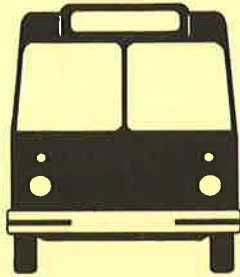


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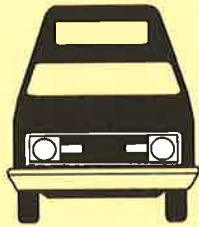
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Small City Transit

EL CAJON, CALIFORNIA:

City-Wide Shared-Ride
Taxi Service



March 1976

U. S. DEPARTMENT OF TRANSPORTATION
Urban Mass Transportation Administration
Office of Service and Methods Demonstrations
Washington, D. C. 20590

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Preface

This document was prepared by the Transportation Systems Center (TSC) as part of the information dissemination function of the Office of Service and Methods Demonstrations, Urban Mass Transportation Administration. This case study is one of thirteen studies of public transit systems in small communities and is intended to serve as an information resource for other communities in the process of planning or considering public transportation.

The information presented in this document is based on a visit to the site, interviews and phone conversations with the principals involved, and operating records obtained during 1975. The authors gratefully acknowledge the cooperation of local officials and transit operators at all of the sites selected for study, and of the TSC staff in compiling the information gained from these studies and assisting in its interpretation.

EL CAJON, CALIFORNIA: City-Wide Shared Ride Taxi Service

The El Cajon shared taxi system was developed to provide a higher level of transit service than that previously available in the City so as to improve the mobility of the entire city population and especially the transit dependent. The shared taxi concept was selected as most consistent with the community goals of providing good public transportation at minimum cost. The design of the transportation service was somewhat unusual in that the service operator, San Diego Yellow Cabs, Inc., and not the City was its chief architect. The system was initially tested for a three-month trial period, the results of which led to its subsequent continuance.

Background

The City of El Cajon, California, is located approximately 15 miles east of San Diego (Figure 1). About 60,500 people live in the 12 square mile incorporated area. According to a recently completed special census, the City is a relatively self-contained, suburban community with two hospitals, a regional shopping center, and a well-developed light industrial area within its borders. It is the commercial and manufacturing hub of the east San Diego County area. About one-half of the city's working population is employed in El Cajon. About 35 percent of the land area is undeveloped.

Prior to December, 1973, the city had only a limited amount of public transportation services. These services consisted of two San Diego Transit bus routes which terminated in El Cajon and thereby providing some local service. Two taxicab companies also operated in El Cajon: San Diego Yellow Cabs, Inc. and Radio Cab Company, each with five taxis in service.

The City Council believed that better and more economical transportation was needed to serve the community, particularly the elderly and those unable to drive or afford an automobile. After investigating several transportation alternatives, including shuttle buses and small bus-type dial-a-ride systems, the Council decided to pursue the concept of subsidizing private taxis to provide a shared ride, demand responsive service. The other transit alternatives were rejected because they were too expensive. No laws had to be changed to permit operation of the shared ride taxi concept. The State of California allows the individual cities to regulate taxi services within their boundaries. There was nothing in the El Cajon statutes that prohibited the shared ride taxi service.

