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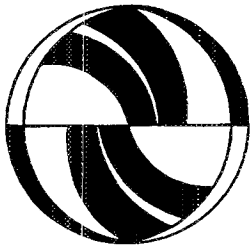
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**Commercial Paratransit in the United States:
Service Options, Markets, and Performance**

Robert Cervero

Working Paper
UCTC No. 299

**The University of California
Transportation Center**

University of California
Berkeley, CA 94720

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**Commercial Paratransit in the United States:
Service Options, Markets, and Performance**

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The University of California Transportation Center
University of California at Berkeley

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Chapter One

Commercial Paratransit: Past, Present, and Prospects

1.1 INTRODUCTION

Paratransit has the potential to produce substantial mobility and environmental benefits by attracting large numbers of urban trips that otherwise would be made by private automobile. Experiments with shared-ride taxis and jitney services in Seattle, San Diego, Indianapolis, and several other U.S. cities in the late 1970s and 1980s demonstrated there is a market demand for frequent, on-call, and sometimes door-to-door services that are cheaper than exclusive-ride taxis and sometimes even public transit (Frankena and Paulter, 1984; Cervero, 1985). Importantly, these types of services blend the best features of mass transit (i.e., multiple-occupancy) and the private automobile (i.e., flexible, on-call, point-to-point services). Because of allegations of unfair competition and "cream-skimming," however, many local and state authorities introduced or tightened regulations over the past three decades that effectively banned competitive, free-enterprise paratransit from most American cities. In addition, labor protection legislation, such as the 13(c) provision of the Federal Transit Act, as well as capital and operating subsidies to public transit have placed private paratransit operators at a competitive disadvantage, limiting most to specialized, contract services such as for the elderly and disabled.

Despite these regulatory and economic barriers, some paratransit entrepreneurs have carved out market niches that earn them profits and provide valuable transportation services. Today, New York City has the largest number of commuter vans of any American city — an estimated 2,400 to 5,000 vehicles (seating 14 to 20 passengers) operate, both legally and illegally, on semi-fixed routes and variable schedules to subway stops and as connectors to Manhattan. Surveys show that over three-quarters of New York's commuter-van customers are former transit riders who value having a guaranteed seat and speedy, dependable services. Miami currently has the second largest paratransit market in the continental U.S. — at its height in the early 1990s, around 500 vans carried some 50,000 riders each weekday (around one-third of Metrobus ridership). Many users are recent immigrants from Cuba and the West Indies who find jitney-vans a more familiar and congenial form of travel than bus transit. Surveys show Miami's jitneys have successfully carved out an independent market niche rather than siphoning customers from public transit — 67 percent of survey respondents said they were drawn to jitneys because they got them to their destinations faster and 23 percent said they were less expensive (Urban Mobility Corporation, 1992). Following Hurricane Andrew in August, 1992, over 200 independent jitney owner-operators were recruited to provide fixed-route van services to South Dade County residents.

Besides New York and Miami, private vans and mini-buses currently provide valuable feeder services to rail stations or bus terminals in San Francisco, San Jose, San Diego, and other cities. Some

serve largely transit-captive markets, such as the San Ysidro jitneys that operate between the Mexican border and worksites in south San Diego County. Shared-ride taxis that are technically illegal yet tolerated by public authorities also thrive in poor, minority inner-city neighborhoods in Baltimore, Boston, Chicago, Omaha, and dozens of other U.S. cities, many providing on-call connections to supermarkets and shopping malls. Other private paratransit services cater mainly to middle-class or professional white-collar customers — such as San Francisco's sole-surviving jitney serving the downtown financial district, Berkeley's racetrack taxi pool, Atlantic City's jitney vans that parallel the boardwalk and casinos, and Washington, D.C.'s venerable shared-ride taxicabs. The most extensive and popular form of private paratransit serving middle-class America is the airport shuttle-van, which in the case of the Los Angeles and San Francisco airports currently handle about 15 percent of all ground-access trips. With the exceptions of New York, Miami, and a few other large cities, commercial shuttle vans have so far avoided serving other major activity centers — downtowns, edge cities, shopping malls, college campuses, and sports stadia, for example — because of unreceptive market conditions, like free parking and competition from subsidized public transit services. Of course, outside of the U.S., free-enterprise mini-buses, jitneys, and three-wheelers ply their trade throughout the streets of many third-world megacities, like Jakarta, Bangkok, and Mexico City. In many of these places, paratransit is the workhorse of the local mass transit system, carrying over half of all transit trips.

This report examines the potential for private, free-enterprise paratransit services to provide a respectable transportation alternative to the private automobile in U.S. cities. If legalized and allowed to freely compete in a non-distorted marketplace, paratransit, we believe, could lure hundreds of thousands of commuters and motorists out of their cars each day, producing real and lasting mobility and environmental benefits. In many instances, paratransit could operate at a lower cost per passenger-mile than conventional bus transit and without any kind of subsidy support. Competition from private paratransit providers, moreover, could over the long run induce the kinds of efficiency gains and service reforms that would improve the overall financial health of America's struggling public transportation sector.

