

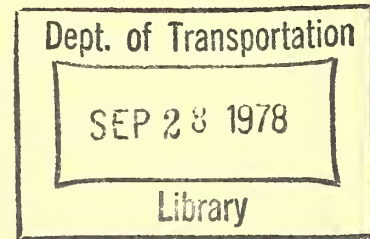
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UMTA/TSC Project Evaluation Series

Community Brokerage of Transportation Services for the Elderly in Mountain View, California

Final Report
February 1978



Service and Methods Demonstration Program



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

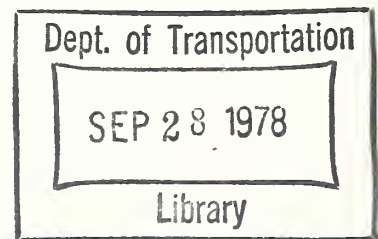
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16. Abstract <p>This document reports on a unique way of providing transportation and transportation-related services (e.g., information and scheduling) to elderly and handicapped individuals in a small geographic area. In the Mountain View Community Broker project, a community broker furnished his clients with individualized primary service information and scheduling assistance. He also drove these clients to their destinations in a 12-passenger van. The project was intended to demonstrate the economic and operational feasibility of combining these functions in one role. The report describes the community broker concept and project operations; assesses the economic feasibility of the idea; discusses the project's impact on the target group; and provides some commentary on ways a community-broker type of project could be integrated into the existing network of social services for the handicapped and elderly.</p>				14. Sponsoring Agency Code	
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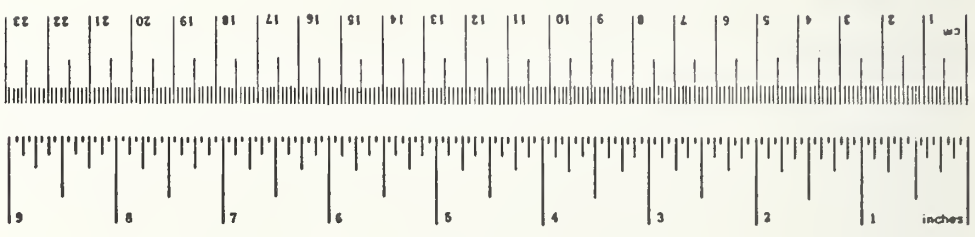


PREFACE

The Mountain View Community Broker experiment has been funded by the U.S. DOT, UMTA Service and Methods Demonstration (SMD) Program. As part of the demonstration program, Crain & Associates, under contract to U.S. DOT, Transportation Systems Center, has prepared the following Final Evaluation Report on the demonstration.

The report is based on analysis of information gained from several people closely associated with the project. In particular, I wish to thank: Peter Corning, Michael Higgins, Raphael Rivera, Tom Linvill and Marjorie Sutton of the CSC staff for their insights into project operations and for their data collection efforts; Mr. S.H. Sanger, owner of Cabs Unlimited, and Mr. Jim Pastorelli, manager of G.I.-United Cabs, for their observations from the taxi operator perspective; Wayne Larocque, a graduate anthropology student at Stanford University, for his sensitive insights into the human impact aspect of the community broker project; Rebecca Ruggles, a graduate M.B.A. student at Stanford, for help with data analyses and evaluation techniques; Bruce Miller for his painstaking data gathering and analysis; and Pam Bloomfield for her writing and editing assistance. Peter FitzGerald provided helpful advice in suggesting evaluation approaches and in interpreting the data. Finally, John Crain was particularly helpful in providing encouragement and helpful suggestions in the report preparation stages.

METRIC CONVERSION FACTORS

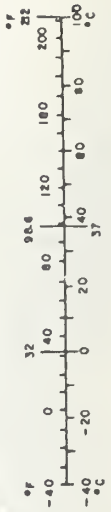


Approximate Conversions to Metric Measures

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

Approximate Conversions from Metric Measures

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



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1. EXECUTIVE SUMMARY

The Mountain View Community Broker demonstration tested an innovative way of providing transportation and transportation-related services to a small group of elderly clients. In this project a community broker furnished his clients with individualized information and scheduling assistance. These activities are referred to as brokerage of transportation services. He also transported these clients to their destinations in a twelve passenger van. Early in the demonstration the community broker (also called driver/broker) attempted, without success, to broker shared taxi rides for groups of five or less. The community broker's activities were intended to facilitate his clients' access to social services.

The community broker demonstration in Mountain View is a limited form of a broader concept, the Integrated Human Services Delivery concept. In this larger concept, brokerage of transportation services would be combined with various other primary and support services to produce an integrated package of social services for eligible clients. The Mountain View experiment was a first step toward this broader concept.

The key issues in the demonstration concerned the community broker model's workability, economic feasibility and acceptability to the client group. It was hoped that the project would show that a driver/broker could aggregate demand and raise vehicle productivity to the point where the service could operate on a self-sustaining basis and still charge low fares.

The following conclusions can be drawn from the Mountain View experiment.

1. The driver/broker was able to aggregate demand (i.e., plan and schedule group trips in the van) for his clients

in an acceptable manner. The most popular trips were for shopping (34% of all passenger-trips delivered), a nutrition program trip (23%) and commercial meals (11%).

2. The project provided a significant portion of the users' total transportation. Between one-fourth and one-third of the people making a given type of trip (with the exception of medical trips) relied exclusively on van service.
3. The project had a dramatic impact on the social and emotional aspects of users' lives. The group riding in the van afforded the clients a high degree of social interaction; many of the trips were for social and recreational purposes.
4. Total ridership never reached expected levels. Reasons for this include: problems in attracting clients--there were only 112 users at the end of the project; target market access to other modes, particularly the automobile; mid-project expansion plans being thwarted by the local taxi operator.
5. Estimated operating costs for the project were high: \$29,285 for 8776 passenger trips delivered during the year. Cost per trip was \$3.34. In contrast, revenues totaled only \$3,432, about 12 percent of operating cost. Subsidy cost per passenger trip was \$2.95.
6. To generate demand the driver/broker in a similar setting would have to spend approximately 40 percent of his time on brokering and administration. The remaining 60 percent of his time, which could be spent driving, would produce about 840 hours of revenue time according to the Mountain View experience. At \$10/revenue hour the driver/broker could generate only \$8,400, far less than the estimated operating cost of \$29,285.

7. Brokering of shared taxi rides proved unworkable because (1) relatively high trip costs made the service unattractive; (2) organizing a group ride was time consuming and therefore not economically feasible; and (3) clients did not like sharing rides when the broker was not available to act as a buffer.
8. This demonstration has not proved that the community broker concept is economically infeasible. It is possible that the revenue generating capability of the concept could be enhanced if: (a) the fully integrated services approach were adopted, and/or (b) if the community broker were affiliated with an existing social service agency. Also, (c) it is possible that implementation attempts in other sites would not experience the institutional conflicts the Mountain View experiment faced.

2. INTRODUCTION

2.1 PURPOSE OF THE DEMONSTRATION

The Mountain View Community Broker demonstration project tested an innovative way of providing transportation and transportation-related services (i.e., trip information and scheduling) to a small target market of elderly and low-income people.

Under the concept tested, the driver/broker, operating out of a HUD 221 project apartment complex, worked directly with his low-income, elderly clients to plan and organize group rides. Through personal contacts with these clients he gained an understanding of their needs and prepared a schedule of group trips. Once there was sufficient interest definitely to schedule a trip, the Community Broker encouraged as many people as possible to sign up. Most trips were for shopping, a local rural program, and a variety of social/recreational purposes.

This project was staffed and implemented by the grantee, the Department of Engineering and Economic Systems at Stanford University. The local taxi operator in Mountain View contracted with the grantee to furnish the van and to hire the Community Broker; this taxi operator was not involved in the day-to-day operations of the Community Broker project.

The Community Broker concept was conceived as a means to improve social service client access to particular services. According to the grantees, the social service delivery system fails, not because of inappropriate or inadequate services, but because client access to the services is often limited. In the Community Broker system client access is facilitated by two types of support services which are intended to link consumers and producers of human services and relevant public- and private-sector institutions into functionally-integrated communities. These support services are:

1. Community Brokerage, facilitating the operation of the human services delivery system by supplying those support services (e.g., transportation) that enable a client to use the primary service.
2. Institutional Brokerage, facilitating those institutional relationships necessary for improved operation of the human services delivery system.

A more detailed description of this concept as conceived by the grantee is covered in Section 4.1.3.

In the Mountain View experiment, the Community Brokerage function was limited, for the most part, to transportation and transportation-related (i.e., information and scheduling) services. The Institutional Brokerage function was never fully developed and tested in the Mountain View project.

Specific purposes of the demonstration were to:

- a. test the workability of the limited Community Broker concept in providing special needs transportation,
- b. test the economic feasibility of the concept, and
- c. determine the demonstration's impact on the target group and the community.

2.1.1 Objectives

2.1.1.1 SMD Objectives - The Mountain View demonstration addresses three SMD objectives:

1. improving service to the transit dependent (i.e., primarily low-income, handicapped, and elderly persons),
2. increasing transit coverage, and
3. increasing transit vehicle productivity.

The main objective of improving service to the transit dependent is directly addressed in that the project proposes to make a new transportation service that combines informational and referral help with a very personalized transportation service to the

target group. Coverage to this group is increased because this service is being offered to people who did not have acceptable transportation beforehand. The vehicle productivity improvement objective is indirectly addressed in that the Mountain View demonstration sought to achieve lower costs to both the provider and consumer through group ride-sharing.

2.1.1.2 Grantee Objectives - The grantees saw the Community Broker system as a means of improving the economic, social, and health welfare of the clients by improving the transportation and transportation-related services available to them. Two grantee objectives consistent with SMD objectives were addressed:

1. to lower the cost of suitable public transportation for the low-income, elderly, and transportation-handicapped target market, and
2. to improve utilization of available community human services by removing (or lowering) the transportation barriers that now exist.

The grantees focused on the transportation support service because it seemed to be a major barrier to access to primary social services. It was thought that the target group had limited private transportation available. Public transportation was economically or functionally inadequate for many of the clients or was too expensive for local governments to support. For instance, service on the fixed-route bus system was too infrequent, did not go where they needed to go and was not able to be used by many of the physically handicapped and elderly. The publicly operated dial-a-ride system that would have provided more adequate service proved too expensive for local government to subsidize. Taxicabs also were too expensive for most of the target low-income and elderly group to use regularly.

2.1.2 Demonstration Issues

In assessing the Community Broker project, several key issues

were examined:

1. Feasibility of brokering large group van rides
2. Feasibility of brokering shared taxi rides
3. Workability of the Community Broker concept
4. Economic feasibility of the Community Broker system
5. Project impact on travel demand
6. Project impact on user mobility and quality of life
7. User perceptions of the service
8. Possible alternative organizational settings and funding sources for the Community Broker concept.

2.1.3 Project Innovations

The Community Broker concept as tested in Mountain View was innovative in being a reorganization and centralization of those information, scheduling, and transportation duties generally performed in extending transportation services to the transit dependent. In Mountain View, a driver/broker aggregated demand, planned and scheduled trips, transported clients in a twelve-passenger van, and provided primary service information and referral to a client population of around 100 people. More often social service agencies assume most of the trip planning and scheduling duties and either social service agencies or public or private transit operators provide transportation to clients. For example, in the current Portland handicapped and elderly transportation demonstration, the transit operator provides transportation services to elderly and handicapped persons by contracting with various social service agencies who provide the primary services. There, the social service agencies work as an intermediary in the trip-planning and scheduling process. In another example, Economic and Social Opportunities (ESO) in San Jose, an umbrella social agency, has initiated a contract with the local taxi operator to provide low-fare trips to individual clients of ESO's sub-agencies. Again, the agencies schedule client trips with the taxi operator.

Another innovative aspect of the Community Broker project was the limited use of Institutional Brokerage to facilitate coordination and integration among private-sector producers of services, public- and private-sector support service institutions, and consumers as a group. Examples of the Institutional Brokerage functions that were performed on a limited basis in Mountain View are: provision of information and schedules regarding various transportation systems; help in planning the supply of services by providing demand information to suppliers; initiation of new primary services (e.g., cooperative food buying) where they seemed needed by clients.

2.2 ORGANIZATIONAL ROLES

The Mountain View project (CA-96-0002-1) is funded under a U.S. Department of Transportation, Urban Mass Transportation Administration (UMTA), Service and Methods Demonstration grant. The project is being staffed and implemented by the grantee, the Engineering-Economic Systems Department at Stanford University, Stanford, CA. The project and its staff are referred to collectively as Community Services Cooperative (CSC). The Transportation Systems Center (TSC) of the U.S. Department of Transportation is responsible for evaluation of the project. Crain & Associates is acting as a subcontractor to TSC for the evaluation effort. Consistent with its role as an on-site evaluator, Crain & Associates has coordinated with the Engineering-Economic Systems Department in its project evaluation and data-collection efforts.

The transportation services, including the salary and benefits of the driver/broker, were provided under contract by Cabs Unlimited in Mountain View.

The funding and timing of the grant are as follows:

Funding:

Federal (UMTA FY 76)	\$152,675
State	-
Local	-
	<hr/>
TOTAL:	\$152,675

Timing:

Date of grant award:	7/75
Planned starting date:	1/02/76
Actual starting date:	2/16/76
Planned termination date:	12/31/76
Actual project termination:	2/18/77

2.3 EVALUATION OVERVIEW

2.3.1 Scope of the Report

This report covers the operation of the Mountain View Community Broker project from February 16, 1976 until February 18, 1977, when the UMTA funding lapsed. The project is continuing operation under Caltrans and Department of Health, Education and Welfare funding, but this subsequent activity is not covered here.

A planning and design stage beginning on October 1, 1973 preceded the operational phase of the project. This initial work culminated in a report, A Concept for Improving Human Services Delivery,¹ which detailed the Community Broker concept and laid the groundwork for implementation. A formal implementation plan outlining project tasks, responsibilities, and timing was then completed in December 1975. This evaluation report draws upon relevant information in these two documents, but only to the extent that the information clarifies or puts into perspective the events between February 16, 1976 and February 18, 1977.

¹Engineering-Economic Systems Department, Stanford University, A Concept for Improving Human Service Delivery: Final Report, DOT-CA-96-0002, December 6, 1974.

2.3.2 Approach

1. An explanation of the concept, including descriptions of the Community Broker and Institutional Broker roles; the types of services CSC offered; and the changes in those roles and services that evolved during the demonstration year.
2. Economic analysis of the Community Broker operation. This includes analysis of operating economics of the Community Broker system; analysis of ridership and revenues generated; detailed explanation of the costs involved; comparison of the cost of the Community Broker system with other systems.
3. Analysis of the project's impact upon its clients. The report examines service coverage; market penetration; comparison of transportation habits and needs of project users and non-users; reasons for non-use; clients' perception of the project benefits.
4. Institutional analysis. The report includes analysis of broker involvement with transportation providers, primary service providers, and community agencies. It also explains the relationships with the taxi operator and other community organizations. Alternative funding sources and organizational settings for the Community Broker concept are briefly discussed.

Six principal data sources were used during the evaluation:

- a. Direct observation of the Community Broker operation and frequent discussions with the CSC staff. This information was useful in all aspects of the analysis.
- b. Operational data. This included ridership data; vehicle operating data (time, miles, age, etc.) revenue data aggregated on a weekly basis; and the Community Broker's log. This data was used in the project description and the economic analysis portions of the report.
- c. Surveys of users and non-users. This included mid-project and late-project surveys of users and non-users to determine impact of the project and user perceptions of the service. Some demographic information also was gathered in the surveys.
- d. Selective in-depth interviews. Several in-depth interviews with project users were conducted to determine project impact. This information supplemented the more formal surveys to give a more complete assessment of project impact.

- e. Site data.
- f. Evaluation contractor interviews with (1) CSC project staff who participated in the Community Broker project, (2) the taxi operator, (3) representatives from community agencies, and (4) other knowledgeable personnel. This information was used in all aspects of the evaluation.

3. DEMONSTRATION SETTING

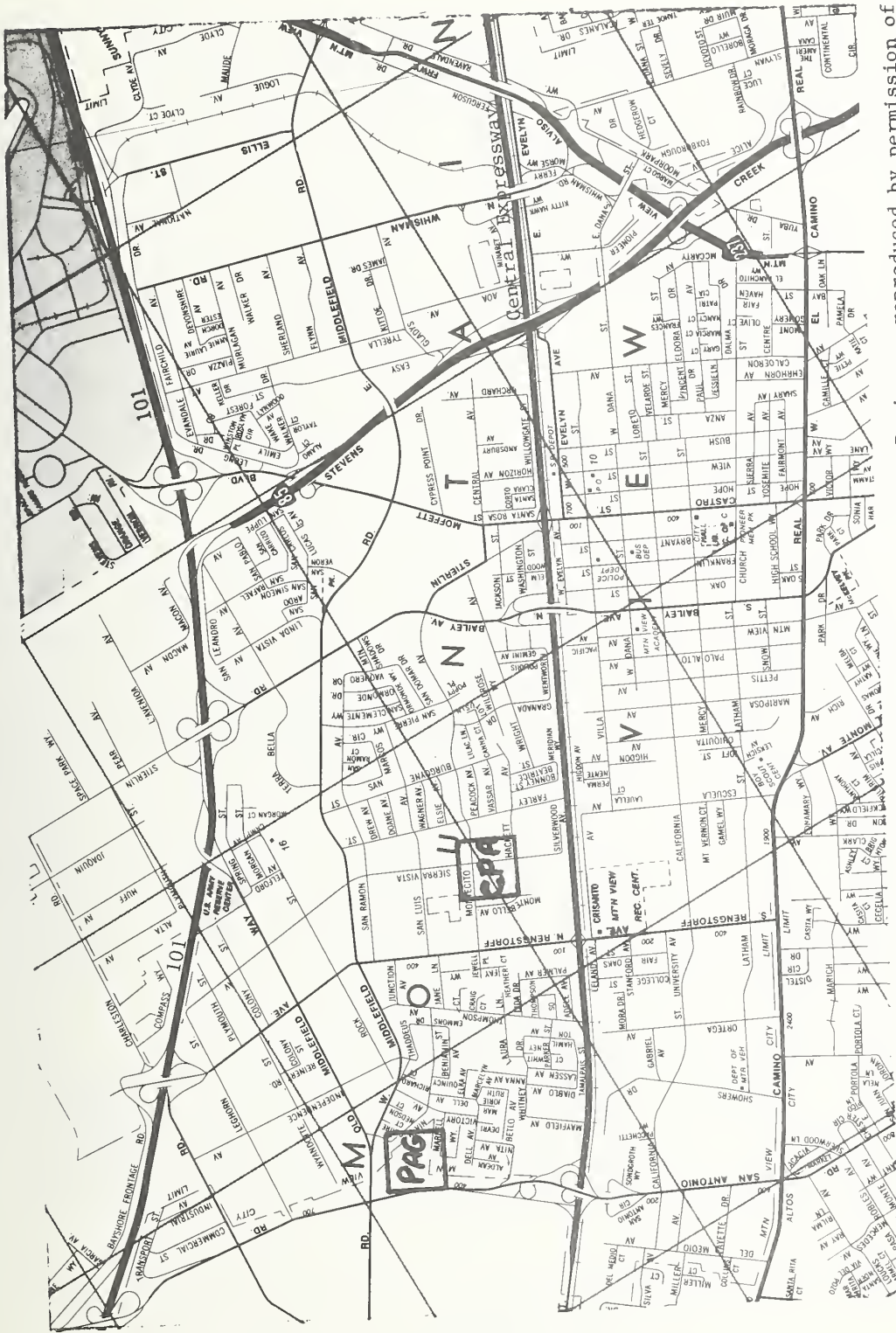
3.1 GEOGRAPHIC AND DEMOGRAPHIC CHARACTERISTICS

3.1.1 Demonstration Site Description

During the project year (February 1976-February 1977) the Community Services Cooperative (CSC) served riders who lived in an approximately 1.25-square-mile area in Mountain View and Palo Alto, California. Within this area, project clients were concentrated at two low-income (HUD 221) apartment complexes with approximately 160 residents each: Palo Alto Gardens (PAG) and Central Park Apartments (CPA). The former complex is located in Palo Alto close to the boundary between the two cities; the latter is approximately one mile to the south in Mountain View. As the project progressed, a few people from the nearby community close to the two apartment complexes used the service. The most frequent trips were to destinations within Mountain View. Figure 3-1 is a map showing the demonstration site.

Both Mountain View and Palo Alto can be characterized as stable, relatively affluent suburban cities. Several high-technology industries, primarily space- and electronics-oriented, anchor a thriving business community. Population growth, after a dramatic increase in the 1960's, has leveled off in recent years.

The climate in Palo Alto and Mountain View is considered to be ideal. Average daily temperatures range between 49° F in January and 68° F in July. Average annual rainfall is 13 inches and the humidity is low. Drought conditions prevailed during the project year.



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California State Automobile Assoc., copyright owner.

FIGURE 3-1.

