that chose to utilize the taxi portion of the project to at least some extent, the average trip rate was approximately 1.5 project taxi trips per month.

The bus portion of the project, on the other hand, was much more intensively utilized, with nearly 35 percent of all project registrants making project bus trips at least once a month. As shown in Appendix E (Table E-3), intensive bus users contained a disproportionate representation of males, blacks, and nonelderly handicapped individuals. As was the case with taxi, the most intensive users tended to be workers and had the fewest available ride sources, but in this case they also had the lowest incomes. Also in contrast to the taxi portion of

the program, nonambulatory project registrants (i.e., those confined to wheelchairs) were unable to use the bus portion of the program, for which service was provided by nonaccessible transit buses. Overall, among registrants that chose to utilize the bus portion of the project to at least some extent, the average trip rate was approximately 13.2 project bus trips per month.

Project utilization was also related to the time of registration by the users. As shown in Table 5-3, early registrants tended to make the most frequent use of project discounts. This reflects the fact that the neediest individuals are likely to have registered for the program immediately, while those whose needs were less pronounced may have delayed their registration until their circumstances more clearly demonstrated the utility of the discount program. Given that later registrants may have consisted to some degree of auto users who registered for the program due to gasoline availability and price problems in 1979, the observation that earlier registrants made greater use of the project is consistent with the role of auto travel alternatives in the determination of project-use frequency described above. This may also indicate that at least some later registrants used the program as "insurance" against the possibility of a major gasoline shortfall rather than a day-to-day method of financing travel.

Changes in user characteristics after registration may also have a significant or even overriding effect on a user's attitude toward and need for the project. Some registrants may have died or moved away from Montgomery, precluding them from active participation in the program. The extent of this sort of attrition is difficult to document since individuals who chose not to use the program cannot be distinguished from those who were not able to. However, the exit of registrants from the program over time is likely to be a nontrivial phenomenon that must be considered, at least implicitly, when nominal registration totals or aggregate use rates are being analyzed.

Changes that did not involve the permanent departure of registrants from the program also affected project usage. At a minimum, registrants grew older over time and experienced corresponding changes in their travel behavior. Other specific changes experienced by FARE/SHARE project registrants during the course of the demonstration that are relevant to project use included changes in household size, employment status, handicap status, vehicle ownership, and income. While these

changes may not have been large on a net basis, and accrued to relatively few registrants (15 percent or less), they are likely to have had significant effects on the use rates of individual project participants.

Within the constraints of project budget limitations, project registrants expressed a number of reasons for not making greater use of the subsidy program (see Tables 5-4 and 5-5). The majority of these reasons relate to a lack of need for additional travel rather than to difficulties experienced in utilizing program discounts. However, as outlined in Chapter 3, at least some registrants found that the voucher use limit acted as a constraint on their project trip making. Indeed, given the sensitivity of use rates to the characteristics of individuals and the types of reasons cited by registrants for not participating more in the program, the monthly use limitation may have been one of the few policy-sensitive variables that had a significant effect on project use.

5.3 TRAVEL BEHAVIOR CHANGES

The information presented above provides detailed perspectives on the types of individuals who registered for the project and the extent to which they made use of project subsidies. However, this, in and of itself, does not represent a change in travel behavior that is attributable to the program, since it has not been established that the same individuals would not have made the same trips if the program had never been implemented.* Such changes in travel behavior that reflect changes in registrant mobility caused by the subsidy program are of particular interest in this demonstration.

For the purposes of this analysis, changes in travel behavior can usefully be categorized into effects on overall travel frequency, trip purpose, mode, destination, and timing. Changes of each of these types that are attributable to the subsidy project are described below.

5.3.1 Travel Frequency

Changes in overall travel frequency that occurred because of the program are extremely significant because they represent

---

*See, for example, Charles River Associates, Measurements of the Effects of Transportation Changes, prepared for U.S. Department of Transportation, July 1972.

TABLE 5-3. PROJECT USE BY DATE OF REGISTRATION
(PERCENT)

TAXI

AVERAGE NUMBER OF PROJECT TAXI TRIPS PER MONTH	REGISTRATION DATE 8/77 TO 7/78	8/78 TO 7/79	8/79 TO 5/80
0	66.5	71.3	82.3
Less than one	21.5	18.0	8.6
1-7	10.3	9.4	8.1
8+	1.7	1.4	1.0
	(n = 3,909)	(n = 1,635)	(n = 628)

SOURCE: Registration interviews and taxi vouchers, August 1977 to May 1980.

BUS

AVERAGE NUMBER OF PROJECT BUS TRIPS PER MONTH	REGISTRATION DATE 8/77 TO 7/78	8/78 TO 7/79
0	64.0	67.7
1-5	14.2	13.8
6-15	11.9	9.6
16+	9.9	8.9
	(n = 3,909)	(n = 1,635)

SOURCE: Registration interviews and taxi vouchers, August 1977 to May 1980; and registration interviews, August 1977 to June 1979, and bus tickets, June 1979.

TABLE 5-4. REGISTRANT RESPONSES TO QUESTION: "WHY HAVEN"T YOU USED FARE/SHARE MORE TO RIDE TAXIS?"

REASON	PERCENT OF ALL NONREGISTRANTS CITING REASON[a]
Have own car/transportation	34.7
Fare too high	14.9
Bad health	12.9
Ride buses	9.9
Ride as much as is needed	6.9
Inconvenience of wait time	5.9
Haven't heard about program[b]	5.0
Favorite company not in program	2.0
Inconvenience of registration	1.0
No reason	17.8
	(n = 101)

[a]Does not add to 100 percent because of multiple responses.

[b]Registrants may take advantage of the bus subsidy without being aware of the taxi subsidy.

SOURCE: Survey of project registrants, August 1979.

TABLE 5-5. REGISTRANT RESPONSES TO QUESTION: "WHY HAVEN'T YOU USED FARE/SHARE MORE TO RIDE MATS BUSES?"

REASON	PERCENT OF ALL NONREGISTRANTS CITING REASON[a]
Ride as much as is needed	29.7
Have own transportation	22.8
Bad health	19.8
Buses unavailable	7.9
Ride taxis	3.0
Don't ride buses	2.0
Haven't heard of program**	1.0
No reason	20.7
	(n = 101)

[a]Does not add to 100 percent because of multiple responses.

[b]Registrants may take advantage of the taxi subsidy without being aware of the bus subsidy.

SOURCE: Survey of project registrants, August 1979.

both the primary measure of changes in registrant mobility and a principal cause of changes in the total volume of travel handled by service providers. In the taxi portion of the program, it is estimated* that 14.3 percent of all trips made by project registrants would not have been made in the absence of the subsidy program. Since project trips accounted for approximately 94 percent of all registrant taxi trips**, project-induced trips are estimated to account for 15.2 percent (.143/.94) of all project trips. Based on the approximate project utilization rate of 1.5 rides per month for project registrants that used the taxi portion of the program (see above), this is the equivalent of .23 (=.152 x 1.5) project-induced taxi trips per taxi-using registrant per month. While these figures must all be viewed somewhat tentatively due to their reliance on registrant recall, they tend to suggest that the increase in overall trip-making attributable to the taxi portion of the program is extremely modest.

Of course, the effect of the taxi subsidy on the mobility of individual registrants may have been significantly higher. As shown in Appendix E (Table E-2), for example, most taxi users averaged less than one project trip per month, while some 5 percent of taxi users averaged eight or more project trips per month. Given the concentration of project taxi usage among relatively few registrants, it is reasonable to assume that increases in mobility may have been more substantial for selected individuals than would otherwise be indicated by the .23 trips per month figure derived above. Overall, however, the effect of the taxi portion of the program on registrant mobility tended to be small, but positive.

The bus portion of the program also had at least some effects on registrant mobility. At an aggregate level, it is evident that the project increased bus ridership by the elderly and handicapped. For example, the percentage that elderly and handicapped riders formed of total bus ridership increased from 9.3 to 19.8 after the beginning of the demonstration,*** with 84.5 percent of the latter figure composed of project registrants. Also, over 37 percent of project bus users indicated that they had increased their frequency of bus use

---

*Based on registrant-reported changes in the frequency of travel to destinations served by taxicabs drawn from taxi on-board surveys.

**Taxi on-board survey, August 1979.

***Transit on-board surveys.

since the project began, in comparison to only 25 percent of project taxi users. Because of data limitations, however, the specific effects of the bus portion of the program on overall registrant travel frequency can only be quantified on a tentative basis. The best available evidence* is that up to 26 percent of project bus trips would not have been made in the absence of the subsidy program. Based on the approximate project utilization rate of 13.2 project bus trips per month (see above), this is the equivalent of 3.4 (=.26 X 13.2) project-induced bus trips per bus-using registrant per month. Because of the nature of the various assumptions underlying these calculations, it is essential that these estimates be viewed as order-of-magnitude, upper bound approximations of the actual effect of the bus portion of the project on registrant mobility. However, even if the actual effect were substantially smaller than estimated here, it appears that the bus portion of the project produced a somewhat greater increase in average user mobility than the taxi portion of the project, though both increases were quite modest relative to likely total travel rates.

5.3.2 Trip Purpose

As shown in Table 5-6, the overall mix of trip purposes for which taxis were used changed somewhat during the demonstration project. For example, the proportion of shopping/personal trips increased somewhat, while the use of taxis to visit friends or relatives declined on a relative basis. It can be assumed that the project itself did not reduce the actual frequency of any particular types of trips, although the new trips that were taken because of the subsidy may have been for distinct purposes, and affected the overall trip purpose mix. However, simple differences between before and after observations may simply represent a reallocation of traffic among taxi firms, as project registrants who previously had ridden with firms that did not participate in the program

---

*Drawn from registrant-reported mobility data in transit on-board surveys.

TABLE 5-6. TAXI TRIP PURPOSES: ALL RIDES CARRIED BY PARTICIPATING FIRMS (PERCENT)

TRIP PURPOSE	JUNE 1977	AUGUST 1979
Work/School	26.8	20.3
Shopping/Personal Business	27.7	32.0
Medical	8.9	14.3
Visit Friends, Relatives	16.0	11.7
Recreation/Entertainment	11.7	6.9
Social Service Agency	1.9	0.4
Religious	0.0	1.3
Other	7.0	13.0
	(n = 213)	(n = 231)

SOURCE: Taxi on-board surveys.

switched to firms that did.* Therefore, it is generally not possible to infer the purposes of project-induced taxi trips from the aggregate before/after comparisons of the trip purpose mix presented above.

However, as shown in Table 5-7, project taxi rides tended to be for shopping/personal business and medical trips. This confirms the opinions of project registrants, who indicated that shopping, personal business, and medical trips were the principal types of trips they made more of because of the FARE/SHARE program (see Table 5-8).

The purposes of project-induced bus trips also cannot be inferred from aggregate before/after comparisons of trip purpose mix. This is because the before and after surveys took place during entirely different seasons, possibly introducing significant exogenous influences on the observed trip purpose mix. However, as shown in Table 5-9, project bus rides tended to be for shopping, visiting friends and relatives, etc. This is consistent with the opinions of project registrants, who indicated that shopping and personal business were the principal types of trips they made more of because of the FARE/SHARE program (see Table 5-10).

Overall, project registrants made disproportionately greater use of taxis for medical trips, while buses were used more for shopping and other types of personal business. It is important to note, however, that given the difference in total volume between bus and taxi usage rates (approximately 25,000 versus 2,800 project trips per month, respectively), a greater number of trips were made by bus for each trip purpose than were made by taxi.

---

*The August 1979 survey of project registrants found that this occurred for some 12.8 percent of all project participants. Given that recall reliability may be hindered by the time span between the initial registration date of most registrants and the time of this survey, and that individuals who forego their preference for a given firm to participate in the program are likely to use taxi more frequently than others, the switching phenomenon may have been even more common than indicated by this figure.

TABLE 5-7. TRIP PURPOSES OF PROJECT TAXI RIDES

PURPOSE	PERCENT
Work/School	16.1
Shopping/Personal Business	24.2
Medical	37.1
Visit Friends, Relatives	6.5
Recreation/Entertainment	4.8
Social Service Agency	1.6
Religious	8.1
Other (Airport, Motel/Hotel, Bus Station, Restaurant)	1.6
	(n = 62)

SOURCE: Taxi on-board survey, August 1979.

TABLE 5-8. REGISTRANT RESPONSES TO QUESTION: "WHAT KINDS OF TAXI TRIPS DO YOU TAKE MORE OF BECAUSE OF FARE/SHARE?"[a]

PURPOSE	PERCENT[b]
Work/School	0.0
Shopping	46.2
Personal Business	30.8
Medical	38.4
Visit Friends, Relatives	7.7
Recreation/Entertainment	7.7
Religious	0.0
	(n = 86)

[a]Asked only of registrants who indicated taxi use frequency increases.

[b]Does not sum to 100 percent because of multiple responses.

SOURCE: Survey of project registrants, August 1979.

TABLE 5-9. TRIP PURPOSES OF PROJECT BUS RIDES

PURPOSE	PERCENT
Work/School	15.0
Visit Friends/Relatives	19.2
Visit Social or Welfare Agency	3.6
Shop	37.3
Medical	16.1
Other	8.8
	(n = 193)

SOURCE: Transit on-board survey, August 1979.

TABLE 5-10. REGISTRANT RESPONSES TO QUESTION: "WHAT KINDS OF BUS TRIPS DO YOU TAKE MORE OF BECAUSE OF FARE/SHARE?"[a]

PURPOSE	PERCENT[b]
Shopping	75.0
Personal Business	65.2
Medical	30.4
Visit Friends, Relatives	12.5
Work/School	4.2
Recreation/Entertainment	4.2
Religious	0.0
	(n = 24)

[a]Asked only of registrants who indicated bus use frequency increases.

[b]Does not sum to 100 percent because of multiple responses.

SOURCE: Survey of project registrants, August 1979.

5.3.3 Mode

Increases in total taxi and transit usage resulting from the subsidy program include trips that were diverted to the project modes from other methods of travel. Such trips do not represent an increase in total trip-making by project registrants, but would tend to indicate that the project subsidies have enabled at least some registrants to substitute more preferred modes for less convenient methods of travel. While project registrants tend to be individuals who do not own or drive automobiles, and would rely heavily on at least conventional buses even in the absence of the program (see Table 5-11), it is estimated (based on the changes in primary travel modes presented in Table 5-12) that some 31.5 percent of project taxi trips would have been made before the program by MATS bus, driving or riding as a passenger in an automobile, or other means. Given the earlier finding that new, project-induced trips accounted for 15.2 percent of all project trips, it can be seen that the additional 31.5 percent of project trips that resulted from modal diversion yields a total increase in taxi usage that is attributable to the project of 46.7 percent (.152 + .315) of all project trips. This is consistent with the extremely supportive attitudes expressed toward the project by the largest participating taxi operators.*

Unfortunately, comparable information for bus is again only quantifiable on a tentative basis. The best available evidence** is that up to 37 percent of project trips would have been made before the program by riding as a passenger in an automobile, taxi, or walking. Given the earlier finding that new, project-induced bus trips may have accounted for up to 26 percent of all project trips, it can be seen that the additional 37 percent of project trips that resulted from modal division yields a total increase in bus usage that is attributable to the project of up to 63 percent of all project trips. Because of the various underlying assumptions, this figure must again be viewed only as an order-of-magnitude, upper-bound approximation. However, it is consistent with the substantial increase in the percentage that elderly and handicapped riders formed of total bus ridership observed after the beginning of the demonstration.

---

*Taxi operator interviews, July 1979.

**Drawn from registrant-reported mobility data in transit on-board surveys.

TABLE 5-11. TRAVEL CHARACTERISTICS OF PROJECT REGISTRANTS AND NONREGISTRANTS

MOST FREQUENT MODE	REGISTRANTS	ELIGIBLE NON-REGISTRANTS
Walk	4.0	2.6
Auto driver	17.2	53.7
Auto passenger	29.3	32.0
Taxi	7.1	9.1
MATS bus	40.4	2.6
Social service agency	2.0	0.0
Other	0.0	0.0
SECOND MOST FREQUENT MODE		
Walk	12.6	25.6
Auto driver	9.5	3.3
Auto passenger	30.5	33.6
Taxi	22.1	25.6
MATS bus	17.9	8.1
Social service agency	2.1	1.9
Other	5.3	1.9
	(n = 99)	(n = 231)

SOURCE: Surveys of project registrants and nonregistrants, August 1979.

TABLE 5-12. PRIMARY MODE FOR TRAVEL TO DESTINATIONS OF PROJECT TAXI TRIPS

MODE	BEFORE FARE/SHARE PROGRAM[a]	DURING FARE/SHARE PROGRAM[b]
Auto driver	6.1	1.8
Auto passenger	26.5	10.9
Taxi	44.9	76.4
MATS bus	14.3	7.3
Walk	0.0	1.8
Social service agency vehicle	2.0	0.0
Other	6.1	1.8
	(n = 49)	(n = 55)

[a]Response to question, "How did you usually travel (where you're going now/where you've just been) before the FARE/SHARE program?"