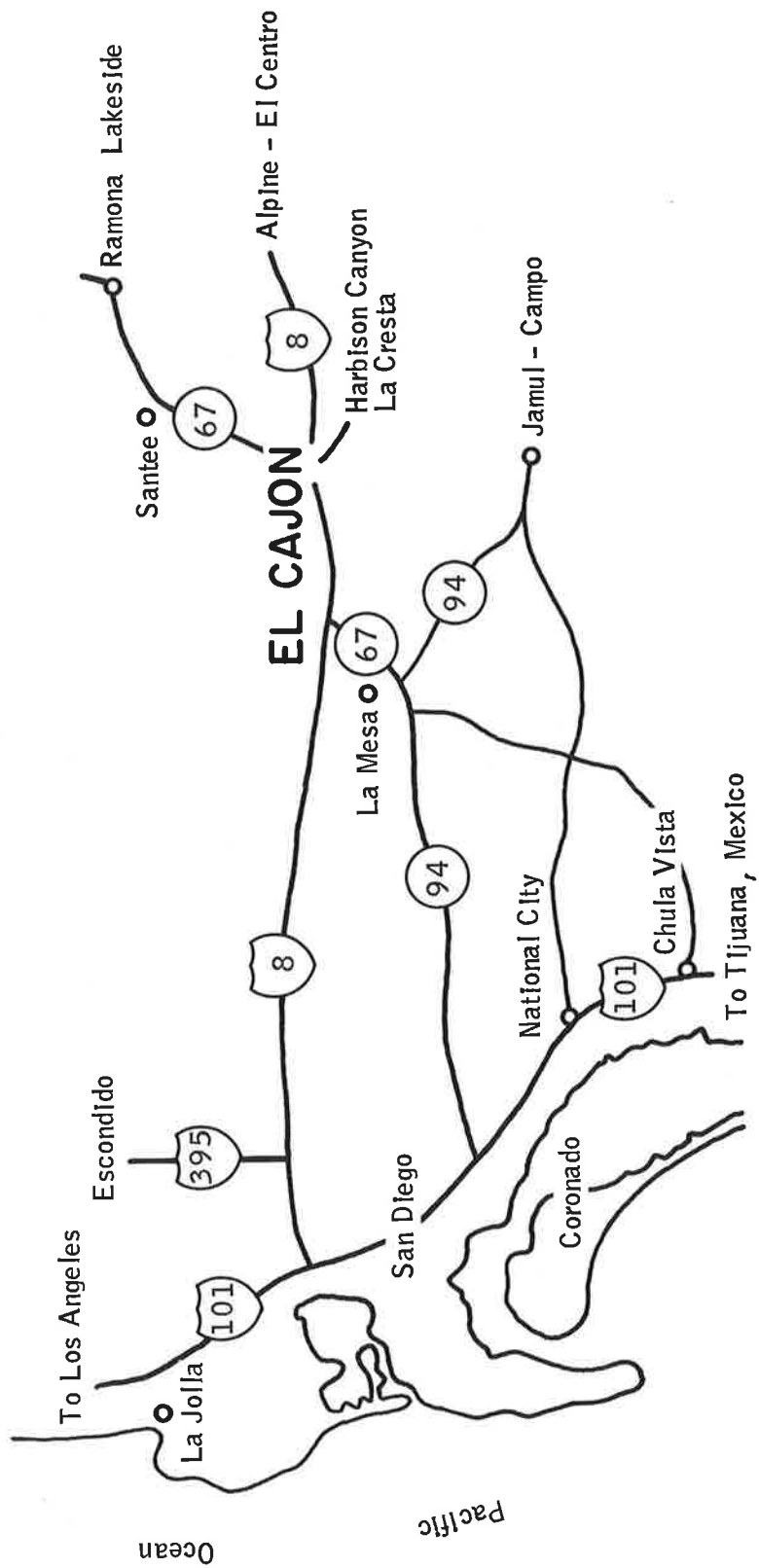


Figure 1. Area Map

Implementation

Both taxi companies were solicited for interest in operating the shared ride service. Only San Diego Yellow Cabs expressed a desire to participate in the experiment. Rather than spend money for a consultant to design a system, the City's approach was to use the taxi company's experience to implement and design the system. The money saved would be spent on publicity, promotion, and operations instead. After months of discussions and negotiations involving the City, San Diego Yellow Cabs, Inc., Yellow Cabs, Inc. of Los Angeles, and the drivers union, an agreement was reached to try out a shared ride service for a three-month period. The City Council committed \$25,000 of federal revenue sharing funds for this experiment. The City retained the right to terminate the agreement at any time upon expenditure of the \$25,000. The service was named the El Cajon Express.

There was essentially no public involvement in the discussions leading to the establishment of the Express. It was conceived and implemented by the City Council. No public hearings on the subject were held.

The system planning, which was done by the San Diego Yellow Cabs, Inc. (SDYC), was limited mostly to working out the mechanics of the operations, such as training of the dispatchers for the new service, designing trip sheets for the drivers to record, and selecting an acceptable method of charging the City.

On December 1, 1973, the El Cajon Express was officially inaugurated in a ceremony at City Hall. The citizenry quickly accepted this new idea in public transit. After two weeks, ridership was averaging more than 200 passengers a day. People were buying coupon books in large numbers at designated ticket outlets. After three months, the ridership had far exceeded expectations and the system was working better than anyone anticipated. The City Council felt that the goal of providing economical transportation to the citizens was being achieved. Since, by that time, most of the \$25,000 had been expended in subsidies to the taxi company, or was committed in order to provide service to those who had already purchased coupons, the Council added more revenue sharing funds to the program and extended the experiment to June 30, 1974. The Council further stated that the Express system would be fully evaluated for funding on a year-to-year basis. The Express was subsequently funded again in June, 1974, and in June, 1975.

Service Description

The El Cajon transit characteristics and operating data are summarized at the end of this report. Service is offered 7 days a week, 24 hours a day. The Express carries passengers only within the City Limits (Figure 2). Any traveler going outside the city is considered a regular taxi passenger and must pay the metered fare. Taxi and Express passengers cannot be transported in the same vehicle at the same time. Express patrons are normally picked up as a result of a telephone call for service. Occasionally, pick ups are made at specific stands in the City. In the event of simultaneous requests for Express and taxi service, when all equipment is in use, the taxicab patron receives first priority. Express passengers may share rides if there are multiple requests for trips in the same vicinity or along the same general route at approximately the same time. SDYC dispatchers govern the pick-ups and routing and do everything possible to avoid undue delay to any Express passenger. Response time for Express service is slower than for regular taxi service. The goal is to pick up patrons within 30 minutes of the time of the request. Express drivers assist in loading and unloading of elderly passengers, parcels, and personal effects. Each trip on the Express system must be supported by a 50¢ coupon. Passengers not holding a coupon will be charged taxicab fares. Coupons must be purchased at authorized sale points. Any number of passengers, up to vehicle capacity, picked up at a common point and discharged at a common point will be considered as one trip and one fare. All other situations are considered separate trips and require a separate fare from each passenger.