MAP OF DEMONSTRATION SITE

3.1.2 Demographics

Demographic data for the demonstration area were derived principally from the 1970 Census and from surveys of users and non-users. Relevant census tract boundaries are shown in Figure 3-2. Project clientele lived principally in the southeastern part of tract 5108 and in tract 5093.01. Data for census tract 5093.01 (Rengstorff) probably give the best profile of the target community. Although the Palo Alto Gardens complex is formally in tract 5108 (Palo Alto), the 5108 area south of San Antonio Road (see map) is very similar to the rest of the Rengstorff community. The CSC project did not attract many riders from the wealthier Thompson subtract (5103.02).

To provide perspective, Table 3-1 summarizes relevant data for the San Jose SMSA (Santa Clara County), the City of Mountain View, and census tract 5093.01, the target community. Relative to the rest of the Mountain View community and the San Jose SMSA, tract 5093.01 is more densely populated, has a lower median income, a higher unemployment rate, and a higher concentration of seniors. One striking statistic is the 88.2 percent renter-occupied housing figure.

Income figures (again from 1970 Census data) show that 80 percent of the people in the target area had incomes that were then less than \$5,000, 18 percent had incomes between \$5,000 and \$10,000, and only 2 percent had incomes over \$10,000. Those who have been closely associated with people in CPA and PAG feel that either incomes among the target population are not really as low as the census figures indicate or that the people who use the service have relatively higher incomes than the community at large. Income data were not obtained from project clients, however.

3.2 TRANSPORTATION CHARACTERISTICS

3.2.1 Transportation Supply

Mountain View is one of a series of suburban cities

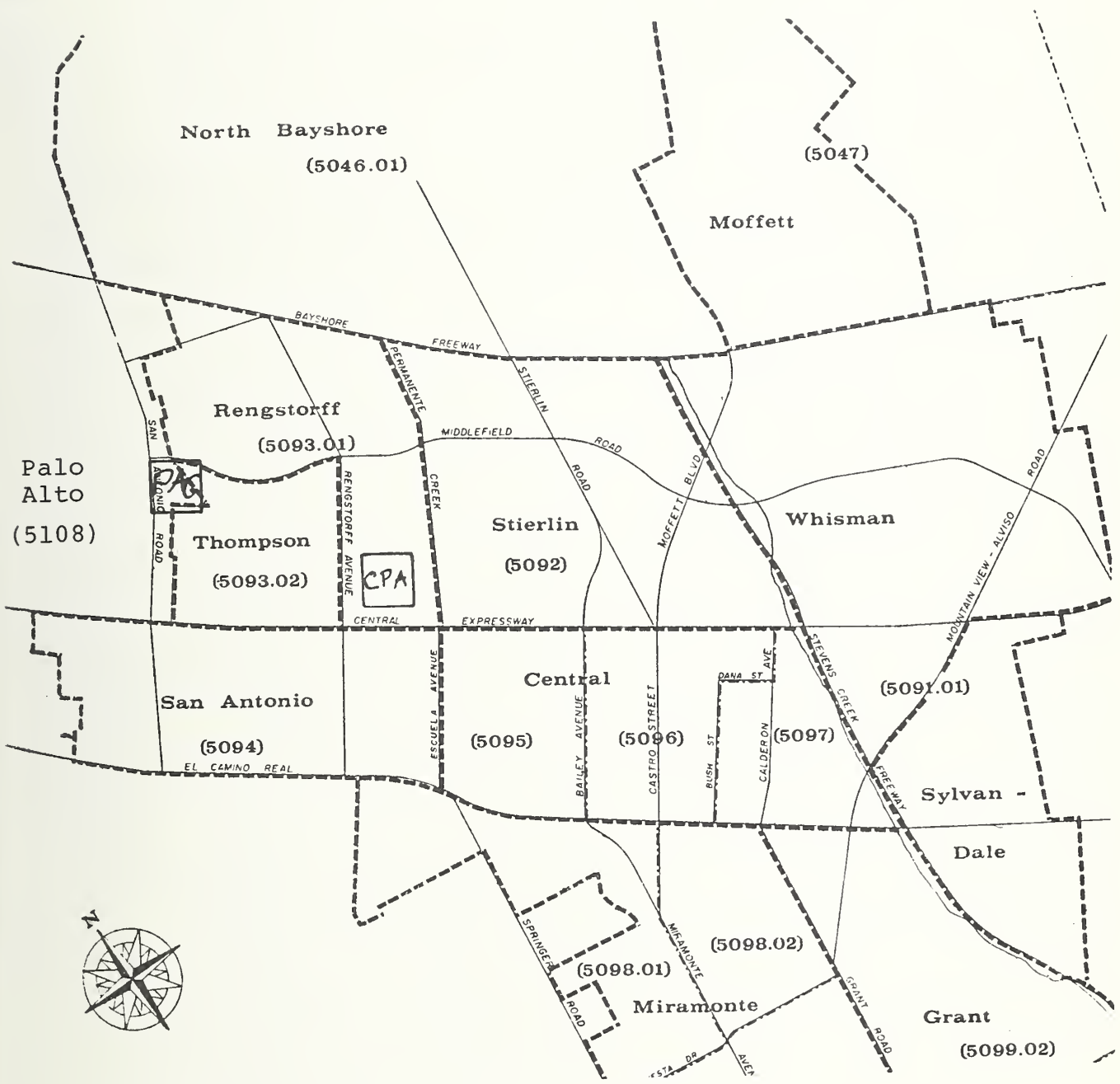


FIGURE 3-2.

CENSUS TRACT MAP OF DEMONSTRATION SITE

TABLE 3-1.
SITE DEMOGRAPHIC DATA^a

	Tract 5093.01	Mountain View	San Jose SMSA
Population	4104	55,260 ^b	1,065,313
Percent over 65	8.2	4.9	6.3 ^c
Percent handicapped	2.2	2.9	-
Population density/sq.mi.	6491	4013	1065 ^d
Percent of population employed	47	51	38
Percent of workforce unemployed	7.9	2.3	5.8 ^e
Median family income	\$8626	-	\$12,456
Percent of households below one-half of median income	29	13	-
Population/autos available	-	2.7	-
Percent renter-occupied housing	88.2	63	39.4 ^c

^aUnless specified otherwise, data source is 1970 Census.

^b1976 figure from Chamber of Commerce.

^cOutside the central city.

^dFor the entire SMSA, central city density = 7960; outside central city = 497.

^e1973 Department of Labor estimate for the annual average unemployment.

located between the major metropolitan areas of San Jose and San Francisco. Transportation to surrounding communities and to San Francisco and San Jose is facilitated by U.S. Highways 101 and Interstate 280, both of which connect San Francisco and San Jose. In addition, there are major thoroughfares and streets (such as the Central Expressway, shown on Figure 3-1) that make vehicular transportation between neighboring cities a simple matter.

Commutes to San Francisco, San Jose, and the cities in-between can be made by Greyhound Bus, which operates regularly throughout the week and on weekends. In addition, the Southern Pacific Railroad (SP) reluctantly operates a commuter service between San Francisco and San Jose. Many people employed in these metropolitan areas regularly use the "SP" for work trips. Service is quite frequent -- three times/hour in the early mornings and late afternoons -- with express trains running at those times. An SP train runs approximately every hour during weekdays and every two to three hours on weekends and holidays.

Santa Clara County Transit provides all of Santa Clara County (which includes San Jose and runs as far north as Palo Alto) with fairly frequent bus service. The transit company is in the process of expanding and improving its routing. Routes are being modified and added to meet the growing demand for service. Ridership has grown at a 40 percent/year rate since 1973. Still, headways are long and buses are often late.

County Transit is also modernizing its equipment. Eighty-one new buses were recently purchased and application has been made to UMTA for a grant to fund purchases of 300 additional coaches. County Transit's goal is to have 516 buses by fiscal year 1979-80. A new maintenance facility has recently begun operations in Mountain View.

Figure 3-3 shows the County Transit bus routes that serve the demonstration sites. The city of Mountain View is serviced by four arterial and two interior routes. In addition, there

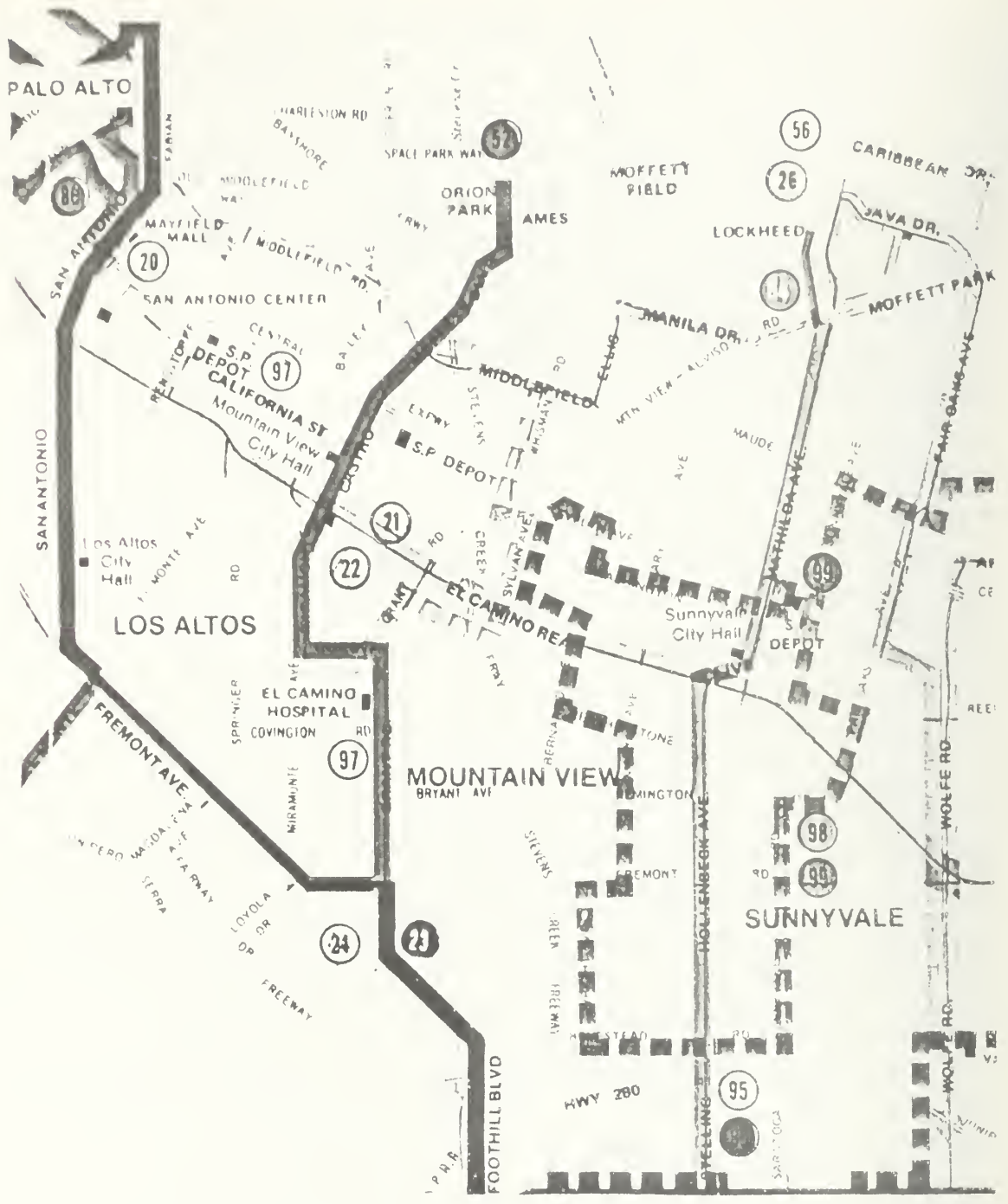


FIGURE 3-3.

COUNTY TRANSIT BUS ROUTES

is a shuttle service between Mayfield Mall, a large shopping center, and the outlying residential areas of Mountain View. Headways on the arterial routes average 20 minutes at peak times and up to an hour at off-peak and weekend times. The shuttle and the interior routes operate between 8:30 AM and 3:00 PM on weekdays only. Eighty to ninety percent of Mountain View's land area is within 1200 feet of a bus line.

A bus runs very near Central Park Apartments and connects at various points with the arterial routes. The Palo Alto Gardens complex is serviced by four arterial routes, two of which have been added since the CSC project began. The fare for regular passengers is 25¢. Seniors and certified handicapped individuals ride free during off-peak times and pay full fare otherwise. The legally blind ride free.

The only public transportation alternative to the bus for Palo Alto Gardens and Central Park Apartments residents is taxicab service. Cabs Unlimited, which operates the CSC van and pays the driver, furnishes taxicab service within the city of Mountain View. The City of Palo Alto, through Project Mobility, provides a subsidized cab fare to seniors and handicapped persons who are low-mobility and low-income. This subsidy program is available to some residents of Palo Alto Gardens. There is no comparable program in Mountain View, where typical one-way taxi trips average between \$3 and \$6. Most destinations within the city of Mountain View are easily accessible by car, and parking is generally no problem.

3.2.2 Travel Patterns

Most primary services for the target community are located close to both the apartment complexes: Mayfield Mall, the primary shopping area, is less than one mile away and the other trips which the Community Broker organized were in Mountain View and Palo Alto. Medical trips were typically a longer distance away than the business and recreational destinations.

3.2.3 Institutional Background

Since one original objective of the demonstration was to demonstrate the project's ability to support itself out of revenues from its clients, no direct continuing contact with social service agencies or governmental organizations of any kind was anticipated. As the project evolved, however, CSC did contract with the Adobe Nutrition Program and the Palo Alto Senior Day Care Center to provide trips to those facilities for agency clients. CSC's relationship with these two agencies is explained further in Section 4.3.

One other continuing organizational relationship was with the taxi operator who contracted with CSC to hire the driver/broker and furnish the vehicle. This relationship is explained further in Section 4.2.2.

Local governmental agencies that were aware of the CSC project were supportive. Several citizens and local officials -- including the Chairman of the Santa Clara County Board of Supervisors, the Mountain View City Manager, and the Director of the Santa Clara County Transportation Agency -- wrote letters of support for the project.

4. PROJECT OPERATIONS AND DEVELOPMENT

This chapter covers project operations and development in two ways: 1) it comprehensively describes how the Mountain View Community Broker project operated and 2) it relates the Mountain View Community Broker concept to other methods of providing transportation and transportation-related services to clients.

4.1 BROKERAGE, TRANSPORTATION BROKERAGE AND THE MOUNTAIN VIEW EXPERIMENT

This section of Chapter 4 describes the Mountain View Community Broker system and relates to other institutional or organizational arrangements for providing transportation and transportation-related services to handicapped and elderly clients. First, the terminology for describing the Community Broker concept is set forth. Next, brokerage as a possible solution to human service delivery system problems is examined. Then the full Integrated Human Services Delivery system is summarized in order to show the conceptual underpinnings to the Mountain View experiment and to indicate how the Mountain View version differed from the full-blown concept.* Finally, the Mountain View brokerage concept is compared with other similar uses of the brokerage concept. This comparison further delineates the Mountain View activity so that the reader will have a clear picture of what was undertaken and tested there.

4.1.1 Terminology

Brokerage refers to an intermediate market function that

*A full description of the Integrated Human Services Delivery concept is contained in A Concept for Improving Human Service Delivery cited in Section 2.3.1.

serves to remove or lower barriers to the exchange of goods and services between suppliers and consumers. This intermediate function can consist of either providing information for consumers or producers to use in making their consumption or supply decisions, or performing various services -- such as negotiating, scheduling, aggregating demand, mediating, and referring -- that facilitate exchange of goods, services, resources, and power within the community.

Primary services are services that satisfy a generic need, i.e., they satisfy basic personal health and welfare requirements. Examples of primary services include health services, shopping services, and recreational services.

Support services are services that improve access to and facilitate use of the primary service. Transportation itself, information about primary services or about other support services, and scheduling assistance are all examples of support services. Brokerage can include a variety of support services.

Community Brokerage refers to the brokerage of primary and support services in such a way that delivery of these services is facilitated.

Institutional Brokerage consists of facilitating relationships among institutions concerned with human service delivery by providing information, negotiation, and coordination between those institutions. Whereas the most common concept of brokerage concerns goods and services, Institutional Brokerage is concerned with changing the community's power structure and institutional relationships so that the human service delivery system works better.

Transportation Brokerage is brokerage between the providers and users of transportation services in order to promote an exchange that is more beneficial to one or both parties and to the society as well. Society can benefit from Transportation Brokerage when the brokerage results in more efficient use of the local transportation supply and thereby less use of the private automobile, less pollution, and less energy consumption.

4.1.2 Brokerage and Human Service Delivery Problems

The Community Broker project is based on the premise that human services fall short of meeting human service needs because of difficulties people experience in obtaining access to these services. Difficulties in access to human services refer to problems people have in finding out if there is a service that meets their particular need, where and when a particular service is offered, the features of the service--including price, how to schedule oneself for the service, how to pay for the service, and how to get to where the service is offered.

These barriers to human services stem, in large part, from the piecemeal, categorized way in which the services are dispensed. Social programs and agencies tend to deal exclusively with their particular functional specialty, e.g., health, and their entire operation is devoted to dispensing services, obtaining payment, outreach, and following operating procedures for that particular service. Consequently, the potential consumer of social services is faced with a confusing array of services, procedures for utilizing the services, ways to get to the services, and payment procedures.

Brokerage of primary and support services can simplify the access problems by providing information and scheduling and by negotiating agreements between producers and consumers of social services. Transportation Brokerage, an example of support service brokerage, can directly facilitate access to transportation services (thereby indirectly improving access to social services) by providing information and scheduling on various modes. Institutional Brokerage can improve the overall human services delivery system by changing the institutional and power relationships in the community.

4.1.3 The Integrated Human Services Delivery System

The demonstration in Mountain View tested a limited version of an Integrated Human Services Delivery system designed to improve client access to human service. The fully Integrated

Human Services Delivery system consists of two component functions or roles -- the Community and Institutional Brokerage roles -- and a support service system to facilitate those functions.

The first function, Community Brokerage, focuses on improving the operation of the human services delivery system by:

1. providing information to individual clients regarding primary and support service availability and characteristics,
2. scheduling various primary and support services,
3. providing transportation,
4. promoting social and recreational activities and services in order to build a sense of community,
5. working (providing information and negotiating) with suppliers of human services to assure the delivery of services which the target clientele wants and needs, and
6. providing necessary primary services (e.g., cooperative food buying, cooperative legal services) as appropriate and feasible.

Figure 4-1 illustrates the Community Broker's role with respect to the community he serves, producers of human services, and the support service institutions. By maintaining the linkages depicted in Figure 4-1, the Community Broker facilitates human services delivery system operations on a day-to-day basis.

In the fully integrated system, a network of Community Brokers is supported by the Institutional Brokerage function consisting of:

- a. adding desired human services, e.g., cooperative food buying,
- b. working to develop useful human service delivery institutions to meet client needs (an example would be a legal service organization for seniors or low-income persons),

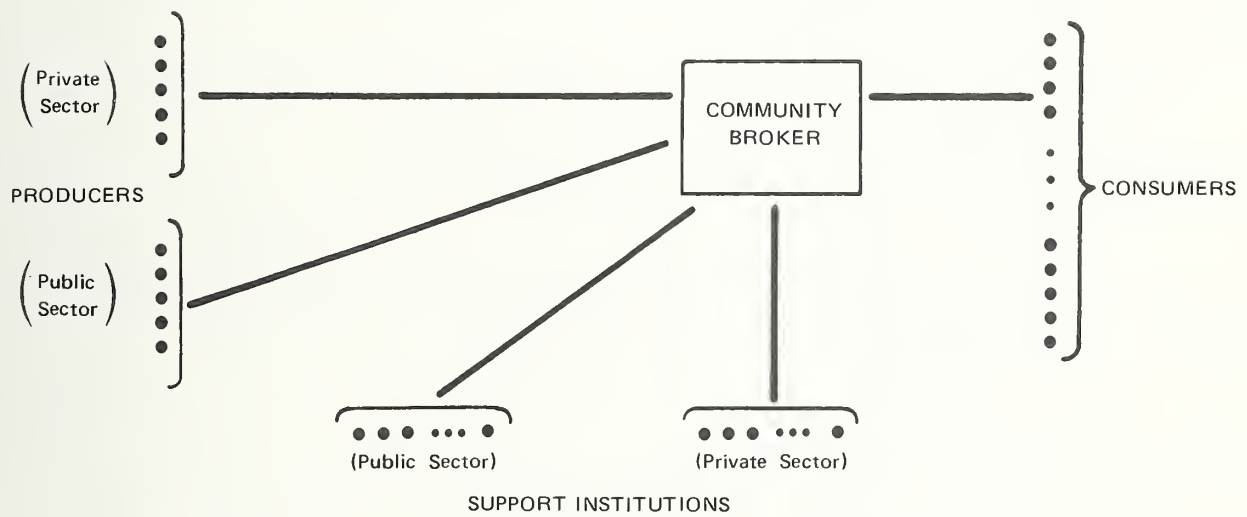


FIGURE 4-1. THE COMMUNITY BROKER LINKS INDIVIDUAL CONSUMERS TO SERVICE PRODUCERS AND SERVICE SUPPORTERS

- c. stimulating new human service delivery mechanisms and services by promoting agreements between public- and private-sector support institutions and service delivery institutions, and
- d. developing and expanding the Community Brokerage system.

Figure 4-2 illustrates the Institutional Broker's relationships to Community Brokers and the public and private primary and support service institutions.