This study also examines regulatory and economic barriers that currently stifle commercial paratransit services in the U.S. in Part II of the report. Regulations governing urban transportation have been built up, layer by layer, over time to the point where today they represent significant obstacles to market penetration and service innovations. Entry and service restrictions are placed on taxis in most U.S. cities, while jitneys, shared-ride taxis, and most other for-profit ridesharing services have generally been regulated out of existence. In most states, inter-city services, like commercial shuttle vans and private buspools, fall under the purview of state regulators, who historically have overly protected long-time operators and imposed stringent insurance and safety requirements on new entrants. In some places, participation in employer-sponsored vanpooling is effectively limited to co-workers. In general, laws aimed at protecting taxi firms and public transit agencies from head-to-head competition are inconsistent with the need to foster a wider range of door-to-door transportation options to the private automobile.

In addition, "hidden" subsidies to motorists, like free parking and unpriced traffic congestion, and overt subsidies to public transit operators, have created a "non-level playing field," making it nearly impossible for commercial paratransit to compete. Possible ways of reducing or eliminating these barriers as a means of stimulating commercial paratransit services in the U.S. are also explored in this report. Particular attention is given to identifying ways of creating a more entrepreneurial and competitive environment for urban transportation services in keeping with the growing interest in advancing market-based transportation policies.

1.2 POTENTIAL BENEFITS OF COMMERCIAL PARATRANSIT

Expanded commercial paratransit services would produce at least six important benefits:

(1) increase travel choices; (2) enhance mobility; (3) improve environmental conditions; (4) impose a market discipline on public transportation; (5) make poor neighborhoods more accessible; and (6) help stimulate advanced transit technologies.

1.2.1. Increase Travel Choices

Commercial paratransit would increase the mix and overall quality of transportation options in U.S. cities, thereby prompting some people to leave their cars at home and share rides instead. Most Americans have only one or two reasonable alternatives when traveling other than by car — either bus or taxi. Yet the past several decades have taught us that the provision of fixed-route, uniform-quality bus services will not lure significant numbers of people out of their cars. There is tremendous diversity in travel preferences — some want fast, comfortable services and are willing to pay a premium fare for them, while others are satisfied to travel more slowly and give up some comfort in return for a break at the farebox. Increasing *choices* increases the odds of enticing commuters to switch their mode of travel.

The importance of service features is well known within the transportation field. Studies consistently show that commuters are far more sensitive to the quality of transportation services than price levels — that is, they are most likely to change their travel behavior, and perhaps switch modes, given dramatic changes in travel times and comfort levels. Transit riders tend to be at least twice as responsive to service changes (such as more frequent headways) than to lower fares (Mayworm et al., 1980). Factors such as reliability of schedules, assurances of a seat, and safety have proven to be key determinants of what modes travelers choose. Time spent walking to a bus stop, waiting, and transferring is particularly abhorred by commuters. As American cities continue to suburbanize at a rapid pace and trip origins and destinations spread in all directions, only flexible transportation services that connect people from "anywhere to everywhere," akin to the private automobile, stand a reasonable chance of competing in the marketplace.

Small vehicles provide a number of service advantages over bigger buses: they take less time to load and unload, they arrive more often, and they stop less frequently (Glaister, 1986; Banister and

Mackett, 1990).¹ They are also more maneuverable in busy traffic, and can accelerate and decelerate faster. Studies show passengers also tend to feel more secure in a smaller vehicle where everyone is close to the driver (Gomez-Ibanez and Meyer, 1987), and surveys show that minibus riders enjoy the "camaraderie" and "friendliness" of being in a smaller vehicle (Prentice, 1987).

1.2.2. Mobility Benefits

To the degree that paratransit services induce modal shifts from cars to mini-buses, shuttle vans, jitneys, and commuter buses, second-order benefits would accrue, mainly in the form of increased mobility and improved environmental conditions. Rapid increases in automobile travel, coupled with limited road expansion, have brought unprecedented levels of traffic congestion in U.S. cities in recent years, especially in the suburbs. For the 39 largest U.S. metropolises, the number of lane-miles of expressways and major arterials combined increased just 13.7 percent during the 1980s, while vehicle miles driven rose 31.4 percent (Federal Highway Administration, 1993). Community opposition, environmental regulations, building moratoria, and funding shortages all contributed to the slowdown in new highway construction, while suburbanization, rising incomes, and more women in the labor force helped to fuel automobile travel. With the growth in auto trips outpacing the growth in road capacity, traffic delays rose sharply, by 57 percent from 1985 to 1988 according to one estimate (Johnson, 1993). The social costs of traffic congestion are difficult to measure, though they can be substantial, including wasted time and energy, air pollution, accidents, lost economic productivity, stress, and a declining quality of life. Some estimates place the social costs of highway congestion in the U.S. at \$73 billion per year (in 1988 dollars), or 2 percent of GNP (Rowand, 1989). A study by the Texas Transportation Institute (Lomax et al., 1991) estimated that congestion costs each driver \$375 annually (in 1990 dollars) in extra fuel and maintenance expenses.

1.2.3. Environmental Benefits

There is probably no issue today that is driving transportation policy-making as much as concerns over air quality. Photochemical smog remains a serious problem in more than 100 U.S. cities, with the worst conditions in California and the industrial areas of the northeast. At extreme levels, smog can impair visibility, damage crops, and threaten human health.

