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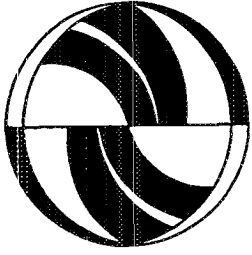
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Publication Date

1995-03-01



**Paratransit in the San Francisco Bay Area:
Providing Feeder Connections to Rail**

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Douglas Mount
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Working Paper
UCTC No. 252

**The University of California
Transportation Center**
University of California
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**The University of California
Transportation Center**

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Providing Feeder Connections to Rail**

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*Working Paper
March 1995*

UCTC No. 252

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This paper was produced with support from Caltrans and the University of California Transportation Center under the UC Transit Research Program

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PARATRANSIT IN THE SAN FRANCISCO BAY AREA: PROVIDING FEEDER CONNECTIONS TO RAIL

1. Introduction

The San Francisco Bay Area is blessed with one of the most extensive urban rail networks in the nation — the 80-mile Bay Area Rapid Transit System, the 72-mile CalTrain commuter rail system, a new light-rail service in Santa Clara County, and streetcars, trams, and cable cars lacing the streets of San Francisco. This extensive, multi-billion dollar network, however, has been unable to reverse mass transit's continuing decline. A major reason why transit has been losing market share to the private automobile is that fixed guideway systems are ill-suited to a metropolitan area which continues to grow outward, in the form of low-density office parks, big-box retail outlets, and tract subdivisions.

The only way for rail transit to work in such an built environment is to promote efficient feeder services. In the past few years, several private paratransit operators have begun to test these waters. This report examines and evaluates the Bay Area's recent experiences with paratransit feeder services.

Initially, the Bay Area's existing paratransit regulatory environment is examined. Since municipalities have jurisdiction over intra-city paratransit services, local regulations governing market entry, fare rates, insurance requirements, and driver/vehicle fitness standards are compared across a sample of Bay Area cities. For the most part, paratransit services fall under existing taxi ordinances. In this report, we assess local regulations primarily in terms of their consistency and levels of permissiveness. This is followed by a discussion of state regulation of inter-city shuttle services, such as airport vans. Whether state standards have hindered non-airport, inter-city shuttles from emerging is discussed.

Three case studies of paratransit feeder services are then discussed. The first case study is of San Francisco's downtown jitney. Once a stalwart of the city's transportation scene, today a single jitney operator plies his trade between a train depot on the periphery of downtown and the heart of the city's financial district. The second case is of an even more specialized service — a seasonal jitney that runs between the North Berkeley BART station and the Golden Gate Fields racetrack in Albany. Last, the most extensive paratransit services in the Bay Area — Santa Clara County's light rail shuttles — is examined. In addition to describing the demand and service features of paratransit for each of these cases, cost and performance comparisons are drawn between privately operated paratransit feeders and nearby public bus transit services.

The report concludes with a discussion of the policy implications of the research findings. Policy reforms that might strengthen the Bay Area's paratransit sector are also discussed.

2. Intracity Paratransit Regulations in the San Francisco Bay Area

2.1. Taxi and Shared Ride Regulations

In California, taxicab and intracity paratransit services are regulated by local governments. Regulations can vary dramatically across cities. At first glance, the sheer number and complexity of regulations would appear to frustrate attempts by taxicab operators to provide cost-effective, multi-city services. It does. However, they can also protect the livelihood of taxicab companies within a jurisdiction. Differences in regulations, and their enforcement, may serve as a barrier to entry by operators from surrounding communities. Consequently, local regulations, on the one hand, frustrate attempts by operators to create multi-jurisdictional service areas and, on the other hand, may shield taxicab operations from competition within a jurisdiction.

In the San Francisco Bay Area and most other parts of the U.S., regulations governing paratransit are almost always part of the same ordinances regulating private taxi companies. Municipal rules and regulations usually pertain to five main areas:

- vehicle and driver fitness;
- insurance and indemnity;
- market entry and exit;
- pricing; and
- services.

Most cities set performance standards for driver fitness and vehicle fitness. Insurance requirements are nearly universal. Typical driver fitness standards include: possessing a state of California chauffeur's license, not being convicted of any violation of criminal law, and being at least 21 years old. Most ordinances give the Chief of Police the latitude to deny a taxi driver's permit whenever the physical or moral character of an applicant is in doubt. In terms of vehicle fitness, taxicabs are typically required to adopt a characteristic color scheme and have the name of the owner painted on the side of the cab. Taxicabs are typically inspected annually by the police department to ensure that they are in proper working order. A motor vehicle liability policy is usually required, as is an insurance binder naming the city as an additional insured. Such standards do not vary a great deal from city to city. However, entry control and fare regulation do differ a considerable degree (Frankena, 1984).

Entry controls restrict the number of taxi companies and vehicles allowed to operate in a jurisdiction. Regulations vary in terms of their level of entry control (Shaw, et al., 1983). On the "most controlled" end of the spectrum are predetermined ceilings — e.g., 400 taxicab medallions in a city. Least controlled is open entry. In between, a mix of entry control regimens exist: population ratios, convenience and necessity, franchise systems, and minimum standards.

Population ratios fix the number of medallions or licenses to changes in population — e.g., 2 cabs per 1,000 population. Findings of convenience and necessity are required for entry in many jurisdictions. Such decisions can be subjectively made or they can be based on satisfying predetermined cri-

teria specified in an ordinance. Some jurisdictions operate a franchise system, which grants licenses to taxicab companies and does not limit the number of taxicabs those companies operate. Minimum standards and open entry occupy the “less controlled” end of the regulation spectrum. However, minimum standards can be more restrictive than other forms of entry control, depending on how “minimal” standards are. And even with open entry, some level of control over driver and vehicle fitness often occurs.

Fare regulation is another important feature of taxicab regulations. In some cities, the fare is set by the transportation commission or its equivalent, and no deviation is allowed. In other cities, maximum or minimum fares are set. The most laissez-faire policy is to allow the industry to set their own fares. However, even with industry fare-setting, some degree of accountability to the municipality is typically required: the most common requirement is posting company fares with the local police department.

In addition to entry control and fare regulations, some jurisdictions restrict the type of services that taxicabs can provide. Prohibitions against shared-ride services, including dial-a-ride and jitneys, are the most common. Shared rides generally involve the pickup and dropoff of passengers from unrelated parties who have different origins and destinations. Shared-ride regulations may require explicit permission, permission with initial passenger consent, or may not be allowed at all. Some ordinances do not speak to shared rides at all, which means they are allowed *de facto*. Shared-ride regulations rarely specify a fare structure for additional passengers. However, it is generally assumed that subsequent passengers will pay the difference between the fare registered on the meter when they are picked up and the fare registered on the meter when they are dropped off. There is not a flag drop premium charged to additional passengers. Zonal taxicab fare systems, as in Washington, D.C., are more amenable to shared-ride services than metered systems. There are no zonal systems in the San Francisco Bay Area.

2.2 Survey of Bay Area Regulations

A survey of taxicab regulations in the San Francisco Bay area illustrates differences in municipal regulatory oversight of the taxicab industry.

The matrix in Table 2.1 gauges the degree of restrictiveness over entry control, fare regulation, and shared-ride privileges for a sample of cities in the San Francisco Bay Area. All three of the region’s largest cities with over 300,000 residents — Oakland, San Francisco, and San Jose — were surveyed. Ten medium-sized cities, with 50,000-200,000 inhabitants, were also surveyed. A small sample of small cities with less than 50,000 inhabitants were also surveyed. However, most small cities did not have taxicabs based in their cities and, consequently, had no taxicab ordinance. Small cities were omitted from the matrix.

Entry Control

Generally, regulatory coverage increases with city size.¹ Oakland and San Francisco both have a predetermined ceiling for the number of medallions or permits granted to operate taxicabs. In Oakland, 310 permits were out in 1989. That year, the city capped the number of available permits because the

police department believed that this was the maximum number of operators that the city could effectively regulate. According to Oakland's police department, demand for permits is still high, based on the request for spare cars, permits, etc.. However, because of the proliferation of smaller companies and enforcement difficulties, the city plans to maintain the ceiling for the foreseeable future. The largest company in Oakland, Associated, holds 27 permits. The remaining permits go to medium-sized companies.²

In San Francisco, medallions are licensed to individuals.³ A public hearing is required whenever a medallion is issued. In reality, because it is infeasible to hold a public hearing every time an individual files for a medallion, public hearings are held annually, and applications for medallions are put on a waiting list. Every three or four years, the San Francisco Police Department, the city's paratransit regulator, increases the number of medallions by 50. In 1984 there were 761 medallions; in 1987, 811; and in 1992, 866.⁴

In San Jose, minimum standards are specified for taxicabs. More stringent regulations are imposed on operators that serve the airport and operate wholly within the city limits.

Medium-sized cities in the San Francisco Bay Area show a broader range of taxi regulation. They also tend to occupy the middle of the control spectrum. Most medium-sized cities govern market entry by requiring operators to prove that a public convenience and necessity exists for the new service. As noted, "convenience and necessity" can be broadly or narrowly construed and specified in the ordinance. In the cities of Livermore and Hayward, the City Council and the Chief of Police, respectively, weigh the following in deciding whether public convenience and necessity exist: the financial responsibility of the applicant; whether existing taxi operators are providing sufficient service to the public; and whether taxi companies are making a reasonable return on investment.

In most cases, the operator is required to submit documentation demonstrating that the new service will meet convenience and necessity "requirements." These requirements typically amount to a financial statement listing assets and liabilities and the "minimum requirements" found in other jurisdictions, such as insurance, and vehicle and driver fitness standards.⁵

In all cities that hold a public hearing to determine if new applicants meet public convenience and necessity requirements, it was reported that existing operators always lodge protests against the petitions. Their primary complaint is that they are barely eking out a living and that more taxicabs would only reduce their income. In all cases, it was reported that such testimony has little impact, and all companies that meet minimum requirements are issued permits.

Most medium-sized jurisdictions report that their City Councils have not, nor are they interested in, limiting the supply of taxis in their jurisdictions. Generally, a laissez faire attitude prevails in those jurisdictions which control entry through convenience and necessity requirements.