Community and Institutional Brokerage is facilitated in the fully integrated system by a support service system. Such a system supports the Community and Institutional Brokerage network by:

1. providing technical information and data analysis on Community Broker operations (this is helpful in program planning and evaluation),
2. cataloging an inventory of services and their characteristics,
3. running a negotiated scheduling system for scheduling transportation, and
4. providing an accounting system that facilitates payment for human services by clients and agencies, as appropriate.

4.1.4 The Mountain View Version

The Mountain View version was similar to the fully integrated system but was planned and operated on a smaller scale. The Community Broker focused primarily on the transportation support service. Information and scheduling for primary services were carried out in Mountain View, but not to the degree that they would have been in the fully integrated system. Also, in Mountain View the Community Broker did not offer as many primary services as would have been offered under the fully integrated arrangement.

The Institutional Brokerage function in Mountain View was performed on a limited basis by the Community Broker, the

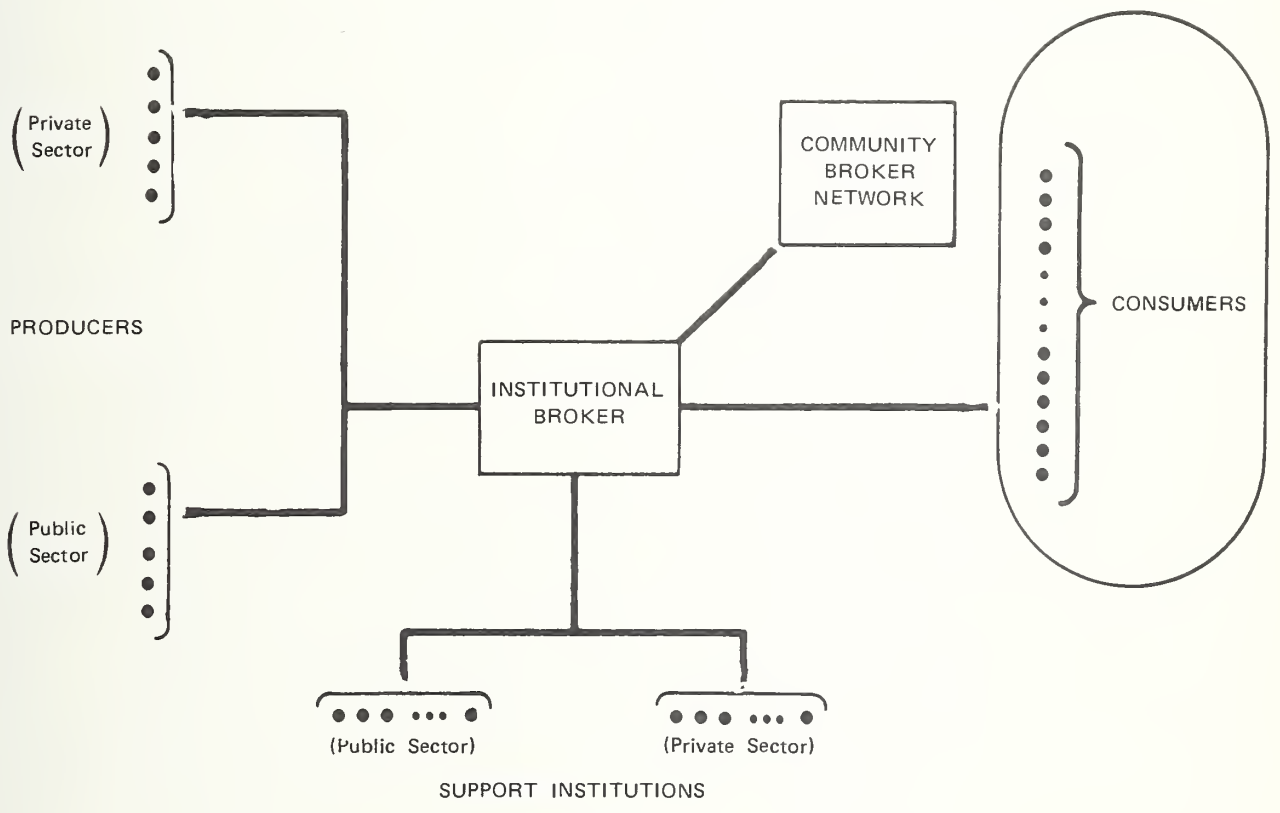


FIGURE 4-2. THE INSTITUTIONAL BROKER FACILITATES RELATIONS AMONG INSTITUTIONS TO IMPROVE SERVICE DELIVERY SYSTEM

Project Director, and the CSC staff. A separate role was not established.

The back-up technical system in Mountain View was limited to keeping operation information on trips and revenues on a trip-purpose basis. The negotiated scheduling and accounting systems were not necessary.

4.1.5 The Mountain View Experiment and Other Forms of Transportation Brokerage

Table 4-1 compares and contrasts the activities of the Knoxville TN Transportation Brokerage project,* the typical multi-purpose senior center, the Community Broker concept as it evolved in Mountain View, and the Integrated Human Services Delivery concept. The four brokerage concepts covered in Table 4-1 do not comprehensively cover all on-going Transportation Brokerage activities; however, they do represent the range of approaches now being tried.

The table indicates that in the Mountain View experiment the broker attempted to participate in the individual's trip planning process to a significant degree in order to group riders in an efficient manner. In Knoxville the brokerage function focuses mainly on gathering and dispensing information about the supply of transportation. Senior centers and social service agencies also enter into the individual's trip planning process but typically limit themselves to trip planning assistance for those purposes which the agency serves. As the table indicates, the fully Integrated Services Delivery concept would undertake more integration of service supply with demand and would in some instances supply a service where the demand existed and there was no supply available.

*The Knoxville project is a demonstration and research project in which a brokerage organization promotes the greatest possible use of both public and private transportation vehicles by a computerized matching of supply and demand.

APPROACHES TO TRANSPORTATION BROKERAGE

Aspects of Transportation Brokerage	Brokerage Concept			
	Knoxville TN	Senior Centers, Social Service Agencies	Community Broker, Mountain View	Community Broker, Integrated Services Delivery
Gather, dispense information on available supply of transportation services	++	+	+	++
Transportation service referral and scheduling	o	++	++	++
Coordinate supply of human services with human service demand and with supply of transportation services	+	++	+	++
Stimulate client demand for new services and trips	o	+	++	++
Offer transportation service	+	+(vans, taxis, volunteer drivers)	++(van)	++(van)
Client market	all travelers	elderly, handicapped, low-income	elderly, handicapped, low-income	elderly, handicapped, low-income
Financial support	government support	government support, fares from riders	government support, fares from riders	client support
Size of target group	approximately 210,000	around 500	112	200-300

Key: ++ = significant activity
 + = moderate activity
 o = little or no activity

4.2 PROJECT DESCRIPTION

4.2.1 Specific Functions, Roles, and Duties

The specific functions that the Community Broker performed were:

1. recruiting members for the Community Services Cooperative,
2. organizing ride schedules for existing client needs,
3. planning and organizing new activities and trips for clients,
4. coordinating transportation with social service agencies and with client- and broker-generated activities,
5. brokering the market to suppliers of transportation in certain cases, and
6. providing escort and acting as the vehicle driver for the transportation aspect of the service.

At the start of the project, two community brokers were contemplated. The first community broker was to operate at the Central Park Apartments site and to provide transportation in a twelve-passenger van. The second community broker, who was to operate at the Palo Alto Gardens site, was to broker transportation on a shared-ride basis in taxicabs. After an initial six weeks of experimentation with taxicabs at the Palo Alto Gardens site, van service was expanded to this site and taxicab brokerage was stopped. One driver/broker then served both communities. (See discussion on brokering of shared-ride taxi service in Section 4.4.)

Institutional Brokerage in Mountain View consisted of contacting public- and private-sector support service agencies, evaluating the market for additional primary and support services, and coordinating with responsible governmental units at the county and city levels. In the complete version of the Integrated Human Services Delivery system, these duties would have been performed by a separate Institutional Broker. However, due to

the scale of the operation in Mountain View, Institutional Brokerage was conducted by the Project Director and staff with assistance from the community broker.

Back-up to the community broker was provided by the Technical Services Director, who was responsible for the accounting system for the project and for the development and updating of a technical system that kept information on ridership, operating data, revenues, and a negotiated scheduling system.

4.2.2 The Negotiated Agreement with the Taxi Operator

Before the project began, the project staff had thought that the CSC could operate without the sanction of the Public Utilities Commission (PUC). When it was discovered that this was not the case, project staff attempted to introduce legislation that would exempt para-transit demonstrations from public utility regulations. However, the taxi operator in Mountain View felt that demonstrations such as the Mountain View experiment constituted unfair competition from the government and he was instrumental in defeating this legislation. Subsequently, CSC contracted with the taxi operator to provide van transportation and to hire the community broker as an adjunct to his taxicab service.

The terms of this contract were as follows:

1. The taxi operator would hire and pay the community broker.
2. The taxi operator would purchase a twelve-passenger van that would become the property of the taxi operator at the end of the one-year demonstration.
3. The taxi operator would furnish all fuel, oil, and maintenance for up to 30,000 miles of operation.
4. The taxi operator would supply the administrative overhead needed to keep books on the broker's salary and the van.
5. CSC would pay the taxi operator \$20,875 to perform all of the functions in 1 through 4.

4.2.3 Organizational Relationships

Figure 4-3 is an organizational chart that shows the working relationships in the Community Services Cooperative (CSC). Although the community broker was hired by the taxi operator, he reported to the Project Director and coordinated, as appropriate, with the taxi operator and the Technical Services Director.

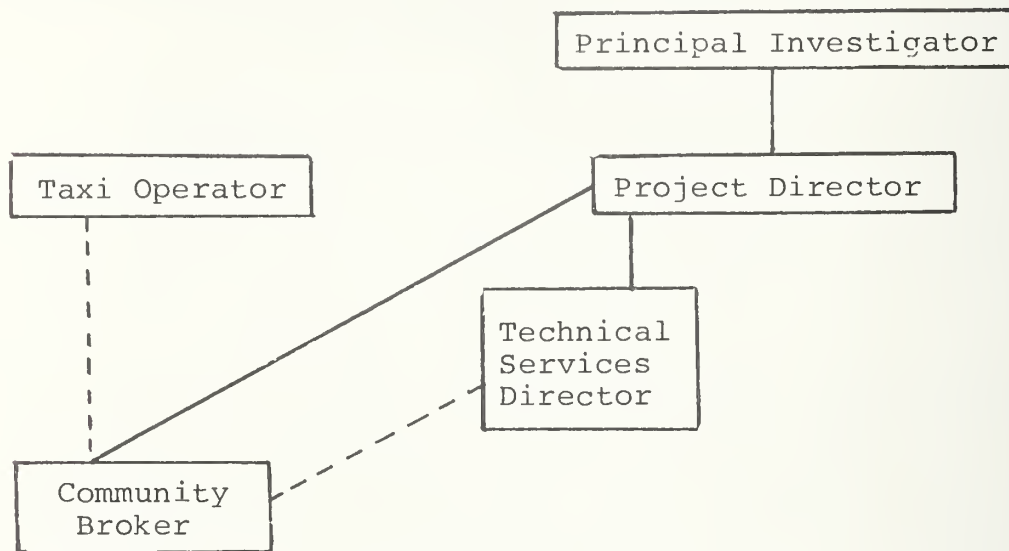


FIGURE 4-3.
CSC ORGANIZATION

4.2.4 Operations and Scheduling

The broker operated from a small space allocated to him by the apartment manager at Central Park Apartments (CPA). He had a desk and a bulletin board there and installed a telephone. The broker's telephone was answered by a 24-hour answering service when the broker was not at his desk.

On a weekly or biweekly basis the community broker put out a schedule of planned rides. This schedule of rides was developed from specific client-initiated requests and from client responses to broker suggestions regarding possible recreational

and social activities. A considerable amount of planning and coordination went into trip scheduling. Oftentimes people were aware that a certain trip was being considered or planned, but needed to be reminded or persuaded to sign up for the trip. Figure 4-4 is an example of the schedule the broker distributed.

Once the trip was scheduled, riders would meet at the CPA recreational room prior to boarding the van. When the time to leave arrived, the driver/broker assisted them into the van and proceeded to pick up any other passengers at Palo Alto Gardens and in the surrounding area. At each stop the driver escorted the persons to the van and helped them board. At the destination the driver assisted people as they exited from the van. Figures 4-5a and 4-5b show the driver/broker loading groceries at a local supermarket and helping passengers off the van at Central Park Apartments.

For many trips the driver dropped people off at a destination with the understanding that he would return at a specified time to pick them up. On other trips the driver accompanied the people as an escort.

"Windows" in the prescheduled service were filled upon the request of a member wishing to make a special trip. Most people seemed to understand that the van was for group ridership, however, and they were hesitant to schedule an individual trip unless it was an emergency. Rides could be scheduled by either calling the broker or contacting him directly.

The project moved into non-transportation functions on a trial-and-error basis during the year. Only cooperative food buying sustained a continuing popularity among CSC members, however.

4.2.5 Fares

Initially, fares on the CSC van were charged according to a fare-splitter schedule that was based on: 1) the length of the trip, and 2) the number of people in the vehicle. Figure

KEEP THIS SCHEDULE

CSC PHONE 967-2291

- SCHEDULE OF WEEKLY TRIPS -

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
11:45 AM to SAINT ATHANASIOS CHURCH RETURN 12:50	11:20 AM to ADOBE RETURN 12:50	9:00-10:15 AM SDCC 11:20 AM to ADOBE RETURN 12:50	11:10 AM to ADOBE MOVIE TODAY! RETURN 12:50 1:30 PM to SUPER DUPER, ALPHA BETA OR SAFEWAY (ONE HOUR) 4:30 PM DINNER OUT - RESTAURANTS WILL BE ANNOUNCED	9:00-10:15 AM SDCC 10:30-1:00 PM FAS MINI-MARKET (CENTRAL PARK) 10:40 AM to GEMCO OR CONTINENTAL (ONE HOUR) 11:20 AM to ADOBE RETURN 12:50 3:30-4:45 PM SDCC	10:30 AM to SUPER DUPER ALPHA BETA OR SAFEWAY (ONE HOUR) 11:20 AM to ADOBE RETURN 12:50 1:30 PM to MAYFIELD MALL, SAN ANTONIO ETC. OR GEMCO (TWO HOURS)	

* WE WILL PICK YOU UP WITHIN 10 (TEN) MINUTES OF THE SCHEDULED DEPARTURE TIME.

- THE TRIPS, ON THE SCHEDULE ABOVE, WILL BE TAKEN EVERY WEEK. PLEASE KEEP THIS SHEET FOR YOUR REFERENCE.
- WE WILL PICK YOU UP WITHIN 10 (TEN) MINUTES OF THE SCHEDULED DEPARTURE TIME.
- IF YOU PLAN TO TAKE ONE (OR MORE) OF THE ABOVE TRIPS EVERY WEEK, WE CAN SIGN YOU UP FOR THAT TRIP FOR A MONTH. (THIS WOULD SAVE YOU THE COST OF WEEKLY PHONE CALLS.)
- YOU WILL STILL BE RECEIVING A SCHEDULE FROM US EVERY TWO WEEKS. THIS SCHEDULE WILL INCLUDE: SPECIAL SHOPPING VENTURES, CULTURAL EVENTS, RECREATIONAL ACTIVITIES, THE "RESTAURANT-OF-THE-WEEK" & OTHER "PIECES OF PRICELESS INFORMATION".
- WHAT ABOUT SUNDAYS? IS THERE SOMETHING YOU WOULD LIKE TO DO ON SUNDAYS - WE NEED SOME SUGGESTIONS!

FIGURE 4-4. SCHEDULE OF WEEKLY TRIPS



Pickup at Local Shopping Center

FIGURE 4-5a.



Drop-off at Apartment Complex

FIGURE 4-5b.

CSC VAN SERVICE IN OPERATION

4-6 is the fare-splitter schedule that was used early on in the project.

The fare-splitter was unpopular with the riders because fares were related to occupancy and fluctuated according to the number of people on a given trip. Consequently, people were unable to plan the amount of money they would need for a given trip. Problems arose when persons who signed up for a ride either cancelled or did not show up at the last minute. When this happened, clients were literally ready to go, inside the van, expecting to pay a fare based upon scheduled occupancy, but due to the no-show had to pay a fare based on actual occupancy.

Because the fare-splitter became unworkable and unpopular during the first few months of the project, project staff switched to a fixed-fare arrangement. The fixed fares were based upon the average occupancy achieved and the average revenue time needed to make the trip. Figure 4-7 is a fare schedule that was used. This schedule was revised from time to time as new operating data showed that the fares were out of line with current experience.

4.2.6 Promotional Activity

The Community Services Cooperative project was a very promotion-intensive operation. A large part of the broker's and supporting staff's time was spent in contact with individuals and groups, either trying to persuade them to become members of the CSC or encouraging them to participate in some of the various trips scheduled.

The promotional activities aimed at generating members took several forms. When the project started, the driver/broker made personal contacts to explain how the service operated, to show benefits that could result to users, and to answer any questions that came up. This personal canvassing was supplemented by group meetings scheduled through apartment managers or convened by the broker himself. Thereafter, tele-

INDIVIDUAL FARES					INDIVIDUAL FARES				
TOTAL FARE	2 RIDERS	3 RIDERS	4 RIDERS	5 RIDERS	TOTAL FARE	2 RIDERS	3 RIDERS	4 RIDERS	5 RIDERS
1.50	.30	.50	.40	.30	4.50	2.30	1.50	1.20	.90
1.60	.30	.60	.40	.40	4.60	2.30	1.60	1.20	1.00
1.70	.90	.60	.50	.40	4.70	2.40	1.60	1.20	1.00
1.80	.90	.60	.50	.40	4.80	2.40	1.60	1.20	1.00
1.90	1.00	.70	.50	.40	4.90	2.50	1.70	1.30	1.00
2.00	1.00	.70	.50	.40	5.00	2.50	1.70	1.30	1.00
2.10	1.10	.70	.60	.50	5.10	2.60	1.70	1.30	1.10
2.20	1.10	.80	.60	.50	5.20	2.60	1.80	1.30	1.10
2.30	1.20	.80	.60	.50	5.30	2.70	1.80	1.40	1.10
2.40	1.20	.80	.60	.50	5.40	2.70	1.80	1.40	1.10
2.50	1.30	.90	.70	.50	5.50	2.80	1.90	1.40	1.10
2.60	1.30	.90	.70	.60	5.60	2.80	1.90	1.40	1.20
2.70	1.40	.90	.70	.60	5.70	2.90	1.90	1.50	1.20
2.80	1.40	1.00	.70	.60	5.80	2.90	2.00	1.50	1.20
2.90	1.50	1.00	.80	.60	5.90	3.00	2.00	1.50	1.20
3.00	1.50	1.00	.80	.60	6.00	3.00	2.00	1.50	1.20
3.10	1.60	1.10	.80	.70	6.10	3.10	2.10	1.60	1.30
3.20	1.60	1.10	.80	.70	6.20	3.10	2.10	1.60	1.30
3.30	1.70	1.10	.90	.70	6.30	3.20	2.10	1.60	1.30
3.40	1.70	1.20	.90	.70	6.40	3.20	2.20	1.60	1.30
3.50	1.80	1.20	.90	.70	6.50	3.30	2.20	1.70	1.30
3.60	1.80	1.20	.90	.80	6.60	3.30	2.20	1.70	1.40
3.70	1.90	1.30	1.00	.80	6.70	3.40	2.30	1.70	1.40
3.80	1.90	1.30	1.00	.80	6.80	3.40	2.30	1.70	1.40
3.90	2.00	1.30	1.00	.80	6.90	3.50	2.30	1.80	1.40
4.00	2.00	1.40	1.00	.80	7.00	3.50	2.40	1.80	1.40
4.10	2.10	1.40	1.10	.90	7.10	3.60	2.40	1.80	1.50
4.20	2.10	1.40	1.10	.90	7.20	3.60	2.40	1.80	1.50
4.30	2.20	1.50	1.10	.90	7.30	3.70	2.50	1.90	1.50
4.40	2.20	1.50	1.10	.90	7.40	3.70	2.50	1.90	1.50

TIPPING CAB DRIVERS IS RECOMMENDED - PLEASE USE COINS, NOT COUPONS.

FIGURE 4-6.

CSC TAXI FARE-SPLITTING

CSC FARE SCHEDULE

CHURCH	\$.40
BANKING	.50
RESTAURANTS	.50
SHOPPING	.70
REC. CENTER	.80
MEDICAL APPTS.	3.00*

*Or less, with 3 or more passengers.

Fares for other trips will be arranged with the driver.

FIGURE 4-7.

FIXED FARE SCHEDULE

phone contacts or personal contacts and further promotional literature were used to attract members.

The CSC van itself was parked at Central Park Apartments a good portion of the time and was very visible to all persons there. A sign on the side of the van saying "Community Services Cooperative" was one form of advertising for the service.

The day-to-day promotional activity consisted of contact and discussion with potential riders (both on the phone and in person) and of preparation and distribution of leaflets describing upcoming trips. During the first six months of the project, the broker spent between 40 and 50 percent of his time in these promotional activities. Corresponding data for the last six months were not available.