The vehicles used in the Express service are conventional 4-door sedans (Figure 3). All vehicles carry the El Cajon Express sign on the roof. However, since vehicles can be used in either Express or regular taxi service depending upon the demand, a sign in the windshield is used to signify that the vehicle is actually operating in Express service. All vehicles have two-way radios and drivers receive all instructions from the SDYC dispatcher. Drivers keep separate records for each service. Trip sheets for Express service contain time and location of pick-ups and drop-offs, number of persons for each origin-destination pair, and mileage at each stopping point. A separate mileage meter records total trip mileage. The trip sheets and all trip order slips (filled out by the call takers) are retained for six months for possible audit by the City.

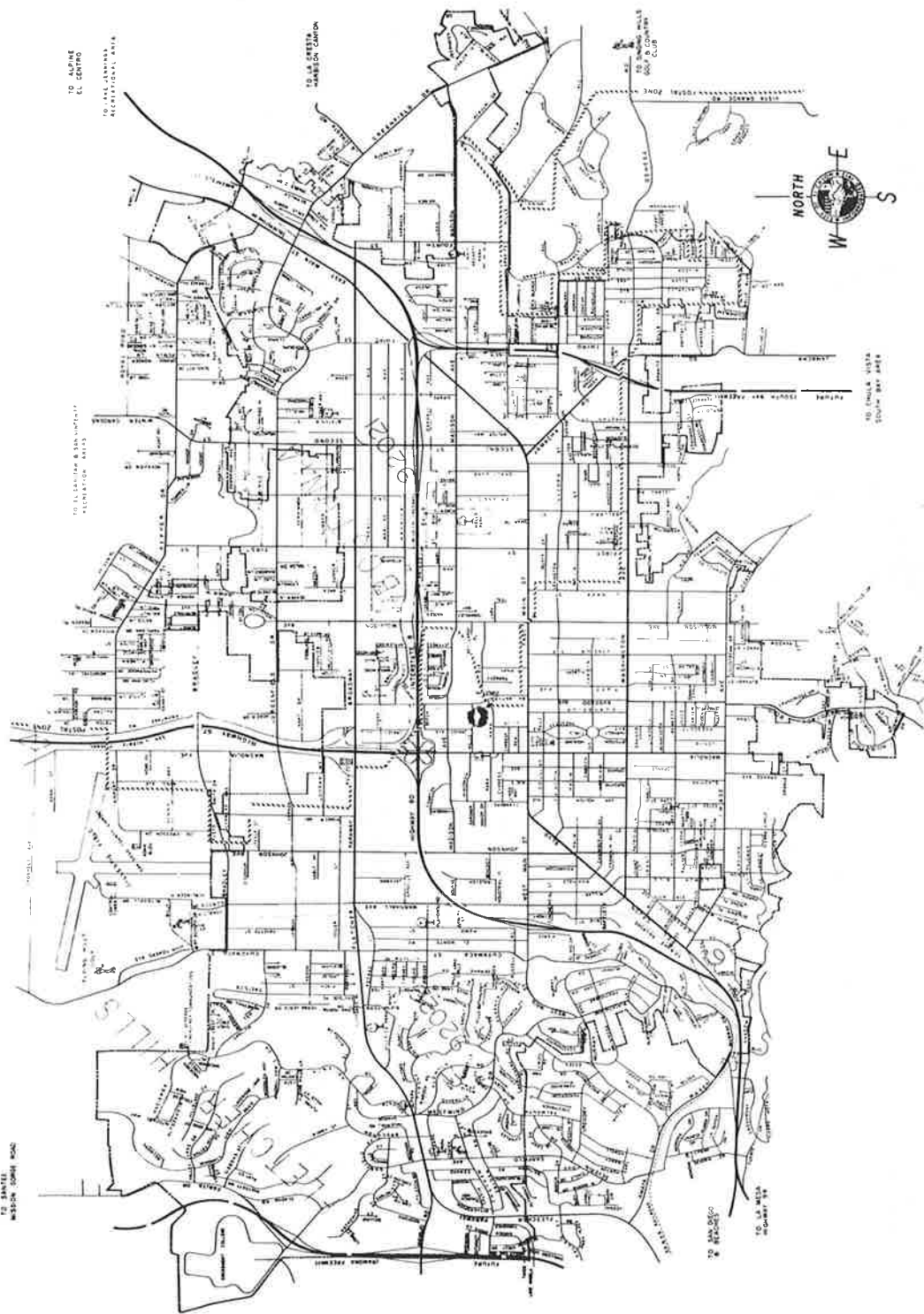