In America, air pollution is largely a product of an auto-dependent society. Between 30 and 40 percent of manmade hydrocarbon and nitrogen-oxide emissions, two of the chief precursors to the formation of photochemical smog, and around two-thirds of carbon monoxide emissions come from the tailpipes of cars. Nationwide, the damage costs attributable to auto-related air pollution has been placed at around \$10 billion annually according to one estimation (MacKenzie et al., 1992) and around 2 cents per vehicle mile travel according to another (Small and Kazimi, 1994). Despite much cleaner automobiles

¹The time savings benefits of minibuses are partially offset by the longer time it normally takes to embark and disembark, due to higher steps and narrower entrances on minibuses.

(1993 cars emitted 80 percent less pollution than the typical 1970 model) and trip reduction mandates, air quality in many urban areas has improved little, and in some places had deteriorated. This is because these measures have largely been swamped by the growth in vehicle population, number of trips, and miles driven, especially in slow-moving traffic.

A study by the Environmental Defense Fund estimated that the expansion of commercial paratransit services in Southern California, coupled with average congestion charges of \$3 per round trip, would reduce vehicle-miles-travelled (VMT) by 1.8 percent from the year 2010 baseline estimates (Cameron, 1991). This would in turn lead to a 2.2 percent reduction in carbon monoxide (CO) and reactive organic gases (ROG). Another study estimated that the shift of 5 percent of airport access trips from cars to shared-ride vans in the greater Los Angeles area over the past decade has eliminated some 84 tons of pollutants per year (Poole and Griffin, 1994).

Shuttle van and jitney runs to rail transit stations, such as currently found in New York, Miami, and San Jose, can yield important air quality benefits. The majority of access trips to suburban rail transit stations in the U.S. are made by solo-drivers who park-and-ride. For San Francisco's Bay Area Rapid Transit (BART) system, a 1993 onboard ridership survey found that around 70 percent of access trips to suburban stations were by private automobile (Cervero, 1995). For a three-mile automobile trip, the typical distance driven to access a suburban BART park-and-ride lot, around 84 percent of HC emissions and 54 percent of NO_x emissions are due to cold starts (inefficient cold engines during the first few minutes of driving) and hot evaporative soaks (California Air Resources Board, 1989).² Park-and-ride transit trips do very little to improve air quality as long as an internal combustion engine is used to reach stations. Converting more of these access trips to higher occupancy vehicles (i.e., "paratransit-and-ride") would enable electrified rail transit to produce the kinds of environmental benefits it is supposed to.

The Clean Air Act Amendments of 1990 (CAAA) and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) explicitly encourage the expansion of transit services, including paratransit, in urban areas which violate national clean air standards. Recently, some air quality management agencies have moved toward market-based strategies versus employer-targetted trip reduction regulations as a more efficient means of achieving clean air mandates.³ The U.S. Environmental Protection Agency

²A car with a cold catalytic converter emits significantly more than when the converter warms up. When the engine is turned off, fuel evaporates until the engine cools down, producing "hot soak" emissions. Cold start and hot soak emissions are independent of distance, meaning they account for a proportionally large share of emissions for short trips, such as to rail stations. For a 10-mile trip, the average 1987 model car emitted 17 grams of HC: 9 grams during the cold start, 2 grams during the hot soak, and 6 grams of running emissions. Halving the trip to five miles halves only the running emissions; total emissions are still 14 grams. Thus, halving VMT cuts emissions by only 18 percent (Kessler and Schroeder, 1995).

³Because of mounting political pressure, high implementation costs (around \$240 per employee per year), and growing resentment of unfunded federal mandates, the Los Angeles area repealed employer-based trip reduction requirements in late 1995, opting for more voluntary, market-based initiatives instead. Studies showed that mandatory trip reduction requirements were ineffective. A study of Southern California's Regulation XV employee trip reduction requirement, for instance, found only a small overall reduction in single-occupant commuting (a 0.4 percent decline in private car miles driven) and no increase in public transit ridership (Wachs, 1993).

(EPA) has also recently issued guidelines that provide for more flexibility in how states and regions prepare Employee Commute Options (ECO) plans for non-attainment areas. In general, trends toward market-based strategies and greater flexibility in developing transportation programs that conform to air quality requirements work in favor of expanded commercial paratransit services.

In addition to air quality gains, the shift of motorists to shared-ride paratransit would yield other environmental benefits, including reduced emissions of greenhouse gases, less noise pollution, and energy conservation. While minibuses and vans emit more pollutants and noise, and consume more fuel, than standard cars, paratransit's high average occupancies would yield net environmental benefits. A 1988 study by the Congressional Budget Office, for example, found that commuter vans require only 37 percent as much energy per passenger-mile as a bus and only 30 percent as much as a light-rail transit system (accounting for full energy expenditures, including facility construction).