[b]Response to question, "How do you usually travel (where you're going now/where you've just been)?" scalarized to eliminate trips that would not have been made prior to FARE/SHARE.

SOURCE: Taxi on-board survey, August 1979.

5.3.4 Destination

Changes in trip destinations are potentially important impacts of a subsidy program of this type, since they could affect the characteristics of the demand encountered by operators and the activity levels of different establishments, as well as indicate a quantum improvement in the mobility of project riders. Conversely, since the project's taxi voucher use limits involved costs, and not the number of trips per se, users may have experienced incentives to take shorter trips, at least when using taxis.

In the taxi portion of the program, registrants indicated* that over 92 percent of their trips involved the same destinations as they did prior to the program. Most changes in destination that did occur were related to changes in the level of registrant need for the services available at different destinations, or the closing of previous destinations, rather than an enhancement of registrant mobility that is attributable to the project. It is therefore concluded that project-related new taxi trips did not involve destinations that were not previously visited for a given trip purpose. This is consistent with the fact that project subsidies could generally only be used for trips within the city limits.

Similarly, it is unlikely that the bus portion of the subsidy program induced travel by registrants to any destinations that were not previously visited for a given trip purpose. This is because the bus fare was essentially invariant to distance, or "flat," so that changes in absolute fare levels associated with the project could not affect the relative attractiveness of different destinations, at least for trips that would not have been made previously, or trips that would have been made previously using transit. It is noted that for trips that would have been made previously using a mode other than transit, some changes in destination choice could take place. Overall, however, it is concluded that the program did not affect destination choice to a significant degree.

5.3.5 Trip Timing

Effects of the project on trip timing may serve to indicate significant mobility changes, as the higher volume of

---

*Taxi on-board survey, August 1979.

travel produced by the project could provide registrants with a greater amount of temporal "coverage" and flexibility for trip purposes of all types. This may be particularly true for the taxi portion of the program, given the relatively small number of taxi trips taken by registrants during any given week or even month. However, project registrants indicated* that over 80 percent of their taxi trips were made at the same general time of day, etc., as before the demonstration. Most changes in timing that did occur were related to changes in registrant needs and time availability (e.g., employment status), and did not involve substantial changes in registrant mobility. It is therefore concluded that the project itself did not have a significant effect on trip timing.

---

*Taxi on-board survey, August 1979.

6. OPERATOR IMPACTS AND PRODUCTIVITY CHANGES

The user-side subsidy program had the potential to substantially affect transportation service providers in Montgomery in a number of ways. For example, operator costs could be increased by program administrative requirements. Conversely, vehicle productivity and profitability could change with changes in registrant travel behavior. Effects of all of these types on Montgomery's taxi and transit operators are described below.

6.1 TAXI

The impacts of the subsidy program on the Montgomery taxi industry varied widely among taxi companies. Among the original 5 participating firms, only Red and Yellow consistently handled a significant volume of project ridership. As a result, project-related increases in taxi use were concentrated in the operations of these two firms, accounting for approximately 5 percent* of their total revenues. While the profitability of project rides may have been limited somewhat by the "rigor" imposed by the grid-fare system in comparison to the largely driver-determined fares for nonproject trips, project rides were generally comparable to nonproject rides in terms of overall resources required (see Table 6-1)**, and therefore appear to have been profitable to handle. This is reflected in the fact that participation in the program by Red and Yellow drivers increased from approximately 50 percent at the beginning of the project to virtually 100 percent by August 1979.***

---

*Estimated from data gathered in taxi operator interviews, July 1978, and analyses presented in Chapter 5.

**It is noted here that Red and Yellow cab companies, which were white-owned, often experienced higher than average levels of empty or "deadheading" mileage when providing project service in black neighborhoods that were not served by local companies. This provided additional incentives for the companies to group rides and take advantage of the allowed policy of delaying responses to service requests by up to 1 hour.

***Taxi operator interviews.

TABLE 6-1. CHARACTERISTICS OF PROJECT AND NONPROJECT TRIPS

	PROJECT	NONPROJECT
Driver Assistance at Origin (percent of rides)		
To find rider	1.5	5.1
To physically help rider	0.0	0.0
To help with bags or open door only	8.7	14.4
Total	10.2	19.5
Number of Riders Per Trip (mean)	1.0	1.0
Shared Rides (percent)	12.5	1.5
Travel Time (mean)	9.6 minutes	9.2 minutes
Driver Assistance at Destination (percent)		
To physically help rider	2.7	0.0
To help with bags or open door only	10.8	12.3
Total	13.5	12.3
Dwell Time (origin and destination) (mean)	3.3 minutes	3.6 minutes
	(n = 78)	(n = 218)

SOURCE: Taxi on-board survey, August 1979.

In general, the program was perceived to be beneficial by the two large companies, who thought that it improved their image in the eyes of their customers and enhanced customer mobility. Of course, some drivers did complain about specific features of the program, such as the time needed to fill out vouchers or the requirement that two vouchers be filled out for a round trip. Also, it should be noted that the total number of cabs in service did not increase measurably due to the program. Indeed, the total number of cabs in service in the participating companies declined after the project started, continuing a longer-term trend that had been in evidence prior to the demonstration. Overall, however, the two large companies were very enthusiastic about the project and found that its benefits greatly exceeded its administrative costs and requirements.

Contrasting with these essentially positive attitudes are the reactions of virtually all of the other participating operators. For example:

1. In September 1977, only 2 months after the program was in operation, Original Queen stopped sending in vouchers. In February 1978 this company and New Deal Taxi formally withdrew from the program.

2. In August 1978 4 new drivers from Deluxe Cab joined the program, bringing the total number of Deluxe drivers to 5. Instrumental in motivating them to join was the $50 advance given each driver, the improved reimbursement check processing time (2 to 4 days), and the fact that checks were made out to each driver. In December 1978, 3 more drivers from Deluxe were recruited, bringing the total to 8. However, during the next 2 years, the number of Deluxe drivers again dwindled to 1.

3. In January 1980 Town Service Cab asked to participate and began providing service with the program in February. Two drivers from Town Service initially participated in the program, although 1 only stayed with the program for 1 month.

The inability of the project to maintain the cooperation of these firms, which were typically small, served minority neighborhoods and utilized owner-drivers, indicates clearly that the benefits of the project for these operators did not outweigh its costs and requirements. Furthermore, as outlined earlier, most Montgomery cab companies never participated in the program at all.

Nonparticipating taxi operators cited* a number of specific problems with the project, including the following:

1. The vouchers took too long to fill out. Since most taxi rides took only 5 to 10 minutes, the extra 2 or 3 minutes required to fill out the voucher was perceived to be a significant cost.

2. The fare calculations were too difficult. Many drivers did not see or read well enough to use the grid-fare map, and many never mastered the new method for calculating fares at all. For those that did master the system, use of the large and highly detailed grid-fare map in the front seat of a taxicab proved to be tedious in many cases.**

3. Many taxi passengers, particularly those making medical trips, were too sick, or were otherwise unwilling to sign the vouchers. Furthermore, a substantial percentage of the ridership of nonparticipating firms was unable to sign vouchers at all due to literacy problems. Without a signed voucher, it was extremely difficult, if not impossible, for drivers to collect subsidy payments from the FARE/SHARE program.

4. Payment for project vouchers was often delayed and uncertain at the beginning of the program. Drivers objected strenuously to the lack of payment for incorrectly-completed vouchers.

5. Drivers were resentful of the $.80 "flag-drop" initially used by the program, even though a "voucher processing fee" of $.20 was added to effectively equalize base fares for project and nonproject trips. Some drivers suspected that the city had been making money (at their expense) from the difference in fares.

---

*In taxi operator interviews.

**The problems did not affect the large participating firms, which used their dispatchers to calculate fares from the grid-fare system.

6. Some drivers tacitly admitted that they underreported revenues for income tax purposes. The documentation associated with project rides necessitated that they be reported to the IRS, implying that revenue from project rides would necessarily be taxed. Furthermore, drivers feared that a sudden increase in reported rides under the program would raise IRS suspicions concerning possible previous underreporting.

Overall, the burdens of project administrative requirements appear to have outweighed the benefits of increased ridership for virtually all of the small taxi companies in Montgomery. Most of these burdens were caused by or related to the use of vouchers and the grid-fare system used to calculate project fares.

6.2 TRANSIT

In contrast with the experience of the small taxi companies, the FARE/SHARE project had a generally positive effect on the Montgomery Area Transit System (MATS) and its riders. As outlined in Chapter 5, the project enhanced the mobility of transit users by making some trips feasible that would not previously have been made. In addition, the project enabled some trips to be made by transit that would otherwise have been made using a less preferred mode. These new project-related trips were particularly beneficial to MATS, since 70 to 80 percent of project ridership typically took place during off-peak hours, when the marginal cost of serving additional passengers was extremely low.* Furthermore, the photo IDs associated with the project enabled MATS to overcome a preexisting fraud problem related to unauthorized utilization of the 50 percent fare discount already offered to elderly and handicapped riders during off-peak hours.

The costs of the project to MATS were generally very low. Administrative requirements averaged approximately 6 hours per week, principally for ticket handling, and the opportunity cost of much of this time was perceived to be low. MATS revenues, on the other hand, increased by up to $700 per week due to the ridership changes associated with the project.

---

*Elderly and handicapped riders were not perceived to require disproportionately long dwell times.

Some drivers complained about the added requirement of punching holes in tickets during peak hours, though this was by no means a major issue. Also, the location of one bus stop was moved to facilitate transit usage by clients of the Montgomery Mental Health Association, many of whom were project registrants (see Chapter 7). Overall, however, the effects of the project on MATS were almost entirely beneficial.

7. NONTRAVEL IMPACTS

As outlined in the preceding chapters, the user-side subsidy demonstration in Montgomery had a variety of effects related to the travel behavior of project registrants and the providers of transportation services. In addition, however, the results of the demonstration shed light on some nontravel effects. These can usefully be classified into effects on social service agencies, project users, and firms and establishments, and are described in detail below.

7.1 SOCIAL SERVICE AGENCIES

It was originally anticipated that social service agencies might perceive the user-side subsidy program as an efficient and desirable alternative to their own transportation services, and consequently use the program to supplement or replace those services. Furthermore, for social service agencies that provided no transportation services, the user-side subsidy program was expected to promote access to the agency by its clientele, resulting in increased agency activity levels. In response, the agencies might assist their clients in arranging or paying for project trips, or even provide financial support for the program itself.

At the beginning of the demonstration, agency attitudes toward the program were generally positive, and there was a broad consensus that the mobility of the elderly and handicapped in general, and agency clients in particular, would be improved by the project (see Table 7-1). Agencies indicated that they would definitely consider providing support for user-side subsidy program promotion and registration activities. However, active involvement in trip scheduling was viewed as much less attractive, and very little potential for financial support was indicated.

Once the demonstration began, agency support was somewhat less than originally envisioned. Some agency clients were referred to FARE/SHARE or provided information about the program, but only one agency, the Montgomery Mental Health Association, had a productive association with the project.

The Mental Health Association, affiliated with the Montgomery Area United Way, provided counseling and mental health treatment for all residents of Montgomery County. This agency had approximately 700 users, the majority of whom were treated on an out-patient basis.

TABLE 7-1. AGENCY ATTITUDES TOWARD SUBSIDY PROGRAM

Agency-	Potential Advantages (range, flexibility, costs, data)	Potential Disadvantages (Advantages to own program, paperwork,etc.)	Willingness to Participate in the Subsidy Program			
			Promotion	Registration	Scheduling	Funding
Department of Parks and Recreation	Ideally, they would like the subsidy to substitute for their transportation program to improve range and flexibility	None cited	Yes	Yes	Perhaps	No
Central Alabama Rehabilitation Center	"FARE-SHARE will not affect us one way or the other."	None cited	Yes	Yes	No	No
Project Harvest	Could make a contribution, especially in improving range, but social service agency ideas about project have not been exploited.	None cited	Yes	Yes	Perhaps	Perhaps
Central Alabama Aging Consortium	Could make a contribution, especially in improving range, but social service agency input has not been exploited	Skeptical of effectiveness of MATS buses and taxis	Yes	Yes	Yes	Perhaps
Voluntary Action Committee	No impact on their mission, but "FARE SHARE needed."	Although program "needed," skeptical of the usefulness of bus or taxi transportation for the needy.	Yes	Perhaps	No	No
Retired Senior Volunteer Program (RSVP)	No specific comments, but general approval	None cited	Yes	Perhaps	No	No
Montgomery Committee on Aging	No specific comments, but general approval	None cited	Yes	Perhaps	No	No
Montgomery Community Action	No specific comments, but general approval	None cited	Yes	Perhaps	No	No
Montgomery Housing Authority	Will enable clients to engage in weekend activities, especially churchgoing	None cited	Yes	Yes	Perhaps	No

SOURCE: Social service agency interviews, July 1977.

To assist their clients in making visits to the agency, the Mental Health Association had subsidized transportation costs for those who were unable to provide their own transportation services to and from their appointments. The agency gave $.80, the equivalent of one (nonproject) round-trip fare, to clients who were able to ride a bus. Clients requiring taxi service were subsidized through an ad hoc voucher system arranged with taxi operators. Approximately 65 percent of the agency's clients took advantage of these subsidies. However, the transportation subsidy was provided from the agency's general funds and caused a significant drain on agency resources.

After the FARE/SHARE program began, the Mental Health Association actively referred its eligible clients to the FARE/SHARE program, while continuing to subsidize the users' portion of transportation costs incurred in traveling to agency services. This enabled the agency to reduce its transportation expenditures substantially.

In general, however, Montgomery's social service agencies took little or no active role in program registration, trip scheduling, or funding. Given the original expectations concerning the role of social service agencies in the context of the subsidy program, it is important to account for this lack of agency participation. For agencies that did not provide their own transportation services, participation in the program would have required new expenditures. Budget limitations may have precluded these additional expenditures, or the higher levels of agency activities that could be caused by project-induced trips. For agencies that did provide transportation services, the true cost per trip might have been lower using the subsidy program. However, agency transportation providers may have utilized donated labor and vehicles that were nontransferable to other agency activities. Lack of rigorous cost accounting may also have contributed to agencies' lack of awareness of cost differentials.

Other potential causes for the lack of agency participation include the following:

1. Service -- The clients of some agencies had specialized service requirements in terms of equipment or responsiveness (e.g., ambulances) that could not be met by ordinary taxis. Direct agency control over the selection and operation of equipment ensured that these requirements were met.

2. Nondiscrimination -- The service areas of many of the agencies were larger than the area covered by the subsidy program. Agency support of the project or project trips would therefore have amounted to a differential in the overall quality of service offered to agency participants.

3. User cost -- Even with a 50 percent subsidy, the cost to the users of conventional taxi service was still often greater than that of agency transportation, which in many cases was provided free.

4. Marketing -- Agencies that provided transportation services may have placed a value on the positive effects that service had on the attitudes of clients towards the agency and may not have wanted to forego that benefit.

7.2 PROJECT USERS

Users of project subsidies incurred both costs and benefits as a result of the program. Costs included the effort required to register for the program and (for transit users) to obtain discount tickets. However, given that the transit tickets could be obtained by mail, and that project registration took place at a number of satellite locations at the beginning of the project, these costs were generally not significant compared to the benefits produced by the subsidy itself.

Aside from the travel benefits described in Chapter 5, users of project subsidies received two distinct types of nontravel benefits as a result of the program. First of all, there was a gain in welfare experienced by individuals who increased their travel frequency and would have been willing to pay more than the subsidized fare (but less than the unsubsidized fare) to make the new trip(s). For these individuals the project created new travel opportunities, which, when taken advantage of, made the individuals better off.

The second, and somewhat more tangible, benefit received by project participants, was the reduction in fares for trips they would have made anyway. This was essentially a transfer payment that increased the users' disposable income net of travel. Since the portion of subsidy payments that accrued in this manner is equal to one minus the fraction that project-related increases formed of total project ridership, it can be

seen that on the order of 50 percent or more of the project subsidy payments amounted to income transfers. These may have been significant income supplements for some project registrants.

Friends, relatives, and cohabitants of project users received indirect benefits from the project. To the extent that registrants used the project discount to take trips that previously would have been taken as a passenger in someone else's auto, for example, the project reduced the requirements placed on those other ride sources. Project users themselves may have benefited psychologically from an increased level of independence.