The survey of users and non-users attempted to identify the communication channels by which people first learned of the CSC van service. Table 4-2 reports the percentages of both users and non-users who first heard of the service through a particular

TABLE 4-2.

HOW USERS AND NON-USERS
FIRST HEARD OF THE CSC VAN SERVICE *

<u>Promotional Channel</u>	<u>Users</u>	<u>Non-Users</u>
Group meeting with broker	38%	23%
Friend	26	9
Bulletin board	15	9
Leaflet	5	20
Individual meeting with broker	5	23
Newspaper	5	9
Senior citizen center	5	3
Sign on van	-	3
Apartment manager	-	3

*Columns do not add to 100% due to rounding error.

channel. As expected, individual or group meetings with the community broker were the most important source of information on the van service. Other users first found out through friends, through observation, and from signs on the bulletin boards in Central Park Apartments. The newspaper, senior citizen centers, and contacts through the apartment manager were not initial sources of information for many members or non-members.

4.2.7 Description of the Driver/Broker Role

The driver/broker, the central figure in the community broker project, had a very difficult role to play. His responsibilities were to attract membership, aggregate demand for specific trips, and provide transportation and, in addition, to generate a sense of community among his clientele. These diverse duties, which would be difficult to perform under normal circumstances, were compounded by the special problems and sensitivities of the elderly client market.

One central dilemma that the community broker faced was how to maintain the integrity and economic feasibility of the community broker concept, while at the same time offering a service people would like and would want to use. On the one hand, the economic feasibility depended upon an efficient grouping of rides. On the other hand, in order to attract riders at the beginning of the project the driver/broker had to get them to use the service and, at times, the only way to do so was to offer economically non-productive trips. Quite often the driver/broker found himself operating a personalized escort service.

Another difficulty that the driver/broker faced was the problem of managing the service so that certain members did not feel excluded. The project was so small that the members grew to know each other personally and the CSC tended, at times, to assume a club atmosphere. This meant that for certain trips

members who were not part of the "regular" group might not participate because they felt excluded. Consequently, the driver/broker had to spend a significant amount of time "encouraging" people to use CSC for their trips.

As the project evolved it became clear the driver had to maintain a high level of personal contact with the clients in order to generate ridership. Many clients had alternative transportation sources available or would choose not to make one of the recreational trips unless persuaded by the driver/broker. This type of interaction activity takes time that could have otherwise been available for driving or generating new members. However, interviews with clients and the driver indicated that this personal contact was instrumental in generating the ridership levels that were achieved; without this personal contact it is quite likely that ridership would have been lower. (See Section 4.2.8 for a description of ridership levels and trip characteristics.)

Appendix A contains a series of excerpts from the driver's log. These quotes substantiate and emphasize the observations stated above and provide insight into the subtleties of the Community Broker role.

The foregoing discussions and the excerpts indicate that:

1. Getting people to change their travel patterns to ride in a shared-ride vehicle is time-consuming and difficult, especially when other modes of transportation are available.
2. While there are several attractive features of the CSC service, in many instances people have been relying upon less expensive modes and it is difficult for them to budget money for the van service.
3. It takes an extremely organized, mature, sensitive, and sophisticated individual to be a driver/broker.
4. Ironically, as the demand grows for the service and the driver spends more time in the vehicle, the service loses some of its people-oriented appeal.

4.3 PROJECT EVOLUTION

Table 4-3 is a chronological list of key events during the demonstration year. As the timeline shows, the first four months were spent promoting the project and trying new types of trips.

During this introductory period, the broker was able to recruit approximately 85 members from the Central Park Apartments but many fewer -- on the order of 15 to 20 -- were recruited from Palo Alto Gardens.

Several reasons were advanced as explanations for the low membership and ridership at Palo Alto Gardens (PAG):

1. PAG residents had more transportation options available to them. Two Santa Clara County bus routes had scheduled stops in front of the apartment complex. Furthermore, PAG is in Palo Alto and residents are therefore eligible for Project Mobility, a subsidized taxi service for seniors.
2. Management at PAG proved uncooperative in that they would not allow CSC access to the PAG recreation room and did not actively support the service.
3. Since the van and broker were located at CPA, there was less visibility and presence at PAG. Visibility was thought to be a critical promotional factor.
4. PAG residents were a relatively mobile group without the service. In a mid-project survey 40 percent of PAG residents said they had driver's licenses, 60 percent rode the bus often, and 60 percent rode taxis often.

The April through June period was marked by continued experimentation with new trips and trip times and a solidification of the trip schedule for those trips that had proved popular. The more popular trips were grocery shopping, other shopping, and a variety of recreational trips -- some new and some repeats. The trips to the hairdresser and social visits were deemphasized because the broker was unable to aggregate sufficient demand to make these trips economically feasible.

TABLE 4-3.

CSC TIMELINE

- 1976: Feb. 15: Van arrived; one week of free rides; schedule of rides began.
- Mar. 15: Recreational trips began.
- Later in March: First evening outing, to a play at Foothill College; PAG membership was lower than expected.
- April: Weekly trip schedule -- including shopping trips, medical appointments, dinners out, cultural and recreational activities -- began to firm up.
- April-June: More of the same: new trips tried; membership grew slowly.
- May: Adobe Nutrition Program began.
- June: Nutrition Program began to subsidize client rides.
- July-August: Planning for expansion; expansion plans blocked by taxi operator.
- Sep.-Oct.: Taxi operator changed his position; canvassing of target area began; emphasis on expansion for six weeks with little payoff, i.e., few new riders.
- October: Service delivery to Senior Day Care Center began; food advisory service "mini-market" began.
- November: Letitia Showen hired as assistant broker; training lasted from November to January.
- 1977: Dec.-Feb.: "Mini-market" developed; Senior Day Care Center decreased use (fewer riders/day); volunteer involvement at CPA actively pursued; second trip to nutrition program requested by nutrition program management.

In April the self-support characteristic of the CSC was modified when the broker began providing transportation service to clients of the Adobe Nutrition Program, a social service agency which served hot noontime meals to seniors. Before the nutrition program trips started, CSC had obtained all revenue from riders. Under the initial agreement with Nutrition Program management, clients paid the first 50¢ and the Nutrition Program paid the difference between this 50¢ fare and the \$10/revenue-hour assumed operating cost of the transportation service. Later the Adobe Nutrition Program assumed the full trip charges.

As ridership for the Adobe trip and other "contract" trips grew, CSC reliance on social service agency generated business increased. Chapter 6, Operating Performance, Productivity and Economics, reports the percentage of total revenues that contract revenues represented.

In July it became clear that sufficient trip demand to make the operation economically feasible could not be drawn from the residents in Central Park Apartments and Palo Alto Gardens. Therefore, the community broker planned to expand into contiguous areas. Potential expansion sites included trailer parks in Mountain View, several apartment houses near the CPA site, and residences of people in the nearby community who might need the service. Potential users were obtained through mailing lists. Planned promotional activities included: the posting of promotional literature; door-to-door surveys of potential clients to determine their primary and transportation service needs; contacts with local clinics to negotiate providing grouped medical trips to transportation-dependent elderly patients; free introductory trips; contact with local churches.

Expansion efforts were halted temporarily when the taxi operator, fearing competition from the expanded van service, moved to block the expansion. He pointed out that the initial agreement between CSC and his company had limited the CSC van to certain areas and that the proposed expansion was beyond those areas. CSC staff argued that their target market did

not use taxicabs, so the expansion would not endanger the taxi operator's business. In late August, the taxi operator reconsidered his position and agreed to allow the expansion to take place.

The promotional campaign was carried on for six weeks during September and October. The activities which had been planned in August, including the canvassing of apartment complexes and trailer parks, were conducted during this time. Few new members were attracted, however.

In October, CSC negotiated a contract with the Senior Day Care Center, a social service agency located in Palo Alto, to provide trips to and from the center for \$3.00 per round trip per passenger. This ride was quite popular at first, but ridership declined because the trip was so long.

During the winter months the broker actively sought volunteers to assist with the brokering functions. No one was willing to become involved on a continuing basis, however, and the broker continued to perform the full range of scheduling and information functions as well the driving.

4.4 BROKERING OF TAXI RIDES

During the first six weeks CSC attempted to broker group taxi rides to residents at the Palo Alto Gardens site. To introduce this service, three public meetings were held, two flyers were passed out, thirty door-to-door contacts were made, and well over 100 phone calls were made during the first four weeks.

The results after six weeks of operation were 27 members and a total of only eight group taxi trips, although several more were cancelled for lack of a full load, and many more than that were proposed to members without success. Consequently, the brokering of shared-ride taxi service was discontinued at

PAG in favor of the brokering of rides in the twelve-passenger van at both PAG and CPA.

Part of the low market penetration at the Palo Alto Gardens complex can be attributed to poor working relations between the project staff and the management of the apartment complex. At the same time, additional regular bus transit service was being added to the site, which also enjoys a slightly higher availability of cars than at the Central Park Apartments.

However, the basic transit service product being offered by the project was not of sufficient quality to compete with the alternatives available. Brokering of taxi rides suffered from all of the following elements:

1. The broker is not available as escort and thus cannot act as a buffer between elderly persons who may not be used to sharing activities with one another; this tends to diminish the attractiveness of the ride to the clients, therefore diminishing demand.
2. The high cost of an unsubsidized taxi ride, even if split three or four ways, exceeds the hypothesized threshold of 50¢ per passenger. In addition, there is certainly no leverage for a fee to the broker.
3. The maximum number of persons that can be comfortably served by a five-passenger taxicab, in most cases, is really only four -- especially disabled persons.
4. Organizing a group ride for three or four persons in a cab can be almost as time-consuming for the broker as organizing a six- or seven-person ride in the van.
5. Even if a ride were successfully arranged by the broker and became a repeat ride by these persons, there is no further role for the broker to play relative to the repeat ride.

A surcharge added on to any such repeat ride, to reimburse the broker via a "royalty" for having set up the ride, may not be enforceable, given the clients' ability to change suppliers or, in other ways, to refuse or subvert payment of the surcharge. Alternatively, taxicab companies are not likely

to absorb the cost of a broker solely on the basis of rides generated, given that the economic market for such rides seems to be poor. If there is such a market, a more cost-effective model should be for the taxicab operator to advertise a special group ride for those who can organize the rides themselves. This puts maximum reliance upon self-help and may be a workable model in the case of small group rides. Furthermore, the role of the broker in this case is small and may be seen as unnecessary in that there are no escort or high-productivity brokerage functions being performed.

Thus, in the taxi case the broker is forever faced with the task of organizing one-shot, time-consuming, low-productivity rides with little leverage for factoring in the cost of his services. Consequently, this type of brokerage is seen as economically self-sustaining only as an adjunct to brokerage of van rides where the broker also acts as driver. In that case, brokerage of small group taxi rides would be seen as an added "good will" service provided to clients in special cases and to the suppliers, who may or may not employ the broker. This service to the client population is seen as potentially an ingredient in providing the clients with transportation options to interface with large group rides that are successfully arranged. Thus, trips to the grocery store for from a medical clinic may be taken most advantageously on a regular transit bus, if available, or by taxi (small group), whereas the other half of the trip could be organized into a large group ride on the van.

5. PROJECT DEMAND

5.1 RIDERSHIP AND REVENUE

Figure 5-1 illustrates monthly ridership and vehicle trips during the operating year, and Figure 5-2 illustrates monthly revenue during the operating year.

In addition to the overall totals, the graphs depict both contract-generated and broker-generated components of trip demand revenue. Contract ridership and revenue refer to those transportation services funded under contract with either the Adobe Nutrition Program or the Palo Alto Senior Day Care Center, both of which paid CSC \$10 per revenue-hour¹ for transporting their clients. Broker-generated trips are those developed by the community broker to help his clients meet their primary service and recreational needs. These data are shown on a three-month moving average basis in order to smooth out the fluctuations and make trends more noticeable.

The figures show that revenue rose steadily throughout the year and that ridership rose steadily at first, but then declined slightly toward the end. The broker-generated component of both ridership and revenue assumed a progressively smaller share of the growth.

It appears that during the year the community broker saturated the immediate client market (i.e., the apartment complexes and the surrounding area) except for those trips involving agency services. Because the revenue and ridership produced under the contracts were still rising from month to month at the time the demonstration ended, it is difficult to determine whether or not the community broker had met the full demand for these agency-supported services.

In other demonstration areas, one might attribute the decline in ridership over the winter months to seasonal fluctuations. In Mountain View, however, the weather during the 1976-

¹The term revenue hour refers to the amount of time the vehicle is traveling with fare-paying passengers aboard; it is therefore equal to vehicle hours minus deadhead time.

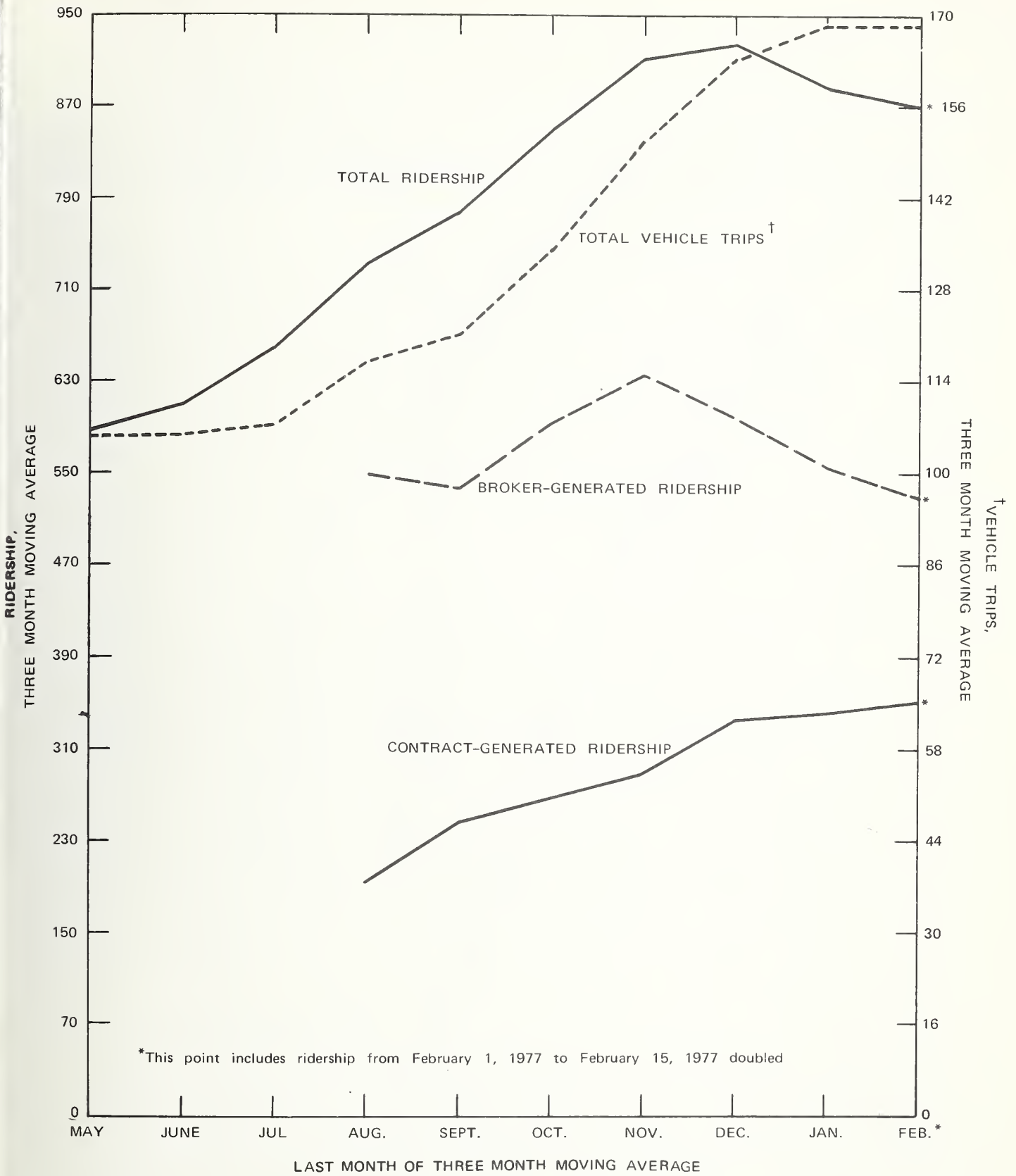
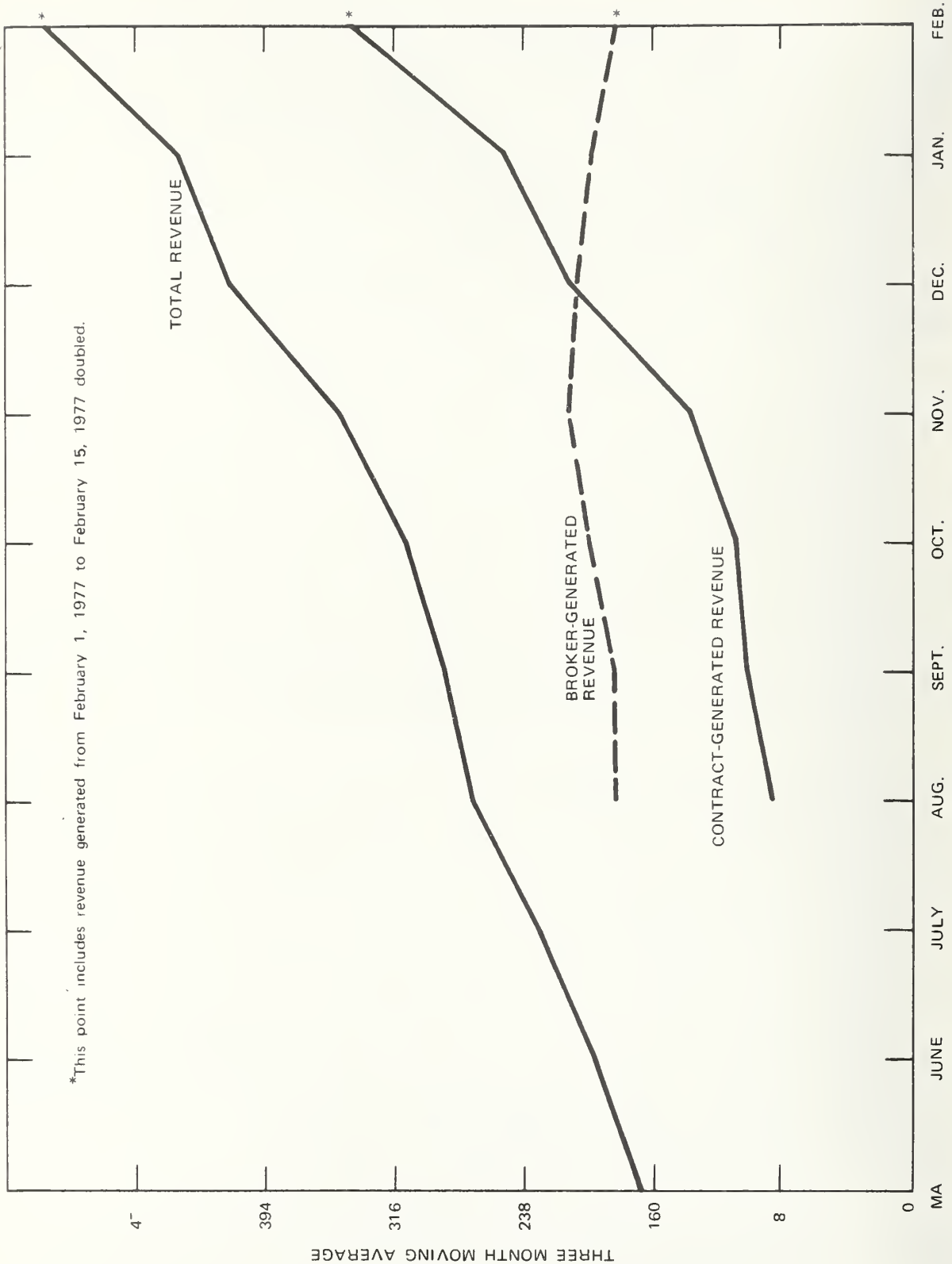


FIGURE 5-1 RIDERSHIP AND VEHICLE TRIPS PER MONTH



*This point includes revenue generated from February 1, 1977 to February 15, 1977 doubled.

FIG. 5-2. REVENUE PER MONTH

77 winter was unusually good: temperatures were mild and precipitation levels were at a record low. It seems unlikely that weather had a serious dampening effect on travel demand, even for the elderly market served.

5.2 DEMOGRAPHICS OF THE MEMBER GROUP

According to the post-demonstration user survey, 97 percent of the users were over 65. The average age was 75. Eight percent of all users were males, while 92 percent were females. Seventy-three percent of the user group had access to a car and 18 percent drove their own cars.

We were not able to gather accurate income information for either the user or non-user groups. However, within the Rengstorff (5093.01) census tract, 29 percent of the total household population earned less than one-half of the median income of the area. Because eligibility for living in the HUD 221 projects is based on a low-income criterion, we can conclude that most of the people there have low incomes or have successfully disguised their financial situations. Casual observation of the member group reveals that some of the individuals may have wealth that was not considered when they were declared eligible to move into the apartment complexes. Also, some of the apartment residents live beyond their means due to financial resources from sons or daughters or other family members who live in the community.