Figure 2. Map of El Cajon
 Courtesy of El Cajon Chamber of Commerce

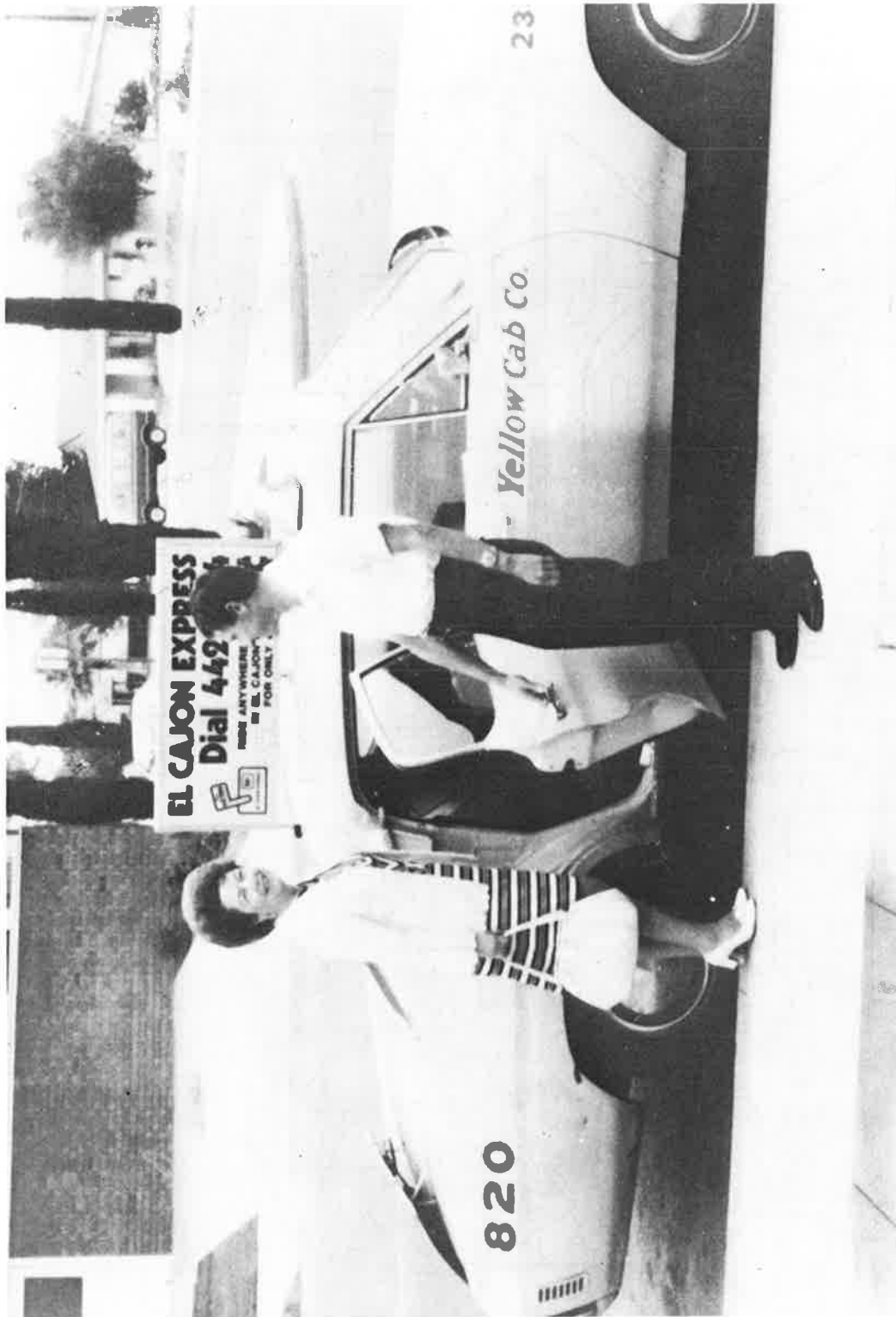


Figure 3. Taxi Used In El Cajon Express Service

Operational Responsibilities

SDYC is a large firm operating over 300 vehicles in San Diego, La Mesa, Chula Vista, National City, Imperial Beach and El Cajon. The garage and dispatching office is in San Diego. SDYC maintains the vehicles and operates the system at its expense and keeps accurate records of all transactions. The dispatcher who handles both Express and regular taxi service in El Cajon also handles six dial-a-ride vehicles in neighboring La Mesa. The sharing of the dispatcher and telephone receptionists results in lower office operating costs. However, the storage of all vehicles in San Diego increases the non-passenger carrying mileage and results in higher vehicle operating costs.

