REPORT NO. UMTA-MA-06-0049-80-4

UMTA/TSC Project Evaluation Series

Evaluation Of The Easyride Specialized Transportation Service

Final Report
November 1979

Service and Methods Demonstration Program

U.S. DEPARTMENT OF TRANSPORTATION
Urban Mass Transportation Administration and
Research and Special Programs Administration
Transportation Systems Center

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
UMTA-MA-06-0049-80-4		PB81-100687

4. Title and Subtitle	5. Report Date
Evaluation of the EASYRIDE Specialized Transportation Service	November, 1979
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
Peter Edelstein	
9. Performing Organization Name and Address Applied Resource Integration, Ltd. 137 Newbury Street Boston, Massachusetts 02116	10. Work Unit No. (TRAIS) UM027/R0712
	11. Contract or Grant No. DOT-TSC-1248
12. Sponsoring Agency Name and Address U.S. Department of Transportation Urban Mass Transportation Administration Office of Transportation Management and Demonstration Washington, DC 20590	13. Type of Report and Period Covered Final Report September 1976 - May 1979
	14. Sponsoring Agency Code

15. Supplementary Notes Performed under contract to:
U.S. Department of Transportation
Transportation Systems Center
Kendall Square, Cambridge, MA 02142

16. Abstract

The EASYRIDE demonstration project took place in New York City's Lower East Side of Manhattan. The Vera Institute of Justice was the grantee for the project in which door-thru-door demand-responsive transportation service was provided to elderly and handicapped residents of the Lower East Side. Service was provided by five fully accessible lift-equipped vans and five regular vans. Most drivers for the EASYRIDE project were graduates of the Wildcat Corporation program which trains rehabilitated ex-offenders and ex-addicts for work on public service projects.

The evaluation report covers the first two full years of operation, from June 1977 through May 1979. EASYRIDE has been granted an additional two year demonstration extension and, as a result, the project is still in operation. REsults of the evaluation indicate that EASYRIDE provides about 3,000 one-way trips per month at an average hourly cost of $27.34. The average cost per trip is about $12.87.

17. Key Words	18. Distribution Statement
Specialized transportation, demand-responsive transportation, paratransit, demonstration project, Lower East Side of Manhattan, accessibility, door-thru-door	DOCUMENT IS AVAILABLE TO THE PUBLIC THROUGH THE NATIONAL TECHNICAL INFORMATION SERVICE, SPRINGFIELD, VIRGINIA 22161

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	334	

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

ACKNOWLEDGEMENT

The evaluation of the EASYRIDE demonstration project was funded by the U.S. DOT, UMTA Service and Methods Demonstration (SMD) Program through the Transportation Systems Center. This report is based on the analysis of a large amount of data which was collected by EASYRIDE and the Vera Institute of Justice. In particular we wish to thank the following individuals who have been most helpful to this evaluation effort:

Claire Haaga	-	Associate Director Vera Institute of Justice
Robert Berman	-	Program Manager EASYRIDE
Walter Strauss	-	Operations Manager EASYRIDE
Nikos Valance	-	Data Collection Supervisor EASYRIDE
Dr. Arnold Simmel	-	Principal Investigator Director EASYRIDE Research

We would like to note that a subsection of Chapter 6 was reproduced from material prepared by EASYRIDE research. This material included some analysis of data collected from the Pilot Study. EASYRIDE research designed the survey instrument, conducted the necessary interviews, and reduced and analyzed the data. Dr. Arnold Simmel and his staff were most helpful in sharing their work with us.

We would also like to thank Ms. Liz Page, the Transportation Systems Center's Evaluation Manager for her helpful comments and guidance during the evaluation process and report preparation.

Finally, we would like to thank Ms. Deborah A. Burke and Ms. Nan Davidson for their diligent efforts in typing the report and Mr. David Capeless for his efforts in preparing the graphics.

CONTENTS

CONTENTS

CONTENTS

TABLES

TABLES

TABLES

TABLES

ILLUSTRATIONS

ILLUSTRATIONS

ILLUSTRATIONS

EXECUTIVE SUMMARY

The EASYRIDE demonstration project took place in New York City's Lower East Side of Manhanttan. The Vera Institute of Justice was the grantee for the project in which door-thru-door demand-responsive transportation service was provided to elderly and handicapped residents of the Lower East Side. Service was provided by five fully accessible lift equipped vans and five regular vans. Most drivers for the EASYRIDE project were graduates of the Wildcat Corporation program which trains rehabilitated ex-offenders and ex-addicts for work on public service projects. During the first two years of the demonstration project there was no required passenger fare (donations were accepted). In addition to Urban Mass Transportation Administration (UMTA) Service and Methods Demonstration (SMD) funds and other local grants, EASYRIDE received the majority of its operating funds through the Health Care Financing Adminstration (HCFA) of the Department of Health, Education, and Welfare (HEW) under the terms of a special Medicare waiver. The terms of the waiver allowed EASYRIDE to be reimbursed for transportation expenses incurred while providing transportation service to eligible persons (those registered under Medicare) for covered trip purposes up to a total maximum funding of $250,000 per year. Covered trips purposes included trips to health care facilities, trips to nutrition programs, etc., but not discretionary travel.

This evalution report covers the first two full years of EASYRIDE's operation, from June, 1977 through May, 1979. EASYRIDE has been granted an additional two year demonstration extension and, as a result, the project continues to operate. It should be pointed out that other funding sources in addition to UMTA demonstration funds have enabled EASYRIDE to continue its operation.

EASYRIDE first began to operate in June, 1976 as a pilot project with three leased vehicles. In January, 1977 EASYRIDE received its current fleet of 10 vehicles through an UMTA Section 16(b)(2) grant award. During the early months of 1977 EASYRIDE began to increase the size of its operation incrementally until a full staff of drivers were hired. Because of this start-up process EASYRIDE was in full operation at the time evaluation activities began. This report documents the following conclusions regarding the EASYRIDE demonstration project for the period from June, 1977 through May, 1979:

1. The "Self-Screening" registration process originally used by EASYRIDE was not effective in limiting registration only to persons who were transportation handicapped. For this reason and for financial reasons, EASYRIDE switched to a far more rigid set of eligibility criteria beginning in May, 1978. Under the new eligibility criteria all new EASYRIDE registrants had to be at least 65 years old and Medicare eligible. Persons under 65 years of age were eligible to register for EASYRIDE if they satisfied the Social Security Adminstration's definition of disabled. Any individual confined to a wheelchair was also allowed to register for EASYRIDE. The revised eligibility criteria did not affect persons who had registered for EASYRIDE prior to May 1, 1978. There were 2,873 persons registered for EASYRIDE through May, 1979.

   Experimentation with a "Self-Screening" process revealed that it was easier to enforce a stated set of eligibility criteria than to let individuals decide for themselves if they were eligible to use the system. If a certain segment of a population is to be allowed to use a specialized service there must be a clear and easily enforceable set of eligibility criteria.

2. EASYRIDE provided a very high quality specialized transportation service to approximately 11% of the eligible population. However, the EASYRIDE transportation system was never marketed to the entire eligible population of the Lower East Side. As a result, only a small segment of all eligible individuals ever had an opportunity to register for the service. The majority of these individuals were clients of human service agencies in the Lower East

Side. EASYRIDE was marketed in a limited basis through local human service agencies, hospitals, and neighborhood based organizations.

3. EASYRIDE, by its design, should have been a capacity constrained system. Our analysis indicates that the system was underutilized during its normal operating hours.

4. Since EASYRIDE accepted trip reservations far in advance of the requested travel date there were a large number of "No Shows" during each month of operation. EASYRIDE averaged 256 "No Shows" per month during the demonstration with a high of 504 "No Shows" during March, 1979. The number of passenger "No Shows" was highly correlated with the number of trips reserved more than one month in advance of the desired travel date. Passenger "No Shows" disrupt service, deny service to other passengers, reduce system productivity and have an adverse impact on system cost effectiveness. EASYRIDE should consider revising its trip reservation policy in an effort to reduce "No Shows" and improve overall system performance. If the reservation policy is to remain unaltered EASYRIDE must allow for "No Shows" by deliberately accepting more reservations than they think the system can accommodate, i.e., overbooking.

5. During the evaluation a detailed analysis of the components of total travel time was performed. These components included access time (dwell time at trip origin), in-vehicle ride time, and egress time (dwell time at the trip destination). The analysis was performed by measuring the travel time components for different user groups. The mean in-vehicle ride times for the different groups of EASYRIDE users ranged from 16.85 to 19.83 minutes. There were, however, several significant differences in the dwell times for different user groups. The analysis of travel time components clearly indicated that as the mobility level of an individual decreased, as indicated by the type of aid used, the dwell time for that individual increased. This increase in dwell time then contributed to an increase in average total travel time.

6. The EASYRIDE drivers helped to provide reliable service. Drivers were known to be prompt, courteous, highly responsible and sensitive to the needs of their passengers. Results of the evaluation indicated that the use of Wildcat Services Corporation graduates in driver positions was an extremely successful and positive aspect of the demonstration project.

7. EASYRIDE operated at an average productivity of 2.15 trips per hour of service. The system productivity was rather disappointing considering the size of the eligible population in the Lower East Side and the fact that 43% of all trips provided by EASYRIDE were many-to-one trips to nutrition programs. The low productivity was a function of high driver out-of-vehicle time (dwell time), the low productivity of service provided in the fully accessible vehicles and the overall high amount of dead time. Dead time is time wasted when the drivers are idle because they have no passengers to carry. The productivity of the accessible vehicles was 1.49 trips per hour of service while the productivity of the ambulatory vehicles was 2.91. If EASYRIDE could have carried additional passengers during some of its dead time at the same average productivity as it carried all other passengers, the overall system productivity would have increased significantly. During the times when EASYRIDE was carrying passengers, the system ran efficiently in terms of its low proportion of time spent deadheading. (During two measurement periods only 17% and 22% of the total vehicle service time was spent deadheading.)

8. Results of the cost evaluation of EASYRIDE for operations between July, 1977 and March, 1979 indicated that EASYRIDE operated at an average hourly cost of $27.34, an average cost per trip of $12.87, and an average cost per mile of $5.35. While the high cost of operation can, in part, be attributed to operating in New York City, the overhead charged to EASYRIDE by the Vera Institute of Justice also contributed to the high hourly cost of operation. After accounting for various factors, EASYRIDE was not considered to be a cost effective specialized transportation system, particularly when one considers that the average cost for a trip made in an accessible vehicle was over $18.00 per trip.

   The EASYRIDE expenses were categorized in three ways: direct hourly costs, mileage related costs, and vehicle and administrative fixed costs. EASYRIDE's direct hourly costs and mileage related costs were reasonably low--accounting for about 33% and 10% respectively of the total expenses during calendar year 1978. However, EASYRIDE's vehicle and administrative fixed costs were quite high during calendar year 1978, accounting for 57% of the total expenses. In order for EASYRIDE to be able to operate without demonstration funds at some future point in time, it will have to significantly reduce its fixed costs.

9. It was originally anticipated that local human service agencies would play a greater role in the EASYRIDE demonstration project. It was thought that EASYRIDE would act as a central transportation provider by coordinating and consolidating human service agency transportation in the Lower East Side in addition to providing transportation service to eligible individuals not affiliated with an agency. The human service agencies in the Lower East Side did not have the money to support a transportation program and as a result they did not play a major role in the operation of EASYRIDE. In addition, due to the urban nature of the Lower East Side, most of the agencies were within a short walking distance of their clients. The local human service agencies did, however, play an important role in the registration of potential EASYRIDE users.

10. EASYRIDE users were generally very satisfied with the system and extremely grateful for the opportunity to use EASYRIDE. They were satisfied with the safety and security provided by the drivers, the courtesy extended to them by the drivers and their ability to make trips that otherwise would not have been made. This evaluation, however, did not focus closely on the impact of EASYRIDE on its users. The Vera Institute of Justice received a large research grant from the United States Department of Health, Education and Welfare to study, in great detail, the impacts of EASYRIDE on the overall well being of the users. An EASYRIDE research team, independent of EASYRIDE operations, was assembled to perform this work.

CHAPTER 1

1.0 INTRODUCTION

This report presents an evaluation of an UMTA Service and Methods Demonstration (UMTA/SMD) Project known as EASYRIDE. EASYRIDE is a specialized transportation system designed to serve elderly and handicapped individuals residing in the Lower East Side of Manhattan in New York City.* The service is operated under the auspices of the Vera Institute of Justice, a New York City-based private non-profit organization. Vera has extensive experience in working with social problems particularly in the areas of criminal justice, anti-social behavior, and the use of a supported work environment to allow ex-offenders and ex-addicts to work on public service projects. The transportation demonstration concept originated with Vera's suggestion that graduates of the Wildcat Service Corporation, the company set up by Vera to provide the supported work experience, be used as the drivers and attendants in a new transportation service. The proposed service would emphasize a high quality door-thru-door service so that each passenger would be escorted, when necessary, from or to the vehicle to a point where they would feel safe and secure, either into their own home or to the care of a supervisory person at a medical or social service facility.

The demonstration was broad in scope, due to the fact that Vera was able to finance EASYRIDE with funds from a variety of sources. The primary funding sources which supported the operation of EASYRIDE included:

- Urban Mass Transportation Administration (USDOT)
- Administration On Aging (HEW)
- Social Security Administration (HEW) (TITLE XVIII - Medicare)

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*EASYRIDE has received a two year grant extension from UMTA and, as a result, the demonstration project was still operating at the time this report was prepared.

The primary funding source which supported Vera's research effort for EASYRIDE was the National Center of Health Service Research (HEW). VERA established an EASYRIDE research team to evaluate many of the non-transportation impacts of the demonstration.

The complete evaluation of the EASYRIDE demonstration project actually consists of two separate evaluations. One evaluation was conducted by ARI acting as the Transportation System Center's evaluation contractor and the second evaluation, still underway, is being conducted by the EASYRIDE research team. This evaluation report focuses primarily on the areas of transportation system performance, especially as it pertains to the UMTA/SMD objective of improved mobility for the transit dependent. The EASYRIDE research team's evaluation effort, which is a much larger and longer term effort, focuses primarily on non-transportation impacts, such as user well being and health care costs.

The balance of this chapter is devoted: 1) to a detailed discussion of the overall demonstration structure, organizational relationships, roles and interfacing; 2) the demonstration objectives and innovations; 3) evaluation issues; and 4) overview of the evaluation approach.

1.1 Overall Demonstration Structure, Organizational Roles and Interfacing

EASYRIDE provides specialized transportation service utilizing ten small Grumman buses. Five of the ten vehicles are fully accessible (i.e., hydraulic lift equipped), thereby able to accommodate wheelchair bound passengers. Although the vehicles are not equipped with two way mobile radios, the drivers do carry "beeper" devices and can be signaled to call the operations office. The vehicles were purchased through the UMTA section 16(b)(2) program which provides capital grants to private non-profit agencies for the purpose of providing elderly and handicapped transportation services.

The two major categories of expenses for the demonstration were the operational expenses for EASYRIDE and the expenses associated with Vera's research and evaluation of the project*. The funding and revenue sources for the demonstration are presented in chapter 7, however, the distribution of the major grant funds used for operational and research/evaluation expenses are briefly presented below.

- UMTA/SMD - Approximately 90% of the UMTA funds were used for EASYRIDE operational expenses, the balance was distributed over the research evaluation budget.
- AOA Model Projects - These funds were primarily used for EASYRIDE operational expenses during the pilot project period and during the actual demonstration.
- HEW (Medicare) Section 222** - These funds were used for operational expenses incurred while transporting Medicare beneficiaries for covered trip purposes.
- NCHSR - These funds were primarily used to support Vera's research and evaluation effort. Vera established an EASYRIDE research team which concentrated its efforts on the impacts of EASYRIDE on its users; changes in their mobility and overall well being.

EASYRIDE operates under the direction of a program manager while the Vera research and evaluation activities are carried out under the direction of the project's principal investigator. Figure 1-1 presents a diagram that displays the primary communications links between the major project participants. HEW and the UMTA/SMD

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*This category includes the research and evaluation expenses for Vera staff and their consultants or subcontractors only. It does not include the expenses incurred for ARI's evaluation effort under UMTA/TSC direction.

**It should be noted that Section 222 of the Social Security Act allows for waivers; in this case, a waiver of the covered services provision of Medicare eligible costs, to allow for the cost of medically related transportation services for Medicare eleigible persons.

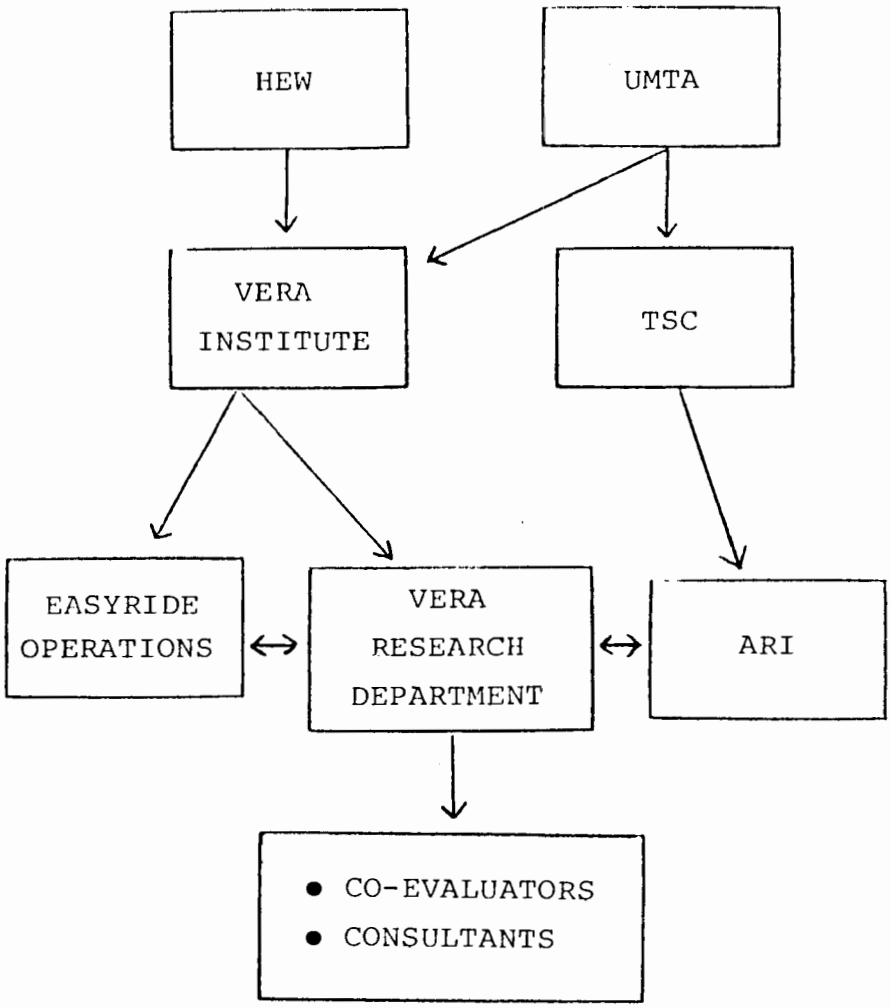

FIGURE 1-1 PRIMARY COMMUNICATION/INTERFACE LINKS BETWEEN PROJECT PARTICIPANTS

program staff directly oversee the general demonstration progress. The agencies within HEW that are funding the evaluation effort also communicate directly with Vera regarding the structure and progress of those evaluations. ARI, acting as the evaluation contractor for the Transportation System Center (TSC) was primarily concerned with the evaluation of issues that related to UMTA's mission. The ARI evaluation staff was in direct communication with the EASYRIDE operations team and the EASYRIDE research team throughout its evaluation effort.

1.2 Demonstration Objectives

The EASYRIDE demonstration project, due to its broad scope and multiple funding sources, was intended to meet a variety of objectives. These objectives are discussed from the viewpoints of UMTA, HEW and the local area, respectively, in the following paragraphs.

The UMTA objectives that were broadly addressed in this demonstration project relate to identifying methods for improving transportation services to elderly and handicapped persons. EASYRIDE has as a major focus the provision of a high quality specialized transportation service, typified by the door-thru-door aspect of the service. The setting in the Lower East Side of Manhattan provides the opportunity to observe and measure the performance and impact of such a specialized transportation system in an inner city area that is characterized by a high population density, an above average number of elderly individuals, (of which nearly half are estimated to live alone) and an ethnic composition that includes a large number of Hispanic persons (33%) and a smaller number of Oriental persons. The Lower East Side is also an area with a high crime rate. Many of these crimes are directed at elderly persons while they are in the process of accessing or using the existing public transportation system. Thus, the major UMTA objectives can be stated:

- Determine the performance, cost characteristics, and user impacts of a high quality specialized transportation service operating in an inner city area.

A secondary UMTA objective relates to the Vera project approach which specified that the EASYRIDE system would attempt to provide a single source for agencies that have a need to purchase or provide transportation for their elderly or handicapped clients. This is usually termed the coordination or consolidation of agency transportation services. This aspect of the Vera demonstration is of interest to UMTA since the coordination of funding sources is hypothesized to lead to lower cost transportation services. Thus, the secondary UMTA objectives may be stated:

- Determine the cost impacts of agency transportation coordination in the Vera project and relate it to the overall demonstration cost impacts.

Although EASYRIDE attempted to work closely with local human service agencies to coordinate or consolidate their transportation services this aspect of the demonstration project did not develop because the local agencies did not have transportation programs or significant amounts of funds to purchase transportation services. Their role is, however, discussed further in the evaluation report.

The HEW objectives were directed primarily to the areas of user non-transportation impacts, impacts on human service agency delivery systems and the performance of the Wildcat graduates as drivers and attendants. These objectives can be summarized as follows:

1) Determine the relationship between improved mobility of users (measured by the number of trips taken) resulting from the demonstration service and their mental health as assessed by indices of life satisfaction; and also ascertain for which subgroups of the user group such impacts are most marked.

2) Determine the impact of the demonstration on the service delivery function of the social services agencies and medical care facilities in the target area.

3) Compare the performance of ex-offenders and ex-addicts as service providers with drivers in other specialized transportation services; and determine the impact of the employment experience on the job satisfaction and lifestyles of the Wildcat graduates as compared to other forms of work experience.

The local objectives of the demonstration, from the overall New York City viewpoint, were centered upon the viability of the transportation service offered in meeting the needs of transportation handicapped persons. Due to recent UMTA regulations regarding transportation services for elderly and handicapped persons, New York City must make special efforts to provide for those persons who have difficulty or are unable to use the existing public transportation vehicles and facilities. One suggested alternative is to provide demand-responsive door-to-door services at a user cost that is comparable to other public transportation services.* It will be important for the local area to determine whether the costs and performance of the service warrant consideration of expansion or duplication in other areas of the city in fulfillment of the UMTA regulation.

1.3 Demonstration Innovations

The innovations of the EASYRIDE Demonstration Project are in the following areas:

1) The provision of high quality door-thru-door service.

2) A user registration process that has no rigid eligibility criteria, with the intent that users will self-screen.

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*These were the regulations in effect when the demonstration project began. Since that time, UMTA has revised their regulations in compliance with section 504 of the Rehabilitation Act of 1973.

3) The employment of ex-offenders and ex-addicts as drivers.

4) A unique third party funding mechanism which provides for the extension of Medicare covered services to include the costs of transportation.

A further discussion of each of these innovations is contained in the following paragraphs.

It is typical of most transit dependent demonstrations to provide door-to-door as opposed to door-thru-door services. There has never been a clear distinction between these two types of services since some door-to-door systems do offer varying degrees of personal assistance. In this case, however, Vera operates a service that provides passengers with the full attention of the driver at both the pick-up and drop-off points, including personal assistance from the front door of the home or apartment. In addition, the passengers are safely entrusted to the supervision of a responsible person at the destination point, if warranted. Services provided by EASYRIDE drivers include activities such as bringing persons in wheelchairs down a flight of stairs or escorting them to the door of their apartment. This type of service obviously consumes more time, particularly in cases where the individuals can only move very slowly and/or their final location is some distance from the vehicle. The sensitivity training of the drivers and the potential empathy of such individuals with elderly and handicapped riders are also important factors in determining the quality of service.

EASYRIDE uses a registration process to certify that persons are eligible to use the service. Between June 1, 1977 and April 30, 1978 the only eligibility criteria required for registration were that an individual must be either elderly (over 60) or handicapped.* Many transit dependent systems of this type use

*Handicapped persons under 60 had to document their disability in order to register for EASYRIDE.

more specific eligibility criteria such as level of mobility or designated medical conditions. These systems might then allow exceptions on a case-by-case basis. In this demonstration Vera began the registration process under the assumption that individuals who were able to use public transportation would screen themselves out due to the requirement that they must request their trip at least two days in advance of their travel date. One basis for this decision by Vera was the likelihood that many elderly people who would be able to use existing public transportation with little or no difficulty actually become handicapped through fear of crime, most notably as they tried to access public transportation, e.g., waiting at a bus stop or subway station.

For reasons which are explained in greater detail later in this report, Vera ended the self-screening registration process on April 30, 1978. Commencing May 1, 1978 Vera instituted the following guidelines for new registrants:

1) All Medicare approved persons over 18.

2) Anyone who is eligible for Medicare will be taken free of charge to the Medicare office to register. If approved for Medicare, they will be able to register with EASYRIDE.

3) All persons 18 and over who are receiving Social Security Disability payments (SSA).

4) Anyone over 18 who is confined to a wheelchair.

5) Persons 60 to 64 who use walkers and are unable to negotiate stairs.

6) Persons receiving home care services.

These new guidelines do not apply to anyone who registered for EASYRIDE prior to May 1, 1978.

One of the most novel aspects of the demonstration is the use of ex-addicts and ex-offenders in the role of drivers. Vera, as noted previously, has had extensive experience in working with such individuals in a supported work environment provided by the Wildcat Services Corporation. Typically, most demand-responsive elderly and handicapped transportation services select drivers who have had experience in bus or taxi operations and who also have an interest in providing services to elderly and handicapped individuals. The performance of the drivers and their acceptance by the users was of great interest, particularly since the project is operating in an inner city area.

The final innovation associated with the demonstration project is the use of a waiver under Section 222 of the Social Security Act Amendment of 1972 to allow Medicare beneficiaries to receive transportation benefits as part of the services that are provided under the Medicare program. This was the first waiver of its kind ever granted and covered trip purposes including visits to private physicians, visits to hospitals, trips to laboratory facilities and trips to other health care facilities. The waiver also covered trips to nutrition programs.

This waiver, which is only for the purposes of the demonstration, allows elderly persons who are not eligible for Medicaid to receive transportation services at no cost when they are traveling for medical purposes and to nutrition programs. Since all individuals that have contributed to Social Security become eligible for Medicare by the age of 65, it was expected that a large number of the elderly living in the target area would be covered under this program.

1.4 Evaluation Issues

There were a wide variety of issues that were inherent in or related to the demonstration project. The EASYRIDE demonstration project has, in fact, provided useful insights on four major issue areas which are addressed in this evaluation report:

1. Impact of a high quality specialized transportation service on the travel patterns of users. The results of three different survey efforts were used to determine the user perceptions of the EASYRIDE service and the impact the system had on user travel patterns. Key variables in this analysis were the frequency with which EASYRIDE was used, the trip purposes for which EASYRIDE was used and the alternative mode which would have been used if EASYRIDE did not exist.

2. Transportation Service Delivery Issues. Operations and financial data from the system were used to evaluate EASYRIDE's operating efficiencies and cost effectiveness. Transportation delivery issues are addressed in the chapters detailing project supply characteristics, project demand characteristics and project productivities and economics. A microscopic examination of travel time components, vehicle utilization, ride sharing, vehicle scheduling, passenger "no shows", and system operating expenses were among the areas evaluated under the broad category of Transportation Service Delivery Issues. These examinations enabled us to address specific issues such as:

   - What are the costs of providing a high quality specialized transportation service in an inner city area?

- How does driver off-vehicle time affect system productivity?
- How does the mobility level of users impact system productivity?

3. Site Specific Operational Issues. The impact of operating a specialized transportation system in a section of a large urban city such as Manhattan's Lower East Side is discussed in the evaluation report. This impact was most pronounced in the area of system operating expenses. However, the problems of operating a specialized transportation system in a large bureaucracy are discussed in various chapters of the evaluation report.

4. Driver Performance and Acceptance Issues. This issue area is unique to this particular demonstration project due to the involvement of ex-addicts and ex-offenders. This issue area is basically comprised of two issues. First, how did the drivers, based on their past life experience and lifestyles, adapt to the job requirements placed upon EASYRIDE drivers? The second issue is concerned with the acceptance of the drivers by users of the system and the community in general. Based on site visits, discussions with EASYRIDE management and operations data, the driver performance and acceptance issues were evaluated. Key variables in the evaluation were absenteeism, turnover, tardiness and user perceptions of the drivers' performance.

1.5 Overview of Evaluation Approach

The purpose of this subsection is to provide the reader with an overview of the evaluation approach. The actual evaluation activities and evaluation results are expanded upon in the

subsequent chapters of the report. The basic information which is discussed includes the overall evaluation approach, the basic areas which were evaluated, and the data sources which were utilized. Specific details regarding the data collection procedures are noted in the corresponding chapters of the report.

EASYRIDE was a new demonstration transportation service operated by the Vera Institute of Justice in a limited section of New York City. The overall evaluation strategy that was planned was a before and after comparison of the impact of the specialized service on users and participating agencies in the target area. Vera, as part of its research design, is studying a comparison group of elderly persons living in an area similar to the Lower East Side. This was intended to provide some degree of "control" with regard to the user evaluation. At the time this report was prepared, few results from Vera's reasearch and evaluation effort were available. As a result, this evaluation report focuses primarily on the transportation issues and includes only a brief discussion of user impacts.

As part of Vera's research effort a number of "micro-studies" which involve in-depth interviews with selected groups of users and agency staff were planned. At the time this report was prepared, much of the work on the "micro-studies" was either in process or delayed until additional research funding was secured by Vera. For these reasons the interested reader is advised to contact EASYRIDE research for a listing of available research reports.

The EASYRIDE operations and research staffs were responsible for the collection of all operations data and the adminstration of all surveys and special studies. Vera's accounting department was responsible for the collection of all financial data and the production of EASYRIDE's financial reports. The ARI staff provided comments and assistance to Vera with regard to the design

of data forms to ensure that all of the data required for the evaluation was collected. ARI was responsible for the compilation of site related data using all information gathered by Vera as part of its research and supplemented by additional data collected from secondary sources.

With regard to the actual evaluation effort, the EASYRIDE research staff was primarily responsible for the analyses relative to the user related non-transportation issues, and the driver performance issues. ARI was primarily responsible for analyses relative to the user related transportation issues, transportation service delivery issues, the agency coordination/impact issues, and site specific operational issues. Because much of ARI's evaluation of user related transportation issues was dependent upon research conducted by EASYRIDE (and not yet completed) this area was evaluated with limited detail. In addition, the agency coordination/impact issues did not materialize as significant issues and received only minimal attention. There was considerable interaction beteween ARI and Vera with respect to most evaluation activities. Communications were maintained through frequent telephone calls and site visits.

There were two basic categories of data sources that were used for evaluation purposes:

1) Operations and financial data records
2) Surveys

The data sources in each of the two categories are summarized in Table 1-1, and are discussed in the following paragraphs.

The two basic sources of data for operations information were the User Registration Form and the Driver Trip Log. The registration form provided data regarding the users' socio-economic status, transportation handicaps and limited travel pattern data. A summary of the complete user registrant file was included in

DATA SOURCE	FREQUENCY OF MEASUREMENT	DATA PRESENTATION
1. OPERATIONAL/FINANCIAL		
- User Registration Form	Complete Data Set Updated Continuously	Monthly Operations Report
- Driver Trip Log	Complete Data Set	Semi-Monthly Operations Report
- Detailed Driver Trip Log	May, 16 - 31, 1978 March, 16 - 31, 1979	Evaluation Report
- Financial Records	Continuously	Monthly or Quarterly Financial Report
2. SURVEYS		
- On-Board User Survey	July - August, 1977	Evaluation Report
- EASYRIDE User Survey	December, 1978	Evaluation Report
- Pilot Study		
- Wave I	Spring, 1977	NA
- Wave II	Spring, 1978	NA

TABLE 1-1 SUMMARY OF MAJOR DATA SOURCES USED IN THE EASYRIDE EVALUATION

EASYRIDE's monthly operations report. The Driver Trip Log, which contains entries made by both the dispatcher and the driver, provided a complete profile of each passenger trip, including such items as pick-up and drop-off times and origin and destination zones. The data contained in the Driver Trip Logs was used to produce EASYRIDE's semi-monthly operations report.

Detailed Driver Trip Logs were actually modified versions of the Driver Trip Logs. During two sample periods (May 16 - 31, 1978 and March 16 - 31, 1979) the EASYRIDE drivers were required to record both their arrival and departure times at each trip's origin and destination. This data was used to determine system dwell times as well as other system operating measures. The results of the analysis of the Detailed Driver Trip Log are presented in this evaluation report.

Financial Records for the EASYRIDE operation were maintained by EASYRIDE's accounting department. This data was used to define the total operating costs of the demonstration and the corresponding unit cost ratios. The financial records were compiled as monthly reports by Vera and then the reporting period was extended to cover quarterly periods. During the demonstration, the financial reports were seldom merged together with the semi-monthly operations reports by EASYRIDE. The process of evaluating the operations data and the financial data to produce unit operating cost ratios was a key evaluation activity.

The results of three survey efforts were used in the preparation of the evaluation report. These surveys were as follows:

- On-Board User Survey
- EASYRIDE User Survey
- Pilot Study

The On-Board User Survey was designed by the evaluation contractor and administered on the EASYRIDE vehicles by Vera interviewers. This survey was conducted during the summer of 1977 and was used to examine user perceptions and attitudes about EASYRIDE. The results of this survey were incorporated into a discussion on user impacts in the evaluation report.

The EASYRIDE User Survey was designed by the EASYRIDE research team and administered by telephone to a sample of persons who used EASYRIDE at least once a month for a specified period of time. The sample was biased towards wheelchair users and as a result the evaluation contractor weighted the survey responses before analyzing the data for use in the evaluation report. The EASYRIDE User Survey was conducted in December, 1978.

The Pilot Study was the first major survey effort conducted by EASYRIDE research. During the Spring of 1977, 188 home interviews were completed with elderly or handicapped residents of the Lower East Side. The sample was selected through the human service agencies located on the Lower East Side. The first wave of the Pilot Study was intended to be conducted before EASYRIDE was in full operation but the survey implementation and EASYRIDE start up coincided. The survey instrument was rather lengthy requiring approximately one hour of interview time. It included questions on travel patterns, mobility limitations, satisfaction with life and overall well being.

The second wave of the Pilot Study was conducted during the Spring of 1978. The survey device was similar to the one used in 1977 and 140 of the 188 samples were reinterviewed. It was believed that conducting the surveys one year apart, before and after EASYRIDE was in full operation, would provide information on the impact of EASYRIDE on persons who used it. Then users could be compared to non-users with respect to their travel behavior. At the time this report was prepared some preliminary results from

the Pilot Study were available from EASYRIDE research. Those results are included in Chapter 6 to enhance the evaluation report.

It should also be noted that there was a change in principal investigators for the EASYRIDE research effort which occurred at the end of 1977. For this reason, EASYRIDE's framework for research was revised and a new set of home interview surveys were designed and the first wave of surveys implemented. EASYRIDE research has postulated that changes in travel behavior and the impact of the Medicare waiver on health care costs will take place gradually (over the course of several years); therefore, they have requested additional research funding from the Department of Health, Education and Welfare. In January, 1979, EASYRIDE research submitted a grant application to HEW requesting research funds to be used to continue their efforts over the next three years. It is expected that the complete research effort on the impact of EASYRIDE on users and health care costs will not be available for several years.

The data items discussed in this subsection were used throughout the remainder of the evaluation report. In Chapter 2, a description of the demonstration setting is presented to familiarize the reader with the Lower East Side of Manhattan. In Chapter 3, a complete description of the project development and operations is presented. This chapter includes a discussion of how the Vera Institute operates and how EASYRIDE developed from a pilot project to a full scale operation. The chapter also includes a detailed discussion of EASYRIDE operating procedures.

Chapter 4 presents a detailed analysis of the project supply characteristics. This includes an analysis of travel time components, service reliability, hours of service provided, vehicle mileage travelled and the influence of demand levels on service.

In Chapter 5, the project demand characteristics are examined. This includes the number of trips provided by EASYRIDE, an analysis of market penetration and user perceptions of service.

The results of the three surveys completed at this time are summarized in Chapter 6. Chapter 6 is also used to provide a description of the socioeconomic characteristics of EASYRIDE registrants and users. Some of the apparent user impacts of EASYRIDE are also presented in this chapter.

In Chapter 7 the project supply and demand characteristics are combined in a discussion of EASYRIDE system productivity and operating efficiency. This analysis is followed by a comprehensive analysis of EASYRIDE's operating expenses and unit cost ratios. Project revenues are detailed in this chapter as are all project expenses.

Chapter 8 presents a discussion of transferability of the demonstration project results, and Chapter 9 presents a brief summary of the project and the more important conclusions.

2.0 DEMONSTRATION SETTING

This chapter presents the site characteristics and describes the existing opportunities for travel for the elderly and handicapped target group. Such a description of the demonstration setting is useful in understanding changes which took place during, and as a result of, implementation of the EASYRIDE service. This chapter also includes a discussion of known exogenous factors which have had an impact on the demonstration results. The information presented in this chapter is also presented to enhance the transferability of results to other sites.

The actual service area for EASYRIDE is potentially much larger than the Lower East Side since many trip destinations are to other parts of Manhattan and some trip destinations are to locations outside New York City. However, since all registrants and trips originate from the Lower East Side, it is used as the target area for discussion purposes.

The issues which are addressed using the information contained in this section are those in the category of site specific operational issues; namely the impact of the demonstration on ambulette service, taxi service and public transportation. The information contained in this chapter on existing transportation services provides the "before" data for any evaluation of that issue. The subsections of this discussion are divided into the following data groupings:

- Geographic and Demographic Characteristics
- Existing Transportation System Characteristics
- Existing Travel Patterns of Target Group
- Exogenous Factors

2.1 Geographic and Demographic Data

The project area for the demonstration is the portion of Manhattan bounded by 14th Street and Fulton Street, on the north and south respectively, while the west boundary is Broadway and the east boundary is the East River. The project area, as displayed on the map shown in Figure 2-1 is approximately 2.0 square miles. The Lower East Side is an inner-city area that is characterized by an abundance of public housing and health service facilities. Consideration of the fact that good shopping and most other needed services are available on a neighborhood basis leads to the assumption that many trips are made within the project area. At this time, however, the only available data regarding the location of public housing and facilities which attract trips is for an area, somewhat smaller than the project area, known as Manhattan Community Planning District No. 3. Figure 2-1 shows the location of public and publicly aided housing in this planning district. It is obvious that there are a substantial number of housing developments in the area. The fact that many of the units are located in high-rise buildings implies that a substantial number of EASYRIDE users will likely reside in such units, conceivably making it a time-consuming process for the driver to pick them up and drop them off. Figures 2-1 through 2-5 indicate the locations of a variety of human service agency facilities that are utilized by eligible project participants.

The demographic data for the area has been compiled only at the planning district level, but should serve to provide some basic understanding of the area. A population profile (1970) for District 3 is shown in Table 2-1, indicating that the total population is 182,171 persons.* Thus, the Lower East Side will likely contain on the order of 200,000 persons. The population

*Manhattan Community Planning District 3 represents about 90 percent of the EASYRIDE project area.

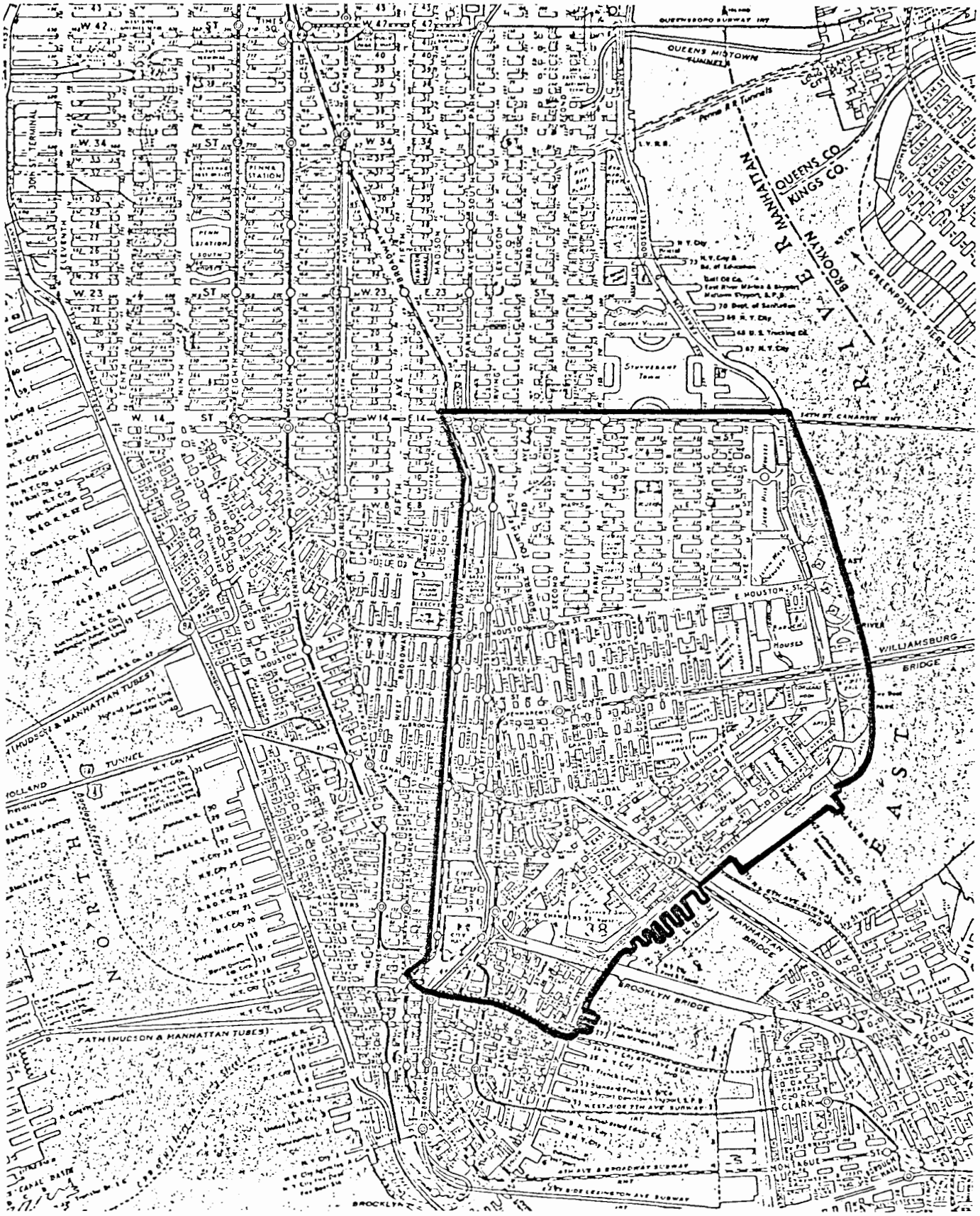

FIGURE 2-1 EASYRIDE DEMONSTRATION PROJECT TARGET AREA

FIGURE 2-2 PUBLIC AND PUBLICLY AIDED HOUSING
IN THE TARGET AREA

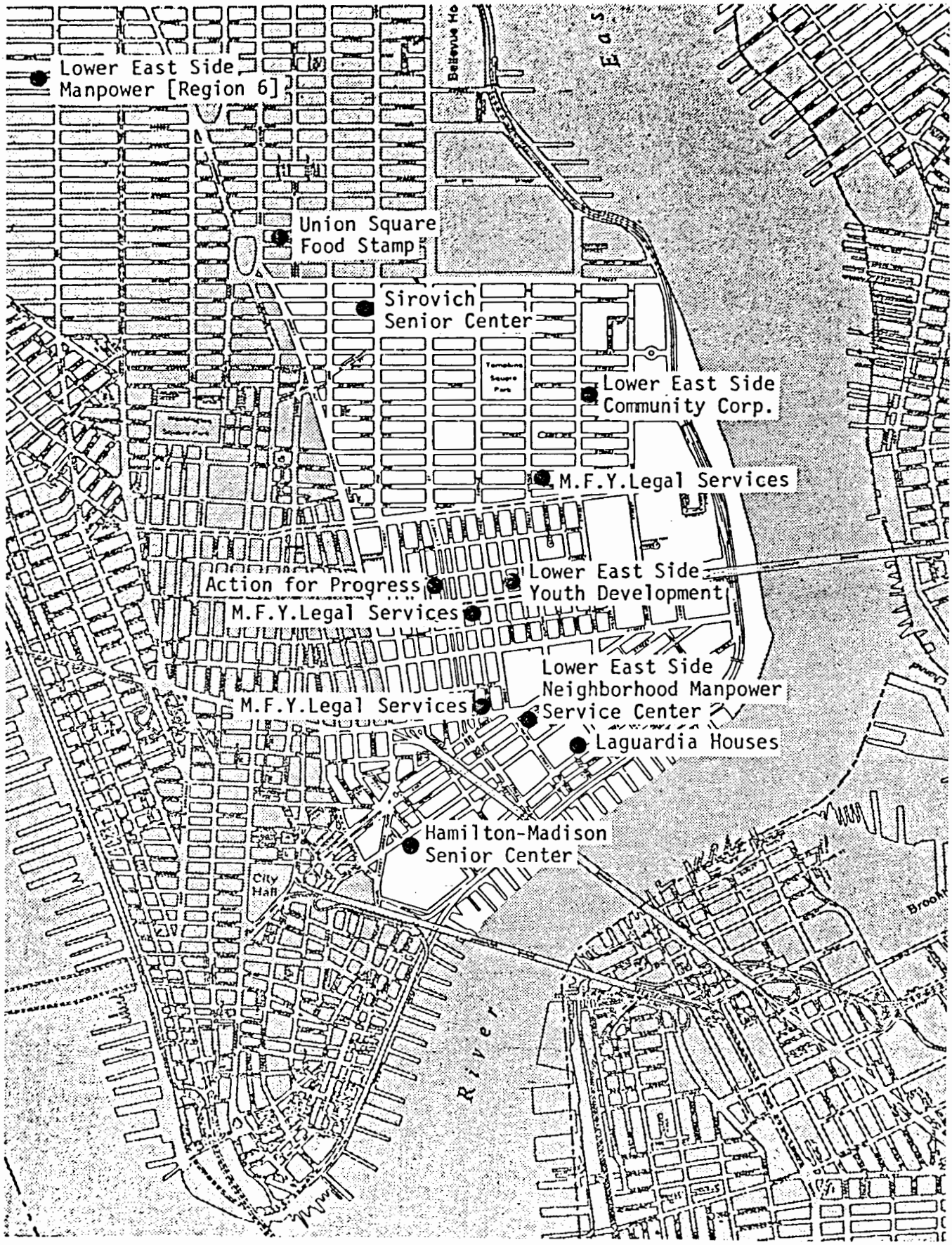

FIGURE 2-3 HUMAN RESOURCES ADMINISTRATION FACILITIES IN THE TARGET AREA

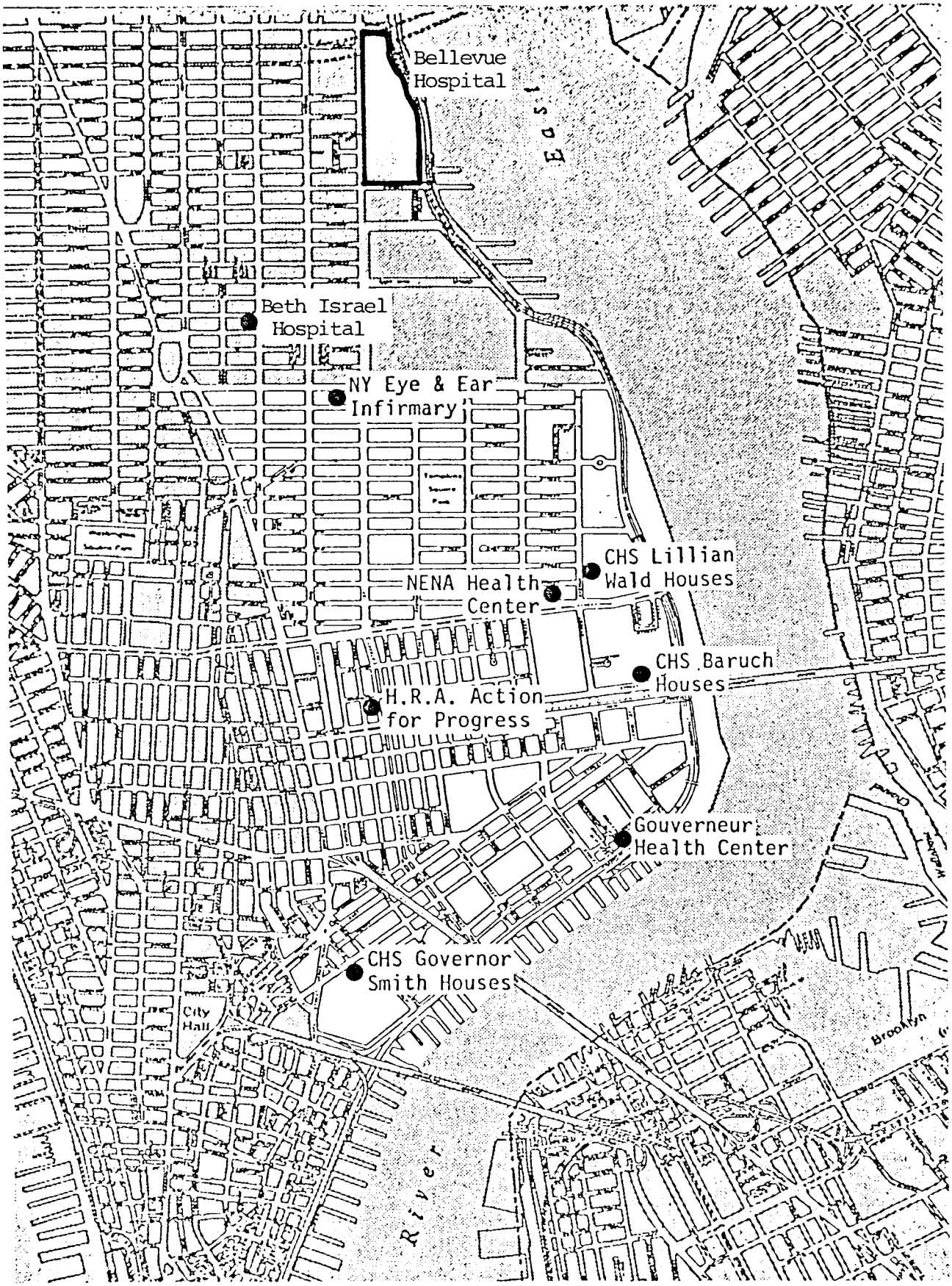

FIGURE 2-4 GENERAL HEALTH CARE FACILITIES IN THE TARGET AREA

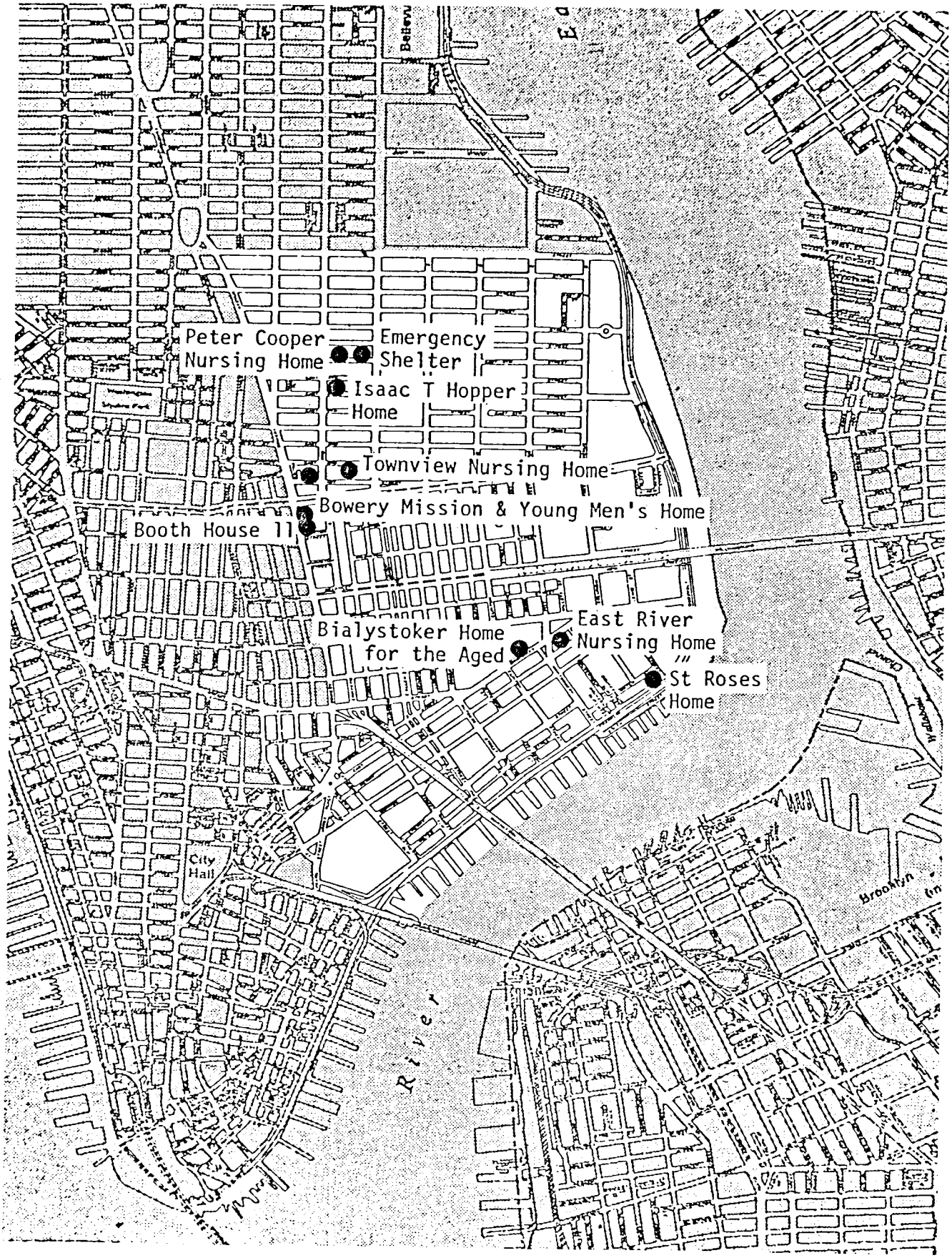

FIGURE 2-5 NURSING HOMES AND RELATED FACILITIES IN THE TARGET AREA

POPULATION PROFILE

MANHATTAN COMMUNITY PLANNING DISTRICT 3

	NUMBER	PERCENT
TOTAL POPULATION	182171	100.00
WHITE	132398	72.67
NEGRO	22699	12.46
OTHER NONWHITE	27073	14.86
AGE CHARACTERISTICS		
UNDER 5 YEARS - TOTAL POP.	13913	7.63
5 TO 17 YEARS - ' '	38278	21.01
18 TO 64 YEARS- ' '	109557	60.13
65 YEARS + OVER ' '	20423	11.21
HOUSEHOLD COMPOSITION		
TOTAL HOUSEHOLDS	69590	100.00
HUSBAND-WIFE FAMILIES	31065	44.64
SINGLE PARENT FAMILIES WITH MEMBERS UNDER 18 YEARS	6470	9.29
WITH MALE HEAD	762	1.09
WITH FEMALE HEAD	5708	8.21
OTHER SINGLE PARENT FAMILIES	4803	
PRIMARY INDIVIDUALS	27251	39.15
OVER 65 YEARS	7888	11.33
AVER. NO. OF PERSONS PER HH	2.54	
POP. IN GROUP QUARTERS	5031	
MARITAL STATUS (POP. 14YRS+ OVER)		
DIVORCED	4911	3.46
SEPARATED	7496	5.29
WIDOWED	13770	9.72
HOUSING		
TOTAL HOUSING UNITS	72320	100.00
RENTER OCCUPIED - TOTAL	61428	84.93
WHITE	46099	63.74
NEGRO	6781	9.37
AVER. CONTRACT MONTHLY RENT	$74	
OWNER OCCUPIED - TOTAL	8600	11.89
SINGLE FAMILY W/O BUSINESS	16	.02
AVERAGE $ VALUE OF ABOVE	$50,000	
COOPS AND CONDOMINIUMS	8066	11.15
OTHER OWNER OCCUPIED UNITS	517	.71
WHITE	7630	10.55
NEGRO	506	.69
ONE ROOM UNITS	3589	4.96
OCC. UNITS LACKING TELEPHONE	23150	32.01
OVERCROWDED UNITS (1.51+ PPR)	3814	5.27

TABLE 2-1 SOCIO-ECONOMIC CHARACTERISTICS OF RESIDENTS LIVING IN MANHATTAN COMMUNITY PLANNING DISTRICT 3 - 1970

density of the area is approximately 100,000 persons per square mile, which is clearly very high. There are a large number of ethnic groups residing in the area, many of which do not use English as their primary language. The ethnic groups include persons of Jewish, Italian, Slavic, Hispanic, African and Oriental descent. In addition, the Lower East Side is a very low income area, and has a high crime rate.

Based on the information contained in Table 2-1, it can be assumed that the number of elderly residing in the project target area is in excess of 20,000 persons with nearly half of them living alone. Vera has estimated that approximately 5,000 non-elderly disabled persons live in the project target area. This would lead to a total eligible population of approximately 25,000 persons, if there were no eligibility requirements other than age (65 or older) or being disabled (any age). EASYRIDE began its operations with a self-screening process which placed the responsibility of eligibility determination with the individual user. After about one year, the self-screening process was replaced by a specific set of eligibility requirements to ensure use of EASYRIDE by those persons most in need of mobility assistance and to increase Medicare reimbursements. This issue is discussed in greater detail in Chapter 3.

ARI has developed an estimation technique for predicting the number of transportation handicapped (persons of all ages who have difficulty or are unable to use conventional public transit) based on census data and National Health Survey data.* The technique avoids the problem of double counting (counting all elderly and elderly who are also handicapped) which leads to inflated estimates of the transportation handicapped population.

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*A Regional Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin: 1978 - 1982 prepared for the Southeastern Wisconsin Regional Planning Commission by Applied Resource Integration, Ltd., pp 17-25, April, 1978.

Application of this technique in a number of cities has shown that the transportation handicapped range between four and six percent of the total population in an area. Extrapolating this range to the Lower East Side leads to a transportation handicapped population of approximately 8,000 to 12,000 persons.

2.2 Existing Transportation System Characteristics

The EASYRIDE transportation system was expected to provide a high quality service at a low price. In fact, during the demonstration, EASYRIDE was essentially a fare free system and as a result it was the most inexpensive form of transportation available in the Lower East Side. Suggested donations of $.15 were minimal during the first two years of the demonstration. The impact of EASYRIDE on existing transportation services was not considered to be an important issue in the demonstration. This subsection does, however, provide information on the Metropolitan Transportation Authority (MTA) which operates the buses and subways, the New York City taxi operators and the ambulette services.*

2.2.1 Public Transportation

The MTA operates the buses and subways in New York City. The Lower East Side is served by several subway lines and quite extensively by bus routes as indicated in Figures 2-6 and 2-7. The headways for the subways are approximately five minutes during rush hour, ten minutes during off-peak and 20-30 minutes at night. The buses run on approximately the same headways. The fare for both the bus and subway is $.50 with exact change required on the buses and tokens on the subways. A weekend reduced fare ($.25) is in effect for all passengers from 6:00 P.M. Saturday to midnight on Sunday. Elderly and handicapped passengers travel at half fare during all off-peak hours. At the present time there are kneeler buses running on bus routes in the project area, however, there are no lift-equipped buses operating in the Lower East Side.

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*"Ambulette" refers to a privately operated livery service which provides door-thru-door transportation with specially trained drivers for persons in wheelchairs and others who cannot use public transport or taxis.