7.3 FIRMS AND ESTABLISHMENTS

The changes in travel behavior outlined above had effects on levels of activities of many different firms and organizations. For example, increases in the frequency of shopping trips imply increases in the level of retail activity, at least for the stores with a significant elderly and handicapped clientele. This effect may have been further magnified by the "income effect" described above, which essentially provided users with more disposable income by reducing the cost of transportation, in addition to allowing them more frequent visits to retail areas. Overall, the increased mobility and income of subsidy users can be assumed to have led to increased activity levels for establishments that served as the destinations for project trips, particularly those that increased in frequency.

8. TRANSFERABILITY OF FINDINGS

The Montgomery user-side subsidy demonstration tested an innovative approach to the task of increasing the mobility of the elderly and handicapped. From this test, as outlined in the preceding chapters, numerous observations concerning the operation and effects of the subsidy program in the local setting have been made. When assessing the potential merits of user-side subsidy programs in other areas, however, it is necessary to account for the effects that the characteristics of the local setting and the demonstration itself had on observed results. Therefore, in this chapter, relationships between the impacts of this demonstration and site- and project-related factors are developed. Based on these relationships, the potential effects of user-side subsidies for taxi and bus rides at other sites, as well as the potential for improvement in the subsidy program as applied in Montgomery, are assessed. General conclusions and issues for further research are then presented.

8.1 TAXI

The effects of the taxi portion of the Montgomery user-side subsidy demonstration project were generally positive, but were limited in magnitude. The program was only able to maintain the participation of two of Montgomery's 16 taxi companies. While these companies were the largest two taxi operators in Montgomery, and represented over 25 percent of all taxis in the City, the impact of the project was generally limited by the low level of operator participation, particularly in minority neighborhoods.

The low level of project impact may be traced to a number of causes, including the following:

- The low level of enforcement of the pre-existing taxi code, along with other factors, created a situation where at least some of the minority taxi firms offered services that historically had been illegal (e.g. reduced user fares, some shared-riding). Such firms, partly in an effort to conceal these practices, held a strong aversion to contact with government agencies. Such firms may also have been influenced by racial factors, and may not have trusted a city-sponsored program of this type. The aversion of such firms to contact with government agencies constituted an artificial barrier to their participation

in the program that, when combined with the reluctance of the large participating firms to serve some minority neighborhoods, invalidated the traditional economic theory of open entry by potential service suppliers. The existence of this barrier is clearly indicated by the fact that nearly half of Montgomery's taxi firms failed to attend any of the major project planning meetings or respond to project staff efforts to communicate with them by phone or by mail. At least one firm refused even to sign for a certified letter from the city regarding the design of the program.

Of course, it is not necessary for a user-side subsidy program to achieve a 100 percent participation rate among local taxi firms. As long as there is reasonable coverage of the areas where project registrant trips originate, the subsidy program will likely be effective whether or not all operators choose to participate. Nonparticipation only becomes an important problem when it causes significant gaps in service coverage and/or degradations in service quality for project users, such as occurred in Montgomery.

The minority areas where these problems occurred in Montgomery were among the most economically disadvantaged in the region, yet supported the operation of a number of nonparticipating taxi firms. With the introduction of a user-side subsidy program of this type, such firms would seemingly have had an opportunity to increase their revenues by inducing their patrons to join the program. The firms would then be able to realize higher revenues per trip, while maintaining user fares at an attractively low level and operating much the way that they had previously. Furthermore there was no enforcement mechanism to preclude such operators from foregoing the full amount of the cash payment that was supposed to accompany the voucher as payment for project trips (though the project documentation associated with such a transaction would raise the driver's tax liability to the level associated with a full user-share fare payment). This would have been a powerful inducement for the clientele of such firms, whose poverty and consequent sensitivity to full, exclusive-ride taxi fares motivated, in part, the development of the illegal jitney services in the first place.

In practice, however, project participants in the minority neighborhoods had to endure extra wait times to obtain

service from participating firms (which, by all accounts would have preferred not to offer service at all in the given areas) rather than direct their subsidized patronage to neighborhood firms that could offer higher service quality. This is clear evidence of, among other things, the inefficiencies introduced by barriers to participation by the neighborhood firms, and the importance of reasonable project coverage.

In Montgomery, the aversion of some firms to contact with government agencies was extremely strong, and would likely have required fairly drastic action (e.g., threatening to suspend operating rights or empound vehicles) to overcome. Such action would normally be undertaken only with strong political support from the city, which, as outlined, was not forthcoming during the detailed project planning phase.

At other sites, particularly those with stronger regulatory enforcement, there may be fewer clandestine activities, and less aversion to government contact. However, the importance of breaking down barriers that do exist, particularly barriers between project planners and the carriers that handle the majority of taxi trips by the most disadvantaged individuals in the eligible population, should not be underestimated.

- The organization and characteristics of many of Montgomery's taxi companies made it difficult for them to take advantage of this user-side subsidy program. Much of the Montgomery taxi supply consisted of small firms utilizing owner-drivers who worked largely on a cash-only basis in informally-limited neighborhoods or geographical service areas. Firms that operate a small number of vehicles in a small service area, particularly those with limited dispatching capabilities, may be at a serious disadvantage relative to larger firms in terms of their ability to dynamically group rides for shared-riding under the project, or utilize dispatcher resources to fulfill project administrative requirements. Likewise, owner-drivers that operate on a cash-only basis may be severely restricted in their willingness and ability to use the project due to delays and uncertainties involved in project reimbursements. (Two of the three participating minority taxi firms withdrew from the program within the first six months of operation, when these problems were most acute.)

In Montgomery, various efforts were made to circumvent these problems, including the experimental $50 cash advance to drivers, and project reimbursement payments were eventually made more timely and more reliable. However, many of these limitations appear to be inherent, given the characteristics of the pre-existing taxi supply.

At other sites, it should be anticipated that different firms will differ in terms of their ability to take advantage of the potential benefits of a user-side subsidy project. Cash-only drivers may require special actions (e.g., petty cash accounts, possibly administered by their taxi companies, from which advances can be drawn upon submission of completed vouchers prior to their formal processing by the program), or at least quick turnaround, if they are to be willing and able to take advantage of user-side subsidy programs to any great extent. Likewise, firms that utilize dispatchers for most of their business may have an advantage over other firms in being able to fulfill project administrative requirements. Also, if the initiation of shared-riding is made part of a user-side subsidy project, it must be recognized from the outset that all firms are not equally capable of grouping rides in real time. Such considerations are important if the experience of Montgomery, where there were significant numbers of nonparticipating firms, is to be avoided.

- To the extent that factors such as the low level of enforcement of the pre-existing Montgomery taxi code enabled operators to charge excessive fares and/or underreport their revenues, the subsidy program may have appeared unattractive to operators in a number of ways. For example, the tolerance of broken odometers by regulatory officials, and consequent reliance on drivers to estimate the proper fares, produced at least some opportunities for operators to charge excessive fares. The rigor imposed by the project's grid-fare system eliminated such opportunities for project rides and made them correspondingly less attractive. The "audit trail" created by the project's vouchers was also found to be unattractive by independent drivers who historically may have underreported their incomes for tax purposes.

These problems serve to highlight two of the fundamental requirements of user-side subsidy programs in general. First, it is necessary that a reasonably consistent, objective and reliable method exist for determining at

least an upper bound on taxi fares for individual trips. If such a method does not exist, obvious opportunities are created for fraudulent use of subsidy funds through the simple inflation of fares for subsidized trips. Second, it is necessary that there exist sufficient documentation of project trips for a subsidizing agency to be able to determine the proper amounts and correct recipients of project reimbursements.

In Montgomery, the actions taken to fulfill these requirements (institution of grid-fare system; use of vouchers) tended to limit the clandestine opportunities available to taxi operators to enhance their revenues and profitability. These actions must generally be viewed as the inevitable result of the conflict between the administrative requirements of the user-side subsidy concept, and the preproject practices of at least part of the taxi industry in Montgomery.

At other sites, it is not unreasonable to expect that this conflict will reappear to some degree. The severity of the problem will be related to such factors as the level of rigor in the existing fare structure and practices, the existence and administrative enforcement of requirements for "driver logs" that document all taxi vehicle activities and revenues, and even the nature of company/driver relationships. Employee drivers, in particular, may be less motivated to participate in clandestine revenue-enhancement measures than owner-drivers, since they receive at most only a percentage (typically less than 50 percent) of revenues, and often must maintain driver logs that are closely monitored by their companies. The revenues and incomes that they do receive are generally documented in company records for tax purposes. This may explain, in part, the difference between the positive responses of Red and Yellow Cab (both of which use primarily employee drivers) to the project, and the negative or indifferent responses of the rest of the cab companies in Montgomery (which generally rely on owner-drivers). At other sites, therefore, it is reasonable to anticipate that the user-side subsidy concept may be more acceptable to firms using employee drivers than it is to firms using owner-drivers. The acceptability to both groups in this context is determined by the interaction between project administrative requirements and the nature and extent of pre-existing clandestine revenue-enhancement measures.

- Montgomery's taxi fare structure, being based on miles traveled, was generally incompatible with the requirements of shared-riding (i.e., the need to determine consistent and equitable fares when individual passengers may experience substantial circuity). At the same time, the taxi operators who participated in the project planning process did not want the project fare structure to differ materially from the existing mileage-based structure. The grid-fare system that was eventually implemented fulfilled these needs, but proved to be extremely difficult for many operators to use in practice. This system entailed calculation of fares from a network of over 200 zones. Many drivers did not see or read well enough to use the detailed grid-fare maps or found it difficult to use them in the front seat of a cab.

  For the two cab companies that played dominant roles in the planning process, this problem was not insurmountable, since they envisioned that the dispatchers, rather than the drivers, would compute the zone-to-zone fare for project and shared-ride trips. However, for the smaller companies that lacked dispatching capabilities and/or received much of their business from non-dispatch sources, this was a significant obstacle.

  In Montgomery, it would have been very difficult to avoid these problems by changing the design of the project. While user-side subsidies are not incompatible with mileage-based fares per se, it was necessary for the project to provide a reasonably objective, reliable and consistent method for calculating fares and subsidy payments that could be used for both single and shared-rides. Given these requirements, a grid-fare system of the general type used in Montgomery was a logical approach.

  To avoid the specific problems described above, it would have been necessary to either:

  1) Introduce a less complicated and detailed grid-fare system that differed from the mileage-based fare structure; or

  2) Introduce some form of centralized dispatching and/or fare calculation for project trips.

  Clearly, both of these approaches to the shared-riding/ fare structure problems encountered in Montgomery could be

expected to encounter significant practical difficulties of one sort or another. Given the problems encountered in implementing the project as it was formulated, it is reasonable to speculate that the project might never have been implemented at all if either of these options were pressed.

At other sites, it is evident that a fare structure (either in place or feasible to establish) that is both tamper-proof and comprehensible is virtually a prerequisite for successful application of user-side subsidies. If shared-riding is not to be offered, mileage-based fares would likely be acceptable if the meters were checked for accuracy, and efforts were undertaken to ensure that excessive circuity and idle time were not induced by the subsidy. If shared-riding is to be offered, a zonal-type fare structure is preferable, particularly one with a reasonably small number of zones that can easily be understood by drivers and passengers alike. To the extent that these conditions exist or can easily be introduced at other sites, the types of problems encountered in Montgomery related to the implementation and use of the grid-fare system can be minimized.

- The voucher slips used to administer the subsidy were found by drivers to be difficult and time-consuming to fill out. Because the project generally refused to redeem incomplete/unsigned vouchers, several drivers perceived that there were significant risks (lack of payment or additional administrative burden) associated with transporting illiterate or incapacitated passengers who could not sign their names. Likewise, functional illiteracy may have directly precluded or strongly inhibited the participation of many drivers. Clearly, disability or illiteracy among passengers and drivers can be expected to present at least some problems in an administrative control mechanism (i.e., the voucher) that relies on documentation of one type or another provided by each of these groups for each ride taken.

  Of course, at other sites, these problems may be less significant than they were in Montgomery, resulting in greater acceptability of the voucher mechanism. Likewise, these problems were exacerbated by the high level of detailed information provided in the Montgomery vouchers to aid in fraud detection. However, to the extent that these problems exist at all, they must be viewed as exogenous to a user-side subsidy program, and will tend to

limit the applicability of the voucher mechanism relative to less documentation-intensive administrative procedures (e.g., scrip or tickets). If vouchers are to be used at other sites, methods for circumventing these problems, such as making greater use of dispatchers and/or dispatcher logs for project documentation, should be considered and planned in advance.

- The fact that the base fare was initially lower for project rides than for nonproject rides caused service providers to begin the project by taking advantage of every reasonable opportunity for grouping project rides, even at the expense of substantially increased passenger wait times. Such service degradations were especially pronounced in minority neighborhoods not normally served by the two principal participating companies, where shared-riding might substantially reduce "deadheading" mileage. These service degradations continued after the fares for project and nonproject rides were effectively equalized, reflecting in part a lack of desire on the part of the two large companies to develop business in the minority neighborhoods that they did not routinely serve.

  In retrospect, the differentiation of base fares did not make a positive contribution to the viability of the subsidy program. Rather, this policy simply reflected a planning decision that the taxi companies should not share in the financial benefits resulting from increased vehicle productivity accruing from the removal of restrictions on shared-riding (i.e., that revenues should decline with the costs of providing service, just preserving net revenues). In fact, initial assumptions concerning the likely level of shared-riding were found in practice to be excessively optimistic, leading to adverse financial impacts that only served to alienate the participating companies.

  In light of the circumstantial evidence indicating a secular decline in the profitability of Montgomery's taxi industry, an initial determination to leave the base fare at $1.00 would have avoided much of the acrimony that characterized the early phases of the project, as well as compensated somewhat (from the operator viewpoint) for the higher level of rigor and effort involved in the calculation of project fares (see above). These factors might have led to somewhat higher levels of operator participation and service quality in the Montgomery program.

At other sites, extreme care should be taken in any effort to lower the fare structure for project rides based on the anticipated beneficial impacts of the project on operating efficiency, etc. Planners and operators naturally tend to support differing estimates of such impacts, and the furore involved in reconciling these differences serves no real purpose, given that sample data become available soon after the beginning of the project.

Rather, it would be most beneficial for operators and municipal officials to initially implement only the direct operating and service changes associated with the project (e.g., shared-riding). Secondary changes (e.g., changes in allowable fares) resulting from any improvement in operating efficiency should take place, to the extent practical, only after both parties have the opportunity to observe relevant impacts in practice. For example, in Montgomery, the effect of increased shared-riding on allowable fares could simply be taken into account at the time of the next general fare increase. Consideration could also then be given to the introduction of a two-tier fare structure - one for exclusive rides and one for shared rides - that would remove some of the risk perceived by operators when all fare levels are lowered uniformly regardless of whether or not a shared ride actually takes place. Particularly in cases where there are no demonstrable excess profits prior to the project, it is most beneficial from the point of view of the project to make adjustments that are accurate, but after-the-fact, rather than timely, but sources of major controversy.

- Poor communication by project planners with the taxi operators led to a number of problems. For example, as outlined in Chapter 3, it was at one point assumed that operator failure to respond to a letter describing the proposed ordinance change constituted implicit operator approval. This assumption was proven to be erroneous by subsequent events, and led to needless delays and misunderstandings in project implementation. Similarly, the failure of project planners to initially convey the project's fare structure to all operators, or respond to deeply-felt and frequently-repeated operator opinions regarding the impracticality of discount fares for shared-riding in Montgomery, only created additional problems and delays during the early phases of the project.

At other sites, the implementation and operation of a user-side subsidy project can obviously be jeopardized or handicapped by poor communications. Care should be taken to avoid these types of communication difficulties whenever possible.

- The political scandal described in Chapter 2 caused the resignation of the Mayor, a strong proponent of the project, at a time when his support and persuasive power were most needed to enlist operator cooperation and ease the impact of some of the above-mentioned problems. While this event could not have been anticipated, it highlights the general importance of developing strong and broad based support for such a project among the various actors involved at the outset. To the extent that a program is formulated in a way that is well thought-out, and provides benefits to all of the actors involved without raising major opposition, the reliance on any individual to provide motive power is reduced, and the project is better able to survive unanticipated turns of events.

It is essential to note that virtually all of these problems relate to unique features of the Montgomery environment or shortcomings in the design, implementation, and operation of the Montgomery demonstration, per se, rather than in the user-side subsidy concept itself. Despite all of the problems outlined above, the project produced at least modest mobility improvements for individuals who were able to use it, was generally well-received by the two large participating companies and their drivers, and entailed low costs per trip in comparison with other types of doorstep service. It therefore should not be concluded that the results of the Montgomery demonstration in any way cast doubt on the viability of the user-side subsidy concept.