SDYC operates the system, exclusive of advertising, tickets, and research above that normally provided in the course of routine operations, and is presently paid the sum of \$0.80 (formerly \$0.75) for each mile utilized in the transport of Express passengers. The present rate has been in effect since June, 1974. In computing mileage for multiple trips, mileage from point of first pick-up to last discharge is computed. The 80-cent per mile compensation to SDYC to provide the service allows an adequate profit for the company. An adequate profit is necessary as an incentive for the company to run the service properly.

The Express drivers are all employees of SDYC. Express service tends to attract the top drivers because the potential for making money is greater than for ordinary taxi service (somewhere else). Drivers work a 10-hour shift which includes an hour for lunch. During normal weekdays, 13 to 17 shifts are operated in El Cajon. The drivers operate on a commission basis and receive half of the 80 cents per mile express fee. The drivers also receive tips.

SDYC is under no obligation to expend money for promotion or publicity of the Express service. The City is responsible for any advertising it desires. During the term of the agreement, the City cannot enter into an agreement with any other contractor or company for the operation of a similar system or service. The City and SDYC have the option of continuing the service on mutually agreeable terms or Yellow Cab can submit a proposal to the City for continuation of service if mutually agreeable terms cannot be arranged.

The City is responsible for all printing, distribution, and sale of tickets, and monitoring and auditing the operation. Tickets can be obtained at City Hall, the Chamber of Commerce office, and all banks and savings and loan associations in the City. The financial institutions are not compensated for the effort expended in selling the

ticket books, but they are happy to cooperate because the additional lobby traffic generated by it increases their own business. The tickets are sold only in books of five. Refunds for unused tickets are given. There have been very few refunds requested, however.

Monitoring Express service by the City now consumes about 0.2 man years. During the first year it consumed about 0.4 man years. Monthly spot checks of the driver trip sheets are made by the city. These are checked against the weekly invoices submitted by SDYC and against trip sheets for other months. SDYC maintains a separate accounting system for the Express. SDYC also monitors the Express and regular taxi service. All telephone requests and dispatchers instructions are tape-recorded in order to spot check the operation and to investigate operational problems.

Promotion

The City initially spent \$5,000 on a promotion campaign. A firm was hired to carry out this element. A logo was designed, signboards were prepared, posters were put up, public service radio spots were arranged, ads were aired on the local cable TV outlet, informational flyers were distributed, and news releases were given out. The local newspapers gave good coverage to the system. What little continuing publicity there is consists mainly of distribution of the informational brochures at the places of ticket sales.

Subsidy

The subsidy for the first year of operation amounted to \$120,000. This was less than 20 percent of the revenue sharing funds available to the city. There are no other state or federal funds available for use on the Express System. It is anticipated that the increased ridership will bring the current year deficit to approximately \$150,000.

El Cajon also pays a subsidy to San Diego Transit (SDT) for the two routes that terminate within the City. For the year ending June, 1975, this subsidy amounted to \$150,000. For the following year, the City will pay SDT \$194,000. It is estimated that about 245,000 El Cajon passengers will be carried on the SDT routes. The SDT subsidy money comes from the Local Transportation Fund. Money for this Fund is available from a portion of the State of California's sales tax. For El Cajon the current allocation from this Fund is \$400,000. Unfortunately, the money left over after compensating SDT cannot be used for the Express because of the stipulation that the money be available only for City-owned transportation systems or systems in operation when

the Fund was created. The Express system meets neither of these criteria.

Results

Express service has proven to be extremely popular with El Cajon residents. It has been a tremendous benefit to those who do not own or cannot drive a car. Businesses have bought coupons and given them to their customers. Housewives use it for shopping trips. It is the elderly, however, to whom the Express has provided the greatest benefit. Approximately two-thirds of the riders are over 60. This age group, however, represents only about 12 percent of the total population of El Cajon.

The statistic of most interest is the total number of passengers being carried. When the Express was inaugurated in December, 1973, there was no real estimate of how many passengers would use the new service. By the end of March, 1975, about 600 passengers were being carried on an average weekday. The weekend passenger volume varies considerably; the range during March was from a Sunday low of 214 to a Saturday high of 472. The total number of passengers carried for the month was 15,787. This contrasts with the first month of operation (December, 1973) in which 6,187 passengers were carried. It is safe to say that few, if any, expected the Express to carry that many passengers.

Monthly ridership has more or less stabilized on the Express (Table 1). This may be partially due to the fact that the city is not vigorously promoting Express service, nor are they instituting any new service elements to attract more riders.* It is undoubtedly true that a more vigorous advertising campaign could increase ridership on the Express. However, under the agreement currently in effect, for small increases in the number of trips made, each additional trip would be subsidized at approximately the same rate (currently about 90 cents per passenger). Thus, the City is in the position of wanting to provide public transportation to residents, but also desiring to keep the subsidy levels within limits.

Ridership by the non-ambulatory is quite low. Requests for transportation by persons in wheelchairs averages only 3 to 4 per day.