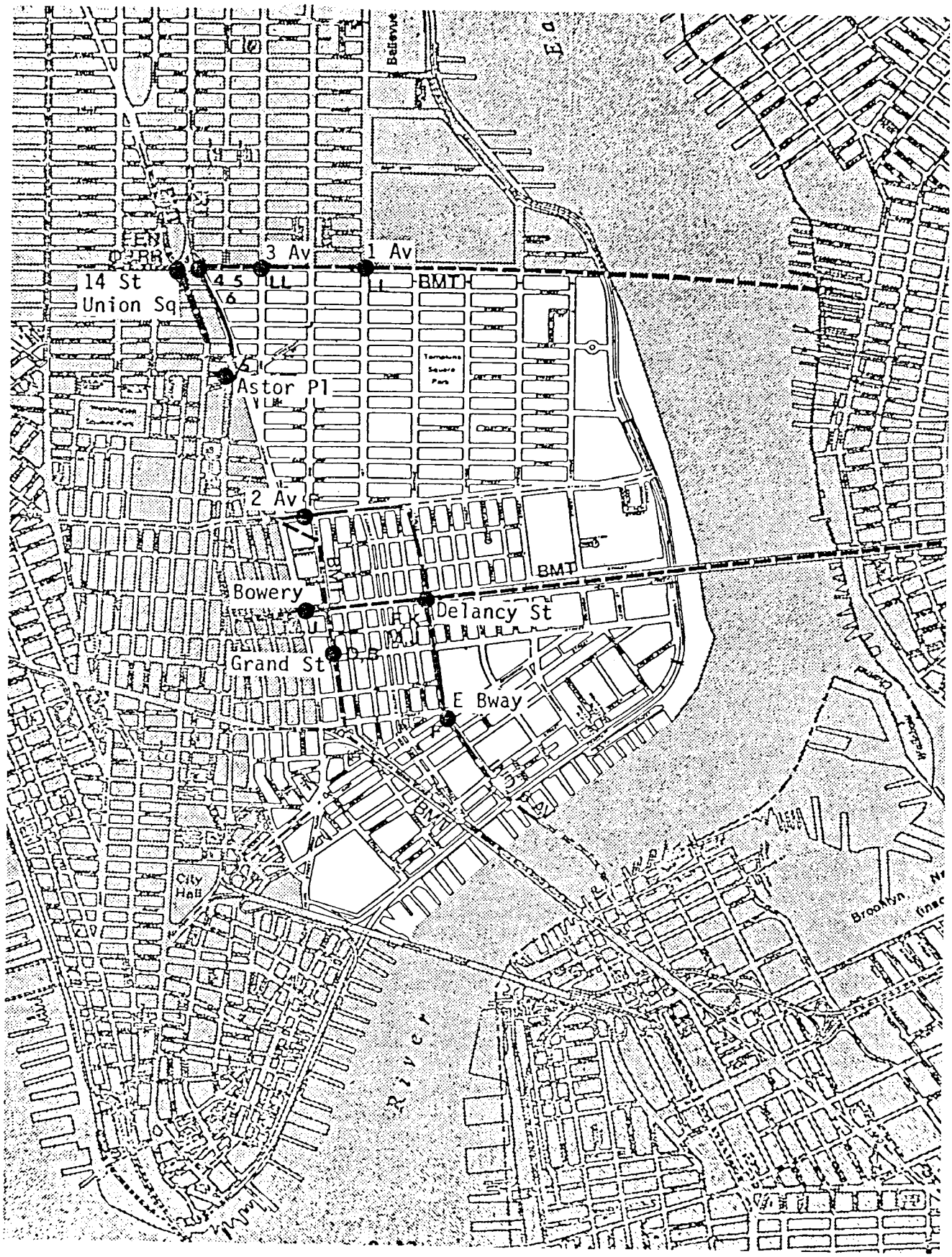

FIGURE 2-6 SUBWAY LINES SERVING THE LOWER EAST SIDE

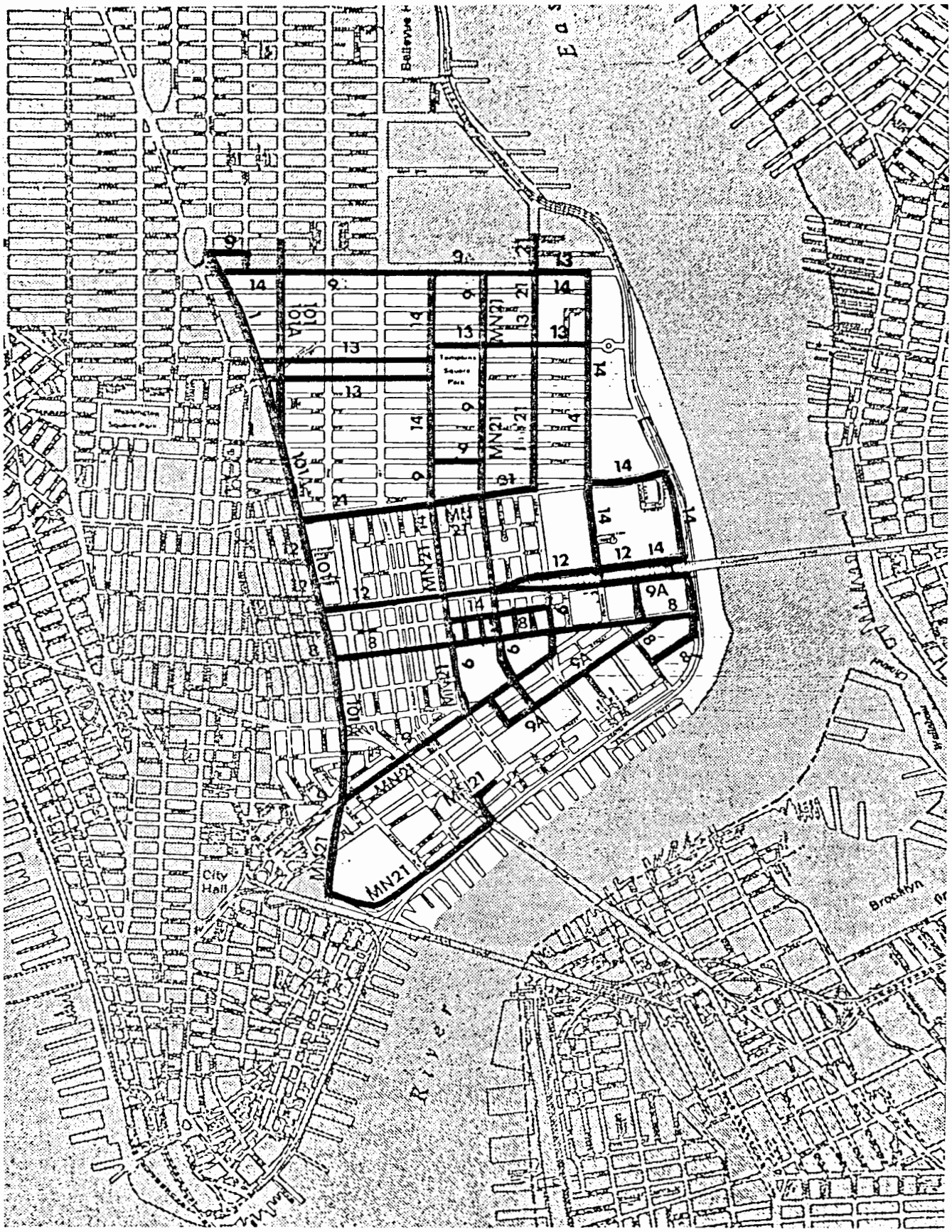

FIGURE 2-7 BUS ROUTES IN THE LOWER EAST SIDE

2.2.2 Taxi Service

The taxi service in New York City is composed of three parts; medallion cabs, private livery vehicles (service cars) and gypsy cabs.* The medallion cabs, which are limited by law to approximately 11,800, tend to operate in the Manhattan central business district for both economic and safety reasons. The private livery vehicles, which are licensed by the state rather than the city, can legally respond only to telephone requests or those made on the premises of the livery operator. Gypsy cabs may be either licensed private livery vehicles illegally accepting hails on the street, or drivers operating taxis without official licenses of any kind. Present estimates are that approximately 15,000 private livery vehicles operate in New York City and that as many as 30,000 gypsy cabs may also be serving the area.

It is not practical to try to estimate the level of taxi service in the Lower East Side because of the presence of service cars and gypsy cabs. Following the same reasoning, it was virtually impossible to determine the effect of the demonstration on the taxi service in the area. Although several EASYRIDE respondents indicated that they used taxi service before EASYRIDE was available, the demonstration's impact on taxi service was believed to be imperceptably small. Furthermore, most of the Lower East Side is not well served by cruising taxis. There are several taxi stands in the target area but a potential taxi user is more likely to telephone a taxi company to receive service than to hail a taxi on the street.

*Material in this section is derived from "Paratransit - Neglected Options for Urban Mobility," Urban Institute (1974).

The fares for medallion taxi service are $.90 for the first 1/7 mile and $.10 for each additional 1/7 mile. For a trip of 2 miles, which is approximately the mean trip length for taxi trips in Manhattan, this would lead to a total fare of $2.20 excluding tip. Fares for livery service are usually based on a flat rate depending upon the approximate distance to be traveled. The rate structure for livery service most closely resembles a zonal fare system.

2.2.3 Ambulette Services

Ambulettes, or invalid coaches as they are sometimes known, provide a unique transportation function in New York City as they do in many other places. They basically provide door-thru-door specialized services for individuals who are unable to use taxis, buses, or the subway. Historically, they have evolved in response to a need for transportation and the availability of a funding source to provide for such a need. The funding source is Title XIX of the Social Security Act, otherwise known as the Medicaid program. Medicaid pays for medical services for low income persons; part of the eligible costs include transportation to and from the medical facility. A medicaid-eligible person who is unable to use taxis or public transportation (as certified by an attending physician) will be provided with ambulette service. The rate structure is set by the New York Medicaid Office and is currently $16.50* for a one-way trip.

*Due to the recent increase in the price of gasoline the New York Medicaid office is paying $16.50 plus a $.75 fuel adjustment if the ambulette companies agree to open their accounting records for review.

Until March, 1979 ambulettes were inspected and certified for operation by the New York State Department of Health after obtaining a certificate of need from the Regional Emergency Medicaid Services Council of New York. However, in March, 1979 the New York State Appellate Division ruled that the New York State Department of Health no longer has jurisdiction over ambulettes. Based on a decision rendered by the Appellate Division the New York State Department of Transportation now has regulatory authority over ambulettes.

The Health Department, when it had jurisdiction over ambulettes, was not able to estimate the number of ambulettes that were in service in New York City, let alone in the Lower East Side. Some indication of the amount of service that is being provided may be estimated indirectly by using expenditure data from Medicaid. It is estimated that almost all ambulette trips made are paid for by Medicaid*, and that the known expenditures for 1974 NYC Medicaid Transportation were approximately $6 million. Based on data from other sources, it is further estimated that between 1/3 and 1/2 of the dollar expenditures are for ambulette services. This would translate to a total yearly number (1974) of ambulette trips in the range of 143,00 to 215,000 one-way trips.

The Vera demonstration service can have no direct competitive impact on the ambulettes in regard to their Medicaid business unless and until they receive authorization as a Medicaid transportation provider. Vera has had preliminary discussions with the New York City Medical Assistance Program Director concerning such service. (As of September 30, 1979 EASYRIDE has obtained a medicaid vendor permit. This occurred during the demonstration extension and, as a result, had no impact on the evaluation results.)

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*Note that many operators of ambulette services also operate other services such as ambulance; therefore, this does not mean that all operators are solely dependent upon Medicaid to stay in business.

2.3 Existing Travel Patterns of Target Group

Information on existing travel patterns is a central factor in determining the impacts of a demonstration service. Unfortunately, there is no recent data available regarding the travel patterns of the elderly and handicapped persons living in the Lower East Side. The most recent data available is a 1974 survey of handicapped persons in the Astoria section of Queens.* However, the sample, consisting of 121 persons, was mainly white and middle class, and thus cannot be considered representatiave of the target population.

For purposes of the evaluation, the required information was to be obtained from the first wave of surveys completed during the Lower East Side Comparison Study (Pilot Study) conducted by the Vera research team. However, the analysis of this data was not completed at the time the evaluation report was prepared. The interested reader is, therefore, advised to contact the EASYRIDE research team to determine the availability of published material.

2.4 Exogenous Factors

The exogenous factors which can influence the results of a demonstration can range from the expected to the completely unanticipated. For the Vera demonstration project, the anticipated exogenous factors included weather conditions, traffic movement conditions, and the occurrence of holidays or special events. In actuality two of the anticipated exogenous factors have had a minor impact on EASYRIDE's operation. These factors include the "Blizzard of '78" and the occurrence of Jewish High Holidays which occur each fall. The impact of these factors is discussed in appropriate chapters of the evaluation report.

*"Mobility of the Handicapped and Elderly", Falcocchio, J., et al., Polytechnic Institute of New York, DOT-TST-75-114.

The exogenous events which could have affected the target population included changes in the level or characteristics of transportation supply from the public/private sector. Such changes in the transportation supply could range from a change in the fare structure to a complete cessation of service, as in the case of a transit strike. These unanticipated exogenous events, however, did not occur during the first two years of the demonstration project. The only unanticipated exogenous events which had some impact on the demonstration project were vehicle mechanical and electrical problems during the latter months of 1977. The impact of these events will be further discussed in appropriate chapters of the evaluation report.

CHAPTER 3

3.0 PROJECT DEVELOPMENT AND OPERATIONS

This chapter provides a description of the development of the project since its inception as well as a detailed review of EASYRIDE's operating characteristics. In order to fully understand the project's development and operating characteristics, it is necesary to depict the institutional setting which surrounds EASYRIDE. This environment is interesting to observe, highly complex and important to the evaluation.

The objectives of this chapter are to provide basic information necessary to understand the service provided by EASYRIDE and to identify the data sources which have been used for evaluation purposes. This section also provides the information necessary to address the issues of replicability and transferability of results, including:

1) The chronological development of the project

2) The internal activities of Vera that were necessary to start up and sustain the service, and

3) The effects of the institutional setting in which the demonstration service developed.

The topics discussed in this section include:

- Description of Service
- Target Group Eligibility/Registration Procedures
- Operations Structure, Equipment and Facilities
- Operations Procedures and Recordkeeping
- Project Marketing and Outreach
- Interaction wth Human Service Agencies
- Driver Selection and Training
- Role of Advisory Groups
- Funding Transition

3.1 Description of the Vera Institute of Justice

The Vera Institute of Justice is located in midtown Manhattan, New York. It was started in 1961 by Louis Schweitzer to introduce reforms into the criminal justice system in New York City. The Vera Institute works to improve the techniques, concepts, and institutions which, together, represent New York City's response to the problems of crime and anti-social behavior as well as social service delivery. Vera is committed to a sustained private effort that works within the existing public institutional structure to develop techniques for promoting change that would be acceptable to an established bureaucracy. As a non-profit institute, Vera receives funding through a variety of federal grants and contracts as well as grants from private foundations. The Institute has a Research Department which assesses all programs that are administered by Vera and which also conducts evaluations for other New York City agencies.

In 1972, a new approach to the problem of aiding ex-offenders and ex-addicts was started at the Vera Institute. The Wildcat Service Corporation was set up as a pilot project by the Vera Institute of Justice to use welfare funds supplemented by federal grants to put unemployed ex-offenders and ex-addicts in treatment to work on public service projects. The welfare funds, which would otherwise be used as income subsidy payments to the participants, are diverted to Wildcat and used as seed money for salaries for new jobs. These diverted welfare payments cover almost half of the participants' salaries. The goal was to use the diverted welfare funds to provide a supported work environment for people previously written off as unemployable.

The Wildcat Service Corporation has proven to be a successful program. Wildcat currently employs 1,100 ex-offenders and ex-addicts in a variety of public service jobs. As of 1975* approximately 450 Wildcat graduates had moved to non-supported

jobs, and of those for whom follow-up data was available, 86% had held their jobs for at least one year. Based on a successful experience with Wildcat employees working on transportation projects for the elderly (meals on wheels and a senior citizen participation project), it was decided that Wildcat graduates would provide an excellent pool of potential drivers for the demonstration transportation service. The principal difference between employment in Wildcat and employment in EASYRIDE lies in the fact that Wildcat employees are welfare recipients. The individual employee's check goes into a "salary pool" where it is combined with income from other sources and converted into wages. The demonstration operation employs graduates who have proven their motivation and capacity in the supported work setting. These employees left the welfare rolls altogether; their salaries are covered entirely from the operating funds of the project. By developing a service to meet the needs of one population group, jobs were created for another population in need. This concept of "job creation" was one of the most innovative features of the demonstration.

The demonstration was structured into the Vera Institute as a separate project with a manager in charge of operations and financial aspects of the demonstration service. All of Vera's research activities and responsibilities, including survey design, data collection and reduction, analysis and other evaluation activities, are carried out by their Research Department. Within the transportation operation, the Wildcat graduates are employed as drivers, schedulers, reservationists, and secretaries: management positions are filled from the conventional labor pool.

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*"Another Approach to Welfare - Putting the Recipients and the Money to Work", Vera Institute of Justice, September, 1975.

3.2 Description of the Demonstration Project

3.2.1 History and Status

EASYRIDE provides door-thru-door transportation service to eligible registered residents of Manhattan's Lower East Side. The door-thru-door nature of the project refers to the fact that EASYRIDE drivers will leave the vehicle to assist passengers boarding and alighting from the vehicle. Drivers will, if necessary, enter a passenger's home to assist them to the vehicle.

The first Vera transportation related proposal was submitted to the Health Resources Administration in May, 1975. This proposal requested research funds to be used in a project to determine the effects of providing transportation services to a group of elderly and disabled residents of Manhattan's Lower East Side. In July, 1975 Vera received notice from the New York State Department of Transportation that their application for vehicles under the Section 16(b)(2) program was approved. The award was for 10 vehicles and related equipment. In November, 1975 Vera received a $100,000 grant award for their pilot project from HEW's Administration on Aging, and Vera's proposal submitted to the National Center for Health Services Research was approved for funding in May, 1976. Although EASYRIDE officially began full operations on June 1, 1977, pilot operations actually began in June of 1976. Shortly after the pilot operations began, Vera received notice of its UMTA Service and Methods Demonstration Grant Award (September 15, 1976). During April, 1977 EASYRIDE began regular operations increasing to full operations by June, 1977. Just after full scale operations began, Vera received approval of its HEW request for reimbursement for transportation provided to Medicare eligibles.

By the summer of 1978, EASYRIDE began to experience financial strain as their expenses were increasing beyond the projected budget and funding resources were running down. In an effort to keep EASYRIDE operating so that all of its impacts could be adequately studied, UMTA granted EASYRIDE a two year extension as a demonstration project. Because of this extension, EASYRIDE operations were never curtailed and service is still provided to the elderly and handicapped residents of the Lower East Side.

A complete chronological history of the project has been prepared by highlighting the key events which occurred during the demonstration. The chronology begins in May, 1975 and is presented in Figure 3-1.

3.2.2 Summary of Project Funding

EASYRIDE was designed as a multi-funded project and as such many proposals were prepared and many activities were dependent upon several related grant awards. In addition, the timing of the grant awards was often crucial to the continuous, uninterrupted operation of EASYRIDE. For example, the approval of the Medicare waiver in July, 1977 retroactive to June 1, 1977 came at a time when available EASYRIDE operating funds were at low levels. EASYRIDE was highly dependent upon all sources of operating funds, the principal sources being UMTA/SMD funds and the funds provided by the Health Care Financing Administration which administers the Medicare program. A detailed summary of all funding sources is presented in Chapter 7.

The Medicare waiver was, in fact, one of the more interesting aspects of the demonstration. Under the Medicare program, commonly referred to as Title XVIII of the Social Security Act, transportation is not a covered service. One of the objectives of the EASYRIDE demonstration was to determine if the availability of high quality specialized transportation service could help the elderly and handicapped travel to medical care facilities and thus

DATE	EVENT - DESCRIPTION
May, 1975	1. The Vera Institute of Justice submitted its first proposal to the Health Resources Administration, to AOA and to UMTA. The proposal was for a research and demonstration project to determine the effects of providing transportation services to a group of elderly and disabled persons in the Lower East Side of Manhattan.
July, 1975	1. Vera received notice from the New York State Department of Transportation that their application for vehicles under the 16(b)(2) program was approved. The award was for 10 vehicles, 10 two-way mobile radios, 1 base station, and 20 snow tires. The total grant award was for approximately $161,000 with the 20% local match approximately $32,200. (The two-way mobile radios were never purchased by EASYRIDE.)
Nov., 1975	1. Vera received a $100,000 grant award for their pilot transportation project from HEW's Administration on Aging.
June, 1976	1. An improved third edition of Vera's transportation research proposal was submitted for review to the National Center for Health Services Research (NCHSR) study section on Health Care Technology. The proposal was unanimously recommended for funding in March, 1977 after a site visit by members of the study section.

FIGURE 3-1 CHRONOLOGY OF DEMONSTRATION EVENTS (CONT'D.)

Feb., 1977	1.	Contract was signed with Henry Street Settlement House for service to begin in March.
	2.	The Administration on Aging funding grant was renewed.
April, 1977	1.	EASYRIDE operated between 8:00 A.M. and 8:00 P.M. with a maximum of seven vehicles during the mid-day period.
	2.	The lift-equipped vehicles had defective lift mechanisms and poor interior seating configurations. Vera worked with the vehicle manufacturer (Grumman) to correct the problems.
May, 1977	1.	EASYRIDE reached an agreement to provide service to the New York State Department of Mental Hygiene. EASYRIDE served clients who were residents of the Willowbrook school in Staten Island, New York.
June, 1977	1.	Vera received approval of its HEW request for reimbursement for transportation provided to Medicare eligibles.

FIGURE 3-1 (CONT'D.)

	2. To give the EASYRIDE drivers a sense of responsibility and to keep the vehicles in peak operating condition, each driver was assigned to a pair of vehicles (a lift-equipped vehicle and a straight passenger vehicle).
	3. The GNL Company was contracted by Vera to develop the software capabilities for the EASYRIDE Management Information System. Vera plans to have GNL produce semi-monthly operating reports and monthly reports.
July, 1977	1. The HEW grant for evaluation was approved and was effective July 1, 1977 (NCHSR).
	2. All ten vehicles were in operation.
	3. Three vehicles experienced electrical malfunctions.
	4. Professional mechanic was employed full time by EASYRIDE on a trial basis.
August, 1977	1. Vera negotiated with Medicare/HEW on a passenger trip rate for Medicare - eligible trips. The trip rate was based on standard Medicare reimbursement procedures using EASYRIDE cost data. A detailed list of reimbursable trip purposes was agreed upon. The waiver received by Vera has a ceiling cost of $250,000 for each year of a two year period.

FIGURE 3-1 (CONT'D.)

	2.	Coordination with Lower East Side agencies appears limited due to a general shortage of funds.
Sept., 1977	1.	Contract with Henry Street Settlement House was not renewed due to lack of funds.
	2.	Vera still negotiating with New York State Department of Mental Health with regard to service expansion.
Nov., 1977	1.	Vera researchers concentrated their efforts on verifying the Medicare numbers and eligibility of EASYRIDE clients with HCFA. HCFA must verify each EASYRIDE patron's Medicare number before reimbursements are made for covered trips.
	2.	A shuttle service was instituted at the end of November, 1977 serving five major hospitals in the vicinity of the Lower East Side. Three runs are made by the shuttle each afternoon.
	3.	Vehicles plagued by persistent electrical problems resulting from low average speeds and poor wiring. Engineers from the manufacturer will re-wire the vehicles.
	4.	The accessible vans were modified to accommodate three wheelchairs instead of four.

FIGURE 3-1 (CONT'D.)

Dec., 1977	1.	Engineers have almost completely re-wired the vehicles to eliminate the electrical problems.
Jan., 1978	1.	Large snow storm in New York City hindered service to the wheelchair bound.
Feb., 1978	1.	Blizzard of February, 1978 again reduced service to wheelchair passengers.
March, 1978	1.	EASYRIDE cut down on the number of trips it provides to far, out of the way, destinations which required disproportionate amounts of vehicle service time for single passengers.
	2.	EASYRIDE considered eliminating or reducing destinations to addresses above 50th Street in Manhattan. One plan would provide service to these destinations on specified days of the week.
	3.	EASYRIDE buckled down on agency "No Shows". An agency would make reservations for a group trip and then half of the group would decide not to show.
	4.	EASYRIDE picked up six different lunch time nutrition programs. These programs are sponsored by the United Jewish Council and include a Kosher Nutrition Program.

FIGURE 3-1 (CONT'D.)

April, 1978	1.	EASYRIDE planned to distribute registration cards to project participants begining in May. The cards were intended to serve two primary purposes: 1) give the passengers a sense of identity, and 2) provide a method to expedite the time involved in health care visits to avoid delays in vehicle departure times.
May, 1978	1.	Beginning May 1, 1978 all new EASYRIDE registrants were subject to new eligibility criteria. Persons must now be at least 65 years old and Medicare eligible in order to register for EASYRIDE. However, persons under 65 and disabled will be eligible for EASYRIDE service if they satisfy the Social Security Administration's definition of disabled. Any person confined to a wheelchair will also be allowed to register for EASYRIDE. The process was instituted beause too many persons were using EASYRIDE who were not transportation handicapped. Vera will assist persons obtain Medicare cards if they are eligible and not yet registered.
	2.	Although most of EASYRIDE's vehicle problems have been resolved (e.g., electrical and mechanical) a final adjustment will be made to vehicles with the installation of fast idle kits. The fast idle kits will allow the vehicles to idle at high speeds whenever the transmission is placed in park. The kits were provided at no cost by Grumman. Grumman also agreed to reimburse EASYRIDE for the cost of installation.

FIGURE 3-1 (CONT'D.)

July, 1978	1.	Productivity during the first four months of 1978 showed general improvement.
	2.	EASYRIDE is experiencing financial strain and may not have sufficient funds to operate through December 31, 1978. Vera is actively pursuing additional funding sources.
Nov., 1978	1.	It was understood that UMTA would grant Vera a two year extension for the demonstration project.
	2.	The Vera research staff was engaged in the process of preparing an application to extend the contract for its research and evaluation activities. A report was submitted to HEW January 15, 1979.
Jan., 1979	1.	The Vera research team has submitted an application for an extension of its Medicare waiver. A report was submitted with the application which focuses on the health care issues involved with providing transportation to Medicare eligibles for health-related purposes.
Feb., 1979	1.	EASYRIDE implemented a "beeper" system so that the operations office could notify drivers to call in immediately when a change had to be made to their schedule.

FIGURE 3-1 CHRONOLOGY OF DEMONSTRATION EVENTS

improve their overall well being. It was further hypothesized that the total cost of health care for eligible persons could be reduced by funding transportation to and from medical facilities and nutrition centers rather than paying the high cost of in-patient care. It currently costs Medicare patients more than $200 per day to stay in a New York City Hospital. The Medicare waiver was officially approved in July, 1977 by Secretary of Health, Education and Welfare Califano, retroactive for trips made as of June 1, 1977. This was the first Medicare waiver specifically related to transportation ever granted, and it covered trips to medical care facilities and nutrition programs.

3.2.3 Organization and Staff

The organizational structure for the EASYRIDE demonstration project is illustrated in Figure 3-2. The operations staff includes a program manager, an operations manager, one secretary, one scheduler, three reservation clerks, and 10 drivers. All of these 17 positions are filled by full time employees although the drivers and reservation clerks work on staggered shifts. The entire EASYRIDE staff is on duty during the midday, barring any unforeseen circumstances such as sick leave, vacations, etc. The program manager is responsible for all daily activities required to keep EASYRIDE operational including the direct supervision of all employees. The Associate Director of the Vera Institute oversees the project and is involved in administrative and planning aspects of the project.* A data collection supervisor is also involved with the project. This person is primarily responsible for preparing data for entry into the EASYRIDE Management Information System and Medicare billing schedule.

*At the time final revisions were made to this report the data collection supervisor position was eliminated. One of EASYRIDE's reservation clerks now handles this function. However, the data collection supervisor was a staff member during the period of time covered in the evaluation.

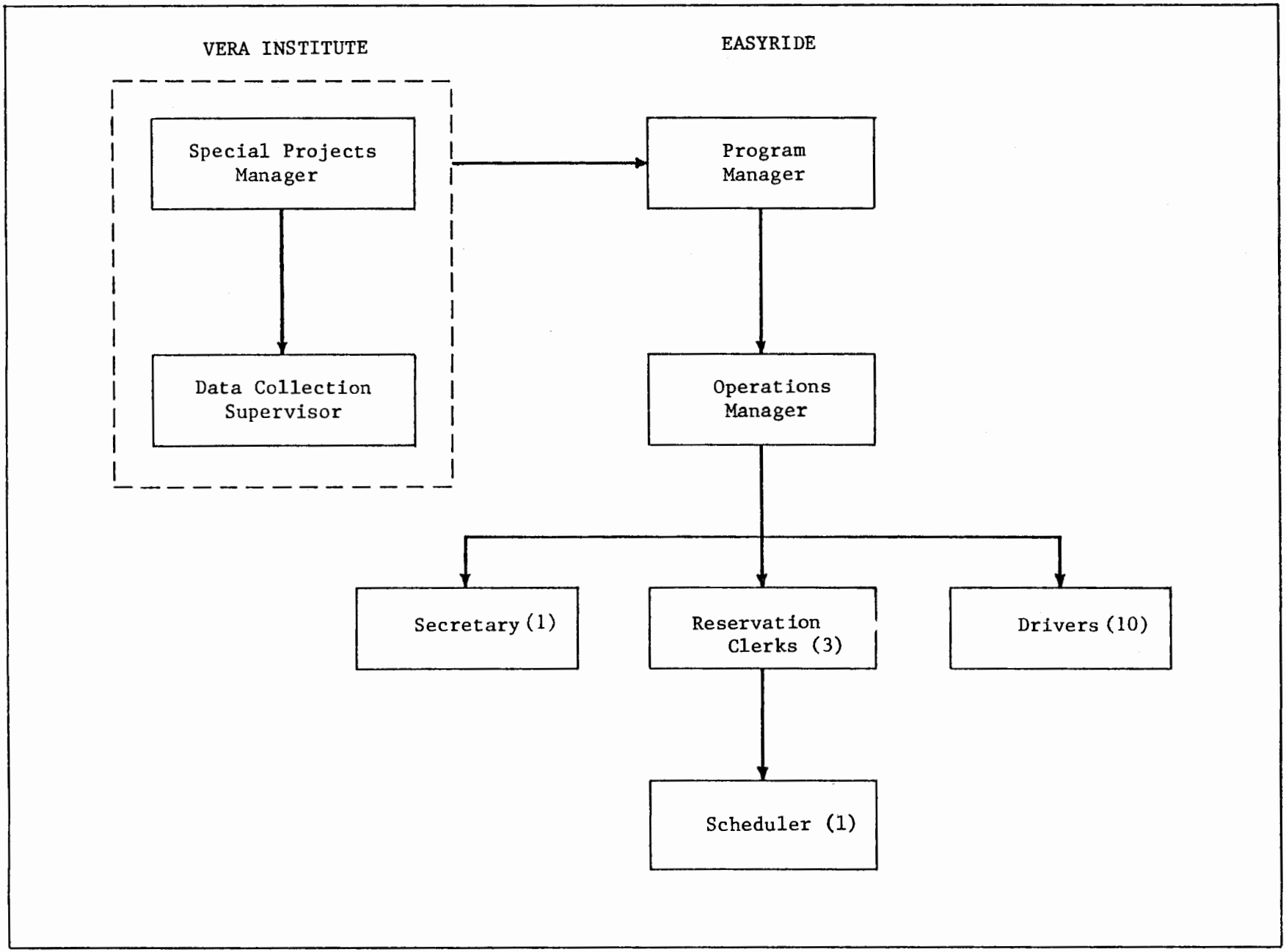

FIGURE 3-2 OPERATIONS ORGANIZATION STRUCTURE FOR EASYRIDE

3.2.4 Facilities

The EASYRIDE operations office was originally located in the service area at 125 Delancey Street. Due to severe flooding from rainstorms, EASYRIDE moved to a larger modern office at 551 Grand Street in September, 1978. The new office is also located in the service area.

A separate building in the Lower East Side was purchased by the Vera Institute at the beginning of 1977 to garage the EASYRIDE vehicles overnight and on weekends. Minor vehicle maintenance and repair work was also performed at this location, although the building was not equipped as a garage. This building, although in the service area, was not within walking distance of either operations center. The EASYRIDE drivers were required to pick their vehicles up from the storage facility when their shift began, and drive it to the operations center. While at the Delancey Street location, EASYRIDE had off-street and on-street parking available on the same block as the operations office. At the Grand Street location, EASYRIDE did not have any on-street or off-street parking space. The program manager had to make special arrangements with New York City to allow the vehicles to park on the street in the block of the operations office.

3.3 Overview of Services and Operations

The purpose of this subsection is to discuss, in some detail, the types of service provided by EASYRIDE and the specific procedures used to operate EASYRIDE. These include the procedures used to arrange for and provide a trip, driver selection and training, project marketing and outreach, the vehicle fleet, the role of human service agencies in the demonstration, and the management information system.

3.3.1 Services Provided by EASYRIDE

EASYRIDE provided three distinct types of specialized transportation service to its users. These services were as follows:

- o Demand-Responsive Service - service provided to individual users who make trip reservations at least 48 hours in advance of the desired travel time.
- o Subscription Service - service provided to individual users who make trips on a specified recurring basis (daily, weekly, monthly).
- o Charter Service - service provided to a group of users travelling to a single destination. Charter service is sponsored by local human service agencies.

Of the three types of service provided by EASYRIDE, demand-responsive service was the most popular, accounting for 82% of all trips. Charter service was the second most popular service mode accounting for 13% of all trips, while subscription service accounted for the remaining five percent of all trips.

Although service requests are desired at least 48 hours in advance of the desired travel date, almost one-half (48%) of all EASYRIDE service requests were made more than a month in advance of the actual travel date. Twenty-two percent of the service requests were made more than one week in advance, 9% of the service requests were made five to seven days in advance, ten percent of the service requests were made two to four days in advance, and 9% of the service requests were made one day in advance of the actual travel date. All requests for service made less than 48 hours in advance were accepted only if the trip could be accommodated within the day's schedule due to a recent cancellation or a vacant time slot.*

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*Users requesting service more than 48 hours in advance which cannot be provided are asked to call EASYRIDE the day before and, often, the request can be accommodated due to a cancellation.

Many of the demand-responsive trips provided by EASYRIDE were scheduled with an indefinite return time. This was particularly common for medical service trips and trips to government agencies. To pick up users who are ready to return to their home EASYRIDE operated a "will call" service; users called EASYRIDE as soon as their appointment was completed and drivers were dispatched as available to pick them up. "Will call" service was provided as fast as possible so that the user's wait time was minimized. The wait time varied from five to ten minutes to as much as one hour when demand or traffic was heavy.

Subscription service was used primarily by users who required specialized transportation to travel to and from work. Employed users paid a fare of $1.00 for each one-way trip they took; $10.00 per week for a full week of round trips (ten one-way trips). Users taking advantage of the subscription service were billed on a monthly basis.

Human service agencies, settlement houses, churches, and other organizations in the study area frequently used EASYRIDE's charter service to organize group trips. The sponsoring organizations paid EASYRIDE for this service at a rate of $10.00 per vehicle for trips within Manhattan, $15.00 per vehicle for trips to any other borough of New York City (Brooklyn, Queens, Staten Island, the Bronx) and $40.00 per vehicle for trips outside New York City.*

Initially, EASYRIDE was intended to be available for use by any Lower East Side resident aged 60 or over and any disabled resident aged 18 and over. During the first year of operation a "self screening" process was used for registration. Any persons who felt that he/she was disabled was allowed to register for EASYRIDE

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*In cooperation with its Consumer Advisory Committe, EASYRIDE has established a method for allocating vehicles for group trips and has limited destination to locations that are within 100 miles of New York City.

without medical verification of the disability claimed. Human service agencies serving the elderly and handicapped in the Lower East Side provided the initial outreach to register persons for EASYRIDE. These agencies as well as the EASYRIDE staff continue to register new users. Registration can be made in person or by telephone. The registration form, presented in Appendix A, requires information on travel patterns, demographic characteristics and disabilities. This data is used to continuously assess characteristics of EASYRIDE users and to determine how to continue the outreach program.

In May, 1978, the eligibility criteria for EASYRIDE registration was modified. As of May 1, 1978, persons must be at least 65 years of age and Medicare eligible in order to register for EASYRIDE.* Persons under 65 and disabled are eligible for EASYRIDE service if they are recipients of Social Security Disability Benefits. In addition to the above criteria, any persons confined to a wheelchair is allowed to register for EASYRIDE. It should be noted that the eligibility requirements implemented in May, 1978, did not effect previous registrants.

As mentioned earlier, users travelling to and from work using EASYRIDE's subscription service were charged $1.00 per trip. Organizations sponsoring group trips using EASYRIDE's charter service were charged a flat rate per vehicle depending upon the location of the destination. Users of the demand-responsive service were not required to pay a fare, although a suggested donation of $0.15 could be made. EASYRIDE installed a lock box at the front of each vehicle so users could deposit a donation if they so desired; very few donations, however, were received.

*Individuals between 60 and 65 are eligible for Medicare if they require particular kinds of medical treatments such as renal dialysis.

EASYRIDE service was generally provided to all parts of New York City upon request; however, individual trips requested to locations which were far from the Lower East Side, such as The Bronx or Upper Manhattan, may have been refused if demand for service in general was very high. Between 70% and 75% of all trips began and ended in the Lower East Side, indicating that most EASYRIDE service was provided in the general proximity of the project area. In order to most efficiently accommodate service requests to medical appointments in Upper Manhattan, EASYRIDE designated Tuesdays and Thursdays for service to this area. Upper Manhattan includes the area north of 34th Street. The two other sections of Manhattan that served as EASYRIDE destinations were lower Manhattan (the area north of 14th Street and south of 35th Street) and Mid-Manhattan (the area north of 35th Street and south of 86th Street). These two zones accounted for 14% and five percent respectively of all EASYRIDE destinations.

EASYRIDE also experimented with a hospital shuttle service which operated each afternoon. This shuttle was used in conjunction with the demand responsive service and served the following hospitals:

- Beth Israel Hospital
- Columbus - Cabrini
- Bellevue Hospital
- University Hospital
- RUSK Institute

Initially, three shuttle runs were scheduled each afternoon, but the number was later reduced to one as the shuttle program was not as successful as originally hoped. Use of the shuttle was not mandatory, and many users received faster service to these hospitals when they did not use the shuttle. One problem with the

shuttle that was often cited by the users was the long travel time on the shuttle. Persons who were picked up at the first stop of the shuttle had to ride to each of the four successive shuttle stops before the vehicle returned to their homes. A complete shuttle run lasted slightly more than one hour.

A second problem with the shuttle involved the perceptions of its users. Due to the street configuration in Manhattan, it was more efficient to stop at hospitals closer to the Lower East Side first, and hospitals farthest from the Lower East Side last. As a result, passengers picked up at the first few stops on the shuttle felt as though they were always travelling away from their home as opposed to getting closer to it.

3.3.2 Operations, Procedures and Recordkeeping

EASYRIDE operates Monday through Friday between the hours of 7:00 A.M. and 6:00 P.M. The exact time of the first pick up and the last return trip is dependent upon demand for service on any particular day. It was originally intended that EASYRIDE would operate for 12 hours a day Monday through Friday (8:00 A.M. to 8:00 P.M.) and seven hours per day on weekends. Funding limitations necessitated the limiting of the number of service hours provided each day and prevented service on weekends. EASYRIDE's drivers worked on staggered shifts in order to ensure that there were sufficient vehicles in service during the course of each day. A sample set of shifts are as follows:

1) 7:30 A.M. to 3:30 P.M.
2) 8:00 A.M. to 4:00 P.M.
3) 9:00 A.M. to 5:00 P.M.
4) 10:00 A.M. to 6:00 P.M.

EASYRIDE employed a manual reservation and dispatching system. All requests for EASYRIDE service were required at least 48 hours prior to the desired travel time. In actuality, many trips were

scheduled several days and often several weeks in advance. The reservations were usually made for medical care appointments which were typically scheduled for future dates at the time of the patient's last appointment. Subscription reservations were also made far in advance of the actual trip date since they recurred on a regular basis. Subscription service was closely associated with clients using EASYRIDE for their work trip. Certain group trips were also scheduled well in advance of the required travel date. Nutrition service is a prime example of recurring group trip which was scheduled more than 48 hours in advance.

Calls for trip requests were received by the reservation clerks who recorded the necessary information for scheduling and recordkeeping purposes. The information recorded at the time of a trip request included the following:

- Passenger's name, address, and telephone number (if passenger has a telephone)
- Requested destination address
- Requested travel date
- Requested pick-up time and passenger's appointment time
- Whether or not the passenger requires an accessible vehicle.

If the trip could not be scheduled for the requested time, the reservation clerks suggested alternative times when service could be provided. All of the information obtained by the reservation clerks was recorded on a trip request form (in triplicate). One copy of the trip request form was eventually attached to an EASYRIDE trip log which was used by the driver. The reservation clerks added additional information to the trip request form after their telephone call was completed. This information was obtained primarily from the registrant's file and the telephone request; it included the following:

- The type of aid used by passenger
- If the passenger lives in walk-up building
- If an escort will accompany the passenger
- Who requested the trip
- When was the trip requested
- Type of trip
- Trip purpose
- Payment made
- Pick-up zone
- Drop-off zone
- Trip number
- Registrant number
- Time of day pick-up is to be made.

This information was then entered onto the trip request form using a numerical code for each item.

As trip requests were accepted they were recorded by the reservation clerks on a master calendar. The trip request forms were then filed according to their respective trip dates. One day before the scheduled trip date, the scheduler would take all trip request forms for that day from the files and build trip schedules for each driver. The trip schedules were formulated according to scheduled pick-up times, origin and destination zones and whether or not an accessible vehicle was required. One copy of each completed driver trip schedule or "EASYRIDE Trip Log" was then distributed to the respective drivers at the end of the day. A second copy of each EASYRIDE trip log was posted in the operations office on the morning of the travel date and was used as the daily running schedule.*

*It should be noted that EASYRIDE attempts to confirm most trip reservations the night before the requested travel date by a telephone call to the passenger.

Cancellations were immediately relayed from the reservation clerks to the scheduler to the drivers. The scheduler also indicated cancellations directly on the copy of the EASYRIDE trip log posted in the operations office. During the first 11 months of full operation (June 1, 1977 through April 30, 1978) there were no established trip priorities. Trip requests were accepted on a first come, first served basis.

Return trips were scheduled, if possible, when the original trip request was made. When the return trip pick-up time was unknown at the time of the trip request (such as on trips to a physician's office) the return trip was classified as a "will call". That is, the passenger would call the reservation clerk when he/she was ready to be picked up. A list of all "will calls" was posted in the operations office so that the drivers knew that there were passengers waiting for return trips when they checked back into the operations office between runs.

The trip reservation process is illustrated in Figures 3-3 through 3-7. In Figure 3-3 an EASYRIDE reservation clerk is completing a trip request form in duplicate while in the background the EASYRIDE program manager is checking some information from the EASYRIDE registrant file. Immediately after a trip reservation is made, one copy of the trip request form is attached to the master calendar as illustrated in Figure 3-4. The remaining copy of the trip request form is filed according to the day of the month the trip is to be made. The file is illustrated in Figure 3-5. One day before the scheduled travel day, individual driver schedules are built. Figures 3-6 illustrates the table on which the trip request forms are built into driver schedules. Finally, Figure 3-7 illustrates the wall in the operations office where copies of all driver schedules are posted as well as the posting area for "will calls".

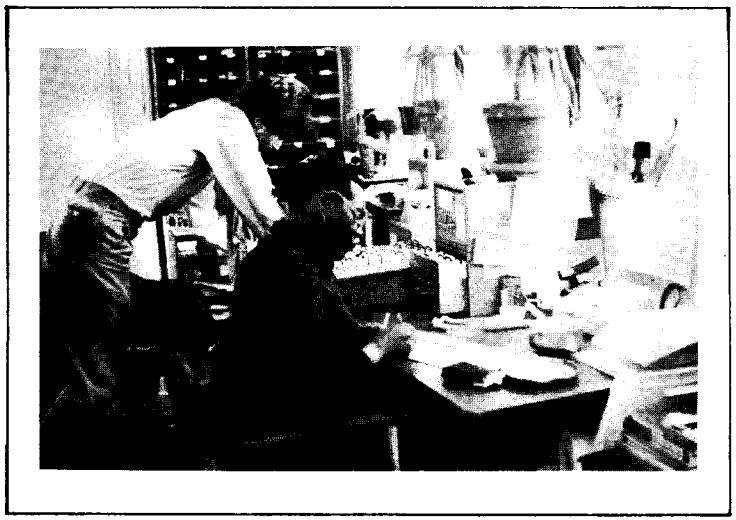

FIGURE 3-3 EASYRIDE RESERVATION CLERK COMPLETING TRIP REQUEST FORM

FIGURE 3-4 EASYRIDE MASTER CALENDER

FIGURE 3-5 EASYRIDE TRIP REQUEST FILE

FIGURE 3-6 EASYRIDE TRIP SCHEDULES

FIGURE 3-7 POSTED EASYRIDE SCHEDULES AND "WILL CALL's"

As discussed earlier, all scheduled trips appeared on an EASYRIDE trip log. The heading of the trip log was completed by the scheduler and the drivers. The scheduler recorded the day of the week, the date, the driver's name and the vehicle number on the heading. The driver then recorded the start and finish time and the start and finish mileage on the heading. During the drivers' daily runs they recorded actual pick-up and actual drop-off times on the trip log and indicated whether the passenger was late or did not show. A sample trip log is presented in Appendix B.

All trip log data was recorded in numeric characters which were then easily entered onto the EASYRIDE management information system. After a day was completed, the drivers' copies of the EASYRIDE trip logs were edited by the data collection supervisor or an employee working under the data collection supervisor. The editing process included filling in any missing information and checking to be sure that all recorded information was in the correct location. The information for one trip has a field length of 39 columns of one standard computer card. Edited trip logs were grouped by day and forwarded to the data processing subcontractor who prepared semi-monthly and monthly operations reports. Semi-monthly reports covered the period from the first through the fifteenth day of the month, inclusive, and the sixteenth through the last day of the month, inclusive. Monthly reports focused primarily on the characteristics of the passengers while semi-monthly reports focused on operations and service provided during the two semi-monthly periods. Sample semi-monthly and monthly reports are presented in Appendix C.

The EASYRIDE payroll as well as all other billing and financial recordkeeping was managed by Vera's accounting department. All of the project's grant awards flowed through Vera's accounting department as well as agency and individual payments for service. The only cash which was ever handled by EASYRIDE was that which was generated from the donation lock box on each vehicle. The

suggested donation was $0.15 per trip; donations however, were minimal. Vera's accounting department produced a financial summary for the EASYRIDE operation on a monthly basis. This was later reduced to quarterly reports.

3.3.3 EASYRIDE Vehicles

EASYRIDE operated 10 specially equipped Grumman vans: five had a 15 passenger seating capacity, all front facing, and five were fully accessible lift equipped vans so that they could accommodate up to three wheelchair users and six ambulatory passengers.* The vehicles were actually modified step vans and as a result they had ample ceiling clearance so an average adult could stand upright without hitting his/her head on the roof. All of the vehicles had a low (12") front entry step, stanchions and grab rails, no-skid floor covering, interior lighting, and seat belts. Features added specifically for passenger comfort included extra-padded seats, a radio, and air conditioning. The vehicles, although a bit noisy, were comfortable to ride in especially with the mood music provided by the radios. The vehicles were purchased with a Section 16(b)(2) grant award with the 20% matching funds coming from a grant made to Vera Institute by the Hofheimer Foundation.

A standard EASYRIDE 15 passenger ambulatory van is illustrated in Figure 3-8 while a standard EASYRIDE accessible vehicle is presented in Figure 3-9. In Figure 3-9, the door which contains the lift is directly behind the opened passenger door. Figures 3-10 and 3-11 present pictures of the interior of the accessible vans. The accessible vans each have three bench seats which can each seat two passengers. Along the right side of the vehicle are hold down positions for three wheelchairs. One hold down position is between the bench seat and back of the vehicle as depicted in Figure 3-11. The two remaining hold down positions are between the bench seat and the front of the vehicle as illustrted in Figure 3-12.

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*The 15 passenger vans are referred to as ambulatory vans and the lift equipped vans are referred to as accessible vans.

FIGURE 3-8 15 PASSENGER EASYRIDE VAN

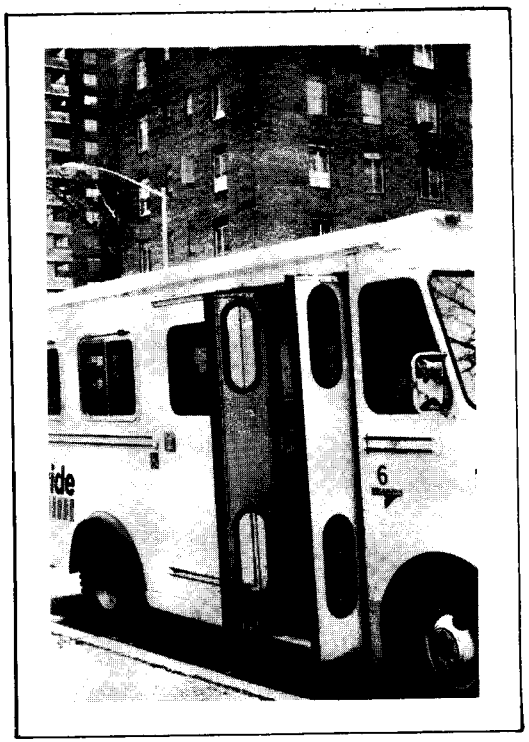


FIGURE 3-9 FULLY ACCESSIBLE EASYRIDE VAN

FIGURE 3-10 INTERIOR OF ACCESSIBLE VAN(LEFT SIDE)

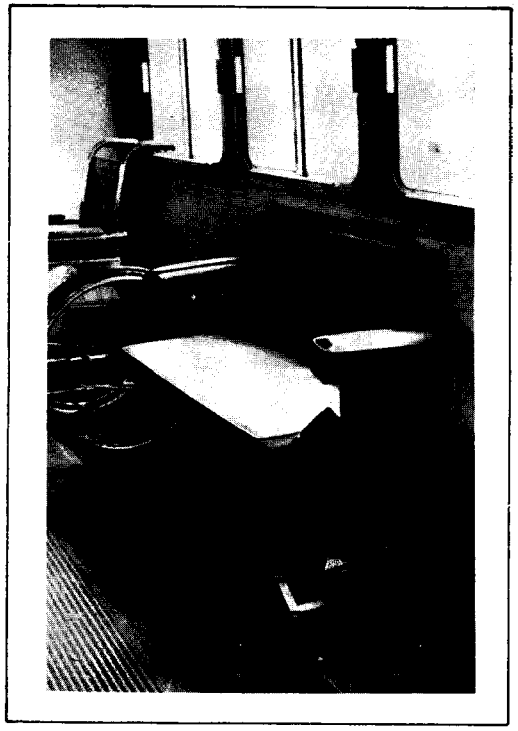


FIGURE 3-11 INTERIOR OF ACCESSIBLE VAN(RIGHT SIDE)

FIGURE 3-12 WHEELCHAIR HOLD-DOWN POSITIONS

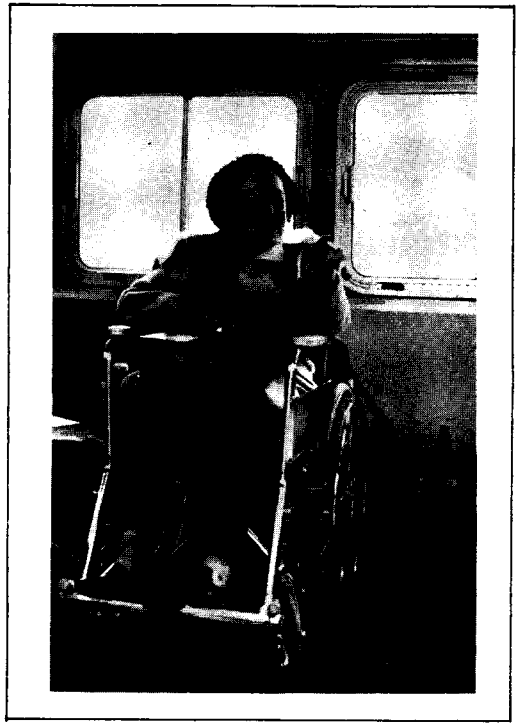


FIGURE 3-13 PASSENGER IN HOLD-DOWN POSITION

Upon careful examnation of the wheelchair hold down units illustrated in Figure 3-12, one can see that a seat belt and elastic cable are used to secure a wheelchair into the framed position. A picture of an EASYRIDE passenger secured into a wheelchair hold down position is illustrated in Figure 3-13. The sequence of pictures in Figures 3-14, 3-15, and 3-16 illustrate the use of the lift device. The control box for the lift is attached to the inside of the door just below the window. There is also a hand pump which will raise or lower the lift in an emergency located just inside the van.

Vehicle maintenance was initially performed by a private Chevrolet dealership, located in the borough of Queens, under contract to perform work under the vehicles' warranty. (The Grumman vehicles were modified from Chevrolet chassis and engine components.) This arrangement, however, was inconvenient because of the distance between the dealership in Queens and the operations center in the Lower East Side of Manhattan. As a result, it proved more economical to have minor repair work performed locally. In addition, EASYRIDE has experimented with the employment of part-time mechanics--a step expected to save time and repair costs.

A second step was taken by EASYRIDE management to maintain and improve vehicle life. Beginning on July 1, 1977, each EASYRIDE driver was assigned to a pair of vehicles; one regular passenger vehicle and one lift-equipped vehicle. Therefore, only two different drivers, barring emergencies, are assigned to each vehicle. In addition to improving vehicle operation, the step was intended to give each driver a sense of personal responsiblity.

3.3.4 Driver Selection and Training

Most drivers are selected from among the graduates of the Wildcat Corporation program. Applicants for the driver positions must be ready to begin training as soon as their application is received

FIGURE 3-14 PASSENGER BEING LOWERED ON LIFT

FIGURE 3-15 PASSENGER LOWERED TO GROUND

FIGURE 3-16 LIFT AT GROUND LEVEL

and a position offered. Potential EASYRIDE drivers must have the appropriate driver's license at the time of their interview, and they must have a perfect driving record. Prior to the implementation of full scale operations, 50 prospective drivers were interviewed and nine were hired as drivers. Shortly after full scale operations began, a tenth driver was hired.

New drivers must complete a two month training program before they become full time EASYRIDE drivers. During the first six weeks of training, prospective drivers remain on the Wildcat Corporation payroll and are considered to be on a trial basis. Seven of the first eleven drivers hired are still employed by EASYRIDE. (Two have moved on to better jobs; two have been terminated.)

During the two month training program, new drivers work as attendants on vehicles operated by experienced EASYRIDE drivers. The trainees then drive those vehicles while the experienced drivers act as attendants and oversee the performance of the trainees. All EASYRIDE drivers must have a New York State Class 4 (chauffeur's) license. The driving record of each EASYRIDE driver is examined yearly and the drivers must pass a physical examination every two years. In addition, all EASYRIDE drivers must meet the requirements of Article 19A of the New York State Vehicle and Traffic Law.

EASYRIDE drivers are trained to handle a variety of situations which are expected to arise while providing specialized transportation services for the elderly and handicapped. To assist them on the road, drivers must take and pass a course in defensive driving. To sensitize drivers to the specific problems of the elderly, they receive training in the psychology of older persons, and go through a series of role-playing exercises with the operations manager. A course from the Rusk Institute trains drivers to properly handle persons in wheelchairs, as well as providing insight into the problems of the disabled. All drivers

are required to have completed a basic course in first aid which is certified by the Red Cross. Finally, the New York City Police Department has given the EASYRIDE drivers official training as "block watchers". If, while driving their vehicles, EASYRIDE drivers witness a crime, accident, or suspicious situation, they will immediately alert the police department.

Through the first two years of the EASYRIDE demonstration, the drivers have become a major success of the project. The EASYRIDE drivers have been reliable and productive members of the project team, greatly admired and appreciated by the passengers. Through the success of the EASYRIDE drivers, Vera has further demonstrated that the Wildcat Corporation can effectively train ex-offenders and ex-addicts to obtain work in an unsupported environment. EASYRIDE drivers are paid from project funds and not from any forms of public welfare.

3.3.5 Project Marketing and Outreach

Much of the marketing for EASYRIDE has been done by the various human service agencies located in or around Manhattan's Lower East Side. Prior to the demonstration start up, representatives of EASYRIDE spoke with social workers at local human service agencies describing the transportation service which would be available to their clients. In addition, the human service agency representatives were provided with registration materials so that they could begin registering eligible individuals. The human service agency representatives then informed their clients about how they could use EASYRIDE and assisted eligible persons to complete the registration form. Additional persons registered for EASYRIDE by telephone after hearing about the service from friends and neighbors. EASYRIDE has not actively marketed the transportation service through public media and mass advertising because they felt that they would not be able to accommodate the resulting demand.

The number of registrants grew to just over 2,000 before EASYRIDE revised its eligibility criteria effective May 1, 1978. Until that point in time EASYRIDE employed a self-screening registration process. During the early months of 1978, the EASYRIDE program manager recognized a need to reduce the number of new registrants who did not have a legitimate need for EASYRIDE. In short, the self-screening process was not performing its intended function. In addition, there was a financial need which required EASYRIDE to focus its energies on registering Medicare eligibles. EASYRIDE needed the Medicare reimbursement funds to maintain its operation. To increase the inflow of Medicare funds (up to a limit of $250,000 per year) EASYRIDE began to concentrate on registering Medicare eligibles or those persons who were truly transportation handicapped, i.e., mobility impaired. All persons who registered for EASYRIDE prior to May 1, 1978, were still eligible for service regardless of whether or not they met the new eligibility requirements.

A preliminary review of the registrant file indicates some facts which reflect the ethnic mix of the service area. Three ethnic groups dominate the total population of the Lower East Side; these groups include persons of Jewish persuasion (Eastern European), persons of Hispanic descent and persons of Chinese descent. The registrant file indicates, however, that the majority of the registrants for EASYRIDE are persons of Jewish persuasion with only a small proportion of Hispanics and almost no Chinese.

The primary explanation for this factor is related to the human service agencies located in and around the target area. Historically, many of the human service agencies located in the Lower East Side were established to serve the Jewish emigrants arriving in New York City. These agencies are still in existence and continue to serve their Jewish clientele. Many of these agencies are the ones which were contacted by Vera and EASYRIDE during the early stages of the project. Few Hispanic persons are as active with local human service agencies and hence they are not

generally aware of EASYRIDE. Elderly Chinese persons residing in the Lower East Side are typically encouraged by their family members to stay together and to limit their travel to the immediate neighborhood. Individual travel by elderly Chinese persons is also discouraged by family members, particularly if the travel involves a distance which cannot be walked. As a result of these characteristics, few Chinese or Hispanic persons have participated in the demonstration project.

EASYRIDE has produced a newsletter which was distributed to registrants and local human service agencies. The newsletter outlined the revised eligibility criteria and discussed some of EASYRIDE's latest accomplishments. This newsletter was printed in English and Spanish so that the majority of EASYRIDE registrants could read it.

3.3.6 Interactions with Human Service Agencies

As noted in the previous subsection the Lower East Side of Manhattan has a high density of human service agencies. As a result of the presence of so many agencies, it was originally thought that the EASYRIDE demonstration project would focus on the coordination of human service agency transportation. EASYRIDE has established a strong working relationship with area agencies and there has been a significant amount of mutual cooperation as the agencies and EASYRIDE worked toward a common goal of improving the well being of the elderly and handicapped. However, because most of the agencies do not have sufficient funds to support a full time transportation program, the demonstration project has not focused on the coordination of human service agency transportation. EASYRIDE will eventually have to establish third party purchase of service agreements with agencies such as the Office of Vocational Rehabilitation and Medicaid.

EASYRIDE has worked closely with the area agencies and has provided service directly to the agencies. This service was provided under the group trip or charter program. In such instances, an agency or group of agencies planned group trips and made a reservation with EASYRIDE to provide the transportation service. EASYRIDE has also provided limited service to several agencies under a contractual agreement. An example of this type of service was the contractual agreement between EASYRIDE and the Henry Street Settlement House. EASYRIDE provided the transportation service to an evening nutrition program held at the Henry Street Settlement House for several months during the summer of 1977. The service was only provided by EASYRIDE as long as funding was available. When the funding ran out, service to the evening nutrition program ended and EASYRIDE discontinued evening service. EASYRIDE has also provided limited service under contract to the New York State Department of Mental Health.