1.2.4. More Efficient and Economical Public Transit Services

Commercial paratransit has proven itself to be a comparatively cost-effective mode. Some of the cost savings come from high passenger loads and more frequent passenger turnover. Commercial paratransit operations also average lower labor input costs. Many services are owned, operated, and maintained by a single, often very hard-working, person. These "one-man" operations usually have no overhead, nor labor-related expenses for health insurance, worker's compensation insurance, or retirement benefits. Even for larger firms, paratransit drivers are typically non-unionized and earn far less per hour than public transit employees. Accounting for full costs, including facility construction, one study found that, on average, commuter vans cost 64 per cent less than bus transit per passenger mile and 91 percent less than heavy rail transit (Congressional Budget Office, 1988).⁴

Competitive paratransit would impose a much-needed market discipline on America's public transit industry, forcing bus operators to contain costs and increase productivity in order to effectively compete for customers. Since 1970, America's public transit industry has been plagued by rising operating deficits and declining productivity, by virtually any measure, despite the infusion of billions of dollars in operating assistance annually. Federal, state, and local subsidies to public transit operations jumped from \$132 million in 1970 to over \$10 billion in 1992. This aid has produced relatively little payoff — nationwide transit ridership has remained fairly stagnant over the past three decades, at around 7-8 billion passenger trips (ignoring transfers) annually. Meanwhile, highway travel has risen from 570 billion miles a year in 1970 to over 2 trillion miles in 1990 (Federal Highway Administration, 1995). Transit's market share of motorized trips in U.S. cities has slipped from around 5 percent in 1970 to under 3 percent in 1990 (Pucher, 1995). Studies show that a large share of government subsidies has been consumed by higher labor costs, less service output per worker, and the unbusinesslike expansion of services into low-

⁴This study used total annual cost (operating cost plus annualized capital expenditures) of each transit mode, divided by the total number of passenger miles by that mode in 1985.

density, suburban markets (Sale and Green, 1978; Cervero, 1983). Between 1975 and 1985, for instance, transit labor productivity dropped sharply from 13,618 vehicle miles of service per worker to 9,364. As critics of transit subsidies had feared, operating assistance was not spurring ridership increases, but instead was leading to lax management practices and overly generous wage settlements. Perhaps more troubling, the underwriting of public transit services and creation of a protected public monopoly have prevented higher quality paratransit options from gaining a market foothold.

Experiences show that increased competition can induce public transit operators to become more productive and efficient. In the Norfolk, Virginia area, the Tidewater Transit District Commission (TTDC) began competitively contracting selected suburban services to private minibuses operators who provided door-to-door, dial-a-ride service in 1979. TTDC drivers agreed to form a non-unionized class of minibus operators earning lower wages, allowing TTDC to eventually win back the dial-a-ride services and operate them in-house in 1984. In Tidewater, Houston, and other U.S. cities, increased competition has prodded public transit agencies to concentrate mainly on serving high-density, high-volume corridors which enjoy economies of scale.

Private vans and buspools would also provide peak-hour supplements to public transit operators, relieving them of the need to expand costly peak hour services. Studies consistently show that it costs two to three times more to run buses during rush hours than at other times, largely because of restrictive union work rules that guarantee eight hours pay and provide split-shift wage premiums (Cervero, 1988). In Singapore, the area licensing scheme that charges motorists for entering the downtown area during peak hours has relied heavily on shared-ride taxis and expanded private buspools to absorb those priced off of roads, thus holding the public transit system to a much more manageable scale. By supplementing bus runs at peak hours and serving other markets, such as senior citizens and those with physical disabilities, at other hours, commercial paratransit operators would be in a position to use vehicles efficiently throughout the day.

The few comparative studies of commercial paratransit versus subsidized public transit have shown paratransit to be an economic asset, eliminating the need for government subsidies and relieving public transit companies of their costly peak period burdens. For example, Manila's 60,000 jeepneys (converted U.S. army jeeps that serve up to 12 riders on a semi-fixed route) are the mainstay of the city's transportation system, carrying around 60 percent of all peak-period passenger trips. Manila's jeepneys cost 16 percent less per seat mile than standard buses and generally provide a higher quality service (e.g., greater reliability, shorter waits) at a lower fare (Roth and Wynne, 1983). Manila's jeepney operators, moreover, have historically been the last to petition for fare increases. Almost all turn a profit where public transit authorities are unable to.

1.2.5. Improved Services for Poor Neighborhoods

An expanded commercial paratransit sector would also increase mobility in poor neighborhoods. One of the most troubling effects of an increasingly auto-dependent society are the social injustices that

result from physically and socially isolating significant segments of American society. Those who are too poor, disabled, young, or old to own or drive a car are effectively left out of many of society's offerings. For older Americans, it can mean loneliness and inadequate attention to medical needs. For the inner-city poor, it often means isolation from job opportunities, what has been called the "spatial mismatch" problem (Kain, 1994). Today, two out of every three jobs in large metropolitan areas are being created in the suburbs. A study of commuting in Philadelphia, Chicago, and Los Angeles found that unequal accessibility to jobs explained nearly half of the difference in employment rates between black and white teenagers (Ihlanfeldt and Sjoquist, 1989). Besides poor transit services, the study suggested black youths lacked information about jobs farther away and were not inclined to seek jobs in "unfamiliar areas."