Only one city in the survey, Sunnyvale, operates a franchise system, where the companies must meet minimum service standards but are allowed to operate as many cabs as the market will bear. Three medium-sized cities have a combination of minimum standards and/or open entry. Of the three, the city of Richmond's is the most permissive: there are no requirements at all.⁶

Table 2.1. Taxi and Paratransit Regulations in the San Francisco Bay Area — 1994

Cities	Entry Control				Fare Regulation			Shared Ride Permitted?
	Predetermined Ceiling	Convenience and Necessity	Franchise System (w/ no limit on # of vehicles)	Minimum Standards and/or Open Entry	Governmental Fare Setting	Maximum and/or Minimum Fares	Industry Fare Setting	
Large, 200,000+								
Oakland	✓				✓			No
San Francisco	✓					✓		w/ Consent
San Jose				✓	✓			w/ Consent
Medium, 50,000-200,000								
Berkeley				✓		✓		Yes
Fremont				✓			✓	Yes ¹
Hayward		✓			✓			No
Livermore		✓			✓			No
Mountain View		✓					✓	w/ Consent
Palo Alto		✓					✓	Yes ¹
Pleasanton		✓				✓		No
Richmond				✓			✓	Yes
Sunnyvale			✓			✓		w/ Consent
Walnut Creek				✓		✓		w/ Consent

✓ = Condition Exists

¹ Not addressed in ordinance, permitted *de facto*.

Demand for taxicab applications in medium-sized cities vacillated from jurisdiction to jurisdiction and from year to year. In Fremont, there were six applications in 1994 and none the prior year. There, five or six companies have dominated the market for many years.⁷ In Walnut Creek, the city used to limit the number of taxis that could operate. In 1992, the City Council decided to “let the market decide” — and opted to control entry using minimum requirements. Five operators existed in the city before the ordinance and, soon after deregulation, four more operators were approved to operate in the city.

Fare Regulation

In the three big cities, municipalities govern fares that can be charged. In Oakland and San Jose, fare rates are specified (e.g., \$2.00/mile in Oakland). In San Francisco, there is a fare ceiling. However, there is little difference between specified fares and maximum fares among cities. In big and small cities, taxis often charge the maximum fare allowed.

Half of the medium-sized cities surveyed regulated fares: one city set the exact fare rate and four set ceilings. The other five cities allowed the industry to set the fares, but in most cases required each operator to post the fares with the police department. The city of Richmond does not regulate fares at all.

Shared Ride Provisions

Provisions for sharing rides is typically a one-paragraph section of the city code. In Livermore, shared rides are not permitted by ordinance:

When a taxicab or automobile for hire is engaged, the occupants shall have the exclusive right to the full and free use of the passenger compartment, and it is unlawful for the owner or driver of such vehicle to solicit or carry passengers contrary to such right. [section 4.40.130]

In Mountain View, shared rides are permitted by consent:

No driver shall permit any other person to occupy or ride in such taxicab, unless the person or persons first employing the taxicab shall consent to the acceptance of the additional passenger or passengers. [section 30.26.A]

Whether large or small, most surveyed cities permit shared rides with consent of the first passengers. Only the city of Berkeley specifically permits shared rides. In Berkeley, demand for access from the BART rail station to a major activity center, the Golden Gate Fields racetrack, has spawned both public bus transit and shared-ride taxi services (discussed in Section 5). And since Richmond has no taxi regulations at all, shared rides are allowed. Similarly, the Fremont and Palo Alto ordinances do not address shared rides, so they are allowed, *de facto*.

Among big cities, shared rides are not permitted in Oakland and are only permitted with the consent of the passenger in San Francisco and San Jose. Urban densities in these cities may be high enough for taxis or jitneys to provide profitable shared ride services, even in a distorted marketplace. According to local officials, the demand for shared-ride services is presently minimal in the Bay Area. The limited demand for shared ride services is likely a function of market distortions that make private vehicles and public transport more competitive: employer subsidization of parking, public subsidization of transit fares, fuel taxes that do not reflect the true cost of externalities, etc.

3. Intercity Paratransit Regulations in California

In California, private, for-profit intercity shuttles operate under the jurisdiction of the state Public Utilities Commission (PUC). The Passenger Stage Code of PUC's charter governs all common-carrier intercity services. In the San Francisco Bay Area, Passenger Stage Corporations (PSCs) consist primarily of airport shuttles — vans and mini-buses carrying up to 12 passengers that ferry customers between airports and other points in the region. This industry grew from nil in 1976 when airport shuttles were first allowed in the Bay Area, to 49 companies in 1991, and 50 in 1994. Between 1987 and 1991, there was very little firm turnover. While every year showed firms entering, only in 1991 did any firms exit (Table 3.1), in large part because of the recession.

With a natural transportation corridor between downtown San Francisco and the San Francisco Airport, there was a ready-made market for shuttle services. Currently, 80 percent of shuttle passengers

Table 3.1. Shuttles Regulated by PUC Operating in the San Francisco Bay Area, 1987-1991

Numbers of firms...	1987	1988	1989	1990	1991	Total
...on Jan. 1	10	11	12	15	18	
...entering during the year	1	1	3	3	5	13
...exiting during the year	0	0	0	0	2	2

Source: Strauss, 1992

travel this corridor. The East Bay market, in contrast, is geographically more dispersed, which increases costs and necessitates longer, less direct routing for each passenger.

Pioneering the airport shuttle industry was a single carrier: Super Shuttle. Super Shuttle came in initially with a large number of vans (50) and doubled its capacity during the first year. Through aggressive marketing and with few other competitors, Super Shuttle dominated the Bay Area's airport shuttle industry during the early 1980s. San Francisco's relatively small geographic size (49 sq.mi.) and close proximity to the airport (12 miles from downtown) enabled Super Shuttle to provide reliable and cost-effective services. Since the early 1980s, the market has diversified, serving a larger area, with a greater variety of companies (Table 3.2).

Table 3.2. Number of Companies Serving Selected Areas in the San Francisco Bay Area, 1986-1991

Year	Selected Service Areas				
	San Francisco			East Bay	South Bay
	Downtown	Sunset	Van Ness	Berkeley	Palo Alto
1986	6	6	7	2	3
1987	6	6	7	3	4
1988	6	6	7	3	3
1989	6	8	8	3	3
1990	9	8	9	3	4
1991	13	12	13	4	6

Source: Strauss, 1992

Given the growth and success of the airport shuttle over the past decade, why has the industry not branched out to other markets, such as downtowns, shopping malls, edge cities, or college campuses? In theory, any common-carrier transportation service which takes passengers across city or county lines is permissible under the PSC code, as long as it meets regulatory requirements.⁸ In practice, only airport shuttles, and in Los Angeles areas, shuttles to other transportation hubs such as the Catalina Ferry, are currently registered under the PSC code. While there is nothing in the code which limits intercity service to airports and other intermodal terminuses, a combination of economic and regulatory realities have constrained operators from branching outward.

3.1. Market Entry

A “Certificate of Public Convenience and Necessity” issued by the PUC is the mechanism by which a business or individual may become a Passenger Stage Corporation (PSC). The following costs are associated with market entry:

- Non-refundable application fee of \$500 (\$300 if for transfer from one carrier to another).
- Three to nine months’ application processing time (depending on potential need for public hearing).
- Need to identify and send notification of intent to operate to all public transit authorities and taxi companies which operate in the same jurisdiction(s).
- Public hearing if requested by transit authorities, taxi lobbies, or any other interests which oppose the application.

Providing there is no public opposition to the PSC application, entry is fairly easy. For applications to operate airport shuttles, the PUC takes a pro-competition stance, generally approving reasonable applications even if there is opposition. This policy was set in the early 1980s when existing airport shuttle operators sought to limit competition, appealing to the PUC that new certificates could only be issued if existing operators fail to provide satisfactory services (Public Utilities Code, Chapter 1, Section 1032b). The PUC took the position that if applicants can charge “reasonable and compensatory” rates, then the proposed service is “necessary and convenient” for the public. This same standard does not apply to non-airport shuttles, however. Vocal opposition by taxi owners or local transit authorities is enough to deny an entry request. For example, a recent application in Palm Springs proposed an “all points” service crossing several jurisdictions in Riverside County with a large number of shuttle vans. Several local public transit authorities united to oppose the application, contending that it would cause overcompetition and economic hardships. The application was consequently rejected. An argument frequently lodged by taxi companies is that, because PSC operators face no fare restrictions, applicants are would-be taxi-operators trying to circumvent strict fare restrictions and medallion caps set by municipalities. Protesters also complain that new entrants will “skim the cream,” focusing only on the most lucrative markets (e.g., outbound airport services where no reservations are needed), leaving them to serve more expensive markets (e.g., advanced-reservation inbound taxi services). Protests of unfair competition and claims of discriminatory service practices have virtually blocked the entry of non-airport shuttle markets.

3.2. Operating Costs

Once an application has been approved, the cost of operating a shuttle depends on the size of the vehicle, the employment structure of the PSC, and the routes covered. Significant expenses are incurred in satisfying the following regulatory requirements:

- *Vehicle safety.* All vehicles must meet standard safety requirements;⁹ however, only vehicles which seat fewer than 10 passengers must be inspected.
- *Workers compensation insurance and employer and social security taxes.* If the PSC operates with subcontractors rather than employees, these expenses are not incurred. Among airport shuttles, this has prompted most service-providers to hire subcontractors rather than employees, reducing the accountability of the PSC certificate owner.
- *Driving requirements.* PSC operators are not required to check the driving history of their employees or sub-contractors. They are, however, required to enroll in the "Pull Notice Program" of the Department of Motor Vehicles, which provides computerized accounts of drivers' records. This program costs \$5 to enroll a driver, and \$1 for each report, which can prove costly when there is high driver turnover.
- *Insurance.* Minimum liability coverage depends on vehicle size (in terms of seating, including driver): < 9 seats — \$750,000; 9-16 seats — \$1.5 million; and > 17 seats — \$5 million.

3.3. Other Financial and Operating Considerations

Besides these regulations, several other factors bear on the potential cost-competitiveness of PSC, non-airport services:

- *Fare requirements.* In contrast to municipally regulated taxis and jitneys, PSCs face no fare restrictions, except that rates should be "reasonable and compensatory." Carriers must file their rates with the PUC, and submit any changes ten days in advance. In general, the absence of strict fare regulations means inter-city shuttle operators would be in a position to introduce differentiated fares (e.g., off-peak discounts) in a competitive market situation.
- *Economies of Scale.* For one-to-many services such as airport shuttles, the closer together the "many" points are, the lower the operating costs. For example, the highly concentrated airport-to-downtown San Francisco route is cost-effective because gasoline consumption and vehicle wear and tear are less per customer. Relatively high-speed freeway services combined with high passenger demand have produced economies of scale and correspondingly relatively low unit costs.
- *Service Recognition.* Shuttle services must exist in sufficient numbers to gain market recognition. In the airport shuttle industry, service coverage is extensive enough that many operators are recognized by the traveling public. For many, their fleets of shuttle vans are "moving billboards" that advertised their services. The lack of extensive services have reduced the potential recognition of non-airport services in the minds of the traveling public. Without large numbers of vans in the streets, few people would even know that their services are available.