8.2. BUS

The bus portion of the program was utilized without major problems by a large number of registrants. Despite the use of only one ticket sales location in the geographically large Montgomery area, and consequent low administrative costs, individuals were generally able to acquire project tickets (in person or through the mail) without difficulty. This occurred at least in part because MATS bus routes, which provided good coverage of minority areas, generally terminated in the downtown area, providing convenient access (1 block) for project bus users. These individuals took at least some trips

that they would not have taken in the absence of the subsidy program and made a number of other trips by bus that would previously have been made using a different mode. The transit operator reacted very favorably to the project, because the majority of project and project-induced rides took place during the off-peak, and project administrative requirements were found to be minor. In short, the experience in Montgomery with ticket-based user-side subsidies for transit was uniformly positive, and did not imply any specific needs for improvement, or limitations for the concept in other settings.

8.3. GENERAL CONCLUSIONS AND ISSUES FOR FURTHER RESEARCH

From the experience of the Montgomery user-side subsidy demonstration, a number of important general conclusions can be drawn. In addition, in areas where firm conclusions cannot be drawn, several issues for further research are suggested by the Montgomery experience. General conclusions and issues for further research are presented below, and are divided into four distinct subject areas:

- Tickets vs. vouchers;
- Bus vs. taxi;
- Feasibility of grid-fare system; and
- Project scale (geographical and population).

8.3.1. Tickets vs. Vouchers

The Montgomery demonstration illustrated clearly some of the important differences between tickets and vouchers as administrative mechanisms for user-side subsidies. Vouchers require a higher degree of literacy among drivers and passengers than tickets, and involve a greater amount of in-service time and effort. Vouchers also provide marginally higher opportunities for certain types of driver fraud, such as post-ride alteration of voucher data or, potentially, falsification of entire trips. Tickets are generally less susceptible to these types of fraud, since the user pays for and controls the subsidy medium, and drivers cannot falsify the values of tickets after their receipt. Of course, given the profit motivation of taxi drivers, tickets for taxi user-side subsidies may be subject to other types of fraud (e.g., drivers procuring tickets from subsidy registrants without providing service) not observed in the Montgomery demonstration. Such opportunities are important to identify through further research, particularly in light of the voucher's inherently higher degree of documentation of project trips.

Of course, the greater amount of trip information contained on a voucher carries with it a potentially higher administrative burden for the subsidy manager. This was particularly evident in Montgomery prior to the initiation of the $.20 payments for properly completed vouchers, when remedial and audit work on voucher slips consumed a large portion of available staff resources, and delayed or inhibited a number of important administrative functions (e.g., processing of subsidy reimbursements). The cost of this work and/or the incentives needed to enhance the completeness and accuracy of the information placed on the vouchers by drivers is a cost that must be attributed to the voucher mechanism, though the procedures used in Montgomery to identify and remove the potential for fraud may have been excessively costly.

Use of tickets, on the other hand, inherently entails distribution costs for the subsidy manager that are not encountered with vouchers. Provisions must be made for public sale/distribution of tickets to registrants prior to their use. In Montgomery, these costs were not large, as a single ticket sales location was used, and some ticket requests were handled by mail. Nevertheless, they are costs that are not incurred with the voucher mechanism.

Tickets also impose costs on users. These costs arise from both the effort required to procure tickets (in Montgomery, from the single ticket distribution point), and, in cases where tickets are paid for, from the "carrying cost" of a ticket inventory. These factors are particularly onerous for infrequent users. Indeed, it is interesting to note that in Montgomery, a large number of registrants used project taxi service relatively infrequently. While there may be a tendency to view infrequent use as reflecting a lack of utility of the project for registrants, it is important to note that vouchers facilitate low frequency project use, and may expand the appeal and usefulness of the project for infrequent riders.

Clearly, tickets tend to have an advantage over vouchers in cases where use is very frequent, fraud incentives and opportunities are limited, and a sufficient scale of operation exists to support an economical ticket distribution arrangement. These factors are evident in the success of tickets as a subsidy medium in the bus portion of the Montgomery subsidy program. Conversely, vouchers tend to have an advantage when the frequency of project utilization is so low that the effort required to fill out vouchers and check their validity is low relative to the costs of a ticket system.

For example, chair car services would appear to be likely candidates for beneficial application of vouchers for user-side subsidies. However, given the large number of difficulties encountered in the taxi portion of the Montgomery demonstration, it will be a matter for future research to determine the specific circumstances under which use of vouchers for user-side subsidies involving conventional taxi cab service is to be preferred.

8.3.2. Bus vs. Taxi

Project registrants in Montgomery could make a choice between subsidized bus and subsidized taxi service. As outlined above, registrants made considerable use of both project services. While the number of project bus rides exceeded the number of project taxi rides by approximately a 9:1 ratio, comparable numbers of registrants made use of each portion of the program. These individuals were able to realize at least modest improvements in their mobility through both modes, either in the form of new trips, or trips that previously would have been made using a less preferred mode. It is particularly interesting to note that each project mode attracted at least some of its ridership from the other.

Rather than attempt to identify the "preferred" mode, it is most important to examine the submarkets of project registrants to which each mode appealed. Bus users and users of both bus and taxi tended to have the lowest incomes and fewest ride sources, and used the project fairly intensively. On the other hand, taxi (only) users tended to have higher incomes and more ride sources, used the project more sparingly, and contained a disproportionate representation of women and individuals requiring aids to travel. Nonambulatory (wheelchair) registrants were able to use the taxi portion of the program but could not use the (nonaccessible) buses in service at the time. These types of differences should be expected, particularly given that even subsidized taxi fares are high relative to subsidized or unsubsidized bus fares, and that taxis are more easily accessed by mobility-impaired individuals.

It also must be remembered that taxi users contained a disproportionate representation of whites relative to bus users. While this may reflect, at least in part, a correlation with other differences (e.g., income), it raises the issue of the general lack of participation by minority cab firms, and the consequent lack of coverage and long response times for

project service requests in certain neighborhoods. It must be left for future research to fully assess the impact of these factors on the attractiveness and viability of the taxi portion of the program.

8.3.3. Feasibility of Grid-Fare System

The feasibility of the grid-fare system introduced with the project as a proxy for Montgomery's traditional mileage-based fare system is subject to some question. While the grid-fare system was technically able to replicate, for the most part, mileage-based fares, the fare calculations were perceived by many drivers to be extremely difficult, and the system was generally successful only when fare calculations were made by company dispatchers. Many drivers did not see or read well enough to use the grid-fare map, and many never mastered the new method for calculating fares at all. For those that did master the system, use of the large and highly detailed grid-fare map in the front seat of a taxi cab proved to be tedious in many cases.

Of course, zonal fare systems of varying complexity have been used successfully in many locales throughout the United States, and there is every reason to believe that user-side subsidy projects introduced in such sites could avoid many of the problems encountered in Montgomery by simply retaining such an existing fare structure. Likewise, if only exclusive ride service is to be offered, existing mileage-based fares (with appropriate administrative safeguards) can likely be used without difficulty. However, if shared-ride service is to be introduced in an area with only mileage-based fares, and a zonal-type fare structure is needed, the Montgomery experience suggests that it may be best to forego complete replication of the mileage-based fare structure in favor of computational simplicity. In practical terms, this may mean use of larger zones, and adjusting the mileage-based fare structure (if it is to be retained) as needed for comparability.

8.3.4. Project Scale

The results of the Montgomery demonstration shed at least some light on issues surrounding the application of user-side subsidies in settings that are larger in terms of area and population. Montgomery itself encompasses a moderately large land area, and the ability of the project (particularly the ticket distribution component of the bus portion) to operate

administratively from a single site implies that operations in larger settings are at least technically feasible. Also, it is possible that voucher-type subsidy mechanisms or ticket purchases by mail could be more acceptable in a larger service area, if only due to the higher costs of distributing/procuring tickets in person. Ideally, of course, such larger service areas would not be subjected to the types of gaps in direct coverage that characterized the taxi portion of the Montgomery program.

As service area population increases, a number of factors must be taken into account. First, as the volume of project activity increases, it becomes even more important that project administrative mechanisms be efficient and effective. Some of the methods used in Montgomery, such as the manual auditing/ logic checking of individual vouchers, and monitoring of trip purposes on individual rides (through examination of destination zones) to ensure that trip purpose restrictions are not violated, may become very difficult to administer as the volume of project activity increases. Conversely, opportunities for fraud increase as the population increases and fewer administrative checks can effectively be applied. Under these circumstances, selection of tickets vs. vouchers as subsidy media, and indeed, the determination of whether the user-side subsidy concept is viable at all in larger settings, must be left to further research.

Given that some form of user-side subsidy is viable in a selected, larger setting, it is clear that any number of basic changes may have to be made from the design of the project used in Montgomery. For example, to the extent that the more populous area enjoys better transit coverage and service, cost factors may tend to favor a restriction of user-side subsidies for taxi service to individuals who are unable to access or utilize transit vehicles because of their physical condition. Again, however, determination of the optimal changes of these types is left to future research.

APPENDIX A. EVALUATION OVERVIEW

APPENDIX A. EVALUATION OVERVIEW

The information and analysis presented throughout this report is based on a series of data collection efforts conducted by the local project staff that were designed to monitor all of the potential effects of the demonstration project described above. For the most part, the data collection was structured in a "before and after" framework to identify changes that took place with the implementation of the demonstration. The before and after observations have been supplemented by monitoring exogenous events and indicators of site activity to facilitate the interpretation of before/after changes and enhance the credibility of findings.

Specific evaluation activities included the following:

1. Site data collections;
2. Registration interviews;
3. Taxi on-board surveys;
4. Taxi operator profiles;
5. Transit on-board surveys;
6. Transit operator profiles;
7. Social service agency profiles;
8. A follow-up survey of project registrants;
9. A survey of nonregistrants;

10. Tabulation of taxi vouchers;

11. Tabulation of bus ticket returns; and

12. Administrative cost accounting.

For each of these activities, a brief description, along with survey instruments and sampling plans as appropriate, are presented below.

1. SITE DATA COLLECTION

Various measures were collected to provide a description of the demonstration site, assist in identifying the location and distribution of the target population, describe local travel patterns, monitor exogenous changes, and aid in the transfer of results. Specific data items included aggregate demographic characteristics, geographical features, land-use distributions, locations of residential and activity centers, and indicators of the local economic and climatological conditions. These data were gathered from a variety of sources, including the Bureau of the Census and the Montgomery Department of Planning and Development.

2. REGISTRATION INTERVIEWS

Whenever an individual registered for the FARE/SHARE program, an interview was conducted to gather socioeconomic data describing the individual and his/her household, as well as various travel-related characteristics. A copy of the standard Registration Interview Form is presented in this appendix.

3. TAXI ON-BOARD SURVEYS

Taxi on-board surveys were administered before and during the demonstration to gather information describing project (eligible) and nonproject riders and the types of trips they made from the perspectives of both driver and passenger. In each case, interviewers were selected to ride in vehicles in a manner that resulted in an approximately random assignment across available vehicle hours. The surveys were conducted over a 4-week period to eliminate daily or weekly biases, and since the before and after surveys were each conducted at approximately the same time of the year, seasonal biases were compensated for as well. In June 1977, a total of 583 interviews were conducted, while in August 1979, there were 319 interviews of taxi riders. A copy of the Taxi On-Board Survey Form is included in this appendix.

4. TAXI OPERATOR PROFILES

For each taxi firm participating in the subsidy program, a comprehensive description of predemonstration operations, covering vehicles and facilities, service policies, operating policies, etc., was developed on the basis of personal interviews conducted in June 1977. In July 1979, a second round of interviews was conducted to detect and investigate significant changes that had taken place during the demonstration.

5. TRANSIT ON-BOARD SURVEYS

Transit on-board surveys were administered before and during the transit portion of the subsidy program to gather information describing project and nonproject riders and their trips. In each case, interviewers were selected to ride in vehicles in a manner that resulted in an approximately random assignment across available vehicle hours. The surveys were conducted over a 4-week period to eliminate daily or weekly biases. In January 1978 a total of 1,993 interviews were conducted, while in August 1979 there were 1,057 interviews of bus riders. A copy of the Transit On-Board Survey Form is included in this appendix.

6. TRANSIT OPERATOR PROFILES

In June 1977, a comprehensive description of Montgomery Area Transit System (MATS) operations, vehicles, and facilities was developed on the basis of personal interviews. In July 1979, a second round of interviews was conducted to detect and investigate significant changes that had taken place during the demonstration.

7. SOCIAL SERVICE AGENCY PROFILES

For seven social service agencies in Montgomery at the beginning of the demonstration, profiles of agency activities, transportation services, and attitudes toward the user-side subsidy program were constructed on the basis of personal interviews conducted in June 1977. These profiles facilitated the analysis of social service agency response to the user-side subsidy program.

8. FOLLOW-UP SURVEY OF PROJECT REGISTRANTS

In August 1979, a sample of 101 project registrants, selected randomly from the 5,716 project registrations completed prior to that time, were contacted by telephone. This survey investigated changes in the characteristics of registrants since the time of their registration that might have affected their travel behavior, changes in travel behavior they attributed to the FARE/SHARE program, the level of service experienced on FARE/SHARE and nonFARE/SHARE taxi rides, difficulties experienced in using the subsidy program, and reasons why they did not use the program more. A copy of the Follow-Up Survey of Project Registrants is included in this appendix.

9. SURVEY OF NONREGISTRANTS

The purpose of this survey was to investigate the socioeconomic and travel characteristics of individuals who were eligible for the FARE/SHARE program but chose not to register, as well as their reasons for nonparticipation. Differences between registrants and nonregistrants are particularly important in explaining project market penetration rates and assessing the transferability of the subsidy concept in other sites. For this survey, a sample of names was drawn randomly from the Montgomery telephone directory (using a random start/constant skip interval) and contacted by telephone. Since eligible and noneligible individuals could not be distinguished prior to telephone contact, a large number of calls had to be made to yield the final sample of 303 eligible nonregistrants. A copy of the Telephone Survey of Nonregistrants is included in this appendix.

10. TABULATION OF BUS VOUCHERS

To monitor project usage by registrants, the project staff maintained records of the project trips taken by each registrant based on returned vouchers. This information facilitated analysis of the factors affecting project use rates.

11. TABULATION OF TAXI TICKET RETURNS

For the sample of June 1979, the project staff compiled a list of the project bus trips taken during the month by each registrant, based on the registrant identification numbers stamped on each returned ticket. This information facilitated analysis of the factors affecting project use rates by different individuals.

12. ADMINISTRATIVE COST ACCOUNTING

To facilitate analyses of project administrative costs and the skills required for different tasks, each project staff member tabulated the time spent working on different administrative activities, using the standard form and cost accounts included in this appendix under Administrative Cost Records.

REGISTRATION INTERVIEW FORM

Code Col 2: 2

City of Montgomery
Project FARE-SHARE
User Registration Interview

Code Col 1: 1

ID #: _____ (Col 2-20)

Date: _____ (Col 21-26)

Interview Location: _____ (Col 27-28)

Applicant Name: _____ (Col 29-50)

Address: _____ Zone: _____ (Col 71-73) (Col 51-70)

Phone Number: _____ (Col 74-80)

Code Col 1: 2

Code Resp ID: _____ (Col 2-20)

1. What is your age? ___yrs. (Col 21)

2. Sex (INTERVIEWER RECORD FROM OBSERVATION) (Col 22)
   (1) ___Male (2) ___Female

3. Race (INTERVIEWER RECORD FROM OBSERVATION) (Col 23)
   (1) __White (2) __Black (3) __Other

4. What is your marital status? (Col 24)
   (1) ___Single
   (2) ___Married
   (3) ___Formerly married (widowed) divorced or separated)

5a. Do you have a physical handicap? (Col 25)
   (1) ___Yes (2) ___No

5b. (IF YES) can you describe the handicap?