While public transit authorities have gotten into the business of running reverse-commute services in greater Philadelphia, Milwaukee, St. Louis, and other U.S. cities, even more popular are the illegal jitneys and van shuttles that ply their trade in many low-income neighborhoods across America. For inner-city residents who cannot afford to own a car, shared-ride jitneys and vans that provide low-priced, curb-to-curb service are among the next best thing. In Philadelphia, as many as 1,500 "hacks," or illegal shared-ride cabs, cruise between poor neighborhoods, supermarkets, and retail strips. In New York City, well over 10,000 illegal van operators provide feeder connections between low-income neighborhoods and rail transit stations (see Chapter Two). Such services not only vastly increase the accessibility of the urban poor and the number of potential work sites within a 45-minute commute, but also reduce the cost of vehicle ownership and usage (which is especially high in inner-city neighborhoods due to high insurance premiums).

Stimulating the paratransit sector could directly help the poor financially. Frankena and Paulter (1986, p. 3) note that "... the low-income population spends higher shares of their income, and often simply more dollars, on taxis than does the high-income population." Another advantage, according to Suzuki (1995, p. 130), is that commercial paratransit operators "... are more willing to travel to neighborhoods that medallion cab drivers consider to be too dangerous." In competitive marketplace, firms might also compete for patrons in poor neighborhoods during off-peak hours when there is a surplus of unused vehicles.

One concern about possibly cracking down on illegal paratransit services and forcing them to meet insurance, indemnity, and vehicle fitness standards is that this would end up inflating fares, hurting the poor financially. Some argue that illicit operations function usefully as third-world-like paratransit in a society that sets first-world-like standards on all common-carrier services. One way to help offset fare impacts of legalizing "gypsy" shared-ride cabs and clandestine jitneys would be through a system of user-side subsidies and vouchers targetted at the poor, perhaps administered through community-based human services programs.

1.2.6. Stimulate the Development of Advanced Transportation Technologies

Expanded commercial transit could also help speed up the development of advanced transportation technologies. In order to gain a competitive edge, commercial transit operators might try to introduce automated technologies like satellite-based vehicle tracking and dispatching systems that can be used to optimize routing, avoid detours, reduce deadheading, and inform waiting customers of expected vehicle arrival times. Small-scale paratransit services might be the dominant consumer of advanced transit technologies since they, unlike fixed-route bus services, are better able to alter routing in response to real-time information on vehicle locations. Moreover, commercial fleets of vans lend themselves to alternative fuels (including battery power) far more readily than individually owned cars and even commercial buses. In states like California, where the state air control board has mandated that at least 10 percent of new car sales in the year 2003 be Zero Emission Vehicles (ZEVs), neighborhood jitneys and vans could be important assets; by providing short-haul, limited-range services, shared-ride minivans and sedans using conventional lead-acid batteries could prove to be one of the most cost-effective forms of ZEVs.

The marriage of conventional shared-ride paratransit services and Advanced Public Transit Systems (APTS) technologies, like satellite-based vehicle locator systems, might eventually spawn a kind of "smart paratransit." In some German cities, paratransit vehicles with on-board terminals are linked to central computers, allowing shared-ride taxis and minibuses to be dispatched to customers waiting at suburban rail stations and in rural areas. Ridership on these "Call-a-Bus" services has increased between 36 percent and 80 percent above the fixed-route bus services they replaced in several German metropolises. Average passenger waiting times of seven minutes have been reported, and most paratransit operators are recovering 80 percent of full costs through the farebox, a rate that is two to three times higher than what most U.S. suburban transit services recover (Benke, 1993).

In response to a target set by the Southern California Association of Governments of achieving a 19 percent transit modal split by the year 2010 for the greater Los Angeles area, one recent study proposed a system of 60,000 "smart shuttles" that would function mainly as feeders to Metrorail stations (Urban Innovations Group, 1993). The smart shuttles would have capacities of four to eight passengers, would rely on an extensive network of High-Occupancy-Vehicle (HOV) lanes to gain a speed advantage, and would take advantage of advanced tracking and dispatching systems to optimize vehicle routing.

Melvin Webber (1994) envisages automated technologies one day allowing a virtual laissez-faire of shared-ride transportation services. Under Webber's scheme, people belonging to a "shared-ride co-op" would dial a transportation help line, say "711," wherein a central computer would direct the nearest passing motorist who also belongs to the co-op, is heading in the same direction, and is willing to fill an empty seat for a fee, to pick up the waiting customer. If none is found, the nearest publicly or privately owned bus, van, or taxi would be sent to the caller's front door.

1.3. POTENTIAL DRAWBACKS OF COMMERCIAL PARATRANSIT

The chief arguments against open competition in the urban transportation sector are that public transit systems are natural monopolies and that excessive competition would jeopardize public safety and welfare. With a true natural monopoly, like water utilities, average costs decline with output, meaning a single firm can provide consumers the least-cost service, providing, of course, that regulation prohibits the firm from raising prices to monopoly profit levels (Kahn, 1971). In general, the natural monopoly argument for regulating entry into the urban commuter bus and van service market has little foundation. Studies have consistently shown that with the exception of rapid rail operations and very high-demand corridors, most mass transportation services operate under constant, and for most big operators, declining returns to scale (Lee and Steedman, 1970; Wells et al., 1972; Williams, 1979; Viton, 1981). A study of 73 U.S. public bus systems found that each additional bus added slightly more than 2 cents to the per vehicle hour cost of service (Keough, 1989). For bus transit, average unit costs generally increase with fleet size because big transit operators are in big cities where buses usually run slower, living costs (and thus wages) are higher, and unions are more powerful (Lave, 1991).⁵ Thus, in large U.S. cities where paratransit would likely have the greatest market potential, the natural monopoly argument against commercial transit competition is the weakest.