EASYRIDE continues to provide transportation service to many agency clients for purposes related to agency activities and for many purposes unrelated to agency activities. As discussed in the subsection on project marketing and outreach, the local human service agencies were instrumental in client registration for EASYRIDE. The demonstration project has also received the support and endorsement of the New York City Department of the Aging and the Office for the Handicapped, both of which realized the need for specialized transportation systems and were willing to serve as links to local elderly and handicapped groups.

The Lower East Side Inter-Agency Council on Aging (a coalition of workers in service programs for the elderly) represents the largest number of elderly people residing on the Lower East Side. Coalition members include over 80 organizations. Some of the chief agencies are the Henry Street Settlement House, Grand Street Settlement House, University Settlement House, Hamilton - Madison Houses, Education Alliance, the Church of All Nations, and

Friendship Center. This coalition has been concerned about the transportation problems of the elderly for several years and voted to work with EASYRIDE by informing clients of the service, assisting in enrollment, and cooperating in other areas as specific needs arose. In turn, EASYRIDE agreed to work closely with Council members by serving their transportation needs when feasible.

Although the handicapped are not as well served by community organizations as the elderly, several agencies serving the handicapped have responded enthusiastically to EASYRIDE. These agencies include the National Paraplegia Association, United Cerebral Palsy, the Philanthropic League, the Federation of the Handicapped and New York University's Institute of Rehabilitative Medicine.

While it is necessary to briefly present the role of the human service agencies in order to gain a general understanding of the project's history, only a minimal amount of time was invested in a detailed examination of the agencies' role in the demonstration project. This decision was made by both the evaluation contractor and the TSC evaluation manager due to the budget available for the evaluation and the related research activities planned by Vera. One of the research activities conducted by Vera was a survey of agency social workers shortly after EASYRIDE operations began. The following is an excerpt from a report entitled EASYRIDE and Social Agencies: A First Report prepared by the Vera Institute of Justice (Study 121) May, 1978 illustrating some results of the agency survey:

> Social agencies enthusiastically welcomed EASYRIDE to the Lower East Side. Interviews conducted with agency representatives soon after the service became operational brought forth such endorsements as "Fantastic", "Greatest thing that has happened down here", a "Godsend", "It gives people control over their lives"... The agencies saw EASYRIDE as answering a critical need of the elderly and handicapped clients and as a boon to the community as well....

Agency social workers see EASYRIDE primarily as a means to make the lives of their clients a little easier and richer. In addition, "Getting out gives them a more positive feeling about themselves". EASYRIDE is also viewed as a way to give clients services not available on the site of the senior center. "They are using services they might not have used before or at least as frequently...such as the doctor... going to the supermarket and social visiting." One social worker observed, "And they don't get lost anymore".

3.4 Role of Advisory Groups

Advisory groups play an important role in setting up a project such as EASYRIDE, particularly in an urban environment such as the Lower East Side. It is espcially important to solicit the assistance of the many different groups which are associated with the Lower East Side. Advisory groups provide information on the problems which, because of their particular environment or nature, require expertise which is not possessed by Vera. The members of the advisory groups provided specialized knowledge, contacts and information, which were invaluable when EASYRIDE faced bureaucratic or political difficulties.

There are two committees now involved in the demonstration project--the Steering Committee and the Consumer Advisory Board. The EASYRIDE Steering Committee is made up of many offical plannig groups. The information they provide is generally technical in nature. The following groups comprise the committee membership:

Groups Represented on EASYRIDE's Steering Committee:

- New York City "Special Efforts" Task Force for Elderly and Handicapped Transportation
- Association of Lower East Side Settlements
- Region II, Administration on Aging
- Region II, UMTA
- New York University Institute of Rehabilitation Medicine

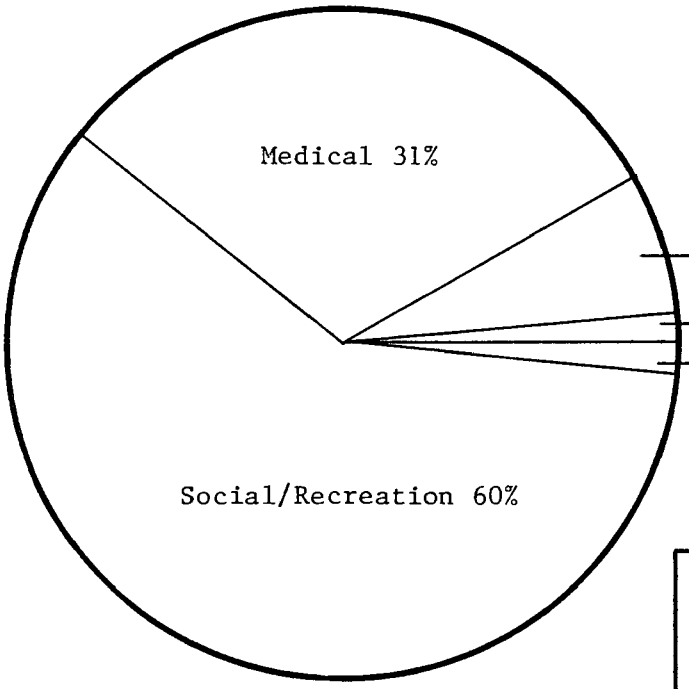
- o New York City Mayor's Office
- o New York State Office for the Aging
- o Metropolitan Transit Authority

The Consumer Advisory Board is analogous in function to the Steering Committee. It is made up on non-technically oriented people who are concerned with the provision of transportation to the elderly and handicapped. This local citizen group is concerned with short-range, specific problems. It is composed of four elderly and disabled persons who reside in the target area and representatives of about 20 agencies. This group meets approximately once every two months.

3.5 Pilot Operations

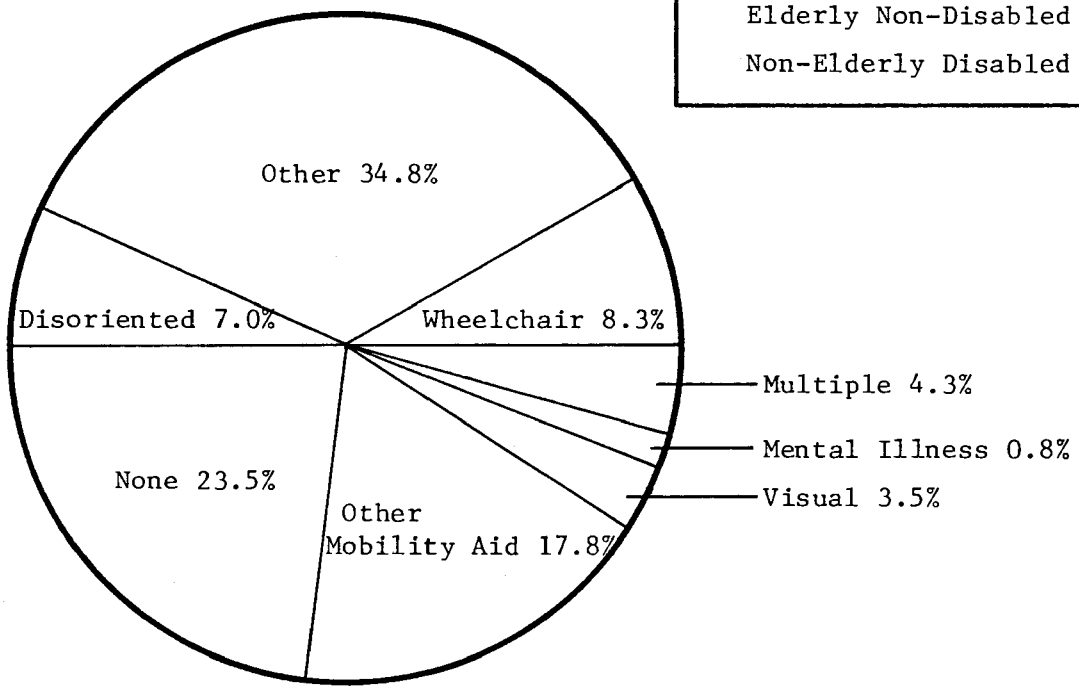
EASYRIDE began a pilot program in the Lower East Side on June 28, 1976 as a prelude to the full scale demonstration project. The transportation service was provided using three Dodge vans operating five days per week from June 28, 1976 through December 31, 1976. The service operated on a 48 hour advanced notice basis and carried individual and group charter passengers. The service was provided free of charge to the users and attracted clients from many of the area human service agencies.

Since this evaluation report does not include a detailed analysis of the pilot program, a brief summary of a portion of the pilot program is presented in Figure 3-17 (June 28, 1976 through November 12, 1976). As illustrated in Figure 3-17, the pilot service provided approximately 46 trips per day and attracted 230 registratnts to the program. Users of the system traveled primarily for discretionary purposes, social/recreational--60%, followed by medical---31%. The distribution of the registrants was predominantly elderly (96%) and 80% of the registrants were disabled. A small group (4%) of the registrants were non-elderly disabled.



DISTRIBUTION OF TRIPS BY PURPOSE

TOTAL TRIPS	4,453
AVERAGE TRIPS PER DAY	46
Individual Trips	49%
Group Charter Trips	51%
TOTAL REGISTRANTS	230
Elderly Disabled	76%
Elderly Non-Disabled	20%
Non-Elderly Disabled	4%



DISTRIBUTION OF REGISTRANT DISABILITIES

FIGURE 3-17 SUMMARY OF EASYRIDE PILOT OPERATIONS
(June 28, 1976 - November 12, 1978)

3.6 Funding Transition

As pointed out in Chapter 1, system viability is a critical subissue since it affects both the transition of the project from a demonstration to a permanent operation as well as the prospects of transferability to other sites. Due to the fact that the EASYRIDE demonstration project has been granted a two-year extension by UMTA/SMD it remains to be seen exactly how EASYRIDE will secure funding to maintain its operation on a permanent basis.

Through the first two years of operation two events have occurred which should be mentioned since they are related to project financing. EASYRIDE's system of voluntary contributions has not succeeded in producing meaningful revenue. This was due to the fact that Medicare eligible trips were fully reimbursed by the Health Care Finance Administration and agencies paid a flat rate for group trips. There were not many trips which fell in betweeen these two categories. As it turned out, the cost of purchasing and installing lock boxes in each vehicle exceeded the revenue generated by the sugested donation.

Due to the expenses involved in operating a specialized transportation system, EASYRIDE had to adjust its service in a manner that would generate a maximum amount of operating funds. As previously discussed, EASYRIDE eliminated the self-screening registration process and adjusted its eligibility requirements to maximize Medicare reimbursements. At the same time, the new eligibility requirements were designed to allow only those persons who have disabilities which reduce their ability to use public transportation to register for EASYRIDE.

CHAPTER 4

4.0 PROJECT SUPPLY CHARACTERISTICS

An important aspect of the EASYRIDE evaluation is to examine the project supply characteristics of the demonstration project and relate their impact to the operational performance of the system. Supply characteristics refer to the magnitude and types of services offered to the user. The primary factors that enter into the supply side include service characteristics (such as travel time and coverage), pricing, service reliability, and influence of demand levels.

The project supply characteristics are related to a number of issues of the demonstration project. The issues that the supply characteristics encompass are as follows:

- o User Related Transportation Issues
  - Pricing and coverage
  - Driver sensitivity
  - Service reliability
- o Transportation Service Delivery Issues
  - Time reliability
  - Coverage variability
  - Impact of access and egress time

4.1 Service Characteristics

EASYRIDE provided three types of service:

1) Demand-Responsive
2) Subscription
3) Charter

While the demand-responsive service was typically many-to-many shared ride service, demand-responsive service was occasionally many-to-few and many-to-one group ride service. Subscription service was typically provided for persons making a work trip or other trip which recurred on a regular basis. Charter service was exclusively many-to-one group rides provided when a sponsoring human service agency organized a trip for a recreational purpose or some other personal need (such as trips to cemeteries outside N.Y.C.).

Table 4-1 illustrates the distribution of EASYRIDE trips by type of service for five months during the demonstration. With the exception of the first month of operation the vast majority (82%) of all EASYRIDE trips were made in the demand-responsive mode. Charter service, which declined after the first few months of service, accounted for approximately 13% of all EASYRIDE trips while subscription service accounted for the balance of service (5%). It should be pointed out, however, that nutrition trips were counted as demand-responsive trips so that there was little separation between single person trips and many of the group trips (group trips other than charter trips).*

Since the subscription and charter modes accounted for a small proportion of the total EASYRIDE service much of the following analysis was performed independent of the service mode used.

4.1.1 Travel Time

Travel time refers to the total amount of time it takes for a passenger to travel from the trip origin to the trip destination. Since EASYRIDE provided door-thru-door service, it was necessary to stratify travel time by its additive components. Therefore, travel time was defined as follows:

*Nutrition trips were arranged by individuals and by human service agency representatives.

Trip Type	June, 1977		Dec., 1977		June, 1978		Dec., 1978		May, 1979		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Demand Responsive	1,478	37%	2,233	92%	2,752	91%	2,845	87%	3,633	96%	64,076	82%
Subscription	294	7%	156	6%	112	3.5%	75	2%	70	2%	3,751	5%
Charter	2,210	55%	32	2%	170	5.5%	334	11%	60	2%	10,344	13%
Total	3,982	100%	2,421	100%	3,034	100%	3,254	100%	3,763	100%	78,171	100%

TABLE 4-1 DISTRIBUTION OF EASYRIDE TRIPS BY TYPE OF SERVICE

$$T_t = t_1 + t_2 + t_3$$

Where: T_t = Total Travel Time

t_1 = access time or dwell time at the origin; the time required to assist the passenger from the origin to the vehicle.

t_2 = in-vehicle time or ride time; the time spent in the vehicle travelling from the origin to the destination.

t_3 = egress time or dwell time at the destination; the time required to assist the passenger from the vehicle to the destination.

Measurements of travel time (by component) were made twice during the demonstration using Detailed Driver Trip Logs. Two measurement periods were used so that the results from each period could be verified. It was hypothesized that the measures of travel time would not change during the demonstration. The measurement periods were from May 15 to May 31, 1978 and March 15 to March 31, 1979. The detailed driver trip logs were the regularly used EASYRIDE driver log with one modification. During the two sampling periods EASYRIDE drivers were required to record dwell times at trip origins and destinations. The drivers recorded the time they arrived at the trip origin and the time they left the origin. The difference between these two values was the access time or origin dwell time. The same procedure was used at the trip destination to determine the egress time or destination dwell time. The difference between the time a trip origin was left and the arrival time at a trip destination was the in-vehicle or ride time.

Detailed driver trip logs are an effective tool for monitoring the efficiency of demand-responsive systems. When possible, it is highly desirable to have an on-board observer record the pick-up and drop-off times. However, this procedure can be prohibitively

expensive for an evaluation of this nature. For the most part, the EASYRIDE drivers maintained the logs with sufficient accuracy for analysis purposes. There were, however, several logs which were not used because of errors in their completion or too many omissions of necessary data.

A detailed analysis of the components of travel time was performed using data collected from the Detailed Driver Trip Logs. The analysis was performed by considering travel time for the following groups:

- For all trips made.
- For all trips made in accessible vans.
- For all trips made in ambulatory vans.
- For all trips made by persons using a wheelchair.
- For all trips made by persons using a walker or braces/crutches.
- For all trips made by persons using a cane.
- For all trips made by time of day criteria (morning, midday, late afternoon).

A summary of the travel time components obtained from an analysis of the data contained in the May, 1978 detailed driver trip logs is presented in Table 4-2. The total sample from this data set consisted of 1,127 trips. All of the travel components have been computed in minutes.

The average access time (t_1) or dwell time at the origin was 2.60 minutes for all trips. The access time, as expected, was higher for trips made in the accessible vans (3.60 minutes) than for trips made in the ambulatory vans (1.74 minutes). Clearly, persons requiring use of the lift on the accessible vans require greater access time than ambulatory persons.

Analysis of the access time according to the type of mobility aid used indicated that persons in wheelchairs required the longest access time (6.44 minutes) of the three groups considered. The

Travel Time Component	For All Trips (min.)	Accessible Vans (min.)	Ambulatory Vans (min.)	Aid: Wheelchair (min.)	Aid: Walker or Braces/ Crutches (min.)	Aid: Cane (min.)
t_1 Access Time (dwell origin)	$\bar{x}$ = 2.60 Sx = 4.04 $S\bar{x}$ = .12 n = 1,127 95% C.I. 2.60 ± .24	$\bar{x}$ = 3.60 Sx = 4.44 $S\bar{x}$ = .20 n = 505 95% C.I. 3.60 ± .39	$\bar{x}$ = 1.74 Sx = 3.43 $S\bar{x}$ = .14 n = 627 95% C.I. 1.74 ± .27	$\bar{x}$ = 6.44 Sx = 4.54 $S\bar{x}$ = .46 n = 99 95% C.I. 6.44 ± .90	$\bar{x}$ = 4.12 Sx = 3.92 $S\bar{x}$ = .62 n = 40 95% C.I. 4.12 ± 1.22	$\bar{x}$ = 3.71 Sx = 3.77 $S\bar{x}$ = .33 n = 133 95% C.I. 3.71 ± .65
t_2 In-Vehicle Time (ride time)	$\bar{x}$ = 17.98 Sx = 14.88 $S\bar{x}$ = .44 n = 1,127 95% C.I. 17.98 ± .86			$\bar{x}$ = 18.02 Sx = 18.24 $S\bar{x}$ = 1.83 n = 99 95% C.I. 18.02±3.59	$\bar{x}$ = 16.85 Sx = 16.55 $S\bar{x}$ = 2.62 n = 40 95% C.I. 16.85±5.14	$\bar{x}$ = 18.52 Sx = 18.34 $S\bar{x}$ = 1.59 n = 133 95% C.I. 18.52±3.12
t_3 Egress Time (dwell destination)	$\bar{x}$ = 1.05 Sx = 2.84 $S\bar{x}$ = .08 n = 1,127 95% C.I. 1.05 ± .16	$\bar{x}$ = 1.58 Sx = 2.97 $S\bar{x}$ = .13 n = 502 95% C.I. 1.58 ± .25	$\bar{x}$ = .58 Sx = 2.06 $S\bar{x}$ = .08 n = 625 95% C.I. .58 ± .16	$\bar{x}$ = 3.85 Sx = 2.92 $S\bar{x}$ = .30 n = 97 95% C.I. 3.85 ± .59	$\bar{x}$ = 2.30 Sx = 2.15 $S\bar{x}$ = .34 n = 40 95% C.I. 2.30 ± .67	$\bar{x}$ = 2.26 Sx = 3.52 $S\bar{x}$ = .31 n = 133 95% C.I. 2.26 ± .61
T_t Total Travel Time	$\bar{x}$ = 21.63	$\bar{x}$ ∿ 23.18	$\bar{x}$ ∿ 20.32	$\bar{x}$ = 28.31	$\bar{x}$ = 23.27	$\bar{x}$ = 24.49
Percent Dwell Time	17%	22%	11%	36%	28%	24%

TABLE 4-2 SUMMARY OF TRAVEL TIME COMPONENTS FROM DETAILED DRIVER TRIP LOGS - MAY, 1978

group consisting of persons using walkers or braces/crutches had an average access time of 4.12 minutes and persons using a cane (or umbrella) had an average access time of 3.71 minutes. It appears, as expected, that the access time decreases as the severity of the mobility limitation decreases. Persons with severe mobility limitations required a greater amount of driver assistance than persons who were able to board and alight from the vehicle without any driver assistance.

The standard deviations of the access time measures were reasonably large indicating a wide range in the variability of the individual measures. It was not unusual for a driver to spend 15 minutes or more helping a user board the vehicle. However, because the sample sizes of the various groups were large, the standard error of the estimates were small. Therefore, the 95% confidence intervals formulated around the mean values were small (with the exception of some of the mobility aid groups).

The in-vehicle time (t_2) or ride time averaged 17.98 minutes for all trips made. It should be noted that this value of ride time was computed for each individual trip made, regardless of the number of persons in the vehicle at the time. For example, if five persons were picked up at one origin and dropped off at one destination they all had the same ride time (say 10 minutes). That 10 minute ride time was then counted 5 times when the total average ride time was computed. Another example will also be helpful in understanding what the measures of ride time mean. If one passenger was riding on the vehicle for 10 minutes and then a second passenger is picked up and they both ride the vehicle together for 5 minutes before they are both dropped off at the same destination (excluding dwell times) the <u>first</u> passenger's ride time was 15 minutes and the second passengers ride time was 5 minutes. Therefore, the 17.98 minute average ride time for all trips includes ride sharing, group riding and riding alone.

The standard deviation of ride time for all trips (14.88 minutes) indicates the wide variability in individual ride times. Although the vast majority of all EASYRIDE trips start and end in the Lower East Side it was not unusual for an uptown medical trip to require 60 minutes or more of ride time. Since the sample size was large, the standard error of this value was small, resulting in a 95% confidence interval of 17.98 $\pm$ .86 minutes for individual ride time.

The egress time (t_3) or destination dwell time for all categories of trips was always less than the corresponding access time (t_1). This can be explained by the fact that once at the destination the user quickly alighted from the vehicle with little waste of time. This phenomenon is not unique to EASYRIDE as it has been observed at many other specialized transportation systems.* It appears that people can alight from a vehicle in almost half the time it takes them to board the vehicle.

The egress time for all trips averaged 1.05 minutes. As was the case with access time (t_1), the egress time for accessible vans (1.58 minutes) was greater than the egress time for the ambulatory vans (.58 minutes). The egress times for users requiring mobility aids decreased with the severity of the mobility limitation. The egress times for persons requiring a wheelchair, walker or crutches/braces, or a cane were 3.85 minutes, 2.30 minutes, and 2.26 minutes, respectively. Generally speaking, there was less variability in the measures of egress time than in the measures of access time. This was evidenced by the lower standard deviations about the mean values compared to the access time measures and the resulting smaller 95% confidence intervals about the mean values.

*Federated Dorchester Neighborhood House's Senior Shuttle (Boston, MA), Hamilton Township's Dial-A-Ride (Hamilton, NJ), Ewing Townships' Dial-A-Ride (Ewing, NJ).

The average total travel time (T_t) was computed for each category of trip by adding the mean values of the travel time components. Since the ride times for the different categories of trips presented in Table 4-2 are approximately equal, the differences in total travel time are due to the differences in access and egress times. The average total travel time for all trips in the first detailed sample was 21.63 minutes.

Persons using a wheelchair had the highest average dwell times (t_1 and t_3) and therefore it was not surprising that these persons had the highest average total travel time (28.31 minutes) of all groups considered. The average total travel time for persons using a walker or braces/crutches was 23.27 minutes and persons using a cane had an average total travel time of 24.49 minutes. The reason that the walker or braces/crutches group had a lower travel time than the cane group, even though their total dwell time was greater, was because the former group had a lower average ride time than the latter group.

The data presented on the components of travel time are informative, but another comparison should be made to put the values of the travel time components in their proper perspective. The ratio of total dwell time (t_1 and t_3) has been expressed as a percentage of total travel time (T_t). For all trips made, 17% of the total travel time was devoted to access and egress time. The ratio was approximately 22% for all trips made in accessible vehicles but only about 11% for all trips made in ambulatory vans. The ratios increase further when the travel times are disaggregated by mobility aid. For trips made by persons in wheelchairs, the total dwell time accounted for 36% of the total travel time. This percentage was 28% for persons using a walker or braces/crutches and 24% for persons using a cane.

The difference in the impact of dwell time on total travel time between the group of people that require little, if any, assistance and those requiring driver assistance boarding and alighting from the vehicle is quite significant. Persons using a mobility aid spent between one-quarter and one-third of their total travel time boarding and alighting from the vehicle. In direct contrast to this, persons travelling in the ambulatory vehicles spent about 11% of their total travel time boarding and alighting from the vehicle. These figures, clearly, are characteristic of a high quality door-thru- door specialized transportation system. That is, to serve a group of persons with mobility limitations, systems managers must expect a high dwell time to total travel time ratio. This factor will, however, adversely impact overall productivity and the total cost per trip.

In order to determine if the travel time components of the various categories of trips presented in Table 4-2 differ from each other a t- test of the variables' mean value was performed. The results of the t-tests performed are presented in Table 4-3. In each test we computed the t statistic to determine if the difference between the mean values of each pair of travel time components was statistically significant. The null hypothesis was:

$$H_o: \quad \bar{X}_i = \bar{X}_j$$

and the alternative hypothesis was

$$H_1: \quad \bar{X}_i - \bar{X}_j \neq 0$$

The test statistic was computed from the following:

$$t = \frac{\bar{X}_i - \bar{X}_j}{\sqrt{\underline{S}^2_{\overline{n}x^i} + \underline{S}^2_{\overline{n}xi}}}$$

All tests were performed at a 95% confidence level and were two-tailed tests with a critical value of 1.96.

Travel Time Component	Groups Tested	T value	Difference in Mean Value (95% level)
t_1 Access Time (dwell origin)	Wheelchair - Walker/Braces	3.01	Yes
	Wheelchair - Cane	4.86	Yes
	Cane - Walker/Braces	.59	No
	Ambulatory Vans - Accessible Vans	7.73	Yes
t_3 Egress Time (dwell destination)	Wheelchair - Walker/Braces	3.44	Yes
	Wheelchair - Cane	3.74	Yes
	Cane - Walker/Braces	.09	No
	Ambulatory Vans - Accessible Vans	6.40	Yes

TABLE 4-3 COMPARISON OF TRAVEL TIME COMPONENTS - T TEST MAY, 1978 DETAILED DRIVER TRIP LOGS

As indicated in Table 4-3 there were statistically significant differences in the mean value of the access time and egress time for the following pairs of groups:

- Wheelchair users and walker or crutches/braces users
- Wheelchair users and persons using a cane
- Trips made in ambulatory vans and trips made in accessible vans

There was no statistically significant difference between the access and egress times of persons using a cane and persons using a walker or crutches/braces.

A summary of the travel time components obtained from the analysis of the second set of detailed driver trip logs is presented in Table 4-4. The measures of the travel time components obtained during March, 1979 are generally very comparable with the measures obtained from the first set of detailed driver trip logs, and, therefore, verfiy our original hypothesis that the components of travel time would not change during the demonstration. For example, the access time for persons making trips using different types of mobility aids increased as the severity of the disability requiring different mobility aids increased. In other words, the access time for persons using a wheelchair was greater than the access time for persons using a walker or braces/crutches which was greater than the access time for persons using a cane.

The major difference between the analysis of travel time components from the two sets of detailed driver trip logs was in the egress times. The egress times for various trip types measured from the first set of detailed driver trip logs were, for the most part, significantly different from each other. Furthermore, their magnitude followed logically from the type of trip which was made categorized by vehicle type and mobility aid. The egress times measured from the second set of detailed driver

Travel Time Component	For All Trips (min.)	Accessible Vans (min.)	Ambulatory Vans (min.)	Aid: Wheelchair (min.)	Aid: Walker or Braces/ Crutches (min.)	Aid: Cane (min.)
t_1 Access Time (dwell origin)	$\bar{x}$ = 3.93 Sx = 5.25 $S\bar{x}$ = .20 n = 704 95% C.I. 13.93 ± .39	$\bar{x}$ = 4.16 Sx = 5.99 $S\bar{x}$ = .29 n = 423 95% C.I. 4.16 ± .57	$\bar{x}$ = 3.65 Sx = 3.89 $S\bar{x}$ = .23 n = 281 95% C.I. 3.65 ± .45	$\bar{x}$ = 5.13 Sx = 8.85 $S\bar{x}$ = .74 n = 142 95% C.I. 5.13 ± 1.45	$\bar{x}$ = 4.34 Sx = 4.07 $S\bar{x}$ = .46 n = 77 95% C.I. 4.34 ± .90	$\bar{x}$ = 3.45 Sx = 4.34 $S\bar{x}$ = .29 n = 223 95% C.I. 3.45 ± .57
t_2 In-Vehicle Time (ride time)	$\bar{x}$ = 18.44 Sx = 15.60 $S\bar{x}$ = .59 n = 704 95% C.I. 18.44±1.15	$\bar{x}$ = 17.94 Sx = 15.20 $S\bar{x}$ = .74 n = 423 95% C.I. 17.94±1.45	$\bar{x}$ = 19.19 Sx = 16.10 $S\bar{x}$ = .96 n = 281 95% C.I. 19.19±1.88	$\bar{x}$ = 18.59 Sx = 14.80 $S\bar{x}$ = 1.24 n = 142 95% C.I. 18.59±2.43	$\bar{x}$ = 17.27 Sx = 16.90 $S\bar{x}$ = 1.93 n = 77 95% C.I. 17.27±3.77	$\bar{x}$ = 19.83 Sx = 17.70 $S\bar{x}$ = 1.14 n = 223 95% C.I. 19.83±2.32
t_3 Egress Time (dwell destination)	$\bar{x}$ = 1.43 Sx = 1.98 $S\bar{x}$ = .07 n = 704 95% C.I. 1.43 ± .15	$\bar{x}$ = 1.65 Sx = 2.34 $S\bar{x}$ = .11 n = 423 95% C.I. 1.65 ± .22	$\bar{x}$ = 1.10 Sx = 1.19 $S\bar{x}$ = .07 n = 281 95% C.I. 1.10 ± .14	$\bar{x}$ = 1.11 Sx = 7.86 $S\bar{x}$ = .66 n = 142 95% C.I. 1.11 ± 1.29	$\bar{x}$ = 1.64 Sx = 2.13 $S\bar{x}$ = .24 n = 77 95% C.I. 1.64 ± .47	$\bar{x}$ = 1.14 Sx = 1.13 $S\bar{x}$ = .08 n = 223 95% C.I. 1.14 ± .15
T_t Total Travel Time	$\bar{x}$ = 23.80	$\bar{x}$ = 23.75	$\bar{x}$ = 23.94	$\bar{x}$ = 24.83	$\bar{x}$ = 23.25	$\bar{x}$ = 24.42
Percent Dwell Time	23%	24%	20%	25%	26%	19%

TABLE 4-4 SUMMARY OF TRAVEL TIME COMPONENTS FROM DETAILED DRIVER TRIP LOGS - MARCH, 1979

trip logs were consistently lower than those measured from the first set of detailed driver trip logs. Furthermore, these egress times were not significantly different from each other. Table 4-5 presents a summary of the t tests performed on the travel time components. Because of small differences in the measures' mean values and their relatively large standard deviations the t values are rather low.

The mean values of the travel time components measured from the two sets of detailed driver trip logs were compared using the t test to test the hypothesis that their mean values were not significantly different at a 95% confidence interval. The t values from these tests are presented in Table 4-6.

The data presented in Table 4-2 indicated that the average in-vehicle time (ride time) for all trips made during the May, 1978 sampling period was 17.98 minutes. In order to obtain a more detailed understanding of in-vehicle time a frequency distribution was created. The frequency distribution of in-vehicle time is presented graphically in Figure 4-1. In-vehicle time has been categorized into five minute intervals. The resulting distribution is positively skewed with the mode in the 10 to 14 minute interval.

The distribution illustrated in Figure 4-1 is characteristic of specialized transportation systems where most of the trips are very short, but long trips do occur. The distribution presented in Figure 4-1 is very similar to the distribution of travel times for The Lift in Portland.* The trips with short in-vehicle times are primarily nutrition trips. The longer trips are uptown medical trips which go beyond the Lower East Side to Upper Manhattan.

*The Lift: Special Needs Transportation in Portland, Oregon, Interim Report June 1978 Service and Methods Demonstration Program, Crain and Associates, P. 100.

Travel Time Component	Groups Tested	T value	Difference in Mean Value (95% level)
t_1 Access Time (dwell origin)	Wheelchair - Walker/Braces	.90	No
	Wheelchair - Cane	2.11	Yes
	Cane - Walker/Braces	1.63	No
	Ambulatory Vans - Accessible Vans	1.37	No
t_3 Egress Time (dwell destination)	Wheelchair - Walker/Braces	.75	No
	Wheelchair - Cane	.04	No
	Cane - Walker/Braces	1.97	Yes
	Ambulatory Vans - Accessible Vans	4.10	Yes

TABLE 4-5 COMPARISON OF TRAVEL TIME COMPONENTS - T TEST
MARCH, 1979 DETAILED DRIVER TRIP LOGS

TRAVEL TIME COMPONENT	ALL TRIPS	ACCESSIBLE VANS	AMBULATORY VANS	AID: WHEELCHAIR	AID: BRACES/CRUTCHES	AID: CANE
t_1 Access Time	5.74*	1.59	7.09	1.50	.28	.59
t_2 In-Vehicle Time	1.62	.04**	1.07**	.26	.13	.66
t_3 Egress Time	3.37*	1.40	4.78*	3.79*	1.58	3.57*

* Statistically significant difference in mean value of components at the 95% confidence level

** Compared to in-vehicle time for all trips in May, 1978

TABLE 4-6 T TEST VALUES FROM A COMPARISON OF THE TRAVEL TIME COMPONENTS FROM THE TWO SETS OF DETAILED DRIVER TRIP LOGS

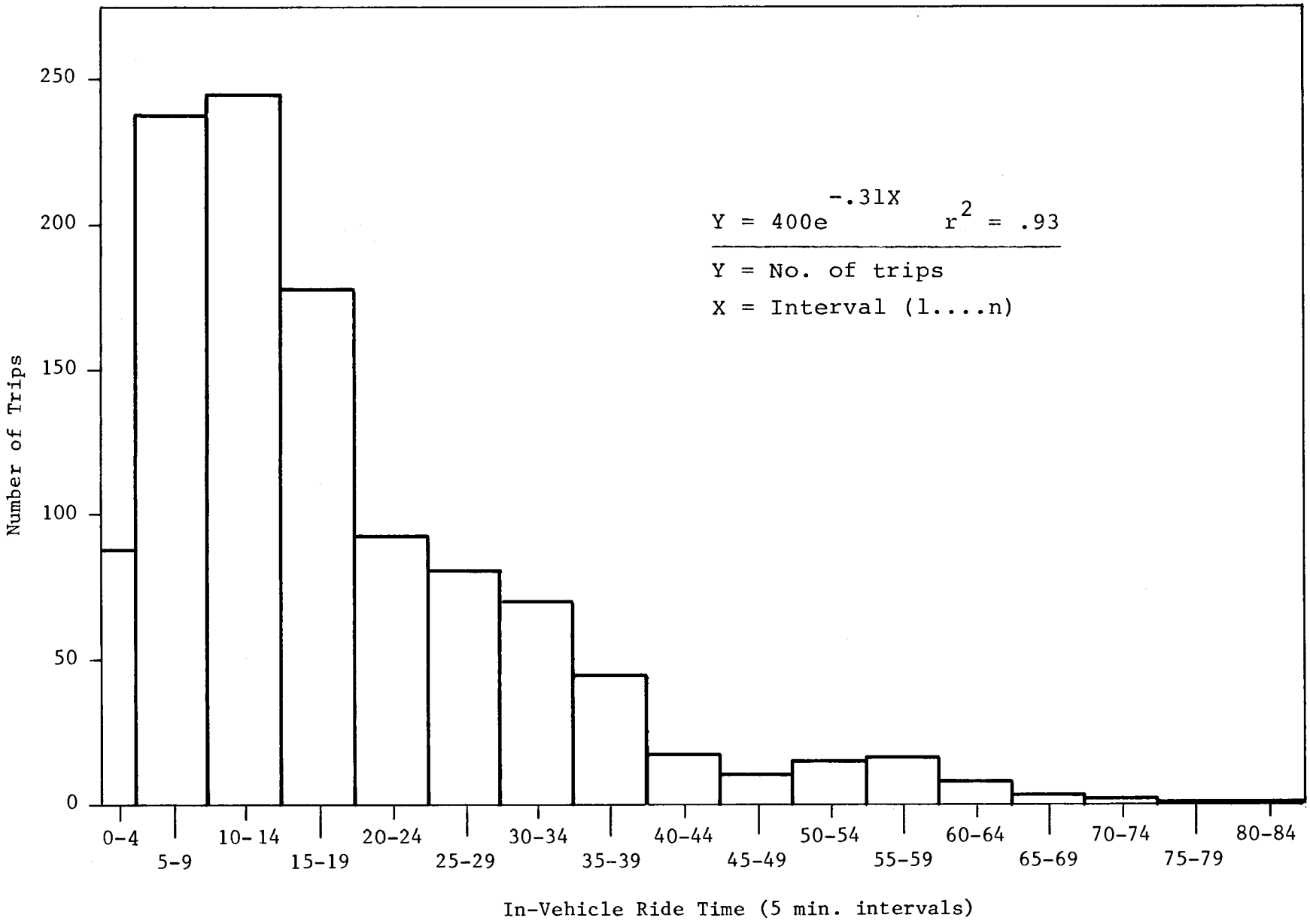


FIGURE 4-1 RIDE TIME DISTRIBUTION - MAY, 1978

The data obtained from the second set of detailed driver trip logs indicated that the average in-vehicle travel time (ride time) for all trips made during the March, 1979 sampling period was 18.82 minutes. A frequency distribution of in-vehicle time was again assembled and is presented in Figure 4-2. The resulting distribution is also positively skewed with the mode in the 6-10 minute interval.

The shape of the frequency distributions obtained from data collected from the two sets of detailed driver trip logs are basically identical. The equations developed which express the number of trips in each interval have the same coefficient for the dependent variable. The equation for the frequency distribution of in-vehicle time obtained from the first set of detailed trip logs is:

$$Y = 400\ e^{-.31X} \qquad r^2 = .93$$

The equation for the frequency distribution of in-vehicle time obtained from the second set of detailed trip logs is:

$$Y = 299\ e^{-.31X} \qquad r^2 = .91$$

In both equations the number of trips made in a given interval is the dependent variable (Y) while the interval is the independent variable (X).

These equations differ only in their magnitude but not in their shape. During the first detailed trip log the sample size was 1,127 while the sample size obtained during the second set of detailed driver trip logs was only 830.

Figure 4-3 presents the distribution of travel times (in ten minute intervals) from The Lift project in Portland, Oregon. Although presented in ten minute intervals the frequency distribution has the same characteristic shape as those presented

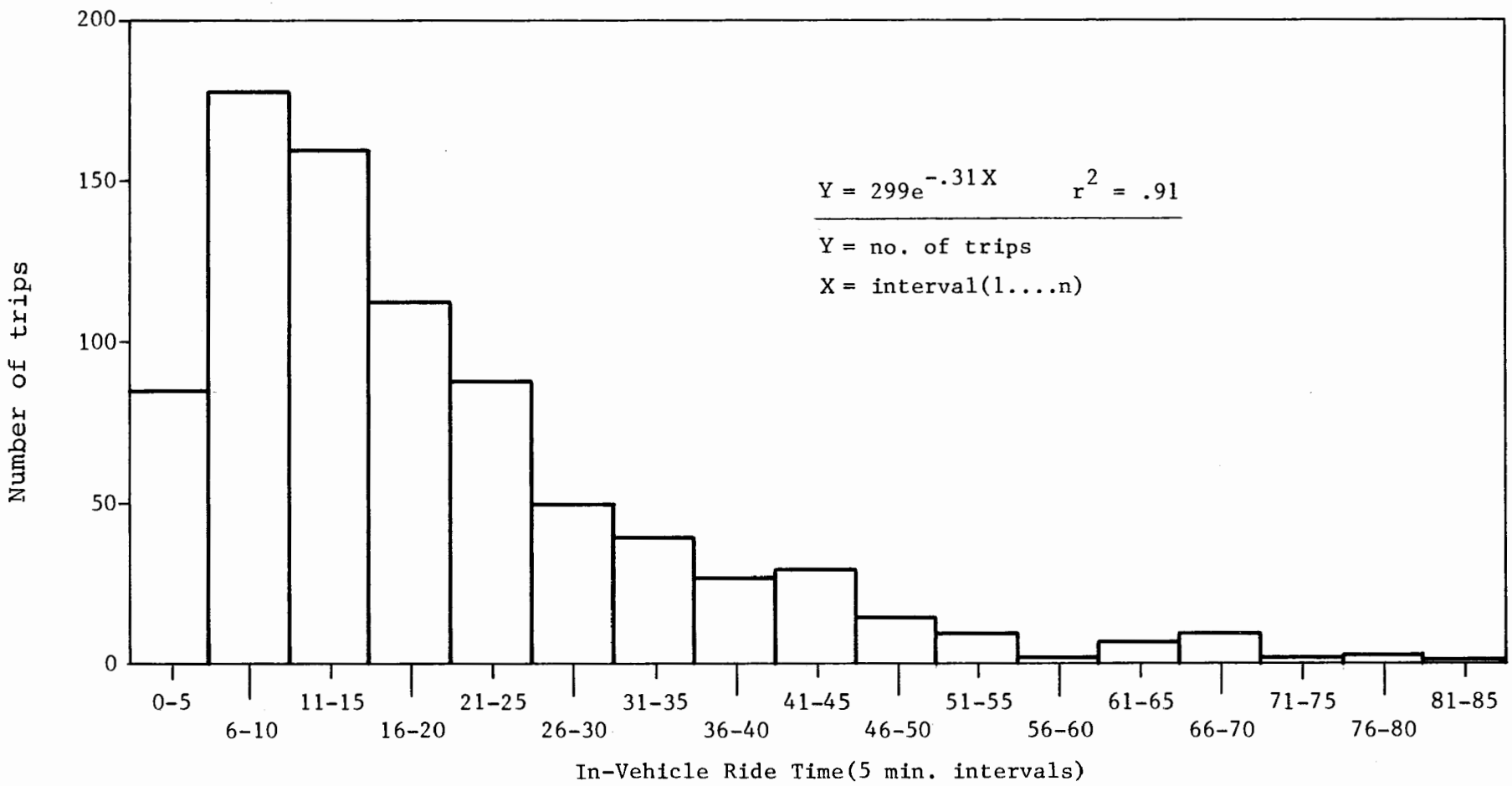
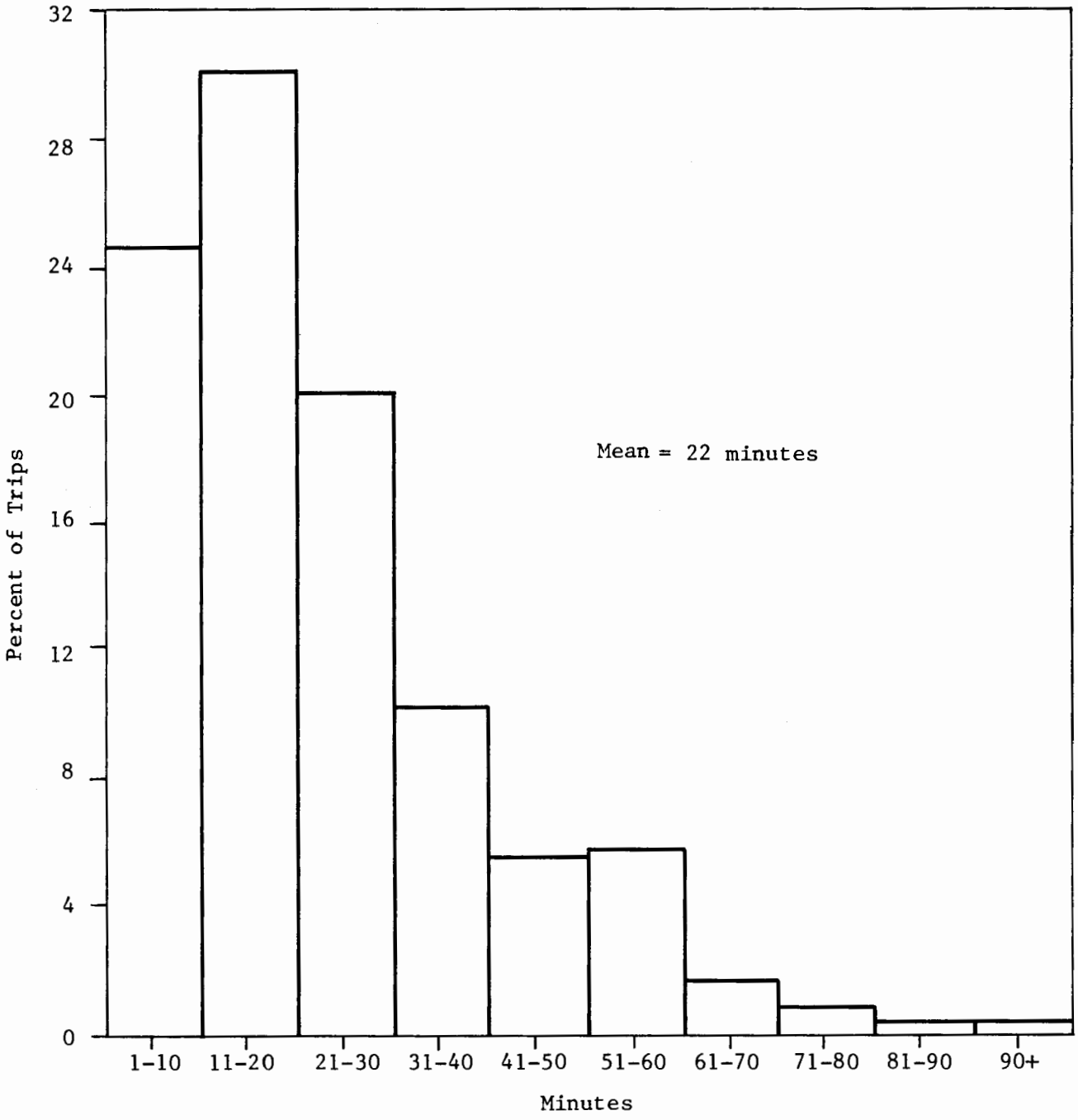


FIGURE 4-2 RIDE TIME DISTRIBUTION - MARCH, 1979



Source: The Lift: Special Needs Transportation in Portland, Oregon, Interim Report June, 1978 Service and Methods Demonstration Program, Crain and Associates

FIGURE 4-3 DISTRIBUTION OF TRAVEL TIMES FOR THE LIFT

for EASYRIDE. The slope computed for the Lift data was greater than the slope computed from the EASYRIDE data using the same model form ($Y = a\ e^{bX}$). In the case of The Lift, b was determined equal to -.54.

In addition to analyzing the components of travel time, total travel time was evaluated according to time of day considerations. Three time periods were defined for this analysis; these were as follows:

1) Morning - prior to 10:00 a.m.

2) Midday - 10:00 a.m. through 3:00 p.m.

3) Late Afternoon - 3:01 p.m. through the end of the day

A trip was assigned to one of the three time periods according to the driver's arrival time at the trip origin. Even if a trip ended in a later time period it was assigned to an earlier time period if the driver's arrival time at the origin indicated an earlier period.

A summary of the total travel time by time of day is presented in Table 4-7. A brief examination of the sample sizes indicates that the vast majority of all trips began during the midday period (78% during the first set of detailed driver trip logs and 65% during the second set). Total travel time averaged 20.19 minutes and 23.15 minutes during the midday period as measured from the May, 1978 and March 1979 driver trip logs respectively. During the morning period total travel time averaged 23.50 minutes (May, 1978) and 22.63 minutes (March, 1979). The longest total travel times, however, were recorded during the late afternoon period when average values of 29.56 minutes (May, 1978) and 32.00 minutes (March, 1979) were recorded.

Time of Day Consideration	May, 1978 Total Travel Time (min.)	March, 1979 Total Travel Time (min.)	T Value (Comparing 1978 and 1979 data)
Morning (prior to 10:00 am)	$x = 23.50$ $s_x = 13.46$ $s_{\bar{x}} = 1.03$ $n = 171$ 95% C.I. 23.50 ± 2.02	$\bar{x} = 22.63$ $s_x = 14.60$ $s_{\bar{x}} = .97$ $n = 226$ 95% C.I. 22.63 ± 1.90	.61
Mid-Day (10:00 am thru 3:00 pm)	$\bar{x} = 20.19$ $s_x = 16.13$ $s_{\bar{x}} = .54$ $n = 884$ 95% C.I. 20.19 ± 1.06	$\bar{x} = 23.15$ $s_x = 21.30$ $s_{\bar{x}} = 1.01$ $n = 446$ 95% C.I. 23.15 ± 1.98	2.58
Late Afternoon (3:01 pm thru end of day)	$\bar{x} = 24.56$ $s_x = 19.16$ $s_{\bar{x}} = 2.26$ $n = 72$ 95% C.I. 29.56 ± 4.43	$\bar{x} = 32.00$ $s_x = 26.10$ $s_{\bar{x}} = 8.25$ $n = 10$ 95% C.I. 32.00 ± 16.18	.29

TABLE 4-7 TRAVEL TIME BY TIME OF DAY

The differences in total travel time by time of day can be explained by reviewing the types of trips which were made during each of the three time periods. During the morning and late afternoon periods EASYRIDE provided a majority of medical related trips. The hospital shuttle system operated during the late afternoon and the shuttle runs usually required more in-vehicle time per trip than regular trips. In addition, many of the medical trips were made to destinations outside the Lower East Side, also adding to the in-vehicle time.

The midday period was by far the busiest service period of the day primarily because nutrition program trips were made during that period. The nutrition trips had both their origins and destinations in the Lower East Side and were, therefore, shorter trips (total travel time per trip) than most other trips served by EASYRIDE. As a result the average total travel time for trips which began during the midday period was less than for the other two service periods, with one exception.*

A summary of trip purposes served by time of day was prepared from data contained in the second set of detailed driver trip logs and is presented in Table 4-8. Data contained in this table support the conclusions made concerning the magnitude of average total travel time by time of day.

Finally, the average total travel time measures specified by time of day considerations obtained from the two sample periods were compared using a t test. The t values from these tests are presented in Table 4-7. Analysis of the t values indicate that:

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*During March, 1979 the average total travel time was slightly greater during the midday period than during the morning period.

Trip Purpose	Morning (Before 10:00 AM)		Mid-day (10:01 AM - 3:30 PM)		Late Afternoon (After 3:30 PM)	
	f	%	f	%	f	%
Health Related	199	57	228	31	5	36
Employment/Training	34	10	34	5	6	43
Recreation	0	0	38	5	2	14
Shopping	0	0	0	0	0	0
Nutrition	91	26	410	56	1	7
Social Service	2	1	0	0	0	0
Other	19	6	19	3	0	0
TOTAL	350	100%	729	100%	14	100%

TABLE 4-8 SUMMARY OF TRIP PURPOSES SERVED BY TIME OF DAY - MARCH, 1979

1 - There was no statistically significant difference between the mean values of average total travel time during the morning period.

2 - There was no statistically significant difference between the mean values of average total travel time during the late afternoon period.

3 - There was a statistically significant difference between the mean values of average total travel time during the midday period. This difference, although significant, was only several minutes.

4.1.2 Coverage

Coverage refers to the area in the demonstration project for which specialized transit service was provided. The two measures primarily associated with coverage are spatial coverage and temporal coverage. Spatial coverage refers to the size of the target area and the number of vehicles serving this area. Temporal coverage refers to the amount of service provided during each hour of the day.

The Lower East Side is an area of approximately 2.0 square miles while the area of Manhattan Island is approximately 23 square miles. The target area was served by approximately five vehicles per square mile while the potential destination area was served by approximately .43 vehicles per square mile.

The spatial coverage of EASYRIDE is compared to four other systems in Table 4-9. Generally speaking, the spatial coverage by EASYRIDE is higher than the coverage provided by Project Mobility, DATS and The Lift. Only Brockton Area Transit's Dial-A-Bat has a higher ratio of vehcles to service area than EASYRIDE. However, the traffic density present in the Lower East Side and the rest of Manhattan is far greater than in any of the other service areas. As a result EASYRIDE has a more difficult task providing service with its fleet of 10 vehicles than the other systems considered.

	EASYRIDE	DIAL-A-BAT	PROJECT MOBILITY	DATS	LIFT
No. of Vehicles	10	12	12	16	15
Service Area	2.0 sq.mi. (23 sq.mi.)*	21.5 sq.mi.	6.3 sq.mi. (100 sq.mi.)*	123 sq.mi.	89 sq.mi.
Eligible Population	25,000	10,000	3,400	19,000	21,000
No. of Vehicles/ Target Area	5.00	-	1.90	-	-
No. of Vehicles/ Total Service Area	.43	.56	.12	.13	.17
No. of Vehicles/ Eligible Population	.0004	.0012	.0035	.0008	.0007

*Total area of destinations served.

TABLE 4-9 COMPARISON OF SPATIAL COVERAGE

A measure which should also be considered in this discussion is the number of vehicles available per eligible user. In this comparison EASYRIDE has the lowest ratio of vehicles to eligibles of the five systems compared. Project Mobility's ratio was almost nine times greater than EASYRIDE's while Dial-A-Bat's ratio was three times greater. DATS and The Lift had ratios which were twice as large as EASYRIDE's. This measure indicates that EASYRIDE has fewer resources to serve a larger number of eligibles than the other systems considered. This is a characteristic of operating in a high density urban city.

EASYRIDE drivers work in seven hour shifts within the daily operating hours of 7:30 a.m. to 6:00 p.m. (plus one hour for lunch). In the previous subsection there was some indication that the vast majority of EASYRIDE trips began during the midday period (10:00 a.m. to 3:00 p.m.). EASYRIDE management has developed their driver schedules so that the peak demand periods are served with all ten drivers. The schedule also provides adequate coverage at the beginning and end of the day.

A profile of EASYRIDE service by the hour of day is presented in Figure 4-4. This figure indicates the number of vehicle hours of service provided during each hour of the day and the percent of total daily vehicle service hours provided at each hour of the day. On a typical day all 10 EASYRIDE vehicles are in service between 10:00 a.m. and 3:30 p.m., the midday service period. Between June, 1977 and February, 1979 61% of all EASYRIDE trips began sometime during the midday period. EASYRIDE management has very effectively matched the available supply of service with the peak demand. However, since 23% of all EASYRIDE trips began during the morning period and only 6% of the trips began during the late afternoon it would appear from Figure that there is too much supply of service at the end of the day and too little at the beginning of the day. EASYRIDE management might consider shifting one or two drivers so that they begin their tours earlier in the day.

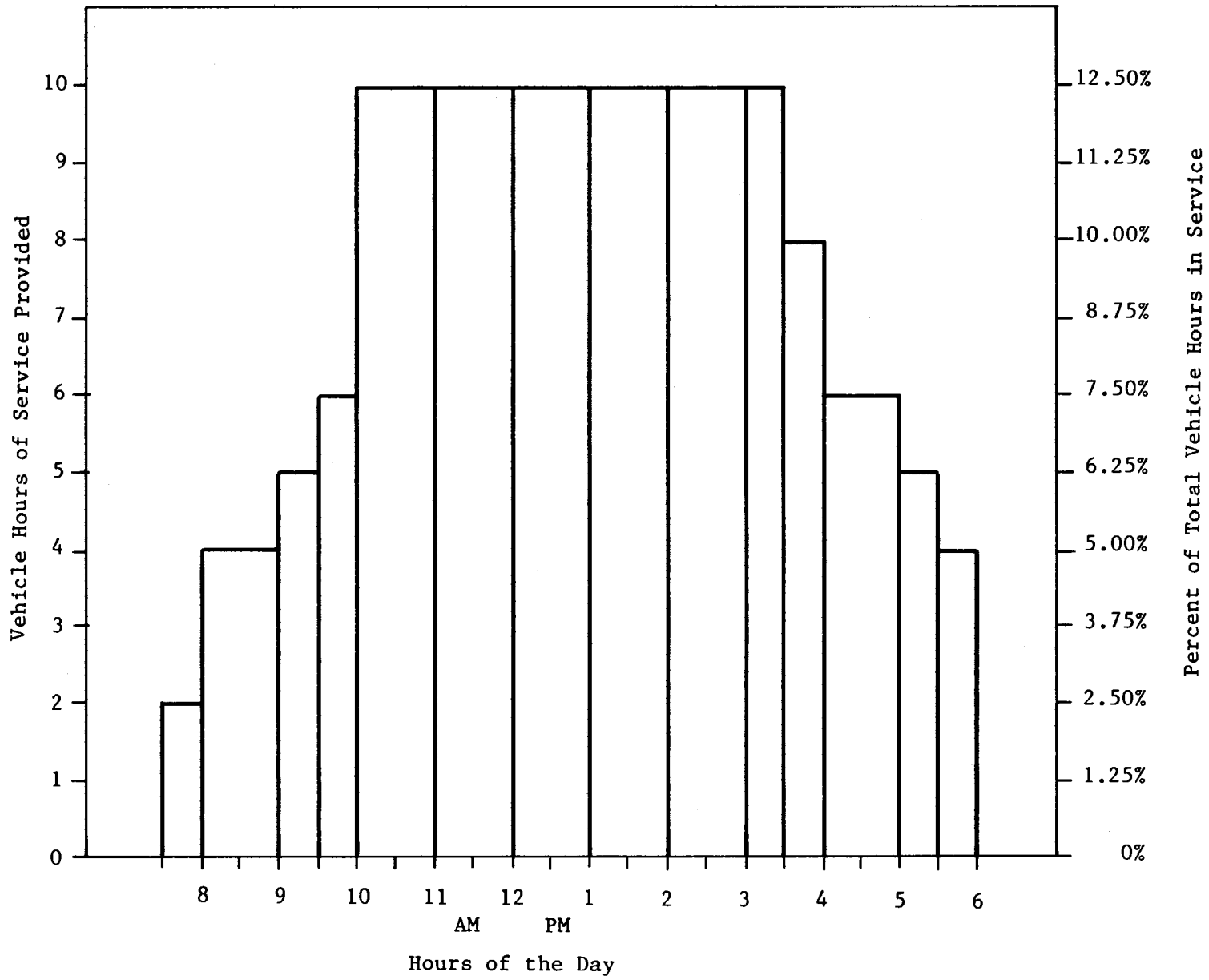

FIGURE 4-4 SERVICE BY HOUR OF DAY (TYPICAL DAY)

4.2 Pricing

Pricing deals with the actual cost that the user (individual or agency) paid to use the EASYRIDE service. As discussed in Chapter 3 there were several different user fares in effect depending upon the type of EASYRIDE service required. For persons using the demand-responsive service there was no required fare during the first two years of the demonstration. Demand-responsive users could make a suggested donation of $.15. The number of donations made was quite insignificant. For example, during calendar year 1978 all contributions amounted to $3,522 while the total operating costs were just over $440,000.* Contributions accounted for .8% of the total costs during calendar year 1978.

Reasons for the lack of donations are related to the following:

- Many users simply do not have enough money to pay for transportation.
- Many of the trips made are reimbursed by Medicare so users feel that they do not have to pay any additional money for the service.
- EASYRIDE was free to users from its inception. The suggested donation was not instituted until October, 1977. As a result users became accustomed to the free service.

EASYRIDE plans to introduce a $.25 fare for all users begining June 1, 1979. This fare will be charged to all users regardless of whether or not their trip is subject to Medicare reimbursement.

From the demonstration's inception subscription service was provided at a user cost of $1.00 per one-way trip. Since the subscription service only accounted for 5% of all EASYRIDE trips the revenue generated from the service was rather small.

*This figure of $3,522 included private contributions in addition to user donations.

Charter service was provided to local human service agencies for special group trips. The sponsoring organizations paid EASYRIDE for this service at a rate of $10.00 per vehicle for trips within Manhattan, $15.00 per vehicle for trips to any other borough of New York City (Brooklyn, Queens, Staten Island, the Bronx) and $40.00 per vehicle for trips outside New York City. It should be noted that these rates were per vehicle regardless of the amount of time involved in making the round trip and any driver layover time (if the driver and vehicle waited for the group at the activity site).

The charter rates were rather low and did not cover the actual cost of service. However, they were designed to encourage trip making to locations not readily accessible to residents of the Lower East Side. Trips made on the charter service were frequently for recreational purposes or some form of personal business (such as trips to Long Island, N.Y. cemeteries once or twice a year).

4.2.1 Payment Mode

Table 4-10 illustrates the distribution of trip payment modes during various months of the demonstration. The trend that was established during the fall of 1977 sustained itself for the remainder of the demonstration. That trend was that a majority of all EASYRIDE trips were subject to Medicare reimbursement. At the end of the first two years of the EASYRIDE demonstration 68% of all trips made were subject to Medicare reimbursement. Another important trend that was established during the demonstration was a reduction in the percentage of trips which were not reimbursable by any mode.