*An example of a new service component might be special provisions for subscription work trips either to local employment centers or to connecting buses to San Diego.

TABLE 1. MONTHLY RIDERSHIP TOTALS

<u>PASSENGERS</u>	
December 1973	6,187
January 1974	8,239
February	9,235
March	10,398
April	10,091
May	11,026
June	10,948
July	12,200
August	13,043
September	12,705
October	14,306
November	14,458
December	15,135
January 1975	14,767
February	14,785
March	<u>15,787</u>
	193,310

The most frequent trip purpose is shopping, (40 percent) with medical-dental trips (26 percent) next highest. The heaviest hours of the day are from 1 to 3 p.m. which is indicative of the fact that this is not a commuter-oriented, work trip transportation service, primarily because of uncertain arrival times. Figure 4 shows the telephone requests for service by hour of the day. Because of multiple rides there are generally 25 percent more passenger trips made than there are telephone requests.

The combination of the small delay to accumulate trips and the number of multiple trips results in an occupancy rate of 2 persons per vehicle. The productivity of the Express service is 6.38 passengers per vehicle, per hour. SDYC feels that the vehicle size utilized is the correct one for the service operated in El Cajon. About 57 percent of the miles driven by the taxis in Express service are paid passenger miles. This figure could rise to nearly 70 percent if the San Diego-El Cajon daily round trip for each vehicle was eliminated. A 70 percent paid mileage for taxi operations would be extremely good.

The goal for standards of service is to cause no one to wait more than 30 minutes for a vehicle to pick them up. There is some built-in delay in order for the dispatcher to accumulate trips into vehicle tours. This delay is usually about 10 minutes. Most passengers wait less than 20 minutes except during the busiest periods of the day.

It is difficult to determine the average trip length of passengers due to the nature of the service since deviations from the shortest route between each passenger's origin and destination may be made to pick-up or drop other passengers. A reasonable guess might be around 2 miles per passenger trip. The gross cost to the City during March, 1975, for providing Express service was \$1.28 for each passenger carried. Even though the fare is \$0.50 per trip, the average revenue per person was only \$0.38, due to the cost sharing provision for multiple trips between the same origin-destination points. Therefore, the net cost to the City, per passenger, was \$0.90.

Unfortunately, the subsidy per passenger does not seem to vary markedly with the number of passengers carried, and, consequently, the deficit rises in almost direct proportion to the number of riders. The city has tentatively allocated \$419,000 for three years to operate the service. Based upon current ridership and financial agreement, this will not be sufficient to cover the costs. There are methods of reducing this subsidy which the city is considering. These will be discussed later.

SDYC seems pleased with the Express arrangement. They claim that they make about the same profit per trip as with standard taxi service and that their passenger volume has increased since the inauguration of the Express. Their regular taxi patronage has not dropped off substantially, contrary to what one might expect.

The other taxi company (Radio Cab) operating in El Cajon, which originally was not interested in operating the Express service, has complained to the City about a loss in ridership. However, as far as can be ascertained, they are operating the same number of taxicabs as they did before. It is not clear that any ridership loss would be due principally to the Express. San Diego Transit has also expanded service into the unincorporated area of El Cajon, an area served previously only by taxi. To date, Radio Cab has not responded to an invitation by the city to come in to discuss their letter of complaint. Consequently, whether anything will come of this complaint is unknown at this time.

The city is apparently pleased with the service aspects of the Express. The Chamber of Commerce has even suggested some economic benefit from the Express but there has been no firm evidence of this put forth. There have been a few problem areas, some of which have been resolved and some of which still remain. Early in the operation there were some complaints about excessive waits of as much as an hour, and in some instances of a vehicle not arriving at all. The former problem has been corrected by the addition of more vehicles and the modification of operating procedures. (The shared-ride concept is particularly sensitive to the skills of the dispatcher.) The latter was mostly a case of the passenger giving a wrong address.

A continuing problem results from the dual use of the vehicles. When a vehicle is used for an out of town trip (to San Diego Airport, for example) the Express operates minus one vehicle until it returns.

The major administrative problem area is the lack of an absolute means in which to audit and control the Express operation. Since drivers are paid on a commission basis, the more miles driven, the more the driver will earn. In a normal taxi operation, the passenger is in effect an on-board monitor. However, for Express trips, the share-the-ride feature makes it difficult for the passenger to ascertain instances of indirect routing and doubling back by the driver. Furthermore, since the fare is 50 cents regardless of distance travelled, the passenger is normally not alert to potential fraudulent practices by the driver. The city does not allege that such overcharging occurs. In fact, all indications are that SDYC has attempted to operate