In conclusion, while the PUC has taken a pro-competition stance with regards to airport shuttles, it is effectively protecting the interests of local taxi lobbies and public transit monopolies by preventing other types of private shuttles from operating. While the market potential of non-airport shuttles remains unclear, the presence of protected monopolies has undoubtedly discouraged innovation and driven up costs (Cervero, 1985). There is no reason to believe that a market for non-airport shuttles could not be cost-competitive and fill a market void. California's PUC should consider taking a more decisive stand on expanded inter-city shuttle services, just as they did with the airport shuttles in the early 1980s, by letting the marketplace, not the monopolists, determine what consumers want and are willing to pay for.

4. Case Study I: The San Francisco Jitney — A Commuter Rail Feeder

Today, a privately operated 20-seat passenger jitney bus runs between downtown San Francisco and the Southern Pacific Transportation Depot, the northern terminus of the Peninsula CalTrains commuter rail service. Officially sanctioned by the San Francisco Police Department (SFPD) as Jitney No. 97, this shuttle is the last remnant of San Francisco's once-flourishing jitney industry. It remains the most heavily used private paratransit service in the San Francisco Bay Area. It also provides hints about the kinds of cost-savings measures and lean service practices that are necessary to survive in an era of huge public transit subsidies and heavy-handed regulation.

4.1 San Francisco's Jitneys: The Early Years

San Francisco's jitneys first appeared in 1914 to transport workers and attendees to the Panama-Pacific International Exposition. By 1915, over 1,400 private jitney operators were plying their trade on the streets of San Francisco. Because of complaints from streetcar operators, jitneys were soon banned on major thoroughfares; however, the Board of Supervisors lifted all restrictions in 1917 in response to a streetcar-worker's strike that threatened to cripple the city. By 1918, several thousand jitneys covered every major thoroughfare in the city, primarily ferrying suburbanites to downtown jobs (Belknap, 1973).

From this height, San Francisco's jitney fleet fell steadily at the hands of rising insurance rates, competition from the private automobile, and more restrictive rules on who could operate, when, and where. By 1950, there were 136 vehicles (mainly Cadillac limousines) hauling around 7,000 passengers per day at a 10-cent fare. Twenty years later, there were 120 vehicles operating on two routes.¹⁰ The major one was the "Mission" jitney — a 24-hour, seven-day-a-week service route consisting of 12-seater vans and mini-buses that ran along Mission Street between the Ferry Building on the eastern edge of downtown to the San Mateo county line. The Mission district, arguably the city's greatest melting pot, is a mixed-use neighborhood populated predominantly by Hispanics and other ethnic minorities. During rush hours, most operators would deadhead via freeway to gather another load.¹¹ The second route, which had only around 5 percent of the jitney fleet in the early 1970s, operated along the 3rd-4th Street one-way couplet between the Southern Pacific Depot and Market Street, downtown's major thoroughfare, eight blocks to the north. Schedules along this rail feeder route generally followed the arrival and departure of commuter trains.

Throughout the post-war era, San Francisco's jitneys have been regulated by the SFPD, the same authority responsible for overseeing taxi operations. While the 1950s San Francisco jitneys were primarily limousines serving white-collar workers, by the 1970s the vehicle of choice was a van or mini-bus, serving a blue-collar and pink-collar clientele. The choice of vehicle was entirely up to the permit owner provided it passed safety inspection.

Because of mounting public transit deficits and pressures to protect Muni trolleybuses and streetcars from competition, no new permits were issued after 1972.¹² This severely restricted any potential

for expansion and market innovation at a time when the region's new rail service, the Bay Area Rapid Transit (BART) system, opened. The Mission jitney was hard hit by BART's 1974 opening. Because city regulations required operators to charge fares at least as high as the local public transit services (Muni), jitney operators found it difficult to compete with BART's lower fare and faster service for trips beginning and ending near BART stations.

4.2 Jitneys in the 1970s and 1980s: The Demise of an Industry

In the early 1970s, San Francisco's jitneys were mainly serving ethnic minorities from the Mission district, many of whom used to patronize jitneys when they lived in Central and South America and Asia. Riders were attracted by the faster services with fewer stops, the greater likelihood of getting a seat during peak hours than on a Muni bus or tram, the ability to talk with friends in their native tongue, and the fact that jitneys were crime-free, unlike Muni.

From 1972 to 1978, even though no new permits were issued, market entry was not impossible. Permits could be bought and sold, and estimates for the going rate at the time ranged from \$2,000 to \$3,500. In 1978, however, voters passed Proposition K, a referendum which stipulated that permits could not be transferred or sold from one operator to another. This resulted in an overnight change in the value of permits, now worthless on the market.¹³ Permits were reverted back to the City upon the forfeiture of a permit by, or death of, an operator, and, in practice, were not issued again.

The 1970s and 1980s also witnessed sharp increases in jitney operating costs, particularly for insurance premiums. The state raised minimum liability insurance requirements to \$1.5 million in 1978 and again in 1985 to \$5 million. This dealt a death blow to most operators. Even if jitney drivers could make premium payments, because of poor vehicle conditions and relatively high accident rates, most jitney drivers could not find insurance companies willing to write policies.¹⁴ Lack of alternatives invited fraudulent insurers, and two major insurance scandals — one in 1976 and another in 1986 — forced many operators into bankruptcy. Added to this was stepped-up police enforcement of jitney rules in an effort to ferret out violations like overloading (e.g., 41 in a 21 passenger bus), unsafe seating (e.g., a milk carton used as an extra seat), removal of doors to expedite alighting while in motion (cable-car style), erratic driving, and drivers racing one another for customers (Griffin, 1986).

By the late 1980s, virtually every San Francisco jitney had ceased operations. A 1985 editorial in the *San Francisco Chronicle* lamented the passing of "another San Francisco institution, . . . and those doughty little cars that putter up and down Mission Street." San Francisco's once-vibrant jitney industry had fallen prey to a combination of rising insurance costs, tighter regulations, fraud, and unfair competition from subsidized public transit services.

Why was more not done by jitney owners to prevent this outcome? Over the post-war era, jitney operators in San Francisco were unable to effectively organize to protest minimum fares, limited routing options, and rising insurance requirements. San Francisco's jitney operators were independent

and often fierce competitors; thus, route associations never formed to promote the industry's interests, reduce service duplication, and coordinate services, as in much of the third world. Organizing and developing a single voice for effective advocacy proved extremely difficult (Watry, 1993; Nolte, 1988).

4.3 The San Francisco Jitney of Today

Today, a single jitney owner-operator remains. The sole survivor, Jesus Losa, has attained local celebrity status.¹⁵ Every weekday, he drives a 1978 blue passenger bus along Third and Fourth Streets between the Southern Pacific commuter train depot and Market Street eight blocks to the north (Figure 4.1). The blue bus is marked "jitney" and looks like it belongs in Tiajuana or Jakarta more than the streets of San Francisco (Photo 4.1). This has not deterred professional office workers, most from upscale San Mateo County, from paying a dollar one-way fare for a five-minute lift from the train depot to their downtown jobs. Thus, in contrast to the earlier jitneys, San Francisco's sole jitney survivor serves an upmarket clientele. Passengers give Mr. Losa's jitney rave reviews — passengers noted in a 1988 *Chronicle* article that "I don't think I've ever missed a train with him" and "Jess really knows how to handle traffic" (Nolte, 1988, p. A2). Most are regular, loyal customers who are on a first-name basis with Jesus Losa. Most find the jitney ride to be more dependable, faster, and more comfortable than Muni bus runs. No signs or markings designate where the jitney picks up afternoon passengers, but regulars know where to go (and nearby newspaper kiosk attendants know where to direct people who ask). An estimated 250-300 customers ride the six morning and six afternoon runs of Jitney No. 97.¹⁶

An obvious question is why is it that Mr. Losa is able to earn a profit running a jitney when all others have gone out of business? One reason is he hauls large numbers of people a short distance, and is able to make a number of round trips within a short period of time. Another reason is that he works very hard, runs a no-frill, low-cost service, and has outlasted other competitors in this feeder-service niche market. Mr. Losa is a one-man business, driving and maintaining vehicles and taking care of all administrative chores (Photo 4.2). He has no employees. This means he does not have to purchase health insurance, pay worker's compensation insurance, or provide paid vacations or sick leave. If he is sick, which is rare, the jitney simply does not run that day. While jitney fares are Mr. Losa's main source of income, he supplements this through odd jobs on weekends. As a one-man business surviving on a small profit margin, Mr. Losa has learned to be resourceful and frugal. He makes most repairs on his vehicle himself. Seated on the dashboard, next to pictures of his first jitney, are cups of screws, washers, and miscellaneous mechanical parts. With an older vehicle, he has to be prepared for anything to go wrong.

Mr. Losa plans to continue driving his jitney for the foreseeable future. He does not expect to be joined by other jitneys, although he admits he would welcome a little competition. Being an anomaly, his jitney is not viewed by Muni bosses or taxi operators as a threat to their livelihoods. Critics tolerate his jitney, and most others are oblivious to it. Nonetheless, the No. 97 is the only sanctioned private service in the Bay Area that functions as a feeder into a mainline rail station. The model of competitive



Photo 4.1. San Francisco's Downtown Jitney Bus



Photo 4.2. Jitney No. 97: One-Man Business

paratransit runs feeding into publicly operated mainline rail services (where scale economies warrant a single operator) makes good economic sense, and it is encouraging that at least one San Francisco feeder service remains profitable. Major policy reforms, like eliminating public transit subsidies, free employee parking, and other market distortions, would likely be necessary to bring about a return to San Francisco's flourishing jitney services of yesteryear.

5. Case Study II: The East Bay's Racetrack Jitney — A BART Feeder

A good example of a “niche-market” paratransit service in the Bay Area is the “racetrack jitney” that connects the North Berkeley BART station to the Golden Gate Fields racetrack. This is a seasonal service that functions as a complement or “service extender” to the existing bus services that link the BART station and racetrack. Thus, race fans who ride BART have a choice of riding a bus, a jitney, or a much more expensive exclusive-ride taxi to reach the racetrack.

The Golden Gate Fields racetrack abuts the bay, at the western edge of the city of Albany. The race season begins in early February and lasts until June. The track is open Wednesday to Sunday and on holidays. All-day parking is available for \$3 during the regular season. Parking is free during the off-season.

Public transit access to the Fields is limited. The East Bay's major bus operator, AC Transit, operates two seasonal services to the track.¹⁷ Alternatively, taxicabs provide demand responsive service year-round from the North Berkeley BART station to the Fields. The fare for bus transit and taxi rides from the BART station to the Track is the same: \$2 per one-way trip.

5.1. Service Characteristics

Racetrack goers who ride BART have two shared-ride choices by which to reach the track: bus or jitney. Map 5.1 shows the routing of both services for the three-and-a-half-mile stretch from BART to the track¹⁸ The jitney plies a slightly more direct route over the three-and-a-half mile distance.