	June 1977		Dec. 1977		June 1978		Dec. 1978		May 1979		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%
None	959	24	737	30	436	14	142	4	453	12	11,212	14
Medicare	991	25	1,503	62	2,447	81	2,572	80	2,957	79	53,468	68
Henry St.*	1,744	44	1	0	0	0	3	0	3	0	5,063	6
Subs-Self Pay	87	2	122	5	84	3	70	2	56	1	2,270	3
Dept. Mental Hyg.**	170	4	16	1	0	0	1	0	0	0	874	1
Medicaid	1	0	10	1	7	0	0	0	0	0	247	0
Group-Agency Pay	30	1	32	1	60	2	362	11	75	2	3,542	5
Group-Ind. Pay	0	0	0	0	0	0	0	0	0	0	460	1
Cargo Lunch	0	0	0	0	0	0	0	0	30	1	155	1
Outward Bound	0	0	0	0	0	0	104	3	189	5	880	1
TOTAL	3,982	100%	2,421	100%	3,034	100%	3,254	100%	3,763	100%	78,171	100%

* Henry St. program ended Sept. 30, 1977

** Dept. of Mental Hygiene program ended Dec. 16, 1977

TABLE 4-10 PAYMENT MODE DURING THE DEMONSTRATION

4.3 Service Reliability

Service reliability is a measure used to evaluate the dependability of three components: time reliability--adherence to scheduled pick-up and drop-off times; vehicle reliability--dependability associated with preventative maintenance and repairs; and driver reliability. These measures were evaluated in terms of the impact they had on providing service to users of the system.

4.3.1 Time reliability

Time reliability was evaluated in terms of EASYRIDE's adherence to the scheduled pick-up time. The pick-up time for a trip was defined as the difference between the actual pick-up time and the scheduled pick-up time. The measurement of adherence to pick-up time was made from the detailed driver trip logs which were completed during May, 1978 and March, 1979. A summary of the evaluation of pick-up time reliability is presented in Table 4-11.

Data analyzed from the May, 1978 detailed driver trip logs indicated that on average EASYRIDE made their pick-ups exactly when they were scheduled. However, the large standard deviation (23.50) indicates that there was a large amount of variability in the individual pick-up times recorded.

The distribution of actual scheduled pick-up times is presented graphically in Figure 4-5. The graphic representation of pick-up times indicates that 65% of the trips evaluated during the first detailed driver trip log were made exactly on time. Of the remaining trips, 26% were picked-up early while only 9% were picked up after the scheduled pick-up time. Of all the trips examined 80% were picked up within five minutes of the scheduled pick-up time, 90% within 10 minutes of the scheduled pick-up time and only 10% of the trips were picked up more than 10 minutes before or after the scheduled pick-up time.

Measure	Time Period	
	May, 1978	March, 1979
n	1,048	718
$\bar{x}$*	.00095 minutes	3.42
s_x	23.50	34.80
$s_{\bar{x}}$	.73	1.30
95% Confidence Level	.00095 $\pm$ 1.42	3.42 $\pm$ 2.55

*Average amount of time (in minutes) driver is early or late at pick-up point compared to scheduled pick-up time.

TABLE 4-11 SUMMARY OF THE EVALUATION OF PICK-UP TIME FROM THE DETAILED DRIVER TRIP LOGS

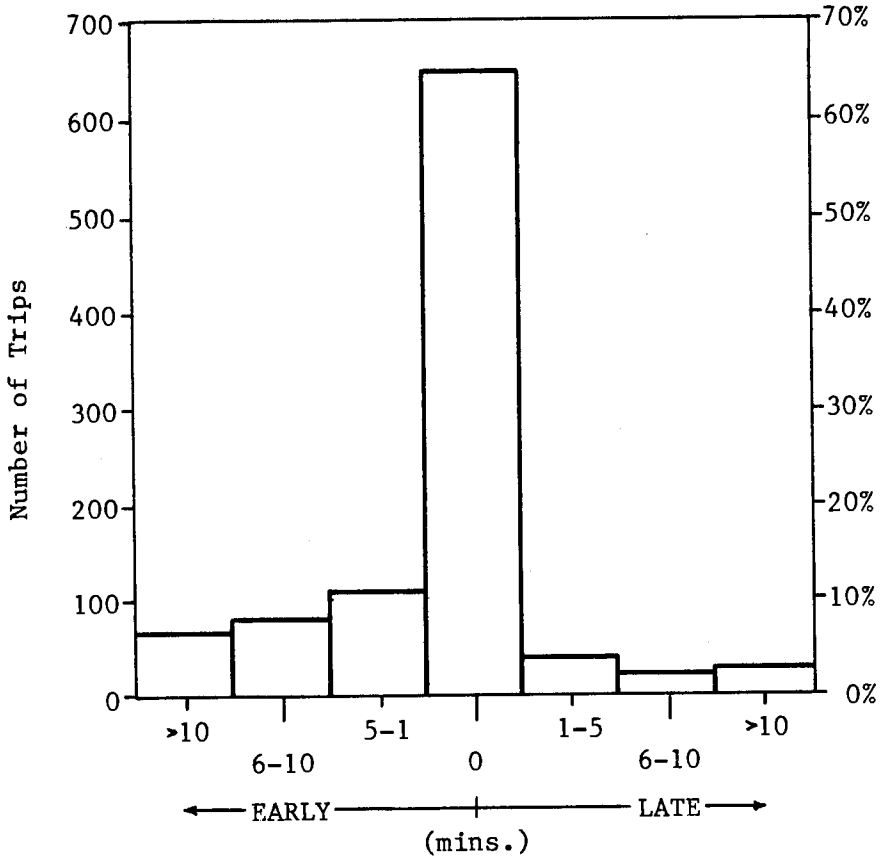

FIGURE 4-5 DISTRIBUTION OF PICK-UP TIME RELIABILITY-May, 1978

Data analyzed from the March, 1979 detailed driver trip logs indicated that on average EASYRIDE made their pick-ups 3.42 minutes after the scheduled pick-up time. However, the standard deviation of this mean value was greater than during the first measure. As a result the confidence interval around the mean value is rather large even though the sample size was 718. A t test was used to determine whether the means from the two measurement periods were significantly different. A t score of 2.30 resulted from test and this value, being greater than the critical value, allowed us to reject the null hypothesis that the difference between the mean values was not statistically significant.

The distribution of pick-up times from the second detailed trip log is presented in Figure 4-6. The graphic representation of pick-up times indicates that 24% of the trips sampled were picked-up early while 76% of the trips were picked-up within five minutes of the scheduled pick-up time and 79% of the trips were picked up within 10 minutes of the scheduled pick-up time. Of the trips sampled during the second set of detailed trip logs, 21% were picked up more ten minutes before or after the scheduled pick-up time.

While pick-up time reliability varied between the two sampling periods, the overall results indicate that EASYRIDE operated with excellent pick-up time reliability.

Table 4-12 illustrates a summary of EASYRIDE time reliability for the entire demonstration project. These data suggest that EASYRIDE is seldom more than 15 minutes late and the passengers are seldom more than 15 minutes late. Passenger "No Shows" ran at about 8% of all trips provided. The issue of "No Shows" is discussed in greater detail in Chapter 7.

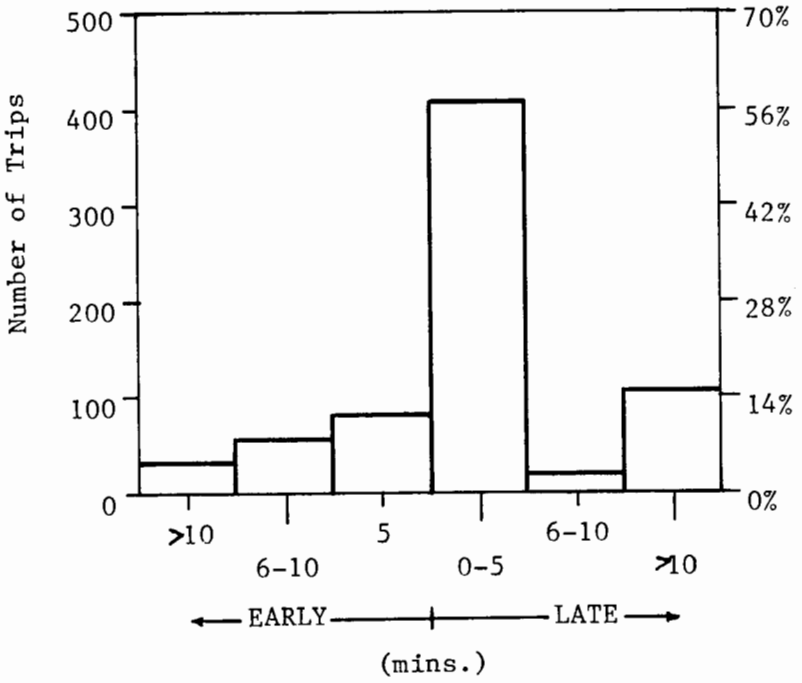

FIGURE 4-6 DISTRIBUTION OF PICK-UP TIME RELIABILITY-MARCH, 1979

The data presented in Table 4-12 was obtained from the EASYRIDE semi-monthly operations reports and is quite reasonable based on the time reliability of similar systems and the generally high quality of EASYRIDE service. However, it is unusual for such a large number of passengers to be picked-up exactly on time as suggested by the data presented in Figure 4-5. Further investigation into this issue indicated that it was not unusual for the drivers to slightly exaggerate their promptness in order to maintain unblemished driving records. It is assumed, therefore, that the number of passengers picked-up exactly on time was probably somewhat less than the number indicated in Figure 4-5. It is also assumed that in spite of some slight exaggeration by the drivers they were generally prompt and tardiness was not a problem.

The experience described indicates some of the difficulties in collecting accurate data directly from drivers. However, EASYRIDE driver trip logs include a great deal of data and the drivers complete portions of the log as a regular part of their job. The collection of data by drivers is, however, often overlooked as a simple task. Drivers in many other specialized system often balk at instructions to record a variety of data items on logs. EASYRIDE's success at collecting reliable data can be attributed to the fact that data collection by drivers was part of the drivers' function from the outset of the project.

Data collected from the EASYRIDE on-board survey indicated that users were more sensitive to their wait time (pick-up time) than to any other attribute of the EASYRIDE service. While the vast majority of EASYRIDE users surveyed were very satisfied with their wait time, there was more diversity in their response to their satisfaction with wait time than with the seven other attributes considered. The results of the attitudinal questions on user satisfaction with EASYRIDE from the on-board survey are presented in Table 4-13.

Lateness/No-Show	June 1977		Dec. 1977		June 1978		Dec. 1978		May 1979		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%
Not Late	3,800	95.5	2,197	91	2,637	87	2,802	86	3,341	89	68,904	88
Passenger Late*	27	.6	4	0	1	0	0	0	4	0	287	0
Passenger No-Show	59	1.5	153	6	396	13	316	10	349	9	6,527	8
Service Late*	96	2.4	67	3	0	0	136	4	69	2	2,449	3
Service Missed	0	0	0	0	0	0	0	0	0	0	4	0
TOTAL	3,982	100	2,421	100	3,034	100	3,254	100	3,763	100	78,171	100

* more than 15 minutes late

TABLE 4-12 SUMMARY OF EASYRIDE TIME RELIABILITY

Service Characteristics	Very Satisfied 1	2	3	In Between 4	5	6	Very Dis-satisfied 7
Comfort	144	2	3	1	0	2	2
Convenience	148	3	1	1	0	0	0
Driver Courtesy	152	1	0	1	0	0	0
Safety	150	1	0	0	0	0	1
Reliability	142	4	1	3	0	1	0
Wait Time	116	15	2	15	1	1	4
Entry-Exit	147	4	0	0	0	1	2
Share Ride	154	0	0	0	0	0	0

TABLE 4-13 RESPONSES TO ATTITUDINAL QUESTIONS ON THE SERVICE CHARACTERISTICS OF EASYRIDE - FROM ON-BOARD SURVEY

The data collected in the evaluation of passenger pick-up time indicate that EASYRIDE was generally on-time. However, since the standard deviation of pick-up time was so large EASYRIDE management might be well advised to examine the passenger pick-up time in greater detail during the extension of the demonstration. The objective of the examination would be to determine a method of reducing the variability in pick-up time.

4.3.2 Vehicle Reliability

Vehicle reliability refers to system dependability with regard to scheduled and non-scheduled (breakdowns) maintenance. The measures used to evaluate vehicle reliability were missed trips and the vehicle unavailability ratio. Missed trips refer to the number of trips which were not accommodated or rescheduled due to a vehicle breakdown.

As discussed in subsection 4.3.1 there were only four missed trips recorded during the demonstration. The reasons for these missed trips are not available but even if, by the most unusual of circumstance, they were all the result of vehicle breakdown it is safe to say that EASYRIDE vehicle reliability was excellent as far as passenger service was concerned.

New vehicles are not without problems and the EASYRIDE vehicles were no exception. Five of the EASYRIDE vehicles are lift equipped and all of the lifts had a lower weight capacity than specified in the original vehicle specifications. The lifts were all repaired by the vehicle manufacturer, Grumman, bringing their capacity up to approximately 600 pounds.

The interior configuration of the accessible vehicles also required modification. The vehicles were delivered with the capacity to accommodate up to four passengers in wheelchairs. EASYRIDE management examined the interior configuration of the

vehicles and realized that they could not accommodate four wheelchairs simultaneously. The accessible vehicles were modified so that they could accommodate up to three wheelchairs and six ambulatory passengers.

The major vehicle problems which hindered the EASYRIDE fleet during the early months of the demonstration were electrical in nature. The first problem was related to the wiring of the vehicles. Engineeers from Grumman had to rewire the vehicles to correct the problem. The second electrical problem was related to the vehicles' charging system. Apparently the vehicles were not maintaining speeds which were high enough to adequately recharge the vehicles' batteries. Because of the constant idling and poor charging ability the vehicles' air conditioners could not be utilized. Grumman engineers altered the pulley system in an attempt to increase the rotational speed of the alternator and thus re-charge the batteries at a higher rate.

The final modification made to the engines was the installation of fast idle kits. These kits are connected to the carburetor and transmission selector arm. When the transmission is placed in park the fast idle kit kicks in and causes the engine to idle at a speed higher than the normal idling speed. These adjustments have apparently resolved the vehicle charging problems.*

4.3.3 Driver Reliability

One of the innovative features of the EASYRIDE demonstration project was the creation of jobs for ex-offenders and ex-drug addicts in conjunction with the Wildcat Services Corporation. All of EASYRIDE's drivers were graduates of the Wildcat program and

*Although detailed information was not available we do know that three vehicles were out of service during part of July, 1977. In addition, vehicles were out of service for repairs during the latter months of 1977.

they have performed, with several exceptions, extremely well throughout the demonstration. Seven of the first eleven drivers hired by EASYRIDE remained with the demonstration project through its first two years and will continue with EASYRIDE during the demonstration's extension.

Since the project's inception a total of 16 drivers have been employed by EASYRIDE. Six of these drivers have left the project either to take a higher paying job or because they were asked to leave. Three drivers were asked to resign their position because, in management's opinion, they did not have the proper attitude to serve the elderly and handicapped. EASYRIDE mangement is extremely sensitive to driver performance and has indicated that newly hired drivers either adapt to the demands of the system very quickly or not at all. EASYRIDE management does not tolerate driver tardiness or anything less than courteous behavior towards EASYRIDE patrons.

Table 4-14 indicates the start and ending dates for all drivers employed by EASYRIDE and their reason for leaving. Turnover has not been a signifcant problem for EASYRIDE as the current driving staff have been with the project an average of 23 months. There appears to be a good fit between graduates of the Wildcat program and employment in fields requiring sensitivity to the needs of elederly and handicapped individuals.

The EASYRIDE drivers also have other qualitites which added to their success. From the patron's viewpoint the drivers provide protection from the often hostile Lower East Side environment. Fear of harassment while travelling is a barrier to the use of public transportation frequently cited by the elderly. The EASYRIDE drivers provide passenger security as they are recognized in the neighborhood as having a role of importance. In addition, the EASYRIDE drivers will go into any area of the Lower East Side

Driver	Starting Date	Ending Date	Reason for Leaving
A	June, 1976*	Still Driving	
B	June, 1976	Still Driving	
C	June, 1976	February, 1977	Let Go - Poor Attitude
D	June, 1976	March, 1977	Let Go - Absenteeism, Attitude
E	January, 1977	Still Driving	
F	January, 1977	October, 1977	Let Go - Poor Attitude
G	April, 1977	Still Driving	
H	April, 1977	Still Driving	
I	April, 1977	Still Driving	
J	April, 1977	October, 1978	Took Another Job In Vera
K	May, 1977	Still Driving	
L	August, 1977	May, 1978	Took Another Job Outside Vera
M	September, 1977	February, 1978	Took Another Job Outside Vera
N	April, 1978	Still Driving	
O	September, 1978	Still Driving	
P	February, 1979	Still Driving	

*EASYRIDE began as a pilot project in June, 1976

TABLE 4-14 SUMMARY OF EASYRIDE DRIVING STAFF's
LENGTH OF EMPLOYMENT

to make a pick-up or drop-off regardless of the conditions. This cannot be said of other forms of transportation such as taxi service. Taxi drivers will frequently refuse to travel to neighborhoods which have known high crime rates.

Absenteeism was not a problem with the staff of EASYRIDE drivers although it was a problem with one particular driver who was dismissed from the program in March, 1977. EASYRIDE drivers were very reliable and have been out due to illness on average of less than five days per year. EASYRIDE drivers were required to call in if they could not come to work otherwise they lose a day's pay regardless of the reason for their absence. Lateness among EASYRIDE drivers was not a problem during the first two years of the demonstration. It should be noted that EASYRIDE does not have spare drivers. When a driver is out unexpectedly, his trips are distributed to the other drivers wherever possible. EASYRIDE administrative staff personnel will also drive a vehicle in tight situations.

During the EASYRIDE demonstration project there were no major accidents. That is a remarkable record considering the vehicles have logged over 170,000 miles in a high traffic density city such as New York. There were, however, several minor "fender benders" where two vehicles have actually touched causing a minimum amount of damage. There were no personal injuries as a result of the operation of any EASYRIDE vehicles.

Much of the success of EASYRIDE's drivers can be attributed to the system's management, although credit must also be given to the drivers themselves. EASYRIDE's management very carefully interviews all candidates for the driver positions and verifies their previous driving record. Only those candidates who management believes could successfully cope with providing service to the elderly and handicapped are given the opportunity to become driver trainees. To date EASYRIDE management has been very successful in their efforts to hire the best drivers available from the pool of Wildcat graduates.

Since EASYRIDE provides a high quality service the drivers are in close contact with the riders. This is especially true of the riders who require assitance boarding and alighting from the vehicle. During the on-board survey administered during the summer of 1977 a sample of EASYRIDE users indicated a very high level of satisfaction with driver courtesy. The users of EASYRIDE have established close relationships with the drivers and a strong sense of security and safety while riding on the EASYRIDE vehicles.

While a rigorous comparison of the performance of EASYRIDE drivers with drivers of other specialized systems was not part of the evaluation, some general comments are presented. Specialized transporation systems may employ one of the following types of drivers (and sometimes some combination of the groups):

- Union drivers from transit authority
- CETA drivers
- Non-union drivers from general employment pool
- Non-union drivers receiving some form of welfare assistance supplemented by their salary.
- Non-union drivers who had some history which reduces their opportunities in the regular job market.
- Non-union part-time or full time drivers who are retired from their former field of employement.

The evaluation contractor's experience with a large number of specialized transportation systems has led us to the conclusion that the EASYRIDE drivers are among the best we have seen. They are energetic, alert, highly motivated and they feel as though they are making a contribution to their environment.

Transit authority union drivers are not always well suited to operate specialized transit systems. The level of tolerance required is often too great for them to comfortably adjust to. In

addition, transit authority and union regulations often constrain the amount of personal services a union driver can provide to a rider. Union drivers will seldom be allowed to provide door-thru-door service as do EASYRIDE and other non-unionized drivers. As a result of the constraints imposed upon them union drivers operating specialized transit systems do not establish personal relationships with the riders. This is not a fault of the drivers but merely a consequence of the environment they must operate in.

The various types of non-union drivers are allowed and encouraged to provide a high quality of personal service to riders of their vehicles. Non-union drivers of specialized transportation systems are typically employed by systems who place a high priority on personalized service. Our experience has indicated that non-union drivers who have received some form of public assistance tend to be more sensitive to the needs of the elderly and handicapped than any other single group of drivers of specialized transportation systems.

Our experience with specialized systems employing CETA drivers has been varied. Several systems have run extremely well with CETA drivers while others have had some very serious problems. While CETA drivers will generally provide the special assistance required by the elderly and handicapped their operations managers do not always have complete control over them. The CETA drivers often feel like temporary employees and are not responsible to the supervisor in charge of the place of their employment. Their salary comes from the local CETA program and they often do as they wish.

Specialized transportation systems employing CETA drivers have higher rates of turnover and absenteeism then any other type of driver. For example, at the TRADE demonstration project in Mercer County, New Jersey only one of the first five CETA drivers hired remained on the job for any appreciable amount of time. Although one driver resigned so that he could take a higher paying job, two

drivers were dismissed because they drove while intoxicated and a third driver was dismissed following his arrest for drugs and weapons possession charges. The TRADE program has been constantly hampered by poor driver performance.

The last factor which deserves mention when discussing specialized transportation drivers is their salary levels. Union drivers earn salaries which are usually double that of their non-union counterparts. Compared to other non-union drivers CETA drivers are among the highest paid. The salaries of the EASYRIDE drivers are higher than most other non-union drivers and comparable to the highest paid CETA drivers. Typical non-union hourly wages vary between $2.90 and $5.00 while the hourly rate of union drivers varies between $6.00 and $9.00. In actuality, the lower paid non-union specialized transit drivers are required to provide more service than most of their union counterparts. The EASYRIDE drivers earn approximately $5.00 an hour plus fringe benefits.

4.4 Influence of Demand Levels

Demand levels can have signifcant impacts on the supply characteristics of any specialized transportation system. The areas that demand levels have the most influence on are: travel time, service reliability and coverage. For example, demand levels that exceed the design estimates would tend to have a negative impact on the system by increasing individual travel time, reducing service reliability to unacceptable levels, and in some instances eliminating some of the permissible destination choices of the users of the system.

During the EASYRIDE demonstration several adjustments were made to the system operating procedures as a result of the characteristics of user demand. The most important changes instituted in the EASYRIDE system during the first two years of operation were the hospital shuttle runs and the limitation of service to uptown medical destinations to Tuesday and Thursday afternoons.

During the first two years of the demonstration, demand levels were not reached which adversely impacted individual travel time or system reliability. The elimination of far out-of-the way destinations was necessitated for economic reasons as well as for reasons of demand. At EASYRIDE's level of demand it was far too costly to tie up one vehicle on a single trip to upper Manhattan or other boroughs or New York City. Characteristics of project demand are discussed in detail in the following Chapter.

4.4.1 Service Reliability

Shifts in demand can have the greatest impacts on three aspects of service reliability: vehicle reliability, driver reliability and time reliability. In the evaluation of EASYRIDE only time reliability was examined.

While EASYRIDE users have not complained about their vehicle dwell times there have been some complaints about the wait time for return trips or "will calls" (the time between the call for a return trip and actual pick-up time). When the return leg of a trip is not prescheduled the rider must often wait for the next available driver. When demand is heavy it will always take longer to pick-up a "will call" then for a regularly scheduled trip.

Another area where EASYRIDE users have voiced some complaints was with the hospital shuttle. The complaint resulted from the fact that persons picked-up at the first stop had to ride the vehicle for the entire shuttle run. In addition, the first stop on the shuttle was closest to the Lower East Side because of the configuration of the traffic flow on the hospital's streets. In order to improve the hospital shuttle the number of runs per day was reduced from three to one. EASYRIDE management felt that they could serve users more efficiently with the "will call" system than with three shuttle runs.

As discussed earlier in the report, EASYRIDE operates without two-way mobile radios. In February, 1979 EASYRIDE began to use a "beeper" system so that the drivers could be signaled to call the operations office. This system improved EASYRIDE's service reliability and overall efficiency because drivers no longer had to make unnecessary trips. Often drivers would leave a hospital with a passenger and then have to return to the same hospital for another passenger because he left just before the second passenger was ready. With the "beeper" device some of this "doubling back" was reduced.

Two measures of service reliability have been evaluated in quantitative terms. (These are the distribution of the number of stops before discharge and the ability of EASYRIDE to schedule shared rides.)

Figure 4-7 presents the format of the chi square goodness-of-fit test to evaluate whether increased demand effects the number of stops before discharge hence, the level of ride sharing. The data obtained from the first detailed driver trip log indicates that over one-half (56%) of the riders made no stops before their discharge. That figure is indicative of a high level of service, a relatively low level of demand and a low level of ride sharing.

During the second set of detailed driver trip logs the distribution of the number of stops before discharge did not alter to any noticeable degree. The percentage of trips that were made with no stops before discharge decreased slightly to 54%. Again, this is indicative of a high level of service and a relatively low level of demand.

In order to provide a more accurate comparison of these distributions a t test was performed between the average value of each distribution. The average value represents the average number of stops before discharge. The t value which results from

Number of Stops Before Discharge	First Detailed Driver Trip Log May, 1978		Second Detailed Driver Trip Log March, 1979	
	f	%	f	%
0	524	56	572	54
1	196	21	291	28
2	109	12	87	8
3	51	5	36	3
4	32	3	28	3
5	15	2	26	2
6+	10	1	14	1
TOTAL	937	100%	1,054	99%*

* Does not sum to 100% due to rounding error

FIGURE 4-7 FORMAT OF CHI SQUARE GOODNESS-OF-FIT TEST: DOES INCREASED DEMAND EFFECT THE NUMBER OF STOPS BEFORE DISCHARGE?

performing a t test between the two mean values was .68. This indicates that we cannot reject the null hypothesis that the difference betwen the two mean values is zero. In other words, the difference between the two mean values is not statistically significant. This result supports our visual analysis of the distributors which indicated that there was no diffence between the two distributions.

The level of demand also effects service reliability when shared riding is considered. While shared riding is necessary for an efficient, cost effective operation, it can sometimes lead to unreliable service in terms of getting riders to their destinations on time. During the period when the first set of detailed driver trip logs were maintained demand for service was well within the capacity of EASYRIDE. The graph presented in Figure 4-8 illustrates the degree to which ride sharing was achieved.

Four categories of ride sharing were formulated for this analysis. These categories included:

1) Trips made exclusively by one person.

2) Trips made when two persons at sometime during the trip shared the vehicle. The two persons could have have the same set of origins and destinations or a completely different set of origins and destinations.

3) Trips made when three persons at sometime during the trip shared the vehicle.

4) Trips made when four or more persons at sometime during the trip shared the vehicle.

The data illustrated in Figure 4-8 indicate that 56% of all trips sampled during the first detailed driver trip log were made exclusively by one person. However, since 46% of the trips sampled involved ride sharing it was also clear that EASYRIDE was trying to maintain scheduling efficiency. The large percent of

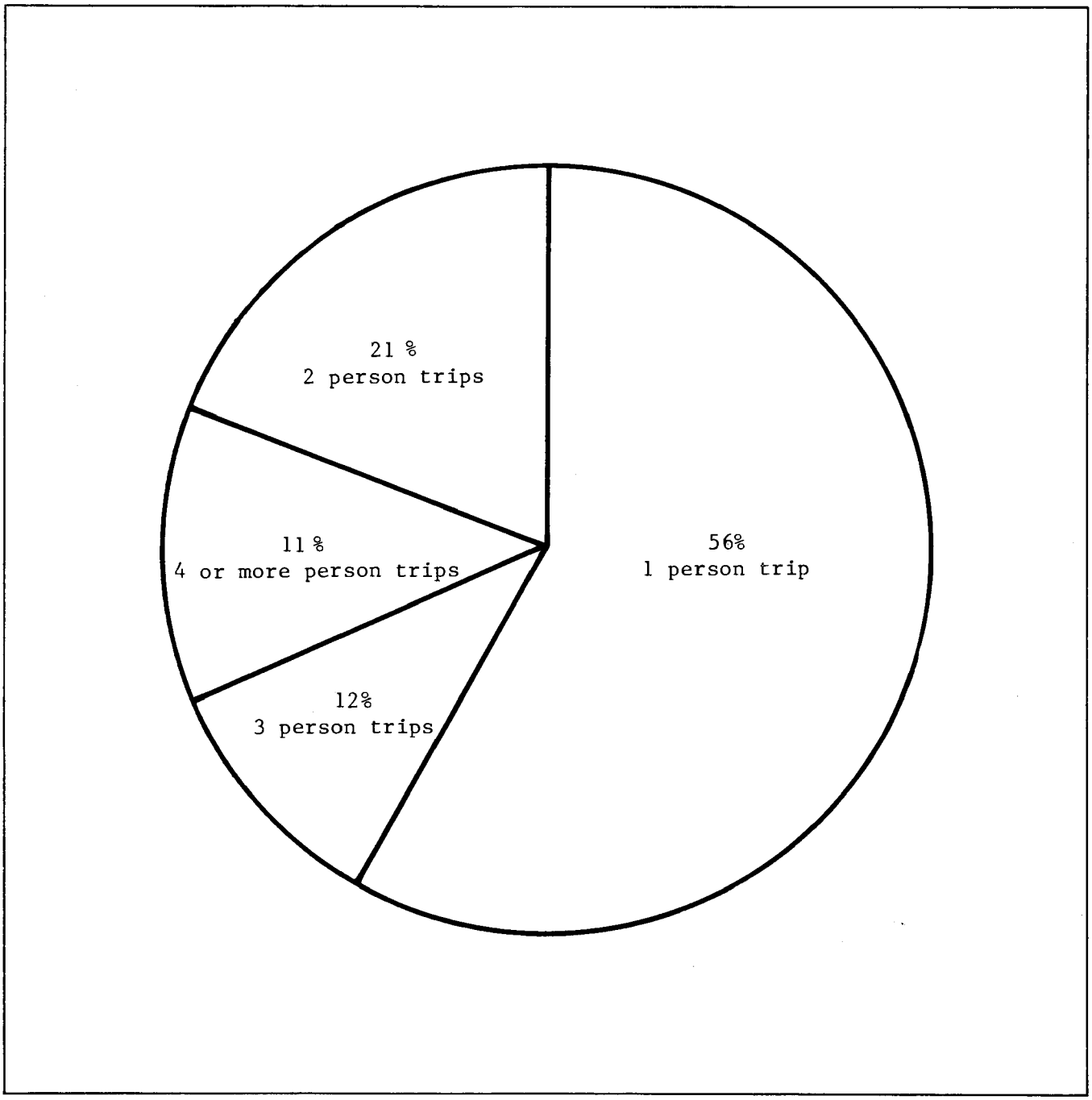

FIGURE 4-8 EASYRIDE RIDE SHARING - MAY, 1978

trips made with four or more persons was attributed primarily to the nutrition programs served by EASYRIDE and the charter service provided to various groups. The results of the second detailed driver trip log are consistent with those of the first with respect to ride sharing.

4.4.2 Coverage and Deadheading

Coverage can be influenced by demand in subtle ways. At higher levels of demand, dispatchers are less likely to schedule trips to distant destinations because such trips will require a disproportionately large amount of time. The dispatcher will also be unwilling to tie-up a vehicle, which must run empty on the return leg of the trip (deadhead time). Such trips would tend to lower deadheading times. High deadheading time implies both low productivity (trips per hour of service) and more "out of the way" destinations.

As mentioned several times in this report, EASYRIDE management made an operations decision to reduce service to distant destinations. In fact, throughout the demonstration over 70% of all EASYRIDE trips had both their origin and destination within the Lower East Side. So although the demand for EASYRIDE was well within the system's capacity, the same level of demand could not have been served as efficiently, if at all, if the majority of the trips were made to locations outside the Lower East Side.

Data collected from the detailed driver trip logs was analyzed to determine the amount of time the EASYRIDE drivers spent dead-heading. Deadheading occurs when the vehicles are being driven to a passenger pick-up or after a passenger drop-off and there are no other passengers in the vehicle. If a driver starts from the operations office and travels to pick-up a passenger, the time spent travelling to pick-up the passenger is deadhead time. Similarly, after dropping off a passenger the time spent driving back to the operations office is deadhead time. Efficient

scheduling will result in a minimum of deadhead time, thereby making more time available for passenger service.

Because of the large amount of dead time in the EASYRIDE system the deadhead time between some trips had to be estimated. However, it is firmly believed that the estimates of deadhead time made from the detailed driver trip logs are representative of the EASYRIDE system. Dead time refers to time during a driver's shift when both the vehicle and the driver are idle. There is a certain amount of dead time built into the EARYRIDE driver's schedules. EASYRIDE management believes that this is necessary to reduce the pressure on the drivers, thereby minimizing accidents and improving performance. However, in spite of these considerations EARYRIDE's dead time was excessive.

Analysis of data collected from the first set of detailed driver trip logs indicated that 17% of all driver service time (equivalent to driver payroll hours) was spend deadheading. During the May, 1978 sample period, 35% of driver service time was spent providing passenger service with the remaining 48% of the time allocated to dead time. The ratio of deadhead time to passenger service time is quite low for EASYRIDE indicating efficient scheduling of trips. However, the high percentage of dead time indicates that the system was underutilized. It is not uncommon for the percentage of deadhead time to approach the percentage of passenger service time for specialized transportation systems yielding a ratio close to 1.00. Clearly, ratios less than 1.00 are desirable.

Analysis of the data collected during the second detailed driver trip log indicated a slight improvement in system performance. Although the percentage of driver time spend deadheading increased to 22% the percentage of driver time spent providing passenger service increased to 39%. Clearly, as passenger service time

increases, deadhead time is likely to increase.* The increases in passenger service time and deadhead time during the second set of detailed trip logs was accompanied by a decrease in the percentage of driver time spend idle (dead time). Dead time during the second sample period of detailed driver trip logs was 39%.

A summary of the detailed driver trip log analysis is presented in Table 4-15. Comparison of the figures for the two data collection periods indicates an improvement in the utilization ratio (ratio of passenger service time to driver payroll hours). However, compared to other specialized transportation systems EASYRIDE's utilization ratio is at the low end of an acceptable range which begins at 35%. Most systems operate in the range of 40 to 55% with several systems in the 60% range and a few systems in the 80 to 90% range (the latter result because of the extensive use of part time drivers).

The typical reasons for low utilization ratios are limited demand for the service and peaking of demand between the hours of 10:00 a.m. and 2:00 p.m. The peaking problem is usually the most severe as all the eligibles for a service wish to travel at about the same time. However, because of the size of the eligible population, limited demand was not a problem which impacted EASYRIDE's system performance. EASYRIDE did experience peaking of demand during the midday and that contributed to its low utilization ratio. In order for EASYRIDE to increase its utilization ratio it must explore methods of increasing demand during the early morning and late afternoon service periods.

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*It should be noted that passenger service time is computed from the time the vehicle arrives at an origin and leaves the destination after dropping of a passenger. Also, passenger service time allows for no double counting. During one hour a vehicle can provide no more than 60 minutes of passenger service time, regardless of the number of passengers carried. It is a measure of vehicle use by at least one passenger, appropriate for specialized transportation systems.

Components of Driver Payroll Hours	May, 1978	March, 1979
Passenger Service Hours	245.49	244.06
Deadhead Hours	121.67	138.91
Dead Time (Hours)	339.84	237.03
Driver Payroll Hours	707	620
Utilization Ratio	.35	.39
Deadtime Ratio	.48	.39
Deadhead Ratio	.17	.22
Ratio Deadhead to Passenger Service Hours	.50	.56

TABLE 4-15 SUMMARY OF DETAILED DRIVER TRIP LOG ANALYSIS

EASYRIDE has been managed with the attitude that it could only provide a high quality of service to a small segment of the eligible population. While EASYRIDE should have been a capacity constrained system, the data indicated that it was actually an underutilized system. It may be argued that a general analysis of detailed driver trip logs indicates a false picture of the actual system operation. The amount of dead time which was termed "too much" may have actually been due to the accumulation of many small amounts of time between trips. Too small, in fact to be efficiently used to provide additional transportation service. This scenario naturally occurs in all specialized systems and has occurred to some extent to EASYRIDE. However, the disturbing fact about EASYRIDE is that much of the dead time occurred in blocks of time lasting several hours for individual drivers.

The data collected during the first detailed driver trip log was used to estimate a model relating deadhead time to demand and passenger service time. Demand was expressed in terms of the number of one-way trips provided by each individual driver during each day of the sampled period. Passenger service time is the amount of time when at least one passenger is in the vehicle being served. Passenger service time includes dwell time so it is computed from the time the driver arrives at an origin and departs from a destination. The mutiple regression models estimated from this data did not provide statistically significant results so that deadhead time could not be related, quantitatively, to demand and passenger service time.

4.4.3 Vehicle Mileage

Figure 4-9 graphically illustrates the total vehicle miles travelled per month for the entire EASYRIDE vehicle fleet. This data was collected from the semi-monthly operations reports produced by EASYRIDE. The graph illustrates the wide fluctuations in total monthly travel, particularly during the first 12 months

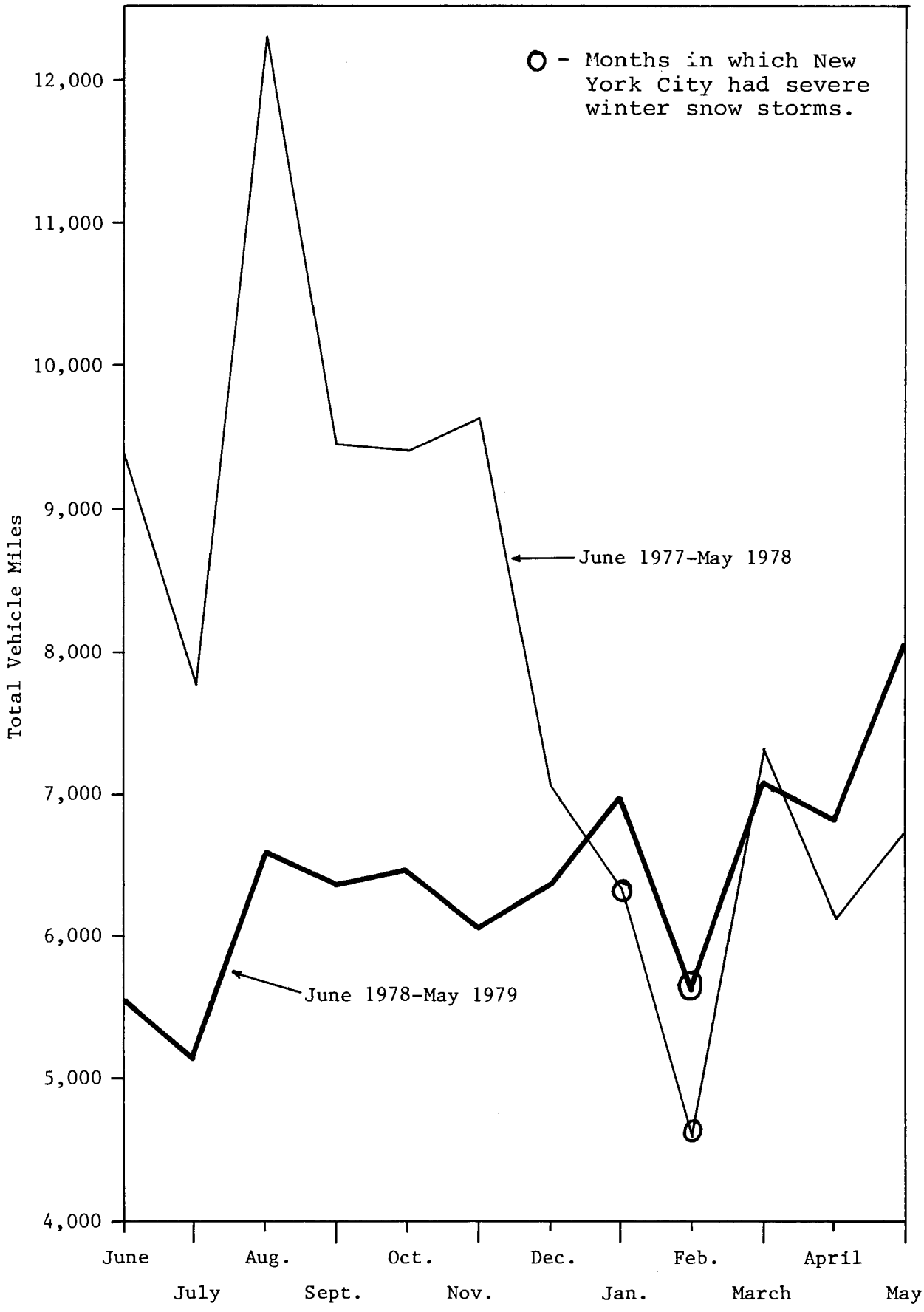

FIGURE 4-9 SUMMARY OF TOTAL MONTHLY VEHICLE MILES

of the project. The extreme fluctuations which occurred during the first 12 months of operation resulted from a combination of the type of service provided, vehicle mechanical problems, poor winter weather conditions and general start-up problems when EASYRIDE began operating its entire fleet on a full time basis.

As mentioned earlier in the report EASYRIDE provided service under contract to the New York State Department of Health during the early months of the project. This service required EASYRIDE vehicles to travel from Manhattan to and from the boroughs of Brooklyn and Queens. Vehicles involved in this program logged far more miles than vehicles operating solely in Manhattan. The analysis of detailed driver trip logs from May, 1978 indicated that EASYRIDE vehicles averaged 35 miles per day. Vehicles involved in the Department of Mental Health program logged far more than 35 miles per day solely due to the distance between the boroughs.

Vehicle mechanical problems were also discussed earlier in the report. These problems occurred between October and December, 1977 and involved a reduction in the available fleet size. Following the vehicle problems, New York City experienced two winter blizzards (January and February, 1978) which also resulted in curtailed service and a decrease in vehicle mileage. These events, coupled with general implementation problems, contributed substantially to the extreme fluctuations in total vehicle mileage travelled.

During the second 12 months of EASYRIDE's operation the monthly variation in vehicle miles travelled was substantially reduced. During this period there were fewer operational changes made to the system compared to the first 12 months of operation. In addition, the vehicles performed well and New York City received only one crippling snow storm, again in February (1979).

The differences between the number of monthly miles travelled by the EASYRIDE fleet during the first two years of operation are more obvious upon examination of a set of summary statistics presented in Table 4-16.

The average number of miles travelled per month by the EASYRIDE fleet during the demonstration project was 7,217. However, the average value during the first 12 months was 8,021 while the monthly average declined to 6,413 miles during the second 12 months. In addition to the large difference in these mean values, the variation in the mean value during the first 12 months was far greater than the variation in the mean value during the second 12 months. The standard deviation during the first 12 months of operation was 2,084 while the standard deviation during the second 12 months of operation was only 776. It is believed that the stability achieved during the last 12 months of operation is most indicative of the mileage that will be travelled during the demonstration extension.

4.4.4 Vehicle Hours of Service

Figure 4-10 graphically illustrates the total number of vehicle service hours provided during each month of the EASYRIDE demonstration. This data has also been collected from the semi-monthly operations reports prepared by EASYRIDE. The graph indicates that the number of monthly vehicle service hours declined during the first 12 months of operation, but has stabilized during the second 12 months of operation.

A set of summary statistics describing the number of monthly vehicle service hours is presented in Table 4-17. Thoughout the demonstration project EASYRIDE has provided an average of 1,406 vehicle hours of service per month. The variation in the mean value is indicated by the standard deviation which was 210. However, most of the variation in the total number of monthly

FIGURE 4-10 SUMMARY OF TOTAL MONTHLY VEHICLE HOURS OF SERVICE

Time Period	Mean Value	Standard Deviation	Standard Error
June, 1977 - May, 1978	8,021	2,084	602
June, 1978 - May, 1979	6,413	776	224
June, 1977 - May, 1979	7,216	1,744	356

TABLE 4-16 SUMMARY STATISTICS OF MONTHLY VEHICLE MILES TRAVELLED

Time Period	Mean Value	Standard Deviation	Standard Error
June, 1977 - May, 1978	1,487	244	70
June, 1978 - May, 1979	1,325	123	35
June, 1977 - May, 1979	1,406	206	42

TABLE 4-17 SUMMARY STATISTICS OF MONTHLY VEHICLE HOURS OF SERVICE

vehicle service hours was due to fluctuations which occurred during the first 12 months of the demonstration. During this period EASYRIDE provided an average of 1,487 hours of service per month with a standard deviation of 244. During the second 12 months of the project the average value of monthly vehicle service hours decreased to 1,325. More importantly, however, the variation in the mean value decreased significantly as indicated by the standard deviation of 123.

CHAPTER 5

5.0 PROJECT DEMAND CHARACTERISTICS

The purpose of this chapter of the evaluation report is to examine the demand for EASYRIDE service by analyzing project ridership, user travel patterns, market penetration, and user perception of service. These factors are very much interrelated and are discussed in terms of transportation service delivery issues and user related transportation issues.

The analysis presented in this chapter is intended to answer questions such as how many people rode EASYRIDE each month, where did they go and when did they travel? The analysis presented in this chapter will also answer questions regarding the market penetration of EASYRIDE. How many unduplicated persons used EASYRIDE each month? How many trips did the average EASYRIDE user make each month? Finally, user perceptions of service (How do users feel about the availability of EASYRIDE?, its reliability?, safety?, etc.) are examined.

5.1 Project Ridership

5.1.1 Trip Volume

Monthly trip volumes for EASYRIDE were obtained from the semi-monthly operating reports prepared by EASYRIDE. A summary of the number of trips provided by EASYRIDE during each month of the demonstration is presented in Table 5-1. This table also includes the average number of trips provided each day per month during the demonstration. The trips per day per month figure allows for comparisons between months by controlling for the number of days in the month. The number of operating days per month varied from a low of 16 to a high of 23.

During the demonstration, EASYRIDE provided an average of 144 trips per day and an average of 2,975 trips per month. These figures are for all one way trips actually made and do not include passenger "No Shows".

	1977		1978		1979	
	Trips per Day	Total Trips	Trips per Day	Total Trips	Trips per Day	Total Trips
June	178	3,293	120	2,638		
July	149	2,834	119	2,252		
August	168	3,863	123	2,825		
September	142	3,126	158	3,150		
October	116	2,430	126	2,640		
November	112	2,231	144	2,883		
December	108	2,268	140	2,938		
January			172	3,430	161	3,545
February			163	2,619	151	2,872
March			169	3,891	155	3,418
April			153	3,057	133	2,796
May			136	2,984	155	3,414
Total Trips (June, 1977 - May, 1979)						71,397
Average Trips per Month						2,975
Average Trips per Day						144

TABLE 5-1 SUMMARY OF EASYRIDE TRIP VOLUME

The data contained in Table 5-1 is presented graphically in Figure 5-1. Figure 5-1 illustrates the variability in the total number of trips provided each month during the demonstration. The monthly trends during the two years of the demonstration are almost identical to each other and they both reflect wide variation in monthly trip making.

During the first 12 months of operation, ridership increased at the end of the summer (August and September, 1977) and then decreased during the fall of 1977. The decrease in ridership during October, November and December, 1977 was a result of a decrease in vehicle service hours during those months. As discussed in Chapter 3, EASYRIDE's vehicles underwent electrical repairs during the fall of 1977.

Ridership increased dramatically after the December, 1977 holiday season in January, 1978 only to decline sharply in February, 1978. During February, 1978 New York City was slowed considerably by the "Blizzard of 1978". The snow covered streets prevented EASYRIDE from serving users requiring wheelchairs as the wheelchairs could not be pushed through the street to the vehicle. Following the recovery from the blizzard, ridership soared during March, 1978 to the highest monthly total (3,891 trips) during the demonstration. It appeared that many persons who could not get out during February were able to travel in March after much of the snow had been cleared. Ridership during the spring of 1978 declined to levels below the previous year and did not increase until August and September, 1978. During the fall of 1978, ridership was generally higher than during the previous fall. During the first six months of 1979, ridership followed the magnitude and trends of the first six months of 1978 almost exactly.

An interesting trend which was observed from the graph in Figure 5-1 was the decline in ridership after the peak ridership of the summer months, particularly during August. The decrease in

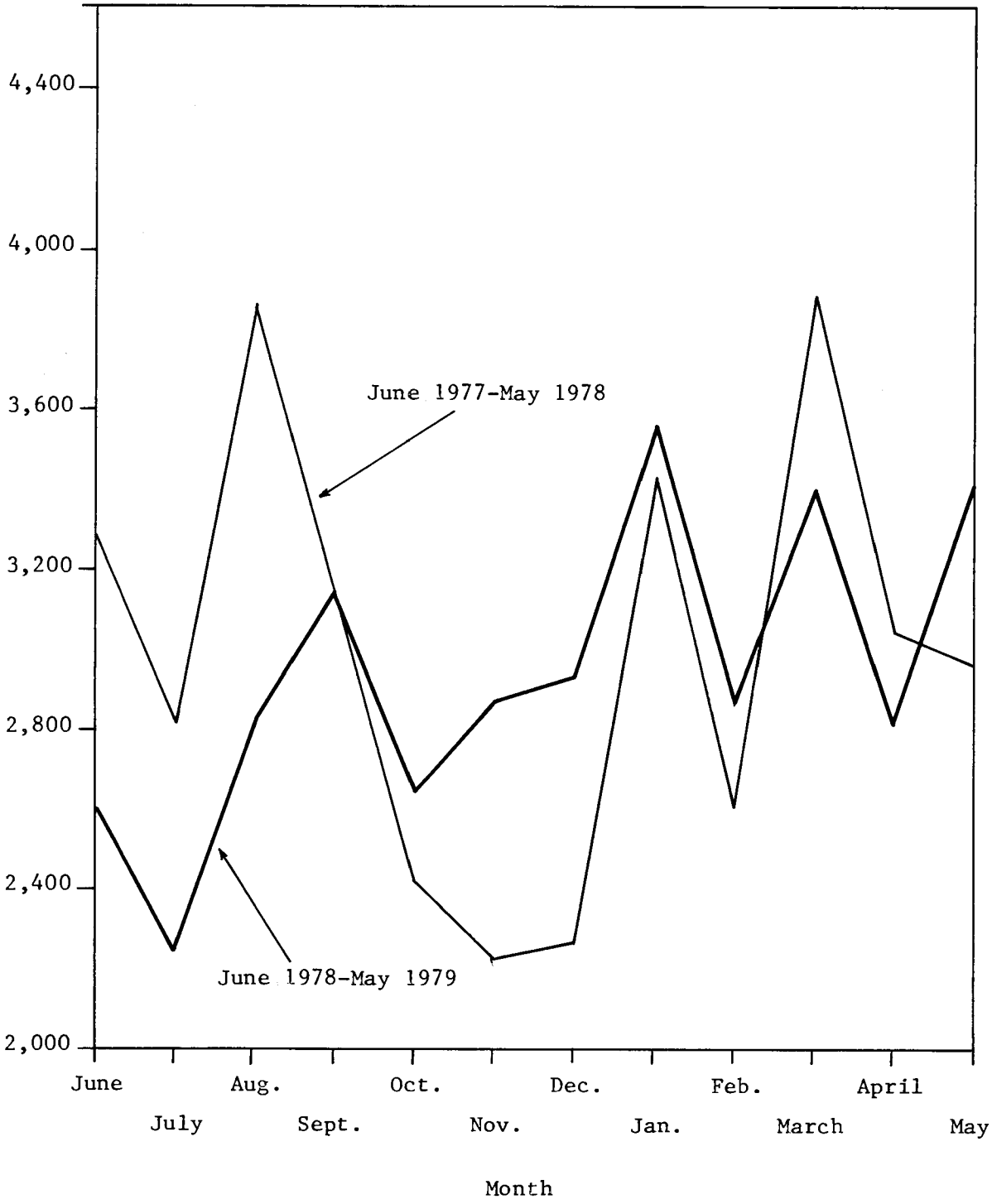

FIGURE 5-1 SUMMARY OF TOTAL TRIPS PER MONTH

ridership during the early fall is related to the High Holy Days of the Jewish New Year. The majority of EASYRIDE's users are persons of the Jewish faith. During 1977, the Jewish New Year fell in September and that was when ridership dropped off after peaking during the previous August. During 1978 the Jewish New Year fell in October and that was when ridership dropped off after peaking during the previous September. Since these holidays do not last for an entire month, the total decline in ridership is not completely a result of the holiday season. However, the holidays did clearly contribute to the decline in ridership during the months in which they occurred.

The data on trips per day per month more clearly illustrates the variability in ridership during the demonstration. The variability in the trips per day per month was greatest during the first 12 months of the demonstration as compared to the second 12 months. During the first 12 months of the demonstration, average number of trips per day was 147 with the standard deviation at 24.6. The large decline in the number of trips per day which occurred between September and December, 1977 was primarily responsible for the large standard deviation of the measure. During the second 12 months of the demonstration the average number of trips per day declined to 139 but the standard deviation was only 15.8. Although the averge number of trips per day declined slightly during the second year of the demonstration there was less variability in the value indicating that some stabilization in daily ridership has occurred.

5.1.2 Passenger No Shows

In Chapter 4 there was a discussion of time reliability in which lateness by both the driver and the passenger was evaluated. Included in Table 4-12 presented as part of that discussion was a measure defined as passenger "no shows". A "no show" occurs when the vehicle arrives at a pick-up point and the passenger is not present or the passenger just decides that he/she does not want to

make the trip. "No shows" consume vehicle time and are therefore, non-productive for the system. "No shows" also deny service to other persons who need the transportation service provided by EASYRIDE.

EASYRIDE's management was aware of an increasing number of "no shows" and indicated that it was often the fault of the local agencies who arranged for individual and group trips. "No shows" were particularly high among persons being transported to and from the nutrition programs. EASYRIDE's management has attempted to "tighten up" their operation by refusing to serve individuals who are repeatedly "no shows". However, the data presented in Table 5-2 and illustrated graphically in Figure 5-2 indicate that the number of "no shows" per month increased during the two years of the demonstration.

In addition to a large number of passenger "no shows", EASYRIDE incurs a large number of cancellations. Cancellations occur when scheduled tripmakers call EASYRIDE prior to the time of their reservation and inform the reservation clerk that they will not be making their trip. During the analysis of the first detailed driver log, a total of 306 cancellations were identified (for half of the month of May, 1978). Cancellations are more desirable than passenger "no shows" from an operations standpoint because the vacated time slots can often be filled. However, not all of the cancelled time slots are filled and the net result is that some persons may be denied service.

One of the reasons that EASYRIDE had such a large number of passenger "no shows" and passenger cancellations is related to their reservation policy. Although it is stated that reservations must be made at least 48 hours in advance of the trip, almost one-half (48%) of all EASYRIDE trip reservations were made more than one month in advance of the requested travel day. Another 23% of the trips were made more than one week in advance of the desired travel day and 9% of the reservations were made five to

	1977	1978	1979
June	59	396	
July	51	235	
August	83	350	
September	123	283	
October	95	235	
November	72	350	
December	153	316	
January		122	381
February		383	340
March		394	504
April		257	329
May		279	349
		Average	255.79

TABLE 5-2 MONTHLY PASSENGER NO SHOWS

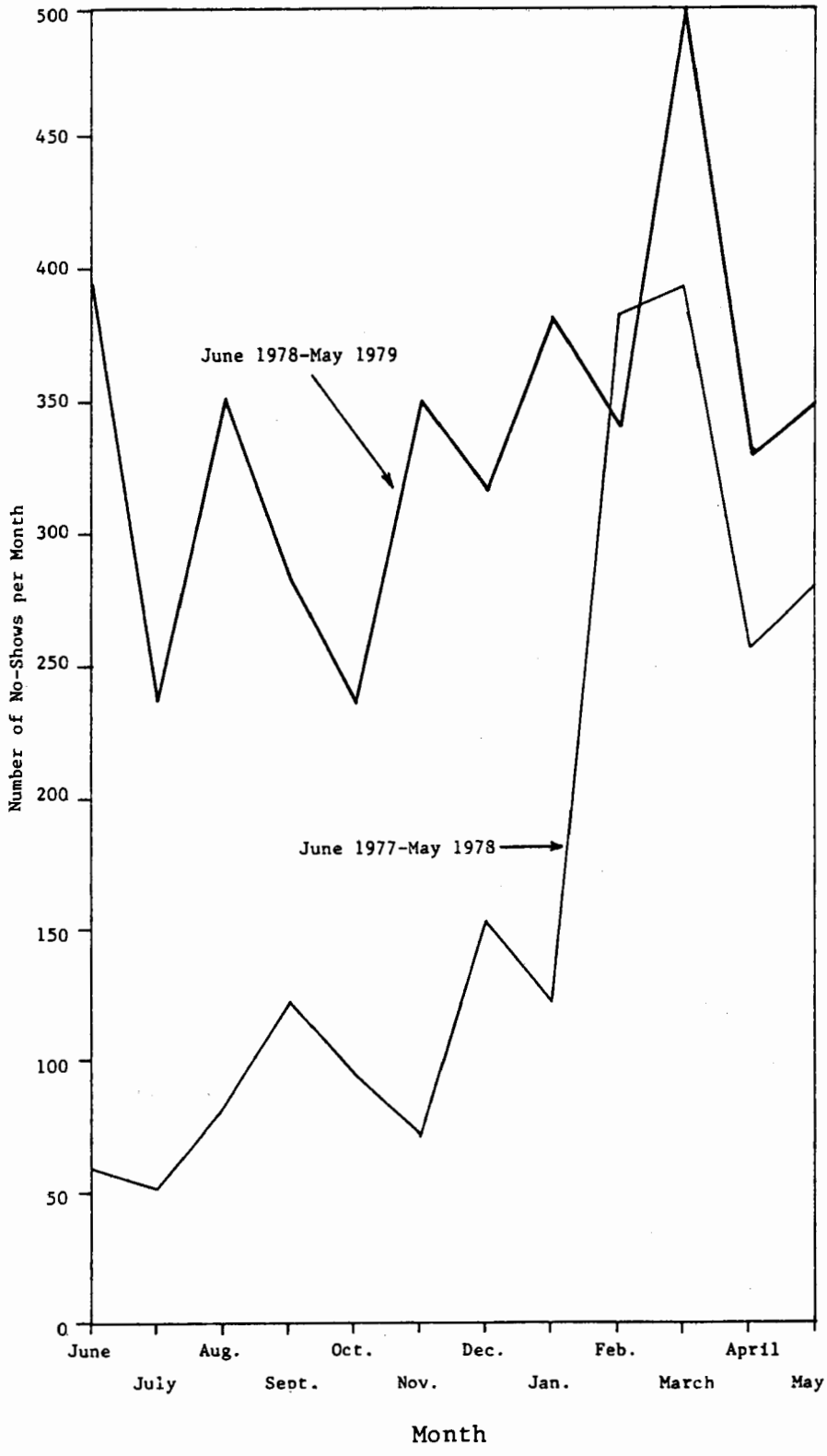

FIGURE 5-2 SUMMARY OF TOTAL MONTHLY NO SHOWS

seven days prior to the travel day. The remaining 23% of the trip reservations were made with an advanced notice time of 4 days or less (10% two to four days before, 10% the day before and 3% the same day).

Several models were estimated in order to determine if the number of passenger "no shows" could be expressed as a function of the advanced notice time for trip reservations. The following model strongly suggests that as the number of reservations made more than one month in advance of the desired travel date increases the number of "no shows" also increases:

$$Y = .0024\ X^{1.57} \qquad r^2 = .82$$

Where:

Y = the number of passenger "no shows" per month

X = the number of trips reserved more than one month in advance of the desired travel date.

A second model was estimted to determine if advanced notice times greater than or equal to five days was also related to the number of passenger "no shows". The following model also suggests than an advance notice time of five days or more explains a considerable portion of the variance in the number of "no shows" per month.

$$Y = .21\ X - 267.20 \qquad r^2 = .77$$

Where:

Y = the number of passenger "no shows" per month

X = the number of trips reserved five days or more in advance of the desired travel date.

These models lead us to the recommendation that EASYRIDE management consider revising their advance notice reservation policy. The consistently high number of monthly passenger "no shows" and the high number of cancellations indicated on the detailed driver trip logs suggest that system efficiency was adversely impacted by the policy currently in effect. In addition, many individuals were inadvertently denied service because of time wasted waiting for "no shows" or because cancelled trip requests were not replced with requests from other users. EASYRIDE should consider accepting reservations not more than one week before the trip is to be made.

A summary of the advance notice time for all monthly trip requests is presented in Table 5-3.

The problems of passenger "no shows" and cancellations are not unique to EASYRIDE. They are characteristic of specialized transportation systems which employ long advance notice policies. In these instances ARI has recommended a reduction in the advance notice time to betwen one and five days, depending upon they type of service provided by the system. Implementation of this recommendation has significantly reduced the number of "no shows" and cancellations, thereby helping the systems to improve their overall efficiency.