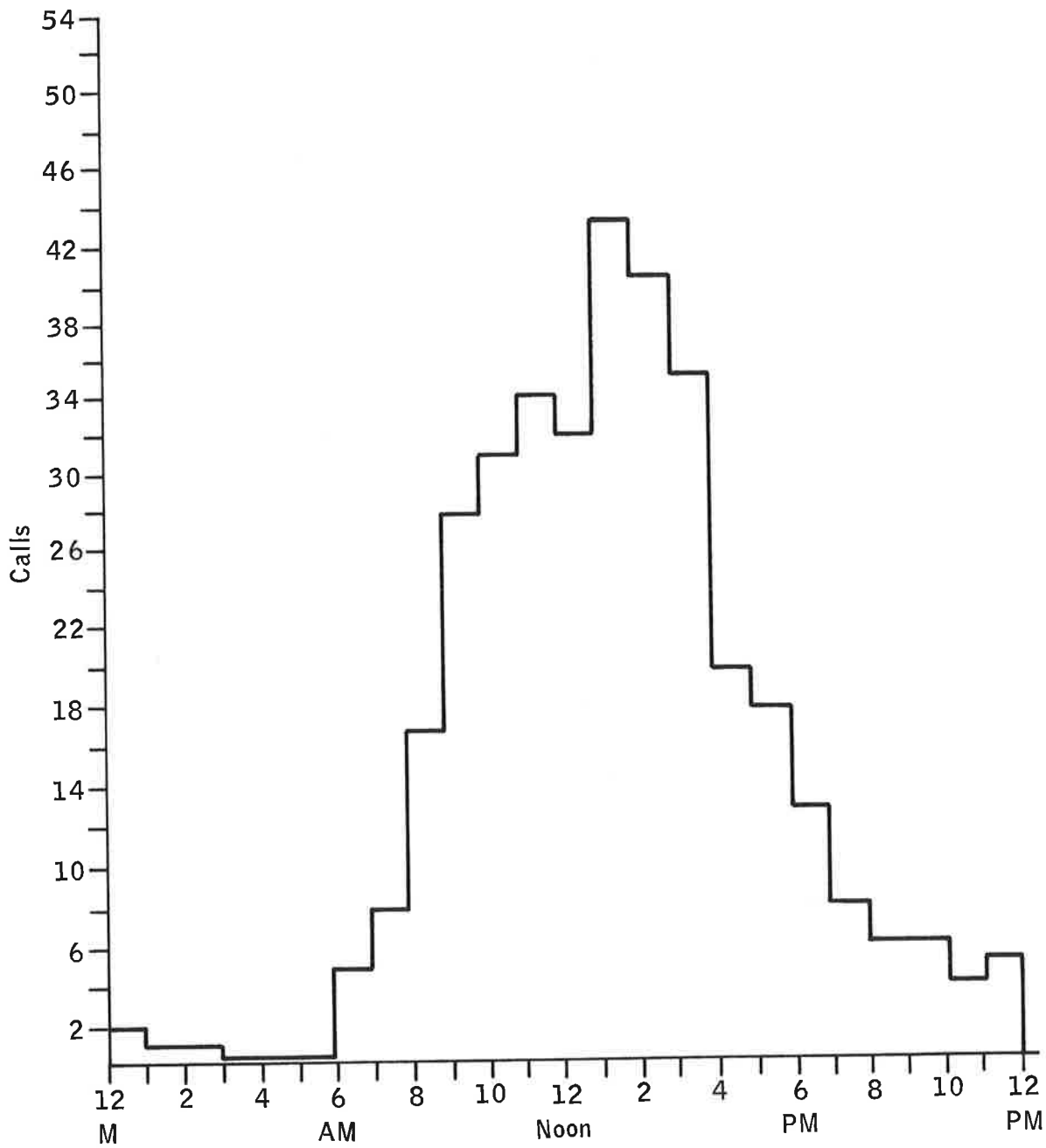


Figure 4. Hourly Distribution of Service Requests (Nov. 1974)

the system properly and fairly. However, if minor abuses were occurring, detection procedures would be difficult as well as expensive and would be likely to more than offset any potential recovery. An important point regarding this contractual arrangement is that the method of compensation does not appear to give any incentive to the operator to group rides and increase the vehicle productivity, as long as the wait-time standard is not exceeded.

Notwithstanding these problem areas, the citizens, the City Administration, and SDYC all seem to be happy with the service being provided and are not inclined to change any element of the concept. It is generally agreed that it would be politically impossible to discontinue Express service. However, the city is giving thought to changes in the method of compensating SDYC and in the fare schedule.

Future Plans

Due to the difficulty of auditing the operation, a few different methods of reimbursing SDYC for Express operation have been considered. One method would be to pay a flat fee for every ticket collected. Based on the year and a half of operation, a price per ticket could easily be established. However, a change in the service area would complicate matters under this procedure. Another possible method would be to set performance standards and vary the fee paid according to the degree of success in meeting the standards as measured in the charged mileage per passenger trip. Under this method, the mileage charge would increase as average trip length decreased and vice versa. The burden of auditing would then be shifted to a greater degree to the company. However, this method is also more complex and it may be difficult to reach an equitable arrangement.