Another usual argument against paratransit is that free market conditions will lead to cutthroat competition, as with the taxi wars during the Great Depression when regulations were eventually introduced. While excessive competition (e.g., queue-hopping, pestering, price gouging of tourists) occurred, at times, at airports and cab stands at major hotels in San Diego, Seattle, and several other cities that deregulated taxis in the early 1980s, no such problems were encountered with general-hail and advanced-reservation services in these cities (Frankena and Paulter, 1984). Taxi operators competed fiercely for airport customers because these patrons are the most "transit-dependent," owing to the high parking rates at airports that deter many air travelers from parking over extended periods of time. If commercial rates were charged for parking elsewhere in cities with deregulated taxis, particularly at the workplace, then it is likely that cabbies would not have fought so strenuously for airport customers; rather, competition would have been less concentrated (and thus not as excessive). In an environment of market-based pricing and universal parking charges, predatory and cutthroat competition would be less of a problem.

Another argument against commercial paratransit is that if numerous competitors were allowed into the urban transportation market, they would "skim the cream" by taking the most lucrative routes and leaving the unprofitable ones. However, a single transportation company, the argument goes, would operate in the public interest by operating both money-making and money-losing services, a practice

⁵The taxi industry has some of the hallmarks of a natural monopoly. For smaller firms with fewer than 30 vehicles, there are likely no appreciable economies of scale with respect to costs. Larger firms, on the other hand, may be able to achieve some economies by computerizing record-keeping and developing more extensive in-house maintenance capabilities. These economies are likely to be small, however (Gilbert and Samuels, 1982).

commonly called cross-subsidization. This situation is most often alleged to occur when a common carrier is forced to serve low-density areas or nonpeak times, but faces competition, legal or otherwise, during peak periods and in high-volume areas. To ensure high levels of transportation services throughout an urban region, then, regulators argue that the public has an obligation to protect carriers from excessive competition and ensure that they receive a fair return on investment.

Because public transit operators incur deficits for almost every route they operate, it would not appear that there is any "cream" to skim in today's urban transit sector. By serving trips without any public subsidies, if anything, commercial paratransit services would help skim some of the deficits public operators might otherwise occur. Rather than being ruthless predators, paratransit providers would actually aid transit agencies by relieving them of high-cost services, improving service quality in the process.

Lastly, in many third world settings where entrepreneurial paratransit services thrive, drivers are all too often overly aggressive and disobey traffic rules. Many are frequently criticized for reckless driving, cutting off cars to pick up fares, blocking lanes to load and unload passengers, overloading and operating unsafe vehicles, and excessive cruising for customers (Morgridge, 1983; Kirby et al., 1986). Such problems, however, are more related to lax enforcement than to oversupply. Rather than restricting market entry and thus stifling competition, the preferred response to unruly driving behavior is stepped-up enforcement and stiffer sanctions and fines. Of course, there will always be a need for some degree of regulation to ensure that vehicles and drivers meet fitness and safety standards. However, this should not be at the expense of restricting market entry and exit, service practices (as long as they are safe), and pricing.

1.4. CLASSES OF PARATRANSIT

The term *paratransit* was coined in the 1970s to describe the full spectrum of transportation options that fall between the private automobile and the conventional bus. Like automobiles, many paratransit services are flexible and ubiquitous, connecting multiple places within a region, but at a price far below a taxi. And like bus transit, paratransit is an efficient user of road space and energy resources because of its high average loads.

The range of paratransit options is summarized in Table 1.1. These options, discussed in this section, comprise a mix of service types and configurations, passenger-carrying levels, market orientations, and levels of regulatory control. One basic distinction is whether services are purely commercial, open to the general public, or sponsored by employers (perhaps as part of a trip-reduction program) or developers. Some services, like many dial-a-ride vans, are highly specialized, restricted to certain clientele, such as the elderly and handicapped. Another basic distinction is whether services respond to immediate requests made by phone or curbside hail (such as shared-ride taxis, dial-a-ride vans), or are prearranged services (like commuter buses and vanpools).