5.3 TRIP CHARACTERISTICS

Table 5-1 describes the trip demand for the CSC van service by listing the major trip purposes and, for each trip purpose, the total number of one-way passenger trips, percent of the total passenger trips, load factors and average trip length. These data indicate that:

TABLE 5-1.

TRIP CHARACTERISTICS

	<u>Number of Pass- enger Trips</u>	<u>Percent of Total Passenger Trips Delivered</u>	<u>Average Passengers Per Trip (Load factor)</u>	<u>Average Trip Length (in Miles)</u>
Grocery shopping	2120	24.2%	5.8	2.2
Nutrition program	2013	22.9	6.9	3.2
Commercial meals	994	11.3	8.0	2.6
Other shopping	861	9.8	7.5	2.9
Church	450	5.1	5.4	1.4
Commercial recreation	339	3.9	7.9	3.2
Recreation center	304	3.5	5.2	3.8
Government offices	280	3.2	4.5	1.2
Senior day-care center	266	3.0	5.9	14.2
Health care	224	2.6	1.4	4.7
Link-up	199	2.3	6.6	2.2
Banking	118	1.3	3.7	7.0
Hairdresser	72	.8	2.3	1.5
Social visits	12	.1	6.0	2.6
Miscellaneous	524	6.0	6.4	3.1
	<u>8776</u>	<u>100.0%</u>	<u>5.8</u>	<u>3.2</u>

1. Most trips, with the exception of trips to the senior day-care center and some health-care trips, were to destinations close to the CSC site. Since average trip-length figures given include deviations to pick up passengers in the community, destinations were even closer than the average trip-length figures indicate.
2. The most popular trips were those for shopping, the nutrition program, and a variety of recreational activities. These recreational activities included commercial meals, church, and commercial recreation.
3. The broker was able to aggregate demand for commercial meal trips, shopping trips, and the nutrition program fairly easily. Load factor figures show, however, that health-care trips, trips to the hairdresser, and a variety of personal business trips were less popular.

5.4 COMPARISON OF REVENUE AND RIDERSHIP GOALS WITH RESULTS

Comparison of specific operational goals with results is useful in explaining operational performance of the community broker project. Table 5-2 shows CSC's quarterly demand and revenue goals (annual goals expressed on a quarterly basis), actual results for the last quarter, and the percentage of goal achieved. These last quarter operational performance results reflect a mature stage of project operations in Mountain View. These results indicate that:

1. CSC fell far short of its projections for demand and revenue: 29 percent of the quarterly revenue and demand goals were reached.
2. The average load factor for those trips that were generated was, at 5.2, below what was originally thought possible.
3. Due to higher than anticipated average fare, revenue per vehicle trip was essentially on target. The relatively high fare is attributable to the revenue generated under contracts with the Adobe Nutrition Program and the Senior Day Care Program.

TABLE 5-2.

DEMAND AND REVENUE GOALS VS. RESULTS

	<u>Original Goal, Expressed on Quarterly Basis</u>	<u>Final Quarter Results</u>	<u>% of Quarterly Goal</u>
Revenue	\$4,500	\$1,315	29
Vehicle Trips/Year	1,500	432	29
Revenue/Vehicle Trip	\$3	\$3.04	101
Average Load Factor	7.5	5.2	69
Average Revenue/Passenger	\$.40	\$.59	148

5.5 MARKET PENETRATIONS

5.5.1 Target Market Penetration

There are two definitions of target population that can be used in estimating the community broker project's penetration rate: 1) low-income, elderly residents of the two target apartment complexes, and 2) low-income, elderly persons in census tract 5093.01. Although neither of these two populations was formerly designated as the target market, over 95 percent of all trips were delivered to clients in these areas.

Table 5-3 shows the number of members and penetration rate for each apartment complex and the number of members from the surrounding community. Market penetration was much higher at CPA than at PAG. This higher penetration rate can be attributed, in part, to the project's visibility at the CPA site and to the frequency of client contact with the community broker. Disagreements with the PAG apartment manager, early promotional difficulties, and association with the ill-fated, shared-ride taxi service, account for the lower penetration rate at the PAG complex.

During an expansion effort mid-way through the demonstration year, several potential markets in Mountain View were approached, including a 60-square-block residential area contiguous to CPA, several mobile home complexes in Mountain View, and the downtown residential section, which is the poorest community in the city. More promotional effort was devoted to the area close to CPA than to other areas.

If the target market is considered to be the elderly in census tract 5093.01, then the 112 CSC members represent a 17-percent penetration of the elderly market of 665 (1970 census figures). The market consisting of persons who are both low-income and elderly is smaller -- probably one-half the size of the elderly population as a whole -- and the CSC penetration of the tract 5093.01 elderly and low-income market is estimated at 35 percent.

TABLE 5-3.

TARGET POPULATION AND MARKET PENETRATION

<u>Location</u>	<u>Total Elderly Population</u>	<u>CSC Members</u>	<u>Market Pene- tration Rate</u>
Central Park Apartments	158	80	50.6%
Palo Alto Gardens	170 ^a	16	9.4
Other ^b		<u>16</u>	
	Total Members:	112	

^aThis figure is an estimate. There are approximately 195 people living in the apartment complex. Although most of them are elderly, some live with non-elderly members of their families.

^bThere were sixteen members from the community at large.

5.5.2 Penetration of Member Trip Market

We estimate that the community broker captured approximately one-fourth of the total trip demand for CSC members. Over the course of the year, 8,776 trips were offered. Some of these, around five percent, were offered as promotions. This leaves 8,337 revenue trips provided to CSC members. For 240 days of service the average number of revenue passenger trips per day for CSC members was 35, or approximately .31 trips per member per day. This compares with a 1.4-trip-per-day figure of all able bodied elderly and a 1.1 to 0.7 range for those elderly who also were transportation handicapped. The 1.1 figure refers to those elderly who are moderately transportation-handicapped, while the 0.7 figure refers to those elderly who are severely transportation-handicapped.²

5.5.3 Explanation of Market Penetration

5.5.3.1 Reasons for Use - The market penetration figures can be interpreted in light of survey data indicating why users chose to join CSC and why non-users chose not to. Table 5-4 records responses given when persons were asked the open-ended question, "Why do you use the CSC van service?" The information in Table 5-4 indicates that:

1. People very much appreciated the convenience of the service. Convenience in this sense refers to the fact that the van was present in the community that was served and that it catered directly to the trip-making habits of the target population.
2. The personalized service also was a frequently mentioned feature. Forty percent of the people mentioned the personal assistance they received from the driver and the driver's courtesy in assisting them.

²These figures come from Incidence Rates and Travel Characteristics of the Transportation Handicapped in Portland, Oregon, Report No. UMTA-OR-06-0004-77-1, April 1977.

TABLE 5-4.

REASONS FOR USING THE VAN SERVICE¹

Features

Convenience (closeby, goes where I need to go)	45%
Help from driver	40%
Comfort	13%
Reliability	11%
Safety	5%
Low Cost	3%
Fast	3%

Activity Oriented Reasons

Chance to get out more	24%
Chance to be with others ²	24%

¹These responses are to an open-ended question. Some respondents gave more than one answer so the total does not add to 100%.

²This includes those who expressed a high regard for the driver.

3. The service that evolved helped meet social and recreational needs. Approximately a quarter of those interviewed responded that the van enabled them to "get out" and "be with others" more. Furthermore, in this small-scale setting, a warm, personal relationship developed between the driver/broker and his clients. Many of those who mentioned the "chance to be with others" were expressing their personal regard for the driver/broker.
4. Only one person mentioned the low-cost fares as a reason for using the service. This seems to indicate that cost savings were not perceived as a prime benefit of the service or that they were not as significant as other benefits.

These latter three points were confirmed by responses to another question. Survey respondents were asked to indicate the "importance" of six features of the service. A "very important" rating by a respondent indicated that he or she might not use the service if it did not have the particular feature or characteristic to the level or amount provided by the CSC. Table 5-5 lists these six features and the percentage of people who said each was "very important."

TABLE 5-5. IMPORTANCE OF SELECTED FEATURES

<u>Feature</u>	<u>Percent Describing Feature As Very Important</u>
Help from driver	70
Safe and comfortable ride	38
Frequent service	30
Low-cost fares	28
On-time pick-up	23
Chance to meet others	23

Another way to determine client's reasons for joining CSC is to ask them why they preferred CSC to other forms of transit. Table 5-6 shows that the CSC van is evidently more convenient and perceived by many as being more reliable than fixed-route buses. The escort and sociability features of the van also seem important.

TABLE 5-6.

REASONS NON-TRANSIT DEPENDENTS
PREFER CSC TO OTHER FORMS OF TRANSIT

	<u>Percent Giving Reason</u>
Convenience	42.4
Be with others	21.2
Reliability	15.2
Don't know area	12.1
Help from driver	12.1

5.5.3.2 Reasons for Non-Use - The primary reason for not using CSC van service was access to another means of transportation. Sixty-eight percent of those questioned gave this reason for not using the van. Eighteen percent explained that they had a handicap that kept them from using the service. Others mentioned a variety of individual problems they had with the van service, but none of these problems were mentioned often enough to indicate a serious shortcoming in the service.

TABLE 5-7.

REASONS FOR NON-USE

	<u>Percent Giving Reason</u>
Other means of transportation	68
Too handicapped to use CSC	18
Don't like scheduling ahead	5
Waiting time	5
Absence of group trips	3
Unreliable service	3

Table 5-8 shows that trip-making behavior of non-users was very similar to that of users (cf. Table 7-1). However, the modes were different. Non-users drove themselves, used buses and taxis more, and were less reliant upon agencies. This is consistent with the responses in Table 6-3, which show that they had access to other means of transportation that they considered adequate.

TABLE 5-8.

NON-USER TRIP MAKING

TYPE OF TRIP	% Making Trip	PREDOMINANT MODE ¹							
		Drive Self	Driven by Relative	Driven by Friend	Driven by Agency	Bus	Walk	Taxi	Bicycle
1. Health Care (Medical or Dental)	95%	51%	23%	10%	3%	10%	3%	-	-
2. Grocery Shopping	90%	54%	22%	3%	8%	3%	8%	3%	-
3. Personal Business	88%	56%	17%	3%	6%	8%	-	3%	-
4. Recreational/Social	82%	56%	14%	15%	-	9%	-	3%	-
5. Commercial Meals	75%	58%	16%	10%	-	10%	3%	-	3%
6. Other Shopping	75%	48%	16%	3%	-	10%	16%	7%	-
7. Church	48%	65%	10%	15%	-	5%	-	5%	-
8. Work	8%	100%	-	-	-	-	-	-	-
9. Nutrition Program	5%	50%	-	-	-	-	50%	-	-

¹of those making trip

6. OPERATING PERFORMANCE, PRODUCTIVITY AND ECONOMICS

This section of the report has two major purposes:

- 1) to present operating results for the demonstration year,
- and 2) to assess the economic feasibility of the limited community broker concept tested. A later section provides some commentary on the economic feasibility of the fully integrated community broker model.

6.1 OPERATING DATA BY TRIP PURPOSE

CSC staff kept detailed weekly operating data on ridership, miles traveled, revenue and revenue time (the time spent driving with passengers) for each type of trip that was taken. These data are summarized in Tables 6-1 and 6-2. Table 6-1 summarizes operational information for the entire year; Table 6-2 contains data from the final two quarters only in order to show how the project evolved over the year.

The following highlights from Tables 6-1 and 6-2 help to describe the service that evolved in Mountain View:

1. Shopping trips, trips to the Adobe Nutrition Program, commercial meal trips, and medical/dental trips accounted for more than two-thirds (69 percent) of vehicle trips delivered and 71 percent of passenger trips. During the last two quarters (Table 6-2) these trip types constituted an even larger percentage of vehicle-trips (72 percent), but a declining portion of passenger trips (60 percent).
2. Most of the trips were within four miles of the demonstration site. This distance includes direct route deviation to pick up passengers. However, trips to the Senior Day Care Center in Palo Alto were 14.2 miles and health care trips averaged 4.7 miles. The average trip length was 3.6 miles for the last two quarters of the demonstration year and 3.2 miles overall. The increase in average trip length over the last two quarters was due primarily to the increase in the number of trips to the Palo Alto Senior Day Care Center. These

trips accounted for 20 percent of vehicle miles driven during the last two quarters, but only 13 percent of vehicle miles for the year as a whole.

3. Trips to the Adobe Nutrition Program, Senior Day Care Center, and shopping were the most significant revenue producers, accounting for 67 percent of all revenues. The former two trip types were paid for, under contract, by the respective agencies. Senior Day Care trips and health-care trips generated the most revenue per passenger because they were the longest.
4. The community broker was able to successfully organize and aggregate demand for most trips. Productivity statistics show that the social trips--such as commercial recreation, commercial meals, and the Nutrition Program--tended to attract more riders than the other trips. Productivity for health-care trips was extremely low at 1.4, as CSC was unable to coordinate personal medical schedules in a satisfactory manner. Other low productivities were also due to the individualized trip purposes served. Average load factors for the specific trips did not change appreciably during the last two quarters.
5. The driver/broker drove 4,825 vehicle miles during the demonstration or approximately 20 miles per service day. Sixty-five percent of these vehicle miles of service (3,161 miles) were driven during the last two quarters of the project year. For the last half of the year, vehicle miles driven per service day averaged 25.3.
6. Revenue per passenger-mile was 12¢/mile for the year, but health-care trips (25¢/passenger mile) and hair-dresser trips (17¢/passenger mile) helped to raise that average.
7. Revenue per revenue-hour hovered around the \$7.36 rate throughout the year, decreasing slightly during the latter two quarters. Revenue per revenue-hour ranged from a low of \$3.28 for church trips to a high of \$10.37 for commercial recreation.
8. The average revenue (fare) per passenger was 39¢ for the year and 46¢ for the last two quarters. Most fares were stable over the year with the exception of the Adobe Nutrition Program trips; their average revenue increased dramatically. This was probably due to the fact that the driver/broker made two trips/day--each trip at less than full occupancy--during the last two quarters, but billed the program at \$10 per revenue hour of service regardless of the number of passengers.

TABLE 6-1.

DEMONSTRATION YEAR OPERATING DATA

TRIP PURPOSE	Vehicle Trips		Passenger Trips		Load Factor (Pass./ Trip)	Vehicle Miles		Passenger Miles		Mean Trip Length	Revenue Collected		Rev./ Trip \$	Rev./ Pass. \$	Revenue Hours		Rev./ Pass-Ml. \$	Rev./ Rev.-Hr. \$	Pass. Trips/ Rev.-Hr.	
	#	%	#	%		#	%	#	%		\$	%			#	%				
Senior Day Care	45	3.0	266	3.0	5.9	640.5	13.3	3787.1	13.4	14.2	457,90	13.3	10.18	1.72	45.79	9.8	.12	10.00	5.8	
Commercial Recreation	43	2.8	339	3.9	7.9	211.4	4.4	1609.1	5.7	4.9	129.40	3.8	3.01	.38	12.48	2.7	.08	10.37	27.2	
Link-up	30	2.0	199	2.3	6.6	67.1	1.4	470.2	1.7	2.2	63.25	1.8	2.11	.32	6.74	1.4	.13	9.38	29.5	
Commercial Meals	125	8.2	994	11.3	8.0	331.2	6.9	2735.0	9.7	2.6	284.92	8.3	2.28	.29	31.62	6.8	.10	9.01	31.4	
Nutrition Program	292	19.2	2013	22.9	6.9	924.8	19.2	6517.2	23.1	3.2	865.70	25.2	2.96	.43	100.02	21.4	.13	8.66	20.1	
Grocery Shopping	367	24.1	2120	24.2	5.8	823.2	17.1	5234.1	18.6	2.2	682.22	19.9	1.86	.32	94.14	20.2	.13	7.25	22.5	
Other Shopping	115	7.5	861	9.8	7.5	335.9	7.0	2658.2	9.4	2.9	280.86	8.2	2.44	.33	38.29	8.2	.11	7.34	22.5	
Church	84	5.5	450	5.1	5.4	114.3	2.4	637.5	2.3	1.4	73.80	2.2	.88	.16	22.51	4.8	.12	3.28	20.0	
Health Care	155	10.2	224	2.6	1.4	733.6	15.2	922.9	3.3	4.7	228.79	6.7	1.48	1.02	50.50	10.8	.25	4.53	4.4	
Hair Dresser	32	2.1	72	.8	2.3	46.6	1.0	145.5	0.5	1.5	24.90	0.7	.78	.35	4.06	.9	.17	6.13	17.7	
Banking	32	2.1	118	1.3	3.7	63.3	1.3	220.4	0.8	2.0	33.50	1.0	1.05	.28	5.35	1.1	.15	6.26	22.1	
Recreation Center	58	3.8	304	3.5	5.2	198.0	4.1	1301.1	4.6	3.4	100.35	2.9	1.73	.33	13.74	2.9	.08	7.30	22.1	
Government Offices	62	4.1	280	3.2	4.5	75.1	1.6	383.6	1.4	1.2	31.60	0.9	.51	.11	6.92	1.5	.08	4.57	40.5	
Miscellaneous	82	5.4	524	6.0	6.4	255.0	5.3	1545.2	5.5	3.1	174.57	5.0	2.09	.33	33.88	7.3	.11	5.06	15.5	
Social Visits	2	.1	12	.1	6.0	5.1	.1	30.6	0.1	2.6	3.00	0.1	1.50	.25	.58	.1	.10	5.17	20.7	
TOTAL/AVERAGE ^a	1524	100.1	8776	100	5.8 ^b	4825.1	100.3	28,197.7	100.1	3.2 ^b	3431.76	100.0	2.25 ^b		.39 ^b	466.62	99.9	.12 ^b	7.36 ^b	18.8 ^b

^aSome percentage totals do not add to 100% due to rounding error.

^bThis figure represents a division of the respective totals, e.g., total vehicle miles ÷ total trips, or total revenue ÷ total trips, etc.

TABLE 6-2.

FINAL TWO QUARTERS OPERATING DATA

TRIP PURPOSE	Vehicle Trips		Passenger Trips		Load Factor (Pass./ Trip)	Vehicle Miles		Passenger-Miles		Mean Trip Length	Revenue Collected		Rev./ Trip \$	Rev./ Pass. \$	Revenue		Rev./ Pass.-Mt. \$	Rev./ Pass.-Hr. \$	Pass. Trips/ Rev.-Hr.
	#	%	#	%		#	%	#	%		\$	%			#	%			
Senior Day Care	45	5.1	266	5.3	5.9	640.5	20.3	3787.1	20.7	14.2	457.90	19.7	10.18	1.72	.12	45.79	14.6	10.00	5.81
Commercial Recreation	25	2.8	211	4.2	8.4	100.9	3.2	814.3	4.4	4.0	68.70	3.0	2.75	.33	.08	5.84	1.9	11.76	36.1
Link-Up	18	2.0	103	2.0	5.7	42.9	1.4	269.4	1.5	2.4	34.25	1.5	1.90	.33	.13	3.89	1.2	8.80	26.5
Commercial Meals	61	6.9	484	9.6	7.9	170.2	5.4	1416.6	7.7	2.8	120.37	5.2	1.97	.25	.08	14.74	4.7	8.17	32.8
Nutrition Program	210	23.8	1491	29.7	7.1	672.4	21.2	4854.4	26.5	3.2	753.65	32.3	3.59	.51	.16	76.64	24.4	9.83	19.5
Grocery Shopping	205	23.2	1056	21.0	5.2	438.7	13.9	2565.4	14.0	2.1	347.67	15.0	1.70	.33	.14	49.32	15.7	7.05	21.4
Other Shopping	57	6.4	436	8.7	7.6	213.5	6.8	1719.2	9.4	3.7	151.81	6.5	2.66	.35	.09	21.66	6.9	7.01	20.1
Church	42	4.8	218	4.3	5.2	83.5	2.6	471.9	2.6	2.0	47.90	2.1	1.14	.22	.10	18.29	5.8	2.62	11.9
Health Care	103	11.7	160	3.2	1.6	458.8	14.5	547.1	3.0	4.5	149.74	6.4	1.45	.94	.27	36.87	11.7	4.06	4.3
Hair Dresser	18	2.0	46	.9	2.6	34.4	1.1	121.5	.7	1.9	14.50	.6	.81	.32	.12	2.74	.9	5.29	16.8
Banking	20	2.3	54	1.1	2.7	48.0	1.5	147.2	.8	2.4	16.00	.7	.80	.30	.11	3.80	1.2	4.21	14.2
Recreation Center	10	1.1	34	.7	3.4	24.5	.8	131.0	.7	2.5	10.75	.5	1.08	.32	.08	2.16	.7	4.98	15.7
Government Offices	2	.2	22	.4	11.0	9.1	.3	100.1	.5	4.6	6.60	.3	3.30	.30	.07	.80	.3	8.25	27.5
Miscellaneous	68	7.7	446	8.9	6.6	223.8	7.1	1372.8	7.5	3.3	143.47	6.2	2.11	.32	.10	31.32	10.0	4.58	14.2
Social Visits	-- No Social Trips in Final Two Quarters --																		
TOTAL/AVERAGE ^a	884	100.0	5027	100.0	5.7 ^b	3161.2	100.1	18,318.0	100.0	3.6 ^b	2323.31	100.0	2.63 ^b	.46 ^b	.13 ^b	313.86	100.0	7.40 ^b	16.0 ^b

^aSome percentage totals do not add to 100% due to rounding error.