_____

_____

_____

CODE HERE THE NUMBER OF THE HANDICAP ELIGIBILITY CLASS ASSIGNED THIS INDIVIDUAL: _____ (Col 26-27)

6a. Do you require any special aids for movement? (DO NOT PROBE; CHECK ALL THAT APPLY) _____ (Col 28-29)

(1) ____Handicapped, but no aids
(2) ____Wheelchair
(3) ____Walker
(4) ____Crutches
(5) ____Cane (for walking)
(6) ____Cane (for blind person)
(7) ____Car with special controls
(8) ____Seeing-eye dog
(9) ____Artificial limbs
(10) ____Braces
(11) ____Another person
(12) ____Other (specify)
(13) ____No handicap

6b. Do you have any difficulty performing any of the following activities? (ASK EACH AND RECORD ALL THAT APPLY) _____ (Col 30-36)

(1) ___Walking more than one block
(2) ___Negotiating a flight of stairs or escalator
(3) ___Boarding or alighting from a standard bus
(4) ___Standing in a moving bus
(5) ___Sitting down or getting up
(6) ___Reading information signs
(7) ___Hearing announcements

7a. Do you have a current driver's license? _____ (Col 37)
(1) _____Yes (2) _____No

7b. When did you last drive? _____ (Col 38)

(1) __within past month (3) __within past year
(2) __within past 3 months (4) __more than 1 year
(5) __never drove

8. What is your employment status (DO NOT PROBE): _____ (Col 39)

(1) ___Employed full-time
(2) ___Employed part-time
(3) ___Unemployed
(4) ___Retired
(5) ___Student
(6) ___Homemaker
(7) ___Other, specify: _____

9a. (HAND RESPONDENT INCOME RESPONSE CARD) Could you please tell me the letter of the category in which your personal annual income (1976 before taxes) falls? _____ (Col 40)

A. Less than $3,000 __(1)
B. $3,000-$4,999 __(2)
C. $5,000-$7,999 __(3)
D. $8,000-$11,999 __(4)
E. $12,000-$14,999 __(5)
F. $15,000-$20,000 __(6)
G. Over $20,000 __(7)
H. Refused __(8)
I. Don't know __(9)

9b. (ASK ONLY IF RESPONDENT CANNOT ESTIMATE ANNUAL INCOME) Perhaps then you could give me an estimate of your monthly income? $_____/month. _____ (Col 41-44)

10. How many persons (including yourself) maintain a residence in your household?_____ _____ (Col 45-46)

11a. How many persons in your household are 65 years of age or over (including yourself if applicable)? _____ _____ (Col 47-48)

11b. How many of these persons (over 65) have some physical handicap that restricts their travel? _____ _____ (Col 49-50)

12. How many persons in your household are under 65 years of age *and* handicapped (including yourself if applicable)? _____ _____ (Col 51-52)

13. How many vehicles (automobiles, vans etc.) are available for regular use to persons in your household?_____ _____ (Col 53-54)

14. How many drivers are there in your household (including yourself)? _____ _____ (Col 55-56)

15a. How far do you live from the nearest bus stop? (TRY TO OBTAIN ANSWER IN BLOCKS)
(1)_____miles (2)_____blocks
(3) Don't know/too far_____ _____ (Col 57-59)

15b. (IF RESPONSE (1) OR (2) TO QUESTION 15a) How long does it take to walk?_____minutes _____ (Col 60-61)

16a. (HAND RESPONDENT INFORMATION SOURCE CARD)

Through which of the means listed on this card did you hear of or learn about the discount program? (CIRCLE THE NUMBER OF EACH.) _____ (Col 62-69)

(1) Newspaper
(2) Television
(3) Radio
(4) Friend or Relative
(5) Social or Welfare Service Agency (includes Medical Clinic, Rehabilitation Workshop, or Doctor)
(6) Employer
(7) Religious organization
(8) Other (Specify) _____

16b. Which was the most important in convincing you to register for membership?_____ _____ (Col 70)

17. (HAND RESPONDENT INCOME RESPONSE CARD) Could you please tell me the letter of the category that describes the combined annual income (1976 before taxes) of all members of your household (including yourself)?_____ (Col 71)

A. Less than $3,000	___(1)	E. $12,000-$14,999	__ (5)
B. $3,000-$4,999	___(2)	F. $15,000-$20,000	__ (6)
C. $5,000-$7,999	___(3)	G. Over $20,000	__ (7)
D. $8,000 to $11,999	___(4)	H. Refused	__ (8)
		I. Don't Know	__ (9)

18. Now, to complete this interview, I would like to ask you a few questions on your travel patterns. I would like you to think back carefully over what you did and where you went during the past week. Then I'd like you to tell me to the best of your recollection how many times you went out to engage in the type of activities I'm going to list for you: (TELL RESPONDENT IN YOUR OWN WORDS THAT ALL JOURNEYS ARE OF INTEREST--LONG OR SHORT, BY CAR, BUS OR ON FOOT.)

Code Col 1: 3

Code Response ID#: _____ (Col 2-20)

WEEK TRIP RECALL RECORD

Number Times Performed Activity ____	Activity	
____	1. Went to work or school	(Col 21-22)
____	2. Went shopping (for groceries, clothing, drugstore, a new car, etc.)	(Col 23-24)
____	3. Went to visit a friend or relative (at their home or in hospital)	(Col 25-26)
____	4. Went to see doctor or visit clinic	(Col 27-28)
____	5. Went to religious service or activities	(Col 29-30)
____	6. Went to eat meal (restaurant or fast food)	(Col 31-32)
____	7. Went to accomplish some personal business (go to the bank, hairdresser, laundromat, club meeting, funeral home)	(Col 33-34)
____	8. For entertainment (movie, flower show, baseball game, bingo, play cards)	(Col 35-36)
____	9. For recreation (go for a pleasure walk or drive, go to the park, walk dog)	(Col 37-38)
____	10. To drive somebody else somewhere (that you weren't going to for some other reason)	(Col 39-40)
____	11. To provide company or an escort for somebody else (to a place you weren't going to for some other reason)	(Col 41-42)

TAXI ON-BOARD SURVEY FORM

Montgomery On-Board Taxi Survey Form TAXOB-

Interviewer Batch Sheet

(To be completed for each cab ridden in)

Batch No._____ (Col 1-3)

1. Interviewer:_____ Code Number:_____ (Col 4-5)

2. Date:_____ Code Number:_____ (Col 6-7)

3. Company:_____ Code Number:_____ (Col 8-9)

4. Cab Number:_____ Code Number:_____ (Col 10-12)

5. Cab Driver:_____ Code Number:_____ (Col 13-15)

6. Time Begin:_____ am pm Code *all four* digits:_____ (24 hr clock) (Col 16-19)

7. Time End:_____ am pm Code *all four* digits:_____ (24 hr clock) (Col 20-23)

8. Mileage at Beginning:_____ Code *last three* digits:_____ (Col 24-26)

9. Mileage at End:_____ Code *last three* digits:_____ (Col 27-29)

10. Number of rides surveyed in this cab:_____ Code:_____ (Col 30-31)
(Number of form TAXOB-1;s completed)

Form TAXOB-1

Montgomery Taxi Interviewer Observations

Batch No._____ (Col 1-3)

Ride No._____ (Col 4-5)

1. Is this ride shared with the previous ride:
   (1)_____Yes (2)_____No. . . . . _____ (Col 6)

2. Time of Trip Assignment_____. Code four digits (24 hr clock) _____ (Col 7-10)

3. How assigned:
   (1)___Person at Cab Stand (3)___Call--immediately
   (2)___Person Hailed Cab (4)___Call--appt _____ (Col 11)

4. Appointment Time:_____. Code four digits or 99 (24 hr clock) _____ (Col 12-15)

5. Mileage at Assignment_____. Code last two digits _____ (Col 16-17)

6. Time arrives origin_____ am pm. Code four digits (24 hr clock) _____ (Col 18-21)
   ORIGIN ZONE:_____. _____ (Col 22-24)

7. Mileage at origin:_____. Code last two digits _____ (Col 25-26)

8. Does driver get out of cab? _____ (Col 27)
   (1) ___Yes, to find rider
   (2) ___Yes, to physically help rider
   (3) ___Yes, to help with bags or open door only
   (4) ___No

9. Number of riders picked up (0-5) _____ _____ (Col 28)

10. Did passenger demand an exclusive ride? (1) Yes__(2)__ No _____ (Col 29)

11. Race of riders:
    (1) ___White (2) ___Non-White (3) ___Mixed Group _____ (Col 30)

12. For each member of the group, identify any noticable handicaps:

	Rider #	
(0) No Handicap noticeable	1	_____ (Col 31)
(1) Wheelchair	2	_____ (Col 32)
(2) Walking Problem	3	_____ (Col 33)
(3) Blind or Deaf	4	_____ (Col 34)
(4) Other (specify)_____	5	_____ (Col 35)

13. Time cab leaves origin:_____. Code four digits (24 hr clock) _____ (Col 36-39)

14. Is the next ride shared with this one?
(1)_____Yes (2)_____No _____ (Col 40)

15. Enroute stops requested by this passenger:
Number of Stops:_____ _____ (Col 41)
Time spent at stops:_____minutes _____ (Col 42-44)
Reason for stops: ___(1) shopping or other errand _____ (Col 45)
___(2) see friend
___(3) other

16. Time cab arrives at destination:_____ am pm. Code four digits (24 hr clock) _____ (Col 46-49)

17. Mileage at destination:_____. Code last two digits _____ (Col 50-51)

DESTINATION ZONE: _____. _____ (Col 52-54)

18. Does driver get out of cab?
(1) ___Yes, to physically help rider
(2) ___Yes, to help with bags or open door only
(3) ___No _____ (Col 55)

19. Amount of fare: $_____. Code 4 digits: 0.75; 1.65; etc. _____ (Col 56-59)

20. Amount of tip: $_____. Code 3 digits: 0.75; etc.; or 99 unknown_____ (Col 60-62)

21. Time cab ready to leave again:_____. Code four digits (24 hr clock) _____ (Col 63-66)

Batch No. _____ (Col 1-3)

Ride No. _____ (Col 4-5)

Rider No. _____ (Col 6)

CITY OF MONTGOMERY TAXI SURVEY

1. Do you live in the city of Montgomery _____ (Col 7)

(1)_____Yes (2 _____No

2a. What is the activity for which you are going on this trip: _____ (Col 8-9)

(1) ___ Home
(2) ___ Work or School
(3) ___ Church
(4) ___ Shopping or Personal Business
(5) ___ Medical
(6) ___ Visiting friends or relatives
(7) ___ Recreational, Cultural, Civic
(8) ___ Visit social or welfare agency
(9) ___ Other _____Specify

2b. What is the activity from which you just came: _____ (Col 10-1

(1) ___ Home
(2) ___ Work or School
(3) ___ Church
(4) ___ Shopping or Personal
(5) ___ Medical
(6) ___ Visiting friends or relatives
(7) ___ Recreational, Cultural, Civic
(8) ___ Visit social or welfare agency
(9) ___Other _____Specify

3a. If you are returning home, how did you get here: _____ (Col 12)

(1)___Auto Passenger
(2)___Taxi
(3)___MATS bus
(4)___Walk
(5)___Vehicle provided by place you visited
(6)___Other_____Specify

3b. If you are coming from home, how do you plan on returning: _____ (Col 13)

(1)___Auto Passenger
(2)___Taxi
(3)___MATS Bus
(4)___Walk
(5)___Vehicle provided by place you visit
(6)___Other_____Specify

4. How often do you use taxis? (Col 14)

(1) _____Daily
(2) _____Several times per week
(3) _____About once a week
(4) _____Several times a month (less than once a week)
(5) _____About once a month
(6) _____Less than once a month

5. How would you have made this trip if not by taxi? (Col 15)

(1) ___Auto Driver (4) ___Walk
(2) ___Auto Passenger (5) ___Vehicle provided by place you visited
(3) ___MATS Bus (6) ___Other (specify) _____

6a. Do you think taxicabs in Montgomery maintain acceptable standards of safety, cleanliness. and reliability? (Col 16)

(1) ___Yes (2) ___No (3) ___Some do, some don't

6b. Do you make a serious effort to select a cab company on the basis of safety, cleanliness and reliability? (Col 17)

(1) ___Yes (2) ___No

7a. Did you arrange for the cab to pick you up at a stated time? (Col 18)

(1) ___Yes (2) ___No

7b. If so, and it did not arrive at the stated time, how long did you wait? (Col 19)

(1) ___ Less than 5 minutes
(2) ___ Between 5 and 15 minutes
(3) ___ Between 15 and 30 minutes
(4) ___ Greater than 30 minutes

8. What is your sex and age?

(1) _____Male (2) _____Female (Col 20)

_____ Years Old (Col21-

9. How many persons live in your household (including yourself)?

_____ Persons (Col24

10a. Please circle the number indicating the annual income of all members of your household? (Col 26)

(1) Less than $3,000
(2) $3,000-$4,999
(3) $5,000-$9,999
(4) $10,000-$15,000
(5) Over $15,000

10b. If not possible, could you please estimate your household's income per month $_____/month (Col 27-3)

11. If you make this trip regularly, what is the fare you usually pay? $_____ ☐ Don't make trip regularly (code 099) (Col 31-3)

12. If you make this trip regularly, how long do you usually ride?_____minutes ☐ Don't make trip regularly (code 099) (Col 35-3)

Appendix A-2c

Questions on Mobility Improvement and Substitution for On-Board Surveys

1a. How often do you make this particular trip?

_____ Time per week/month (circle one).

1b. How often did you make the trip before the discount program? _____ times per week/month (circle one).

2a. By what means do you usually travel here?

_____ Auto driver
_____ Auto passenger
_____ Bus
_____ Taxi
_____ Walk
_____ Agency service

2b. By what means did you usually travel before?

_____ Auto driver
_____ Auto passenger
_____ Bus
_____ Taxi
_____ Walk
_____ Agency service

3. How would you compare this place you are going to other places you have gone for this purpose?

_____ Have always gone only here for this purpose
_____ Better
_____ Same
_____ Not as good

4. How does this trip compare in distance to places you have usually gone for this purpose in the past?

_____ Further
_____ Same
_____ Not as far

5a. If you come to this place by some other means, would you have come at the same time of day?

_____ Usually yes

_____ Usually no

5b. At the same time of the week?

_____ Usually yes

_____ Usually no

5c. If there has been some change in the timing of your trip, what effect has this had on the convenience or flexibility with which you can schedule the trip?

_____ This is a better time for me

_____ About the same

_____ Not as good

Form TAXOB-4
Batch:_____

Montgomery On-Board Taxi Survey
Survey of Driver Attitudes
on Serving the Elderly and Handicapped

To the driver, at the end of the assignment:

As part of this survey we would also like to collect your attitudes on what it is like serving the elderly and handicapped as taxi customers. We would like to know if there is any difference between them and other passengers as far as you are concerned in some of these areas:

1. Is there any difference in the amount of attention they need? In other words, do you usually have to offer any more assistance in getting in or out of the cab, or with packages?

	Elderly	Handicapped
Almost always	☐	☐
Occasionally	☐	☐
Very seldom	☐	☐
No difference	☐	☐
Don't know	☐	☐

2. Do you have any trouble finding out where they want to go, or on how much the fare should be?

	Elderly	Handicapped
Almost always	☐	☐
Occasionally	☐	☐
Very seldom	☐	☐
No difference	☐	☐
Don't know	☐	☐

3. Do you find you have to wait any longer for them to be ready to go when you answer the call compared to other passengers?

	Elderly	Handicapped
Wait longer	☐	☐
No difference	☐	☐
Wait less	☐	☐
Don't know	☐	☐

4. How about the places they travel to or come from? Are they out of the way for you compared to other passengers?

	Elderly	Handicapped
Generally yes	☐	☐
Occasionally	☐	☐
Generally no	☐	☐
About the same	☐	☐
Don't know	☐	☐

5. How do their fares compare with other passengers?

	Elderly	Handicapped
Generally more	☐	☐
About the same	☐	☐
Generally less	☐	☐
Don't know	☐	☐

6. How do their tips compare with other passengers?

	Elderly	Handicapped
Generally more	☐	☐
About the same	☐	☐
Generally less	☐	☐
Don't know	☐	☐

7. What are your feelings about the taxi discount program for elderly and handicapped? (Use back of sheet for response)

PUBLIC TRANSIT RIDER SURVEY

CITY OF MONTGOMERY PLANNING AND DEVELOPMENT DEPARTMENT

Interviewer _____ (Col 1)

Date _____ (Col 2-7)

Circuit _____ (Col 8)

Route #: _____ (Cols 9-11) 1 ☐ Inbound 2 ☐ Outbound (Col 12)

Time: _____ (Cols 13-17) 1 ☐ AM 2 ☐ PM (Col 18)

S: 1 ☐ M 2 ☐ F _____ (Col 19)

R: 1 ☐ W 2 ☐ B 3 ☐ O _____ (Col 20)

HELLO, I'M WORKING FOR THE CITY OF MONTGOMERY AND WE'RE CONDUCTING A SURVEY THIS MONTH OF PASSENGERS ON MATS. WE'RE DOING THIS IN CONNECTION WITH THE FARE/SHARE PROJECT WHICH THE CITY IS SPONSORING FOR THE ELDERLY AND HANDICAPPED CITIZENS. THROUGH THIS SURVEY WE WOULD LIKE TO FIND OUT WHAT EFFECT THIS PROGRAM IS HAVING ON THE PEOPLE WHO WILL USE IT AS WELL AS THE REST OF THE COMMUNITY. WOULD YOU MIND IF I ASKED YOU A FEW QUESTIONS?

1. First, so that we can determine the number of people who are qualified for the program may I ask your age? _____(years) (Cols 21-23)

2. (RECORD HERE IF PERSON HAS ANY OBVIOUS HANDICAP)

   1 ☐ Yes DESCRIBE _____

   2 ☐ No (Cols 24-25)

   IF NO ASK: Do you have any disability that makes travel difficult?

   1 ☐ Yes DESCRIBE _____

   2 ☐ No (Cols 26-27)

   UNLESS PERSON IS 65 YEARS OR OVER, OR HAS A DISABILITY, THANK RESPONDENT AND TERMINATE INTERVIEW.