Approximately ten taxi owner-operators operate jitney services during the race season. Most taxis make two to three trips in each direction daily, carrying four to five passengers each trip. Two dollars per person is charged regardless of the number of passengers. When there are only three passengers, some drivers attempt to charge \$3/passenger; however, most passengers are regular customers who will only pay the standard \$2 fare.

The fare is effectively set by AC Transit. Jitney operators set their fares to the going rate for the competing Line 304.¹⁹ The cities of Berkeley and Albany do not set or regulate jitney fares.

5.2. Demand

Approximately 150 racetrack goers arrive at North Berkeley BART station on each weekday, headed for the Golden Gate Fields. Around three times as many arrive on Saturdays and Sundays. Approximately 55 of the racetrack goers board the AC Transit bus on weekdays, 165 on Saturdays, and

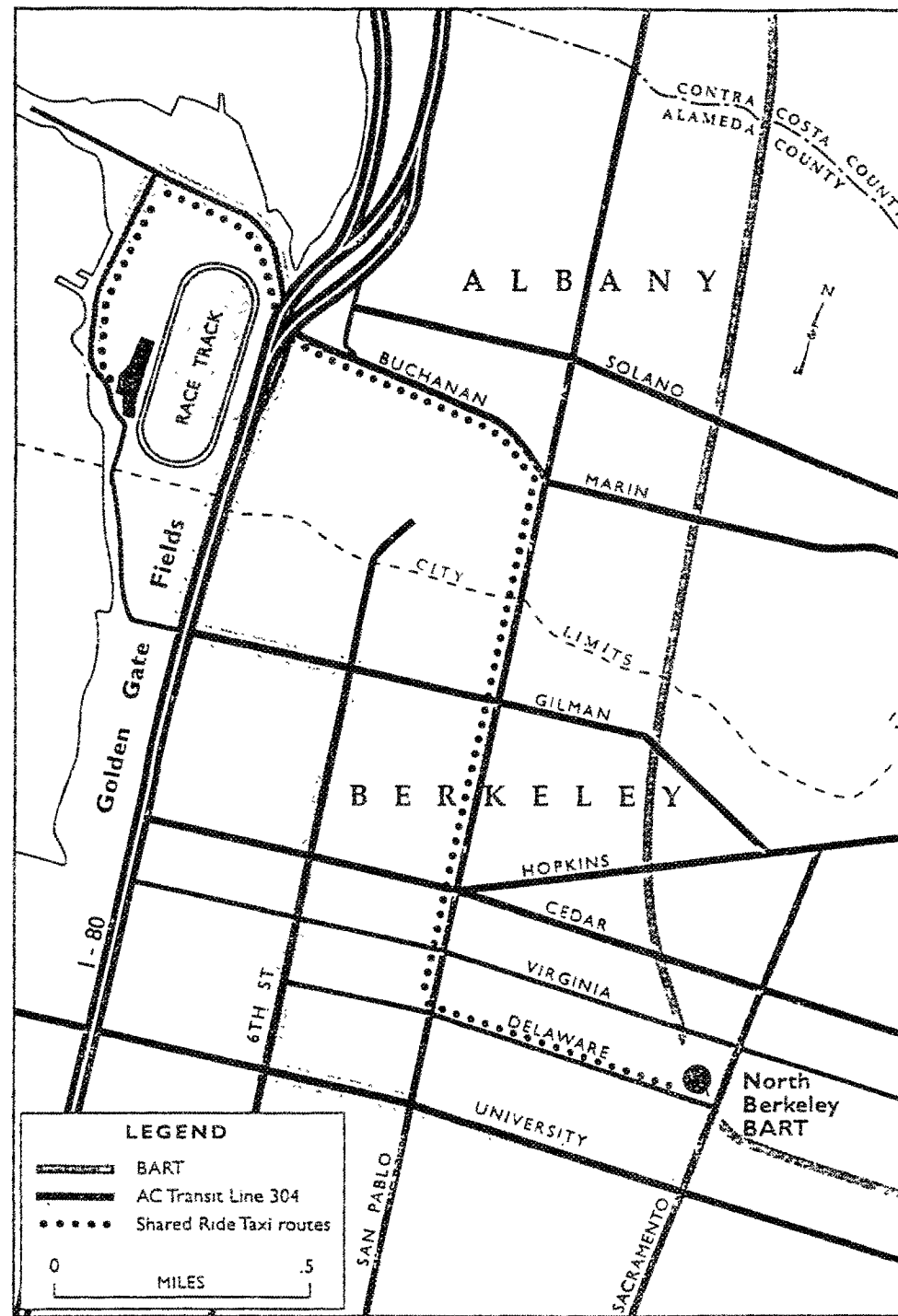


Figure 5.1. Routing of the Racetrack Jitney and AC Transit's Line 304

90 on Sundays.²⁰ The remainder board jitneys. With the same price and similar service features, modal preference is based on the value of time, habit, random selection, or, what one taxicab operator describes as “herd mentality.”²¹ For racetrack goers who want to get to a particular race in time to place a bet, the jitney will get them to the track quickest, especially if they are willing to pay \$10 to hire the cab all to themselves. Of the typical 100-125 jitney passengers during race season, a small percentage will carpool back to the stations with acquaintances from the track.

Economic Factors

Most jitney operators earn approximately \$50/day from hauling customers between BART and the racetrack. Most drivers will forgo their place at the BART station or the Fields queues to respond to the more lucrative call service (especially for trips to the airport). Typical daily income from regular cab services is around \$100. Drivers typically work 12 hours a day, six days a week. However, they will remain parked in one place for long periods of time during off-peak hours.

Based on interviews with drivers and other sources, we estimated the daily operating costs of jitney service to the track is around \$28-\$29.²² Table 5.1 lists these amortized costs by expense item. Most drivers “set aside” approximately \$18 a day for insurance and maintenance. Liability insurance costs approximately \$5,000 per year. On a busy day, drivers will drive 100 miles. An average day of driving is about 60 to 70 miles. Gasoline costs approximately \$4 per day.

Insurance	\$16.03
Maintenance	\$2.02
Gasoline	\$3.90
Finance Charges	\$0.70
Car Depreciation	\$4.49
Permits	\$1.24
Total	\$28.37

Most jitney drivers own their own vehicles. Late-model (1990 or 1991) sedans are the preferred vehicles, and they cost between \$4,000 and \$5,000. They last approximately two to three years.²³

East Bay jitney drivers take home \$35-\$40 per day, or approximately \$12,000 per year. Most drivers are single adults in their twenties. Many are Sikhs from the same region in India.

AC Transit’s operating cost are approximately \$76/hour.²⁴ On a typical weekday, AC’s Line 304 costs \$532 to operate, compared to an average of \$212 in fare revenues, producing a \$320 per day deficit. Because of higher ridership, Line 304 makes a profit of around \$120 per day on weekends.

Comparing the unit costs of AC Transit versus jitney services is fraught with difficulties. AC’s costs are based on system-wide statistics. Jitney cost data include expenses attributable to passengers not traveling to the racetrack, such as for responding to dispatch calls. Table 5.2 highlights the differences.

Table 5.2. Performance Comparison of Jitney and AC Transit Services for the Golden Gate Field Run, Weekday			
Cost/Passenger		Passengers/Revenue Hour	
AC Transit Line 304	Jitney	AC Transit Line 304	Jitney
\$ 3.01	\$ 2.57	11	18.67

As Table 5.2 shows, the weekday costs per passenger exceed the \$2 fare charged for both services. (The ability of jitney operators to earn non-racetrack fares while deadheading and in the middays allows them to generate additional fares to fully cover the costs and earn a profit.) On weekdays, AC Transit is losing approximately \$1 for every passenger.

Passenger/revenue hour comparisons are also shown in Table 5.2 (For purposes of this comparison, the fleet of ten jitney-cabs is compared to the one AC Transit bus that plies the racetrack route.) The jitneys carry around eight more passengers per revenue hour on weekdays compared to Line 304. Fully seated jitneys thus show higher ridership productivity than the competing bus run.

In summary, the racetrack jitneys appear to enjoy a modest cost advantage and a rather significant ridership advantage over their competitor — AC Transit Line 304. An argument could be made to allow them to fully absorb AC's services on pure cost-recovery and productivity grounds.

5.3. The Jitney Regulatory Environment

Both Berkeley and Albany control market entry through the use of minimum driver and vehicle requirements. They largely allow the market to determine the number of vehicles that operate within their respective boundaries, including the number of racetrack jitneys, and allow operators to set fares. Shared rides are specifically permitted under the Berkeley taxicab ordinance.

Albany officials report that no jitney application in recent memory has been rejected. However, some permits have been "pulled" for cases involving accidents or insurance premium lapses. Both cities have reports of taxis operating within the city limits without the proper licenses, though all jitney operators are properly licensed. The regularity of the route, self-enforcement by the existing operators, and ease of police enforcement of point-to-point services make illegal operations difficult.

5.4. Close

In Berkeley and Albany, the racetrack jitneys demonstrate that a private-sector service can compete with a publicly subsidized service and make a small profit in a lower-density environment. Several factors make these shared-ride services possible that might not be duplicable elsewhere in the Bay Area: point-to-point service; destination parking charges; a large transit-dependent population; a permissive regulatory environment; and regular and predictable demand.

The competitor to the jitney, AC Transit's Line 304, loses money. Entrepreneurial local governments and transit agencies may want to consider competitively bid special, point-to-point services like the East Bay's racetrack jitneys on economic grounds.

6. Case Study III: LRT Shuttle

6.1. Bay Area Shuttles-at-Large

By far, the most extensive shared-ride paratransit services in the Bay Area are those sponsored by employers and local transit agencies. There were 154 non-airport/non-ADA shuttle services sponsored by employers and public agencies in the Bay Area in 1993.²⁵ (See the Appendix for a listing of these services, by county.) Most provide peak-hour feeder connections to rail stations; a few operate shuttles upwards of 12 hours a day. Many large employers, such as high-technology firms, hospitals, and universities, use shuttles to interconnect campuses during the midday. Most shuttle services are privately contracted and administered by in-house staff.

Three-quarters of the region's shuttles are in Alameda, Santa Clara, and San Mateo Counties. As shown in Figures 6.1 to 6.3, these are the eastern and southern-tier counties of the bay; Alameda County is served by BART (Figure 6.1), San Mateo County is where most CalTrain commuter rail services operate (Figure 6.2), and Santa Clara is the southern terminus of CalTrain and home to the new light-rail service (Figure 6.3).

Around 70 percent of the Bay Area's shuttles function primarily as feeders to rail transit stops. Forty percent of the shuttles serve multiple destinations (e.g., a remote parking lot and BART station). Ten percent feed into park-and-ride lots exclusively.