^bThis figure represents a division of the respective totals, e.g., total vehicle miles ÷ total trips, or total revenue ÷ total trips, etc.

6.2 ANALYSIS OF DRIVER/BROKER FUNCTIONS

6.2.1 Economic Significance of the Driver/Broker Role

The revenue-generating capacity of the community broker service and, consequently, the economic feasibility of the project were dependent upon the way the driver/broker allocated his time. The more time he spent transporting passengers for revenue (as opposed to promoting the service, for example), the more revenue he could generate and the less subsidy would be required.

One purpose of the demonstration was to determine whether one person could indeed successfully perform both the driver and broker functions. The demonstration was intended to determine 1) what portion of his total time a driver/broker could devote to driving vs. brokering, and 2) what proportion of driving time was revenue time, i.e., time actually spent transporting passengers for money. These two questions are addressed in this section.

6.2.2 Driver/Broker Time Allocation

Records of the driver/broker's time were available for the first six months of the project. These indicate, as shown in Table 6-3, that only 21 percent of his time was spent driving. The balance was devoted to various administrative, brokering and outreach duties. Table 6-3 also indicates the average number of driver/broker minutes spent in each of four different functions per passenger trip and per vehicle trip. Generally, these data show that it took the driver/broker longer to perform the scheduling and outreach necessary to generate the demand than it did to deliver the trip. Program administration was also more time consuming than driving.

There is some indication that the time driving/total time ratio increased in the second half of the demonstration. If we assume that the driving time per vehicle mile was the same for both halves of the demonstration, then time spent driving can be

TABLE 6-3.

BREAKDOWN OF DRIVER/BROKER TIME^a

Function	Hours	% of Total Time	Time/ Passenger-trip (min.)	Time/ Vehicle-trip (min.)
Registration, i.e., Signing up a New Member	3	2.3	-	-
Scheduling	164	14.2	2.6	15.4
Driving	246	21.2	3.9	23.0
Program Administration	343	29.7	5.5	32.1
General Discussion and Outreach	302	26.1	4.8	28.3
Escort	48	4.1	-	-
Service Provider Contacts	22	1.9	.3	1.5
Vehicle Maintenance	30	2.6	-	-
Totals:	1,158	102.1 ^b	17.1	100.3 ^b

^aBased on first six months of operating data.

^bDue to rounding.

derived from the number of vehicle miles driven. During the first two quarters the driving time per vehicle mile was 8.9 minutes. In the last two quarters 3,161.2 vehicle miles were driven. At 8.9 minutes per vehicle mile, total time spent driving in the second half of the year is estimated at 470 hours. If there are 1,040 hours available in one half of a year, then the driver/broker spent about 45% of his time driving in the last two quarters.

Table 6-4 is a partial explanation of how the broker went about generating trips. These figures indicate that the number of contacts made in the brokerage function is high: almost seven contacts per vehicle-trip. This reflects the very personalized nature of the community broker function and the intensive marketing effort conducted during the first half of the year. The 1.1 contacts per passenger trip would have been higher except that, as the year progressed, many passengers became regular riders on certain trips; recontacting these regular riders was not necessary because they were already aware of the trip.

6.2.3 Driver Time Efficiency

The other determinant of the level of demand that can be served by a driver/broker is the driver's efficiency, i.e., the ratio of revenue time/driving time. For the 26 weeks for which data are available, driver time efficiency was .62.

It was hypothesized that driving efficiency, i.e., revenue time/driving time, would increase as the number of trips increased. The reasoning was that deadheading -- going to pick up the first passenger or returning to the Central Park apartments site -- would decrease and driver time efficiency would therefore improve.

To test this hypothesis we examined driver time efficiencies for different weeks during the first half of the year. No statistically significant relationship between trip volume and driver time efficiency was found. One possible explanation for this

TABLE 6-4.

BREAKDOWN OF DRIVER/BROKER CONTACTS¹

<u>Contacts with Clients/ Potential Clients</u>	<u>#</u>	<u>#/passenger- trip</u>	<u>#/vehicle- trip</u>
Telephone calls, to Broker	946	.25	1.5
Telephone calls, from Broker	731	.19	1.1
Personal Contacts	<u>2594</u>	<u>.69</u>	<u>4.1</u>
Total	4271	1.13	6.7

¹Based on first 6 months of operating data.

lack of increase in driver time efficiency is that trip volumes never reached a level where efficiencies could occur. It is possible that during the second half of the year when trip volumes were greater that efficiencies did occur. However, data were not available to test this.

6.2.4 Estimate of Demand Levels a Community Broker Can Serve

In order to reach some conclusions about the efficiency of a Community Broker system it is necessary to determine the level of demand a single driver/broker could serve. This level of demand coupled with fare information gives an overall indication of the revenue-generating capacity of a single Community Broker.

Since the Mountain View Community Broker never reached its potential, it is necessary to make some assumptions about the maximum percentage of time a broker could spend driving and about the driver time efficiency.

Our estimate of the amount of demand a community broker can serve is based upon the following assumptions:

1. Maximum percentage of time spent driving: 60 percent
2. Maximum driver time efficiency: 70 percent

Both figures are intended to show the best results that could be achieved in a stable, established community broker operation.

The 60-percent driving time figure is based on the data presented in Section 6.2.2 which, when coupled with our knowledge of how the system operated, led to an estimate of the least amount of time that could be devoted to the non-driving functions, i.e., brokering and administration. The 60 percent is higher than the Mountain View results because we feel that once a stable ongoing operation is obtained, administration could be decreased to 10 percent and brokering to 30 percent of total time.

The brokerage and administrative functions probably cannot be reduced below 40 percent of the driver/broker's time. Personal contact is a significant part of the broker's job and is necessary

to sustain demand. As reported in Section 5, several users of the service that were surveyed indicated that they derived meaningful assistance from the driver/broker contacts, and that this assistance was an attractive aspect of the service. If that level of contact (e.g., assistance with scheduling, personal attention and so forth) dropped appreciably, some users might switch to other transportation modes. Some users might never have joined without the continuing personal encouragement from the driver/broker.

The 70 percent driver time efficiency estimate is a few percentage points higher than the highest figure achieved during the first six months of the demonstration and therefore a reasonable estimate of the optimal ratio that could be achieved.

A 60 percent driving time and a 70 percent driver time efficiency would yield 840 hours of available revenue time, based upon a 2,000 hour staff year. Using the 840 revenue hour figure as the constraining factor, Table 6-5 projects the demand that could be served in two cases. Case I is based on actual operating data for the year: 3.3 vehicle trips/revenue hour, 18.8 passenger trips per revenue hour, and \$7.44/revenue hour. Case II assumes that the 3.3 vehicle trips per revenue hour holds, sets passengers per vehicle trip at 7.5, and assumes a \$10/revenue hour revenue figure.

This analysis indicates that, given the trip characteristics observed in Mountain View, the demand that can be generated and served by a single community broker is limited by the nature of his duties. Even under the most favorable productivity and revenue/revenue hour assumptions, a single community broker could only hope to generate 20,790 trips and \$8,400 in revenue in the time available to him. As the next section will show, this would cover less than 1/3 of the operating cost of a community broker system.

TABLE 6-5.
COMPARATIVE EFFICIENCY DATA, DEMAND LEVELS, AND
REVENUE LEVELS FOR A SINGLE COMMUNITY BROKER¹

	CASE I <u>Actual</u> <u>Demonstration Results</u>	CASE II <u>Projected</u> <u>Optimal Operating Results</u>
<u>Efficiency Data</u>		
Vehicle trips per revenue hour	3.3	3.3
Passenger trips per revenue hour	18.8	24.8 ²
Revenue per revenue hour	\$7.44	\$10.00 ³
<u>Demand Levels</u>		
Vehicle trips/year	2,722	2,722
Passenger trips/year	15,792	20,832 ⁴
<u>Revenue Level</u>		
Revenue/year	\$6,250 ⁵	\$8,400 ⁶

¹Assumes capacity at 840 revenue hours of service.

²Calculated as follows: 3.3 vehicle trips per revenue hour x 7.5 passenger trips per vehicle hour = 24.8 passenger trips per revenue hour.

³\$10.00 figure based upon 25 passengers per revenue hour paying \$.40 apiece.

⁴840 revenue hours per year x 24.8 passenger trips per revenue hour = 20,832 passenger trips per year.

⁵Based on \$.40 revenue per passenger trip.

⁶840 revenue hours per year x \$10 per revenue hour = \$8,400.

6.3 COSTS OF THE COMMUNITY BROKER SYSTEM

The total funding for the Community Broker project amounted to \$153,000. The purpose of this section is to identify the portion of that money that can be attributed to research and start-up costs and to distinguish it from the portion spent in generating demand and delivering trips. This analysis takes a "bottom-up" approach, i.e., identifying cost components and then adding them together to arrive at a total operating cost (total costs minus depreciation) and total costs.

6.3.1 Derivation of Community Broker Costs

Table 6-6 depicts component costs for the Community Broker Project. The operating cost figures from items 1, 3, 4, 5, and 6 were gained from the local taxi operator who provided the van and hired the Community Broker for a contract fee of \$21,000. These costs altogether amount to \$17,285 so we can assume that the taxi operator realized close to \$4,000 profit. (If the van had traveled 30,000 vehicle miles, as anticipated, the profit would have been much less under this fixed price contract because of increased variable gasoline and repair expenses.)

Item #2 represents an estimate of the costs of institutional brokerage, project analyses, promotion and so forth. This \$12,000 is a conservative estimate based upon careful review of the implementation tasks, discussions with project staff, and general observation throughout the project. It does not reflect start-up or research related costs, but only the work required to provide community coordinating, to generate demand, and to provide analysis and strategic and technical management (as opposed to administrative management which was provided by the taxi operator and is included in item 4).

Normally, research would account for a large portion of the costs of this type of demonstration experiment. However, the community broker demonstration was preceded by a study culminating in a lengthy, detailed report entitled A Concept for Improving

TABLE 6-6.
BREAKDOWN OF COSTS OF COMMUNITY BROKER SYSTEM

OPERATING COSTS*

COST CATEGORY	<u>\$</u>	<u>% of Total</u>
1. Driver/Broker Salary and Benefits	\$11,200	38%
2. Institutional Brokerage, Promotion, Management Analysis	12,000	41
3. Insurance	2,200	8
4. Administration and Overhead	1,400	5
5. Gasoline	695*	2
6. Maintenance and Repair	440*	2
7. Licensing	<u>100</u>	<u>*</u>
TOTAL OPERATING COSTS	28,035	96
+ Depreciation on Van	<u>1,250</u>	<u>4</u>
TOTAL COSTS	\$29,285	100%

*Assumes 12,570 vehicle miles of service.

GRANT COSTS**

COST CATEGORY	<u>\$</u>	<u>% of Total</u>
1. Research	\$20,000	13%
2. Start-up Activity	64,000	42
3. Project Management	40,000	26
4. Operating Costs (from above)	<u>29,000</u>	<u>19</u>
TOTAL GRANT COSTS	\$153,000	100%

**This functional breakdown is an estimate as no accounting records were kept for these cost categories.

Human Service Delivery (December 6, 1974). In this report the community broker concept was developed and applied to two settings, one of which was Mountain View. Subsequently, the present grantees developed an implementation plan (December 25, 1975) for the Mountain View community broker project. Together, these documents account for much of the preliminary research and formulation of the concepts that were tested in Mountain View.

6.3.2 Unit Costs

Table 6-7 summarizes key cost data from the Mountain View demonstration. The unit costs depicted there are based upon the estimated yearly cost of \$29,285. The high costs per vehicle mile and per vehicle hour are due to the low number of vehicle miles of service delivered. This low level of mileage was because of short trip distances and because the passengers, for the most part, congregated at the driver's van at the start of a trip so the van did not have to travel to a variety of separate trip origins.

6.3.3 Analysis of Subsidy Costs

The Community Broker project was initiated with the hope that the costs of the service could be financed out of transportation revenues. The results of the Mountain View demonstration show that this is not possible. With a \$.40 fare it would take over 73,000 trips in a year to cover the \$29,285 annual cost. Even if the average fare were \$1.00 (higher than the low income target market could afford to pay) it would take over 29,000 passenger trips to break even. Section 6.2.4 showed that the maximum number of trips a single community broker could deliver in a year is around 20,000. Therefore it can be concluded that the version of the Community Broker project as tested in Mountain View could not break even.

Figure 6-1 examines the effects that fare increases or de-

TABLE 6-7.
OPERATING RESULTS^a

Demand	8,776 passenger
Average revenue per passenger trip	\$.39
Total revenue	\$3,431.76
Estimated operating cost ^b	\$29,285
Cost per passenger trip	\$3.34
Subsidy per passenger trip ^c	\$2.95
Cost per vehicle mile ^d	\$6.07
Cost per vehicle hour ^e	\$43.93

a. Data come from Table 6-1 unless otherwise noted..

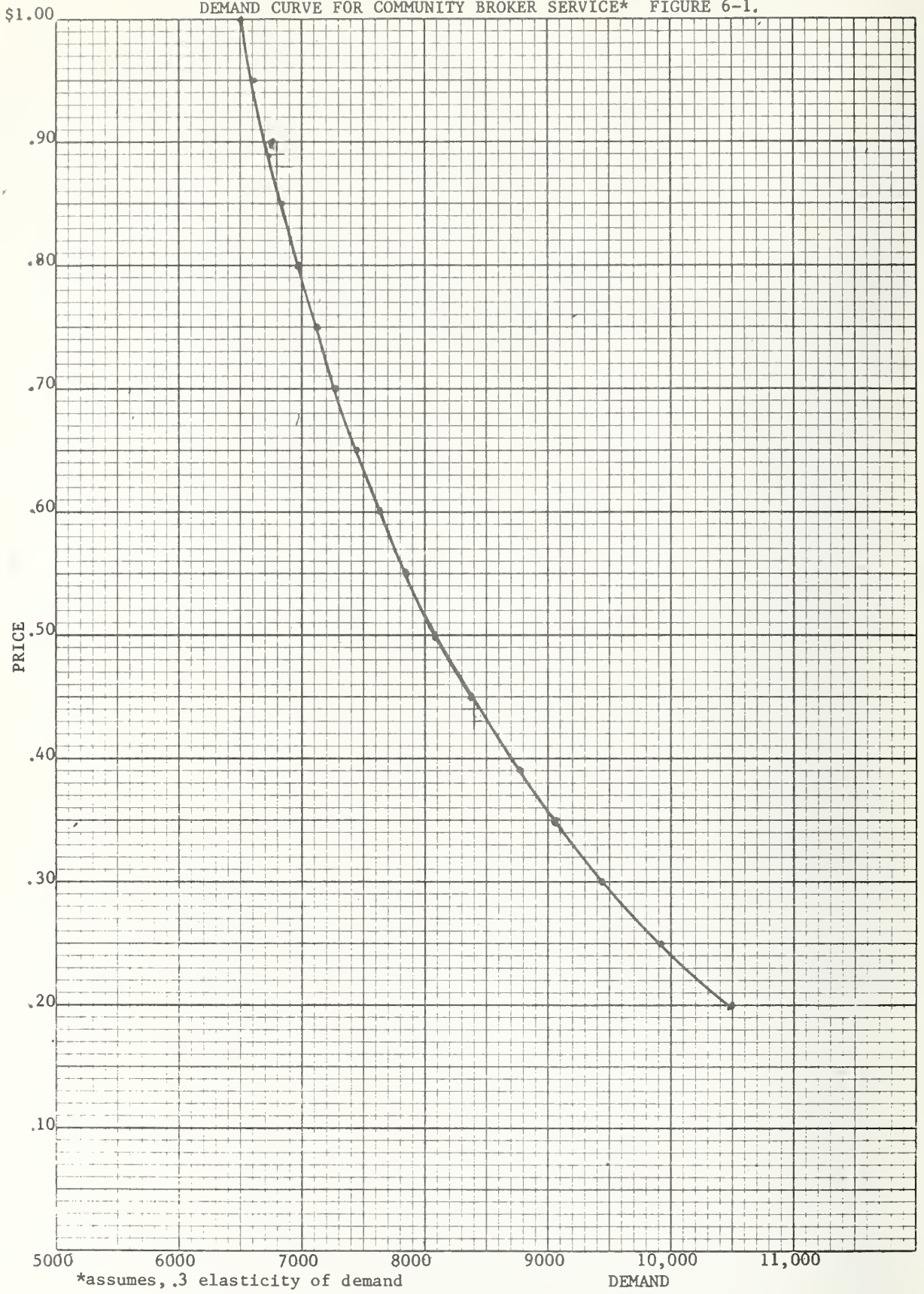
b. From analysis in Section 6.3.1.

c. Cost per trip less average revenue.

d. Derived from (total cost) ÷ total vehicle miles.

e. Assumes that (vehicle hours) = (revenue hours) ÷ .7.
See Section 6.2.4.

DEMAND CURVE FOR COMMUNITY BROKER SERVICE* FIGURE 6-1.



creases would have on demand assuming a .3 elasticity of demand. The curve, which passes through the point 8776, 0.39 (the actual yearly results) indicates the demand levels that would occur at different fare levels. As the figure shows, halving the fare would add over 1,700 trips to annual demand, assuming a demand elasticity of .3. Similarly, doubling the fare to \$.80 would only decrease demand by about 1,800 trips per year.

6.4 COMPARISON WITH OTHER SYSTEMS

The community broker system's potential usefulness as a special needs transportation alternative depends upon its relative cost and effectiveness when compared with other systems. Table 6-8 compares the Mountain View results with results of four other distinctive approaches to the special needs transportation problem.

1. The User-Side Subsidy. In Danville, IL a user-side subsidy taxi discount project is being tested. In this project, special groups are provided with fare discounts for trips in privately owned taxis on a shared-ride basis. The service is demand-responsive. Trips average 2 miles in length.
2. The Transit Operator Independently Providing Special Needs Transit. In Cleveland, OH, the transit operator provides demand-responsive service on 12 specially designed buses to elderly persons in three neighborhoods for a 10¢ fare.
3. Government Coordination with Local Taxi Operators. Six cases are cited here:
 - a. In Santa Clara County, CA, an umbrella social agency contracts with a local taxi operator to provide reduced fare service to social service agency clients. The umbrella agency trained taxi drivers,

TABLE 6-8.

OPERATING COST COMPARISONS OF SPECIAL NEEDS TRANSPORTATION SYSTEMS

	Cost/Passenger trip	Cost/Vehicle Hour	Cost/Passenger Mile	Subsidy Cost Passenger trip*
1. Mountain View Community Broker	\$3.34	\$43.93	\$6.07	\$2.95 (88%)
2. Danville User- Side Subsidy	1.55	6.16	.67	1.24 (80%)
3. Cleveland -- Transit Operator Independently Providing Transit Service	4.02	19.69	3.19	3.92 (98%)
4. San Francisco Bay Area -- Private Transit Operators Under Contract to Local Government				
a. Santa Clara County	1.75	N.A.	N.A.	1.75 (100%)
b. San Leandro	2.45	N.A.	N.A.	1.85 (76%)
c. Fremont	2.93	N.A.	N.A.	2.43 (83%)
d. Palo Alto	2.70	N.A.	N.A.	2.25 (83%)
e. Lafayette	1.26	N.A.	N.A.	.63 (50%)
f. Sunnyvale	2.80	N.A.	N.A.	2.30 (82%)
Average for Taxi Program	2.31	N.A.	N.A.	1.87 (81%)

* Numbers in parentheses are subsidy percentages.

and the specific social service agencies arrange rides for their clients. Passenger trips averaged 2.5 miles in length.

- b. In San Leandro, CA, the City contracts with a local taxi operator to provide reduced-fare service to elderly residents of San Leandro. The program utilizes a ticket payment system, and the taxi provider gives the city a discount on total bi-weekly billings. Trips are 1.5 to 2 miles in length.
- c. In Fremont, CA, the City contracts with the county for funds to provide reduced-fare, door-to-door taxi transportation service to meet the needs of elderly residents of Fremont. The program utilizes a ticket payment system, and the taxi provider gives the City a discount on total bi-weekly billings. Trips average 2.13 miles in length.
- d. In Palo Alto, CA, the City funds a program designed to provide taxi transportation for all mobility-impaired Palo Alto residents over 18 years of age who meet the income eligibility requirements. The maximum family income of the applicant determines the amount of fare subsidy received: 50 percent, 70 percent, or 90 percent. The program utilizes a scrip payment system. Trips average 2 miles in length.
- e. In Lafayette, CA, the City funds a program designed to serve the needs of the elderly residents of Lafayette. The program utilizes a coupon payment system, whereby the City sells coupon books at 50 percent of their face value to clients. Trips average 1.75 miles in length.
- f. In Sunnyvale, CA, the City funds a program designed to serve the elderly residents of Sunnyvale as well as physically disabled persons of all ages who are

unable to drive a car or use public transit. The program utilizes a ticket payment system.

The Mountain View service is, at present demand levels, clearly more expensive than two of the other systems. The cost per trip is more than double that of the Danville project, and the cost per passenger mile is about nine times that of Danville. Only the Cleveland project produced a higher subsidy cost per passenger trip, and it was later redesigned to reduce costs drastically.