5.1.3 Trip Purpose

EASYRIDE reported the number of trips made by each purpose in each of its semi-monthly operations reports. A total of 19 trip purposes were identified by EASYRIDE in conjunction with the reporting requirements of the Health Care Financing Administration (HCFA). HCFA is the agency which administers the Medicare program and provides EASYRIDE with their reimbursements for covered transportation expenses. Upon HCFA's request, EASYRIDE disaggregated medical related trips into many specific trip

		When Trip Was Requested						
		No. of No-Shows	More Than One Month	More Than One Week	5-7 Days	2-4 Days	Day Before	Same Day
1977	June	59	591	767	327	371	1,887	39
	July	51	677	808	155	381	862	7
	August	83	906	628	356	546	1,468	38
	September	123	868	517	292	318	1,219	34
	October	95	1,028	685	358	355	41	56
	November	72	985	692	265	215	66	79
	December	153	993	672	336	309	62	47
1978	January	510	1,841	999	266	296	36	112
	February	383	1,807	687	173	229	40	65
	March	394	2,262	928	346	355	65	328
	April	257	1,850	778	217	272	40	140
	May	279	2,101	564	242	237	71	46
	June	396	1,516	929	281	179	32	82
	July	235	1,216	789	136	245	41	60
	August	350	1,685	593	452	281	70	83
	September	280	1,555	510	473	719	98	79
	October	235	1,511	523	406	261	94	77
	November	350	1,796	683	199	380	77	87
	December	316	1,959	644	275	234	61	79
1979	January	381	2,377	801	271	296	50	139
	February	240	1,994	559	255	206	89	108
	March	504	1,934	691	218	241	62	102
	April	329	1,591	878	191	281	86	90
	May	349	1,846	994	375	296	73	162
	Percentage		48%	22%	9%	10%	9%	3%

TABLE 5-3 SUMMARY OF ADVANCED NOTICE TIME FOR ALL EASYRIDE TRIP REQUESTS

purpose categories. For evaluation purposes, these 19 trip purposes were aggregated into seven trip purpose categories. The mapping of the original 19 trip purpose categories into seven trip purpose categories is presented in Figure 5-3. The percentage of trips made by trip purpose is presented graphically in Figure 5-4.* In this figure the trip purpose data is presented for five individual monthly periods during the demonstration and for all trips provided during the two year demonstration period. The most common trip purpose during the demonstration was travel to and from nutrition programs. Nutrition trips accounted for 43.5% of all EASYRIDE trips. During the five individual months examined, travel for nutrition program varied only slightly with the exception of December, 1977. Table 5-4 presents a summary of EASYRIDE travel when collapsed into seven trip purpose categories.

At the beginning of the demonstration project EASYRIDE provided transportation under contract to the nutrition program at the Henry Street Settlement House. This service continued through September 30, 1977 at which time transportation funds were totally expended and service to the program ended. The nutrition program also ended at this time. The percentage of trips provided for nutrition programs declined between October and December, 1977 before service was provided to other nutrition programs beginning in January, 1978. The percentage of monthly trips provided for nutrition programs remained above 40% for almost every month during the remainder of the demonstration. In fact during February, 1978 nutrition trips accounted for 60% of all trips provided during that month.

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*There was no category for homebound trips. A trip to and from a nutrition site was counted as two nutrition trips.

EASYRIDE TRIP PURPOSE CATEGORIES	AGGREGATED TRIP PURPOSE CATEGORIES
*1. Hospital	1. Health Related
*2. Physician	1. Health Related
3. Employment	2. Employment/Training
4. Social Service	6. Social Service
5. Recreation	3. Recreation
6. Shopping	4. Shopping
*7. Nutrition	5. Nutrition
8. Training	2. Employment/Training
9. Other	7. Other
*10. Non-Hospital Clinic	1. Health Related
*11. Hospital/Skilled Nursing Facility/ Intermediary Care Facility	1. Health Related
*12. Day Care Facility	1. Health Related
*13. Pharmacy	1. Health Related
*14. Other Professional Care	1. Health Related
*15. Laboratory and Radiology	1. Helath Related
*16. Renal Dialysis	1. Health Related
*17. Physical Therapy	1. Health Related
*18. Suppliers	1. Health Related
*19. Cargo Lunch	5. Nutrition

*Trip purposes eligible for Medicare reimbursement

FIGURE 5-3 MAPPING OF EASYRIDE TRIP PURPOSES INTO AGGREGATED TRIP PURPOSE CATEGORIES

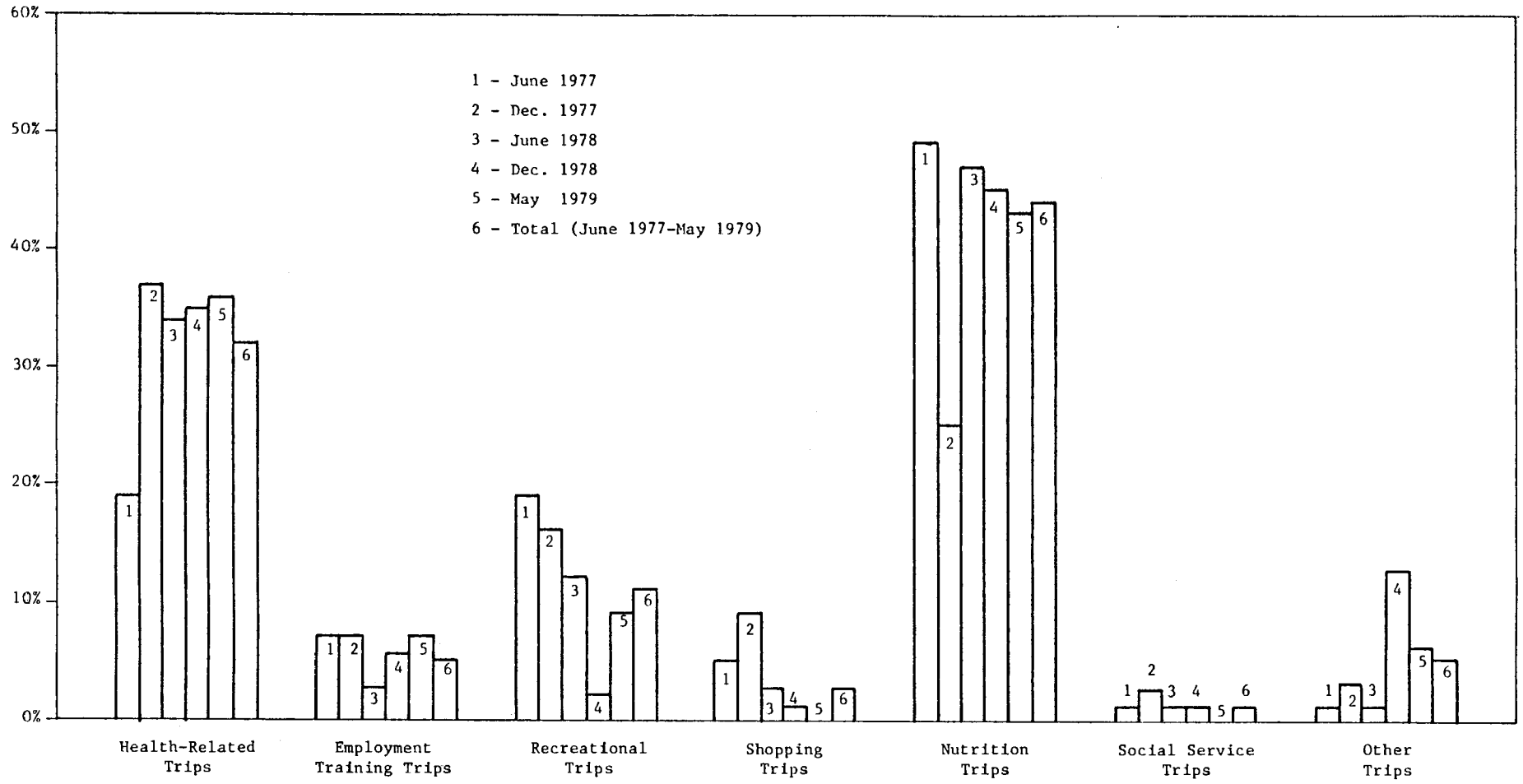

FIGURE 5-4 EASYRIDE TRIP PURPOSES

Trip Purpose	June 1977		Dec. 1977		June 1978		Dec. 1978		May 1979		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
1. Health-Related	757	19%	901	37%	1,023	34%	1,132	34.8%	1,354	36%	25,067	32%
2. Employment/Training	259	7%	158	7%	187	3%	181	5.5%	260	7%	4,228	5.5%
3. Recreation	759	19%	397	16%	373	12%	58	2%	327	9%	8,873	11%
4. Shopping	201	5%	206	9%	80	2.5%	17	.5%	6	0	1,942	2.5%
5. Nutrition	1,964	49%	613	25%	1,420	47%	1,450	44.5%	1,588	42%	33,975	43.5%
6. Social Service	24	.5%	61	2.5%	14	.5%	8	.2%	18	0	441	.5%
7. Other	18	.5%	85	3.5%	37	1%	408	125%	210	6%	3,645	5%
TOTAL	3,982	100%	2,421	100%	3,034	100%	3,254	100%	3,763	100%	78,171	100%

* Please note that the number of trips by trip purpose was not corrected for no-shows and missed trips.

TABLE 5-4 SUMMARY OF EASYRIDE TRAVEL BY TRIP PURPOSE

Health related trips were the second most popular trip type served by EASYRIDE. Health related trips accounted for 32% of all EASYRIDE trips provided. Health related trips started off slowly in June, 1977 as many nutrition and recreational trips were provided. However, six months into the demonstration the percentage of health related trips provided by EASYRIDE increased to 37% of all trips provided during December, 1977. This level of health related trips maintained itself throughout the remainder of the demonstration.

Generally speaking the remaining trip purposes accounted for only a small portion of all EASYRIDE trips. Recreational trips were the third most popular trip type accounting for 11% of all EASYRIDE trips followed by employment/training trips (5.5%), other trips (5%), shopping trips (2.5%) and social service trips (.5%). Some discretionary travel can be made within the Lower East Side by the walk mode.

The most important factor in the distribution of EASYRIDE trips is the large percentage of nutrition trips. Nutrition trips were always provided in the shared ride mode and took place entirely within the Lower East Side. During the first detailed driver trip log (May, 1978) nutrition trips accounted for 53% of all trips provided. This service consumed only 28% of the total passenger service time and 31% of the total deadhead time indicating the high relative productivity of the nutrition service. The average productivity (trips per hour of service) of the nutrition service is about two and one-half times that of all other EASYRIDE service. This fact has important ramifications for the cost of service which is discussed in greater detail in Chapter 7.

Since May 1, 1978 EASYRIDE has made a concerted effort to register Medicare eligible individuals in an effort to increase the amount of Medicare reimbursements to the system. Although this policy

decision was necessary to insure the availability of operational funds, EASYRIDE only receives reimbursement for eligible trip purposes made by Medicare eligibles. The data presented in this subsection does not suggest, however, that EASYRIDE has, in any way, prioritized service for Medicare eligible purposes. EASYRIDE management has basically allowed individuals to travel for whatever purpose they chose. They have structured their program around medical care and nutrition programs but not to the exclusion of other trip purposes.

5.1.4 Travel By Time of Day

Each trip made on EASYRIDE was assigned a time of day code as part of the standard data recorded on the individual trip records. The four codes used by EASYRIDE were as follows:

1) Morning - before 10:00 A.M.
2) Midday - 10:00 A.M. to 3:30 P.M.
3) Late Afternoon - 3:31 P.M. to 6:00 P.M.
4) Evening - After 6:00 P.M.

During the demonstration, the distribution of travel by the time of day was primarily influenced by the transportation provided to nutrition programs. As a result the distribution of travel by time of day changed significantly during one period of the demonstration. This period was the one directly after service provided under contract to the Henry Street Settlement House ended (September 30, 1977). Service was provided to the Henry Street Settlement House for their evening nutrition program. Once service to this program ended, EASYRIDE's evening service was virtually discontinued.

Table 5-5 illustrates the distribution of travel by time of day before and after September 30, 1977 and for all trips made on EASYRIDE through February, 1979. The table illustrates that after the evening nutrition program ended, EASYRIDE provided a very

TRAVEL PERIOD	JUNE - SEPTEMBER, 1977 PERCENT OF TRIPS	OCTOBER, 1977- FEBRUARY, 1979 PERCENT OF TRIPS	TOTAL THROUGH FEBRUARY, 1979 PERCENT OF TRIPS
Morning	19%	24%	23%
Midday	37%	67%	61%
Late Afternoon	20%	3%	6%
Evening	20%	0%	4%
Unknown	5%	5%	5%
TOTAL	101%*	99%*	99%*

*Does not sum to 100% due to rounding error

TABLE 5-5 SUMMARY OF THE DISTRIBUTION OF TRAVEL BY TIME OF DAY

small percentage of its trips after 3:30 P.M. EASYRIDE did increase the percentage of trips provided during the midday period by increasing its service to lunch time nutrition programs which generally operated between 11:00 A.M. and 1:30 P.M. Some of the nutrition sites also provided recreational activity after the meal was completed.

While the majority of the midday travel was for nutritional purposes, health related travel also took place during the midday period. Health related travel was also heavy during the morning period when riders were brought to health care facilities. Many of these return trips were made during the midday period.

Data collected from the detailed driver trip logs was used to construct histograms of travel by each hour of the day. The histograms constructed are illustrated in Figures 5-5 and 5-6. The distribution of travel by the hour of day confirms the results of the aggregated data presented in Table 5-5. Travel was heaviest between the hours of 10:00 A.M. and 3:00 P.M. (many trips started between 1:00 and 2:00 P.M., ended during the 2:00 to 3:00 hour). The peak hour of travel occurred betwen 1:00 and 2:00 P.M. while travel was almost as great between 10:00 A.M. and 12:00 noon. There was a slack period between 12:00 noon and 1:00 P.M. as all of the first legs of the nutrition runs were completed.

The data collected from the detailed driver trip logs indicated that more than 70% of all travel began between 10:00 A.M. and 3:00 P.M., with about 20% of the trips beginning before 10:00 A.M. and 10% beginnning after 3:00 P.M. It would appear that the midday peak may be a bit heavier than it was immediately after September, 1977.

As discussed in Chapter 4, the supply of EASYRIDE service is also at its peak during the midday period. There was a good match between peak demand and peak service.

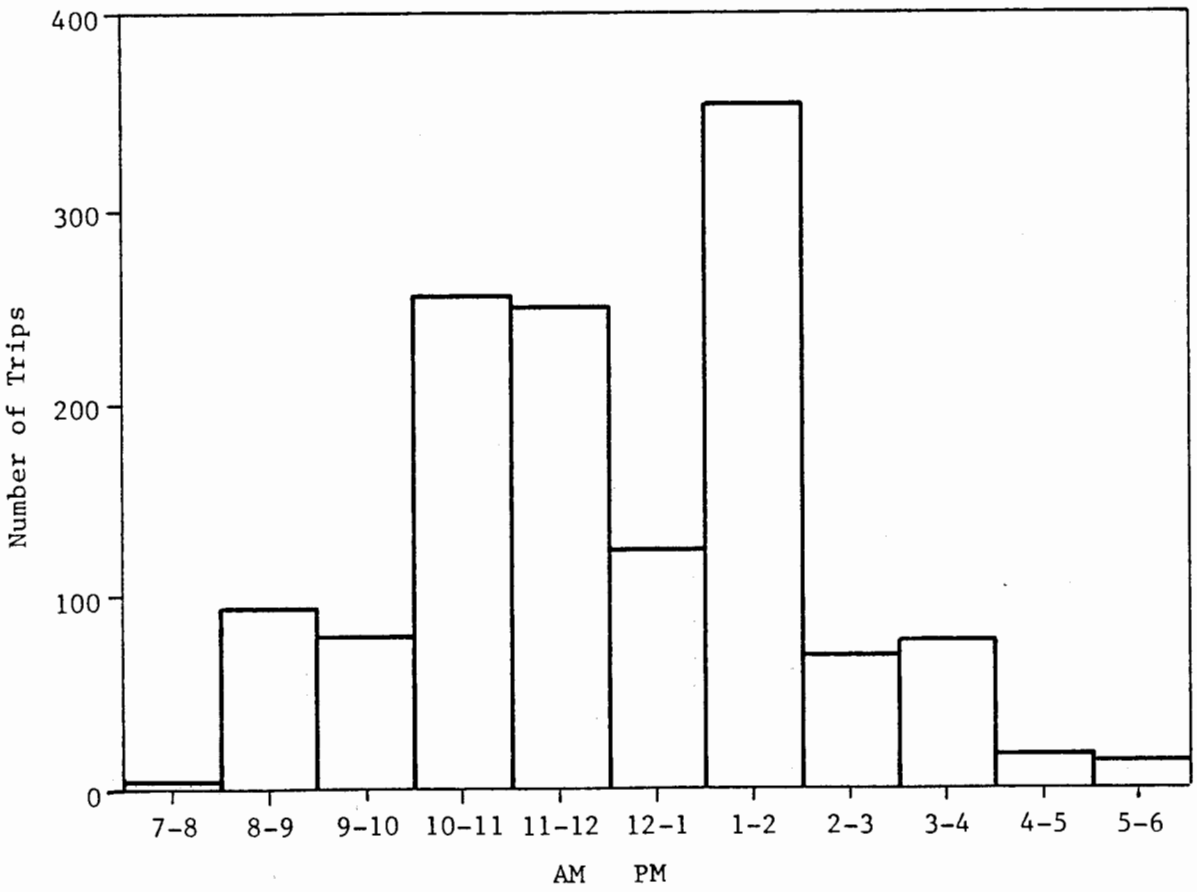

FIGURE 5-5 TRAVEL BY HOUR OF THE DAY - MAY, 1978

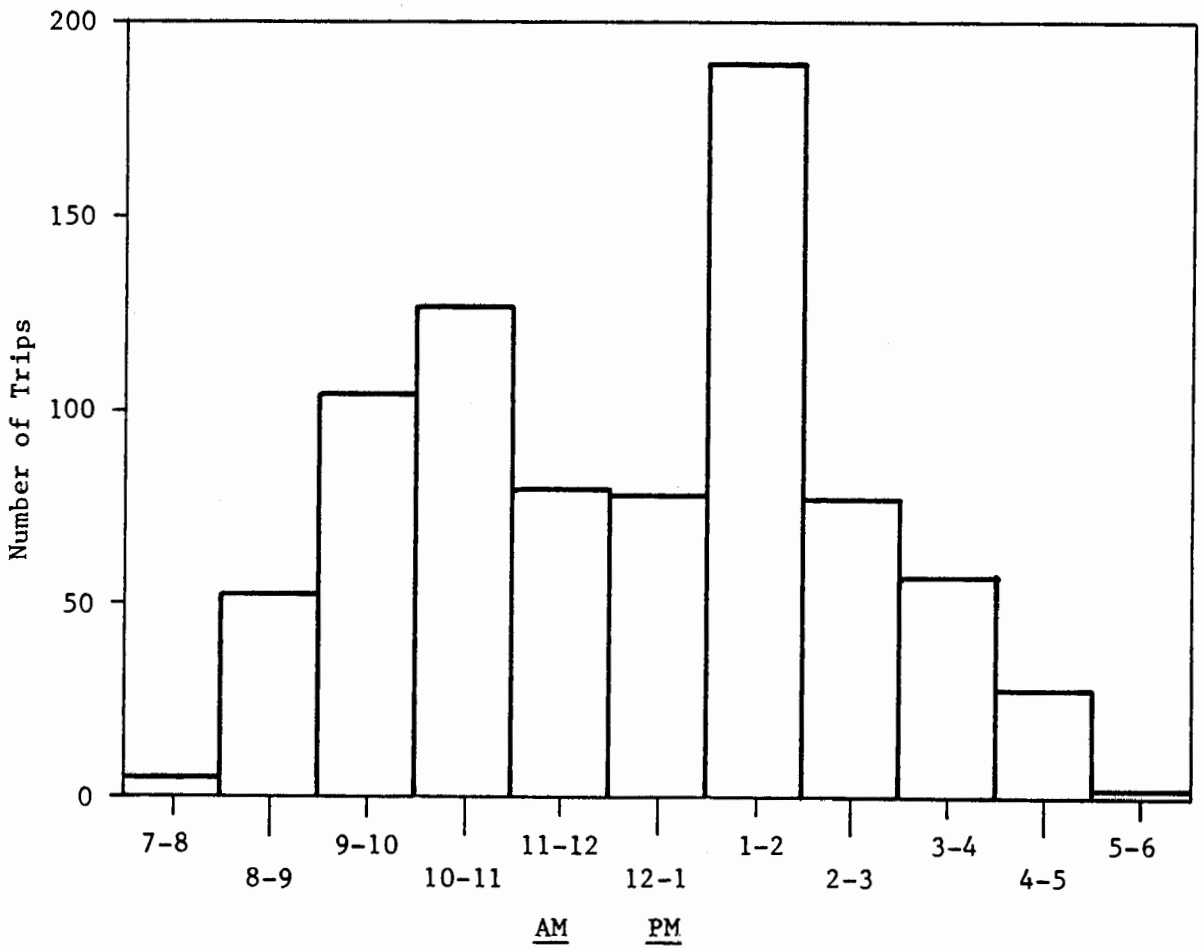

FIGURE 5-6 TRAVEL BY HOUR OF THE DAY - MARCH, 1979

5.1.5 Travel By Day of Week

Figure 5-7 illustrates a histogram of travel by the day of the week during the demonstration project. There was a slight variation in travel by day of week during the demonstration. Travel was greatest on Wednesdays and Thursdays and lowest on Mondays and Fridays. Friday travel was consistently lower than travel on any other day of the week. This pattern in user demand is related to the ethnicity of the EASYRIDE users. A majority of EASYRIDE users were Jewish and elderly Jewish residents of the Lower East Side traditionally curtail their travel on Fridays in preparation for their Sabbath observance (which begins at sundown on Friday). In addition, many of the human service agencies which serve a predominantly Jewish clientele often close their offices Friday afternoons. This is especially the case during winter months when the early sundowns result in the Sabbath beginning as early as 4:30 p.m.

The curtailed travel by Jewish persons in the Lower East Side does not necessarily imply that all such persons are Sabbath observers. The curtailed travel on Friday afternoon, in particular, is more a result of the traditions of the Lower East Side which to a large extent is dominated by Jewish residents and merchants.

5.2 Market Penetration

Market penetration typically refers to the number of persons who register to use a specialized transportation system of all those eligible to register for the system. Defined in this manner, market penetration is expressed as percentage and as such may vary from 0% to 100%. Taken a step further, other ratios involving the use of a specialized transportation may be developed, such as the number of unduplicated users. Since all registrants for a particular service do not necessarily use the service, it is necessary to determine the number of persons who are actual users during a specified period of time. In this section EASYRIDE registration, the number of unduplicated users, user trip rates and the number of Medicare eligible users is discussed.

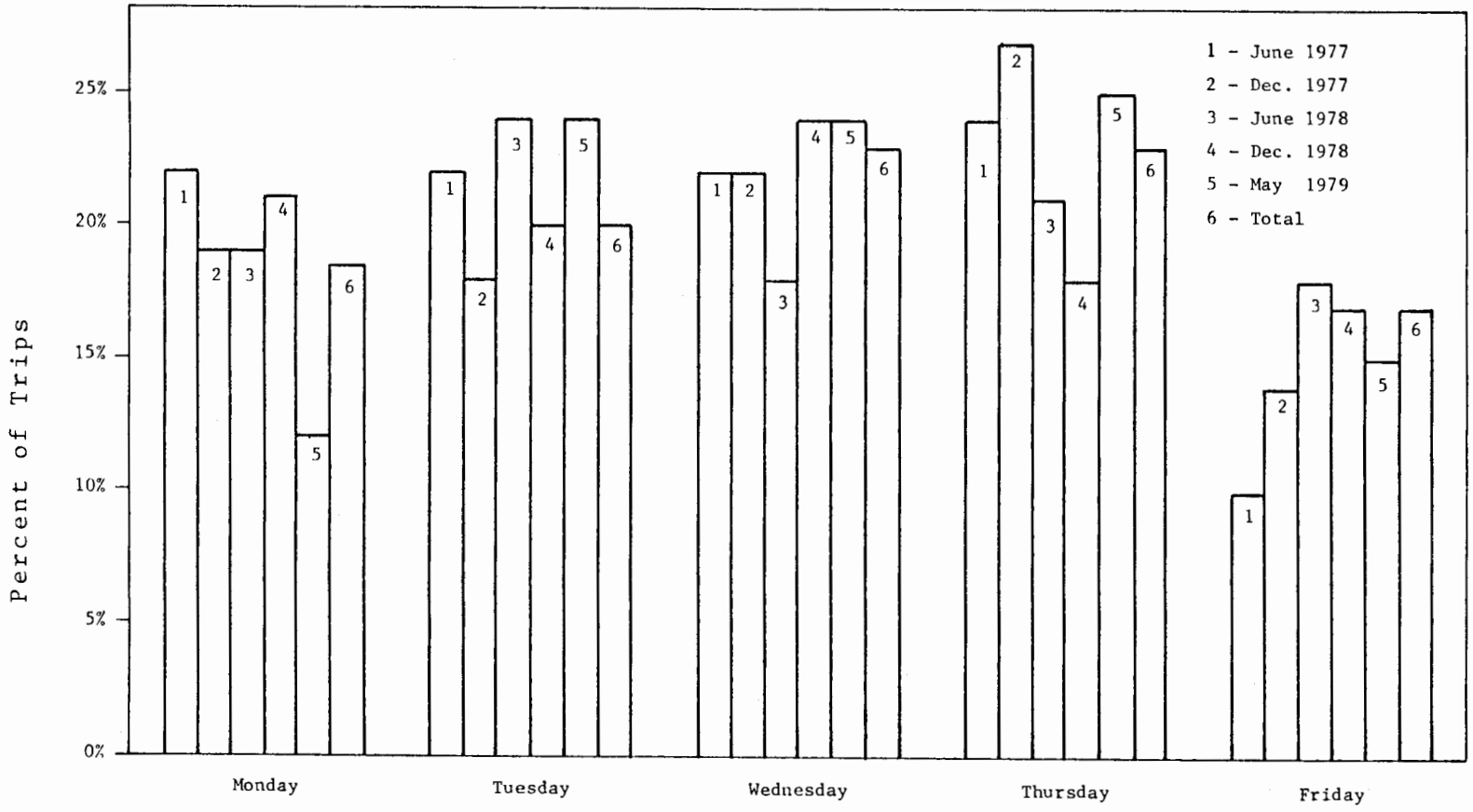

FIGURE 5-7 TRAVEL BY DAY OF WEEK

5.2.1 EASYRIDE Registration

EASYRIDE registration was initially conducted by signing up clients at the various human service agencies in the Lower East Side. As long as it was thought that a given individual would qualify to use EASYRIDE under the self screening eligibility system, he/she was assisted in the registration process. Registration by an individual under this process, however, did not imply that the individual would ever actually use EASYRIDE. After the initial sign-up period (prior to June 1, 1977) there were 896 registrants.* Between June, 1977 and April, 1978, the number of registrants increased at a rate of about 127 per month to 2,123. Beginning May 1, 1978 the self-screening registration process was replaced by a more formal set of eligibility requirements as detailed in Chapter 3. As a result of the implementation of the new registration procedures, the number of registrants continued to increase each month but only at the rate of about 54 persons per month. The total number of registrants through May, 1979 was 2,873.

It is hypothesized, however, that a larger percentage of the persons who registered for EASYRIDE after May 1, 1978 actually used the system. If this hypothesis is correct it is then likely that EASYRIDE provided more Medicare covered trips to Medicare eligible individuals thereby insuring EASYRIDE's receipt of the maximum amount of reimbursement from HCFA. Data which could be used to directly verify this hypothesis was not analyzed. However, other data which indirectly tend to support the hypothesis are discussed in subsequent parts of this section.

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*The registration process was an on going activity since the pilot project began in June, 1976.

Figure 5-8 illustrates the increase in registration for EASYRIDE during the first two years of the project. It is clear, from Figure 5-8, that the slope of the graph representing registration between June 1, 1977 and April 30, 1978 is steeper than the slope of the graph representing registration between May 1, 1978 and May 31, 1979. The equation of the trend line for registration period between June, 1977 and April, 1978 is as follows:

$$Y = 682 + 127 X \quad r^2 = .96$$

Where:

Y = Total number of registrants

X = Month of the project (X = 1, ... 11)

The equation of the trend line for the registration period May, 1978 to April, 1979 is as follows:

$$Y = 2{,}178 + 56.5 X \quad r^2 = .99$$

Where:

Y = Total number of registrants

X = Month of project after April, 1978 (X = 1, ...12)

It is clear that upon comparison of these two regression equations that the registration rate has been reduced by approximately 56%.

While examining the registration patterns for EASYRIDE, it is necessary to consider the market penetration of EASYRIDE. Market penetration refers to the number of persons who have registered to use EASYRIDE compared to total number of persons eligible to use EASYRIDE. Based on the demographic characteristics of the Lower East Side it was estimated that there were approximately 25,000 persons eligible to use EASYRIDE. This estimation was made based on the more liberal eligibility criteria intially employed by EASYRIDE. Prior to May 1, 1978 about 8% of the eligible population registered for EASYRIDE. Registration has been increasing monthly and thru May, 1979, 11% of the eligible population registered for EASYRIDE.

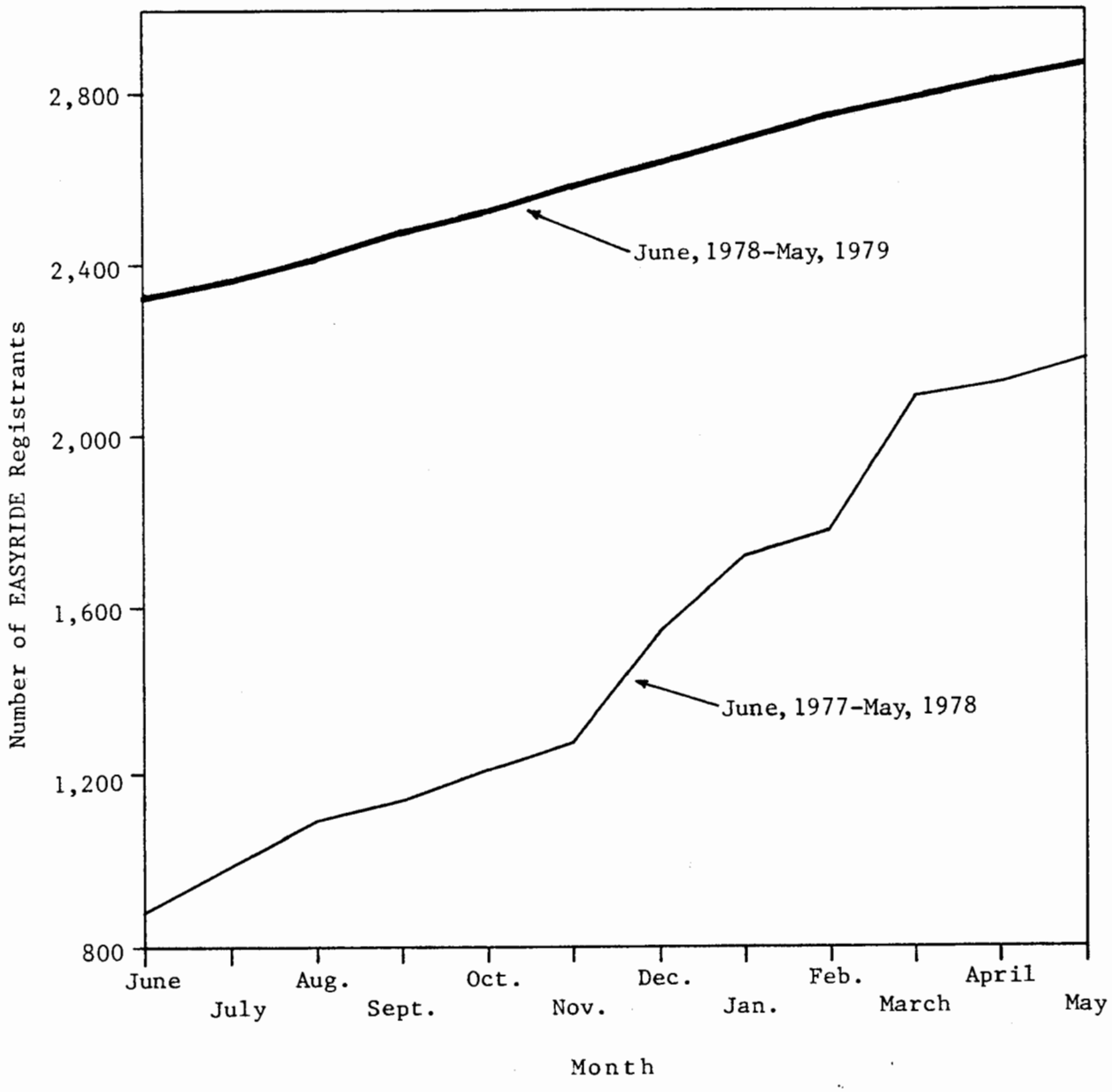


FIGURE 5-8 EASYRIDE REGISTRATION BY MONTH

It should be noted, however, that the market penetration figures developed after May 1, 1978 have not been corrected for the new eligibility criteria. Although persons who registered for EASYRIDE under the "self-screening" process were eligible for service under the revised eligibility criteria the estimated target population is certainly some value less than 25,000. Therefore, we can state that the market penetration rate of 11% through May, 1979 is a minimum value. The actual rate is likely to be slightly greater than 11%.

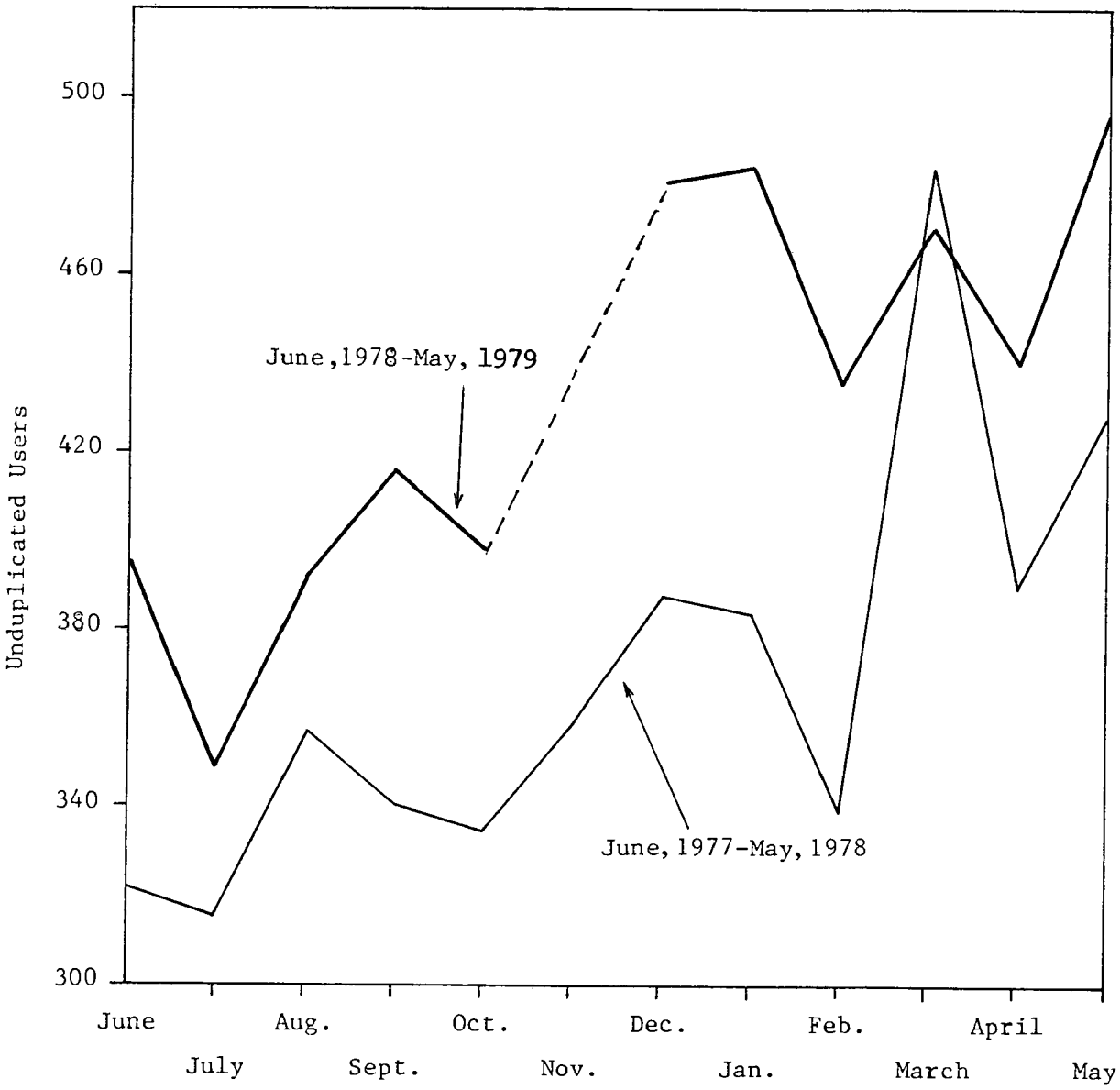
Because the vast majority of the intial registrants were signed up through the human service agencies in the Lower East Side, the market penetration figures must be viewed cautiously. All of the potential eligibles in the Lower East Side did not have the same opportunity to register for EASYRIDE as did those persons who frequented human service agency activities. EASYRIDE was not mass marketed throughout the Lower East Side during the early months of the demonstration. The EASYRIDE managers feared that if the system was mass marketed, the demand would be overwhelming for the available supply of service.

5.2.2 Unduplicated Users

The number of unduplicated users represents the number of persons who have made at least one trip on EASYRIDE during a designated period of time. For the purposes of the evaluation the number of unduplicated users per month has been determined. Table 5-6 presents the number of unduplicated users per month during the first two years of the demonstration project. This data is presented graphically in Figure 5-9. Although there was large variation in the number of unduplicated users per month during the demonstration, there was an increasing trend in the number of different persons using EASYRIDE at least once each month. The number of unduplicated users per month during the second 12 months of the demonstration was, with one exception, always greater than the number of unduplicated users per month during the corresponding month of the first 12 months of the demonstration.

	1977	1978	1979
June	322	397	
July	316	349	
August	357	393	
September	340	415	
October	335	398	
November	359	NA	
December	388	481	
January		384	485
February		339	436
March		483	472
April		389	441
May		430	499
			Average 400

TABLE 5-6 SUMMARY OF THE NUMBER OF UNDUPLICATED USERS PER MONTH



Note: Data for November, 1978 was not available at time of report preparation

FIGURE 5-9 NUMBER OF UNDUPLICATED USERS PER MONTH

The range in the number of unduplicated users per month was from a low of 316 in July, 1977 to a high of 499 in May, 1979. The number of unduplicated users during the summer months of 1977, although low in absolute magnitude, represented the largest unduplicated person usage per month expressed as a percentage of total registrants (36% in June, 32% in July, 32% in August). Although the number of unduplicated users per month generally increased during the demonstration, the increase was at a rate less than the increase in the number of monthly registrants. Clearly, there is a functional limit to the number of unduplicated users of a specialized transportation system per month. Parameters which constrain the number of monthly unduplicated users include hours of vehicle service and the frequency of individual use.

The ratio of the number of unduplicated users per month to the total number of registrants up to that particular month varied from a high of 36% in June, 1977 to a low of 15% in July of 1978. During the last seven months of 1977 the percentage declined from 22% in January to 15% in July before increasing back to 18% in December. The percentage has appeared to stablize during the closing months of 1978 and the early months of 1979 in the range of 16% to 18%. These percentage figures correspond to approximately 400 to 500 unduplicated users per month.

Referring again to Figure 5-9, there are several low points in the graph which warrant brief explanations. During the months of September and October of 1977 the EASYRIDE vehicles experienced electrical difficulties and as a result the numbers of hours of service provided during these months was reduced. This service decrease resulted in a decrease in the total number of trips provided during these months thereby reducing the number of unduplicated users. As the vehicle problems were resolved the level of service increased as did the number of trips delivered and the number of unduplicated users.

During February of 1978, EASYRIDE service was somewhat curtailed by the "Blizzard of 1978". The number of vehicle service hours was substantially reduced which again reduced the number of trips provided and reduced the number of monthly unduplicated users. The low point in February was followed immediately by a large rebound in March probably due to a response to the increased level of service provided by EASYRIDE. EASYRIDE provided only 1,091 hours of vehicle service in February, 1978 but then increased this number by 43% to 1,558 hours of service in March.* It is also possible that persons made trips in March which they could not make during February.

An important factor which influences the number of unduplicated users per month is the frequency with which persons use a system. For example, if a specialized transit system provides service for a nutrition program we would expect that the number of unduplicated users per month would be relatively low compared to a similar system providing more general purpose trips. Furthermore, persons using a specialized transportation system for purposes which recur on a daily basis will tend to dominate the supply of service available, thereby reducing the number of unduplicated persons which could use the system in a given period of time.

The frequency with which EASYRIDE users use the system was measured twice during the demonstration. The first time frequency of use was measured was during an on-board survey administered in July and August of 1977. The second time frequency of use was measured was during a telephone user survey conducted in December, 1978. The results of these two measures are presented in Table 5-7. An analysis of the frequency counts presented in this table

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*Although March, 1978 had 23 operating days and February, 1978 had a potential of 19 operating days, February service was curtailed because of the presence of snow and ice on New York City streets.

FREQUENCY OF USE	ON-BOARD SURVEY JULY/AUGUST, 1977			USER SURVEY DECEMBER, 1978	
	f	%	ADJUSTED %*	f	%
Daily	30	19%	20%	19	14%
Every Few Days	17	11%	12%	14**	10%
Once a Week	22	14%	15%	12	9%
Once or Twice a Month	48	31%	33%	79***	58%
Rarely	29	19%	20%	12	9%
Unknown	9	6%	0	0	0
TOTAL	155	100%	100%	136	100%

* Adjusted to eliminate the effect of unknown responses
** More than one time per week
*** One time every two or three months and less often

TABLE 5-7 SUMMARY OF FREQUENCY OF EASYRIDE USE

indicates that there is a difference between these distributions. The interpretation of this data is that early in the demonstration, persons used EASYRIDE more frequently than persons a year and one-half later. This change in the frequency of use would certainly support previously illustrated data which indicated that the number of unduplicated users per month has increased during the course of the demonstration project. That is, fewer individuals dominated the service available from EASYRIDE, thereby allowing more individuals a chance to use the service at least once a month. However, since the data presented in Table 5-7 was collected using two different survey methods direct comparisons between results should be made cautiously.

5.2.3 User Trip Rates for Registrants and Eligibles

The evaluation of specialized transportation system user trip rates is often clouded due to a lack of data on the number of unduplicated system users. However, due to the detailed Management Information System (MIS) developed by EASYRIDE, monthly trip rates have been developed for all registrants and for unduplicated monthly users. This information has been tabularized and is illustrated in Table 5-8.

The monthly trip rate per registrant has been computed in two ways. The first method is simply the ratio of all trips made during a particular month to the total number of registrants through a particular month (trip rate per total registrant) or the total number of unduplicated users during a particular month (trip rate per monthly user). The second method involves the same denominators as the first method but modified numerators. The total number of trips in the second method has been reduced by subtracting out group trips (charter trips). This adjustment was made because it was possible that not all persons who made charter trips were EASYRIDE registrants. Although it is generally believed that most charter trips are made by EASYRIDE registrants, it is not required for agencies sponsoring charter trips.

	TRIP RATE PER TOTAL REGISTRANT		TRIP RATE PER UNDUPLICATED MONTHLY USER	
	All Trips	All Trips Minus Group Trips	All Trips	All Trips Minus Group Trips
1977 June	4.44	1.60	12.37	4.48
July	2.90	1.30	9.15	4.10
August	3.57	1.59	11.05	4.91
September	2.82	1.32	9.56	4.45
October	2.07	1.40	7.53	5.10
November	1.80	1.37	6.42	4.90
December	1.57	1.17	6.24	4.65
1978 January	2.07	1.15	9.25	5.14
February	1.69	.91	8.86	4.77
March	2.05	1.44	8.87	6.25
April	1.56	1.29	8.52	7.03
May	1.50	1.30	7.59	6.60
June	1.31	1.14	7.64	6.66
July	1.05	.90	7.13	6.08
August	1.32	1.13	8.08	6.90
September	1.39	1.05	8.27	6.27
October	1.14	.96	7.22	6.09
November	NA	NA	NA	NA
December	1.24	1.10	6.77	6.02
1979 January	1.46	1.31	8.09	7.25
February	1.17	1.02	7.37	6.43
March	1.40	1.14	8.31	6.77
April	1.10	.95	7.09	6.10
May	1.19	1.07	6.84	6.17

TABLE 5-8 SUMMARY OF MONTHLY EASYRIDE USER TRIP RATES

The monthly trip rate per registrant declined during the demonstration due to the constant increase in the number of total registrants. The modified monthly trip rate per registrant declined slightly during the demonstration and was generally erratic reflecting changes in both total monthly trips and total charter trips. A comparison of the two trip rates indicates a decrease in the number of charter trips provided during the first 10 months of the demonstration. This was followed by a leveling off of the number of charter trips relative to the number of total trips during the remainder of the demonstration.

The trip rates developed for unduplicated monthly users is, perhaps, a bit more informative than the rates developed for total registrants. After the first months of the demonstration, the trip rate per month for unduplicated users, with few exceptions, settled into the range of 7 to 9 trips per month or 3.5 to 4.5 round trips per month. This may be interpreted, more generally, as one round trip per week per user. These figures are impressive when one considers the fact that the total number of users per month has been on the rise towards the end of the demonstration. EASYRIDE, while serving more individuals per month, has been able to maintain approximately the same level of monthly service.

5.2.4 Models of EASYRIDE Use

Several models were estimated in an attempt to relate the monthly trip rate per registrant and monthly trip rate per user to the duration of the demonstration project. It was hypothesized that as the number of registrants increased, their trip rate per month would decrease while the available supply of service was constant. In each model the trip rate, (Y), was the dependent variable and the month of the project, (X), was the independent variable. The following four model forms were estimated for each of the trip rates:

1) $Y = a + b X$

2) $Y = a + b \ln X$

3) $Y = ae^{bx}$

4) $Y = aX^{b}$

The results of the model estimations are presented in Table 5-9. The models relating the trip rate per registrant to the month of the demonstration indicate a decreasing trend over time as discussed previously. The model forms which have the highest goodness-of-fit measure (r^2) are the logarithmic model ($r^2 = .87$) and power model ($r^2 = .87$). The linear and exponential models also have reasonable r^2 values. The negative slope of the coefficient of the independent variable indicates that as the demonstration progressed, the trip rate per registrant declined.

The models relating the trip rate per user to the month of the project were not acceptable models as evidenced by the low goodness-of-fit values. The rates were erratic as discussed previously and as a result, the monthly user trip rate and the month of the demonstration were not highly correlated. Stated another way, the month of the project explained only a small portion of the variance in the monthly user trip rate.

5.2.5 Medicare Covered Trips

One of the most innovative features of the EASYRIDE demonstration project is the Medicare reimbursement for covered trips made by Medicare eligibles. During the first seven months of the demonstration, EASYRIDE served approximately two Medicare eligibles for every one non-eligible. This ratio reversed itself during the next six months of the demonstration. At that time, EASYRIDE served more non-Medicare eligibles than Medicare eligibles. Since EASYRIDE was dependent upon the Medicare reimbursements for operating funds, it was important to reverse this trend.

Trip Rate Per Registrant (Y) Per Month (X)			
Model Form	a	b	r^2
1. $Y = a + bX$	3.25	- .13	.67
2. $Y = a + b\ln X$	4.09	-1.04	.87
3. $Y = ae^{bX}$	3.30	- .06	.76
4. $Y = aX^{b}$	4.59	- .45	.87

Trip Rate Per User (Y) Per Month (X)			
Model Form	a	b	r^2
1. $Y = a + bX$	9.86	- .15	.31
2. $Y = a + b\ln X$	11.07	-1.32	.48
3. $Y = ae^{bX}$	9.65	- .02	.27
4. $Y = aX^{b}$	10.97	- .14	.41

TABLE 5-9 MODELS OF EASYRIDE USE

Shortly after EASYRIDE revised its eligibility criteria, the system began to again serve a large proportion of Medicare eligibles. In fact, during the closing months of 1978 and early months of 1979, the ratio of Medicare eligibles served to non-Medicare eligibles was greater than 4 to 1.

Although EASYRIDE receives reimbursement under their Medicare waiver not all trip purposes are covered. The Medicare waiver essentially covers all medical related trips and nutrition trips for eligibles. The data tabularized in Table 5-10 indicates the number of Medicare covered trips provided by EASYRIDE (to Medicare and non-Medicare eligibles) and the number of trips which were reimbursed by Medicare. An interesting statistic presented in Table 5-10 is the percentage of all Medicare eligible trips which were reimbursed. The percentage of reimbursed Medicare trips is a function of 1) the total number of Medicare eligible trips provided, and 2) the total number of Medicare eligible users. Anyone eligible to use EASYRIDE could have potentially made a trip covered by the Medicare waiver. However, only Medicare covered trips made by Medicare eligibles were reimbursable.

During the first seven months of the demonstration the percentage of reimbursed Medicare trips increased steadily from 21% to 62%. The percentage increased during those months for the following reasons:

- The number of Medicare eligibles using EASYRIDE increased slightly.
- The number of total Medicare covered trips declined.
- Medicare eligibles made an increasing number of covered trips.

During January, 1978, the eighth month of the demonstration, the percentage of reimbursed trips dropped dramatically from 62% the previous month to 25%. For the next six months, the percentage again increased slowly to 38% but was surpressed because EASYRIDE

	Medicare Covered Trips			Non-Medicare Covered Trips	Unduplicate Medicare Eligible Users(3)	Non-Medicare Eligible Users(4)	Ratio (3) to (4)
	Total (1)	Reimbursable (2)	% Reimbursable(2)÷(1)				
1977 June	2,721	579	21%	1,261	213	109	1.95
July	1,736	595	34%	1,154	220	96	2.29
August	2,619	802	31%	1,327	255	102	2.50
September	2,168	627	29%	1,081	240	100	2.40
October	1,292	745	58%	1,233	223	112	1.99
November	1,358	844	62%	945	255	104	2.45
December	1,514	944	62%	. 907	236	152	1.55
1978 January	2,896	721	25%	656	170	214	.79
February	2,577	579	22%	425	136	203	.67
March	3,580	1,014	28%	705	178	305	.58
April	2,647	966	26%	667	163	226	.72
May	2,734	1,040	38%	532	176	254	.69
June	2,443	886	36%	591	160	237	.68
July	2,017	1,202	60%	470	226	123	1.84
August	2,637	1,556	59%	538	260	133	1.95
September	2,851	1,876	66%	582	317	98	3.23
October	2,180	1,613	74%	695	319	79	4.04
November	NA	NA	NA	NA	NA	NA	NA
December	2,577	2,031	79%	677	392	89	4.40
1979 January	3,188	2,517	79%	738	403	82	4.91
February	2,591	2,033	78%	621	356	80	4.45
March	2,856	2,271	80%	1,066	393	79	4.97
April	2,271	1,787	79%	854	353	88	4.01
May	2,942	2,366	80%	821	399	100	3.99

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*Total number of trips have not been corrected for "No Shows" and "Missed Trips"

TABLE 5-10 SUMMARY OF MEDICARE ELIGIBLE AND REIMBURSED TRIPS

served more non-Medicare eligibles than Medicare eligibles. Once EASYRIDE management adjusted the eligibility criteria in May, 1978 the percentage began to increase. Between July, 1978 and February, 1979 the percentage increased from 59% to 79%. This increase was influenced by the following factors:

- Increased number of Medicare eligible users.
- Increased number of Medicare covered trips made by the Medicare eligibles.
- Conscientious effort made by EASYRIDE staff to register eligible persons for Medicare so that their covered trips would be reimbursed.

5.3 User Perceptions of Service

EASYRIDE users were queried about their satisfaction or dissatisfaction with the EASYRIDE system during the on-board survey, the EASYRIDE User Survey and the Pilot Study. Generally, speaking, EASYRIDE users were very satisfied with all aspects of the transportation service.

As mentioned previously, respondents from the on-board survey indicated that they were "very satisified" with the following service attributes of EASYRIDE:*

- Vehicle Comfort
- Convenience of Service
- Driver Courtesy
- Safety of the Service
- Service Reliability
- Wait Time
- Ease of Access and Egress from Vehicles
- Shared Ride Nature of Service

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*Respondents were asked to express their satisfaction or dissatisfaction, on a seven point semantic differential scale, to a series of eight attributes of EASYRIDE service.

In fact, the only attribute which received less than 142 ratings of "very satisfied", of a total sample of 155 persons, was "wait time". "Wait time" received 116 ratings of "very satisfied" while 15 respondents were "somewhat more than slightly" satisfied, 2 respondents were "slightly" satisfied, 15 respondents were "in-between", one respodent was "slightly" dissatisfied, one respondent was "somewhat more than slightly" dissatisifed and 4 respondents were "very dissatisfied" (see Table 5-11). According to these respondents, EASYRIDE users are more sensitive to system wait time than to any other attribute of service. This result is consistent with the general public's high sensitivity to wait time for public transportation. People are rather anxious until the vehicle arrives at which time their anxiety diminishes.

The on-board survey respondents were not very sensitive to the length of time they believe they could ride, comfortably, in the EASYRIDE vehicles. As illustrated in Table 5-12, 93% of the on-board survey respondents felt that they could ride comfortably in an EASYRIDE vehicle for an extended period of time. However, EASYRIDE management indicated that users of the hospital shuttle system complained about the excessive travel time involved in their trips. Complaints resulted when the first passengers picked-up had to travel uptown to all of the other stops on the loop before returning downtown to be dropped off. This progression of stops was necessary because of the hospital locations with respect to the traffic flow of the street network.

While it is always desirable to please as many users as possible, it is sometimes necessary to sacrifice the number of users who are completely satisfied with the service to provide service to the maximum number of persons. The fact that several EASYRIDE users had to remain on the vehicle a little longer than they would have preferred was unfortunate but necessary; particularly, if shortened travel times meant that some of the users would not have been served at all.

Service Characteristics	Very Satisfied 1	2	3	In Between 4	5	6	Very Dissatisfied 7
Comfort	144	2	3	1	0	2	2
Convenience	148	3	1	1	0	0	0
Driver Courtesy	152	1	0	1	0	0	0
Safety	150	1	0	0	0	0	1
Reliability	142	4	1	3	0	1	0
Wait Time	116	15	2	15	1	1	4
Entry-Exit	147	4	0	0	0	1	2
Share Ride	154	0	0	0	0	0	0

TABLE 5-11 RESPONSES TO ATTITUDINAL QUESTIONS ON THE SERVICE CHARACTERISTICS OF EASYRIDE - FROM THE ON-BOARD SURVEY

TIME INTERVAL FOR COMFORTABLE RIDE	NO.	PERCENT
Less Than 15 Minutes	2	1.3%
15 to 30 Minutes	3	1.9%
30 to 45 Minutes	1	.6%
45 to 60 Minutes	5	3.2%
Over One Hour	143	93.0%
TOTAL	154	100.0%

TABLE 5-12 LENGTH OF TIME ON-BOARD RESPONDENTS BELIEVE THEY CAN RIDE COMFORTABLY IN AN EASYRIDE VEHICLE

Fifteen of 40 respondents, to the second wave of the Pilot Study, agreed with the statement "its hard to plan so far in advance". This response tends to support the evaluation contractor's recommendation that the lead time in which reservations can be made be shortened. Users developed a habit of reserving trips well in advance of their travel date for fear of not getting a reservation. EASYRIDE turned down very few trip requests and the advance notice time could certainly be shortened. It is rather surprising to observe that 9 of 38 respondents felt that the statement "you can never get an appointment when you want one" was true. This also supports the suggestion that the advance reservation system currently employed be reviewed.

During the re-interview of 140 persons who participated in the pilot study, respondents were asked to reply to several statements posed to them about EASYRIDE. The EASYRIDE research team tabulated the response of 43 respondents who were, according to their own reports, EASYRIDE users at least once a month during the past year. Table 5-15 presents the responses of regular EASYRIDE users to a series of statements made about EASYRIDE. This table was compiled from the re-interview of pilot study respondents during 1978 by the EASYRIDE research team.* The survey interviews introduced these statements in the following way:

> "I am going to tell you some things people have said about EASYRIDE--some good and some not so good. Would you tell me which of them are true in accordance with your own experiences with EASYRIDE?"

As can be observed from Table 5-13 many of the statements were phrased in a negative way so that it would be easy for a respondent to voice dissatisfaction with the system. The response to statements about the EASYRIDE staff tend to confirm the user satisfaction with the EASYRIDE drivers expressed during the on-board survey. None of the respondents thought that the EASYRIDE staff was impolite and 37 of 40 respondents thought that the statement "drivers are very considerate" was true.

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*EASYRIDE Research Mini-Report #1, Satisfaction and Dissatisfaction with EASYRIDE, November 8, 1978.

STATEMENT	TRUE	FALSE
Staff		
The EASYRIDE staff is impolite	0	37
The drivers are very considerate	37	3
Nature of the Service		
EASYRIDE is late too often	4	36
The wait is too long on call-backs	7	33
Its hard to plan so far in advance	15	25
You can never get an appointment when you want one.	9	31
They forget to pick me up	5	35
The ride is too bumpy	9	31
It wastes a lot of my time	2	35
Instrumental Rewards		
It has made transportation less expensive for me	35	5
It enables me to do more things for myself	34	4
It helps me get more things done	31	6
I can go to places I couldn't get to before.	23	16
EASYRIDE makes it easier for me to get to medical facilities	22	16
I wish EASYRIDE would run on weekends	36	3
Other Feelings		
EASYRIDE makes me feel more secure when I go out	38	1
I enjoy the bus ride	33	6
It helped me make new friends	13	27
It is embarrassing to be seen taking EASYRIDE	2	36
I would feel better if there was a fixed fare	9	30

Source: Wave 2 of the Pilot Study (compiled by EASYRIDE Research)

TABLE 5-13 RESPONSES TO STATEMENTS ABOUT EASYRIDE BY REGULAR EASYRIDE USERS

The responses to statements posed about the nature of service indicated some areas of user sensitivity. Seven of 33 respondents agreed with the statement "the wait is too long on call-backs". That was an encouraging response rate considering EASYRIDE operated without two-way mobile radios during the demonstration. "Will calls" are the most difficult trips to service, but EASYRIDE usually responds to these requests within one hour of the call. The positive response by 9 persons to the statement "the ride is too bumpy", is also reasonable.

The responses to statement about "Instrumental Rewards" provided some interesting information about EASYRIDE users. The vast majority of the respondents felt that the following statements were true:

- "it has made transportation less expensive for me"
- "it enables me to do more things myself"
- "it helps me get more things done"
- "I wish EASYRIDE would run on weekends"

The positive responses to these statements tend to imply that the respondents were rather mobile before EASYRIDE existed and the new system has made it easier and less expensive to travel. In fact, the large number of respondents who felt that the statements "I can go to places I couldn't get to before" and "EASYRIDE makes it easier for me to get to medical facilities" were false also imply that the respondents managed to travel for necessary purposes before EASYRIDE existed. This perception was verified by responses to the on-board survey questions on alternative modes of travel which would have been used if EASYRIDE did not exist. These responses are discussed in Chapter 6, User Impacts. It appears that while EASYRIDE was a safe, convenient, reliable, inexpensive transportaiton system, it may have caused more mode shift than serving induced travel and latent travel demand, at least among persons who used EASYRIDE about once a month.

Finally, the pilot survey respodents strongly agreed with the statement "EASYRIDE makes me feel more secure when I go out" and "I enjoy the bus ride". The perception of security which is associated with EASYRIDE is certainly understandable since the elderly residents of the Lower East Side have such a tremendous fear of being mugged if they go outside of their home. The perception of security associated with EASYRIDE is unlike that associated with the use of public transportation in New York City. The New York City public transportation system is perceived as dangerous by many members of the general public and even more so by the elderly.

EASYRIDE research also tabulated the responses, to ten statements about EASYRIDE, of a group of 81 respondents to the pilot study who used EASYRIDE less often than once a month or used it for group trips only. These respondents were asked to respond to the ten statements in the context of the following question:

> "Why do you think you haven't made more use of EASYRIDE?"