Sixty percent of Bay Area shuttles are funded by employers, either fully or partially. Overwhelmingly, employer-sponsored shuttles connect work sites to BART stations (Figure 6.1). Some funding support is also provided through state air quality funds, notably AB 434 (a vehicle registration surcharge set aside for clean air programs). In the case of shuttles that feed into CalTrain's lines, approximately equal numbers are financially supported by multiple sponsors (e.g., local governments and transit agencies) as are by individual employers (Figure 6.2). An assortment of sponsors are also behind shuttle services that connect the Silicon Valley area of north Santa Clara County with the county's north-south light-rail line (Figure 6.3).

The remainder of this sections reviews the experience with employer-sponsored shuttles to light-rail stops in Santa Clara County, the Bay Area county with the most rail shuttles. This case is an example of how the public and private sectors joined to form a partnership for sponsoring LRT shuttle runs that benefited both parties.

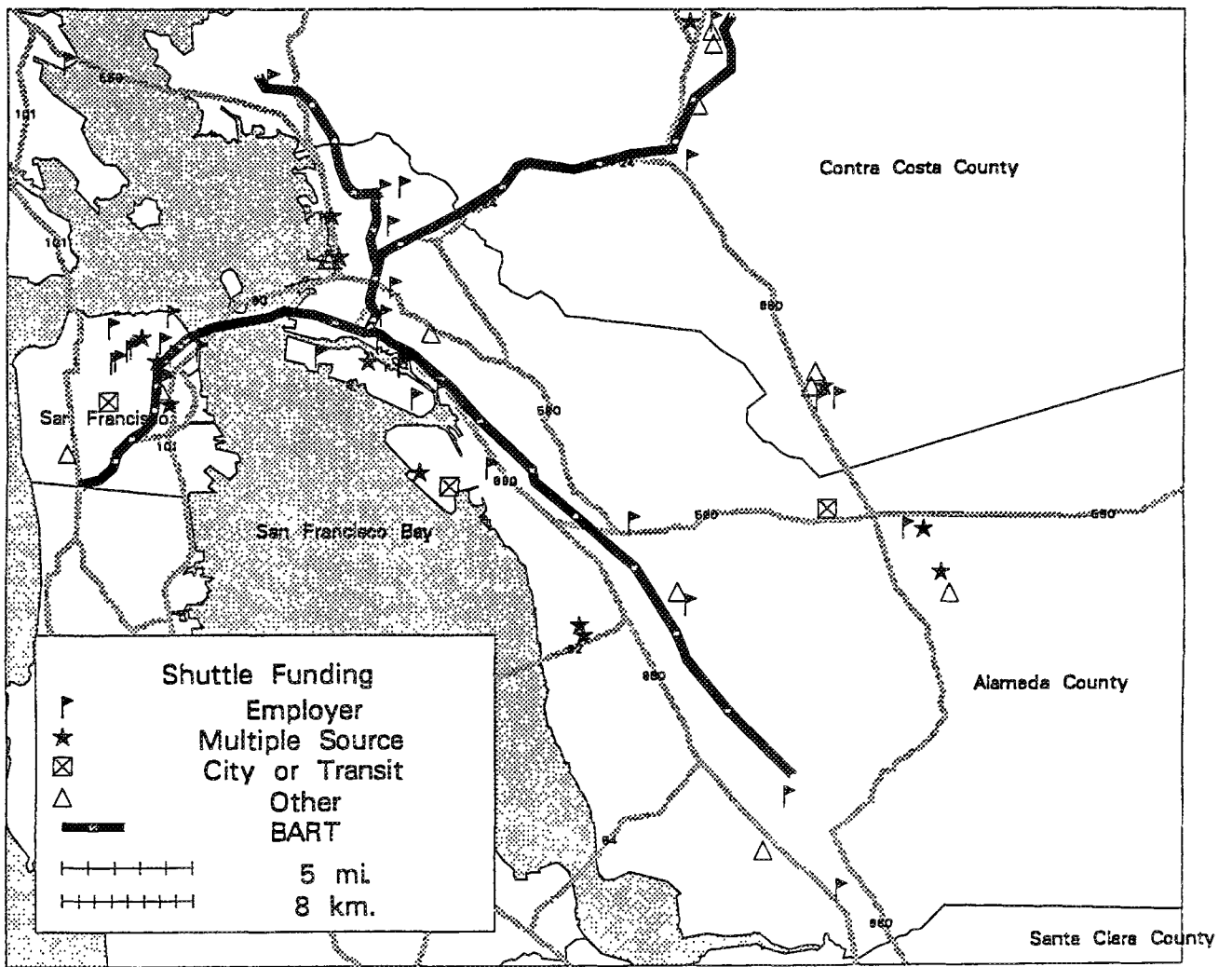


Figure 6.1. BART System and General Location of Shuttle Services, Defined by Funding Source

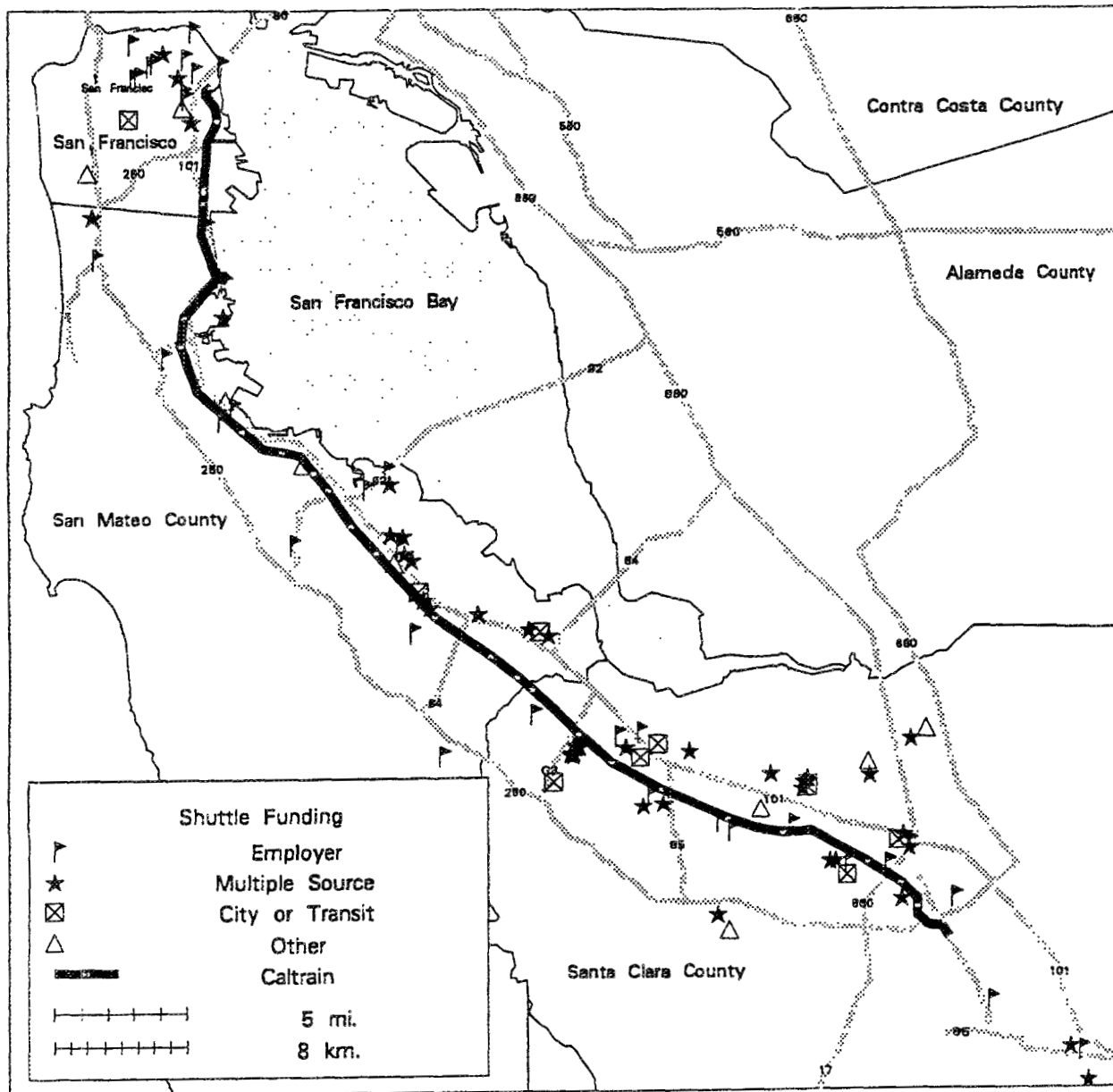


Figure 6.2. CalTrain System and General Location of Shuttle Services, Defined by Funding Source