Unfortunately, there are no comprehensive data sources that provide national statistics on paratransit ridership, so defining the existing mobility role of paratransit is largely guesswork. It is thought

Table 1.1: Typology of Paratransit Services

	Service Types	Service Configuration	Typical Passenger Loads	Primary Markets	Typical Regulatory Jurisdiction	Degree of Regulatory Restrictiveness
Commercial Services						
• <i>Shared-Ride Taxis</i>	On demand, hail request	Many-to-many	3-4	Downtown, airports, train stations	City	High
• <i>Dial-a-ride</i>						
–Specialized	On demand, phone request	Many-to-many	6-10	Elderly, handicapped, poor	City/State	Low
–Airport Shuttles	On demand, phone & hail request	Few-to-one	6-10	Air travelers	State	Low to moderate
• <i>jitneys</i>						
–Circulators	Regular route, fixed stops	Fixed route/loop (one to one)	6-15	Employees, low income, specialized	City	Moderate to high
–Transit feeders	Regular route, hail request	Many-to-one	6-15	Employees, low income	City	Moderate to high
–Areawide	Semi-regular route, hail request	Many-to-many	6-15	Low income, recent immigrants	City	Moderate to high
• <i>Commuter Vans</i>	Pre-arranged, scheduled	Few-to-one	10-60	Commuters	State	Low
Employer- and Developer-Sponsored Services						
• <i>Shuttles</i>	Pre-arranged, regular route	Fixed route/loop (often one-to-one)	15-30	Commuters, students	Local/State	Low
• <i>Vanpools</i>	Pre-arranged, scheduled	Many-to-one	6-15	Commuters	State	Low
• <i>Buspools</i>	Pre-arranged, scheduled	Few-to-one	30-60	Commuters	State	Low

to be fairly small in the larger scheme of things. Supply-side statistics provide some insights. Nationwide, there were 16,471 demand-responsive vehicles (mainly vans), 19,491 inter-city buses, and some 32,000 taxicabs in operation in 1990; in total, then, there were around 68,000 (mainly private-sector) vehicles that fall into our definition of paratransit. This, however, is a small fraction of the 143.5 million registered automobiles, 59,500 public buses, and 380,000 school buses that operated in 1990 (U.S. Department of Transportation, 1995). In 1992, 79 million unlinked trips were served by demand-responsive vehicles operated or contracted by public transit agencies, or a little less than one percent of the 8.52 billion total transit trips made that year. Lastly, the Nationwide Personal Transportation Survey (NPTS) provides travel diaries on trips by members of some 45,000 randomly sample U.S. households. Last conducted in 1990, NPTS records trips by type of vehicle and trip purpose, although there is no way to separate out trips by private, public, or for-hire vehicles. Table 1.2 shows the distribution of 1990 trips by three passenger vehicles that include commercial paratransit carriers — passenger vans, bus transit, and taxis — as well as all other modes (mainly private automobiles), broken down by trip purpose. For work trips, a significant share of passenger van travel likely includes employer-sponsored vanpools and more informal, shared-ride arrangements. The vast majority of bus transit commutes occurred on publicly owned and operated vehicles. Taxis handled only around 1 in 1,000 motorized trips in 1990. Excluding vanpools, the share of nationwide commercial paratransit trips is probably not much higher than this number. Of course,

Table 1.2: Distribution of Motorized Trips in U.S. Metropolitan Area by Modes that Include Commercial Paratransit Carriers and by Trip Purpose, 1991

	<u>Work</u>	<u>Shop</u>	<u>Social/ Recreation</u>	<u>Other</u>	<u>All Types</u>
Passenger Van	4.0	4.7	5.4	5.8	5.2
Bus Transit	2.2	0.8	0.8	1.3	1.4
Taxi	0.2	0.1	0.2	0.2	0.2
Other Modes	93.6	94.4	92.7	92.7	93.2
Total	100.0	100.0	100.0	100.0	100.0

Source: 1990-91 Nationwide Personal Transportation Survey, Data Files

within metropolitan areas, paratransit's role is more significant, and in a few large east coast cities, notably New York and Miami, paratransit's market share of total trips is thought to be as high as 2-3 percent.

1.4.1. Shared-Ride Services

Shared-ride taxis, dial-a-ride vans, and jitneys comprise a class of paratransit services that carry moderate passenger loads and are demand-responsive. A basic distinction is how demand is served: shared-ride taxis respond to either phone or curbside requests, dial-a-ride vans typically require phone reservations, and jitneys respond only to curbside hails.

Shared-Ride Taxis

While governments have over the years been quite solicitous of carpools and vanpools, they have generally been reluctant to extend the ride-sharing concept to taxis by allowing them to pick up more than one party. Whether taxis can serve multiple passengers is a local prerogative since taxi permits are almost universally regulated at the municipal level. Shared-ride taxis flourished in Washington, D.C., during World War II, when cab drivers displayed destination signs in their front windows and folks along the route would hail the cabs going their way. Riders saved money, drivers got multiple fares for a single trip, and scarce wartime resources were efficiently used. In 1974, Washington again adopted a version of taxi ride-sharing, primarily in response to gasoline shortages, and has retained the program ever since. In Southern California, shared-ride taxi services are restricted to downtown Los Angeles and Burbank.⁶ Atlanta and Boston likewise permit downtown taxi-sharing. New York City allows shared-ride taxis only at taxistands, and taxi-pooling from downtown to airports occurs in Chicago, Denver, Seattle, and several other cities. Outside of Washington, D.C., ride-sharing makes up a minuscule portion of taxi trips in most U.S. cities, partly because these programs are not widely marketed.