3. Are you registered with the FARE/SHARE program?

   1 ☐ No Why not? _____

   2 ☐ Yes What is your ID number? _____ (Cols 29-36)

   (Col 28)

4. For what purpose are you making this trip? (Cols 37-38)

   1 ☐ Return Home 3 ☐ Visit Friends or Relatives

   2 ☐ Attend Work or School 4 ☐ Shop

   5 ☐ Other (Specify) _____

   (IF PURPOSE IS RETURN HOME, ASK:) From what activity have you just come? (RECORD ANSWER ABOVE)

5. Have you transferred from another bus to make this trip?

   1 ☐ Yes 2 ☐ No (Col 39)

6. (IF YES, ASK:) Where did you first board a MATS bus?
   (IF NO, ASK:) Where did you get on this bus?

   _____ (Cols 40-42)
   (Street Intersection or Name of Building)

7. How far did you walk to get to the bus stop at the start of your trip?

   _____ Blocks ☐ Check here if person didn't walk (Col 43-44)

8. Will you have to transfer to another bus to complete your trip?

   1 ☐ Yes 2 ☐ No (Col 45)

9. (IF YES, ASK:) Where will you finally get off the MATS bus?
   (IF NO, ASK:) Where will you get off this bus?

   _____ (Cols 46-48)
   (Street Intersection or Name of Building)

10. How far will you need to walk from the bus to the place you are going?

    _____ Blocks (Cols 49-50)

11. How often do you travel by bus? 1 ☐ Daily 2 ☐ Several times per week (Col 51)

    3 ☐ About once a week 4 ☐ Several times a month 5 ☐ About once a month

    6 ☐ Less than once a month

12. How would you have made this trip if bus service were not available? (Col 52)

1 ☐ Drive a car 4 ☐ Ride in car with someone else

2 ☐ Taxi 5 ☐ Walk

3 ☐ Wouldn't go 6 ☐ Other _____

13. How many cars or other passenger vehicles are owned by your household? (Col 53)

_____ Cars

14. When is the last time you drove a car? (Col 54)

1 ☐ Never drove 2 ☐ Less than 3 months 3 ☐ 3 months to a year

4 ☐ More than 1 year

15. How many persons, including yourself, are there in your household? _____ (Col 55)

16. What would you estimate to be the combined monthly income of all members of your household? (BEFORE TAXES) (Col 56)

1 ☐ Less than $250 2 ☐ $250-$415 3 ☐ $416-$835

4 ☐ $836 to $1250 5 ☐ Over $1250

FOLLOW-UP SURVEY OF PROJECT REGISTRANTS FORM

CITY OF MONTGOMERY
DEPARTMENT OF PLANNING AND DEVELOPMENT
FOLLOW-UP SURVEY OF FARE/SHARE PROJECT REGISTRANTS

Card Number: 0 1 (1 2)

Name: LAST (1 4 5 6 7 8 10 11 12 13 14 15 16) FIRST (17 18 19 20 21 22 23 24 25 26 27 28 29 30) INIT. (31)

Project ID: (32 33 34) - (35 36) - (37 38 39 40) - (41 2)

I'm calling from Montgomery City Hall in connection with the FARE/SHARE Program. We are currently conducting a survey of people who are registered with FARE/SHARE to find out how the service is working. If you have a couple of minutes, I would like to ask you a few questions concerning your use of FARE/SHARE. If you are not using FARE/SHARE, or if you have been having any trouble using it, we would like to ask you questions about that too.

A. First I would like to find out if there has been any change in your living arrangements since you registered. (GIVE DATE)

1. Do you still live at (GIVE RESIDENCE ADDRESS)?

1) ____ Yes

2) ____ No _____ (New Address)

3) ____ Information Incorrect _____ (Correct Address)

(43) (44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63)

(Code address if changed)

2. Are there still (GIVE NUMBER) members in your household? [64] [65 66] (Code number if changed)

1) ____ Yes

2) ____ No _____ (New Number)

3) ____ Information Incorrect _____ (Correct Number)

3. Is your employment status the same? You were formerly (GIVE EMPLOYMENT STATUS). [67] [68 69] (Code status if changed)

1) ____ Yes

2) ____ No _____ (New Status)

3) ____ Information Incorrect _____ (Correct Status)

4. When you registered with FARE/SHARE you had (GIVE HANDICAP) disability that affected your travel. Has anything happened to your health since you registered that would affect your ability to travel?

1) ____ Yes _____ (New Handicap)

2) ____ No [70] [71 72] (Code handicap if changed)

3) ____ Information Incorrect _____ (Correct Handicap)

5. Previously your household owned (GIVE NUMBER) vehicles (in operating condition). Is this still true? [73] [74 75] (Code number if changed)

1) ____ Yes

2) ____ No _____ (New Number)

3) ____ Information Incorrect _____ (Correct Number)

B. Now I'd like to ask some questions about your travel.

6. When was the last time you rode a taxi in Montgomery? [76]

1) ____ Within past week
2) ____ Within past month
3) ____ Within past year
4) ____ More than 1 year
5) ____ Never rode (SKIP TO QU 22)

7. Do you use FARE/SHARE to ride taxis? [77]

1) ____ Yes 2) ____ No → (SKIP TO QU 22)

8. Did you use taxis in Montgomery before FARE/SHARE? [78]

1) ____ Yes 2) ____ No → (SKIP TO QU 10)

9. Do you ride taxis more now than before FARE/SHARE? [79]

1) ____ Yes 2) ____ No → (SKIP TO QU 11)

Card No: [1] [2] 0 2

10. What kinds of taxi trips do you take more of because of FARE/SHARE? (RECORD RESPONSES WITHOUT ITEMIZING CHOICES)

Work/school	1) ____ Yes	2) ____ No	[3]
Visit friends or relatives	1) ____ Yes	2) ____ No	[4]
Shopping	1) ____ Yes	2) ____ No	[5]
Church/religious	1) ____ Yes	2) ____ No	[6]
Medical	1) ____ Yes	2) ____ No	[7]
Personal business	1) ____ Yes	2) ____ No	[8]
Entertainment/ recreation	1) ____ Yes	2) ____ No	[9]
Other	1) ____ Yes	2) ____ No	[10]

11. Did you have to change taxi companies in order to get FARE/SHARE service?

1) ____ Yes 2) ____ No → (SKIP TO QU 13) [11]

12. Which company did you ride with most often before?

_____ [12] [13]

13. Do you ever take taxi rides now where you don't use FARE/SHARE?

1) ____ Yes 2) ____ No → (SKIP TO QU 15) [14]

14. How many trips did you take last month where you paid full fare? _____ [15] [16]

15. How long do you generally have to wait when you request a FARE/SHARE ride? _____ minutes [17] [18]

16. Do you have to wait <u>any longer</u> to get a FARE/SHARE ride than you do for a regular taxi?

1) ____ Yes 2) ____ No [19]

17. Does it take <u>any longer</u> to get where you are going on FARE/SHARE than on a regular taxi ride?

1) ____ Yes 2) ____ No [20]

18. Is FARE/SHARE <u>as reliable</u> as regular taxis when it comes to getting where you're going on time?

1) ____ Yes 2) ____ No [21]

19. Is the courtesy or assistance you get from cab drivers under FARE/SHARE <u>as good</u> as what you received before?

1) ____ Yes 2) ____ No [22]

20. Have you ever been asked to pay a fare on FARE/SHARE that you didn't understand or didn't think was right? 23

1) ____ Yes 2) ____ No

→ (PROBE TO MAKE SURE MISUNDERSTANDING NOT DUE TO MAY 1979 FARE INCREASE)

21. Have you ever shared a cab with someone who you weren't familiar with on FARE/SHARE? 24

1) ____ Yes 2) ____ No

22. Have you had any difficulty in getting information on FARE/SHARE taxi service, or in learning how to use it? 25

1) ____ Yes 2) ____ No → (SKIP TO QU 24)

23. What was the problem? 26 27

_____

24. Have you ever requested a FARE/SHARE ride where you were refused? 28

1) ____ Yes 2) ____ No → (SKIP TO QU 27)

25. Which company(s) was this?

Red Taxi	1) ____ Yes	2) ____ No	29
Yellow Taxi	1) ____ Yes	2) ____ No	30
Deluxe	1) ____ Yes	2) ____ No	31
New Deal	1) ____ Yes	2) ____ No	32
Original Queen	1) ____ Yes	2) ____ No	33
Other (Non-participating)	1) ____ Yes	2) ____ No	34

35

26. When did this last happen?

1) ____ Within past month
2) ____ Within past 6 months
3) ____ Within past year
4) ____ More than 1 year
5) ____ Can't remember

27. When was the last time you rode a bus in Montgomery?

36

1) ____ Within past week
2) ____ Within past month
3) ____ Within past year
4) ____ More than 1 year
5) ____ Never rode → (SKIP TO QU 33)

28. Do you use FARE/SHARE to ride MATS buses?

37

1) ____ Yes 2) ____ No → (SKIP TO QU 33)

29. Did you ride buses in Montgomery before FARE/SHARE?

38

1) ____ Yes 2) ____ No → (SKIP TO QU 31)

30. Do you ride buses more now than before FARE/SHARE?

39

1) ____ Yes 2) ____ No → (SKIP TO QU 32)

31. What kinds of bus trips do you take more of because of FARE/SHARE? (RECORD RESPONSES WITHOUT ITEMIZING CHOICES)

Work/school	1) ____ Yes	2) ____ No	40
Visit friends or relatives	1) ____ Yes	2) ____ No	41
Shopping	1) ____ Yes	2) ____ No	42
Church/religious	1) ____ Yes	2) ____ No	43
Medical	1) ____ Yes	2) ____ No	44
Personal business	1) ____ Yes	2) ____ No	45
Entertainment/ recreation	1) ____ Yes	2) ____ No	46
Other	1) ____ Yes	2) ____ No	47

32. Do you ever use bus for one part of a trip, and taxi for the other?

1) ____ Yes 2) ____ No 48

33. Is it difficult for you to obtain bus tickets?

1) ____ Yes 2) ____ No 49

34. Can you tell me which method of travel you use most often: is it walking, driving, riding as a passenger in a car, taxi, bus or some other means? 50

1) ____ Walk

2) ____ Auto driver

3) ____ Auto passenger

4) ____ Taxi

5) ____ MATS bus

6) ____ Social service agency

7) ____ Other _____

35. What method of travel do you use most frequently after (STATE PREVIOUS MODE)?

51

1) ____ Walk

2) ____ Auto driver

3) ____ Auto passenger

4) ____ Taxi

5) ____ MATS bus

6) ____ Social service agency

7) ____ Other _____

We know that some FARE/SHARE registrants have used their FARE/SHARE privileges quite a bit, while others do not use theirs at all.

36. Can you tell us in your own words why you haven't used FARE/SHARE more to ride taxis?

52 53

_____

54 55

_____

56 57

_____

37. Can you tell us in your own words why you haven't used FARE/SHARE more to ride MATS buses?

58 59

_____

60 61

_____

62 63

_____

38. Is there any method of travel you use less often since FARE/SHARE has been available? 64

1) ____ Yes 2) ____ No → (SKIP TO QU 40)

1) ____ Walk
2) ____ Auto driver
3) ____ Auto passenger 65
4) ____ Taxi
5) ____ MATS bus
6) ____ Social service agency
7) ____ Other _____

39. Why do you use (STATE PREVIOUS MODE) less often? 66

_____

(PROBE TO DETERMINE ROLE OF GASOLINE AVAILABILITY AND PRICES.)

40. (IF RESPONDENT HAS NEVER USED BUS OR TAXI IN MONTGOMERY, SKIP TO QU 42.)

For what kinds of trips would you use a taxi instead of a bus? 67 68

_____ 69 70

_____ 71 72

_____

41. For what kinds of trips would you use a bus instead of a taxi? 73 4

_____ 75 76

_____ 77 78

_____

42. When you registered with FARE/SHARE, your income was (GIVE INCOME RANGE). Is this still true?

1) ____ Yes

2) ____ No _____ (New Income)

3) ____ Information Incorrect _____ (Correct Income)

79 ☐

80 ☐

(Code income if changed)

That completes my list of questions. Thank you very much for your cooperation.

TELEPHONE SURVEY OF NONREGISTRANTS FORM

CITY OF MONTGOMERY
DEPARTMENT OF PLANNING AND DEVELOPMENT
FARE/SHARE PROJECT
TELEPHONE SURVEY OF NON-REGISTRANTS

Household Number: _____

Address: _____

Phone No: _____

Card No.: 0 1

Code Zone: _____

HELLO, MY NAME IS _____. I'M CALLING FROM THE CITY HALL IN MONTGOMERY IN CONNECTION WITH THE FARE/SHARE TRANSPORTATION PROGRAM THAT THE CITY IS SPONSORING FOR ITS ELDERLY AND HANDICAPPED RESIDENTS. IF YOU CAN SPARE A MOMENT, I WONDER IF I COULD ASK YOU A FEW QUESTIONS?

*1. How many people, including yourself, live in your home on a full-time basis? _____ [10 11]

*2. How many of these people (including yourself if applicable) are 65 years of age or older? _____ [12]

*3. Are there any people who are under 65 who have some disability that may affect their travel? This means people who need wheelchairs or some other means of assistance to get about, people with serious heart conditions, who have epilepsy or some neuromuscular disease, who are mentally retarded, or who are deaf or blind (or seriously hard of hearing or visually impaired.)

1) ___ Yes 2) ___ No → IF NO ONE IN HOUSEHOLD IS 65 OR OLDER OR HANDICAPPED TERMINATE INTERVIEW. [13]

Describe these individuals by their disability:

1) _____

2) _____

3) _____

4) _____

(Code Number of Persons in List:) [14]

*4. Do you fall in either of these categories, that is, are you 65 or older or disabled? [15]

1) ___ 65 or older
2) ___ under 65 and disabled
3) ___ no → ASK TO SPEAK WITH ONE OF THE MEMBERS WHO IS HANDICAPPED OR ELDERLY. IF THE DISABILITY PRESENTS A COMMUNICATION PROBLEM, ASK IF SOMEONE CAN SPEAK FOR THE INDIVIDUAL. BEGIN WITH QU 5.

5. What is your age? _____ years. [16 17 18]

6. Do you have any disability that makes it difficult for you to travel? [19]

1) ___ Yes 2) ___ No → SKIP TO QU 11

7. Can you describe your disability? [20 21]

_____

_____

8. Do you use any special aids to get about, like a cane or wheelchair? [22]

1) ___ Yes 2) ___ No → SKIP TO QU 9

Crutches (non-temporary)	1) ___Yes	2) ___No [23]
Wheelchair	1) ___Yes	2) ___No [24]
Walker	1) ___Yes	2) ___No [25]
Cane	1) ___Yes	2) ___No [26]
Escort	1) ___Yes	2) ___No [27]
Other	1) ___Yes	2) ___No [28]

9. Are you able to ride in a taxi? [29]

1) ___ Yes 2) ___ No

10. Are you able to use a regular bus? [30]

1) ___ Yes 2) ___ No

11. Have you heard about the FARE/SHARE Program? [31]

1) ___ Yes 2) ___ No → "FARE/SHARE is a program operated by the city that offers substantial discounts to elderly or handicapped citizens when riding buses or taxis. I'd be glad to give you more information later if you like." SKIP TO QU 13

12. Are you registered with the FARE/SHARE Program? [32]

1) ___ Yes → THANK RESPONDENT AND TERMINATE INTERVIEW. (GO TO CONCLUSION AND INSTRUCTIONS AT END OF SURVEY)

2) ___ No

13. Do you ever ride taxis in Montgomery? [33]

1) ___ Yes 2) ___ No → SKIP TO QU 16

14. How often do you ride taxis? [34]

1) ___ at least once a week

2) ___ at least once a month

3) ___ at least once a year

4) ___ very infrequently

15. On those occasions when you do ride, are there any special conditions that cause you to use a taxi? [35] [36]

_____

16. Do you ever ride MATS buses in Montgomery? [37]

1) ___ Yes 2) ___ No → SKIP TO QU 19

17. How often do you ride MATS buses? [38]

1) ___ at least once a week

2) ___ at least once a month

3) ___ at least once a year

4) ___ very infrequently

18. On those occasions when you do ride are there any special conditions that cause you to use a bus? [39] [40]

_____

19. We are wondering why persons who have not registered for FARE/SHARE have not done so. Can you tell me what reasons you may have had for not registering? We would like to hear all of your reasons if there is more than one.

41 42

a.) _____

43 44

b.) _____

45 46

c.) _____

47 48

d.) _____

20. (ASK IF MORE THAN ONE REASON IN QU 19) Which is the most important reason?

49 50

_____

*21. Does your household own any cars or trucks (in operating condition)?