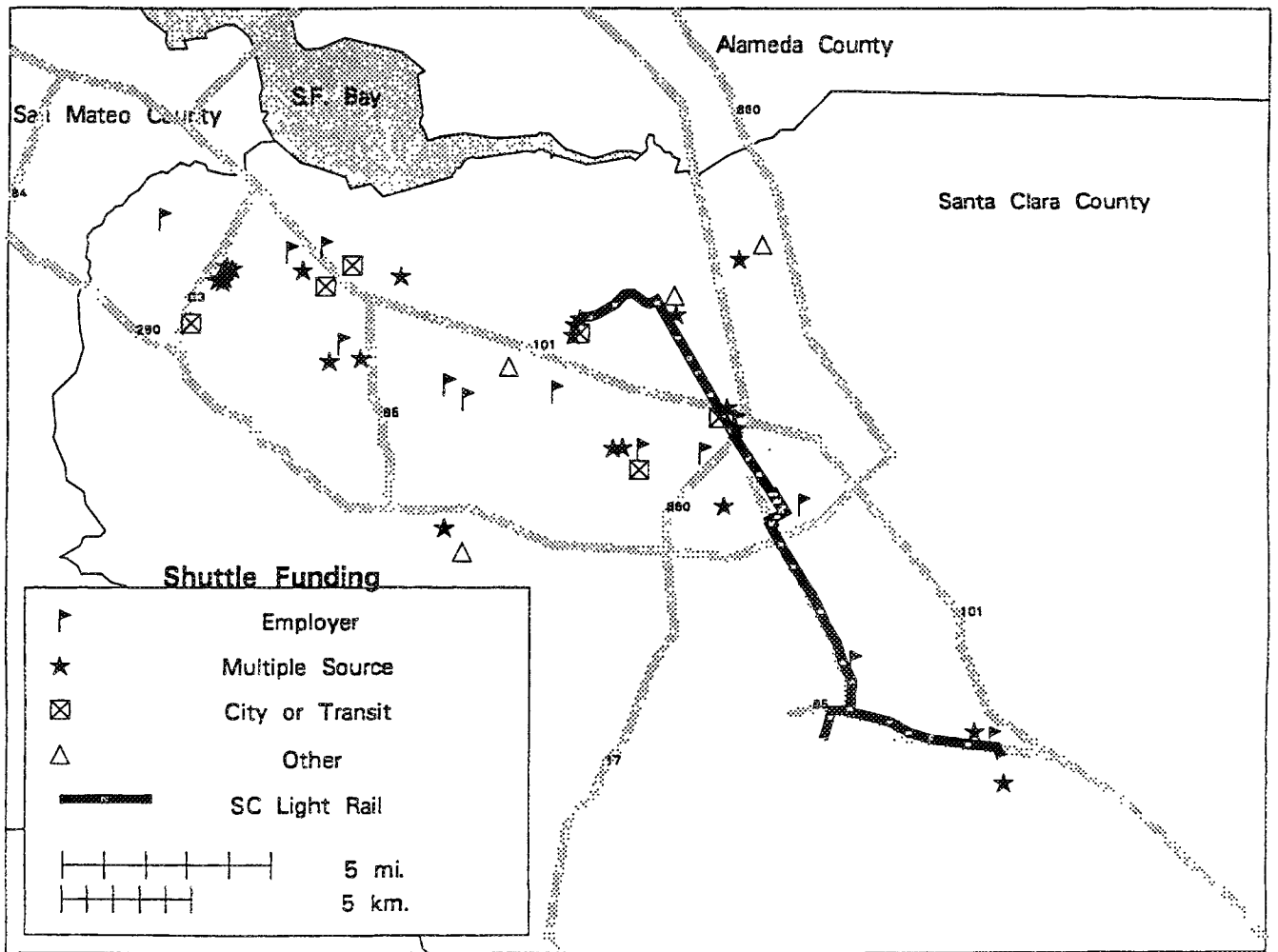


Figure 6.3. Santa Clara Light-Rail Transit System and General Location of Shuttle Services, Defined by Funding Source

6.2. Santa Clara County's Light Rail Shuttle Program

As of late 1994, eight LRT shuttles were operating in Santa Clara County, all of which were co-sponsored by employers and the regional transit authority, the Santa Clara County Transportation Authority (SCCTA), with fundings assistance from the regional air quality district (Bay Area Air Quality Management District — BAAQMD). Planning for these shuttles began a year before the 1988 opening of the Santa Clara Light Rail Transit system, presently an 18-mile system that links downtown San Jose to Silicon Valley to the north and residential development to the south. The shuttles were conceived as feeders for residents and employees who were beyond walking distance of LRT stops. They also were seen as a means of satisfying federal mandates aimed at injecting competition within the public transit sector.²⁶

The eight existing Santa Clara County shuttles operate as both fixed-route and demand-responsive services, depending on the hour of day, and only on weekdays. Figure 6.4 shows the fixed routes of eight feeder shuttles (actually a total of nine routes when the two routes of the IBM shuttles are counted). Rides are free on all shuttles. Some shuttles have wheelchair lifts and are compatible with ADA mandates. Four private firms operate the shuttles. The eight shuttles (and average number of passengers per day) are:

- *Metro/Airport Shuttle*: Interconnects San Jose Airport, Metro Plaza, and the Metro/Airport LRT station. Major employment centers served are Gateway Office Park and Santa Clara County Social Services. Began in 1988. (235 daily passengers.) (See Photo 6.1.)
- *Great America Employee Shuttle*: Serves employees of the theme park, Mission College, and the Old Ironside LRT station. Operates on fixed-route schedules only when the theme park is in operation (late spring-early autumn). Initiated in 1988. (345 daily passengers.)
- *Lockheed Shuttle*: Serves the Old Ironside LRT station and the Tasman Corridor employment centers, serving principally Lockheed Corporation. The fixed-route service, started in early 1994, operates at peak hours only. (30 daily passengers.)
- *River Oaks Shuttle*: Initiated in 1993, the shuttle connects the River Oaks LRT station to nearby large employment centers, including Sony, Cadence, Maxtor, Interactive Network, and the River Oaks Industrial Park. (45 daily passengers.)
- *Intel Shuttle*: Established in 1993, the shuttle connects the Orchard LRT station with such large employers as Intel, Applied Materials, and Hewlett-Packard. (30 daily passengers.)
- *IBM Shuttle*: Introduced in 1994, the shuttle interconnects the Santa Teresa LRT station, Blossom Hill Caltrain station, and two major centers: IBM and Santa Teresa Community Hospital. It operates as a peak-only fixed-route service, and a demand-responsive midday service to the IBM site. (160 daily passengers.)
- *Kaiser/Santa Teresa Shuttle*: Also initiated in 1994, this shuttle services the Cottle LRT station and medical facilities of the Kaiser/Santa Teresa complex. (85 daily passengers.)
- *Creekside Connection*: Started in 1993 to connect the Creekside Technology Center with the Metro LRT station and CalTrain depot. (40 daily passengers.)

The patrons of these shuttles tend to be well-salaried professional workers. The availability of a shuttle connection has allowed many to leave their cars at home and take transit to work instead. While most services are targeted at Silicon Valley employees, the shuttles are often used by others, such as Mission

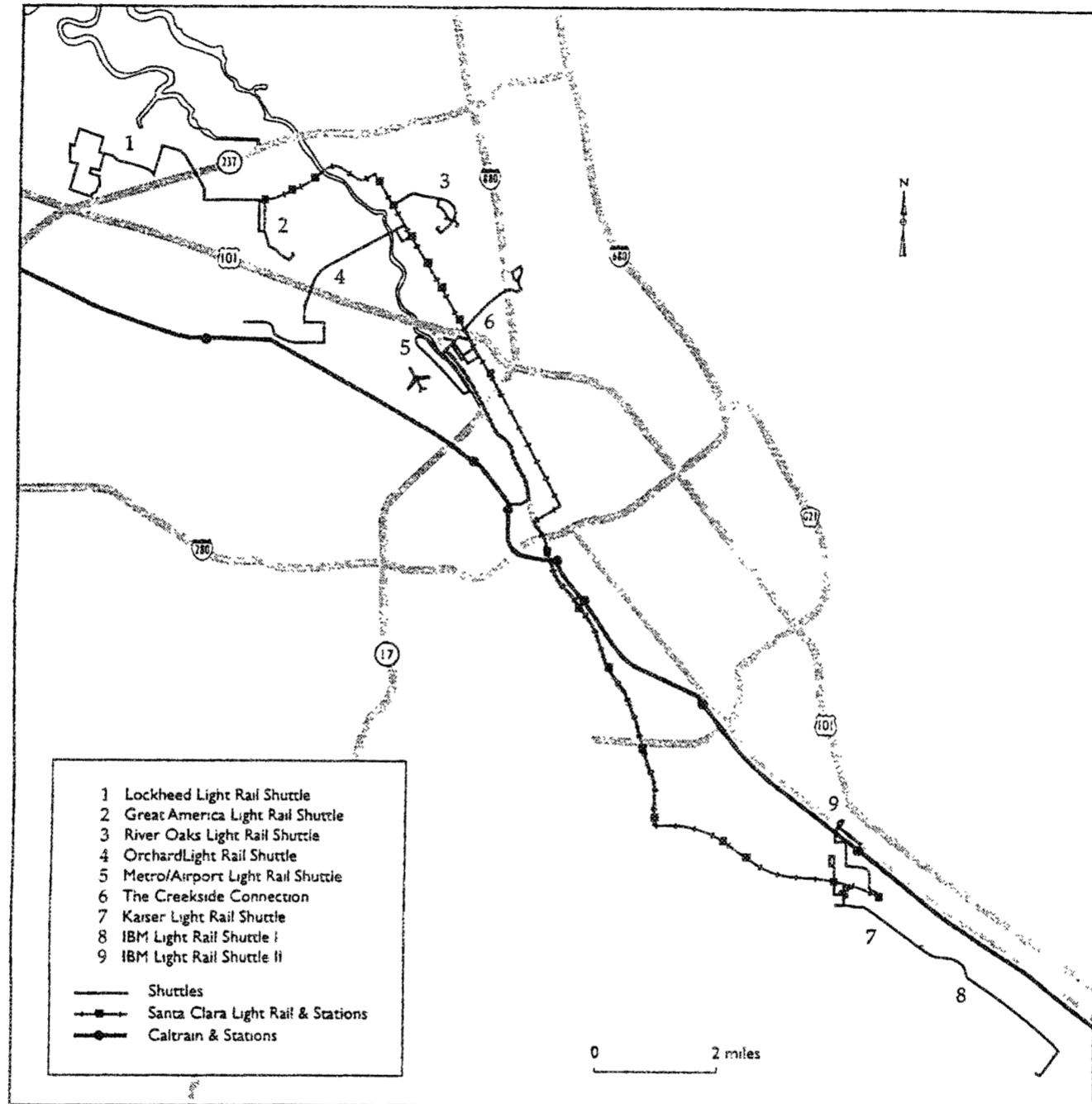


Figure 6.4. Fixed Routes of the Santa Clara County Light-Rail Shuttles



Photo 6.1. The Metro/Airport "Free Light Rail Shuttle"

College students, airport passengers, and patrons of the Great America Theme Park. Although employers help underwrite the services, standard practice has been to allow anyone on board.

6.3. Shuttle Service Levels and Funding

Most of the LRT shuttles follow prescribed routes, with specific stops and timetables. Headways vary from 5 to 30 minutes during peak hours (see Table 6.1). Shuttle stops are clearly marked, and timetables specify exact pick-up times for each stop.²⁷ The Metro/Airport, IBM, and Kaiser/Santa Teresa shuttles provide off-peak services on a request-for-service basis. Demand-responsive shuttles require 10- to 15-minute lead times and generally provide direct service to patrons' destinations.

Overall, around three-quarters of funding for the LRT shuttles comes from SCCTA, with the remaining one-quarter paid by benefiting employers. To date, most of SCCTA's funds have come from the Transportation Fund for Clean Air, AB 434.²⁸ In fiscal year 1994, the LRT shuttle program cost \$740,000 to operate.

Table 6.1. Santa Clara County LRT Shuttles: Levels of Service, 1994

LRT Shuttle	peak service type	peak service headways	non-peak service type	non-peak headways	weekend service
Metro/Airport	fixed route	10 min. & 20 min. - am 5 min. & 10 min. - pm	fixed route to Airport only; demand response other locations	15 min. or on request	n/a
Great American	fixed route	15 min.	n/a	n/a	fixed route 15 min. headways
Lockheed	fixed route	30 min.	n/a	n/a	n/a
River Oaks	fixed route	20 min.	n/a	n/a	n/a
Intel	fixed route	25 min. (approx.)	n/a	n/a	n/a
IBM	fixed route	15 min.	demand response	15 min. or less	n/a
Kaiser	fixed route & demand response	on request 10 min.	fixed route & demand response	on request 10 min.	n/a
Creekside	fixed route	other	n/a	n/a	n/a

Note: Metro/Airport headways alternate (ex. 10 min., 5 min., 10 min., etc.)
 Great America service operates evenings and late nights
 Other - specific scheduled service with no standard headway
 n/a - not applicable or no service offered.