7. IMPACTS

This chapter of the report examines the demonstration's impact on the target group, the local taxi industry, and social service agencies.

7.1 USER IMPACTS

7.1.1 Impact on Trip-Making Behavior*

Table 7-1 examines the impact of the CSC van service on the trip-making behavior of the users. The table points out the extent of use of the CSC van for specific trips. It also shows the alternative trip modes used by those not relying on the CSC van for a given trip. This information does not contain any data on frequency of trips and does not directly indicate mode shift. The following points seem relevant:

1. The user group was a fairly mobile group. Over 90 percent of the group made grocery shopping, other shopping, and health-care trips.
2. For the user group, survey results show that between one-fourth and one-third of those making trips relied exclusively upon CSC van service.** Health care was the exception to this generalization: only 5.4 percent relied upon the van for this trip purpose. (This low use of the van for medical trips is due in part to members' understanding that individual medical trips were economically inefficient for the CSC service because of low occupancy and long trip distances. They did not want to ask the broker to drive them for trips when productivity would be low. Also, many people relied heavily upon nearby family and friends.)

*Data compiled from User/Non-User Survey (see Appendix B).

**The responses to this question may have overstated the actual level of reliance upon the service. People were concerned that the service might be terminated and therefore may have either consciously or unconsciously overstated their reliance on the CSC van.

TABLE 7-1.

USER TRIP-MAKING BEHAVIOR AND RELIANCE ON CSC VAN SERVICE

TYPE OF TRIP	% Making Trip	Use of CSC Van ^{a.}		% Using Other Modes ^{b.}	PREDOMINANT ALTERNATIVE TRIP MODES							
		Always	Sometimes or Always		Drive Self	Driven Relative	Driven by Friend	Driven by Agency	Bus	Walk	Taxi	
												28%
1. Grocery Shopping	98%	28%	62%	72%	27%	35%	15%	8%	8%	-	-	-
2. Health Care (Medical or Dental)	93%	5%	27%	85%	15%	29%	18%	12%	18%	3%	6%	6%
3. Other Shopping	90%	25%	64%	75%	15%	39%	12%	-	23%	12%	-	-
4. Recreational/Social	80%	34%	75%	66%	c.	c.	c.	c.	c.	c.	c.	c.
5. Personal Business	75%	27%	43%	73%	19%	24%	14%	10%	19%	14%	-	-
6. Commercial Meals	78%	32%	56%	68%	17%	56%	22%	-	-	6%	-	-
7. Church	60%	25%	46%	75%	17%	28%	44%	-	-	11%	-	-
8. Nutrition Program	18%	57%	86%	43%	100%	-	-	-	-	-	-	-

a. Calculated as a percentage of those making the specific type of trip

b. Calculated as a percentage of those reporting they use other modes to make the specific type of trip

c. Interview technique inadvertently did not follow through to obtain these numbers

3. Several users relied upon the van service as one of several alternative means to make a specific trip. This is consistent with the finding that many people regarded the van as security, i.e., that they could either rely upon it when other modes of transportation were not available or increase their trip-making capability by means of the van service.
4. Many trips attracted a core group of regular riders who relied heavily or exclusively upon the van for particular trips. The Nutrition Program trips, Senior Day Care Center rides, and the recurring social trips are examples of these trips.
5. With the exception of Nutrition Program trips, between two-thirds and three-fourths of those who made the specific trips listed in Table 7-1 relied, at one time or another, upon other modes of transportation. The most heavily used modes were "drive themselves," "driven by a relative," or "driven by a friend." These varied, depending upon the type of trip.
6. Agency transportation accounted for relatively small portions of the alternative trip modes for all trips.
7. The case study interviews show that people perceived the service as a means of enhancing the social aspect of their lives. When asked, "How would you improve the service?", people responded with ideas for social, entertainment, and excursionary trips that they might not have otherwise taken.
8. Buses were seen as alternative trip modes for personal business, health care, and other shopping, but were not used very heavily on trips when individuals either had to carry parcels (i.e., grocery shopping) or when the function was primarily social in nature, such as church, commercial meals, etc.
9. Users did not rely on the taxi for any of the trips except medical and dental trips; and few of the non-users relied on taxi service for similar trips.

Survey results show that most people who were members of CSC were fairly frequent users. Table 7-2 illustrates users' responses to the question, "How often do you use the service?" The respondents consisted of people in both apartment complexes and the community.

TABLE 7-2.
USER TRIP FREQUENCY

<u>Response</u>	<u>Percent</u>
Often (more than once a week)	56
Occasionally (1-4 times/month)	24
Seldom (less than once a month)	<u>20</u>
	100

7.1.2 Financial Benefits

The level of financial benefits to users (in terms of cost savings) appears to be limited in the Mountain View experiment. This is because the basic competing modes -- Santa Clara County Transit and personal automobile transportation, the network of friends and relatives -- are quite inexpensive. Only the taxi and possibly the personal auto are more expensive than the CSC van service. The bus system allows seniors to ride free between 9 AM and 3 PM (10¢/ride otherwise), and the personal network of friends is, of course, free. Cab fares are \$1.00 for the first one-tenth mile plus 10¢ for each additional one-tenth mile; thus, a taxi trip (non-shared ride) of 3.2 miles would have cost \$4.10. Table 7-3 shows the costs per passenger mile for different modes of transportation. At these costs, the 112 members of CSC (who averaged 241 passenger miles on the van in 12 months) would have saved approximately \$280 apiece over the cab fares for the same distance. However, the 241 passenger miles of CSC service cost \$29 more than the free bus service that is available between 9 AM and 3 PM.

7.1.3 Client Satisfaction with Specific Features

Another indicator of client impact is expressed satisfaction with certain features of the service. These satisfaction ratings implicitly suggest what people feel is important; in addition, they express how well a feature meets clients' needs. Table 7-4 shows client ratings of ten features. These ratings indicate that:

TABLE 7-3.
 FINANCIAL SAVINGS FOR CSC USERS
 OVER OTHER MODES OF TRANSIT

<u>Mode</u>	<u>User Cost/Passenger-Mile</u>	<u>Annual Savings CSC Provided Over Cost of Other Modes^a</u>
Santa Clara County Transit	\$0.00 (off-peak)	None
Taxi	1.28 ^b	\$280.00
Automobile	.15	7.23
CSC Van	.12	

^aFor 241 passenger miles of travel, the average mileage traveled by a CSC user during the year.

^bAssumes a 3.12 mile average trip length.

TABLE 7-4.

CLIENT SATISFACTION WITH CERTAIN CSC VAN FEATURES.*

<u>Aspect of Van Service</u>	<u>% Saying "Very Good"</u>	<u>% Saying "O.K."</u>	<u>% Saying "Needs Improvement"</u>
Courtesy,			
Helpfulness of Drivers/Brokers	97%	3%	-
Overall Quality of Service	83	15	3
On Time Pickup to Return Home	55	35	10
On Time Pickup at Home	50	48	3
Comfort of Ride	48	50	3
Time It Takes to Get to Destination	26	74	-
Scheduling	18	73	10
Time to Spend Doing What I Need to Do	15	63	23
Fare Policy**	10	86	4
Cost of Trips	13	78	10

* For each aspect, the percentages under the three ratings add to 100%.
 ** This refers to the way the fares are determined, not the cost.

1. The most dominant feature is the driver/broker presence. Ninety-seven percent indicated that this feature or aspect of the service was very good, and none said that it needed improvement.
2. Relative dissatisfaction was expressed regarding the scheduling constraints which the van service imposed. For example, only 15 percent said that they had enough time at their destinations to do what they needed to do, and only 25 percent regarded the time it took to get to the destination as "very good." Twenty-two percent went so far as to say that the time they needed at the destination "needed improvement" and ten percent said that the on-time pick-up to return home needed improvement. Only 17.5 percent mentioned that the overall scheduling of the service was very good.
3. The ratings for the overall quality of the service were higher than most of the responses to specific aspects of the program. This suggests that, in people's minds, certain features such as the presence and helpfulness of the driver/broker as both a friend and as a helper tended to dominate people's perceptions of the service. This is borne out by the case studies. People were reluctant to say anything negative about the service because they did not want to embarrass or in any way slight the driver/broker.

7.1.4 Human Impacts

In an effort to assess objectively the ultimate and overall impact of the service on users' lives, users were asked at the end of the project what the service had meant to them. Their responses are shown in Table 7-5. These figures indicate that the service improved user mobility and access to services.

TABLE 7-5.
THE VAN SERVICE'S EFFECT ON USERS' LIVES

	<u>Percent Giving Reason</u>
Easier to get out more	27.5
Chance to get out more	37.5
Security (know it's there)	17.5
Improved access to services	15.0
Socializing, meeting people	7.5
Independence	7.5
Personal interest from driver	5.0
Comfort and safety	5.0

Our case study interviews indicate that the CSC's greatest contribution to improving the quality of its members' lives may have been in creating an ambience for enriched social and emotional experiences. CPA members, like many of the elderly in our society, experience loneliness, isolation, a dearth of purposeful activity, and lack of self-esteem stemming from decreasing mental and physical capabilities and from increasing dependence upon others. In the case study interviews, members frequently commented on CSC itself, the broker, and the social contacts as being a positive aspect of their lives. From these interviews we can see that the service provides more than simply transportation. Specifically, the following impacts were observed:

1. The warm and responsive nature of the CSC operation, particularly the sensitivity and concern of the broker, provides people with a sense of dignity and self-esteem. The personalized nature of the service provides acknowledgment of their personhood.
2. The service provides a simple and attractive way for people to engage in social and recreational activities. In this sense, it serves as a catalyst for social activity in general -- from gathering in the recreation room to chat while waiting for the van to exchanging greetings or small talk with the broker.

3. The service also affords peace of mind as well as a decreasing dependence upon family and friends. Members repeatedly said that they felt better because they "know it's there."

These impacts would not have been achieved to the degree that they were without:

- a. The continuing presence of the broker in the community to act as a personal friend or confidant,
- b. The flexible, responsive nature of the service, and
- c. The active coordinating and integrating influence of the broker in planning trips and activities.

Each of these three factors is unique to the community broker concept.

7.2 THE TAXI INDUSTRY PERSPECTIVE

Taxi-operator perspective was obtained from Mr. S. H. Sanger, owner and manager of Cabs Unlimited in Mountain View, and from Mr. Jim Pastorelli, manager of GI--United Cabs in San Jose. Mr. Sanger gained involvement through the demonstration; Mr. Pastorelli has worked extensively with social service agencies in San Jose to provide trips to the elderly.

7.2.1 Potential for Community Broker/Taxi Operator Conflict

The community broker van service as priced in this demonstration can present competition for the elderly market to the local taxi industry. The degree to which this competition manifests itself in a particular community depends upon a variety of situational factors, including relative prices of the two forms of transit, their relative availability and appeal to the client group, availability of other modes of transportation, etc. Regardless of the situational factors that exist in any community, the potential for competition between the broker and the

taxi operator can be perceived as threatening by the latter. Therefore, he is likely to oppose a community broker system unless he understands that the service will not threaten his business or he can participate in the operation (and profits).

Two experiences in Mountain View support the conclusion that the taxi operator is likely to oppose the community broker system. When the community broker operation was first being planned, CSC staff assumed that Mr. Sanger would not resist it because it offered rides to a low-income target market which was thought not to use taxis. However, Mr. Sanger felt that the community broker was government-subsidized competition, and he lobbied against a bill introduced to the State legislature that would have exempted projects such as the community broker from Public Utilities Commission regulation. Subsequently, CSC contracted with him to provide the transportation and hire the community broker as an adjunct to his taxicab service. The details of this agreement have been explained in Section 4.

The second experience involves the CSC's expansion plans. Halfway through the demonstration year, CSC staff wanted to expand community broker operations beyond the two apartment complexes. Mr. Sanger at first opposed this move because he felt, again, that it would infringe upon his taxi business. Subsequently, he grudgingly changed his mind under political pressure.

7.2.2 Taxi Views on Workability of the Community Broker Concept

Both taxi operators we contacted had reservations about the CSC project and the community broker concept as a practical, economical way to provide transportation services. Their reservations were as follows:

1. The group ridership aspect of CSC service dehumanized the elderly clients by crowding them into a twelve-passenger van and forcing them to go on long, tiring trips (to pick up other passengers) to get to their final destinations. By contrast, the taxi provides private, direct, and rapid transportation.
2. The CSC staff had no demonstrated experience in the transportation industry, were unfamiliar with people's trip-making habits, and consequently were unqualified to provide transportation.
3. The community broker operation was financially unsound. The only economically efficient way to provide good transportation service is through the user-side subsidy method.
4. The concept was "too academic" to be practical.

7.2.3 Potential for Integrating a Community Broker Operation with a Local Taxi Operator

Both taxi operators we interviewed expressed an interest in serving the low-income market, provided it made economic sense. However, they felt that the community broker system would be difficult to integrate with local taxi operations because:

1. The community broker concept is not economically feasible without government support. Taxi operators do not want to become involved (and do not have the skills to become involved) in the grantsmanship and bureaucratic red-tape necessary to garner support funds.
2. Taxi operators do not have the social work skills, social work orientation, or time to work closely with the client group. They operate best when they focus on the transportation and escort functions.
3. The integrated services package (in which a community broker offers a full range of services such as food buying, legal services, etc. in addition to transportation) would present severe coordination and management problems to a business that must operate smoothly and efficiently to make a profit.

7.2.4 Implications of Experience with the Taxi Industry

In summary, interviews with taxi operators and the Mountain View experience indicate that:

1. A government-subsidized community broker system is likely to be opposed by the taxi industry because it is felt to constitute unfair government-subsidized competition.
2. The Public Utilities Commission is not likely to license an independent, private enterprise, community broker operation that would tend to duplicate existing services.
3. The taxi industry does not have the skills, at present, to undertake the non-transportation aspects of the community broker operation. Furthermore, it does not view acquiring these skills and performing these non-transportation functions as being in its interest.

7.3 SOCIAL SERVICE AGENCIES

The community broker model originally proposed was intended to operate solely on revenue from fare-paying members. Soon after the CSC project began operation, however, it became clear that providing trips for clients of social service agencies was a good way to increase CSC membership, passenger trips, and revenue.

Consequently, CSC contracted with two social service agencies -- the Adobe Nutrition Program, which served hot lunches to seniors, and the Palo Alto Senior Day Care Center -- to furnish trips to and from the respective centers for a \$10/revenue-hour fee. The Adobe Nutrition Program was housed in Mountain View near the Central Park Apartments. The Senior Day Care Center was located in Palo Alto, about three miles from the CPA site.

The Adobe Nutrition Center was especially pleased with the transportation service provided. Toward the end of the demonstration period, the nutrition program's management asked

CSC to provide one additional vehicle round-trip each day. Seniors were extremely enthusiastic about the service, as it provided an opportunity to socialize and enjoy a free hot meal in a pleasant setting.

The Senior Day Care Center trip was popular at first, but ridership declined in January and February of 1977. The length of the trip and the widely dispersed clientele made travel times long and tiring, particularly for the first passengers to be picked up going to the Center and the last to be dropped off on the return trip.

The broker maintained contact with other social service agencies and local governmental bodies (such as Santa Clara County Transit) in order to provide information and referral services to CSC members. These contacts and relationships evolved smoothly, and the information function proved useful to CSC members.

8. DISCUSSION OF CRITERIA FOR A SUCCESSFUL COMMUNITY BROKER OPERATION AND ALTERNATIVE ORGANIZATIONAL STRUCTURES

This section builds upon the information set forth in the preceding chapters to present some alternative institutional arrangements and funding sources. The chapter begins by explaining why the rather negative economic conclusions about the Mountain View experience might not be indicative of the performance of the community broker concept. From there the report discusses five broad criteria for judging economic and operational feasibility of the community broker concept. Finally, these criteria are used to help assess alternative institutional arrangements and funding sources for the community broker idea.

8.1 TRANSFERABILITY IMPLICATIONS

The results given in the previous two chapters show that in Mountain View the Community Services Cooperative provided a premium transportation service to a small target group at a high cost relative to known transportation alternatives. From a transferability standpoint these findings in Mountain View would seem quite negative, given the limited availability of local resources for special transportation and the vast need for special transportation services that most communities have. However, we caution against projecting the costly Mountain View results into conclusions about the overall viability of the community broker approach to solving the special needs transportation problem. There are two groups of reasons why negative conclusions would seem premature.

First, only a limited version of the Integrated Human Services Delivery concept was tested in Mountain View. It is

possible that the fully integrated concept may achieve significant economies of scale in operation so that unit costs for particular services, including transportation, can be lowered substantially. Furthermore, by integrating other services -- such as cooperative food buying, legal services, etc. -- into the overall service package, the concept may induce more people to join the cooperative. Finally, consumers may spend more for an integrated package covering a variety of services than they would if they had to purchase each unit of service separately. By purchasing the integrated package they are, in effect, purchasing those services that they know they will use plus some "insurance" that the other services they do not now plan to use (or plan to use only occasionally) would be available if and when they want to use them. (We know from the Mountain View experiment that many CSC members viewed the project as supplemental to their regular modes of transportation, i.e., insurance that they would always have a means of transportation available.) In these ways, a fully Integrated Human Services Delivery operation could lower costs substantially.

The second group of reasons concerns the unique characteristics of the Mountain View demonstration. One might argue that demand for CSC service would have been greater, and therefore unit costs lower, if the demonstration site had contained a target population that did not have ready access to a rich personal network of transportation or an inexpensive transit system. Furthermore, without the national interest in brokering of taxi rides, CSC might not have devoted so much time to the ill-fated taxi-brokering experiment at Palo Alto Gardens. The relationship with the local taxi operator was strained, at best, and CSC staff devoted a large amount of time developing a working agreement with him. This agreement might not have been so difficult to obtain in other circumstances and with other parties involved.

While the above-mentioned circumstances may provide a partial explanation of the poor economic performance, it should be remembered that any demonstration will encounter a unique set of problems that make smooth implementation difficult. Whether or not those problems encountered in Mountain View were more severe than those of other start-up situations is difficult to judge. Based upon a year of observation and a knowledge of the difficulties in interacting successfully in the multi-institutional context, we feel that the obstacles faced in Mountain View were more severe than normal. However, the community broker concept, because of the arena in which it operates, is particularly susceptible to the types of problems encountered in Mountain View.

8.2 INGREDIENTS FOR SUCCESS

While it is impossible to draw definite conclusions about overall viability of the community broker concept from the Mountain View experience, we have learned enough to suggest some ingredients that should improve the concept. Hopefully, such a list of ingredients will help the reader to evaluate the feasibility of the idea; it should also provide transportation and social service planners with a yardstick to assess applicability of the community broker concept in their own communities.

The ingredients for success are divided into five broad areas: 1) funding sources, 2) appropriate site characteristics, 3) certain product mix and packaging criteria, 4) criteria regarding institutional relationships, and 5) good management.

8.2.1 Funding Sources

Although the level of subsidy required to support a community broker's transportation service is still open to question, there is no doubt that the community broker concept, in the limited form tested here, cannot be supported by passenger revenues alone.

Chapter 6 shows that the level of subsidy required is over \$2.95 per passenger trip and that cutting back the fare is not likely to lower subsidy costs below \$2.00/trip.

8.2.2 Necessary Site Characteristics

The site selected for a community brokerage project must enable the generation of sufficient demand for those trips the driver/broker can deliver efficiently. This means that:

1. The site must have a relatively high concentration of the target population in a small geographical area. Based on the Mountain View experience, we feel that a target population of 600-700 people and a membership in a community cooperative of around 300-400 would be necessary to generate an acceptable level of trip demand. Apartment complexes that are designated especially for the target population offer high concentrations. However, depending upon the size of the apartment complex, it may be necessary (as it was in Mountain View) to draw clients from the surrounding community. If this is the case, then the community also must have relatively high concentrations of the target group.
2. Driving times (and driving distances) to primary service centers should be short -- no more than four miles on average. Otherwise, deadheading makes the trip economically impractical and the longer trip-length unattractive to elderly and handicapped clients.
3. Within the target area there should be little competition to the community broker transportation service provided. If, for example, social service agencies or bus and taxi service provide adequate service (either on their own or in conjunction with a subsidy program) then it may prove difficult to generate demand. Also, if potential clients have a convenient personal network of transportation available to them (i.e., "drive self," "driven by friends," "driven by relatives") then it may be difficult to persuade them to shift to the community broker's prescheduled group riding.

8.2.3 Product Mix and Product Promotion Criteria

The transportation aspect of a community broker's service must be coordinated with other primary services and integrated into a product mix that the potential market will want and will pay for. Furthermore, promotional efforts should not raise client group expectations that the community broker will be unable to meet. If people sense that there is a gap between program promises and results, they may become disenchanted with the cooperative and drop their memberships (or decide not to join in the first place).

Regardless of the specific services that are chosen as part of the community broker's product mix, they should all be perceived as highly personalized if they are to appeal to the client market. The Mountain View experience shows that a major reason for using the van instead of other available means of transit was the opportunity to relate and socialize with other people (particularly the driver/broker) that the van service provided.

8.2.4 Cooperation among Institutions

Cooperative working relationships with existing public and private service institutions are essential if the community broker is to succeed in his role of facilitating delivery of human services. Yet, the trust and cooperation needed may be difficult to establish for two reasons.