51

1) ____Yes 2) ____No → SKIP TO QU 23

*22. How many? _____

52 53

23. Do you drive?

54

1) ____Yes 2) ___ No

24. Can you tell me which method of travel you use most often: is it walking, driving, riding as a passenger in a car, taxi, bus or some other means?

55

1) ____walk

2) ____auto driver

3) ____auto passenger

4) ____taxi

5) ____MATS bus

6) ____social service agency

7) ____Other _____

25. What method of travel do you use most frequently after (STATE MODE FROM QU 24.) 56

1) ____walk

2) ____auto driver

3) ____auto passenger

4) ____taxi

5) ____MATS bus

6) ____social service agency

7) ____other _____

26. What is your employment status? 57

1) ___Employed full-time
2) ___Employed part-time
3) ___Unemployed
4) ___Retired
5) ___Student
6) ___Homemaker
7) ___Other, specify: _____

*27. I'm going to read you a list of categories, and I'd like you to stop me when I reach the one that best represents the combined income (before taxes) of your household last year. Is it: 58

1) ____ less than $3000 (less than $250 per month)

2) ____ $3000 to $5000 ($250 to $417 per month)

3) ____ $5000 to $8000 ($412 to $667 per month)

4) ____ $8000 to $12000 ($667 to $1000 per month)

5) ____ $12000 to $20000 ($1000 to $1666 per month)

6) ____ $ Over $20000 (over $1666 per month)

7) ____Refused } INTERVIEWER: DO NOT READ
8) ____Don't know } AS POSSIBLE OPTION

28. INTERVIEWER RECORD SEX OF RESPONDENT [59]

1) ____Male 2) ____Female

29. INTERVIEWER RECORD RACE OF RESPONDENT [60]

1) ____ Black 2) ____White 3) ____Other, can't tell

30. ENTER HERE THE NUMBER OF THIS INTERVIEW IN THE HOUSEHOLD: _____ [61]

That completes my list of questions. Thank you very much for your cooperation.

IF THERE IS MORE THAN ONE ELIGIBLE PERSON IN THE HOUSEHOLD, INTERVIEW AS MANY OTHERS AS YOU CAN. FOR NEW INTERVIEWS IN SAME HOUSEHOLD, USE NEW FORM, BUT DO NOT ADMINISTER QUESTIONS WITH ASTERISKS (*). FILL IN QUESTIONS WITH ASTERISKS USING INFORMATION FROM PREVIOUS INTERVIEW.

ADMINISTRATIVE COST RECORDS

FARE SHARE TIME SHEET

Week Ending
Name
Professional Code

Project Activity*	Four Digit Code*	Total Hours	S	M	T	W	T	F	S

*See administrative cost account descriptions on following pages.

PROJECT FARE SHARE

ADMINISTRATIVE COST ACCOUNTS

Account Number	Project Activity
1	DIRECT SUBSIDY MANAGEMENT
1.01.0	Taxi voucher processing and validation
1.02.0	MATS ridership data processing and validation
1.03.0	UMTA subsidy coordination, request for repayment
1.04.0	Taxi Operator coordination and reimbursement
1.05.0	MATS coordination and reimbursement
1.06.0	Coordination with City Finance Office for fund advance
1.07.0	Other direct subsidy management activities (specify)
2	SUBSIDY-RELATED INDIRECT
2.01.0	User registration process/appeals
2.02.0	Taxi operator driver training programs
2.03.0	Handling service complaints
2.04.0	Project information (telephone)
2.05.0	Other marketing and promotion
2.06.0	Fraud investigations
2.07.0	Monitoring user budgets for overrun; actions taken
2.08.0	Other problems or major tasks (specify)
2.09.0	General project planning and development relating to subsidy management procedure
2.10.0	Other meetings and coordination related to subsidy management but not specific to task
3	NON-SUBSIDY RELATED
3.01.*	User Registration
3.02.*	First follow-on survey of registrants
3.03.*	Second follow-on of registrants
3.04.*	Survey of non-users
3.05.*	Background site data

PROJECT FARE SHARE ADMINISTRATIVE COST ACCOUNTS -- 2

Account Number	Project Activity
3.06.*	First taxi on-board survey
3.07.*	Second taxi on-board survey
3.08.*	Third taxi on-board survey
3.09.*	First transit on-board survey
3.10.*	Second transit on-board survey
3.11.*	Third transit on-board survey
3.12.*	Vouchers
3.13.*	Taxi Operating Data
3.14.*	Transit Operating Data
3.15.*	Taxi Operator Interviews
3.16.*	Social Agency Interviews
3.17.*	Administrative Cost System Data
3.18.0	Coordination within City Hall
3.19.0	General Coordination with UMTA
3.20.0	General Coordination with TSC
3.21.0	General Coordination with Evaluator
3.22.0	Other General Coordination
3.23.0	Other NON-SUBSIDY RELATED (Specify)

*The last digit of the code for data collection activities (code 3. .) is reserved for task description:

Code	Task Description
1	Activity planning, development of forms
2	Coordination, supervision of activity in progress
3	Interviewing
4	Data reduction, processing, handling
5	File management

All activities, including data collection, should receive the four-digit code. The development of forms for user registration, for example, would be coded 3.01.1.

MONTHLY COST SUMMARY SHEET

Category of Cost	Cost	Code
Personnel		
Materials		
Xerox/Production		
Computer		
Travel		
Phone		
Other (please specify)		

For _____
(Month)

Date Completed _____

APPENDIX B. SOCIAL SERVICE AGENCY DESCRIPTIONS

TABLE B-1. MONTGOMERY SOCIAL SERVICE AGENCIES HAVING DIRECT CONTACT WITH OR PROVIDING TRANSPORTATION SERVICES FOR THE ELDERLY AND HANDICAPPED

American Red Cross
American Social Health Association
Catholic Social Services
*Central Alabama Aging Consortium
*Central Alabama Rehabilitation Center
*City Parks & Recreation
Goodwill Industries of Alabama
Human Services
Mental Health Association, Montgomery
*Montgomery Committee on Aging
*Montgomery Community Action Agency
*Montgomery Housing Authority
Nellie Burge Community Center
*Project Harvest, Nutrition Project for the Elderly
Public Assistance
*Retired Senior Volunteer Program
Salvation Army -- Booker T. Washington Center
Salvation Army -- Citadel
Society for Crippled Children and Adults
*Voluntary Action Committee
YMCA

*Selected for detailed investigation.

TABLE B-2. DESCRIPTION OF SAMPLE SOCIAL SERVICE AGENCIES

Agency	Year Founded	Public or Private	Affiliations	Mission	Official Client Definition	Official Service Area
Department of Parks and Recreation	circa 1950	Public	City of Montgomery; National Recreation & Park Association; Alabama Parks & Recreation Association	To promote a balanced recreation program for the entire community	Every citizen in Montgomery	City of Montgomery
Central Alabama Rehabilitation Center	1961	Private (although they received substantial funding from State of Alabama	National Association for Handicapped Persons; Alabama Society for Crippled Children and Adults; State Vocational Office	To promote the rehabilitation of handicapped persons	Physically handicapped mentally retarded, mentally ill, behavioral problems, drug/alcohol abusers	Central Alabama (17 counties)
Project Harvest	1976	Public	Alabama Committee on Aging; Central Alabama Aging Consortium	To provide a noon-time meal to elderly citizens	All citizens 60 years of age and over and their spouses	Montgomery County, Autauga County, Elmore County
Voluntary Action Committee	1974, May 1977 Trans. Program began	Private	National Center for Voluntary Action; Community Council	To establish volunteer programs to benefit the community	Persons of all age groups, who wish to provide volunteer services	Montgomery County, Autauga County, Elmore County
Retired Senior Volunteer Program (RSVP)	1973	Private	Alabama Committee on Aging; Central Alabama Aging Consortium; Montgomery Committee on Aging	To help socialize the elderly through volunteer work	All citizens over 60 years of age	Montgomery, Autauga, & Elmore Counties
Montgomery Committee on Aging	1972	Private	Alabama Committee on Aging, Central Alabama Aging Consortium	"To serve Montgomery's elderly"	All citizens over 60 years of age	Montgomery, Autauga, & Elmore Counties
Montgomery Community Action	1968	Private	National Council on Aging; Central Alabama Aging Consortium; Central Alabama Area Agency on Aging	To eliminate poverty	The poor (according to Community Service Administration guidelines)	Montgomery County outside of the City of Montgomery
Montgomery Housing Authority	1937	Public	City of Montgomery, Housing and Urban Development; Central Alabama Aging Consortium	To provide better housing and living conditions for lower income and elderly citizens	Low-income and elderly persons	City of Montgomery

TABLE B-2. DESCRIPTION OF SAMPLE SOCIAL SERVICE AGENCIES (CONTINUED)

Agency	Services Provided	What People Use Services?	Number of Current Users	Number Elderly (nonhandicapped, handicapped)*	Number Nonelderly (nonhandicapped, handicapped)*
Department of Parks and Recreation	Wide variety of recreational programs at community centers and parks	No quantitative breakdown available, but virtually all types use services; affluent people use service less; handicapped program discontinued when supervisor left	NA	NA	NA
Central Alabama Rehabilitation Center	Physical therapy, occupational therapy, speech and hearing, recreational, evaluation of clients	Handicapped, 50% from City, 60% from County; 59% white; 59% male	236/day	64(0,64)	575(0,575)
Project Harvest	Meals	Elderly, mostly male	5324/month	No registration; virtually all users over 60, however	No registration; virtually all users over 60, however
Voluntary Action Committee	Primarily advocacy and coordination, only program is transportation	Average age is in 30's and most volunteers are young through middle age; however, elderly citizens benefit through actions of volunteers	144/month (volunteers)	NA; but VAC does serve several elderly agencies	NA; but VAC does serve several agencies that serve the handicapped
Retired Senior Volunteer Program (RSVP)	Placement of elderly volunteers	Elderly volunteers, an unquantifiable number of elderly citizens benefit through actions of volunteers	90/month (volunteers)	300-400 elderly; but no handicapped/nonhandicapped breakdown	0(0,0)
Montgomery Committee on Aging	"Senior Citizens Service Center (Transportation, mobile meals, social functioning, homemaker programs); Retired Senior Volunteer Program	Elderly	1200/month*	NA	NA
Montgomery Community Action	Head Start, meals for the elderly, arts & crafts, basic education, vocational assistance, etc.	Four of eight centers in city, but transportation program is for County	2500/year* excluding Head Start	800(518,222)	1260(1200,60)
Montgomery Housing Authority	Housing, day care, nutrition program, basic education, vocational training	Low income and elderly who qualify under HUD guidelines	4500*	NA	NA

*Estimates

TABLE B-3. DESCRIPTION OF AGENCY TRANSPORTATION SERVICES, 1977

Agency	Transportation Program	Number of Vehicles & Characteristics	Number of Drivers & Characteristics	Other Special Transportation Staff
Department of Parks & Recreation	Yes	4 12-passenger vans (Owned; 4,5, 6 and 8 years old); 1 has an hydraulic lift; 10 old school buses (owned) which can be used when necessary	2 full-time drivers; In addition Program Directors check out cars on a regular basis	None
Central Alabama Rehabilitation Center	Yes	4 "Bluebird" buses (1966, 1965, 1971, 1977) with springs in back for wheelchairs; 3 vans (1966, 1971, 1971) with step stools	5 full-time drivers; special training under Alabama Act 281 which covers Alabama business licenses; also new drivers ride with experienced drivers for 2 days and talk with psychologists	1 full-time transportation supervisor; 2 aids who work with drivers
Project Harvest	Yes	2 vehicles from Central Alabama Aging Consortium	2 part-time drivers; no special training	None
Voluntary Action Committee	Yes	No fleet; use volunteer's vehicles	3 part-time volunteers; 8 registered volunteer drivers total; goal is to have 50 by 1978; training in September	None
Retired Senior Volunteer Program (RSVP)	Yes	1 12-passenger van; no special characteristics	2 part-time drivers; no special training	None
Montgomery Committee on Aging	Yes	2 12-passenger vans, equipped with welded steps for the handicapped	2 full-time drivers	1 full-time transportation coordinator
Montgomery Community Action	Yes	2 15-passenger vans, with rudimentary handrails	2 part-time drivers; 1 full-time by October; trained in first aid and outreach (3 hrs/wk to start, 1 1/2 hours/week thereafter	None
Montgomery Housing Authority	Yes	1 11-passenger van (1977); 1 15-passenger van (1977), with hydraulic lift; 1 18-passenger bus (1975)	2 part-time drivers; 2 full-time drivers; no special training	None

TABLE B-3. DESCRIPTION OF AGENCY TRANSPORTATION SERVICES, 1977 (CONTINUED)

Agency	Type of Service	Scheduling	Transportation Service Area	Eligibility Requirements	Income Level of People Served
Department of Parks & Recreation	Scheduled service by Program Directors; one to one	Program Directors schedule cars at beginning of month; individuals can request trips to centers with 2-3 days notice	City of Montgomery, except for a few out-of-town excursions	Any person registered in a recreation program	Primarily low and moderate income
Central Alabama Rehabilitation Center	Scheduled, demand responsive (many to one)	Transportation supervisor plans five "runs" throughout the day (6:30-8AM, 8-9AM, 9-3PM, 3-4PM, and 4-5PM; users call in transportation requests	City of Montgomery, clients from out-of-town go to the Montgomery Greyhound Station	Clients who attend the Center	All Levels
Project Harvest	Scheduled, demand responsive (many to one)	Clients stay the same each day so scheduling is not a problem	Montgomery County, Autauga County, Elmore County	Over 60 and Using Project	Predominantly low income
Voluntary Action Committee	Demand-responsive (many to one)	Advance notice of one day required; 2 days preferred	Montgomery, Autauga, & Elmore Counties	Any economically or physically deprived person, or determined by community agency	All Levels
Retired Senior Volunteer Program (RSVP)	Scheduled, demand-responsive (one to one)	No problem, although cancellation rate is approximately 15 percent	Montgomery, Autauga, & Elmore Counties	All elderly volunteer in program	All Levels
Montgomery Committee on Aging	Scheduled, demand-responsive (one to one)	No problem, although cancellation rate is approximately 15 percent; if necessary, medical appointments given priorty	Montgomery, Autauga, & Elmore Counties	All over 60	All Levels
Montgomery Community Action	Scheduled fixed-route, but also demand-responsive (one to one and many to one)	Fixed route, with schedule or one-day notification	Only serve non-city Montgomery County residents, but do not take them inside city limits	Poor, handicapped, & elderly; elderly and handicapped receive priority over poor	Extremely low income
Montgomery Housing Authority	Scheduled trips from one center for many purposes (one to many)	Each day a different housing project is served for a wide array of trip purposes; over a period of two weeks each project is served at least once.	Primarily within the City, except for a few out-of-town excursions	Any public housing resident	low income

TABLE B-3. DESCRIPTION OF AGENCY TRANSPORTATION SERVICES, 1977 (CONTINUED)

Agency	User Charges	Average Number of Passengers per Week	Other Transportation Techniques: Volunteer Provided Transportation	Contract with Taxi Operators	Charter Buses	User Cost Reimbursement
Department of Parks and Recreation	None	1000-1500	Very limited	No	Only for occasional long-distance trip (e.g., August excursion to Canada)	No
Central Alabama Rehabilitation Center	None, except for "private clients" (not supported by state funding) who pay: up to 3 miles, $3.00; 3 to 5 miles, $5.00; and 5 to 7 miles, $7.00	1000	Yes, for job placement	No	No	No
Project Harvest	None, but donations requested	720	No	No	No	No
Voluntary Action Committee	None	5	Yes	No	No	No
Retired Senior Volunteer Program (RSVP)	None	85	No	No	No	No
Montgomery Committee on Aging	None	168	No	No	No	No
Montgomery Community Action	None, but donations accepted	87	No	No	No	No
Montgomery Housing Authority	None	NA	No	No	No	No

TABLE B-3. DESCRIPTION OF AGENCY TRANSPORTATION SERVICES, 1977 (CONTINUED)

Agency	Trip Purposes Served	Seasonal Fluctuations	Transportation Related Costs	Transportation Costs as a Percent of Total Agency Budget	Costs per Person Trip (one-way)[2]	Funding
Department of Parks and Recreation	Primarily recreational and social; one day a month a shopping day for the elderly	Peaking in late December (Christmas) and in May (Senior Citizen Month)	NA	NA	NA	City of Montgomery; no strings
Central Alabama Rehabilitation Center	Primarily for therapy	Private client case load drops 5-10 percent in summer	$75,000/year[1]	0.7%	up to 3 mi - $8.76 3 to 5 mi - $14.60 5 to 7 mi - $20.46	State Vocational Rehabilitation Services 82% Donations 3% United Appeal 5% Sales & Services 6%
Project Harvest	All are Project-related, i.e. for meals	No seasonal peaking in City because all centers air conditioned	NA	42.7%	NA	Central Alabama Aging Consortium (under Older Americans Act of 1965, as amended, Title 7); transportation mandated
Voluntary Action Committee	Medical 75% Other 25%	Transportation program newly begun, no experience over compiele calendar year	$6/year per driver for insurance	0.06%	$0.18 (does not include compensation for volunteers.	United Way (100%)

TABLE B-3. DESCRIPTION OF AGENCY TRANSPORTATION SERVICES, 1977 (CONTINUED)

Agency	Trip Purposes Served	Seasonal Fluctuations	Transportation Related Costs	Transportation Costs as a Percent of Total Agency Budget	Costs per Person Trip (one-way)	Funding
Retired Senior Volunteer Program (RSVP)	Volunteer Service 100%	None cited	$17,210/year[3]	40.3%	$3.89	Montgomery Committee on Aging, ACTION United Way, Montgomery County, City of Montgomery, Donations
Montgomery Committee on Aging	(Jan 1977) Nutrition 33% Volunteer Service 30% Medical 12% Food Stamps 7% Social Services 4% Shopping 8% "Special Activities" 6%	None cited	$27,226/year[3]	44.6%	$3.12	Central Alabama Aging Consortium (Titles III and VII)
Montgomery Community Action	Health 12% Social Services 29% Nutrition 14% Shopping 29% Volunteer Services 6% Recreation 6% Other 4%	None cited	$11,726/year[3]	0.5% total; 14.0% of Title 3 Aging Program	$2.75	Health, Education, and Welfare; transportation mandated
Montgomery Housing Authority	Nutrition 60% Food Stamps 10% Shopping 25% Other 5%	Demand drops in summer	Total not available; one of the vans cost $3600	NA	NA	Housing and Urban Development

[1]Includes amortization of vehicles, etc.