6.4. Marketing the LRT Shuttles

Although Santa Clara County's shuttles are a marketing tool for promoting LRT ridership, they require substantial marketing efforts themselves. SCCTA staff are quick to assert that successful shuttles rely on active employer participation and promotion.

All shuttle vehicles feature large logos announcing "Free Shuttle" and route name. SCCTA publishes brochures on each route showing routes and timetables, and informing the public how to use the shuttle. Brochures are displayed at employment sites and LRT information kiosks. SCCTA, in conjunction with large employers, occasionally sponsors "Transit Faires," wherein one-day passes are given to workers, monthly rail passes are raffled off, and door prizes are drawn. Some employers subsidize monthly transit passes as an alternative to providing free parking.

The LRT shuttles are also marketed to employer groups on an on-going basis, usually through trade associations or direct contact. SCCTA sponsors an annual workshop to promote employer participation and acquaint employers with outside funding options. When SCCTA staff believes a new shuttle run is warranted, formal Requests for Proposals are distributed to firms along the proposed route and staff assist interested parties in preparing bids.

6.5 LRT Shuttle Performance

In 1994, the Santa Clara County LRT shuttles carried 19,200 passengers, or around 930 riders per day. While this is a fraction of all motorized trips made within the county, it accounts for around 5 percent of all access trips to and from LRT stations. From 1991 to 1994, the Metro/Airport and Great America shuttles enjoyed ridership increases of 102 percent and 31 percent, respectively.

In fiscal year 1992-1993, the average operating cost per passenger trip was \$2.64.²⁹ This is considerably below the fully-allocated operating cost of \$4.15 per passenger for several SCCTA fixed-route bus services that connect large-scale business parks with LRT and CalTrain stations.³⁰ Additionally, the shuttles cost \$41.15 per revenue vehicle hour to operate in 1993, compared to \$106.82 per revenue vehicle hour for the comparison bus routes. Overall, the LRT shuttles' cost advantages are due mainly to lower driver compensation and wage rates.³¹ When SCCTA bus fares are accounted for, the subsidy per passenger trip are about the same on the LRT shuttles and comparable bus routes.

6.6. Close

Santa Clara County's LRT shuttles currently represent the largest paratransit services in the Bay Area. They provide feeder connections for one out of 20 light-rail customers, though at a fairly sizable subsidy. Subsidies per rider are no more than existing bus routes, however. Some observers hope that over time the shuttles will attract more riders and eventually wean themselves from public-sector subsidies. Programs such as parking cash-outs (that would allow employers to give workers transit vouchers in lieu of free parking) might provide alternative funding support for the shuttles.

In many ways, the LRT shuttles should be judged in terms of their role of attracting motorists to LRT commuting. Santa Clara County's built environment — typified by low-density, campus-style office parks, acres of parking asphalt surrounding work sites, and stand-alone buildings — has meant that most origins and destinations are beyond walking distances of LRT stops. Good-quality feeder services have thus become a necessity. While park-and-ride lots allow some workers to reach LRT stops by car, this does little to reduce tailpipe emissions. Once workers exit from stations en route to work, unless convenient shuttle connections are available, many will forego the hassle of LRT commuting and drive instead, particularly if given a free parking spot. The LRT shuttles, then, are playing a small but important role in inducing rail travel and reducing auto-commuting. Their value, then, lies every bit as much in reducing traffic congestion and improving air quality as it does in attaining some financial productivity target.

7. Conclusion

Paratransit services continue to operate in the San Francisco Bay Area, in many guises; however, in the regional scheme of things, their role is fairly modest. The estimated 5,000 or so daily trips made on jitneys and employer-sponsored (non-airport) shuttles constitute a small fraction of one percent of daily vehicle miles traveled in the region. This is a far cry from the dominant role they played in providing transportation services in San Francisco at the height of World War I.

A common feature of the Bay Area's existing paratransit services, be it San Francisco's downtown jitney, the East Bay's racetrack jitney, or Santa Clara County's LRT shuttle, is that nearly all function as feeders into fixed-guideway, mainline rail services. This rationalization of transit services makes perfect economic sense. In order to justify expensive capital investments, mainline services rely on high

passenger volumes on a single carrier. Economies of scale argue for a single service-provider, normally a public entity with protected monopoly status. For the feeder function, however, competition is needed to contain costs and encourage service innovations. There are no grounds for natural monopolies. Rather, private entrepreneurs who can satisfy customer demands for efficient feeder connections and still turn a profit are needed. The emergence of private paratransit services as feeders into Bay Area rail lines in recent years hopefully is a bellwether of what lies ahead.

In general, there are few regulatory barriers to paratransit expansion in the Bay Area. Most local ordinances permit shared-ride services and, except for the largest cities, impose few restrictions on market entry. The state PUC, moreover, has taken a fairly permissive stance on inter-city shuttle operations. Applicants are generally issued permits as long as they meet minimum insurance and fitness standards.

A more serious obstacle to paratransit expansion has been the marketplace. Simply put, it is difficult for private operators to compete in a distorted marketplace where other modes of travel receive huge subsidies. Removing the hidden subsidies to solo commuters and the very real subsidies given to public transit operators and most employees who park for free at their workplaces is needed if there is to be a "level playing field." Otherwise, it is unlikely that there ever will be enough market demand in the Bay Area and other regions for a healthy, self-sustaining paratransit industry to evolve. Insufficient demand drives up the unit costs of liability insurance, permits, and other on-going expenses. The paratransit sector stays suppressed as a result.

While recent progress in establishing paratransit services in the Bay Area has been encouraging, it is apparent that bold public policy action will be necessary to jump-start this still fledgling industry. Removing transit subsidies and substantially raising fuel taxes, however, would no doubt be as much of an uphill battle as removing market entry restrictions and other regulatory reforms. Ultimately, the policy lessons from paratransit in the Bay Area and elsewhere are that unless entrepreneurship and competition are embraced, and present-day market distortions are substantially reduced, no transportation options, regardless how good they are, will be able to lure significant numbers of people out of their cars. Together, market-based pricing and paratransit expansion would prove to be a powerful combination in reshaping how Americans travel.

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Appendix
 Listing of Non-Airport/Non-ADA Shuttle Services in the San Francisco Bay
 Area,
 as of 1994

Shuttle Sponsors in the Bay Area

County	Sponsor	City
ALAMEDA	Alameda Naval Air Station	Alameda
	Alameda Sheriff Dept.- Santa Rita Jail	Dublin
	Alta Bates Medical Center	Berkeley
	Andros Incorporated	Berkeley
	AT&T Communications	Pleasanton
	California State University, Hayward	Hayward
	California State University, Hayward	Hayward
	Children's Hospital and Medical Center	Oakland
	City of Alameda, City Hall	Alameda
	City of Emeryville	Emeryville
	City of Hayward	Hayward
	City of Hayward, Engineering & Transportation Div.	Hayward
	Dillingham Construction	Pleasanton
	Eden Medical Center	Castro Valley
	Golden Gate Auto Auction	Fremont
	Goldsmith & Lathrop	Emeryville
	Hacienda Owners Association	Pleasanton
	Harbor Bay Business Park Association	Alameda
	Hewlett-Packard	Palo Alto
	Highland Hospital	Oakland
	Kaiser Medical Center	Fremont
	Kaiser Permanente Medical Center	Oakland
	Lawrence Berkeley Laboratory	Berkeley
	Lawrence Livermore National Laboratory	Livermore
	Marina Village	Alameda
	Miles Inc.	Berkeley
	New United Motor Mfg., Inc.	Fremont
	Oakland Scavenger	Oakland
	Owens Illinois, Inc.	Oakland
	Pacific Bell	Oakland
	Safeway Stores, Inc.	Oakland
	Sandia National Labs	Livermore
	Sequoia Institute	Fremont
	SQL Solutions	Emeryville
	U.C. Berkeley Dept. of Transportation Services	Berkeley
	U.S. Coast Guard	Alameda
	U.S. Coast Guard Supp. Ctr, Alameda	Alameda
	United Airlines	Oakland
	University of California, Berkeley	Berkeley
	Vanstar	Pleasanton

CONTRA COSTA	Bank of America- Dept. 3228	Concord
	Bass Tickets	Concord
	Berlex Laboratories, Inc.	Richmond
	Bishop Ranch Transportation Center	San Ramon
	Chevron Park	San Ramon
	Chevron USA	Concord
	Chevron USA	San Ramon
	Chevron USA	Concord
	City of San Ramon	San Ramon
	Concord Gateway	Concord
	Contra Costa Centre Association	Walnut Creek
	Kaiser Permanente Medical Center	Walnut Creek
	Pacific Bell	San Ramon
	Pacific Gas and Electric Learning Center	San Ramon
	Shell Oil	Martinez
	Sierra Pacific Properties, Inc.	Concord
	MARIN	AMEX Life Assurance Co.
Marin General Hospital		Greenbrae
San Quentin State Prison		San Quentin
SAN FRANCISCO	Bank of America	San Francisco
	California Pacific Medical Center- PC	San Francisco
	Chevron Corporation	San Francisco
	City/Co. SF- CAO's Office	San Francisco
	Gap, Inc.	San Francisco
	Gap, Inc.	San Francisco
	Kaiser Permanente Medical Center	San Francisco
	Laguna Honda Hospital	San Francisco
	Mt. Zion Hospital	San Francisco
	Pacific Gas and Electric	San Francisco
	San Francisco General Hospital	San Francisco
	San Francisco State University	San Francisco
	St. Francis Hospital	San Francisco
	St. Mary's Medical Center	San Francisco
	U.S. Army - Presidio	San Francisco
	UCSF Transportation Services	San Francisco
	Univ. of San Francisco, Dept. Public Safety	San Francisco
Williams Sonoma	San Francisco	
SAN MATEO	Applied Biosystems	Foster City
	Cisco Systems	San Jose
	City of Belmont	Belmont
	City of Daly City	Daly City
	City of Foster City	Foster City
	CPMC	Redwood City
	DHL Worldwide Express	Redwood City
	ETAK, Inc.	Menlo Park
	Fluor Daniel	Redwood City
	Franklin Resources	San Mateo
	Gap Inc.	San Bruno
Genentech, Inc.	South San Francisco	
Good Guys	Brisbane	
Heublein Inc.	Menlo Park	

Hitachi America, LTD
 Kelly Moore Paint
 Litton Electron Devices
 Mills Peninsula Hospital
 Oracle Corporation
 P.M. Realty Group
 Pacific Gas and Electric
 Provident Central Credit Union
 Quantic Industries
 Raychem Corporation
 San Francisco Airport Marriott Hotel
 Sequoia Hospital
 Seton Medical Center
 Seton Medical Center
 Stanford Linear Accelerator Center
 Unisys Corporation
 Visa International
 Westin Hotel, San Francisco Airport

Brisbane
 San Carlos
 San Carlos
 Burlingame
 Redwood Shores
 San Mateo
 Belmont
 Redwood Shores
 San Carlos
 Menlo Park
 Burlingame
 Redwood City
 Daly City
 Daly City
 Menlo Park
 Brisbane
 San Mateo
 Millbrae

SANTA CLARA

Acurex Environmental
 Acuson
 Adobe Systems
 Amdahl Corporation
 Apple Computer, Inc.
 Applied Materials, Inc.
 City of San Jose, Public Works
 City of Santa Clara
 Electric Power Research Institute (EPRI)
 General Electric
 GTE Government Systems
 Hewlett-Packard
 Hewlett-Packard
 Hewlett-Packard
 Hewlett-Packard
 Hewlett-Packard
 Hewlett-Packard
 Hewlett-Packard Software Replic/Dist
 IBM
 Intel Corporation
 Kaiser Permanente Medical Center
 Koll Company
 Komag, Inc.
 Lockheed Missiles & Space Company
 Loral Space and Range Systems
 NASA Ames Research Center
 Raytheon Semiconductor
 San Jose State University
 Santa Clara County Traffic Authority
 Silicon Graphics
 Sony Electronics Inc.
 Space Systems/Loral
 Stanford University Transportation Program
 Sun Microsystems
 Synoptics Corp.