Their response are presented in Table 5-14 and generally indicate that they are less sensitive to the various characteristics of the system. Their insensitivty is probably related to their infrequent use of the system and their resultant lower expectations of service quality. The more freqent users are more demanding and expect the service to meet all of their needs. This response to specialized transportation services has been observed elsewhere. At first the system users are greatly appreciative of the service. Soon the service is taken for granted and the users become more demanding.

STATEMENT	TRUE	FALSE
Staff		
The drivers are not nice	4	75
The office staff is impolite	0	79
Operations		
The road is too bumpy	0	79
Status		
It is embarrassing to be seen taking EASYRIDE	1	78
Nature of the Service		
Its hard to plan so far in advance	10	68
The wait is too long on call-backs	3	76
EASYRIDE is late too often	2	77
It doesn't run on weekends	9	70
I can't get an appointment when I want one	5	74
They forget to pick me up	1	78

Source: Wave 2 of the Pilot Study compiled by EASYRIDE Research

TABLE 5-14 RESPONSES TO STATEMENTS ABOUT EASYRIDE BY INFREQUENT USERS

CHAPTER 6

6.0 USER IMPACTS

The supply and demand characteristics of the EASYRIDE demonstration project were evaluated in detail using a variety of quantitative measures and econometric techniques in the two previous Chapters. In addition to presenting frequency distributions of trip purposes and mean values of dwell times it is of considerable value to describe the characteristics of EASYRIDE users and to evaluate the impact EASYRIDE has had on these users. In this Chapter the socioeconomic characteristics of EASYRIDE registrants and EASYRIDE users are presented and discussed. The sources of data used in this examination were the EASYRIDE registrant file and the EASYRIDE on-board survey.

During the EASYRIDE demonstration project the evaluation of user impacts was the responsibility of Vera's research department. Vera assembled an EASYRIDE research team when their research grants were awarded and they began a very large scale evaluation of user impacts. The EASYRIDE research team focused their evaluation on the impact of EASYRIDE on user mobility and on the impact of EASYRIDE on user well being. By receiving Medicare reimbursements for the cost of transporting Medicare beneficiaries for covered trip purposes, the EASYRIDE research team will determine whether health benefits accrue to Mecicare beneficiaries who are EASYRIDE passengers, and whether substantial amounts of money are saved by keeping these elderly persons out of hospitals and institutions. It is hypothesized that inpatient care is far more expensive than outpatient care.

Because EASYRIDE's research team started its effort after the demonstration project was in full operation their work was not completed at the time this report was prepared. In addition, because many of the health related issues being evaluated are long term in nature, the research team expects that any significant results will occur after a period of several years. For this reason they requested research funding from the Department of Health, Education, and Welfare for an additional three years. However, some preliminary results of EASYRIDE's research are included in this Chapter based on the results of their Pilot Study conducted in the Lower East Side. User impacts have also been evaluated based on the results of the on-board survey designed by the evaluation contractor and a supplementary user survey conducted by EASYRIDE research.

6.1 Registrant and User Socioeconomic Characteristics

A registration card containing individual identification information and various socioeconomic data was completed for each potential EASYRIDE user at the time of their registration. In this subsection the characteristics of all EASYRIDE registrants are discussed as well as the characteristics of those registrants who have actually used EASYRIDE. Characteristics of EASYRIDE users were compiled by first identifying users and then extracting their characteristics from the registrant file. Sets of users were identified from the on-board survey and from the March, 1979 set of detailed driver trip logs.

A summary of the characteristics of EASYRIDE registrants and users is presented in Table 6-1. By examining the characteristics of users and registrants we can determine if the users are simply a subset of all registrants, possessing characteristics which are similar to those of all registrants, or whether the users have characteristics which are very different from those of all registrants. Upon examination of Table 6-1 it is clear that the typical EASYRIDE registrant is female age 65 or older (probably 75

USER CHARACTERISTICS	DATA SOURCES		
	On-Board Survey*	Sample of Users **	Registrant File
SEX:			
male	26.5%	28%	37%
female	73.5%	72%	63%
Age:			
under 18	0%	0%	0%
18 - 40	5%	2%	3%
41 - 60	11%	8%	5%
61 - 64	11%	4%	5%
65 - 74	31%	36%	33%
75+	42%	50%	54%
Employment Status:			
retired	96%	98%	96%
working full-time	2%	1%	3%
working part-time	2%	1%	1%
Ethnicity:			
Jewish	75%	67%	65%
Italian	4%	7%	7%
Slavic	0%	2%	2%
Hispanic	5%	8%	12%
Black	7%	7%	5%
Oriental	0%	1%	2%
Other	9%	8%	7%

* The On-Board Survey was conducted during July & August, 1977.
**Sample of Users taken from March, 1979 Detailed Driver Trip Log.

TABLE 6-1 SUMMARY OF USER CHARACTERISTICS

USER CHARACTERISTICS	DATA SOURCES		
	On-Board Survey	Sample of Users	Registrant File
Use of Aid:			
wheelchair	10%	11%	11%
walker	4%	10%	6%
artificial limb	2%	3%	2%
braces and/or crutches	4%	5%	4%
cane	28%	27%	20%
guide dog	1%	0%	0%
personal escort	22%	30%	25%
Disabilities:			
hypertension	45%	29%	22%
stroke	6%	8%	5%
other paralysis	4%	7%	4%
heart condition	48%	29%	24%
arthritis	66%	36%	28%
other leg problem	46%	26%	20%
blind	6%	8%	7%
deaf	5%	4%	4%
kidney problem	6%	6%	4%
respiratory disease	10%	9%	9%
emotional disability	4%	8%	5%
retarded	3%	1%	1%
cognitive impairment	2%	1%	2%
other	42%	22%	21%

TABLE 6-1 SUMMARY OF USER CHARACTERISTICS (CONT'D)

User Characteristics	DATA SOURCES		
	On-Board Survey	Sample of Users	Registrant File
Mode of registration:			
by agency	51%	48%	50%
by self in person	12%	3%	5%
by self by telephone	25%	25%	23%
other	12%	24%	22%
How informed about EASYRIDE:			
agency	78%	64%	61%
friend or relative	15%	22%	21%
publicity	1%	5%	7%
other	6%	9%	11%
Household size:			
1 person	54%	50%	46%
2 persons	38%	44%	48%
3 or more persons	8%	6%	6%

TABLE 6-1 SUMMARY OF USER CHARACTERISTICS (CONT'D)

or older), and retired. While it was expected that the majority of the registrants would be over 60 years of age it is particularly interesting to note that 33% of the registrants were between the ages of 65 and 74 and 54% were 75 or older. EASYRIDE is serving an elderly population whose median age is greater than that served by most specialized transportation systems.

Table 6-2 presents a population distribution by sex for persons over age 60 in the United States from the 1970 Census. The national distribution indicates that about 25% of all persons over age 60 are in the group 61-64, 46% of these persons are in the group 65-74, and the remainder (29%) are 75 or older. Of those persons over age 60, 43% are male and 57% female. Compared to these national statistics the EASYRIDE registrants are older and consist of slightly more females than might otherwise be expected.

As discussed previously in this report the Lower East Side has a large Jewish population and this was reflected in the distribution of registrants by ethnicity. As indicated in Table 6-1, 65% of the registrants were Jewish while 12% were Hispanic, 7% Italian, 5% Black, 2% Slavic and 2% Oriental.

Data on the respondent's use of aid presented in Table 6-1 does not indicate multiple aid use by an individual (e.g. an individual using a cane and an escort). The data indicates the percentage of all registrants who use a particular aid. The most common aids used were a personal escort (25%) and a cane (20%). A wheelchair was used by 11% of the registrants and 6% of the registrants used a walker, 4% braces and/or crutches, and 2% of the respondents used an aritificial limb.

The EASYRIDE registrants have a wide variety of disabilities as listed in Table 6-1. The most common disabilities were hypertension (22% of the registrants said they have hypertension), arthritis (28%), heart condition (24%) and other leg problem (10%). Those disabilities are representative of common diseases which accompany the aging process.

	MALE		FEMALE		TOTAL	
Age	No.	Percent	No.	Percent	No.	Percent
61-64	3,136,271	27%	3,543,272	24%	6,729,543	25%
65-74	5,432,892	47%	7,006,786	46%	12,439,678	46%
75 +	3,004,738	26%	4,657,458	30%	7,662,196	29%
TOTAL	11,573,901	100%	15,257,516	100%	26,831,417	100%

Percent Male/Female 43%/57%

TABLE 6-2 POPULATION DISTRIBUTION OVER AGE 60 FROM 1970 CENSUS

The last major user characteristic which should be noted is the registrant household size. Forty-six percent of the registrants live in one person households, 48% live in two person household and 6% live in households of three or more persons.

Finally, Table 6-1 presents some data on the mode of registration and how individuals were informed about EASYRIDE. Human service agencies in the Lower East Side were responsible for completing a majority of the registrations and for informing individuals about EASYRIDE. Fifty percent of the EASYRIDE registrants registered for service through an agency while 28% registered directly through EASYRIDE (5% in person and 23% by telephone). Sixty-one percent of the registrants were informed about EASYRIDE through an agency, 21% were informed about the service through a friend or relative and 7% were informed about EASYRIDE through some form of publicity (large scale marketing was not part of the registration process).

It should also be noted that a comparison of the characteristics of persons registering for EASYRIDE before and after May 1, 1978 was performed. This comparison indicated few differences in the registrant's socioeconomic profiles although the incidence of aid use was slightly higher for persons registering for EASYRIDE after May 1, 1978. This was to be expected since the eligibility criteria implemented at that time were more restrictive than the self-screening process previously used.

6.2 User Characteristics

6.2.1 Sample of Users from On-Board Survey

The EASYRIDE on-board survey was conducted during the summer of 1977 (betwen July 22 and August 11, 1977). The survey device, presented in Appendix D, was designed by the evaluation contractor with the assistance of the Vera research team. Interviewers working for Vera administered the survey directly on-board EASYRIDE vehicles.

When the on-board survey was conducted there were three categories of persons eligible to use EASYRIDE. These three categories included the following:

1 - Elderly Transportation Handicapped - This group included persons 60 years of age and older who perceived themselves as transportation handicapped (i.e. have some disability which prevented them from using public transportation).

2 - Able Bodied Elderly - This group included persons 60 years of age and older with no disability preventing then from using public transportation.

3 - Non-Elderly Transportation Handicapped - This group included persons under age 60 who were unable to use public transportation due to physical or mental disabilities.

Table 6-3 presents the classification of the on-board survey respondents. The differentiation between the Elderly Transportation Handicapped (TH) and the Able Bodied Elderly (ABE) was based upon the interviewers' observations. Thus, it was a subjective process based upon the respondents' obvious physical disabilities and their ability to board and alight from the EASYRIDE vehicles without driver assistance.* Classification of survey respondents into the category of Non-Elderly Transportation Handicapped was based upon the respondents' age and the presence of a disability. Handicapped persons under age 60 were not allowed to participate in the self-screening process. Their disability had to be verified by a physician in order to register for EASYRIDE. As a result the classification of respondents into this category was objective and not subjective.

*During the time period when the first on-board survey was administered EASYRIDE employed a self-screening process for client registration. Elderly clients who felt that they had a physical or other problem which prevented them from using public transit were permited to register for EASYRIDE service. It was believed that the self-screening process and the advance reservation system required to secure a ride would discourage participation by persons who could easily use public transit or some alternative mode.

Classification	No.	Percent
1. Elderly Transportation Handicapped	100	65%
2. Able Bodied Elderly	36	23%
3. Non-Elderly Transportation Handicapped	19	12%
TOTAL	155	100%

TABLE 6-3 CLASSIFICATION OF ON-BOARD SURVEY RESPONDENTS

Examination of the characteristics of the on-board respondents, presented in Table 6-1, indicates a close resemblance to the characteristics of all EASYRIDE registrants. The users, as represented from the on-board survey, consisted of slightly more females than would have been expected from the incidence rate present in the registration file. Slightly more than 73% of the users were female compared to 63% in the registrant file.

Although the users tended to be older (42% over 75) than might otherwise be expected, 16% of the users were age 60 or under while only 8% of the registrants were age 60 or under.

The employment status of users is identical to that of registrants as 96% of each group consisted of retirees. The ethnicity of users was dominated by persons of Jewish faith (75%) with limited participation from persons of the other ethnic backgrounds. The users also used aids in the same proportion as all registrants. The most common aids used were a cane (28% of the on-board survey respondents used a cane) and a personal escort (22%). Ten percent of the users used a wheelchair, 4% used a walker, 4% used braces and/or crutches, 2% used an aritificial limb and 1% used a guide log.

The on-board survey respondents had a similar set of disabilities compared to the registrants. The most common disabilities which afflicted the users were hypertension (45%), heart condition (48%), arthritis (66%) and other leg problem (46%). These were the same disabilities which were most prevalent among the registrants although the incidence rates were higher among the users for these disabilities than for the registrants.

The mode of registration for users was also similar to that of registrants with the majority registering through a human service agency. However, 78% of the users were informed about EASYRIDE through an agency as compared to 61% for the registrants.

Finally, the users came from slightly smaller households than the registrants with 54% of the users living in one person households, 38% of the users living in two person households and 8% of the users living in households with three or more persons.

The respondents selected for the on-board survey, with few exceptions, have a set of socioeconomic characteristics which are almost identical to those of the registrants. The sample selected for the on-board survey was, therefore, representative of all EASYRIDE registrants.

6.2.2. Sample of Users from Detailed Driver Trip Logs

Since the on-board survey was conducted at the beginning of the demonstration project, it was decided to tabulate the user characteristics of a sample obtained at a different time period during the demonstration. The second set of detailed driver trip logs were completed during the second half of March, 1979. All unduplicated users using EASYRIDE during that semi-monthly period were identified from their registration number and their characteristics were extracted from the registrant file. There were 336 unduplicated users identified and their characteristics are presented in column 2 of Table 6-1 (Sample of Users).

This sample of users has a set of socioeconomic characteristics that are very similar to those of the on-board survey respondents and all EASYRIDE registrants. Users identified from the detailed driver trip log are slightly older than the on-board survey respondents with their age distribution more similar to that of all registrants. The distribution of the ethnicity of the sample users is almost identical to that of the registrants and the incedence rates for use of aids is similar to both on-board survey respondents and all registrants.

Based on a complete comparison of the socieconomic characteristics of the sample of users obtained from the detailed driver trip logs to those characteristics of all registrants, it is fair to state that there are no significant differences.

6.3 User Impacts

During the EASYRIDE demonstration project two surveys were conducted of small samples of EASYRIDE users. The first of these two surveys was the on-board survey administered during July and August, 1977. The second survey was called the "EASYRIDE User Survey". This survey was designed by EASYRIDE research and was administered by telephone in December, 1978. A copy of the EASYRIDE User Survey is presented in Appendix E. These surveys were designed to find out some of the travel characteristics of EASYRIDE users, what barriers exist which limit their travel, and their impressions of EASYRIDE. The results of the surveys suggest some of the ways EASYRIDE has impacted on the lives of the users.

6.3.1 On-Board Survey Results

One method of determining EASYRIDE's impact on its users was to identify the frequency with which EASYRIDE was used for each trip purpose served. Table 6-4 illustrates a cross tabulation of frequency of use and trip purpose for respondents of the on-board survey. The results are not particularly surprising, but they do support the results one might expect. The majority of daily EASYRIDE patrons used the system to travel to nutrition programs. Persons who used EASYRIDE every few days, once a week, or once or twice a month were usually travelling for a health related reason while infrequent EASYRIDE users used the system for social or recreational purposes.

	TRIP PURPOSE *									
Frequency of Use	Work	Church/ Synagogue	Shopping	Medical/ Dental	Personal Business	Visiting	Social/ Recreational	Nutrition	Other	TOTAL
Daily	3	0	0	2	0	2	1	22	0	30
Every Few Days	1	0	0	7	1	1	2	4	1	17
Once a Week	0	1	1	13	1	2	2	2	0	22
Once or Twice a Month	0	0	2	33	3	1	6	2	1	48
Rarely	0	0	0	11	0	0	18	0	0	29
Unknown	0	0	0	5	0	0	3	1	0	9
TOTAL	4	1	3	71	5	6	32	31	2	155

*The trip purpose indicated was that purpose for which the respondent was travelling during the on-board survey. The table entries indicate general frequency of EASYRIDE use for any purpose and the particular trip purpose travelled during the survey.

TABLE 6-4 CROSS-TABULATION OF FREQUENCY OF USE AND TRIP PURPOSE

During the on-board survey, respondents were asked how they would have made their trip if EASYRIDE did not exist. The responses to this question are presented in Table 6-5. The results indicate that 43% of the respondents would not have made their trip if EASYRIDE did not exist. It is interesting, however, to observe the alternative modes which were mentioned by 57% of the respondents. The most popular alternative modes mentioned were public bus/public subway (by 17% of the respondents) and taxi (by 15% of the respondents). Ambulette was mentioned by 6% of the respondents, walk by 5% of the respondents, car rider by family by 3% of the respondents, car rider by friends by 1% and some other mode by 2% of the respondents.

In order to determine the true impacts of these responses it was first necessary to determine which trip purposes would have been made by an alternative mode and which trip purposes would not have been made. Table 6-6 presents the results of a cross tabulation of trip purpose and alternative mode. The cross tabulation indicates that 81% of the social/recreational trips, 72% of the nutrition trips, and 23% of the health related trips would not have been made if EASYRIDE did not exist. The cross tabulation also indicates that 77% of the health related trips would have been made by an alternative mode. The most popular alternative modes for health related trips were taxi, public bus/public subway, and ambulette.

These data suggest that most persons who made essential trips probably would have found an alternative mode if EASYRIDE did not exist. In some instances this alternative mode of transportation would have been costly. In fact, most of the alternative modes mentioned would have been more expensive than EASYRIDE including public bus/public subway and, of course, taxis. More than half of the trips which would not have been made if EASYRIDE did not exist were discretionary trips (social/recreational). However, such trip purposes are necessary in order for an individual to live a rounded meaningful life.

Alternative Mode If EASYRIDE Did Not Exist	No.	Percent
Ambulette	9	6%
Car Rider By Family	4	3%
Car Rider By Friends	2	1%
Taxi	24	15%
Public Bus/Public Subway	27	17%
Walk	7	5%
Other	3	2%
Would Not Have Taken Trip	67	43%
Unknown	12	8%
TOTAL	155	100%

TABLE 6-5 ON-BOARD SURVEY RESPONDENTS' ALTERNATIVE MODE FOR TRIP IF EASYRIDE DID NOT EXIST

	TRIP PURPOSE									
Alternative Mode	Work	Church/ Synagogue	Shopping	Medical/ Dental	Personal Business	Visiting	Social/ Recreational	Nutrition	Other	Total
Ambulette	0	0	0	8	0	0	0	1	0	9
Car Rider (Family)	0	0	0	2	1	0	1	0	0	4
Car Rider (Friends)	0	0	0	1	1	0	0	0	0	2
Taxi	1	0	1	18	2	1	1	0	0	24
Public Bus/Subway	2	1	0	18	0	2	3	1	0	27
Walk	0	0	0	0	0	0	1	6	0	7
Other	0	0	0	1	0	2	0	0	0	3
Would Not Have Taken Trip	1	0	2	14	1	1	25	21	2	67
										143

TABLE 6-6 CROSS-TABULATION OF ALTERNATIVE MODE AND TRIP PURPOSE

Thirty one percent of the trips that would not have been made if EASYRIDE did not exist were nutrition trips. It is here that an impact of EASYRIDE on individual users can best be seen. EASYRIDE provided transportation service to some people which made is easier for them to perform life sustaining functions (e.g. receive medical care, participate in nutrition programs). Furthermore, EASYRIDE provided transportation service to some people for discretionary purposes which enabled them to lead more rounded lives. Although EASYRIDE users made a large proportion of medical related and nutrition trips the additional trip purposes served by EASYRIDE were necessary in order to properly serve the travel needs of the elderly and handicapped.

One of the principal travel barriers that specialized transportation systems, such as EASYRIDE, eliminate is the need for riders to climb steps to get into the vehicle. EASYRIDE users who could not negotiate steps because of physical disabilities or any other reason were able to travel in EASYRIDE's lift equipped accessible vehicles. In addition to the accessible vehicles operated by EASYRIDE, the EASYRIDE drivers provided passenger assistance while they boarded and alighted from the vehicle.

With regard to travel barriers EASYRIDE users were asked (during the on-board survey) if the trip they were currently making could have been made on a regular public bus if the buses were equipped with lifts. It was of interest to learn that 37% of the respondents said that the trip could have been made on such a bus. It should be noted that such a response should be viewed as a non-commital response and non-commital responses are not always in accord with actual observed responses. Of those surveyed who responded negatively to the question on use of public buses if they were accessible, two barriers were mentioned more than any others. The most frequently mentioned barrier was "cannot get to bus stop" and the second most frequently mentioned barrier was "the bus does not go where I want to go". A summary of the responses to this question is presented in Table 6-7.

Could trip have been made on a regular public bus if they were equipped with lifts?	No.	Percent
Yes	57	37%
No	94	61%
Don't Know	4	2%
TOTAL	155	100%
If no, why not?		
Cannot get to bus stop	40	43%
Bus does not go where I want to go	13	14%
No bus near where I live	0	0%
Cannot ride bus alone	0	0%
Feel unsafe on a bus	5	5%
Cannot afford a bus	4	4%
Cannot wait for a bus at bus stop	4	4%
Cannot use a bus in bad weather	2	2%
Other	26	28%
TOTAL	94	100%

TABLE 6-7 POTENTIAL USE OF ACCESSIBLE PUBLIC TRANSIT

Based on the spatial characteristics of the Lower East Side and the destinations served by EASYRIDE one might have expected more individuals to respond that "the bus does not go where I want to go." However, the destination choice set of the bus is not even a consideration if a individual has a disability or other type of barrier which prevents him or her from getting to a bus stop.

6.3.2 EASYRIDE User Survey

The EASYRIDE User Survey was designed by EASYRIDE research to obtain information about certain types of users. Sample selection was described as follows in an EASYRIDE Research Mini-Report:*

> "From a listing of EASYRIDE users who took at least six rides during a six month period (April-September 1978), a sample of 150 was to be picked, 50 to be wheelchair users. Those who do not use wheelchairs were selected according to six more specific categories: 3 categories of age (under 60, 60-74, and 75+), each divided into two on the basis of the rider's ability to go up and down stairs with or without difficulty. 177 names were systematically selected from registration lists and letters sent to them explaining that a survey was to be conducted by telephone during the week of December 12-19 (1978), and that they would be called at that time."

Of the 177 persons selected, 126 gave completed interviews, their numbers falling in the chosen categories as follows:

Age	No.	Percent
Under 60 years of age	30	24%
60 - 74	42	33%
75 and Over	54	43%
TOTAL	126	100%

*EASYRIDE RESEARCH - EASYRIDE User Survey Mini-Report No. 5, February 22, 1979.

Aids Used	No.	Percent
Wheelchair	30	24%
Cane (or umbrella)	41	33%
Walker	13	10%
Crutches	2	2%
Other Aids	4	2%
No Aid Used	36	29%
TOTAL	126	100%

Approximately one-quarter of the respondents were wheelchair users and that was a much larger proportion than would have resulted if the sample was chosen purely at random. In order to use the EASYRIDE User Survey Results in a manner more representative of EASYRIDE ridership, it was decided that the sample of 126 respondents would be weighted to represent the total registrant population.

Based on the characteristics of the registrant population and the raw frequency counts of unweighted survey results it was decided that the two most important criteria which could be used in the weighting procedure would be; 1) the age of the respondent, and 2) the aid use of the respondent. The respondents to the EASYRIDE User Survey were categorized according to four mutually exclusive age categories and four mutually exclusive aid use categories. The four age categories were:

1. less than 65
2. 65 to 74
3. 75 or older
4. age unknown or unspecified

The four aid categories were defined as follows:

1. Anyone who used a wheelchair
2. Anyone, not using a wheelchair, who required a personal escort
3. Anyone, not in categories 1 or 2 above, who uses a cane
4. All other persons

The age and aid use information were taken from the respondent's EASYRIDE registration record.*

A similar categorization was made of the 2,570 persons contained in the registrant file at the time of this analysis (i.e., cross-tabulation of age category and aid use category). By comparing the two and dividing the cell frequencies of the registrant cross-tabulation by the corresponding cell frequencies of the cross-tabulation of the EASYRIDE User Survey respondents, weighting factors were determined for each combination of age class and aid-use category. These weights are presented in Table 6-8.

It should be noted that this weighting procedure does <u>not</u> necessarily produce unbiased results. It is unlikely that persons in each age and aid-use classification will be equally likely to use EASYRIDE. It is believed, however, that the weighting procedure produces a <u>more</u> realistic picture of the users of EASYRIDE than does the straight (unweighted) tabulation of the non-random survey results.

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*Two respondents were not listed in the registration file and were, therefore, excluded from the weighting procedure.

Age Category	Wheelchair (1)	Escort (2)	Cane (3)	Other (4)
< 65 (1)	4.875	12.750	6.400	12.667
65-74 (2)	8.000	23.333	16.333	39.667
≥ 75 (3)	17.500	27.667	14.538	43.143
unknown (4)	19.000	19.000	*	37.500

* There were no observations in this cell from the EASYRIDE user survey. However, 0.39% of the registrants fell within this category.

TABLE 6-8 WEIGHTING FACTORS FOR EASYRIDE USER SURVEY

A brief review of the EASYRIDE User Survey (EUS) responses provided some basic information about individual's use of the system and some impacts of the system on the users. In response to several preliminary questions, results of the EUS indicated that only about 40% of the users would be interested in using EASYRIDE in the evening (if it were available), but 60% of the users would be interested in using EASYRIDE on weekends if service became available at that time. These results suggest that if service expansion were possible, EASYRIDE might experiment with weekend service before experimenting with evening service.

The EUS device employed a set of five questions to determine how EASYRIDE was used by the respondents and how travel needs were satisfied before EASYRIDE was available. Three of these five questions (survey qustions 2 through 4) were particularly interesting and the responses to these questions are presented in Table 6-9. These questions were asked with regard to a set of seven specific trip purposes. The questions were as follows:

1. Have you used EASYRIDE to take you to the doctor or clinic? (repeated for each trip purpose)

2. Do you now go to any of these places more often than you did before EASYRIDE was available to take you there?

3. How did you get to these places before you used EASYRIDE?

As indicated in Table 6-9 the survey respondents indicated that they have used EASYRIDE to travel for a health care related purpose more than for any other trip purpose. The other trip purposes for which EASYRIDE was used by a substantial percentage of the respondents were for travel to nutrition programs and to senior centers for social activities. These results are reasonably consistent with the distribution of trip purposes served by EASYRIDE throughout the demonstration project. However, the difference in EASYRIDE use for health care trips and nutrition trips is rather significant. This difference may have resulted

Trip Purpose	Have used it (%)			Used it more frequently (%)			Previous Mode (%)							
	yes	no	NA	yes	no	NA	walk	bus	sub.	car	taxi	aide	did not go	NA
Doctor, clinic, hospital	81	19	0	55	45	0	5	38	10	16	1	2	9	19
Shopping	6	86	8	5	90	5	1	3	0	0	0	0	1	95
To work	3	3	94	2	23	75	1.5	.5	0	.5	.5	0	0	97
Nutrition program	26	37	37	23	54	23	13	.5	0	1.5	0	0	10	75
To Senior Center for social activities	24	43	33	22	57	21	13	.5	0	0	0	0	9.5	77
Visit friends or family	1	88	11	1	93	6	0	.5	0	0	0	0	.5	99
Go to church or synagogue	1	81	18	1	87	12	1	0	0	0	0	0	0	99
Other	5	94	1	1	98	1	0	0	0	2	0	0	1	97
Other	0	99	1	0	100	0	0	0	0	0	0	0	.5	99.5

TABLE 6-9 SUMMARY OF EASYRIDE USE AS DETERMINED FROM EASYRIDE USER SURVEY

because the question did not ask how frequently EASYRIDE was used for each trip purpose. It is likely that although fewer respondents indicated that they used EASYRIDE to travel to a nutrition program those respondents used EASYRIDE more frequently than those persons using EASYRIDE to travel to a health care facility.

When the respondents were asked if they now go to any of these places more often than they did before EASYRIDE was available, the overwhelming response with one exception, was "no". The only trip which appears to have been made more frequently since EASYRIDE was available was to health care facilities. Fifty five percent of the respondents indicated that they traveled to doctor's offices, clinics or hospitals more frequently than before EASYRIDE was available.

A cross-tabulation of the responses to this question with a question asking respondents if they used EASYRIDE as often as they liked, indicated that persons who used EASYRIDE as often as they liked felt they have also traveled for health care more frequently due to EASYRIDE. Those persons who would have liked to use EASYRIDE more frequently felt that they have not increased the number of trips made for health care purposes due to EASYRIDE.

When this question was cross tabulated with the respondent's ability to climb up and down stairs it was clear that persons with no difficulty in climbing stairs generally did not go to health care facilities more frequently as a result of EASYRIDE. However, those persons who could not climb stairs at all have generally noted an increased frequency in making health care trips due to EASYRIDE. This result implies that EASYRIDE has had a very positive impact on these persons having the least amount of mobility in their ability to travel to health care facilities.

When the respondents were asked by what mode each trip was made before EASYRIDE was available, the typical response was "no answer". However, for the health care trip purpose, most respondents indicated a prior mode. The most commonly mentioned prior mode for health care trips was the public bus, mentioned by 38% of the respondents. Car was mentioned by 16% of the respondents, subway by 10%, walk by 5%, and 9% of the respondents said they did not go.

The only other trip purposes which had any interesting mention of a prior mode were nutrition program and senior center trips. Although 75% of the respondents cited no prior mode for nutrition program trips, 13% of the respondents indicated walking as their prior mode. Similarly, walking was mentioned as a prior mode by 13% of the respondents for the senior center trip purpose. In addition, 10% of the respondents indicated they did not go to the nutrition program before EASYRIDE was available and 9.5% of the respondents indicated they did not go to the senior center before EASYRIDE was available.

These results are difficult to interpret since there were such a large number of "no responses." However, the trip purpose for which EASYRIDE appears to have had the greatest impact was the health care trip. Based on the previous modes for health care trips mentioned by the respondents, it is likely that EASYRIDE allowed the users to make more health care trips than before EASYRIDE was available. Furthermore, these trips became less expensive since the previous modes typically had a cost associated with them. This result is somewhat consistent with results obtained from the on-board survey.

Based on the weighted survey responses, it appears that the EASYRIDE users do have mobility limitations at least in terms of their ability to negotiate steps. About 37% of the respondents have "some difficulty" walking up and down stairs, about 8% have "no difficulty", about 20% "need assistance" and 35% "cannot use stairs at all". These results are rather encouraging as they indicate that EASYRIDE is serving a transportation handicapped population.

It was also encouraging to learn that a little more than 77% of the respondents used EASYRIDE as often as they liked while 22% of the respondents indicated that they did not use EASYRIDE as often as desired. In an effort to further identify the characteristics of those persons who did not use EASYRIDE as often as desired, the data was analyzed further. Table 6-10 illustrates a cross tabulation of aid use and satisfaction with frequency of EASYRIDE use.* It appears that of those persons who felt that they did not use EASYRIDE as often as desired and who used a mobility aid, it was likely that their mobility aid was a wheelchair or a cane.

Finally, about 88% of the respondents indicated that if EASYRIDE stopped running, it would make some difference in their life. Based on a further examination of the survey responses, it is most likely that if EASYRIDE stopped running, the greatest impact would be on the user's ability to travel to health care facilities. The users would be forced to use a more expensive alternative mode and would travel to health care faciltities less frequently.

6.4 Preliminary Results From EASYRIDE Research

EASYRIDE's research effort focuses on the use of a detailed household interview survey accompanied by several telephone follow-up interviews and a variety of micro-studies. This research effort is quite comprehensive and involves a large number of interviews resulting in the generation of large data sets. While their research effort continues some preliminary results from the research are available.

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*The results presented in Table 6-10 have been factored up to the entire registrant population.

Use EASYRIDE as often as possible	Aid Use*						
	Wheelchair	Walker	Crutches	Cane	Other	No Aid	TOTAL
yes	197	299	26	533	53	828	1,936
no	83	23	0	259	4	170	539
missing	0	0	0	0	0	23	23
TOTAL	280	322	26	792	57	1,021	2,498

*These results have been factored up to represent the entire registrant population.

TABLE 6-10 CROSS TABULATION OF AID USE AND SATISFACTION WITH FREQUENCY OF EASYRIDE USE

The EASYRIDE research effort was actually organized twice during the demonstration. The original principal investigator administered one wave of home interview surveys before leaving the project. The new and current principal investigator revised the research approach but also proceeded with the second wave (re-interview) of persons interviewed previously. These interviews conducted in 1977 and 1978 were termed "the Pilot Study." Some results of the Pilot Study were prepared by EASYRIDE and presented in their recent application to the Department of Health, Education and Welfare for continued funding of their research efforts. It is these results which are presented in this subsection.*

Following the Pilot Study the home interview survey instrument was revised and samples were selected in the Lower East Side and in comparison areas outside the Lower East Side. Two waves of this survey were scheduled to be implemented each consisting of an in person home interview and two follow-up telephone interviews. The first wave of the revised survey has been completed but few results are available. It should be pointed out that the survey respondents were selected independently of their use or non-use of EASYRIDE.

6.4.1 Pilot Study Results**

As part of an evaluation study of EASYRIDE, an alternative transportation system for the elderly and disabled on the Lower East Side of New York, work in progress is reported based on a pilot study and operations data. The data suggest that old

* EASYRIDE Research material presented in this subsection is only slightly edited from the original EASYRIDE grant application.

**This discussion has been taken from a Vera Institute grant application submitted to the United States Department of Health, Education and Welfare on January 31, 1979. The application was prepared by EASYRIDE research under the direction of Dr. Arnold Simmel.

people, despite having trouble with public transportation, want to go out more than they do, experience various degrees of disability which hinder their going out, and use EASYRIDE to get to nutrition programs, to hospital outpatient services, to private physicians, and to recreation. The data also suggest that EASYRIDE makes its passengers feel more secure, increases their independence, and helps them to establish new social contacts.

The pilot study was based on 188 interviews conducted in 1977 with a convenience sample of elderly and disabled individuals with whom contact was established through social workers in senior centers of settlement houses on the Lower East Side. Of these 188 respondents, 140 were re-interviewed in the Spring of 1978. The intention behind the first wave of interviews was to obtain a first observation before the respondents were likely to have used EASYRIDE.

At the time of the first interview, only three of the respondents had used EASYRIDE as individual riders; 60 had used EASYRIDE for one or more group trip organized by a senior center; 122 respondents had never taken any trips by EASYRIDE. However, 78% had heard of the EASYRIDE service. In 1978, this same sample, diminished by 48 people, was re-interviewed. This time, a few more people (83%) had heard of EASYRIDE and 69% had made some use of it. Of 124 respondents who reported their use of EASYRIDE, 43 respondents used the service once a month or more often; 15 used EASYRIDE occasionally for individual trips, 15 rarely used it; 38 never used it; 13 used it occassionally for group trips. In other words, roughly one-third of this sample used EASYRIDE once a month or more; another third used it more rarely or just for group trips; and the rest never used EASYRIDE.

While the object of this study is to discover change, one would hardly expect a great deal of change in one year, except perhaps for those who had done very little travelling and were now enabled by EASYRIDE to do more. On the whole, very little change was discernible: 60% of the sample made ten or less trips per week both in 1977 and in 1978; the remaining 40% made 10 to 21 trips in 1977, but in 1978 7% made more than 21 trips, some made as many as 35. It must be recalled that by "trip" we mean a one-way trip. (The term "orbit" was coined for referring to journeys begining at one point, usually home, and ending at the same point: while most orbits travelled by our respondents consist of only two segments or trips, some take in more than one destination other than home.) With a sample size of 140 (of those who participated in both waves of interviews) and the possibility that weather might influence the amount of travel greatly, it does not seem that this 7% difference should be paid too much attention. When the sample is divided according to use of EASYRIDE and it is noted whether those who used EASYRIDE changed their travelling more than those who did not use EASYRIDE, there is a small difference and in the expected direction: 43% of the frequent EASYRIDE users increased the number of trips they reported taking between 1977 and 1978, but almost as many of the non-users of EASYRIDE--39%--reported a similar increase.

It is not the primary purpose of the pilot study to provide evaluation data: it is to be used, rather to get some initial impressions of the situation of some of the people who constitute the potential EASYRIDE clientele, and for giving indications for potential tendencies to be confirmed in other samples. <u>One of the most clearcut conclusions that could be drawn from the pilot study was that a one-year interval between interviews would, in all likelihood, not be long enough to allow EASYRIDE to have statistically impressive effects</u>.

Before considering the effect of EASYRIDE on its passengers, we will report the responses from the first wave of interviews which gave us information to address the following questions: What do elderly and disabled people need in the way of transportation? Do they want to travel? Do they want to travel more than they do now? Does public transportation serve their needs?

When respondents to the pilot study were asked in the Spring of 1977 if they get to enough places to give their life some variety or change, 49% replied "no". In addition, more than one-half said that there are times when they don't get to their doctor or to their clinic because it is hard for them to get there. Asked to choose amoung four reasons for not going out more, 62% chose difficulty with public transportation, 48% picked poor health as a reason, 46% chose fear for their safety, and 33% agreed that cost was a reason they did not go out. Those respondents who were 75 years old or older said with yet greater frequency that public transportation was impossible for them. But, perhaps, these elderly people do not want to go out. However, 85% of them said that they looked forward to going out of the house in nice weather, and half reported having a friend or acquaintance living somewhere in the city whom they would have liked to visit but have not in the past year because it was hard for them to get there. While these elderly people were worried about being mugged (85%) and about falling down in the street (more than half), they were nonetheless eager to go out and to have those experiences which they frequently could not have because travelling was too hard for them. When they were asked whether there "is any place else where you would like to go but don't go these days", 52% mentioned medical places, 48% recreational occasions, 43% shopping, 29% the cemetery, 29% social services, 21% religious places. We thus cannot brush aside the complaints about their difficulties with public transportation on the grounds that they are not interested in getting to places or because they would not use appropriate transportation if it were available to them.

However, we must guard against the possibility that old people simply complain more. After all, age has no logical relationship to difficulty with public transportation; it is physical disability that should make the difference. To find out about our respondents' physical disabilities, we asked them questions which had nothing to do with public transportation. We asked them if they could go outdoors without difficulty by themselves, if they have some difficulty, if they can not do it without help, or if they can not do it at all. We also asked them if they could walk up and down stairs and get about their house or room. (These are the three mobility items in the Wilker-Shamas Scale.) The relationship between their responses to these questions and their responses to the questions about difficulties with public transportation are very clearcut. Those respondents who experience greater disability, as measured by their responses to these questions, have greater difficulty with each of the different aspects of public transportation that we inquired about. Indeed, these relationships are so structured that in many of the cross-tabulations all cells on one side of the diagonal are completely empty. The degree of disability puts an absolute limit on what aspects of public transportation can be coped with. In the light of the logical structure of their responses, it does not seem likely that these respondents are merely chronic complainers.

These data thus suggest rather clearly that elderly people want to go out more. In fact, only 8% of the respondents thought it likely that they would not use free or inexpensive door-to-door transportation in a small bus if it became available, while 65% thought that they will use it at least once a month. 43% of the respondents thought that it would make a big change in their lives. Based on their responses to questions asked a year later, of those 43% who thought that EASYRIDE (or a service like it) would make a big change in their lives, 80% used it in 1978; 50% at least once a month. Of those who had anticipated little or no change, 60% used EASYRIDE, but only 20% used it once a month or more frequently. Thus, while a large fraction (86 out or 140)

used EASYRIDE sometimes, only about half of those who thought they would use it at least once a month actually did so. Where did people go who used EASYRIDE? From the pilot study we found that in 1977 over 90% reported going on foot to or from nutrition programs, a destination for which EASYRIDE services are used the most often. In 1978 only 80% walked, but the number going by bus increased by 5% and 6% went by EASYRIDE. It appears that some of those respondents who previously walked used EASYRIDE. Even with 80% of the respondents walking, it is clear that the pilot sample is not representative of the old people who live on the Lower East Side: 80% live within a distance of the senior center that they can negotiate on foot. That in itself is an indication that there must be many elderly and disabled people who cannot get to a senior center, since 48% claim that they never travel more than 3 blocks from home.

In 1978, trips to hospitals, clinics, or private doctors were made by means of EASYRIDE by 20% of the pilot study respondents. Interestingly, one and one-half as large a percentage said that they used ambulettes to get to these destinations. That is a three-fold increase from 1977 in respondents' use of ambulettes. How did people get to the hospital, clinic, and doctor in 1977? We know that due to the increased use of EASYRIDE and of the ambulettes, some other modes of transportation must have been used relatively less. In the case of going to the doctor, subways and taxis experienced the biggest decline and going on foot decreased slightly as well. For going to the hospital or clinic, the percentage reporting that they walked decreased from 40% to 30% while the percentages going by bus or car experienced very small decreases (form 45% to 42%, and from 5% to 3% respectively). The fact that the ambulettes experienced marked increases may be due to rising expectations that transportation services will be provided.* Whether EASYRIDE has any influence on such expectations is an open question.

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*It should be noted that if a person is Medicaid eligible, the hospital attended often steers the person to private ambulettes, even if he/she was an EASYRIDE user.

Respondents' interest in travel and in independence in this pilot survey is partially reflected in their interest in going out more. But so far, EASYRIDE does not seem to have affected that interest. For example, the claim that respondents get to enough places to give their lives some variety and change is very similar between EASYRIDE users and non-users in both 1977 and 1978.

The central expectation of EASYRIDE is that it should help elderly and disabled people to greater independence. Accordingly, a number of questions suggest themselves. Would EASYRIDE make respondents feel more independent? Could their use of it make them feel safer when they travel? Would it help them to maintain social contacts?

Questions asked in the second interview about the service provided by EASYRIDE were answered in a highly favorable way even though many of questions were constructed to make it easy for respondents to express their dissatisfactions. Most of the respondents who use EASYRIDE at least once a month said the EASYRIDE makes them feel more secure when they travel (97%), enables them to do more things for themselves (89%), makes transportation less difficult for them (88%), helps them to get things done (85%), and makes it easier for them to get to medical appointments (58%). In addition, most of these regular users also enjoy the bus ride (85%) and one-third even have made friends on their trips. The most commonly voiced complaint, that it is hard to plan trips so far in advance, is made by 41% of these respondents. Most of these respondents also wished that EASYRIDE would run on week-ends (92%).

The same caution is necessary in interpreting changes in feelings or opinions expressed at two points in time. For example, in 1977 only 8% of the pilot sample gave an unqualified "Yes" answer to the question "Do you feel you get to enough places to give your life some variety or change?" while in 1978 25% answered "Yes" to this same question. Is this difference due to EASYRIDE? Did EASYRIDE cause the following change? To the question "How worried are you about being mugged if you go out somewhere in the daytime?", the answer "Not at all" was given in 1977 by 16% of the respondents, in 1978 by 41% of the respondents. It is true that there has been some decline in the crime rate in the police precincts included in the Lower East Side, but hardly enough to account for such a change. On the other hand, the relative lack of change in other items is what one might expect. "How worried are you about falling down in the street if you go out somewhere?" has almost identical distributions of responses in 1977 and 1978: about one-third are not too worried, a little under a quarter are pretty worried, and the remaining 45% are very worried.

It is recommended that the interested reader contact EASYRIDE research to determine if published reports are available detailing further results of their work.

CHAPTER 7

7.0 PROJECT PRODUCTIVITIES AND ECONOMICS

As pointed out in Chapter 1, project productivities and economics are key areas involved with the evaluation of transportation service delivery issues. These issues are primarily concerned with measurements of the physical output of the system, how they are related to the quality of service and all of the associated costs. It was expected that measures of EASYRIDE service productivities and economics would be influenced by characteristics of the Lower East Side study area. Congested streets, double parked vehicles, high pedestrian volumes, and narrow street and sidewalks are characteristic of the Lower East Side. These factors were expected to act together to increase vehicle ride time thereby reducing performance. A reduction to system performance (e.g. trips per vehicle hour), would then cause unit operating cost ratios to increase. The analyses presented in this Chapter are intended to evaluate these hypotheses by addressing the following specific questions:

1) What was the overall productivity of a system providing high quality door-through-door service in a high density service area?

2) What was the impact on productivity due to the high quality of service provided and the characteristics of the service area users?

3) What were the overall cost parameters involved in providing the high quality service in an urban area such as the Lower East Side?

4) How did the EASYRIDE productivities and cost parameters compare to similar services elsewhere?

7.1 Productivity

Not only are there various measures of productivity there are also varying definitions of productivity. Furthermore, productivity is often related to the type of service provided. For example, the Dial-A-Bat system operated by Brockton Area Transit (Brockton, Massachusetts) reports separate productivity figures for the subscription portion and the dial-a-ride portion of its specialized transportation system. Consequently, the evaluation of EASYRIDE system productivity was accompanied by proper definition of measures used.

7.1.1 Productivity Measures

There were two principal productivity measures used in the evaluation of EASYRIDE: one way passenger trips per vehicle hour of service and one way passenger trips per vehicle mile. The number of one way passenger trips, vehicle service hours and total vehicle miles were reported semi-monthly in EASYRIDE's operations reports. The semi-monthly reports were compiled from the actual EASYRIDE driver trip logs. The data on passenger trips, however, was adjusted to represent only trips actually carried by EASYRIDE. "No shows" and "missed trips" were not included in the monthly productivity figures used for EASYRIDE evaluation.

Table 7-1 illustrates a summary of total EASYRIDE monthly productivity. The average system productivity during the demonstration project was 2.15 trips per vehicle hour of service. The monthly productivity figures presented in Table 7-1 are presented graphically in Figure 7-1 so that the monthly variations and trends can be more easily examined. During the first 12 months of service the greatest fluctuation in monthly productivity occurred between October and December, 1977. EASYRIDE system productivity was lower during these three months than during any other period of the demonstration. The average productivity was

MONTH	YEAR		
	1977	1978	1979
June	2.22	2.18	
July	1.96	2.14	
August	1.89	2.18	
September	2.06	2.43	
October	1.80	1.93	
November	1.44	2.25	
December	1.52	2.20	
January		2.42	2.36
February		2.40	2.23
March		2.50	2.34
April		2.47	2.08
May		2.20	2.33
			Average - 2.15

TABLE 7-1 SUMMARY OF TOTAL EASYRIDE MONTHLY PRODUCTIVITY - PASSENGER TRIPS PER VEHICLE HOUR OF SERVICE

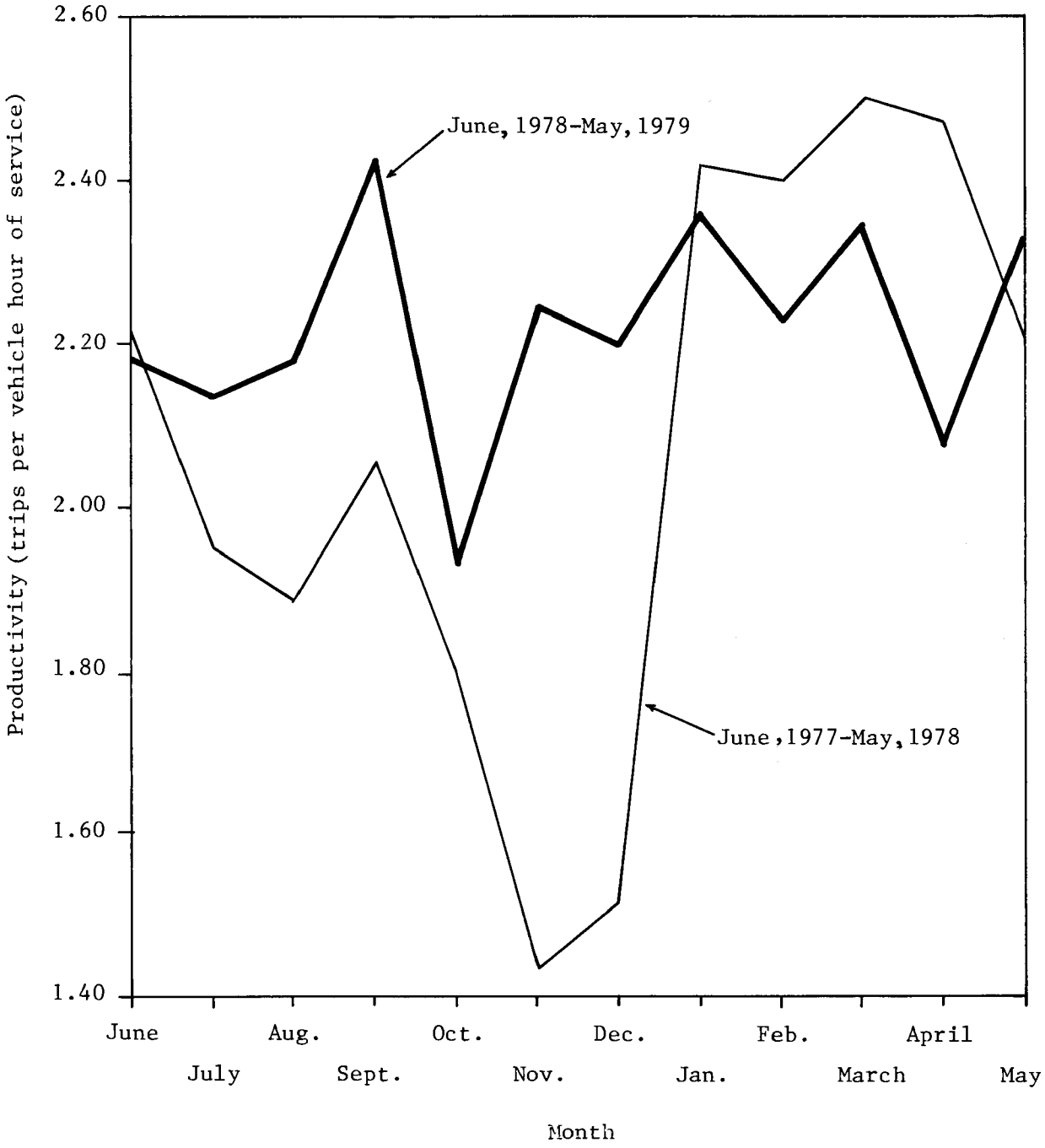

FIGURE 7-1 SUMMARY OF EASYRIDE PRODUCTIVITY

1.80 in October, 1977, 1.44 in November, 1977, and 1.52 in December, 1977. There were two primary reasons for this decrease in system efficiency. The first reason is related to the vehicles' mechanical and electrical malfunctions which were disrupting service during these months. The second reason is related to the conclusion of the service contract with the Henry Street Settlement House for their evening nutrition program. Service to this program, as was mentioned earlier in this report, ended on September 30, 1977. The decrease in demand created by this event was not regained until January, 1978.

Throughout the remainder of the demonstration (from January, 1978 through May, 1979) the monthly variations in overall system productivity were much less than the low period of late 1977. However, the monthly variations continued to occur and there was no evidence of a clear trend in the direction of system producivity (either increasing or decreasing). During the first 12 months of operation there was a slight increasing trend in system producivity. During the second 12 months of the project overall system productivity improved compared to the first 12 months but there was no clear evidence of major improvements in productivity.

Under its current operating procedures EASYRIDE's productivity will probably remain in the range between 2.10 and 2.50. However, if EASYRIDE could provide additional service during the time when vehicles are otherwise idle (dead time), system productivity could be improved. The following example illustrates the impact of converting dead time to passenger service time on overall system productivity:

	SCENARIO A BASE CASE	SCENARIO B ALTERNATE CASE	PERCENT CHANGE
Vehicle Service Hours	350	350	0
Passenger Trips	788	946	+20%
Productivity	2.25	2.70	+20%
Dead Time (Hours)	140	35	-75%

Scenario A is a close approximation of EASYRIDE as it operated during the demonstration. The productivity was set at 2.25 trips per vehicle service hour with 40% of the driver service hours allocated to passenger service, 20% allocated to deadhead time and the remaining 40% allocated to dead time. In scenario B it is assumed that one-half of the dead time is converted to passenger service time. An increase of 70 hours of passenger service time (50% of the dead time of 140 hours) is accompanied by an increase in deadhead time of 35 hours (maintaining the ratio of total passenger service time to deadhead time). Therefore, by converting one-half of the dead time to passenger service time (70 hours) and a corresponding amount of dead time to deadhead time (35 hours) total dead time in Scenario B is reduced to 35 hours or 10% of vehicle service hours.

By assuming that the increase in passenger service hours can be used to provide service at a productivity of 2.25 trips per hour there will be an increase in the number of passenger trips provided from 788 to 946. This increase in ridership results in an increase of total productivity to 2.70 (an increase of 20%). The point of this example is that if EASYRIDE made no improvement in their operating productivity but merely provided trips during their dead time (or increased their utilization ratios) their overall system productivity would automatically increase.

The comparison of EASYRIDE's total system productivity with the productivity of other systems must be prefaced by stating that such comparisons must be made cautiously. There are a large number of specialized transportation systems in operation throughout the nation each with its own unique set of characteristics. Four of the better known systems were chosen for comparison with EASYRIDE and the most currently available data was used to develop the comparative figures presented in Table 7-2. A comparison of the unit cost ratios for these systems is presented in Section 7.4 of this Chapter.

The figures presented in Table 7-2 indicate that these five systems operate a similar number of vehicles and have total staffs which are also comparable. EASYRIDE and Brockton's Dial-A-Bat provide service in approximately the same total area 23 sq. mi. and 21.5 sq. mi. respectively while Project Mobility, DATS, and The Lift operated in slightly larger areas 100 sq. mi., 123 sq. mi., and 89 sq. mi., respectively.

Comparison of system productivities indicates that EASYRIDE is in the middle of the range which varies from 1.60 to 2.68. (The 1.60 productivity figure is the low end of an estimated range for DATS of 1.60 to 2.00). However, there are certain characteristics of some of these systems which must be expanded upon. The productivity figures for Dial-A-Bat were reported when the system operated only two fully accessible vehicles. The remainder of their fleet were straight vans. Dial-A-Bat, therefore, could not serve as many non-ambulatory passengers as EASYRIDE and this is reflected in their higher productivity of 2.68.

Project Mobility, on the other hand, is a specialized transportation service for the severely transportation handicapped. Project Mobility provides a high quality service to persons who are primarily wheelchair bound and operated with an average productivity of 2.10. It is reasonable to conclude that EASYRIDE operated with an average productivity which was acceptable.

COMPARATIVE FIGURE	SYSTEM				
	EASYRIDE (N.Y.,NY)	DIAL-A-BAT (Brockton, MA)	PROJECT MOBILITY (Minneapolis, MN)	DATS (Edmonton, AL)	LIFT (Portland,OR)
Productivity (trips/veh. hr.)	2.15	2.68 DAR 12.88 Sub.	2.10	1.60-2.00	2.56
Productivity (trips/veh. mi.)	.42	.26	.21	NA	.23
Service Area	23 sq.mi.*	21.5 sq.mi.	100 sq.mi.**	123 sq.mi.	89 sq.mi.
Maximum No. of Vehicles Operated	10	12	12	15	16
Total Staff	17	16	15	NA	23
No. of Daily Trips	143	91 DAR 358 Sub.	190	NA	215
Fare Level	free	$1.00 indiv. $3.50 agency	$.35	$.50	$.50 indiv. $3.00 agency

*Total destination area. Target area is 2.0 sq. mi.

**Total destination area. Target area is 6.3 sq. mi.

TABLE 7-2 COMPARISON OF FIVE SPECIALIZED TRANSPORTATION SYSTEMS

Table 7-3 presents a summary of EASYRIDE monthly productivity expressed as passenger trips per vehicle mile. The variation in the monthly measures is similar to the variation in the productivity measures defined as passenger trips per vehicle hour of service. The average value for this measure was .42 passenger trips per vehicle mile. Compared to the four other systems discussed previously, EASYRIDE had the highest productivity when computed in terms of total vehicle mileage. This implies three important items:

1) The average trip length for a typical EASYRIDE trips was less than for trips made by Dial-A-Bat, Project Mobility and The Lift. This is indicative of the urban nature of the demonstration setting.

2) EASYRIDE's relatively high productivity and small proportion of deadhead time indicates that when the vehicles were travelling, there was usually a passenger in the vehicle.

3) This measure of productivity is indicative of the system only when it operates, it says nothing about idle or dead time. It therefore indicates that when the system operated, it operated efficently with respect to scheduling and passenger service.

7.1.2 Trip Type Variations

The productivity measures previously discussed were aggregate measures based on total system performance. It was originally planned to examine the productivity of group and shared rides separtely in order to obtain a more detailed understanding of total system productivity. However, the number of group trips were so few compared to the total number of trips provided, it is believed that such an analysis would not provide any meaningful information. However, as part of EASYRIDE's management information system, data describing service provided by the ambulatory vehicles (not lift-equipped) was reported separately from data describing service provided by the accessible vehicles. The data contained in the EASYRIDE semi-monthly reports was used to compile productivity measures for service provided by both vehicle types.

MONTH	YEAR		
	1977	1978	1979
June	.42	.47	
July	.36	.44	
August	.31	.43	
September	.33	.49	
October	.26	.41	
November	.23	.48	
December	.32	.46	
January		.54	.51
February		.57	.51
March		.53	.49
April		.50	.41
May		.44	.42
			Average - .42

TABLE 7-3 SUMMARY OF TRIPS PER VEHICLE MILE PER MONTH

Table 7-4 presents a summary of EASYRIDE productivity (trips per vehicles hour) categorized by vehicle type. This disaggregation of system productivity clearly indicates that far more service per hour can be provided to ambulatory persons than to persons who are semi-ambulatory or non-ambulatory. The average productivity for service provided in the ambulatory vehicles during the demonstration was 2.91 trips per vehicle hour of service. The productivity for service provided in the accessible vehicles was 1.49 trips per vehicle hour of service, almost one-half the productivity of the ambulatory vehicles.

The productivity measures from Table 7-4 have been presented graphically in Figures 7-2 and 7-3 to illustrate the variation in the monthly measures. The graphs of these productivity measures are very similar to the graph of overall system productivity presented in Figure 7-1. However, the graphs of productivity by vehicle type indicate that there was less monthly variation in the productivity measures developed from the accessible vehicles than from the ambulatory vehicles.

The difference in productivity between service provided in ambulatory vehicles and service provided in accessible vehicles can be explained by two obvious system characteristics. First, the service provided to semi-ambulatory and non-ambulatory persons takes longer than service provided to ambulatory persons. The dwell time at the origin and destination for persons using mobility aids was two to three times longer than for persons not requiring a mobility aid. This was determined from an analysis of the detailed driver trip logs and was discussed in Chapter 4. Second, service to nutrition programs was provided primarily with the ambulatory vehicles. The nutrition program accounted for 43.5% of all EASYRIDE trips and was characterized by many-to-one service within the target area. These trips were, therefore, provided more efficiently because of their short length and high demand density.