Since the Express has become so popular, the subsidy required will, in all probability, exceed the amount allocated for it. Three methods have been considered for decreasing the subsidy necessary to operate the system. All of them result in the raising of fares in some way or another. The obvious method is to increase the price of the ticket. Another straightforward method is to require all passengers to have a ticket. A third method is to establish a zone fare which might require two tickets, for example, to go from one side of the City to the other. The first method would be the most unpopular. The second method would make it more expensive for couples and families travelling together but would increase revenues approximately 30 percent. The zone fare system would be more difficult to establish and administer and would have the least effect on revenues. Its advantage is that it allocates a bigger cost to the passenger for the longer trips which are very costly

to the city. The higher cost might also tend to discourage longer trips.

Unfortunately, if a fare increase is enacted, El Cajon could be following the pattern of some other cities which have raised fares to reduce deficits. This is often followed by a continuing series of ridership declines and fare increases. In the case of El Cajon, the taxi company would probably request a higher mileage payment to compensate for ridership losses. Some cities, however, have countered this trend in recent years by reducing fares to encourage rather than discourage public transportation ridership. The availability of funding sources and the economic condition of the individual city is a major factor in the selection of the course of action. There are two California legislative proposals which hold some promise of future funding for the type of system that El Cajon has implemented. One is a demonstration funding bill and the other would allow payment to taxicab operators by a city for the provision of public transportation service under a contractual arrangement.

At present (and for the near future) neither the city nor SDYC would change the service aspects of the Express. However, the long range plans for El Cajon transportation are uncertain at this time. Federal revenue sharing funds currently used to pay for the Express have an expiration date of 1976, although that could be extended by Congressional action. (Except for the Express, El Cajon has used its Federal revenue sharing funds for capital projects only.) A potentially more significant influence may be the preparation and implementation of regional transportation plans for the area. It is too early to tell whether a regional system will actually be implemented or what form it might take. If such a system is established, El Cajon's public transportation system could be modified or changed to complement the regional scheme.

Comparison With La Mesa

There are other cities operating shared-ride taxi service and it is interesting to note that neighboring La Mesa, a city of 40,000, has a rather different system even though SDYC operates it as well. The vehicles are regular passenger vehicles, owned by the city and leased to SDYC. The La Mesa vehicles are not used in regular taxi service. The drivers are salaried but do receive tips. The service operates 14 hours per day on weekdays, 10 hours on Saturdays, and 6 hours on Sundays. The city pays \$9.50 per vehicle hour to SDYC for service but receives \$1.10 per vehicle hour for the lease of the vehicles. La Mesa also permits fare payment in cash. In addition, coupons are sold at a 10 percent discount and group trips are charged at the

rate of 25 cents per person. The subsidy per passenger, however, is about the same as El Cajon. State funds are received for system operation. The city of La Mesa decided to have a consultant design their system and spent less on publicity and promotion. La Mesa, SDYC, and the drivers are all apparently pleased with the service.

This comparison points up the fact that there is a considerable amount of latitude and flexibility in the development of what basically is a shared taxi, dial-a-ride service. It would not be difficult to imagine that there would be many more options including other system concepts that could also be appropriate for these two communities. It is likely that other system concepts could increase ridership but probably at a greater gross cost per passenger trip.

SUMMARY OF EL CAJON TRANSIT SYSTEM CHARACTERISTICS

DEMOGRAPHICS

Population in service area: 60,500
Population density: 5,000 persons per square mile
Median household income: \$10,600
Cars owned per household: 1.58
Percent carless households: 7%
Percent transit dependent: n/a
Average distance to service: n/a

COVERAGE AND SERVICE

Number of routes: n/a
Average route length (one-way): n/a
Average route time (one-way): n/a
Service area: 12 square miles
Time of service and average headways: 24 hours per
day, seven days per week, pick-up time 15 to
20 minutes
Number, types and average capacity of vehicles:
18 medium-sized taxi vehicles - 5 passenger
Number of vehicles in service: 14

COST AND PRODUCTIVITY

Operating cost per month: n/a
Vehicle miles per month: 66,110
Vehicle hours per month: 3,720
Driver hours per month: 3,720
Operating cost per vehicle hour: \$8.16
Operating cost per vehicle mile: \$0.46
Operating cost per passenger trip (one-way): \$1.28
Passengers per vehicle hour: 6.38
Passengers per vehicle mile: .36
Driver wage rate per hour: Commission and tips

REVENUE AND SUBSIDY

Fares: 50 cents per trip; multiple riders between
common origin-destination points pay only
50 cents total
Revenue per passenger: \$0.38
Subsidy per passenger: \$0.90
Operating ratio: 3.38
Lease or buy vehicles: Lease
Funding: n/a

RIDERSHIP

Average Passengers per weekday: 600
Ridership growth rate: Multiplied by 2 in
1 year and stabilized
Ridership composition: 2/3 over 65
Trip purpose: shopping, medical