Mountain View
 Mountain View
 Mountain View
 Sunnyvale
 Cupertino
 Santa Clara
 San Jose
 Santa Clara
 Palo Alto
 San Jose
 Mountain View
 Palo Alto
 Palo Alto
 Palo Alto
 Palo Alto
 Palo Alto
 Palo Alto
 Palo Alto
 Palo Alto
 San Jose
 Santa Clara
 San Jose
 San Jose
 Milpitas
 Sunnyvale
 Sunnyvale
 Moffett Field
 Mountain View
 San Jose
 San Jose
 Mountain View
 San Jose
 Palo Alto
 Stanford
 Mountain View
 Santa Clara

	Syva Company	San Jose
	Tandem Computers	Cupertino
	UB Networks	Santa Clara
	United Defense	San Jose
	Westinghouse	Sunnyvale
SONOMA	Hewlett-Packard	Santa Rosa
	Santa Rosa Memorial Hospital	Santa Rosa
	Sonoma County Water Agency	Santa Rosa

Source: RIDES, San Francisco.

NOTES

¹Frankena (1984) found a similar relationship in a nationwide study.

²By ordinance, permits are non-transferable. However, in the case of a death or a retirement, the city allows the permits to be traded on the open market. Many of Oakland's taxi operators are reaching old age and are retiring, selling their permits, radios, and companies to younger operators. In recent years, the minimum price for a permit, radio, and company name has been \$6,000. In most cases, the city manager has approved the sale of the permits. Most retiring operators belonged to a larger taxi company. New operators purchasing their permits have formed smaller companies. The proliferation of small companies has made enforcement of regulations, especially insurance regulations, problematic. Smaller operators appear to have a more difficult time maintaining the necessary insurance. The city is now considering limiting future permit transfers to operators who will join a medium or large company.

³Medallions are non-transferable, so they cannot be sold. They can be turned back into the police department, but that has never been done. They can be leased and sub-contracted to others, including companies or cooperatives, but the owner of the medallion is required to drive a minimum percentage of the time. Many of the companies (including Yellow Cab) are actually cooperatives. The medallion owners pool their medallions and share a common color scheme and logo. Yellow Cab was formed in 1976, prior to the 1978 law that specified that medallions only be issued to individuals; it has 25 medallions which were grandfathered in and are not owned by individuals, but are owned by the company (New Yellow Cab Cooperative, Inc.). However, this is unusual.

⁴When medallions are increased, the first 50 (or however many) names are taken from the waiting list and their records are investigated. The most recent batch (from the 1992 increase) of approximately 50 applicants had not been filled by late 1994 — with applications still being processed.

⁵The most significant difference between those jurisdictions that use convenience and necessity and those that use minimum requirements to control entry has been the number of bureaucratic and procedural hurdles that taxi companies must overcome. In Livermore, the process can take six months before an application is approved. In Hayward, the police department "pools" applicants; they wait until there are two or three applicants, and only then will they hold a public hearing. While this slows the process, the city reports that no application has been denied in recent memory.

⁶However, minimum "requirements" do apply to operators who participate in the city's script program for the elderly, and those requirements are contractual, not by ordinance.

⁷One company recently stopped operating in Fremont, and the drivers from that company have decided to apply for their own operating permit rather than work for one of the other companies. The city suspects that these independents will eventually consolidate to form one or two medium-sized operations. Other jurisdictions describe similar city- and operator-specific stories. However, changes in a city's taxicab regulations can stimulate supply.

⁸"Any act of transporting or attempting to transport any person or persons by stage, auto stage, or other motor vehicle upon a highway of this State between two or more points not both within the limits of a single city or city and county, where the rate, charge, or fare for such transportation is computed, collected or demanded on an individual fare basis, shall be presumed to be an act of operating as a passenger stage corporation within the meaning of this part." Public Utilities Commission, Chapter 5, Article 2, section 1035. Excluded services include: taxis or transportation related to medical services, social services, raft or balloon trips, school buses, carpools or prearranged charter services.

⁹According to General Order 158, Part 4, Section 4.02, all vehicles must comply with California Highway Patrol requirements and the Motor Carrier Safety Sections of the California Administrative Code, Title 13.

¹⁰Unlike traditional jitney services, wherein vans and mini-buses operate on "semi-fixed routes on semi-fixed schedules, San Francisco's post-World War II jitneys have always operated on fixed routes.

¹¹Ordinances required drivers to run the entire stretch of Mission Street every other day, alternating a shorter runup to 29th Street, a point at which passenger demand usually fell sharply.

¹²The Mission jitney market was already waning by this time. Of the 116 jitneys registered to operate on Mission Street in 1973, only 52 were observed in action (Griffin, 1986).

¹³The San Francisco Police Department reported that of 120 permittees on record in 1977, 20 percent were already deceased, and many more let their permits lapse by a failure to pay annual fees or obtain proper insurance.

¹⁴According to a October 14, 1985 article in the *San Francisco Chronicle*, an insurance broker was quoted: "Insurance companies don't want to be in the jitney business. There's no market, and the only alternative the owners will have is the assigned risk plan".

¹⁵Mr. Losa began driving a jitney in San Francisco in 1972, soon after immigrating to the U.S. from the Philippines, a country where jitneys (called "jeepneys" in Manila) are the predominate mode of intraurban transportation.

¹⁶Based on informal passenger surveys, we estimate that the No. 97 service generates around \$5,000 per month in passenger fares. Monthly expenses for insurance, gasoline, and general maintenance are around \$3,200 per month. Ignoring the cost of capital depreciation (since the jitney bus has been paid for and has little presumed salvage value), the monthly earnings from the business appears to be less than \$2,000.

¹⁷Line 304 operates between the North Berkeley BART station, approximately three miles away and the track. Additionally, an AC Transit transbay service, Line 310, operates to and from the Transbay terminal in San Francisco.

¹⁸During the race season, passengers arrive at the North Berkeley BART station around 11:30 a.m. to 2:30 p.m. Racetrack goers leave the Fields about 3:30 p.m. to 6:30 p.m. Weekend hours differ, with night racing.

¹⁹AC Transit leaves the BART station and the track every 30 minutes between 11:10 a.m. and 5:40 p.m. No transfers are issued or accepted on Line 304, nor is the monthly pass accepted. Stops are made by Line 304 enroute to receive or discharge passengers at all stops.

²⁰The numbers quoted are one-way only.

²¹If one or a group of passengers opts for the bus or taxicabs, then all will.

²²Cost information is based on October 1994 interviews with drivers, the American Automobile Association's *Your Driving Costs* (1993) and the Motor Vehicle Manufacturer's Association *Motor Vehicle Facts & Figures* (1992).

²³For drivers who lease their vehicles from a company, the leasing cost is \$45 /day. Additionally, there are gate fees of \$45/day to \$50/day that the driver must pay to the company. While costs are higher, so are revenues. Radio-dispatched service can bring in approximately \$100 a day. Balancing the additional costs with the additional revenue, drivers report that their take-home pay is similar regardless of vehicle ownership. However, owners have the advantage of making a capital investment, albeit a depreciating one, in an automobile.

²⁴These costs include capital depreciation; however, they exclude debt service payments.

²⁵These data were obtained mainly from a data base maintained by RIDES for Bay Area Commuters, the regional rideshare coordination agency. Additional information were obtained from the Santa Clara County Transportation Authority.

²⁶Santa Clara County Transit Authority (SCCTA) planners conducted an extensive survey of employers along the LRT line in the late-1980s to assess the potential market demand for shuttle services. The Santa Clara County Manufacturers Groups (SCCMG), a lobbying organization for employers based in the Silicon Valley, was considered the best candidate for sponsoring the shuttle services. The Santa Clara County Transit District Board approved a Light Rail Access plan in 1987, which called for two initial routes. SCCMG withdrew from the program soon thereafter because of concerns over liability and insurance. Reluctant to contract for shuttle services because of possible labor union resistance, SCCTA eventually found two employers willing to sponsor services. After negotiations with union officials, SCCTA assumed responsibility for the services in 1991 and awarded a contract to MV Transportation, Inc. to operate the services in 1992.

²⁷The headways on the Metro/Airport shuttle alternate between 10 and 20 minutes in the morning peak and 5 to 10 minutes in the afternoon peak. Shuttle runs are coordinated with LRT schedules.

²⁸AB 434 authorizes the Bay Area Air Quality Management District (BAAQMD) to impose a surcharge of up to \$4 on motor vehicle registrations within its district to fund transportation projects that will help achieve air quality targets. The Transportation Fund for Clean Air is only available to public agencies, and funds are restricted to seven types of transportation projects, including "feeder us shuttle service to rail and ferries" and "ral-bus integration". In fiscal year 1993-94, SCCTA's light rail shuttle program received \$380,000 in AB 434 funding.

²⁹LRT shuttle costs are based on a flat hourly reimbursement rate paid to private contractors. This rate presumably covers capital costs, wages and benefits, administrative overhead, maintenance, and profit.

³⁰These cost estimates are based of SCCTA routes 40, 41, 43, and 44. The unit cost allocation formula devised by SCCTA, and used in this analysis, to apportion operating costs to individual routes is: $\{[(\$40.40) * (\text{revenue vehicle hours})] + [(\$1.29) * (\text{revenue vehicle miles})]\}$. Capital depreciation and administrative overhead costs are included in these estimates, however debt service expenses are not.

³¹Unlike SCCTA bus drivers and LRT attendents, most shuttle operators are non-unionized.