[2]Estimated.

[3]This is the total of what the Agency spent for transportation in the previous year. It does not include the cost of vehicles, which generally are purchased by the Central Alabama Aging Consortium or with significant federal contributions.

APPENDIX C. ELIGIBILITY CRITERIA

APPENDIX C. ELIGIBILITY CRITERIA

EACH PROJECT PARTICIPANT MUST:

1) Reside in the City of Montgomery

AND BE EITHER

2) 65 years of age or older, establishing their age through use of:

   a) Medicare Card;
   b) Driver's license; or
   c) Any other identification showing birthdate such as a birth certificate, insurance card, etc.

OR

3) Handicapped, defined as having a condition which prevents an individual from performing one of the following: using stairs, escalators, or ramps; riding a regular MATS bus; standing in a moving vehicle; reading informational signs; hearing announcements; or walking more than 200 feet.

   The handicap may be due to one of the following conditions:

   a) Nonambulatory disabilities -- impairments that, regardless of cause of manifestation, for all practical purposes confine individuals to wheelchairs.
   b) Semiambulatory disabilities -- impairments that cause individuals to walk with difficulty or insecurity. Individuals who are amputees, use braces or crutches, or have arthritis, neuromuscular disorders, or pulmonary or cardiac conditions may be considered semiambulatory.
   c) Sight disabilities -- total blindness or uncorrectable impairment affecting sight to the extent that the individual is insecure or exposed to danger when in public.
   d) Hearing disabilities -- total deafness or uncorrectable hearing handicaps that make an individual insecure in public areas because of an inability to communicate or hear warning signals.
   e) Disabilities of incoordination -- faulty coordination or palsy from brain, spinal, or peripheral nerve injury.
   f) Mental retardation -- applicant must have an IQ of 49 or less and be unable to perform routine repetitive tasks or have physical or other mental impairment resulting in restriction of function.
   g) Brain damage -- diagnosis by a psychiatrist, neurologist, or clinical pathologist, establishing that the applicant has organic brain syndrome.

   In cases where handicaps are not obvious, a physician's statement or other documentation was required as proof of eligibility.

APPENDIX D. LETTER TO REGISTRANTS WHO VIOLATE PROJECT TAXI USAGE LIMIT

APPENDIX D. LETTER TO REGISTRANTS WHO VIOLATE PROJECT TAXI USAGE LIMIT

Dear

In our letter recently mailed to you, we reminded you of the conditions for exceeding the $15.00 limit with your Fare Share ID card. In order to register your name in our file of ID card holders allowed to exceed the limit, please read and sign the enclosed certification form and return it to the Fare Share Office, Post Office Box 1111, Montgomery, Ala. 36102. Thank you for your cooperation.

Yours very truly,

PLANNING & DEVELOPMENT DEPT.

J. Aronstein, Jr., Director

"I CERTIFY THAT I AM PERMANENTLY HANDICAPPED OR DISABLED. MY DISABILITY IS _____.

I UNDERSTAND THAT I MAY EXCEED THE $15.00 LIMIT PER MONTH WITH MY FARE SHARE ID CARD ON TAXIS ONLY IF I RESTRICT THE USE OF THE CARD TO TRIPS TO AND FROM WORK, SCHOOL, THERAPY, OR MEDICAL REASONS."

_____ _____

NAME DATE

_____

ID NUMBER

APPENDIX E. CHARACTERISTICS OF PROJECT USERS

TABLE E-1. COMPARISON OF PROJECT BUS USERS AND PROJECT TAXI USERS (PERCENT)

	Use Taxi, Not Bus	Use Bus, Not Taxi	Use Both	Use Neither
Age				
5-54	9.3	7.9	14.0	5.9
55-64	7.2	8.1	9.6	4.9
65-69	22.6	36.9	31.7	33.4
70-74	23.4	25.5	21.5	27.1
75-84	32.4	19.1	20.5	23.9
85+	5.1	2.4	2.6	4.8
Sex				
Male	17.7	35.4	25.3	34.0
Female	82.3	64.6	74.7	66.0
Race				
White	81.2	12.4	39.4	57.8
Black	18.7	87.5	60.5	42.2
Other	0.1	0.1	0.1	0.0
Marital Status				
Single	15.6	14.3	16.8	11.6
Married	20.3	31.7	22.0	40.5
Formerly married	64.0	54.0	61.3	47.9
Handicap Status				
No handicap	60.8	64.9	58.4	71.6
Nonambulatory	1.1	0.7	0.0	0.6
Semiambulatory	21.4	21.5	24.0	15.5
Sight	7.3	3.2	4.7	4.4
Hearing	1.4	1.9	2.1	1.8
Incoordination/ Mental retardation Brain damage	4.9	4.2	5.7	3.1
Other	3.2	3.6	5.2	3.1
Aids				
Wheelchair	1.1	0.0	0.0	0.7
Walker	1.9	0.1	0.8	1.0
Crutches	1.4	0.3	0.8	0.7
Cane (for walking)	10.1	8.1	9.3	7.9
Cane (for blind person)	1.5	0.3	0.3	0.7
Artificial limbs	0.1	0.3	0.3	0.5
Braces	0.9	0.5	0.8	0.3
Escort	1.2	0.5	0.6	0.9
Other	0.7	0.4	1.2	0.9
Total	18.9	10.5	14.1	13.6
Household Size				
1	55.7	44.6	54.3	42.7
2	33.8	37.0	31.1	44.2
3	8.2	11.9	9.6	9.1
4+	2.4	6.6	5.0	4.0
Number of Drivers Available in Household				
0	56.9	72.4	78.0	36.4
1	35.6	20.1	17.9	42.0
2	7.2	6.6	3.7	19.9
3+	0.3	0.9	0.5	1.5

Table continued on following page.

TABLE E-1. COMPARISON OF PROJECT BUS USERS AND PROJECT TAXI USERS (CONTINUED) (PERCENT)

	Use Taxi, Not Bus	Use Bus, Not Taxi	Use Both	Use Neither
Employment Status				
Employed full time	4.3	4.1	5.8	3.7
Employed part time	3.5	6.7	6.3	5.1
Unemployed	5.2	4.2	7.5	3.2
Retired	76.2	80.6	74.5	79.4
Student	0.5	0.4	0.6	1.0
Homemaker	10.3	4.0	5.3	7.6
Household Income				
Less than $3,000	43.1	69.8	63.1	39.8
$3,000-$4,999	30.4	20.1	22.6	24.9
$5,000-$7,999	15.7	6.4	10.1	17.9
$8,000-$11,999	6.6	2.4	3.0	9.6
$12,000-$20,000	3.6	1.0	1.0	6.1
Over $20,000	0.6	0.3	0.2	1.7
Number of Vehicles in Household				
0	59.6	75.8	80.6	37.5
1	36.1	21.2	17.7	50.6
2	4.1	2.6	1.5	11.0
3+	0.3	0.4	0.2	0.9
Current Driver's License				
Yes	30.0	15.4	11.3	48.6
No	70.0	84.6	88.7	51.4
	(n = 1318)	(n = 1174)	(n = 713)	(n = 2189)

SOURCE: Registration interviews, August 1977 to May 1980, taxi vouchers, August 1977 to May 1980, and bus tickets, June 1979.

TABLE E-2. COMPARISON OF FREQUENT AND INFREQUENT PROJECT TAXI USERS (PERCENT)

	0	Less Than 1	1-7	8+
Age				
5-54	7.4	9.2	14.2	30.2
55-64	6.0	8.0	9.3	14.6
65-69	35.7	26.3	25.6	15.6
70-74	25.5	22.9	20.2	16.7
75-84	21.9	28.1	27.8	19.8
85+	3.6	5.4	3.0	3.1
Sex				
Male	34.1	19.4	20.0	26.3
Female	65.9	80.6	80.0	73.7
Race				
White	42.8	63.9	77.8	85.0
Black	57.2	36.0	22.0	15.0
Other	0.0	0.1	0.2	0.0
Marital Status				
Single	12.9	14.8	18.8	24.5
Married	36.9	21.7	16.9	22.3
Formerly married	50.2	63.5	64.3	53.2
Handicap Status				
No handicap	67.8	62.1	53.7	39.0
Nonambulatory	0.6	0.8	0.3	3.1
Semiambulatory	18.7	21.3	26.2	19.6
Sight	4.1	4.8	6.6	14.5
Hearing	1.6	1.9	1.6	1.0
Incoordination/ Mental retardation Brain damage	3.7	4.3	6.0	9.3
Other	3.4	2.8	5.6	13.4
Aids				
Wheelchair	0.4	0.8	0.4	3.4
Walker	0.7	1.6	1.6	0.0
Crutches	0.6	1.3	0.9	2.3
Cane (for walking)	8.0	10.0	8.7	5.7
Cane (for blind person)	0.6	1.1	0.7	5.7
Artificial limbs	0.3	0.1	0.4	0.0
Braces	0.4	0.7	1.1	1.1
Escort	0.7	0.8	1.3	2.3
Other	0.8	0.8	1.1	1.1
Total	12.5	17.2	16.2	21.6
Household Size				
1	42.4	56.1	57.0	39.1
2	41.8	32.3	31.0	42.4
3	9.9	8.7	7.4	12.0
4+	6.0	3.0	4.7	6.5
Number of Drivers Available in Household				
0	48.4	59.5	71.8	71.4
1	34.5	33.2	23.3	18.7
2	15.5	6.7	4.6	8.8
3+	1.7	0.6	0.4	1.1

Table continued on following page.

TABLE E-2. COMPARISON OF FREQUENT AND INFREQUENT PROJECT TAXI USERS (CONTINUED) (PERCENT)

	0	Less Than 1	1-7	8+
Employment Status				
Employed full time	4.0	3.2	6.9	25.3
Employed part time	5.8	4.4	5.3	7.2
Unemployed	3.5	5.7	5.1	13.3
Retired	79.1	77.4	72.7	44.6
Student	0.8	0.2	0.7	1.2
Homemaker	7.0	9.2	9.3	8.4
Household Income				
Less than $3,000	49.5	49.4	51.4	39.5
$3,000-$4,999	23.6	27.8	26.4	38.3
$5,000-$7,999	14.8	13.7	14.3	11.1
$8,000-$14,999	9.1	7.1	7.2	9.9
$15,000+	3.0	2.0	0.8	1.2
Number of Vehicles in Household				
0	50.3	62.9	74.1	74.7
1	40.2	33.1	23.4	20.9
2	8.5	3.8	1.9	3.3
3+	1.0	0.2	0.5	1.1
Current Driver's License				
Yes	37.5	27.2	15.9	16.0
No	62.5	72.8	84.1	84.0
	(n = 4262)	(n = 1195)	(n = 613)	(n = 97)

*From August 1977 to May 1980.

SOURCE: Registration interviews, August 1977 to May 1980, and taxi vouchers, August 1977 to May 1980.

TABLE E-3. COMPARISON OF FREQUENT AND INFREQUENT PROJECT BUS USERS (PERCENT)

	Number of Project Bus Trips per Month*			
	0	1-5	6-15	16+
Age				
5-54	7.2	8.9	6.7	16.3
55-64	5.7	7.3	8.6	10.9
65-69	29.4	33.2	37.4	34.9
70-74	25.8	27.1	24.3	19.2
75-84	27.1	20.7	20.8	16.7
85+	4.9	2.9	2.2	2.1
Sex				
Male	27.9	26.9	27.4	43.6
Female	72.1	73.1	72.6	56.4
Race				
White	66.4	28.2	20.1	17.2
Black	33.6	71.7	79.7	82.8
Other	0.0	0.1	0.2	0.0
Marital Status				
Single	13.1	14.5	10.5	21.7
Married	32.9	28.8	25.5	30.1
Formerly married	54.0	56.7	63.9	48.1
Handicap Status				
No handicap	67.5	63.2	64.8	58.6
Nonambulatory	0.8	0.4	0.9	0.0
Semiambulatory	17.7	22.3	21.8	23.4
Sight	5.5	4.6	2.9	3.7
Hearing	1.6	1.0	2.9	2.4
Incoordination/ Mental retardation Brain damage	3.8	4.2	3.7	6.8
Other	3.1	4.4	3.1	5.1
Aids				
Wheelchair	0.9	0.0	0.0	0.0
Walker	1.3	0.7	0.0	0.2
Crutches	0.9	0.3	0.5	0.7
Cane (for walking)	8.7	8.1	8.9	8.9
Cane (for blind person)	1.0	0.3	0.4	0.2
Artificial Limbs	0.3	0.1	0.5	0.0
Braces	0.5	0.6	0.4	0.9
Escort	1.0	0.9	0.2	0.4
Other	0.8	0.6	0.7	0.9
Total	15.4	11.6	11.6	12.4
Household Size				
1	47.6	46.7	52.6	45.3
2	40.3	34.5	35.5	34.4
3	8.7	11.7	8.0	13.6
4+	3.4	7.1	3.8	6.8
Number of Drivers Available in Household				
0	44.0	68.7	76.4	80.7
1	39.6	22.5	18.9	15.0
2	15.2	7.7	4.1	3.8
3+	1.2	1.1	0.5	0.4

Table continued on following page.

TABLE E-3. COMPARISON OF FREQUENT AND INFREQUENT PROJECT BUS USERS (CONTINUED) (PERCENT)

	Number of Project Bus Trips per Month*			
	0	1-5	6-15	16+
Employment Status				
Employed full time	3.9	3.9	2.6	8.5
Employed part time	4.5	5.3	4.2	11.1
Unemployed	3.9	4.8	6.2	5.6
Retired	78.2	80.4	81.8	70.9
Student	0.8	0.1	0.2	1.3
Homemaker	8.6	5.5	5.0	2.5
Household Income				
Less than $3,000	41.1	62.3	70.7	70.3
$3,000-$4,999	26.9	23.7	18.5	20.2
$5,000-$7,999	17.1	8.8	7.7	6.4
$8,000-$11,999	8.4	3.8	1.9	1.8
$12,000-$20,000	5.2	0.9	1.0	0.0
Over $20,000	1.3	0.5	0.2	
Number of Vehicles in Household				
0	45.8	70.8	79.5	85.5
1	45.1	25.4	19.1	12.6
2	8.4	3.3	1.7	1.9
3+	0.7	0.6	0.4	0.0
Current Driver's License				
Yes	41.6	17.8	12.7	9.4
No	58.4	82.1	87.3	90.6
	(n = 3517)	(n = 761)	(n = 608)	(n = 519)

*Sample month, June 1979.

SOURCE: Registration interviews, August 1977 to May 1980, and bus tickets, June 1979.

REPORT OF NEW TECHNOLOGY

The work performed under this contract, while leading to no new invention, has provided information and insights concerning the practical application of user-side subsidies in public transportation. This information will facilitate future applications of user-side subsidies, and should contribute to an improvement in the overall cost-effectiveness of future public transportation expenditures by illustrating in part the merits and impacts of this innovative service concept.

☆U. S. GOVERNMENT PRINTING OFFICE: 1983--601-033--383

350 copies

U.S. Department
Transportation

**Research and
Special Programs
Administration**

Kendall Square
Cambridge, Massachusetts 02142

Official Business
Penalty for Private Use $300