	1977		1978		1979	
	Ambulatory Vehicles	Accessible Vehicles	Ambulatory Vehicles	Accessible Vehicles	Ambulatory Vehicles	Accessible Vehicles
June	2.95	1.49	2.92	1.58		
July	2.51	1.43	2.86	1.56		
August	2.20	1.60	3.13	1.44		
September	2.53	1.52	3.40	1.63		
October	2.38	1.22	2.72	1.27		
November	1.91	1.00	3.17	1.59		
December	2.09	1.12	2.91	1.59		
January			3.43	1.54	3.21	1.75
February			3.33	1.63	3.03	1.55
March			3.52	1.64	3.12	1.66
April			3.49	1.60	2.84	1.36
May			3.00	1.56	3.16	1.52
					Average - 2.91	1.49
					Standard Deviation - .44	.18

TABLE 7-4 SUMMARY OF EASYRIDE VEHICLE PRODUCTIVITIES (TRIPS PER VEHICLE HOUR) FOR AMBULATORY AND ACCESSIBLE VEHICLES

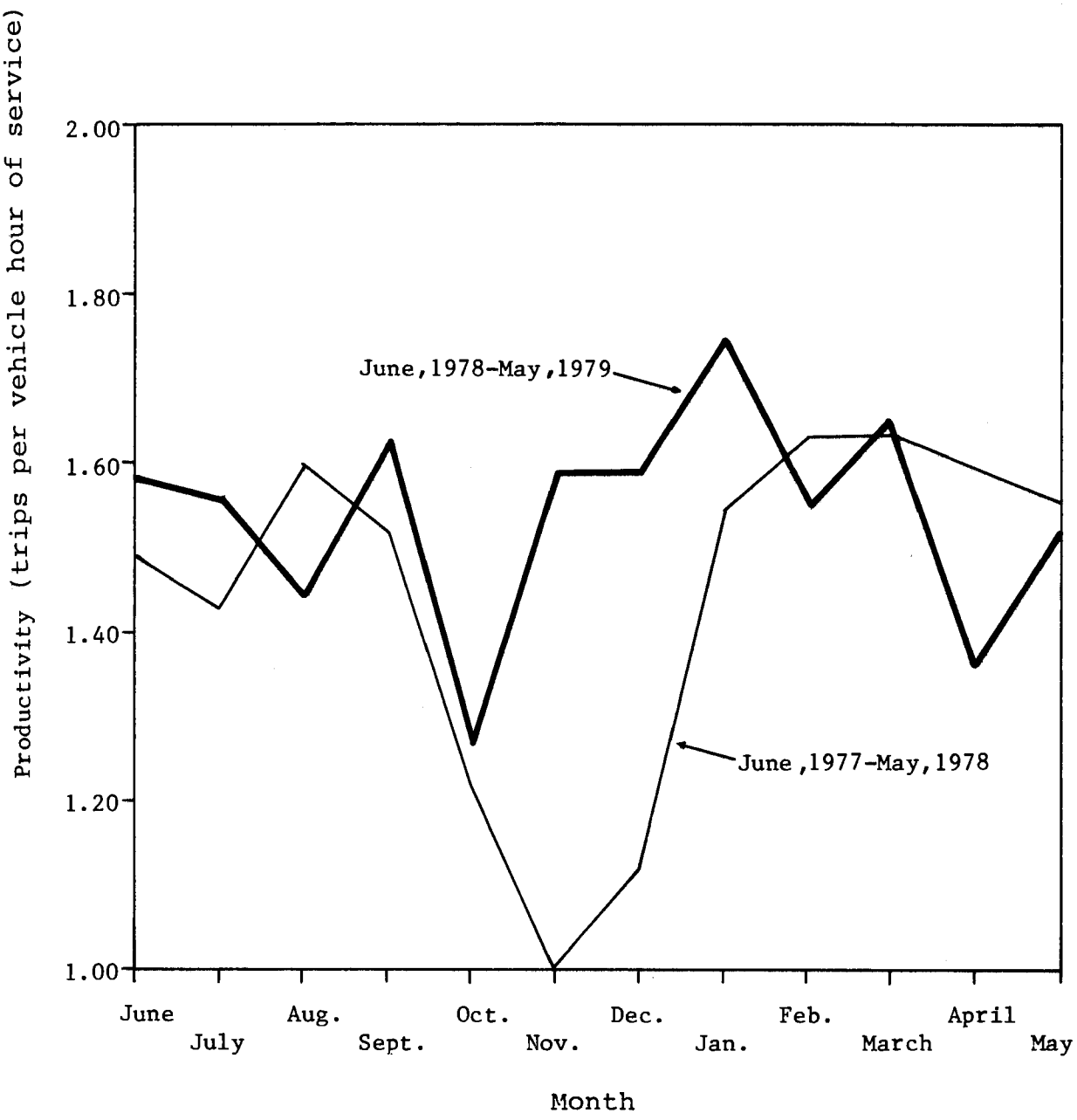

FIGURE 7-2 SUMMARY OF PRODUCTIVITIES OF ACCESSIBLE VEHICLES

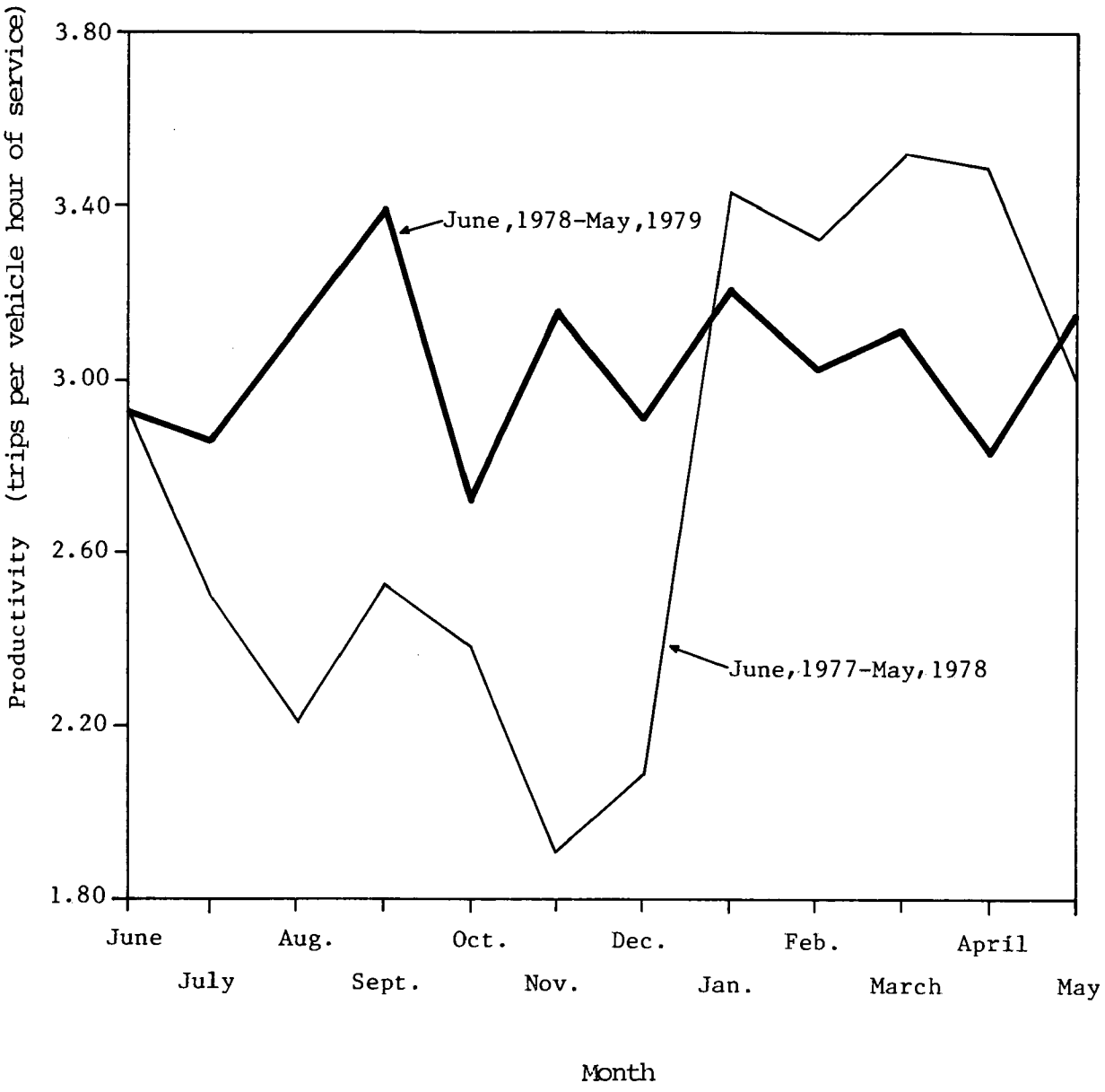

FIGURE 7-3 SUMMARY OF PRODUCTIVITIES OF AMBULATORY VEHICLES

During the analysis of the detailed trip logs the productivity of the nutrition program was analyzed in terms of the number of trips provided per vehicle service hour. Analysis of the set of detailed trip logs from May, 1978 indicated that service to the various nutrition programs consumed 28% of all passenger service time and 31% of all deadhead time. If we assume that 30% of system dead time can be allocated to the nutrition service during this time period a net productivity of 3.57 trips per vehicle service hour for the nutrition program was achieved. Analysis of the set of detailed driver trip logs from May, 1978 also indicated that 53% of all trips provided by EASYRIDE were nutrition trips and these trips required only 30% of the available vehicle service hours. It should be pointed out that while the productivity for the nutrition trips was rather high, the productivity for the remaining trip purposes was rather low at 1.33 trips per vehicle hour. Forty-seven percent of these remaining EASYRIDE trips required 70% of the vehicle service hours.

A similar analysis was planned to be conducted from the second set of detailed driver trip logs maintained during March, 1979. However, the necessary travel time components were not sufficiently completed by the EASYRIDE drivers and, therefore, meaningful evaluation of the nutrition productivity could not be made.

7.1.3 Impact of Service Quality

Clearly, a significant portion of passenger service time is going to be expended assisting passengers boarding and alighting from the vehicles of a high quality specialized transportation system. In Chapter 4 the average dwell times for various types of EASYRIDE users was presented. The data presented indicated that as an individual's mobility decreases (expressed in terms of the type of mobility aid used) his or her dwell time increases. As dwell time

increases, total travel time also increases. This increase then tends to have an adverse impact on system productivity. Whether or not decreased travel time would actually allow a specialized transportation system to provide additional service depends on the demand for a particular system and the system's ability to schedule trips efficently.

To evaluate the true impact of a high quality specialized transportation system, dwell times from specialized systems should be compared with dwell times from general public demand-responsive systems. Because little data is available on dwell times for general public demand-responsive systems, this comparison is not made in this report. However, data presented in this report can be used to estimate the impact of serving persons requiring assistance boarding and alighting from vehicles.

It has been shown in the previous subsection that the productivity of EASYRIDE vehicles serving ambulatory persons was almost twice that of the accessible vehicles used to serve semi-ambulatory and non-ambulatory persons. It might be hypothesized that:

a) If EASYRIDE served only ambulatory persons their total system productivity would be that achieved by the ambulatory vehicles, 2.91 trips per vehicle hour of service, instead of their fleet average of 2.15 trips per vehicle hour of service; or

b) If EASYRIDE served only those persons who might be classified as semi-ambulatory or non-ambulatory their total system productivity would be that achieved by the accessible vehicles, 1.49 trips per vehicle hour of service.

While the results of these hypotheses would not effect the total cost per hour of service provided by EASYRIDE they would have significant impacts on the cost per trip. Under Hypotheses A, the cost per trip would decrease by approximately 26% while under the Hypotheses B, the cost per trip would increase by approximately 43%.

While the productivities of service provided to EASYRIDE users requiring various types of mobility aids could not be determined directly from the detailed driver trip logs, the average driver off-vehicle time was used to estimate these productivities. Table 7-5 illustrates average driver off-vehicle time (access time plus egress time) per trip for EASYRIDE users requiring the use of various mobility aids. The access and egress times were measured from the detailed driver trip logs.

Table 7-5 also illustrates the productivities estimated for service provided by mobility aid used. These productivities were estimated using linear regression models based on actual system data. Data obtained from the first set of detailed driver trip logs suggests that productivities of about 1.00 trips per hour might result if EASYRIDE only served persons requiring mobility aids such as a wheelchair, walker, or braces/crutches, or a cane. Data obtained from the second set of detailed driver trip logs suggests that productivities of about 1.10 to 1.40 trips per hour might result if EASYRIDE only served persons requiring mobility aids such as a wheelchair or walker or braces/crutches. This result is consistent with the results of the first set of detailed driver trip logs. However, the results for persons using a cane were not considered reasonable as the productivity is probably closer to that of persons using other mobility aids.

The impact of service quality on system performance is significant. As more individuals are served who require substantial amounts of driver assistance, system productivity decreases, the cost per trip increases and the number of individuals receiving service decreases. Systems serving a larger number of ambulatory persons, will undoubtedly, be able to operate at higher levels of efficiency. However, specialized transportation systems are designed to serve those persons requiring driver assistance and it behooves system managers to develop methods of operating at the highest possible levels of efficiency.

Trip Type	May, 1978		March, 1979	
	Off-Vehicle Time (min.)	Productivity (trips per hour)	Off-Vehicle Time (min.)	Productivity (trips per hour)
All Trips	3.65	2.20	4.93	2.34
Trips Made in Accessible Vehicles	5.18	1.56	5.81	1.66
Trips Made in Ambulatory Vehicles	2.32	3.00	4.75	3.12
Aid: Wheelchair	10.29	< .90 *	6.24	1.10 *
Aid: Walker or Braces/Crutches	6.42	.90 *	5.98	1.41 *
Aid: Cane	5.97	1.12 *	4.59	3.05 *

* Estimated productivity by linear regression

TABLE 7-5 DRIVER OFF-VEHICLE TIME AND PRODUCTIVITY CATEGORIZED BY TRIP TYPE

7.1.4 Impact of Vehicle Utilization Ratio

Table 7-6 presents a comparison of vehicle use for several specialized transportation systems for which data is available on the utilization ratio, the deadhead time ratio and the dead time ratio. The systems included in this comparison are much smaller than EASYRIDE so that the data should be used just to provide some perspective from which to view EASYRIDE. In fact, some of these systems have problems similar to those of EASYRIDE in that there is too much vehicle idle time. The interesting points illustrated in this table are that:

1) Systems with utilization ratios similar to EASYRIDE's have higher deadhead time ratios and lower dead time ratios, and

2) Systems with utilization ratios higher than EASYRIDE's have comparable deadhead time ratios but lower dead time ratios.

7.2 Expenses

The costs associated with providing the service are an important measure of the system's operation. The total expenses for the EASYRIDE project are divided into two major categories: capital and operating costs.

7.2.1 Capital Costs

Capital costs are the costs of purchasing major pieces of equipment and facilities. This includes such items as vehicles, radios, maintenance equipment and facilities, garages, and office building, etc.

There were two major capital expenditures made during the start-up period of the demonstration project. These capital expenditures included the purchase of 10 vehicles under the 16(b)(2) program (20% of the cost of the vehicles was funded locally) and the

SYSTEM	UTILIZATION RATIO[1]	DEADHEAD TIME RATIO[2]	DEAD TIME RATIO[3]
EASYRIDE	.35 - .39	.17 - .22	.48 - .39
CRW Transportation, Inc.	.51	.25[4]	.24[4]
Ewing Township	.35	.38	.27
Trenton Division On Aging	.53	.13	.34
Hamilton Township	.35	.31	.34

[1]Ratio of passenger service time to vehicle service time
[2]Ratio of deadhead time to vehicle service time
[3]Ratio of dead time (Idle time) to vehicle service time
[4]Estimated

TABLE 7-6 COMPARISON OF VEHICLE USE FOR SEVERAL SPECIALIZED TRANSPORTATION SYSTEMS

purchase of a building used to store the EASYRIDE vehicles on weekends and overnight. The Vera Institute of Justice loaned EASYRIDE approximately $60,000 to purchase the storage building. EASYRIDE is currently repaying the loan from Vera and is allocating the annual depreciation of the garage as an expense. The Section 16(b)(2) award for vehicles and related equipment was in the amount of $160,952 including a 10% allowance for contingencies. Therefore, the 20% local match amounted to $32,191.

7.2.2 Operating Costs

The evaluation of EASYRIDE's operting costs was a major activity of the demonstration evaluation process. All of the data employed in the cost evaluation was compiled from the financial reports produced by Vera's accounting department for EASYRIDE. During the early months of the demonstration (July and August, 1977) the financial reports were not very detailed. However, after August, 1977 the financial reports became extremely detailed and were produced on a monthly basis through June, 1978. After the June, 1978 financial report was produced, Vera began producing financial reports on a quarterly basis. For evaluation purposes, cost data for the periods between September 1, 1977 and March 31, 1979 were examined in detail. Aggregate summaries of costs were used for the months of July and August, 1977 and no data was available for the month of June, 1977. The costs evaluated in this discussion exclude start-up costs and capital costs. The costs considered are soley for the operation of EASYRIDE.

The framework for the evaluation of EASYRIDE operating costs is based upon the separation of the operating cost categories into its two primary components: variable costs and fixed costs. The variable costs are further separated into two categories: direct hourly costs and mileage related costs. Therefore, the cost evaluation framework focuses on the allocation of EASYRIDE expense categories to one of the following three operating cost categories:

- Direct Hourly Costs (Variable Costs)
- Mileage Related Costs (Variable Costs)
- Vehicle and Administative Fixed Costs

This cost evaluation methodology is used because of its widely accepted versatility. It allows for the computation of all operating cost ratios and it allows for the development of a cost allocation formula which can be used for future planning. The cost allocation formula provides a simple tool which can be used to estimate the marginal cost of providing additional service or the marginal savings of reducing service.

Equation (1) presents the relationship between the primary cost categories:

(1) Total Operating Cost = Variable Costs + Fixed Costs

The variable cost component of equation (1) is further disaggregated into a direct hourly cost component and a mileage related cost component as expressed in equation (2)

(2) Variable Costs = Direct Hourly Costs + Mileage Related Costs

By substituting Equation (2) into Equation (1) the final form of the relationship between variable and fixed costs and total cost can be determined. This relationship is expressed in Equation (3).

(3) Total Operating Cost = Direct Hourly Costs + Mileage Related Costs + Fixed Costs

A cost allocation formula is then developed by determining an appropriate direct hourly cost factor and an appropriate mileage related cost factor. The cost allocation formula will have the form as expressed in Equation (4):

(4) $C = DHC \times VH + MRC \times VM$

Where:

- C = Marginal Cost of Service
- DHC = Direct Hourly Cost Factor
- VH = Number of Vehicle Service Hours Added or Deleted
- MRC = Mileage Related Cost Factor
- VM = Number of Vehicle Miles Travelled or Not Travelled

To develop the cost allocation formula to the level of detail specified in Equation (4), the EASYRIDE expense categories must be mapped onto the cost evaluation framework. This mapping procedure will then serve as the basis for the cost evaluation. Table 7-7 illustrates the EASYRIDE expense categories mapped onto the cost evaluation framework. The entries indicate the percentage of each EASYRIDE expense category allocated to each of the three categories in the cost evaluation framework.

As illustrated in Table 7-7 only the cost of EASYRIDE drivers contribute to the direct hourly costs of the system. The cost of all other EASYRIDE staff personnel are categorized under vehicle and administrative fixed costs. The reason for this is that driver payroll hours directly affect the number of vehicle hours of service provided. A change in the number of driver hours on any given day will not change the expense of supporting the remainder of the EASYRIDE staff.

Mileage related costs are those costs which vary only with the number of vehicle miles travelled. These costs consist of maintenance costs, fuel costs and other vehicle expenses. The vehicle expense of insurance does not vary significantly with the number of miles travelled and as a result is categorized as a vehicle and administrative fixed cost.

EASYRIDE Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	100%		
Reservation Clerks			100%
Scheduler			100%
Secretary			100%
Program Manager			100%
Operations Manager			100%
Planners *			100%
Equipment			100%
Occupancy			
Maintenance			100%
Office			100%
Garage			100%
Utilities			100%
Vehicle Expenses			
Maintenance		100%	
Fuel		100%	
Insurance			100%
Other		100%	
Office Expenses			
Telephone			100%
Xerox & Printing			100%
Sundry			100%
Office Supplies			100%
Other			
Recruiting			100%
Travel			100%
Reports & Publications			100%
Total Direct Costs			
Overhead Charged	33%	20%	47%
Total			
Grand Total			

*Primarily responsible for maintaining the Management Information System

TABLE 7-7 EASYRIDE EXPENSE CATEGORIES MAPPED ONTO THE COST EVALUATION FRAMEWORK

The remaining EASYRIDE expense categories have been allocated to the vehicle and administrative fixed cost category. One expense category included in this allocation which should be noted is equipment. Although equipment is normally considered a capital expense, small equipment expenses have been included with the EASYRIDE operations costs. It should also be noted that the Vera overhead expense is included in each of the three cost categories. This determination was based on the ratio of each cost category's total expense to the overall project cost. The percentages indicated for overhead charged were computed based on calendar year 1978 expense data. For example, the total direct hourly costs accounted for 33% of the project costs during calendar year 1978. Therefore, 33% of the overhead charged during 1978 was allocated to the direct hourly cost category. (A discussion of the overhead charged by Vera is presented later in this chapter.)

A summary of detailed costs for the last quarter of calendar year 1977 is presented in Table 7-8. The total cost for this quarter of operation was $124,526 of which $23,806 was overhead charged by Vera and $101,720 was for direct operating expenses. Although a detailed breakdown of expenses was not available for the third quarter of calendar year 1977, the total cost was $106,943. It was also determined that the entire EASYRIDE expenditure for calendar year 1977 was $403,768. A summary of these expenses is presented in Table 7-9. The total EASYRIDE operating expenses for calendar year 1978 are illustrated in Table 7-10. These expenses amounted to $440,310 of which $355,453 were for direct expenses while $84,857 or 24% were for the overhead charged by Vera to the proejct.

Table 7-11 presents the projected EASYRIDE operations budget for calendar year 1979. The total projected budget amount for this year is $576,719 and it represents a potential increase of $136,409 compared to the calendar year 1978 budget. While the actual calendar year 1979 expenses may be less than the amounts

EASYRIDE Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$26,290		
Reservation Clerks			$7,203
Scheduler			14,458
Secretary			
Program Manager			
Operations Manager			
Planners			
Fringe Benefits	5,258		2,569
Equipment			2,811
Occupancy			
Maintenance			
Office			900
Garage			2,977
Utilities			
Vehicle Expenses			
Maintenance		$8,426	
Fuel		4,087	
Insurance			19,312
Other		773	902
Office Expenses			
Telephone			2,155
Xerox & Printing			1,342
Sundry			1,597
Office Supplies			530
Other			
Recruiting			
Travel			130
Reports & Publications			
Total Direct Costs	$31,548	$13,286	$56,886
Overhead Charged	$7,383	$3,110	$13,313
Total	$38,931	$16,396	$70,199
Grand Total			$125,526

TABLE 7-8 SUMMARY OF EASYRIDE EXPENSES FOR OCTOBER-DECEMBER, 1977

EASYRIDE Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$79,555		
Reservation Clerks			$14,170
Scheduler			66,102
Secretary			
Program Manager			
Operations Manager			
Planners			
Fringe Benefits	14,992		12,469
Equipment			7,670
Occupancy			
Maintenance			0
Office			3,900
Garage			14,998
Utilities			
Vehicle Expenses			
Maintenance		$16,694	
Fuel		11,434	
Insurance			59,116
Other		807	3,865
Office Expenses			
Telephone			5,190
Xerox & Printing			2,530
Sundry			2,764
Office Supplies			2,938
Other			
Recruiting			0
Travel			1,283
Reports & Publications			2,196
Total Direct Costs	$94,547	$28,935	$199,191
Overhead Charged	$23,762	$7,272	$50,061
Total	$118,309	$36,207	$249,252
Grand Total			$403,768

TABLE 7-9 SUMMARY OF EASYRIDE EXPENSES FOR CALENDAR YEAR 1977

EASYRIDE Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$98,227		
Reservation Clerks			$29,578
Scheduler			12,108
Secretary			11,950
Program Manager			18,192
Operations Manager			21,600
Planners			10,562
Fringe Benefits	19,645		20,632
Equipment			265
Occupancy			
Maintenance			8,519
Office			4,600
Garage			9,356
Utilities			3,500
Vehicle Expenses			
Maintenance		$27,198	
Fuel		7,468	
Insurance			35,920
Other		306	
Office Expenses			
Telephone			6,306
Xerox & Printing			3,599
Sundry			2,006
Office Supplies			2,256
Other			
Recruiting			339
Travel			1,339
Reports & Publications			4
Total Direct Costs	$117,872	$34,972	$202,609
Overhead Charged	28,139	8,349	48,369
Total	$146,011	$43,321	$440,310
Grand Total			

TABLE 7-10 SUMMARY OF EASYRIDE EXPENSES FOR CALENDAR YEAR 1978

EASYRIDE Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$130,800		
Reservation Clerks			$33,000
Scheduler			15,000
Secretary			15,000
Program Manager			27,500
Operations Manager			22,000
Planners			14,500
Fringe Benefits	24,852		24,035
Equipment			5,242
Occupancy			1,120
Maintenance			4,250
Office			7,200
Garage			9,600
Utilities			4,500
Vehicle Expenses			
Maintenance		$28,880	
Fuel		15,000	
Insurance			44,000
Other		1,000	
Office Expenses			
Telephone			8,100
Xerox & Printing			3,500
Sundry			2,500
Office Supplies			4,500
Other			
Recruiting			
Travel			2,000
Reports & Publications			
Total Direct Costs	$155,652	$44,880	$247,547
Overhead Charged	$45,024	$12,864	$70,752
Total	$200,676	$57,744	$318,299
Grand Total			$596,719

TABLE 7-11 EASYRIDE EXPENSE BUDGET - CALENDAR YEAR 1979

projected, several expense categories will certainly be greater during 1979 than during 1978. All of the EASYRIDE personnel have received salary increases, and the fuel costs have increased dramatically. In addition to these individual increases, the overhead rate charged by Vera was increased to 28.7% for calendar 1979. The impact of these increases was evident during the first quarter of 1979 when the total quarterly expenditure was $147,499 before being adjusted for fixed costs.

In order to accurately evaluate the monthly (or quarterly) variations in the cost of the EASYRIDE demonstration the actual monthly (or quarterly) expenses were adjusted to control for the vehicle and administrative fixed costs. As a result of this adjustment variations in the monthly (or quarterly) costs of operation could be attributed to direct hourly expenses (driver wages) and/or mileage related costs (vehicle maintenance and fuel).

A summary of the actual and adjusted monthly operating costs for EASYRIDE are presented in Table 7-12.* These costs cover the period of time between July, 1977 and March, 1979. Data for the months of July, 1978 through March 1979 are based on quarterly totals while all other data are based on monthly totals. The adjusted monthly expenditures were computed using an averge expenditure for all fixed costs and the actual monthly expenditures for direct hourly costs and mileage related costs. During calendar year 1977 the average monthly fixed cost was $20,771, during calendar year 1978 the average monthly fixed cost was $20,915, and the average monthly fixed cost during calendar year 1979 was projected to be $26,525.

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*A summary of the actual quarterly costs for the demonstration project between July, 1977 and March 1979 are presented in Appendix F.

	1977		1978		1979	
	Actual Monthly Expenditure	Adjusted[1] Monthly Expenditure	Actual Monthly Expenditure	Adjusted[2] Monthly Expenditure	Actual Monthly Expenditure	Adjusted[3] Monthly Expenditure
June	NA	NA	$31,933	$35,574		
July	$49,139	$45,018	39,780[4]	38,144[4]		
August	25,498	33,604	39,780[4]	38,144[4]		
September	32,305	35,193	39,780[4]	38,144[4]		
October	52,957	36,143	33,241[5]	35,619[5]		
November	31,157	34,136	33,241[5]	35,619[5]		
December	41,412	41,433	33,241[5]	35,619[5]		
January			30,868	34,389	$49,166[6]	$43,632[6]
February			37,723	34,833	49,166[6]	43,632[6]
March			44,276	38,284	49,166[6]	43,632[6]
April			39,729	38,914		
May			36,716	37,026		
Standard Deviation	$10,878	$4,593	$4,142	$1,577		

[1] Average monthly fixed cost during 1977 was $20,771

[2] Average monthly fixed cost during 1978 was $20,915

[3] Average monthly fixed cost during 1979 was $26,525

[4] Based on actual quarterly cost of $119,340 and adjusted cost of $114,433

[5] Based on actual quarterly cost of $99,724 and adjusted cost of $106,856

[6] Based on actual quarterly cost of $147,499 and adjusted cost of $130,896

TABLE 7-12 SUMMARY OF ACTUAL AND ADJUSTED MONTHLY OPERATING COSTS FOR EASYRIDE

Examination of the actual and adjusted monthly figures presented in Table 7-12 indicate that the vehicle and administrative fixed costs accounted for a substantial portion of the variation in monthly expense. During 1977 the standard deviation of the monthly expenses decreased from $10,878 to $4,593 by adjusting for average monthly fixed costs. During 1978 the standard deviation decreased from $4,142 to $1,577 by adjusting for average monthly fixed costs.

Actual detailed cost data for the months of July and August, 1977 were not available and the figures presented in Table 7-12 were developed from aggregate figures. In fact other operations data suggest that expenses for the month of August should have been greater than the expenses for July. EASYRIDE provided more vehicle hours of service and travelled more miles in August than in July. The adjusted operating expenses during September, October, and November, 1977 are all very similar. The reason that October's actual monthly expenditure was so unusually high was due to the payment of a large insurance premium ($17,596). Both the actual and adjusted expenditures during December, 1977 were very similar indicating that the high expense during the month was due to expenses other than those which were fixed. A closer examination of the December financial report indicated that vehicle maintenance costs were quite high that month as were fuel costs. The vehicle maintenance costs corresponded to the vehicle electric repairs previously discussed in the report.

The actual monthly expenses incurred during calendar year 1978 exhibited much less monthly variation than during calendar year 1977. However, the existing variation was further reduced by adjusting the expenses. The adjusted monthly expenses vary between each other by a maximum of $4,500 with the lowest monthly expenditures occurring during January, 1978 and February 1978. As discussed earlier, New York City was besieged by snow and ice during these months as the "Blizzard of 1978" hit New York City, thereby forcing EASYRIDE to curtail service.

There was a somewhat noticeable difference in the adjusted expenditure for the third quarter of 1978 (July, August, September) compared to the adjusted expenditure during the fourth quarter of 1978. The higher costs incurred during the third quarter ($114,433) resulted from higher direct hourly costs than during the fourth quarter in which expenses of $106,856 were incurred. The fuel and maintenance costs were slightly higher during the fourth quarter than during the third quarter but this difference was outweighed by the difference in direct hourly costs.

Aggregate cost figures from the cost evaluation framework have been summarized in Tables 7-13, 7-14, and 7-15 and were then used to develop the cost allocation formula for EASYRIDE. Table 7-13 indicates that during the fourth quarter of calendar year 1977 31% of all EASYRIDE costs were allocated to direct hourly costs, 13% to mileage related costs and 57% to vehicle and administrative fixed costs. The portion of expenses allocated to vehicle and administrative fixed costs is unusually high for a specailized transportation system. The majority of the operating expenses are usually allocated to the direct hourly costs and not the fixed costs. A discussion of the high fixed costs is presented later in this subsection.

The cost allocation for EASYRIDE during calendar year 1978 is presented in Table 7-14. The allocation of aggregate expenses to the three cost categories in the cost evaluation framework is almost identical to the distribution for the fourth quarter of 1977. Of the total yearly expenses, 33% of costs were allocated to direct hourly costs, 10% to mileage related costs and 57% to vehicle and administrative fixed costs. The resultant cost allocation formula indicates a slightly higher direct hourly cost than during the fourth quarter of calendar year 1977 and a slightly lower mileage related cost.

	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Total Cost	$38,931	$16,396	$70,199
Percent of Total	31%	13%	56%
Total Hours, Miles	4,383.5	26,093	
Marginal Cost per Hour, Mile	$8.88	$.63	

Cost Allocation Formula C = $8.88 X VH + $.63 X VM

Where: C = Marginal cost of service

VH = Number of vehicle service hours added or deleted

VM = Number of vehicle miles travelled or nor travelled

TABLE 7-13 COST ALLOCATION FOR EASYRIDE - OCTOBER - DECEMBER, 1977

	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Total Cost	$146,011	$43,321	$250,978
Percent of Total	33%	10%	57%
Total Hours, Miles	15,497	73,694	
Marginal Cost per Hour, Mile	$9.42	$.59	

Cost Allocation Formula C = $9.42 X VH + $.59 X VM

Where: C = Marginal cost of service

VH = Number of vehicle service hours added or deleted

VM = Number of vehicle miles travelled or nor travelled

TABLE 7-14 COST ALLOCATION FOR EASYRIDE DURING CALENDAR YEAR 1978

	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Total Cost	$38,148	$13,173	$79,575
Percent of Total	29%	10%	61%
Total Hours, Miles	4,254	19,625	
Marginal Cost per Hour, Mile	$8.97	$.67	

Cost Allocation Formula $C = \$8.97 \times VH + \$.67 \times VM$

Where: C = Marginal cost of service

VH = Number of vehicle service hours added or deleted

VM = Number of vehicle miles travelled or nor travelled

TABLE 7-15 COST ALLOCATION FOR EASYRIDE - JANUARY - MARCH, 1979

Table 7-14 then presents the marginal cost for each additional hour of service and each additional vehicle mile travelled with the cost allocation formula. This formula could be used by the EASYRIDE management to determine the cost impact of changes in service. For example, if EASYRIDE management decided to provide 50 additional hours of service per week and during this time the vehicles would travel an additional 1,000 miles the cost allocation formula could be used to determine the cost of this additional service. The cost of service would be determined as follows:

C = $9.42 X 50 hrs. + $.59 X 1,000 mi.
C = $471.00 + $590.00
C = $1,061.00

The additional cost for service would be $1,061 per week or $55,172 per year. This estimate assumes that drivers would be paid straight time not overtime and that there would be no increases in the associated fixed costs.

A second example serves to demonstrate how much money could be saved if service were reduced. For example, if EASYRIDE's scheduler determined that improved scheduling of trips could save 150 miles per week without changing the number of vehicle hours of service, how much money would be saved? The cost allocation formula would then be used as follows:

C = $.59 X 150
C = $88.50

The cost savings would be $88.50 per week or $4,602 per year. The above two examples indicate that expanding or reducing service has relatively little impact on total operating costs because of EASYRIDE's very high fixed costs.

The cost allocation formula, would of course, be modified to allow for additional service hours to be paid at overtime rates. This adjustment would depend upon the exact service policy being studied by EASYRIDE management.

The cost allocation formula developed for the first quarter of 1979 (Table 7-15) illustrates the impact of EASYRIDE's increased vehicle and administrative fixed costs. During this quarter, direct hourly costs accounted for 29% of total costs, mileage related costs accounted for 10% of total costs, and vehicle and administrative fixed costs accounted for 61% of the total costs. As a result, the direct hourly cost of the operation decreased to $8.97 from $9.42 per hour during 1978. However, the mileage related cost increased to $.67 per mile from $.59 during 1978. These changes indicate that the bulk of the increases in the quarterly costs were due to increased fixed costs and only a small amount were due to increased direct hourly costs and mileage related costs.

As mentioned earlier in this discussion it is believed that one of the reasons for EASYRIDE's high total operating cost was due to its high vehicle and administrative fixed costs. In addition to the high fixed costs a second factor must also be considered and that is the overhead charged by Vera to the project. The overhead rate amounted to approximately 24% of the direct operating costs during 1978.

A review of the vehicle and administrative fixed costs for calendar year 1978 revealed several specific areas in which EASYRIDE had unusually high costs. In the personnel category EASYRIDE supported persons classified as planners. These planners were responsible for editing operations data and submitting it to the data processing subcontractor who produced the semi-monthly and monthly operations reports. The planners were also involved in verifying eligible persons' Medicare numbers with the Health

Care Financing Adminstration. The management informtion system used by EASYRIDE was far more sophisticated than the systems used by most specialized transportation systems. Much of the complexity was necessary to ensure accurate and reliable accountability for the Health Care Financing Administration which issues Medicare reimburesement to Vera for EASYRIDE.

In the occupancy category there is one item which should be noted. Vera purchased a building to be used as a storage garage for the EASYRIDE vehicles. EASYRIDE then paid Vera a rental fee for the use of the garage. The use of a storage garage is absolutely essential for an operation in an urban area such as the Lower East Side which has a relatively high crime rate. This expense is, therefore, necessary and should be expected of specialized transportation systems operating in high density urban areas.

Another very expensive aspect of operating a specialized transit system in an urban area such as the Lower East Side is the cost of vehicle insurance. During 1978 EASYRIDE paid $35,920 for insurance. The insurance policies covering EASYRIDE were written in layers with each layer having specified limits. The URTA system in Howard County, Maryland operates the same number of vehicles as EASYRIDE, has a similar set of insurance policies, and had a premium of $19,000 per year during 1978. This example illustrates the high cost of insurance in New York City. In fact, during 1977, insurance costs for Vera were even higher than during 1978 with the total premium amounting to $59,116.

The last expense item which inflated EASYRIDE's operating costs is the overhead charge paid to the Vera Institute. This charge which amounted to 24% of direct costs added almost $85,000 to the total operating cost. The overhead charge covers the varied professional services provided to EASYRIDE by Vera plus admnistrative expenses associated with managing the demonstration project. The major professional services provided by Vera to EASYRIDE were accounting and bookkeeping, and legal assistance.

All project funds flowed through Vera not through EASYRIDE and as a result Vera handled all of EASYRIDE's accounts receivable and accounts payable plus the production of monthly financial reports. In summary, the overhead charged by Vera results in a variety of high quality professional services provided to EASYRIDE.

7.3 Income

Due to the nature of the demonstration project the bulk of EASYRIDE's income was generated from demonstration grants. Passenger revenue and third party billings accounted for a very small proportion of the total project income. Table 7-16 indicates the amount of income generated to support EASYRIDE by source during calendar year 1978. UMTA demonstration funds accounted for 18% of the total income while the Medicare waiver allowed the Health Care Financing Administration to contribute 63% of the total income. Service contracts, fees and subscriptions accounted for only 1% of EASYRIDE's income and the Vera Institute's contribution to the project accounted for 8% of the project income. Other grants and local contributions accounted for the balance of the project's income.

It should be pointed out that the reason Medicare reimbursements for calendar year 1978 exceeded the $250,000 per year maximum was related to the timing of the reimbursements. The medicare waiver was approved July 1, 1977 retroactive to June 1, 1977. During the month of June, 1977 and July 1, 1977 to June 30, 1978 EASYRIDE earned $229,918 in medicare reimbursements. Between the months of July 1, 1978 and December 31, 1978 EASYRIDE earned $152,202 in medicare reimbursements. Of this total amount ($382,120), $68,068 was applicable to calendar year 1977 and $314,052 was applicable to calendar year 1978.

INCOME SOURCES	AMOUNT	PERCENT OF TOTAL
UMTA Demonstration Grant	$91,082	18%
Administration on Aging	4,399	1%
Health Care Financing Administration (Medicare)	314,052*	63%
Core (Vera Institute) Support	39,196	8%
Levi Strauss Grant	10,000	2%
Robert Wilson Foundation	1,200	-
Greater New York Fund	30,000	6%
Service Contracts, Fees and Subscriptions	3,832	1%
Contributions (Local)	3,522	1%
Total Funding	$497,283	100%

*Amount applicable to 1978

TABLE 7-16 EASYRIDE INCOME FOR CALENDAR YEAR 1978 BY SOURCE

7.4 Operating Cost Ratios

In order to evaluate costs and provide a basis for comparison with other systems, there are several ratios which must be determined. These cost ratios are used in a twofold manner. First, the cost ratios are used to establish a realistic assessment of costs as related to service levels, service quality, user characteristics and site specific conditions. Second, the analysis of operating cost ratios is used to test two hypotheses:

1) The cost of providing service was significantly higher than at other locations because of the provision of door-thru-door service and other special assistance.

2) The cost of providing service was significantly higher than at other locations because of site specific factors such as traffic congestion, high insurance rates and other factors.

7.4.1 Unit Operating Cost Ratios

Analysis of EASYRIDE operating cost data allowed for the determination of the following unit operating cost ratios on a quarterly basis and for the entire demonstration project:

- Cost per trip
- Cost per hour
- Cost per mile

Table 7-17 presents a summary of the unit cost ratios for EASYRIDE between the months of July, 1977 and March, 1979. The total cost for each quarter of operation was determined from the adjusted monthly expenses detailed in Section 7.2.2. In this manner the unit cost ratios can be compared to one another while controlling for fixed costs.

During the demonstration project EASYRIDE operated at an average hourly cost of $27.34. The average cost per trip was $12.87 and the average cost per mile travelled was $5.35. Examination of Table 7-17 indicates that there was no clear trend in the movement of the total adjusted quarterly cost of operation during the project until early 1979 when the operating costs rose dramatically. While EASYRIDE's insurance premiums decreased between 1977 and 1978, the cost of personnel increased during this same time period as the staff expanded to its current size. It is not apparent that EASYRIDE was severly impacted by inflationary pressures which characterized 1978. However, during calendar year 1979 EASYRIDE budgeted for large increases in insurance premiums.

One trend which was apparent from Table 7-17 was an increase in the cost per hour of service. As EASYRIDE stabilized its operation by controlling the number of vehicle service hours provided, the effects of its high fixed costs began to show. The average cost per hour of service increased from $22.71 during the July-September, 1977 quarter to $31.41 per hour of service during the July-September, 1978 quarter. During this same time period, the number of hours of service provided per quarter declined by more than 1,300, although half of this decline took place between the last two quarters of 1977.

Since the number of trips provided during each quarter of the demonstration project fluctuated there was no clear trend as to the direction of the cost per trip. Furthermore, the cost per trip was a function of system productivity and as discussed in Section 7.1 EASYRIDE's system productivity varied throughout the demonstration project. It should be pointed out that the limited data available for calendar year 1979 suggests that EASYRIDE has improved its operating efficiency compared to the service provided during late 1977. During late 1977 EASYRIDE system productivity was just under 2.00 trips per hour of service. Although productivity has no impact on hourly costs it has a profound impact on the cost per trip.

	JULY-SEPT.'77	OCT.-DEC.'77	JAN.-MARCH'78	APRIL-JUNE'78	JULY-SEPT.'78	OCT.-DEC.'78	JAN.-MARCH'79	TOTAL
TOTAL COST	$113,815	$111,762	$107,506	$111,514	$114,432	$106,857	$130,896	$796,782
TOTAL TRIPS	9,828	6,929	9,940	8,679	8,227	8,461	9,835	61,899
(COST PER TRIP)	($11.58)	($16.13)	($10.82)	($12.85)	($13.91)	($12.63)	($13.31)	($12.87)
TOTAL HOURS	5,012.5	4,383.5	4,068	3,806	3,643	3,980	4,254	29,147
(COST PER HOUR)	($22.71)	($25.50)	($26.43)	($29.30)	($31.41)	($26.85)	($30.77)	($27.34)
TOTAL MILES	29,539	26,093	18,322	18,469	18,058	18.845	19,625	148.951
(COST PER MILE)	($3,85)	($4.28)	($5.87)	($6.04)	($6.37)	($5.67)	($6.67)	($5.35)

TABLE 7-17 SUMMARY OF EASYRIDE UNIT COST RATIOS

During the last quarter of 1977, because of vehicle mechanical and electrical problems, system productivity plunged to 1.58 trips per hour. This average productivity resulted in an average cost per trip of $16.13. As system productivity improved the average cost per trip decreased. For example, during the last quarter of 1978 EASYRIDE operated at an average hourly cost of $26.85. Since the system productivity, was at that time, 2.13 trips per hour, the resultant cost per trip was $12.63. However, if a system productivity of 1.58 trips per hour had prevailed the resulting cost per trip would have been $16.99.

One area of EASYRIDE's operation which definitely improved during the demonstration was its decrease in the number of miles travelled. While a decrease in the number of miles travelled resulted in a higher average total cost per mile the marginal cost per mile for the system decreased. This decrease was illustrated in the cost allocation formula developed for EASYRIDE in Section 7.2.2. The marginal cost per mile decreased by $.04 betweeen the last quarter of 1977 and 1978.

The decrease in the number of miles travelled by EASYRIDE resulted from service changes related to human service agency contracts and operations policy. During the later part of 1977 EASYRIDE provided service to the New York State Department of Mental Health. This service involved inter-borough travel resulting in excessive vehicle mileage. At the conclusion of this contract, at the end of 1977, total vehicle mileage declined significantly. During the evolution of the project EASYRIDE management decided to limit service to uptown Manhattan medical destinations to Tuesdays and Thursdays. This policy change also helped reduce vehicle mileage. The impact of a reduction in vehicle miles travelled was an increase in the number of trips provided per mile.

The evaluation of EASYRIDE's operating costs must now focus on the relationship of the presented costs to the service provided. The hourly costs for service are essentially fixed by the characteristics of the program (i.e., variable and fixed costs necessary for providing the base service). The major variable that influences the unit trip cost is, therefore, system productivity. As system productivity increases, the cost per trip decreases and vice versa. EASYRIDE's system productivity was largely influenced by the type of service provided.

In Section 7.1.2 it was determined that the overall productivity of service provided in accessible vehicles was 1.49 trips per hour while the productivity of service provided in the ambulatory (or straight) vehicles was 2.91. If we use an average hourly cost for EASYRIDE service of $27.34 then the average cost per trip made in accessible vehicles was $18.35 and the average cost for trips made in the ambulatory vehicles was $9.40. Therefore, the special assitance required by riders making trips in the ambulatory vehicles added approximately $8.95 to the cost of the trip.

Although the quality of service provided by private for profit ambulettes operating in New York City was not studied as part of this project it is understood that their current trip rate is $16.50.* While this rate was greater than EASYRIDE's average cost per trip of $12.87 it was less than the average cost per trip for trips made in the accessible vehicles. Whether the quality of EASYRIDE's service adequately compensates for this difference in trip cost cannot be objectively assessed. It is believed, however, that the private for profit ambulette operators would have to be quite formidable competitors to provide the high quality, personalized service provided by EASYRIDE.

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*As noted earlier, ambulette operators may receive a $.75 per trip fuel adjustment increase if they open their accounting records for review. This adjustment was instituted as a result of the recent increase in fuel costs.

As discussed in Section 7.2.2 several of EASYRIDE's fixed costs were unusually high and resulted from operating in New York City. The two primary fixed costs in this category are insurance premiums and the cost of EASYRIDE's storage garage. These two items accounted for $45,276 in fixed costs during 1978 or approximately $1.28 per trip. That is a considerable amount of money which must be included in the computation of unit operating costs. If EASYRIDE were located in a less densely populated city the cost for a garage would probably not be necessary and insurance premiums would certainly be reduced. Assuming that insurance premiums were reduced to the level that was paid by URTA in Howard County, Maryland, all other things remaining equal, the average EASYRIDE cost per trip could be reduced by about $.75. During calendar year 1979 EASYRIDE insurance premiums and the vehicle storage expense are expected to cost approximately $53,600.

In order to place this discussion of EASYRIDE's unit operating costs in proper perspective they have been compared with the unit oeprating cost ratios of four other specialized transportation systems. The four systems chosen for the comparative analysis included: Dial-A-Bat - Brockton, MA; Project Mobility - Minneapolis, MN; DATS - Edmonton, Alberta; and The Lift - Portland, OR.

Dial-A-Bat provides a high quality door-to-door subscription and demand-responsive service to a variety of human service agencies and to the elderly and handicapped individuals residing in Brockton. Dial-A-Bat is one of the most cost efficient paratransit systems in the nation. Operations data describing Dial-A-Bat was obtained while the system operated 12 vehicles of which two were fully accessible. The system's current fleet is 50% accessible.

Project Mobility is a capacity constrained system which provides door-to-door, two hours advance notice service to the severely transportation handicapped residents of a target area in Minneapolis. The service is of a high quality which is necessitated by the physical condition of the riders. All of Project Mobility's vehicles are lift equipped and the system operates from early in the morning until 11:00 P.M. at night.

The DATS program in Alberta, Canada is a 24-hour advance notice service primarily serving the transportation handicapped. Agency clients particpate in the program through a subscription sevice component, although some service is provided to agencies in the demand-responsive mode. About 35% of the trips made on DATS are provided through taxi subcontracts.

The Lift program is a demand-responsive service operated by Tri-Met, the Portland area transit operator. The Lift started out serving only agency clients, but since June, 1977 it has been serving individual elderly and handicapped users. During the period between June and November, 1977 ridership on the Lift has shifted from 12% individual users to 38% individual users.

Table 7-18 presents a comparison of unit operating cost ratios for the four previously discussed specialized transit sytems and EASYRIDE. In terms of system operating costs, EASYRIDE has the highest average hourly operating cost and cost per trip of the five systems considered. Although the averge hourly operating cost of both Project Mobility ($22.61) and The Lift ($23.96) are in the same range as EASYRIDE's cost per hour, both of these systems employ high salaried union drivers as the two systems are both operated by the local transit operator. These systems have lower fixed costs than EASYRIDE but higher direct hourly costs. Dial-A-Bat which is operated primarily by non-union drivers (there are two union drivers in the system) has low variable costs and very low fixed costs. The low variable costs result from the fact that all of the non-union drivers are paid only for time they spend working. They are not paid for dead or idle time.

	EASYRIDE	DIAL-A-BAT	Project Mobility	DATS	The LIFT
Fare Level	free	$1.00 individual $3.50 agency	$.35	$.50	$.50 individual $3.00 agency
Cost/Hour	$27.34	$14.03	$22.61	$13.61	$23.46
Rev./Hour	-	$5.60	$.74	$.89	$7.55
Net Cost/Hour	$27.34	$8.41	$21.87	$12.72	$16.41
Recovery Ratio	-	40%	3%	7%	32%
Cost/Trip	$12.87	$5.49 DAR $1.02 Sub.	$10.77	7.56	$9.35
Productivity	2.15	$2.68 DAR $12.88 Sub.	2.10	1.60 - 2.00	2.56
Wage Rate Drivers Average	$5.23/hr.	$4.55/hr.	NA	NA	$7.56/hr.
Service Area	23 sq. mi. Manhattan	21.5 sq. mi. Brockton	6.3 sq. mi. Target 100 sq. mi. Service	123 sq. mi. Edmonton, Alb.	89 sq. mi. Portland
No. of Vehicles	10	12	12	16	15
No. of Staff and Drivers	17	16	15	NA	23
No. of Daily Trips	144	91 DAR 358 Sub.	190	NA	215

TABLE 7-18 COMPARISON OF UNIT OPERATING COST RATIOS OF SPECIALIZED TRANSPORTATION SYSTEMS

Of the systems examined, EASYRIDE is the only one that does not have a required fare. A suggested donation of $.15 was sometimes made by EASYRIDE patrons, but such revenue was minimal. Contracts between EASYRIDE and several human service agencies contributed a small amount of revenue to EASYRIDE's total income.

The most important comparison which can be made between these five systems is with respect to their productivities. EASYRIDE's overall productivity was compared with these four systems in Section 7.1.1. While EASYRIDE's average system productivity is comparable to that of these four other systems the productivity of EASYRIDE's accessible fleet (1.49) is lower than the productivity of Project Mobility and DATS both of which serve only severely handicapped persons. On the other hand, the productivity of EASYRIDE's ambulatory vehicles (2.91) is higher than the productivity of Dial-A-Bat and The Lift. If EASYRIDE could improve its system productivity as discussed in Chapter 5, it could establish itself as one of the more efficient specialized transportation systems.

The data presented in this subsection leads us to believe that part of EASYRIDE's high service costs, compared to those at other locations, are related to site specific factors (operating in New York City). However, the overhead charged by Vera to the project also adds considerably to the overall service costs. The data presented in this subsection also leas us to conclude that service provided to semi or non-ambulatory persons is far more expensive than service provided to ambulatory persons.

CHAPTER 8

8.0 TRANSFERABILITY OF RESULTS

From a planning perspective it is important to determine which results of a particular demonstration project are indicative of what might happen if the same type of system were implemented elsewhere. It is also necessary to identify those results which are thought to be site specific. There are a large number of specialized transportation systems in operation each with its own set of characteristics and idiosyncrasies. However, even with the multitude of differences which are present there are several basic aspects of specialized transportation services which allow for comparisons. Furthermore, there are several results of the EASYRIDE demonstration project which apply to the operation of any specialized transportation service.

8.1 Specific Transferable Results

The EASYRIDE demonstration project took place in a densely populated section of Manhattan in New York City. Since most of EASYRIDE's trips were made exclusively in the Lower East Side we would not expect the average in-vehicle travel times presented in Chapter 4 to be universally applicable to any specialized transportation system. We do, however, expect similar in-vehicle travel times for specialized demand-responsive transportation systems operating solely in urban environments.

The components of total travel time which could be used for planning purposes for all specialized demand-responsive transportation systems, serving the elderly and handicapped, are the access and egress times presented in Chapter 4. The access and egress times measured for different user groups are representative of what one might expect if a specialized transportation system were designed so that the drivers would provide door-thru-door assistance.

The access and egress times presented in Chapter 4 should be used in conjunction with the type of passenger transported. For example, the average total dwell time for trips made by semi or non-ambulatory persons should always be assumed to be greater than for trips made by ambulatory persons.

The discussion of EASYRIDE's system productivity in Chapter 7 indicated that the productivity of the accessible vehicles is significantly less than the productivity of the ambulatory vehicles. While it is not recommended that the average EASYRIDE productivities be considered transferable, the monthly EASYRIDE productivities can be used to develop reasonable productivity ranges for systems serving a wide range of trip purposes in an urban environment. The result which can be applied to specialized transportation systems regardless of location is that there is a large difference in productivity between service provided to ambulatory persons as compared to service provided to semi or non-ambulatory persons. As the mobility level of system users decreases the system productivity will also decrease.

EASYRIDE experienced some variablity in demand according to the day of the week and the time of day. Demand for EASYRIDE service was heaviest during the middle of the week (Tuesday, Wednesday and Thursday) and lightest on Mondays and Fridays. This pattern of demand is believed to be characteristic of EASYRIDE and not necessarily transferable to other systems. Other specialized transportation systems observed by the evaluation contractor have experienced heavy demand at the beginning of the week and lighter demand at the end of the week.

Demand for EASYRIDE service was heaviest during the midday period between 10:00 a.m. and 3:30 p.m. This is a typical demand pattern for specialized transportation systems serving the elderly and handicapped and should be expected at other locations. Of the travel periods at the extreme parts of the day, early morning and

late afternoon, the early morning receives greater demand than the late afternoon. The elderly and handicapped tend to return home before 5:00 p.m. and often as early as 4:00 p.m. This is due in part to the hours maintained by the transportation system serving them and to the hours maintained by the health facilities and recreation centers frequently attended by the elderly and handicapped. Specialized transportation systems which operate into late evening hours, such as Project Mobility, experience decreased levels of demand after 5:00 p.m.

An effective tool which was utilized in the evaluation of EASYRIDE's operations was the detailed driver trip log. The detailed driver trip log was used to obtain data for the computation of access and egress time, in-vehicle ride time, passenger service time, deadhead time and dead time. This evaluation tool is seldom fully utilized but is probably the best single tool available for a comprehensive systems analysis. It is recommended that the use of a detailed driver trip log be considered as an evaluation tool for all specialized transportation systems.

During the first year of the demonstration project EASYRIDE operated with a self screening registration process. This system was then replaced with a specific set of eligibility criteria which were far more objective and, therefore, easier to administrate. The self-screening process did not serve its intended purpose and results of the demonstration imply that specialized transportation systems should develop a specific set of eligibilty guidelines that are objective and enforceable. In order to develop such a set of guidelines the system operators or Board of Directors must determine exactly which segment(s) of the total population is to be served. This is currently a standard procedure in the design of specialized transportation systems. EASYRIDE experimented with a more liberal eligiblity policy and it was not as effective as originally hoped.

Almost one-half of all trips provided by EASYRIDE were to and from nutrition programs in the Lower East Side. This service was provided with greater efficiency than any other type of EASYRIDE service provided. However, the productivity of the nutrition service was low considering the travel distances involved were minimal and the service was provided daily at regularly scheduled times. Specialized transportation systems serving nutrition programs in suburban and semi-rural areas operate at higher productivities than EASYRIDE. It appears that service to nutrition programs in urban areas must be operated at greater efficiencies for it to become a cost effective service. In the Lower East Side a majority of nutrition program participants walk to the sites and EASYRIDE essentially serves a small percentage of the program participants.

During the first two years of the demonstration project EASYRIDE operated without two-way mobile radios. Only since the beginning of calendar year 1979 has EASYRIDE operated with a two-way communication system and the system employed was a "beeper" system. Although a two-way mobile radio system complete with a base station is the most desirable communication system for a specialized transportation system a "beeper" system is preferable to no system at all. Highly developed urban areas, such as New York City, present radio reception problems (e.g. interference from skyscrapers) requiring the use of several repeater stations. This type of problem is less common in smaller cities making two-way mobile radio systems more attractive than "beepers."

The human service agencies involved with the demonstration project provided assistance to EASYRIDE in the registration process. Because these agencies (private non-profit) did not have the funds to help support EASYRIDE there was never a true coordination/ consolidation element in the demonstration project. Most of the human service agencies on the Lower East side are located so that their clients can walk to the agency to participate in programs or receive service. Clearly, persons with severe mobility limitations would have difficulty participating in many agency functions.

The role of the human service agencies in the EASYRIDE demonstration project should not be interpreted as a failure for coordination/consolidation to work in an urban environment. The EASYRIDE demonstration project was not designed to emphasize human service agency participation. However, the EASYRIDE demonstration project did provide some insights into the planning of human service agency transportation programs in large urban areas. It was pointed out to EASYRIDE that many public agencies, serve the entire city and, therefore, require a transportation provider who can serve the entire city. Since EASYRIDE limited its service to persons living in the Lower East Side (although service was provided to destinations outside the Lower East Side) it was not in a position to become an all-area provider although EASYRIDE is in a position to become an all-purpose provider.

It was also clear from the demonstration project that coordinating and/or consolidating human service agency transportation programs in a large urban area is far more complex than simply signing letters of agreement with interested agencies. The process requires a careful analysis of demand, location of destinations, geographic constraints imposed by a city such as New York City and the necessary supply of vehicles necessary to efficiently serve the program's needs.

The majority of the trips served by EASYRIDE were for medical related purposes and nutrition programs. The expenses associated with both of these trip purposes were eligible for Medicare reimbursement if made by a Medicare eligible individual. EASYRIDE did, however, provide transportation service for any trip purpose requested by a project registrant. The demonstration pointed out, as has been indicated in many other studies, that the elderly and handicapped have travel demand for a variety of purposes. Specialized transportation systems may prioritize the trip purposes served but they should not limit trip purposes solely to medical facilities under the assumption that elderly and handicapped persons have a unidimensional travel demand.

EASYRIDE was an expensive specialized transportation system due to unusually high fixed costs. Contributing to the high fixed costs were very large vehicle insurance premiums and the cost of garaging the vehicles. These two costs were influenced by site specific factors. New York City has one of the highest vehicle insurance rates in the country and this has had a profound impact on EASYRIDE. The Lower East side has a high crime rate and as a result the EASYRIDE vehicles had to be stored overnight in an enclosed secure building also adding to the fixed costs. Since EASYRIDE operated as a demonstration project, it is difficult to determine what its operating costs would be if it operated as a regular system. Its current operating expenses probably represent the upper limit of the costs of a specialized transportation system operating without union employees.

The excellent performance of EASYRIDE's drivers was one the major successes of the demonstration project. This result suggests that well trained closely supervised rehabilitated ex-addicts and ex-offenders have the potential to make significant contributions to specialized transportation programs. However, this result should be qualified by the fact that EASYRIDE's drivers graduated from the Wildcat Services Corporation program and then were carefully screened by EASYRIDE management. The point which must be clearly understood is that this result did not "just happen". It was the result of a well planned program and hard work by all related parties.

EASYRIDE had a market penetration ratio of approximately 11% during the first two years of the demonstration project. However, since the program was never mass marketed to all eligibles in the Lower East side and since the eligibility criteria has changed since the project's inception this result should not be considered transferable.

One of the primary issues surrounding the EASYRIDE project was whether or not medical costs were reduced for Medicare beneficiaries because transportation service was provided to them. It was hypothesized that Medicare beneficiaries are often treated as in-patients because they have no means of travelling to the medical facility to receive out-patient care. The daily costs of in-patient care at a hospital are exorbitant considering the basic daily charge for the room alone is about $200. The research necessary to test this hypothesis and evaluate the issue is currently underway, but results are not expected for several more years. This result will certainly have national significance.

In summary this Chapter has discussed some of the important demonstration results in terms of their transferability to other locations. Some of the results can be used in the planning of specialized transportation systems at any location while other results should serve primarily as guidelines in the planning of specialized transportation systems.

CHAPTER 9

9.0 SUMMARY AND CONCLUSIONS

EASYRIDE began to operate as a pilot program in June, 1976. After receiving its complete vehicle fleet, purchased in part with the proceeds of a Section 16(b)(2) grant award, it began full scale operations in April, 1977. At that time, EASYRIDE was operating seven vehicles full-time. By June, 1977 EASYRIDE was operating its complete vehicle fleet and had its Management Information System in place. In July, 1977 the United States Department of Health, Education and Welfare approved a waiver (Section 222) allowing EASYRIDE to receive reimbursement for the cost of transportation provided to Medicare beneficiaries for covered trips. This waiver was retroactive for eligible trips made since June 1, 1977.

The EASYRIDE demonstration project was originally scheduled to operate for two years. As the demonstration funds expired, it was thought that EASYRIDE would be building a funding base so that the program could continue to operate as a regular system. Because the EASYRIDE research team started its work late and because the research team did not believe that statistically significant results could be identified after only two years EASYRIDE received an extension. The extension will allow the EASYRIDE demonstration project to continue to operate for an additional two years.