First, public and private social service and support service institutions may perceive the community broker system as competition to their services. Their natural reaction, if they perceive that their "turf" is being invaded, would be either overt or covert resistance to the project. In Mountain View the taxi operator openly opposed the project because he felt that it posed a threat to his taxi service. At first, he would only cooperate if the project enabled him to receive additional business.

Later he tried to block expansion plans.

Second, and more subtly, the community broker concept may meet resistance because it is different. Existing community social service agencies may be suspicious of a social service that purports to support itself by charging clients for its service. Many social service practitioners believe that these services should be furnished free of charge or at very low cost to low-income recipients, and they may resent or resist a service that does not conform to this belief.

Lack of cooperation or active opposition, for whatever reasons, can make it difficult for the community broker to operate effectively. The community broker concept is based upon the establishment by the driver/broker of an informational and referral network between his clients and the social services available to them. In many instances he coordinates the delivery of these primary services with the community broker transportation service or with other transportation services. Without good working relationships and mutual trust between the community broker system and existing social services, the driver/broker's function would be difficult to perform.

We should point out that passible working relationships usually can be established between the community broker and relevant institutions, but not without some cost in terms of: 1) project staff time and money spent establishing the relationships, 2) direct monetary costs, or 3) modification of program plans and activities to the extent that the emphasis and final effect of the program are changed. In the Mountain View experiment, CSC was able to "buy" the cooperation of the taxi operator; but to do so, CSC had to: a) spend a significant amount of time meeting and negotiating with him; b) spend a considerable amount of money on a contract which stipulated that the taxi operator would provide the van and hire the community broker; and c) curtail the service area so that it became impossible to generate sufficient demand to support the service.

8.2.5 Management

The process of planning and setting organizational objectives, directing an organization toward those activities, and controlling costs and activities, i.e., management functions, are particularly critical ingredients of a successful community broker operation. Without these ingredients, the organization may drift from its original goals and become economically infeasible.

The management problems in a community broker setting are difficult. The multiplicity of goals, the conflicts within those goals (e.g., to provide a low-cost service and to recover a large portion of operating costs), the lack of readily available information about performance, the significant number of new, unique problems that are likely to surface at any site, the variety of services to coordinate and control, present ample opportunity for inefficiencies and misdirection. Consequently the management process should include the following ingredients:

1. In-depth planning and object setting,
2. Delineation of organizational roles and procedures,
3. Financial information systems in order to (a) help in the planning process, (b) motivate those involved in carrying out activities, and (c) periodically assess progress toward goals, and
4. Management information systems to provide on-going, needed, non-financial data (e.g., load factors, market penetration, rates, etc.).

It is assumed that any new arrangement would have to generate about \$25,000 or more in additional revenue per year to support the \$37,400 cost of the community brokerage network. This \$25,000 would have to come from increased revenue above the cost of other services, from subsidy, or from some combination of the two.

The eight modifications examined entail:

- a. combining the concept with a user-side subsidy arrangement;
- b. delivering transportation service to markets other than the handicapped and elderly, e.g., work trips in early morning and late evening;
- c. combining the transportation service with other non-transportation services;
- d. extensive use of volunteers to cut costs;
- e. attaching the community broker operation to a large social service agency;
- f. attaching the community broker operation to a transit operator,
- g. making transportation a co-equal function with housing management, for example, and
- h. locating the community broker as an adjunct to the taxi operator.

Table 8-1 lists these eight possible modifications along with their respective advantages and disadvantages.

The modifications set forth in Table 8-1 are intended to help the reader assess how the community broker concept could be made to work in another setting. The most promising modifications appear to be: 1) combining the transportation service with a variety of other services that are attractive to the target group, and 2) attaching the community broker system to a social service agency. Both of these modifications could lead to increased revenues. The package of services could possibly attract more consumers than the transportation service alone, and the association with a social service organization provides a convenient subsidy channel.

TABLE 8-1.

ADVANTAGES AND DISADVANTAGES OF MODIFICATIONS TO THE COMMUNITY BROKER OPERATION

MODIFICATION TO COMMUNITY BROKER CONCEPT	POSSIBLE ADVANTAGES	POSSIBLE DISADVANTAGES	COMMENTS
1. USER-SIDE SUBSIDY in conjunction with community broker operation	<ul style="list-style-type: none"> • Could strengthen trip demand by removing price barriers. Unit costs of service would decrease. 	<ul style="list-style-type: none"> • Certification and registration process an added workload. • Management made more difficult. 	<ul style="list-style-type: none"> • Could only be used in conjunction with another source of funds.
2. Provide transportation to groups other than low-income handicapped and elderly, e.g., work trips in late mornings and early afternoons.	<ul style="list-style-type: none"> • Could improve overall productivity. • Could generate revenue to subsidize trips for the primary target group. 	<ul style="list-style-type: none"> • Social service agency resistance to "non-social service oriented" activity. • Possible schedule conflict with social service trips. • Perceived as competition by taxi industry. 	<ul style="list-style-type: none"> • Additional subsidy needed. This modification could provide at best \$10,000.
3. Combine transportation service with various primary services (e.g., cooperative legal services, cooperative food buying) in an integrated service package. Sell membership in cooperative for \$10/month.	<ul style="list-style-type: none"> • Membership approach will generate more revenue. • Fully integrated services for clients. 	<ul style="list-style-type: none"> • Increased management and coordination problems. • Consumers may not think the package is worth it. • Possible duplication of services, competition with social service agencies. 	<ul style="list-style-type: none"> • This is the approach now being taken in CSC's San Jose sites. • Possibility that this package can generate sufficient revenue to cover costs.
4. Staff brokerage function with volunteers.	<ul style="list-style-type: none"> • Lowers costs. 	<ul style="list-style-type: none"> • Difficult to manage volunteer operation. 	<ul style="list-style-type: none"> • Use of volunteers did not work in Mountain View.

TABLE 8-1. (cont.)
 ADVANTAGES AND DISADVANTAGES OF MODIFICATIONS TO THE COMMUNITY BROKER OPERATION

MODIFICATION TO COMMUNITY BROKER CONCEPT	POSSIBLE ADVANTAGES	POSSIBLE DISADVANTAGES	COMMENTS
5. Make community broker operation a part of an umbrella social service agency.	<ul style="list-style-type: none"> • Logical subsidy source. • Ease of coordination with social service agencies. 	<ul style="list-style-type: none"> • Community broker could be seen as public sector competition by taxi industry. • Agencies not good at managing a transportation service. 	<ul style="list-style-type: none"> • This seems to offer promise. • Agency may not want to undertake this task.
6. Attach community broker operation to a local transit operator.	<ul style="list-style-type: none"> • Transportation aspect would be managed well. • Source of subsidy funds. 	<ul style="list-style-type: none"> • Most transit operators not in brokerage business. • Taxi industry may perceive it as public sector competition. • Coordination difficult. • Transit operators will not want to fund non-transportation activities. 	
7. Combine community broker function with another function such as housing management.	<ul style="list-style-type: none"> • Source of funds. • Convenient on-site presence (if combines with housing management). 	<ul style="list-style-type: none"> • Management becomes difficult. • Difficult to perform both roles. • Sponsor of non-brokerage functions may not want to fund brokerage or transportation services. • Ridership and revenues from this would be cut back. 	
8. House the community broker operation in a taxi operator's organization.	Covered in Section 6.4	Covered in Section 6.4	This is the strategy that was tried.

9. SUMMARY AND CONCLUSIONS

The following conclusions are grouped according to the issues described in the introduction.

9.1 FEASIBILITY OF BROKERING LARGE-GROUP VAN RIDES

1. The driver/broker was able to aggregate demand (i.e., plan and schedule group trips in the van) for 112 CSC members. The most popular trip purposes were shopping (34% of all passenger-trips delivered), the nutrition program trip (23%), and commercial meals (11%).
2. Aggregating demand required a high level of contact with riders -- an average of seven personal contacts per vehicle trip.

9.2 FEASIBILITY OF BROKERING SHARED TAXI RIDES

The brokered taxi concept proved unworkable because:

1. Many people did not like the concept of sharing rides, particularly when the broker was not available to act as a buffer.
2. The cost of the ride to the individual was high (greater than 50¢) even when split three or four ways.
3. There is really no function that the broker performs in brokering taxi rides that individuals cannot perform themselves; therefore, even if repeat rides did occur there would be no further role for the broker to play.

4. Organizing a group ride is very time consuming, even for three or four persons, and consequently is not economically feasible.

9.3 WORKABILITY OF THE BROKERAGE CONCEPT IN TERMS OF EFFECTING THE DESIRED RELATIONSHIPS WITH TRANSIT OPERATORS AND PRIMARY SERVICE PROVIDERS

1. The community brokerage model is likely to be perceived as public-sector competition by most private transit operators.
2. The private transit operators will probably not view the trip-planning and scheduling aspects of the community brokerage operation as something they would want to take on.

9.4 DEMAND FOR THE COMMUNITY BROKER SERVICE

1. The community broker project attracted only 112 riding members during the year for a total of 8,776 passenger trips. Lower than expected ridership can be attributed to the following factors:
 - a. Alternative means of transportation, particularly private automobiles and rides with friends or relatives, were available to the target population,
 - b. Institutional coordination difficulties whereby the community broker was not able to gain cooperation in promoting the service from the apartment manager at the Palo Alto Gardens site, and
 - c. Institutional difficulties whereby the community broker was unable to promote the service beyond the two apartment complexes because of pressure from the local taxi operator.

2. The community broker market penetration, expressed in terms of membership, was 29 percent at the two apartment complexes (51 percent penetration at one and nine percent at the other).
3. The most popular trips were for shopping (34 percent of all passenger trips delivered), the nutrition program trip (23 percent) and commercial meals (11 percent).

9.5 ECONOMIC FEASIBILITY

9.5.1 Economic Feasibility of the Driver/Broker Role

1. It is estimated that a single driver/broker serving a clientele of two hundred people could spend, at most, sixty percent of his time driving. The remainder would be spent in brokering (30 percent) and administration (10 percent).
2. The best possible driver-time efficiency, i.e., the percentage of driving time that is revenue time appears to be about 70 percent, based on the Mountain View experience.
3. Nos. 1 and 2 above imply that a single driver/broker working 2,000 hours per year could deliver, at most, 840 hours of revenue time during a year. Revenue generated at a ten-dollar/revenue-hour rate would be \$8,400.

9.5.2 Economic Feasibility of the Community Brokerage System

Revenues of \$3,431.76 were about twelve percent of the estimated operating cost of \$29,285. Cost per passenger-trip was \$3.34, cost per vehicle hour was \$43.93 and cost per passenger mile was \$6.07. Subsidy cost per passenger-trip was \$2.95. It is unlikely that the community broker concept in its present form

will ever break even. Analysis shows that even under the most optimistic demand and revenue assumptions, subsidy cost per passenger-trip would fall between \$2.50 and \$3.50.

9.6 PROJECT IMPACT ON USER TRIP-MAKING BEHAVIOR AND QUALITY OF LIFE

1. The CSC project provided a substantial portion of the transportation used by the user-group. Between one-fourth and one-third of the people making a given type of trip (with the exception of medical trips) relied exclusively on the van service.
2. The CSC service had a dramatic impact on the social and emotional aspects of people's lives. The group riding made a large degree of social interaction possible and a large portion of the trips the broker organized were of a social and recreational nature.

9.7 USER PERCEPTIONS OF THE SERVICE

1. Users were extremely enthusiastic about the service. They particularly liked the personalized nature of the service, the escort features, and the convenience it afforded.
2. The service provided a sense of security to users, even when they did not choose to use it.

9.8 BUILDING ON THE MOUNTAIN VIEW COMMUNITY BROKER MODEL

1. The Mountain View version of the community broker concept cannot operate without a continuing source of subsidy.

2. The following factors are critical to a successful community brokerage operation:
 - a. good management,
 - b. appropriate site,
 - c. harmonious institutional relationships,
 - d. a product package attractive to both consumers and to those who might finance the operation, and
 - e. a source of subsidy financing.

3. Considering the critical factors outlined above, the most promising way to enhance the revenue-generating capacity of the Mountain View version of the community broker concept would be to expand the scope of primary services offered or to affiliate a community broker with a local social service agency, or both. With a wider variety of services, the model comes closer to the Integrated Human Services Delivery concept. This larger scaled model would be more difficult to manage, but the increased revenue that could result from the more appealing product package might outweigh the potential management problems. In addition, the affiliation with a social service agency might provide a convenient subsidy channel.

APPENDIX A
EXCERPTS FROM THE
COMMUNITY BROKER/DRIVER'S LOG

1. "The past week has been a clinic on performing the role of community broker. It is important for me to maintain close personal ties with people. It is equally important to develop a system of integrated services with doorstep transportation. Because the system is in its infancy and because my relationship with the CSC members is also relatively new, I find myself constantly faced with the problem of balancing the current importance of one against the other. Because of my particular makeup, I generally choose the person rather than the system. This conflict and my usual solution (I'll go ahead and take you to the hairdresser and charge you the five-passenger rate even though there are only two of you) really messes the data collection end of the project and misrepresents the system to the CSC members. I believe that emphasizing the personal side in the beginning is a good investment, but I'm not sure how long I should continue to subsidize trips that only a few are interested in. There is not enough time in my week to set up fancy trips to exotic places (especially when tickets must be purchased in advance) because folks simply do not commit themselves more than a couple of days in advance. I find myself searching for ways to get people on the bus and usually missing -- badly. (Depressing!) When I miss (only one or two people sign up for a ride) I hate to cancel the trip. I also hate to say, 'Well, that will be \$5 roundtrip.' I must work on being consistent. That was a large part of my problem during this last week. The system must speak for itself. For CSC members to grasp the economy of this system is of primary importance."
2. "I think, in the past, I have spent too much time shooting the breeze with my clients. Although it is justified when getting to know one another, it becomes nonproductive soon after. It leaves little time for me to take care of CSC business....The combination of the schedule and CPA clients coming in to talk to me really burns up the time."

"I spent what seemed like a large amount of my time talking with individuals this week. I can't overemphasize the positive effect those contacts have on ridership. It's a matter of lowering barriers between people and what's out there. I can be a good bridge-builder and I felt like I was sharp in that respect this week."

3. "Today was a very busy day for me. I drove constantly from 10:30 until 2:30. It was an interesting contrast to my usual slow-paced non-hurried delivery of rides. I found myself much more concerned with time and much less tuned-in with what folks were riding with me. When I drive with passengers, I'm especially careful to drive slowly over bumps, to brake and accelerate as smoothly as possible, to in effect level out the ride to insure the comfort of my passengers. When I'm on a tight schedule, time looms very important and my concern for a smooth ride decreases. The question that today's experience brings up is: Will the increase in driving time negate some of the positive people-oriented aspects of the service?"

Communication Difficulties

"I was particularly bothered today by confusing messages from my riders. Someone told me that people who are seniors today are not apt to speak to me when they are displeased with my service, my demeanor (or my haircut). These folks generally keep bad feelings to themselves. It makes communication between the broker and the clients particularly difficult. I feel like I have to be very careful with many of my less-active clients. If I don't work with my ears open all the time, I feel I might alienate some of them and lose others as clients. It's a heavy burden."

Problems Generating Demand

1. "People greatly appreciate the personalized service -- the help with the groceries, the hand entering and leaving the vehicle, a driver who is careful and is always their driver, and the flexibility of a community bus service. But the price of this transportation is higher than other available modes. People have been budgeting nothing for transportation and now we are asking them to set aside 10-12 dollars of their 'mad money' to pay for rides. The big question: Will they want to?"
2. "I've been having a very difficult time finding the hours to make personal contacts necessary to enlist new members. In addition, the promising contacts have been occurring at about a rate of 1 out of 10. Many people are interested in having a CSC system available to them, but few are willing to make the commitment necessary to keep the system going."

3. "Some people are predisposed to ride with CSC, others are wavering or are not interested. There is very little that can be done about those people who simply do not want to ride. We listen carefully to their ideas of what's wrong with the system and find that people in general are unsurpassed in generating reasons why they cannot or should not participate in anything."
4. "From my experience in the last month, I would say that the day-to-day closeness of the Central Park Apartments residents is a negative factor when one is trying to build a system that relies on user cooperation. I'm hoping that our system provides a platform to reduce intracomplex tensions, but I'm not sure if this project will bring people together or further polarize them."

"There is a club atmosphere that has developed around the CSC project. I'm not sure that I like it. The problem with clubs is that they are perceived as either exclusive or intrusive. That is to say, people don't join clubs because it restricts their freedom. If they are less than totally committed to the club's intentions, membership becomes a burden. I didn't want the CSC to become a club. It's funny how things turn out. I keep wanting to be public transportation that: a) cares, and b) can help people answer questions about their needs (for transportation, service, whatever). Everyone has their own idea."

APPENDIX B
SURVEY OF USERS AND NON-USERS

Date: _____

Time: _____

Interviewer: _____

Sample Info: _____

1. Heard of CSC? Yes No

2. Do you use it:

Often
(more than
once a week)

Occasionally
(1-4 times/mon)

Seldom
(less than
once a month)

Never or
Only Once

USERS

NON-USERS

3. (INTERVIEWER ask for information by asking respondent to fill out form # X. Attach to the sheet.)

3. Access to auto Yes No

4. Primary reasons for using service _____

4. (INTERVIEWER asks for information by asking respondent to fill out form Y.)

5. Ranking of factors (1,2,3)

5. Why did you choose not to use the van?

Low-cost fares

Other means of transportation:

Help from driver

Don't like group ridership

On-time pickup & drop-off

Costs too much

Safe & comfortable ride

Too difficult to schedule

Chance to meet others

Worried about unreliability

Frequent service

Worried about waiting times

Other: _____

No group trip to places I want or need to go

Handicap, hard to use CSC

Other: _____

(INTERVIEWER, please ask each respondent about each item on form Q, check (or have respondent check) appropriate box, and attach sheet to questionnaire.)

6. How they first heard of CSC (1)? How else did you learn about CSC (✓)

- Friends
- Relatives
- Pamphlet
- Meeting with T.L.
- Someone stopped by to explain it
- Sign on van
- Newspaper
- Other: _____

6. How did you first hear about the van (1)? What other information sources (✓)?

- Friend
- Relative
- Pamphlet
- Meeting with T.L.
- Someone stopped by to explain it
- Sign on van
- Newspaper
- Other: _____

7. a. Reservations about the service

b. Problem now? (1,2,3)*

- Driver
- "Something new"
- Getting into van
- Other people
- Reliability
- Project continuation
- None
- Other: _____

7. Major problems?

Yes: _____

No

Don't know enough to judge

8. Residence

- PAG
- CPA
- Other: _____

9. Sex? Male Female

10. Age:

*1 = still a major problem
 2 = not a serious problem
 3 = no problem at all

8. Pass out questionnaire M and attach when completed.

9. Which info source most useful?

10. Suggestions for improvement?

11a. Live alone? ___ Yes ___ No

b. If "No", other people living with them:

- Spouse
- Children
- Other relative
- Other: _____

12a. Physically able to use regular transit?

Yes No

b. If "Yes", why CSC? _____

c. If "No", what is your disability?

13. Residence: CPA PAG Other: _____

14. Sex: Male Female

15. Age:

16. What has it meant to you?

- Easier to make trips
- Socializing and meeting other people
- Increased access to services
- Chance to get out more
- Other: _____

FORM M

	NEEDS IMPROVEMENT	O.K.	VERY GOOD	COMMENTS
FARE POLICY: I.E., FIXED RATE				
COMFORT OF RIDE				
SCHEDULING				
COURTESY, HELPFULNESS OF DRIVER/BROKER				
COST OF TRIPS				
VAN PICKING ME UP ON TIME AT HOME				
TIME IT TAKES TO GET WHERE I WANT TO GO				
TIME TO SPEND DOING WHAT I NEED TO DO				
VAN PICKING ME UP ON TIME TO RETURN HOME				
OVERALL QUALITY OF THE SERVICE				

FORM Q

HOW IMPORTANT IS:

	VERY IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT
1. FREQUENT SERVICE			
2. LOW-COST FARES			
3. SAFE AND COMFORTABLE RIDE			
4. ON-TIME PICKUP			
5. HELP FROM DRIVER			
6. CHANCE TO MEET OTHERS			
7. OTHER:			

FORM X

POSSIBLE CSC VAN TRIPS	MAKE TRIP?		USE CSC VAN?		Other way you make trip
	YES	NO	Always	Van Sometimes	
1. Grocery shopping					
2. Other shopping					
3. Church					
4. Health Care (medical and dental)					
5. Nutrition Program					
6. Commercial Meals					
7. Personal business					
8.					
9.					
10.					

Own or have access to auto? Yes No

- 1=Drive self
- 2=Driven by relative
- 3=Driven by friend
- 4=Driven by agency
- 5=Bus
- 6=Walk
- 7=Taxi
- 8=Other

FORM Y

TYPE OF TRIP	DO YOU MAKE TRIP?		WAY(S) YOU USUALLY MAKE TRIP (Check appropriate box(es))							
	YES	NO	Drive Self	Driven by Relative	Driven by Friend	Driven by Agency	Bus	Walk	Taxi	Other (Write In)
1. Grocery Shopping										
2. Other Shopping										
3. Church										
4. Health Care (Medical or Dental)										
5. Nutrition Program										
6. Commercial Meals										
7. Personal Business										
8.										
9.										



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