9.1 Summary of Findings

The evaluation which was presented in the preceding Chapters focused exclusively on EASYRIDE's first two full years of operation (June 1, 1977 to May 31, 1979). A summary of the more significant findings is presented below.

1. The self-screening registration process was not as successful at limiting registration to persons who were truly transportation handicapped as a specific set of eligibility criteria. The original registration process employed by EASYRIDE was moderately

successful at screening out able bodied persons as indicated by the classification of respondents to the on-board survey. Of those persons interviewed, approximately 77% were transportation handicapped and the remaining 23% were classified as able bodied elderly. The results of the self-screening process used for the first year of the demonstration imply that a more rigid set of eligibility criteria are necessary if a specific portion of a total population is to be eligible to use a specialized transportation system. The decision of eligibility should not be left to the discretion of the individual.

2. EASYRIDE's liberal advance notice policy for trip reservations was resposible, in part, for an excessive number of passenger "No Shows". Passenger "No Shows" adversely impacted system productivity and cost effectiveness. In the evaluation of project demand characteristics, it was shown that the number of passenger "No Shows" increased in direct proportion to the number of trip requests accepted more than one week before the desired travel date. It is highly recommended that EASYRIDE review their trip reservation policy in an effort to significantly reduce the number of passenger "No Shows". Passengers making trip reservations more than one month in advance of their desired travel date often decide not to go when the vehicle arrives at their home. This problem was particularly prevalent among persons using EASYRIDE to travel to nutrition programs.

3. About 43% of all EASYRIDE trips were made in conjunction with the nutrition programs served by EASYRIDE. Although the relative productivity for the nutrition service was greater than the productivity for all other types of EASYRIDE service, it is believed that this productivity was lower than what would have been expected of a many-to-one service. The nutrition trips were made in a localized area within the Lower East Side with the participants living relatively close to the nutrition sites. Since the spatial distribution of the Lower East Side was favorable for an efficient service and since these trips occurred

on a daily basis at the same time periods, the productivity for this service could have been higher than the 3.57 trips per hour which was determined during a sampled period. Other nutrition programs operating in suburban and rural areas have exhibited productivities which were greater than EASYRIDE's. These systems were less expensive than EASYRIDE and travelled much greater distances than EASYRIDE. These systems have high productivities because their vehicles (vans) carry full loads of passengers on each of their runs.

4. EASYRIDE's total average productivity of 2.15 trips per vehicle hours was somewhat disappointing. Although the average productivity of trips made in the accessible vehicles was 1.49 trips per hour, the fact that 43% of all trips provided were nutrition trips and the fact that about 70% of all trips had both their origin and destination in the Lower East Side, a higher average productivity was expected. The average productivity of trips made in the ambulatory vehicles was 2.91, but these vehicles carried most of the nutrition trips and most of the agency chartered group trips. EASYRIDE's low system productivity was due to three primary factors: first, the system operated without two-way mobile radios; second, the system had a low average occupancy; and third, the system had a high ratio of dead or idle time and low ratio of passenger service time.

5. The results of the analysis of two sets of detailed driver trip logs suggest that EASYRIDE was underutilized. During the two measurement periods, EASYRIDE had vehicle utilization ratios of 35% and 39%. The vehicle utilization ratio is the ratio of passenger service time to driver payroll hours (excluding lunch time). While low utilization ratios, such as those determined for EASYRIDE, sometimes result from excessive deadhead time, this was not the case with EASYRIDE. The proportion of driver payroll hours spent deadheading was reasonably low compared to the utlization ratio. During the two measurement periods, 17% and 22% of the driver payroll hours were spent deadheading. EASYRIDE's

problem was in the area called dead time (or idle time). This is time when the driver and vehicle sit idle because there are no passengers to transport. A small amount of dead time is normal for specialized transportation systems. However, the dead time ratios measured for EASYRIDE were not small, but rather substantial at 48% and 39%. It is because of this result that it is believed that EASYRIDE was underutilized.

EASYRIDE should set an immediate goal of increasing their utilization ratio to the range of 50% to 55%. This objective will increase deadhead time to some degree but that is an acceptable result. More importantly this objective will help reduce dead time, increase the system productivity, lower the unit cost per trip, and provide more transportation service to the eligible population.

Close examination of the EASYRIDE detailed driver trip logs indicated that there were often blocks of time, some several hours in length, when drivers were idle. Based on the demand density existing in the Lower East Side, it does not seem plausible that all of the travel demand was met. EASYRIDE must allow itself to schedule more service than it has been scheduling in the past.

6. EASYRIDE provided a high proportion of one person trips. Ride sharing was extensive on nutrition runs and agency sponsored group trips, but tapered off considerably for other trip purposes. The dispatching function is not an easy task as it involves scheduling trips so that appointments are met and allowing adequate vehicle time to provide service for the return trip home. However, it is important to review a system's dispatching efficiency periodically to be sure it is functioning in the best possible manner. During the analysis of the detailed driver trip logs, it was determined that slightly more than one-half of the trips made during the sample periods were one person trips.

In order for EASYRIDE to improve its ride sharing capability it is recommended that EASYRIDE review its dispatching strategy. Such a review should include an examination of the advance notice time required for a trip reservation, the potential to spread travel demand from the peak midday period to the morning and afternoon periods, and methods of exerting greater control over the time when the more discretionary types of trips are made. It is possible that modifications to the dispatching strategy will allow EASYRIDE to provide more trips each day then currently provided.

7. EASYRIDE's use of ex-addicts and ex-offenders as system drivers was one of the most successful aspects of the demonstration project. The performance of EASYRIDE's drivers, viewed collectively, was excellent in terms of their reliability, promptness, accident rate and sensitivity to the needs of the passengers. With few exceptions, the turnover rate for EASYRIDE drivers has been very low as most of the current drivers have been with the program for about two years. EASYRIDE has had little problem with driver absenteeism, driver tardiness and the EASYRIDE drivers have not had any major accidents during the first two years of the demonstration project.

The response of the EASYRIDE passengers toward the drivers has also been excellent. The drivers were perceived as courteous and safe. The perception of safety was perhaps one of the more important passenger responses to the EASYRIDE drivers and the EASYRIDE system. One of the most significant travel barriers for elderly residents of the Lower East Side was the fear of being mugged while travelling. EASYRIDE has removed that barrier as it has separated the traveler from the rather hostile, often intimidating surrounding environment. Furthermore, the EASYRIDE passengers found that the EASYRIDE drivers added an additional element of security to their travel. Overall, EASYRIDE was perceived as a very safe mode of travel.

8. EASYRIDE provided a high quality door-thru-door specialized transportation service that was extremely reliable. The evaluation of EASYRIDE indicated that the transportation system almost never missed a trip and that the majority of all passengers were picked-up at their home within five minutes of their scheduled pick-up time.

9. Analysis of the detailed driver trip logs indicated that as the mobility level of EASYRIDE users decreased, as reflected by the type of aid used, their access time and egress time increased. The analysis presented in Chapter 4 illustrated that the dwell time for wheelchair users was greater than the dwell time for persons using a walker or braces/crutches and this dwell time was greater than that for persons using a cane. As the total dwell time (access and egress time) increased, the productivity with which a particular user group could be served decreased. This result suggests that the overall productivity of a specialized transportation system is dependent upon the type or types of persons served. If a system is designed to serve only the severely transportation handicapped, the overall productivity will be far lower than a system designed to serve all elderly and transportation handicapped persons. If a specialized transportation system is designed to serve only the able-bodied then the influence of dwell times will become insignificant and the major factor affecting productivity will be average in vehicle ride time.

Based on the measurements made during the analysis of the detailed driver trip logs, the productivity of trips made in the ambulatory vehicles was roughly twice as great as the productivity of trips made in accessible vehicles. The productivity of service provided to wheelchair users was about one-third as great as the productivity of service provided to persons using the ambulatory vans. The productivity of service provided to persons using a walker or braces/crutches was between one-third and one-half of

the productivity of service provided to persons using the ambulatory van. Finally, the productivity of service provided to persons using a cane was always greater than the productivity of service provided to wheelchair users and persons using a walker or braces/crutches.

10. EASYRIDE was one of the first specialized transportation systems to utilize a rather sophisticated Management Information System (MIS) incorporating electronic data processing. The system was quite comprehensive and required many pieces of information about each trip provided. In order to ensure that the system operated in its intended manner a Vera staff member was assigned to manage the collection of trip data and other operating statistics. This staff person, spending about two-thirds of his time on this project, also edited all data forms prior to their submission to the data processing subcontractor.

The data submitted by EASYRIDE was organized into two reports; a semi-monthly report and a monthly report. The semi-monthly report focused on EASYRIDE operations while the montly report focused on the characteristics of the registrants and provided a listing of the number of trips made by each individual using EASYRIDE during a given month. The individual trip listing divided total trips into the categories of Medicare covered trips and non-covered trips. There was also a listing which separated the number of trips made by individual Medicare eligibles from all other users. The monthly report was used primarily to bill the Health Care Finance Administration for Medicare reimbursements. The semi-monthly report was used primarily to assess operations.

The extensive detail designed into the semi-monthly reports enabled the evaluation contractor to work with a complete set of operations data (i.e., 100% sample for most data items). Since all the information for each trip was contained on a single trip record and since most of the data items were completed at the time of the trip request, the MIS did not create very much extra work

for the reservation clerks. The amount of work required to maintain the MIS appeared to be worth the benfits of obtaining detailed operations reports. The MIS developed by EASYRIDE should be used as a model from which second generation systems could be developed which would employ electronic data processing.

The only part of EASYRIDE's complete MIS which was not produced together with the semi-monthly and monthly operations reports were the operations financial reports. These reports were produced by the accounting department of the Vera Institute of Justice. Unfortunately, these reports were produced several months after the operations reports were produced. Initially, the financial reports were produced monthly and then Vera went to a system of producing quarterly financial reports. It is recommended that monthly financial reports as opposed to quarterly reports be produced and in a timely manner so that they can be used by EASYRIDE management. It is also recommended that some elements of the financial report be incorporated into the semi-monthly operations reports so that unit cost ratios can be determined and presented. These steps would unify EASYRIDE's complete MIS.

12. <u>EASYRIDE was an expensive specialized transportation system and only part of the high cost could be associated with operating in a high cost-of-living city such as New York City.</u> EASYRIDE operated at an average cost per hour of $27.34, an average cost per trip of $12.87, and an average cost per mile of $5.35. High cost items which resulted from operating in New York City were vehicle insurance and a vehicle storage facility. In addition, the overhead charged to EASYRIDE by the Vera Institute of Justice also contributed to the expense of the project.

When EASYRIDE expenses were categorized in three categories; direct hourly costs, mileage related costs, and vehicle and administrative fixed-costs, it was apparent that the fixed costs were higher than expected. The vehicle and administrative fixed-costs accounted for more than one-half of the total

operating expenses. This is an unusually high proportion for what is typicaly a labor intensive service. In the transportation industry, the primary labor category is driver time. During calendar year 1978, the direct hourly costs accounted for 33% of the total expenses, the mileage related costs accounted for 10% of the total expenses, and the vehicle and administrative fixed-costs accounted for 57% of total expenses.

13. The EASYRIDE research team is currently engaged in a comprehensive evaluation of the impacts of EASYRIDE on its users. Because this research effort is not yet completed some of the more interesting results of the demonstration project are not yet available. However, based on the results of the on-board survey and the EASYRIDE user survey, it was evident that persons using EASYRIDE were very satisfied with all aspects of the service.

EASYRIDE provided some of the users with a transit mode so that they could travel for certain trip purposes. These trips, discretionary in nature, would not have been made if EASYRIDE did not exist. In this regard EASYRIDE added a dimension to the range of user travel demand that could be met. On the other hand, many of the on-board survey respondents indicated that they had an alternative travel mode for their trip if EASYRIDE did not exist. Persons responding in this manner made more necessary types of trips such as visits to a private doctor's office or a hospital. Alternative modes mentioned were taxis, ambulette and public transportation.

These results suggest that persons used EASYRIDE because it was their primary mode choice and in some instance, the only mode available. The group recreational trips provided by EASYRIDE probably would not have been made by any other mode. However, it does appear that a group of EASYRIDE users who had travel needs which had to be met (i.e., travel to receive health care) used EASYRIDE because it was more convenient than any other mode in their choice set. The important point is that they apparently had

a choice set. If EASYRIDE did not exist, some of the users would have fulfilled their travel demand for necessary trip purposes. It would have been more expensive and probably more difficult than travelling on EASYRIDE, but in some cases it could have been done.

14. EASYRIDE is a high quality specialized transportation system serving a predominantly transit dependent population. This service has enabled many persons to travel, who otherwise would not have and made it easier for others to travel who otherwise would have difficulty. There is a very definite need for specialized transportaiton service in Manhattan's Lower East Side. However, it is also necessary to provide this service in a cost efficient manner in order for it to be seriously considered as a viable transit alternative. EASYRIDE must continue to improve its operating efficiency and cost effectiveness in order to demonstrate that specialized transportation service is a viable alternative travel mode for persons with special needs.

APPENDIX A

EASYRIDE REGISTRATION FORM

"EASYRIDE REGISTRATION FORM"

Name _____ ___

Address

_____
Street Apt. Zip

Telephone where registrant can be reached:

_____

1 Own phone 3 Relative
2 Neighbor 4 Other(specify)_____ ___

Closest living relative:
Name_____
Address_____
Phone_____

Registrant #: (STAFF USE ONLY) ____

Date of registration (use only last digit of yr.) __ day / __ mo / __ yr

Mode of registration: ___
1 Agency
2 Self/in person
3 Self/phone
4 Other(specify)_____

How did registrant learn about EASYRIDE? ___
1 Agency
2 Friend or relative
3 Publicity
4 Other(specify)_____

Sex: 1 Male ___
2 Female

Year of birth (last three digits): ___

Agency (use codes provided)
Agency contact_____
Phone _____

Medical contact_____
Address_____
Phone_____

Medicare #: __ __ __ __ __ __ __ __ __ __

Medicaid #: __ __ __ __ __ __ __ __ __ __

Please mark if needed:
1 Yes
2 No

wheelchair
walker
artificial limb
braces and/or crutches
cane
guide dog
personal escort

Disabilities:
1 Yes
2 No

high blood pressure
stroke
other paralysis
heart condition
arthritis
other leg problems
blindness
deafness
kidney problem
respiratory disease
emotional
retarded
cognitive impairment
other (specify)
_____

Approximately how many times a month does registrant go out of house by:

bus? __
subway? __
ambulette or other specialized service? __
taxi? __
private car, as driver? __
private car, as passenger? __

Please ascertain how easily registrant can do the following:

(Use codes below)

go outdoors ___
walk up and down stairs ___
get about the house/room ___

Codes:
1 Without difficulty by self
2 With difficulty but by self
3 Only with help of another person
4 Can not do it

Marital status: ___
1 Single
2 Married
3 Divorced or separated
4 Widowed

Who lives with respondent? ___
1 Lives alone
2 Spouse only
3 One other relative or friend
4 More than one relative or friend
5 Employee only
6 Many unrelated persons
7 Other(specify)_____

Is average annual household income above or below level given for number in family?

1 Above 2 Below

one - $3,500	four - $6,875
two - 4,625	five - 8,000
three - 5,750	six - 9,125

Employment status: ___
1 Retired
2 Working/full-time
3 Working/part-time or volunteering

Family background: (choose one) ___
1 Jewish 5 Black
2 Italian 6 Oriental
3 Slavic 7 Other(specify)
4 Hispanic _____

English language ability: ___
1 Fluent
2 Some English
3 Little or no English

I agree to participate in the program of research associated with EASYRIDE. I understand this may involve being interviewed and observed. I also agree to give research staff access to information which I provide to EASYRIDE and to my referring agency. ___

_____
Signature

APPENDIX B

EASYRIDE TRIP LOG

EASYRIDE TRIP LOG

DAY OF THE WEEK	DATE	DRIVER	VEHICLE
_____ (2)	/ / (3-7)	_____ (8,9)	_____ (10,11)

STARTING TIME: _____ BEGINNING MILEAGE: _____

FINISHING TIME: _____ ENDING MILEAGE: _____

Time of Day (12)	Name of Passenger and Address	Wh. Ch. (13)	Walk Up (14)	Es-cort (15)	Destination	Appt. Time	Actual P/U Time	Actual D/O Time	Comments	Late or "No Show" (16)	Who Req. Trip (17)	When Req. Trip (18)	Type Trip (19)	Trip Pur-pose (20)	Pay-ment Mode (21)	P/U Zone (22)	D/O Zone (23)	Trip Number (24-26)	Registrant Number (27-30)

TRIP LOG CODES

(1) "T" (TRIP LOG)

(2) Day of Week - 1 - Mon.
2 - Tues., etc.

(3-7) Date - e.g.: February 4, 1977
02/04/7

(8-9) Driver Number

01=	06=	11=
02=	07=	12=
03=	08=	
04=	09=	
05=	10=	

(10-11) Vehicle Number
(01-10)

(12) Time of Day

1 - Morning before 10:00 a.m.
2 - Mid-day
3 - Late afternoon after 3:30 p.m.
4 - Evening after 6:00 p.m.

(13) Wheelchair - 0 - No
1 - Yes

(14) Walk-up (at pick-up or drop-off)

0 - No
1 - Yes
2 - Elevator to other floor

(15) Escort

0 - No escort
1 - With escort
2 - With other senior citizen

(16) Late or No-Show

0 - No
1 - Passenger late (15 min. after bus arrival)
2 - Passenger no-show (not at appointed nor adjacent pick-up place)
3 - Service late (15 min. after appointed pick-up time)
4 - Service missed trip

(17) Who Requested Trip

1 - Self
2 - Social worker
3 - Relative
4 - Friend
5 - Medical contact
6 - Other

(18) When Trip Requested

1 - More than month in advance
2 - More than week in advance
3 - 5-7 days in advance
4 - 2-4 days in advance
5 - Day before
6 - Same day

(19) Trip Type

1 - Demand/Response trip
2 - Subscription trip
3 - Charter trip

(20) Trip Purpose

1 - Medical - clinic or hospital
2 - Medical - private doctor
3 - Employment
4 - Social service
5 - Recreational
6 - Shopping
7 - Nutrition program
8 - Other

(21) Payment Mode - yet to be decided

(22) Pick-up Zone

1 - Lower East Side
2 - South Ferry to 34th Street (not in LES)
3 - 35th-86th Streets
4 - Rest of Upper Manhattan
5 - Brooklyn
6 - Bronx
7 - Queens
8 - Other

(23) D/O Zone - same as pick-up zone

(24-26) Trip # - 3-digit number in sequence for day (e.g. 001, 002, 00

(27-30) Registrant # - 4-digit unique number (e.g., 0201)

APPENDIX C

SAMPLE OF ESSENTIAL ELEMENTS CONTAINED IN EASYRIDE'S SEMI-MONTHLY AND MONTHLY OPERATIONS REPORTS

SEMI-MONTHLY TRIPS REPORT

	CURRENT PERIOD DATES (11/16-30/78)	PREVIOUS PERIOD DATES (11/01-15/78)	SERVICE-TO-DATE (11/30/78)
ALL PASSENGER VEHICLES			
TOTAL TRIPS DELIVERED	1456	1777	56969
TOTAL VEHICLES IN SERVICE	10	11	11
TOTAL HOURS OF VEHICLES IN SERVICE	571.0	708.0	25320.0
TOTAL MILES TRAVELLED	2732	3325	132390
TOTAL DAYS IN PERIOD	9	11	374
TRIPS/DAY	161.8	161.5	152.3
TRIPS/DAY/VEHICLE	16.1	14.6	13.8
TRIPS/HOUR IN SERVICE	2.55	2.51	2.25
HOURS/TRIP	.39	.40	.44
MILES/TRIP	1.88	1.87	2.32
MILES/DAY	304	302	354
TRIPS WITH VEHICLE NUMBER ERRORS	0	0	3
ALL PASSENGER VEHS. 01-05			
TOTAL TRIPS DELIVERED	846	1059	35931
TOTAL VEHICLES IN SERVICE	5	5	5
TOTAL HOURS OF VEHICLES IN SERVICE	235.0	300.0	11891.0
TOTAL MILES TRAVELLED	1184	1441	60155
TOTAL DAYS IN PERIOD	9	11	374
TRIPS/DAY	94.0	96.3	96.1
TRIPS/DAY/VEHICLE	18.8	19.2	19.2
TRIPS/HOUR IN SERVICE	3.60	3.53	3.02
HOURS/TRIP	.28	.28	.33
MILES/TRIP	1.40	1.36	1.67
MILES/DAY	132	131	161
ALL WH. CH VEHS. 06-10			
TOTAL TRIPS DELIVERED	610	698	20489
TOTAL VEHICLES IN SERVICE	5	5	5
TOTAL HOURS OF VEHICLES IN SERVICE	336.0	400.0	13002.0
TOTAL MILES TRAVELED	1548	1853	70222
TOTAL DAYS IN PERIOD	9	11	373
TRIPS/DAY	67.8	63.5	54.9
TRIPS/DAY/VEHICLE	13.5	12.7	10.9
TRIPS/HOUR IN SERVICE	1.82	1.75	1.58
HOURS/TRIP	.55	.57	.63
MILES/TRIP	2.54	2.65	3.43
MILES/DAY	172	168	188

S E M I - M O N T H L Y T R I P S R E P O R T

		CURRENT PERIOD DATES (11/16-30/78)		PREVIOUS PERIOD DATES (11/01-15/78)		SERVICE-TO-DATE (11/30/78)	
		FREQ.	PCT.	FREQ.	PCT.	FREQ.	PCT.
LATENESS/NO-SHOW	- NO	1252	86	1530	86	50530	89
	PASS. LATE	0	0	0	0	282	0
	PASS. NO-SHOW	157	11	193	11	4308	8
	SVC. LATE	47	3	53	3	1845	3
	SVC. MISS	0	0	1	0	4	0
TRIP TYPE	- D/R	1292	89	1532	86	45424	80
	SUBSCRIPTION	30	2	32	2	3260	6
	CHARTER	134	9	213	12	8285	15
AID	- NO	819	56	1050	59	38163	67
	WHEELCHAIR	134	9	152	9	4882	9
	WALKER	53	4	80	5	970	2
	CANE	393	27	432	24	11255	20
	BRACES/CRUTCHES	57	4	62	3	1675	3
	OTHER	0	0	1	0	24	0
ESCORT	- NO	1270	87	1513	85	49734	87
	YES	184	13	258	15	6935	12
	SR. CIT.	2	0	6	0	300	1
WHEN REQUESTED	- MORE THAN MONTH	787	54	1009	57	25112	44
	MORE THAN WEEK	326	22	357	20	12698	22
	5 - 7 DAYS	102	7	97	5	5388	9
	2 - 4 DAYS	182	13	198	11	5928	10
	DAY BEFORE	25	2	52	3	6297	11
	SAME DAY	33	2	54	3	1445	3
	NO ANSWER	1	0	10	1	101	0
DAY OF WEEK	- MON.	277	19	286	16	10182	18
	TUES.	332	23	281	16	11295	20
	WED.	336	23	577	32	12624	22
	THURS.	364	25	343	19	13409	24
	FRI.	147	10	290	16	9436	17
	SAT.	0	0	0	0	23	0
	SUN.	0	0	0	0	0	0
TIME OF DAY	- MORN.	343	24	321	18	13290	23
	MID DAY	1051	72	1310	74	33467	59
	LATE AFT.	48	3	125	7	3918	7
	EVE.	0	0	0	0	2862	5

S E M I - M O N T H L Y T R I P S R E P O R T

		CURRENT PERIOD DATES (11/16-30/78)		PREVIOUS PERIOD DATES (11/01-15/78)		SERVICE-TO-DATE (11/30/78)	
		FREQ.	PCT.	FREQ.	PCT.	FREQ.	PCT.
	NO ANSWER	14	1	21	1	3432	6
WALK-UP	- NO	1228	84	1419	80	50657	89
	YES	4	0	9	1	502	1
	ELEVATOR	224	15	349	20	5810	10
PICK-UP ZONE	- LES	1207	83	1497	84	45532	80
	LOWER MAN.	170	12	202	11	6586	12
	35 - 86	66	5	65	4	2153	4
	UPPER MAN.	11	1	7	0	538	1
	BKLYN	1	0	0	0	730	1
	BRONX	0	0	0	0	176	0
	QUEENS	0	0	0	0	478	1
	OTHERS	1	0	6	0	776	1
DROP-OFF ZONE	- LES	1192	82	1478	83	43443	76
	LOWER MAN.	166	11	211	12	7748	14
	35 - 86	83	6	74	4	2813	5
	UPPER MAN.	13	1	9	1	707	1
	BKLYN.	1	0	0	0	567	1
	BRONX	0	0	0	0	228	0
	QUEENS	0	0	0	0	863	1
	OTHERS	1	0	5	0	800	1
WHO REQUESTED	- SELF	807	55	939	53	31221	55
	SOCIAL WORKER	457	31	650	37	19198	34
	RELATIVE	119	8	110	6	3868	7
	FRIEND	36	2	27	2	788	1
	MEDICAL	35	2	42	2	1681	3
	OTHER	2	0	9	1	213	0
TRIP PURPOSE	- HOSPITAL	271	19	235	13	9366	16
	PHYSICIAN	179	12	193	11	5283	9
	EMPLOYMENT	51	4	49	3	1843	3
	SOCIAL SERVICE	6	0	6	0	375	1
	RECREATIONAL	18	1	41	2	7450	13
	SHOPPING	4	0	15	1	1903	3
	NUTRITION	602	41	815	46	24765	43
	TRAINING	23	2	24	1	1067	2
	OTHER	167	11	230	13	1715	3
	NON-HOSP CLINIC	36	2	35	2	1106	2
	HOSP/SNF/ICF	0	0	0	0	3	0

S E M I - M O N T H L Y T R I P S R E P O R T

		CURRENT PERIOD DATES (11/16-30/78)		PREVIOUS PERIOD DATES (11/01-15/78)		SERVICE-TO-DATE (11/30/78)	
		FREQ.	PCT.	FREQ.	PCT.	FREQ.	PCT.
TRIP PURPOSE	DAY CARE FACILTY	0	0	0	0	6	0
	PHARMACY	0	0	2	0	12	0
	OTHER PROFESSNAL	24	2	38	2	645	1
	LAB & RADIOLOGY	59	4	65	4	562	1
	- RENAL DIALYSIS	0	0	0	0	110	0
	PHYSICAL THERAPY	10	1	20	1	404	1
	SUPPLIERS	6	0	9	1	304	1
	CARGO LUNCH	0	0	0	0	50	0
PAYMENT MODE	- NONE	83	6	110	6	9295	16
	MEDICARE	1186	81	1416	80	37156	65
	HENRY ST.	2	0	29	2	5055	9
	SUBS.-SELF PAY	26	2	3	0	1890	3
	DEPT MENTAL HYG.	17	1	15	1	873	2
	MEDICAID	0	0	0	0	245	0
	OVR	0	0	0	0	0	0
	GROUP-AGCY PAY	142	10	204	11	1945	3
	GROUP-INDVDL PAY	0	0	0	0	460	1
	CARGO LUNCH	0	0	0	0	50	0

S E M I - M O N T H L Y T R I P S R E P O R T

			CURRENT PERIOD DATES (11/16-30/78)	PREVIOUS PERIOD DATES (11/01-15/78)	SERVICE-TO-DATE (11/30/78)
			FREQ.	FREQ.	FREQ.
DRIVERS	01	- HOURS WORKED	64	88	2837
		DAYS WORKED	8	11	327
		HOURS/DAY	8	8	9
		TRIPS LT OR MISS	0	0	62
	02	- HOURS WORKED	72	80	2605
		DAYS WORKED	9	10	340
		HOURS/DAY	8	8	8
		TRIPS LT OR MISS	6	25	438
	03	- HOURS WORKED	72	80	2561
		DAYS WORKED	9	10	331
		HOURS/DAY	8	8	8
		TRIPS LT OR MISS	10	13	304
	04	- HOURS WORKED	72	88	2586
		DAYS WORKED	9	11	343
		HOURS/DAY	8	8	8
		TRIPS LT OR MISS	11	2	118
	05	- HOURS WORKED	64	80	2534
		DAYS WORKED	8	10	337
		HOURS/DAY	8	8	8
		TRIPS LT OR MISS	0	2	83
	06	- HOURS WORKED	72	84	2752
		DAYS WORKED	9	11	352
		HOURS/DAY	8	8	8
		TRIPS LT OR MISS	5	8	267
	07	- HOURS WORKED	72	88	2523
		DAYS WORKED	9	11	331
		HOURS/DAY	8	8	8
		TRIPS LT OR MISS	3	3	177
	08	- HOURS WORKED	0	0	2628
		DAYS WORKED	0	0	310
		HOURS/DAY	0	0	8
		TRIPS LT OR MISS	0	0	218

S E M I - M O N T H L Y T R I P S R E P O R T

			CURRENT PERIOD DATES (11/16-30/78)	PREVIOUS PERIOD DATES (11/01-15/78)	SERVICE-TO-DATE (11/30/78)
			FREQ.	FREQ.	FREQ.
	09	- HOURS WORKED	0	0	1349
DRIVERS	09	- DAYS WORKED	0	0	137
		HOURS/DAY	0	0	10
		TRIPS LT OR MISS	0	0	35
	10	- HOURS WORKED	0	0	2220
		DAYS WORKED	0	0	296
		HOURS/DAY	0	0	8
		TRIPS LT OR MISS	0	0	113
	11	- HOURS WORKED	5	8	224
		DAYS WORKED	2	1	35
		HOURS/DAY	3	8	6
		TRIPS LT OR MISS	0	0	0
	12	- HOURS WORKED	6	24	195
		DAYS WORKED	2	4	29
		HOURS/DAY	3	6	7
		TRIPS LT OR MISS	0	0	0

EASYRIDE MONTHLY
REGISTRATION STATISTICS
OPERATIONS REPORT

REGISTRATION	CURRENT PERIOD (01-79)		PREVIOUS PERIOD (12-78)		SERVICE TO-DATE	
	FREQ.	PCT.	FREQ.	PCT.	FREQ.	PCT.
1. TOTAL REGISTRANTS	58		53		2693	
2. MODE OF REG. - AGENCY	25	43	19	36	1088	40
SELF/PERSON	5	9	1	2	116	4
SELF/PHONE	8	14	11	21	499	19
OTHER	19	33	19	36	454	17
NO ANSWER	1	2	3	6	536	20
3. SOURCE - AGENCY	27	47	18	34	1334	50
FRIEND/REL.	14	24	21	40	445	17
PUBLICITY	1	2	3	6	142	5
OTHER	14	24	8	15	233	9
NO ANSWER	2	3	3	6	539	20
4. SEX- MALE	23	40	22	42	962	36
FEMALE	34	59	29	55	1679	62
NO ANSWER	1	2	2	4	52	2
5. AGE - UNDER 18	0	0	0	0	12	0
18-40	1	2	3	6	80	3
41-60	2	3	4	8	114	4
61-64	3	5	1	2	124	5
65-74	20	34	19	36	753	28
75+	32	55	22	42	1220	45
NO ANSWER	0	0	4	8	390	14
6. HOUSEHOLD - ALONE	19	33	17	32	904	34
SPOUSE	22	38	22	42	619	23
OTHER REL OR FRIEND	11	19	6	11	250	9
MORE THAN ONE OTHER	1	2	3	6	73	3
EMPLOYEE ONLY	0	0	0	0	6	0
UNRELATED PERSONS	2	3	1	2	36	1
OTHER	1	2	1	2	46	2
NO ANSWER	2	3	3	6	759	28
7. INCOME - ABOVE	18	31	11	21	245	9
BELOW	27	47	25	47	319	12
NO ANSWER	13	22	17	32	2129	79
8. EMPLOYMENT - RETIRED	57	98	49	92	1693	63
WORKING F/T	0	0	0	0	35	1
WORKING P/T	0	0	1	2	20	1
NO ANSWER	1	2	3	6	945	35
9. ETHNIC ORIGIN - JEWISH	39	67	29	55	1189	44

EASYRIDE MONTHLY
REGISTRATION STATISTICS
OPERATIONS REPORT

REGISTRATION	CURRENT PERIOD (01-79)		PREVIOUS PERIOD (12-78)		SERVICE TO-DATE	
	FREQ.	PCT.	FREQ.	PCT.	FREQ.	PCT.
ITALIAN	2	3	5	9	122	5
SLAVIC	0	0	0	0	36	1
HISPANIC	7	12	5	9	252	9
BLACK	3	5	4	8	94	3
ORIENTAL	2	3	0	0	33	1
OTHER	4	7	6	11	152	6
NO ANSWER	1	2	4	8	815	30
10. ENGLISH - FLUENT	48	83	43	81	1482	55
SOME	4	7	2	4	179	7
NONE	5	9	4	8	209	8
NO ANSWER	1	2	4	8	823	31
11. AIDS - WHEEL CHAIR - YES	9	16	8	15	310	12
WALKER - YES	5	9	10	19	144	5
LIMB - YES	0	0	1	2	37	1
BRACES - YES	4	7	0	0	88	3
CANE - YES	22	38	13	25	562	21
GUIDE DOG - YES	1	2	0	0	12	0
PERS. ESC. - YES	27	47	22	42	708	26
12. DISABILITIES - HYPERTENSION - YES	16	28	16	30	628	23
STROKE - YES	2	3	4	8	151	6
OTHER PARALYSIS - YES	3	5	6	11	120	4
HEART - YES	16	28	14	26	693	26
ARTHRITIS - YES	33	57	26	49	805	30
OTHER LEG - YES	17	29	19	36	586	22
BLIND - YES	5	9	3	6	183	7
DEAF - YES	5	9	2	4	124	5
KIDNEY - YES	5	9	4	8	111	4
RESPIRATORY - YES	5	9	4	8	207	8
EMOTIONAL - YES	7	12	5	9	118	4
RETARDED - YES	1	2	0	0	26	1
COGNITIVE - YES	1	2	1	2	47	2
OTHER - YES	14	24	9	17	533	20
13. GO OUTDOORS - W/O DIFFICULTY	24	41	18	34	609	23
WITH DIFFICULTY	13	22	19	36	583	22
WITH HELP	14	24	10	19	484	18
CAN NOT	1	2	0	0	39	1
NO ANSWER	6	10	6	11	978	36
14. WALK STAIRS - W/O DIFFICULTY	17	29	17	32	396	15
WITH DIFFICULTY	19	33	13	25	556	21
WITH HELP	9	16	12	23	293	11
CAN NOT	5	9	4	8	376	14

EASYRIDE MONTHLY
REGISTRATION STATISTICS
OPERATIONS REPORT

REGISTRATION	CURRENT PERIOD (01-79)		PREVIOUS PERIOD (12-78)		SERVICE TO-DATE	
	FREQ.	PCT.	FREQ.	PCT.	FREQ.	PCT.
COUNCIL WORKSHOP	0	0	0	0	7	0
DUNLAP OUTPATIENT CLINIC	0	0	0	0	4	0
NATL MULTIPLE SCLEROSIS SOC-NY	0	0	0	0	1	0
NEW YORK HOSPITAL (CORNELL)	0	0	0	0	3	0
WOMENS AMERICAN ORT	0	0	0	0	2	0
CATHOLIC WORKER	0	0	0	0	1	0
UNITED CEREBRAL PALSY	0	0	0	0	3	0
TANYA TOWERS	0	0	0	0	8	0
SELF HELP	1	2	0	0	8	0
CARING COMMUNITY SENIOR CTR.	0	0	0	0	1	0
MANHATTAN KIDNEY CENTER	0	0	0	0	2	0
DEPT. OF MENTAL HYGIENE	0	0	0	0	8	0
ACTION FOR PROGRESS	0	0	0	0	1	0
HOME OF THE SAGES	1	2	2	4	34	1
HUDSON GUILD	0	0	0	0	1	0
N. Y. CHINESE COALITION	0	0	0	0	2	0
GRAND ST. MEDICAL CENTER	0	0	0	0	1	0
N.Y. SOCIETY FOR THE DEAF	0	0	0	0	16	1
PUBLIC HEALTH SERVICE	0	0	0	0	1	0
HOSPITAL FOR SPECIAL SURGERY	0	0	0	0	2	0
SLOAN KETTERING INSTITUTE	0	0	0	0	1	0
60	1	2	0	0	2	0
61	0	0	0	0	1	0
GEN. SERV. OF LOW. MANHATTAN	0	0	0	0	18	1
OUTWARD BOUND	0	0	8	15	9	0
OFFICE OF THE AGING	1	2	0	0	4	0
90	0	0	0	0	1	0
NO AGENCY	46	79	33	62	1278	47

EASYRIDE MONTHLY
REGISTRATION STATISTICS
OPERATIONS REPORT

REGISTRATION		CURRENT PERIOD (01-79)		PREVIOUS PERIOD (12-78)		SERVICE TO-DATE	
		FREQ.	PCT.	FREQ.	PCT.	FREQ.	PCT.
	NO ANSWER	8	14	7	13	1072	40
15. ABOUT HOUSE -	W/O DIFFICULTY	25	43	20	38	738	27
	WITH DIFFICULTY	20	34	23	43	635	24
	WITH HELP	4	7	4	8	233	9
	CAN NOT	0	0	0	0	31	1
	NO ANSWER	9	16	6	11	1056	39
16. AGENCY -	BEEKMAN HOSPITAL	0	0	0	0	5	0
	BELLEVUE HOSPITAL	1	2	0	0	34	1
	BETH ISRAEL HOSPITAL	0	0	0	0	50	2
	BIALYSTOKER HOME	1	2	0	0	29	1
	CABRINI HOSPITAL	0	0	0	0	3	0
	CHINATOWN PLANNING COUNCIL	0	0	0	0	1	0
	COLUMBUS HOSPITAL	0	0	0	0	9	0
	EDUCATIONAL ALLIANCE	0	0	0	0	190	7
	EYE AND EAR INFIRMARY	0	0	0	0	0	0
	FRIENDSHIP CENTER	0	0	2	4	32	1
	GOUVENEUR HOSPITAL	0	0	0	0	42	2
	GRAND STREET SETTLEMENT	0	0	0	0	51	2
	HAMILTON-MADISON HOUSES	0	0	0	0	6	0
	HENRY STREET SETTLEMENT	3	5	2	4	204	8
	JASA (JEWISH ASSOC. SERV AGED)	0	0	0	0	7	0
	LAGUARDIA SENIOR CENTER	0	0	0	0	35	1
	LILLIAN WALD HOUSES	0	0	0	0	3	0
	MFY LEGAL SERVICES	0	0	0	0	2	0
	NEW YORK INFIRMARY	0	0	0	0	1	0
	OCIM (OFC. CASE INTAKE & MGT)	0	0	0	0	11	0
	SIROVITCH CENTER	0	0	0	0	4	0
	ST. BRIDGET'S CHURCH	0	0	0	0	0	0
	SOUTHBRIDGE SENIOR CENTER	0	0	0	0	6	0
	UNITED JEWISH COUNCIL	0	0	4	8	131	5
	UNIVERSITY SETTLEMENT HOUSE	0	0	2	4	136	5
	LIGHTHOUSE	0	0	0	0	1	0
	ALESS HOMECARE	0	0	0	0	41	2
	MANHATTAN DEVELOPMENT CENTER	0	0	0	0	3	0
	COMMUNITY ACCESS	0	0	0	0	1	0
	EMMANUEL MIDTOWN YM-YWHA	0	0	0	0	3	0
	GRAND COALITION OF SENIORS	0	0	0	0	34	1
	ST. VINCENT'S HOSPITAL	0	0	0	0	2	0
	MELTZER	1	2	0	0	32	1
	VNS (VISITING NURSE'S SERVICE)	2	3	0	0	23	1
	ADULT CONSUMER HOMEMAKING ED	0	0	0	0	1	0
	BOWERY RESIDENCE COMMITTEE	0	0	0	0	130	5
	HARRIET PROGRAM	0	0	0	0	2	0
	FEDERATION OF JOINT SERV.	0	0	0	0	2	0

EASYRIDE

MONTHLY SERVICE REPORT

MONTH OF 01-79

REGISTRANTS NO.	MEDICARE NO.	COVERED TRIPS (WAIVER)	NONCOVERED TRIPS (NON-WAIVER)
0012		4	0
0017	055051820A	37	0
0020		2	0
0023	053097529A	2	0
0031	089073568A	37	0
0034	082030515A	4	0
0039	099308954D	7	0
0041	062052477A	2	0
0045	124188306D	9	0
0046	125186839A	2	0
0049	085309333A	27	0
0054	060107432D	2	0
0059	0911020260	44	0
0067	1101060140	3	0
0074		2	0
0080	133169119A	3	0
0088		2	0
0096	091169264A	3	0
0108	125095368D	41	0
0111	123070961A	19	0
0114	063055595A	5	0
0116	050148887A	22	0
0119		1	0
0129	080207778M	22	1
0137	060286093A	4	0
0158	058248918A	7	0
0141	050100885A	3	0
0142	058079715D	10	2
0145	067033792A	6	0
0146	051053606D	1	0
0153	121074037A	0	1
0159	098079307A	2	0
0162	107183383A	0	2
0163	084542319M	27	0
0168		0	4
0171	069496739M	1	0
0178		0	2
0182	106481138M	2	0
0185	131204696M	40	0
0188	083187682A	4	0
0197		1	0
0199	580425609T	1	0
0201		4	0
0209	085242161D	2	0
0212	130035776A	2	0
0215	092058790D	12	0
0216	119224885A	1	0

EASYRIDE

MONTHLY SERVICE SUMMARY REPORT

MONTH OF 01-79

CODE	TRIP PURPOSE (DESTINATION)	NUMBER OF TRIPS PROVIDED DURING THE MONTH: MEDICARE PASSENGERS	NON-MEDICARE PASSENGERS	TOTALS
01	HOSPITAL (OUTPATIENT)	501	103	604
02	PHYSICIAN	356	36	392
07	NUTRITION	1,354	484	1,838
10	NON-HOSPITAL CLINIC	101	25	126
11	HOSPITAL/SNF/ICF INPATIENT	0	0	0
12	DAY CARE FACILITY	0	0	0
13	PHARMACY	0	0	0
14	OTHER PROFESSIONALS	20	3	23
15	LAB AND RADIOLOGICAL CLINICS	148	20	168
16	RENAL DIALYSIS	0	0	0
17	PHYSICAL THERAPY	29	0	29
60	SUPPLIERS	8	0	8
NON-COVERED		202	536	738
TOTAL TRIPS FOR MONTH		2,719	1,207	3,926

APPENDIX D

EASYRIDE ON-BOARD SURVEY

EASYRIDE ON-BOARD SURVEY

ARI LTD.
Summer 1977
TSC - 529

Day: _____ [1]
Date: _____ [2] [3] [4] [5]
Time: _____ [6] [7] [8] [9]
[10] [11] [12] [13]

Respondant's name _____

PART I TO BE COMPLETED BY INTERVIEWER FROM REGISTRATION FILE AND TRIP LOG SHEET

1. Sex: (1)M (2)F [14]

2. Use of Aid:

(1) Yes
(2) No

- Wheelchair [16]
- Walker [16]
- Artificial Limb [17]
- Braces and/or Crutches [18]
- Cane [19]
- Guide Dog [20]
- Personal Escort [21]

3. Disabilities

(1) Yes
(2) No

- High Blood Pressure [22]
- Stroke [23]
- Other Paralysis [24]
- Heart Condition [25]
- Arthritis [26]
- Emotional [27]
- Retarded [28]
- Other Leg Problem [29]
- Blindness [30]
- Deafness [31]
- Kidney Problem [32]
- Respiratory Disease [33]
- Cognitive Impairment [34]
- Other _____ [36]

4. How did registrant learn about EASYRIDE? [36]

(1) Agency
(2) Friend or relative
(3) Publicity
(4) Other _____

5. Age [37][38]

6. What is the purpose of this trip? [39]

(1) Work
(2) Church/Synagogue
(3) Shopping
(4) Medical or Dental
(5) Personal Business
(6) Visiting
(7) Social or Recreational
(8) Nutrition
(9) Home (if home, note from where from _____
(10) Other

7. Where is the actual destination? _____ [40][41]
(Address or approximate location or D/O Zone)

8. Who requested this trip? [42]
(1) Arranged for self (2) Arranged by Agency

If arranged by an agency, which one?

_____

9. How many people reside in household including registrant? [43]
(1) 1 (2) 2 (3) 3 (4) 4 or more

10. Employment status: [44]
(1) Retired
(2) Working Full-time
(3) Working part-time or volunteering

11. Family background: [45]
(1) Jewish
(2) Italian
(3) Slavic
(4) Hispanic
(5) Black
(6) Oriental
(7) Other _____

12. What is the household's gross income [46]
(1) $0 - $3,500 (2) $3,501 - $4,625 (3) $4,626 - $5,750
(4) $5,751 - $6,875 (5) $6,878 - $8,000 (6) $8,001 - $9,125
(7) $9,126 or over (8) No response, refusal

PART II TO BE COMPLETED ON-BOARD

Good morning, afternoon, or evening, my name is _____.
I am conducting a survey for EASYRIDE to determine how well this service is meeting your transportation needs and ways in which the service might be improved.

INTERVIEWER: ASK IF RESPONDENT HAS PREVIOUSLY BEEN INTERVIEWED. IF SO, THANK INTERVIEWEE AND CONCLUDE INTERVIEW.

INTERVIEWER: DON'T ASK, BUT CHECK THE FOLLOWING:

Respondent Used Lift: (1) Yes (2) No ☐ 47

13. Is this your first trip on EASYRIDE? ☐ 48

(1) Yes (2) No

IF ANSWER TO 13 IS NO, CONTINUE WITH QUESTION 14: OTHERWISE, GO TO QUESTION 16

NO

14. When did you make your first trip on EASYRIDE?

_____Month _____Year ☐☐ 49 50 ☐☐ 51 52

15. On the average, how often do you travel by this service? ☐ 53

(1) Daily (2) Every few days (3) Once a week

(4) Once or twice a month (5) Rarely

YES

16. If this service did not exist, how would you have taken this trip? ☐ 54

(1) Ambulette
(2) Car rider by family
(3) Car rider by friends
(4) Taxi
(5) Public Bus/Public Subway
(6) Walk
(7) Other (specify)_____
(8) Would not have taken trip

17. Could you have made this trip on the regular public buses if they had been equipped with wheelchair lifts? (1) Yes (2) No ☐ 55

If No, why not? ☐ 56

(1) Cannot get to a bus stop
(2) Bus doesn't go where I want to go
(3) There is no bus near where I live
(4) Cannot ride a bus alone
(5) Feel unsafe on a bus
(6) Cannot afford a bus
(7) Cannot wait for a bus at bus stop
(8) Cannot use a bus in bad weather
(9) Other _____

18. How long can you ride in an EASYRIDE vehicle comfortably? ☐ 57

(1) less than 15 min.
(2) 15 to 30 min.
(3) 30 to 45 min.
(4) 45 to 60 min.
(5) over 1 hour

SEMANTIC DIFFERENTIAL INSTRUCTIONS

Now, I want to get a more detailed picture of how you feel about this transportation service. I will ask you to respond to a series of questions. For each question, your response will be based on how satisfied or dissatisfied you are with various aspects of EASYRIDE service.

O.K. let's take the first question. How satisfied are you with the vehicle comfort? Are you "satisfied", "dissatisfied" or "in-between?"

(RESPONDENT PICKS "SATISFIED")

O.K. are you "slightly satisfied", "somewhat more satisfied" or "very satisfied?"

(CHECK RESPONSE AND CONTINUE DOWN THE PAGE IN THE SAME MANNER.)

27. What do you think are the best features of this service?
(RECORD ANSWER VERBATIM)

_____

_____

_____

28. Do you have any suggestions for improving this service?
(RECORD ANSWER VERBATIM)

_____

_____

_____

INTERVIEWER: CONCLUDE INTERVIEW BY THANKING RESPONDENT FOR HIS/HER ASSISTANCE.

			Very 1	Somewhat More 2	Slightly 3	In-Between 4	Slightly 5	Somewhat More 6	Very 7		
19.	How satisfied are you with the vehicle comfort?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 58
20.	How satisfied are you with the convenience of this service?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 59
21.	How satisfied are you with the courtesy of the drivers?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 60
22.	How satisfied are you with the safety of this service?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 61
23.	How satisfied are you with the reliability of this service?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 62
24.	How satisfied are you with the amount of time you must generally spend waiting for a ride?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 63
25.	How satisfied are you with your ability to get into and out of the vehicle?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 64
26.	How satisfied are you with this service when you must share rides with other people?	SATISFIED	___	___	___	___	___	___	___	DISSATISFIED	☐ 65

APPENDIX E

EASYRIDE USER SURVEY

USER SURVEY

Registration Number ☐☐☐☐ Respondent's Telephone # _____

(also fill out Registration number on page one and on back of interview)

CONTACT HISTORY

Date	Disposition	Initiator of Contact	Comments

I = Interviewed

N.H = Not Home

R = Refused

Lang. = Language Problem (write which Lang. they speak in comments)

D = Deceased

M = Moved

H = Hospitalized, or too sick to interview

V = On vacation

E = Deaf or partially deal

T = Telephone # incorrect

_____ Date.

_____ Interviewer's Signature.

Hello, my name is _____ and I work for the Vera Institute which set up EASYRIDE. We are doing a survey of users of EASYRIDE and we would like to ask you a few questions. Did you get our letter explaining what our survey is about? We need to know what people use EASYRIDE for and how they feel about it, so that we can improve EASYRIDE service and hopefully make it available to people in New York City who need it but still don't have it.

0	8		0	1				
1	2		3	4		5	6	7	8

Study Deck EASYRIDE Registration

(1) How often do you use EASYRIDE? (For instance, how often do you make a trip on one of the EASYRIDE buses?)

Daily.....9- 1

More than one time per week..... 2

1 time a week..... 3

1 - 3 times a month..... 4

1 time every 2 or 3 months..... 5

Less often..... 6

No answer..... 9

Questions (2) thru (6) refer to chart.

(2) Have you used EASYRIDE to take you to the Doctor or to a Clinic?, To do your Shopping?, To work?, To Nutrition Programs?, To visit Family or Friends?, To Church or Synagogue?, To Senior Centers?

(3) Do you now go to any of these places more often than you did before EASYRIDE was available to take you there? _____

(4) How did you get to these places before you used EASYRIDE?

(5) Suppose EASYRIDE were available in the evenings, would you use it at that time of day?

Yes.....10- 1

No..... 2

NA..... 9

If yes, where would you go? (Refer to destination on chart).

(6) If EASYRIDE were available on weekends, would you use it then? Yes.....11- 1

No..... 2

NA..... 9

If yes, where would you go?

	Q.2 Have used it			Q.3 More frequently			Q.4 (Circle mode used most often)								Q.5	Q.6
	YES	NO	NA	YES	NO	NA	Walk	Bus	Sub	Car	Taxi	Aide	Did not Go.	NA	Evenings	Weekends
Dr., Clinic, Hosp.	12- 1	2	9	21- 1	2	9	20- 1	2	3	4	5	6	8	9	39- 1	48- 1
Shopping	13- 1	2	9	22- 1	2	9	31- 1	2	3	4	5	6	8	9	40- 1	49- 1
To Work	14- 1	2	0	23- 1	2	2	32- 1	2	3	4	5	6	8	9	41- 1	50- 1
Nutrition Program	15- 1	2	9	24- 1	2	2	33- 1	2	3	4	5	6	8	9	42- 1	51- 1
To Senior Center for Social Activities	16- 1	2	9	25- 1	2	2	34- 1	2	3	4	5	6	8	9	43- 1	52- 1
Visit Friends or Family	17- 1	2	9	26- 1	2	2	35- 1	2	3	4	5	6	8	9	44- 1	53- 1
Go to Church or Synagogue	18- 1	2	9	27- 1	2	2	36- 1	2	3	4	5	6	8	9	45- 1	54- 1
Other (specify)	19- 1	2	9	28- 1	2	9	37- 1	2	3	4	5	6	8	9	46- 1	55- 1
Other (specify)	20- 1	2	9	29- 1	2	9	38- 1	2	3	4	5	6	8	9	47- 1	56- 1

(7) Do you (generally) use a wheelchair, crutches, walker or cane to get around?

57 -	Wheelchair	Walker	Crutches	Cane or Umbrella	Other	No
	1	2	3	4	5	9

(8) With how much difficulty can you walk up and down stairs? (if R claims to never use stairs, ask about steps such as in the post office, or steps onto a public bus)

58-	Without difficulty	Some Difficulty	Need assistance to do it.	No assistance available can never use stairs
	1	2	3	4

(9) Do you use EASYRIDE as often as you like to

Yes.....59- 1

No..... 2

9

If no, why not? What would make it easier for you to use EASYRIDE more often? What makes it hard for you to use EASYRIDE?

(Interviewer: As the respondent to be specific and record answers in the words they give you).

Respondent's answer:_____

_____

_____

_____

(10a) When you go out, do you have any difficulty getting from your apartment to the street?

Yes.....60- 1

No..... 2

NA..... 3

(10b) If yes, what makes it difficult?

Physical disability.....61- 1
trouble walking.

Stairs..... 2

Elevator trouble..... 3

Afraid of crime..... 4

Afraid of falling or accident..... 5

Other..... 6

NA..... 9

(10c) If yes, is there anyone who helps you get downstairs?

Yes, often.....62- 1

Yes, sometimes..... 2

No help available..... 3

Help would make no difference..... 4

NA..... 9

(11) If EASYRIDE charged 25 cents for each one-way trip, would you use it less often? (That is, would you make fewer trips?)

Use less often, fewer trips.....63- 1

It would make no difference..... 2

I would use it only in emergencies or for special occasions..... 3

NA..... 9

(12a) This year, did you use the subway?

Yes.....64- 1

Rarely..... 2

No..... 3

City bus?

Yes.....65- 1

Rarely..... 2

No..... 3

(12b) Is EASYRIDE better for you than the city buses?

Yes.....66- 1

Yes & No..... 2

No..... 3

If YES or YES and NO ask:

What makes it better?

Physically able to use it.....67- 1

Comes to my door..... 2

Safer, don't worry about accident or falling..... 3

Safer, don't have to worry about being mugged..... 4

Other (specify)_____

NA..... 9

(13) If EASYRIDE stopped running, would that make much of a difference to your life? What difference:

Yes.....68- 1

No..... 2

NA..... 9

_____

_____

_____

(14) Is there anything else you want to tell us about EASYRIDE?

_____

_____

_____

Thank you very much for your time. We think EASYRIDE is going to keep running for a long time. We hope you continue using it and that it will get you to the places that you want to to.

Thank you very much.

APPENDIX F

SUMMARY OF ACTUAL EASYRIDE QUARTERLY EXPENSES

Easyride Expense Categories	Total
Salary	$43,572
Fringe	7,897
Vehicle Expense	21,504
Other Expenses	10,515
Overhead	23,455
Total	$106,943

TABLE F-1 EASYRIDE EXPENSES JULY-SPETEMBER, 1977

Easyride Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$ 26,290		
Reservation Clerks			$ 7,203
All Other Staff			14,458
Fringe Benefits	5,258		2,569
Equipment			2,811
Occupancy			
Maintenance			
Office			900
Garage			2,977
Utilities			
Vehicle Expenses			
Maintenance		$ 8,426	
Fuel		4,087	
Insurance			19,312
Leasing			902
Other		773	
Office Expenses			
Telephone			2,155
Xerox & Printing			1,342
Sundry			1,597
Office Supplies			530
Other			
Recruiting			
Travel			130
Reports & Publications			0
Total Direct Costs	$ 31,548	$ 13,286	$ 56,886
Overhead Charged	7,383	3,110	13,313
Total	$ 38,931	$ 16,396	$ 70,199
Grand Total			$125,526

TABLE F-2 EASYRIDE EXPENSES OCTOBER-DECEMBER, 1977

Easyride Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$ 23,202		
Reservation Clerks			$ 6,946
Scheduler			2,888
Secretary			2,906
Program Manager			5,442
Operations Manager			3,667
Planners			1,500
Fringe Benefits	4,640		4,876
Equipment			523
Occupancy			
Maintenance			1,583
Office			900
Garage			2,334
Utilities			1,383
Vehicle Expenses			
Maintenance		$ 7,012	
Fuel		2,356	
Insurance			18,348
Other		(297)	
Office Expenses			
Telephone			1,643
Xerox & Printing			599
Sundry			634
Office Supplies			418
Other			
Recruiting			0
Travel			110
Reports & Publications			0
Total Direct Costs	$ 27,842	$ 9,071	$ 56,700
Overhead Charged	5,776	1,925	11,553
Total	$ 33,618	$ 10,996	$ 58,253
Grand Total			$112,867

TABLE F-3 EASYRIDE EXPENSES JANUARY-MARCH, 1978

Easyride Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$ 26,359		
Reservation Clerks			$ 7,057
Scheduler			2,972
Secretary			3,501
Program Manager			5,751
Operations Manager			7,002
Planners			4,252
Fringe Benefits	5,530		6,509
Equipment			
Occupancy			
Maintenance			440
Office			900
Garage			2,334
Utilities			978
Vehicle Expenses			
Maintenance		$ 4,181	
Fuel		2,291	
Insurance			5,887
Other		0	
Office Expenses			
Telephone			1,438
Xerox & Printing			584
Sundry			819
Office Supplies			377
Other			
Recruiting			0
Travel			85
Reports & Publications			0
Total Direct Costs	$ 31,889	$ 6,472	$ 49,901
Overhead Charged	7,242	1,408	11,466
Total	$ 39,131	$ 7,880	$ 61,367
Grand Total			$108,378

TABLE F-4 EASYRIDE EXPENSES APRIL-JUNE, 1978

Easyride Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$ 25,305		
Reservation Clerks			$ 7,923
Scheduler			3,125
Secretary			2,500
Program Manager			5,751
Operations Manager			5,500
Planners			4,589
Fringe Benefits	4,808		5,334
Equipment			(264)
Occupancy			
Maintenance			4,722
Office			848
Garage			1,300
Utilities			2,334
Vehicle Expenses			
Maintenance		$ 9,034	
Fuel		800	
Insurance			7,688
Other		41	
Office Expenses			
Telephone			1,112
Xerox & Printing			1,142
Sundry			548
Office Supplies			622
Other			
Recruiting			0
Travel			864
Reports & Publications			4
Total Direct Costs	$ 30,113	$ 9,875	$ 55,642
Overhead Charged	7,350	237	16,123
Total	$ 37,463	$ 10,112	$ 71,765
Grand Total			$119,340

TABLE F-5 EASYRIDE EXPENSES JULY-SEPTEMBER, 1978

Easyride Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$ 23,366		
Reservation Clerks			$ 7,637
Scheduler			3,125
Secretary			3,041
Program Manager			6,249
Operations Manager			432
Planners			237
Fringe Benefits	4,440		4,130
Equipment			991
Occupancy			
Maintenance			1,773
Office			291
Garage			1,500
Utilities			2,354
Vehicle Expenses			
Maintenance		$ 6,970	
Fuel		2,022	
Insurance			3,957
Other		603	
Office Expenses			
Telephone			2,113
Xerox & Printing			1,252
Sundry			344
Office Supplies			839
Other			
Recruiting			0
Travel			281
Reports & Publications			0
Total Direct Costs	$ 27,806	$ 9,595	$ 40,546
Overhead Charged	7,840	1,151	12,786
Total	$ 35,646	$ 10,746	$ 53,332
Grand Total			$ 99,724

TABLE F-6 EASYRIDE EXPENSES OCTOBER-DECEMBER, 1978

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Easyride Expense Categories	Direct Hourly Costs	Mileage Related Costs	Vehicle and Administrative Fixed Costs
Personnel			
Drivers	$ 23,671		
Reservation Clerks			$ 7,232
Scheduler			3,750
Secretary			3,750
Program Manager			6,250
Operations Manager			3,750
Planners			2,666
Fringe Benefits	5,918		6,781
Equipment			209
Consultants			2,106
Occupancy			
Maintenance			634
Office			1,600
Garage			2,334
Utilities			328
Vehicle Expenses			
Maintenance		$ 6,090	
Fuel		4,148	
Insurance			26,796
Other		115	
Office Expenses			
Telephone			3,140
Xerox & Printing			815
Sundry			642
Office Supplies			954
Other			
Recruiting			
Travel			660
Reports & Publications			
Total Direct Costs	$ 29,589	$ 10,353	$ 74,397
Overhead Charged	8,622	2,984	21,554
Total	$ 38,211	$ 13,337	$ 95,951
Grand Total			$147,499

TABLE F-7 EASYRIDE EXPENSES JANUARY-MARCH, 1979