As in Washington, D.C., use of the shared-ride concept outside of downtown requires some price decontrols to allow flat or zonal fares rather than distance metering so that riders are not over-

⁶Since 1991, the city of Los Angeles has allowed all 1,350 registered taxicabs in the city to carry up to four passengers, including unrelated parties, within a defined area of downtown for a flat \$3.50 fare. The city of Burbank has initiated a similar program, charging a flat \$3.50 for shared-ride taxi services within city limits.

charged when drivers deviate from a route to drop off other customers. Since some passengers would prefer to avoid even modest delays caused by picking up other fares, a mix of exclusive-ride and shared-ride taxis is the best way to satisfy the riding public's preferences.

U.S. experiences with substituting shared-ride taxis for fixed-route bus services on a contract basis have been encouraging. In Phoenix, the local transit authority contracted with a taxi company to replace minimal-level Sunday fixed-route bus services in the early 1980s — an arrangement that saved over \$700,000 in the first year. In the Norfolk-Virginia Beach area, shared-ride taxis that replaced poorly patronized bus routes in suburban and semi-rural areas led to a \$16 per hour cost savings (Becker and Echols, 1983). These cost savings stemmed from using lower paid, usually non-unionized, drivers as well as the relaxation of restrictive work rules.

Dial-a-Ride Vans

Dial-a-ride vans operate just like shared-ride taxis except vehicles are bigger (normally 6-12 seats) and customers typically request rides by telephone instead of curbside hail. Dial-a-ride vans gained popularity in the 1970s when the Urban Mass Transportation Administration (UMTA) sponsored over 20 demonstration programs in typically small cities like Davenport, Iowa, and El Cajon, California. These services proved to be costly per passenger relative to shared-ride taxis because their drivers earned more per hour and average loads were light. In some cases, a travel voucher program was set up to give senior citizens, disabled individuals, and other participants a choice of whether to travel by bus, shared-ride taxi, or dial-a-van. Such user-side subsidies are an efficient way to underwrite the travel expense of the transportation needy while also promoting healthy competition among different service-providers. While human services agencies and community-based organizations still operate door-to-door van services through the U.S., over time many of these services have been consolidated within a regional transit authority. With the passage of the Americans with Disabilities Act in 1990, dial-a-ride services sponsored by public transit agencies (usually on a contractual basis) jumped from 14,610 vans carrying 59 million passengers in 1984 to 23,220 vans hauling 75 million passengers in 1993 (American Public Transit Association, 1995). The Orange County Transportation Association operates one of the largest publicly sponsored dial-a-ride van service in the country, serving mainly elderly, disabled, and low-income individuals with several hundred vans on a contractual basis. Pace Transit, serving the suburbs and exurbs of the Chicago region, also contracts-out dial-a-ride services available to the general public in over 20 townships.

The most successful commercial dial-a-ride operations in the U.S. are the private shuttle vans that serve mainly airports but sometimes also other depots like train stations and ferry terminals. Competing private companies provide on-call, door-to-door service between airports and a handful of destinations, at fares about half that of exclusive-ride taxis. The pioneer provider of airport van service is Super Shuttle International, which first began running vans to the Los Angeles International Airport in 1985. Today, the company has expanded operations to metropolitan San Diego, San Francisco-Oakland, and

Sacramento on the west coast, Dallas and Miami in the sunbelt, and Philadelphia and Baltimore on the east coast, operating over 700 vans and 100 sedans.⁷ In 1992, Super Shuttle served about 110,000 passenger trips a month in Southern California with a fleet of 170 vans, cornering around 45 percent of the shared-ride airport ground transportation market.

Because of Super Shuttle's success, numerous imitators, mainly independent owner-operators, have entered Southern California's airport shuttle market, in large part because California's Public Utility Commission relaxed restrictions on market entry. Between 1987 and 1991, for example, the number of firms providing van service to Los Angeles's international airport (LAX) and the Burbank airport jumped from 16 to 38. Some problems of overcompetition (e.g., battles over curb space, complaints of nonpickups, overcharging) have resulted, however, prompting airport authorities to enforce more stringent rules (e.g., mandatory queues, fines, etc.). Still, less than 1 percent of shuttle van passengers have filed complaints to California's Public Utilities Commission. Overall, airport shuttle operators have managed to carve out a large but unserved market niche: people who don't want to drive to the airport and want a gap-bridger between public transportation and taxi-limousine services.

Jitneys and Commercial Vans

Jitneys further extend the shared-ride concept by carrying up to 15 passengers,⁸ usually in a van or station wagon, over a semi-fixed route on a fairly regular basis. Jitneys typically operate along major thoroughfares, make numerous pickups and drop-offs anywhere along a route, and, sometimes for an extra charge, will make a slight detour to take someone to their front door. Popular early in this century, jitneys were banned in most U.S. cities around World War I, victims of trolley-operators' charges of cream-skimming and unfair competition (Eckert and Hilton, 1972).

From a service standpoint, jitneys are essentially "mini" versions of standard line-haul, fixed-route bus services; besides being privately operated and using smaller vehicles, they differ from most line-haul services in that they stop anywhere along a route, don't follow a set schedule, and will make slight route deviations. Relative to conventional bus routes, jitneys tend to come by more frequently and stop less often since vehicles are smaller.

Lombardo (1994) has defined five different, though not mutually exclusive, functions performed by jitneys. Jitneys can act as *capacity enhancers*, helping to relieve overcrowding and passenger overflow (i.e., passengers left at the bus stop when buses are full). They can also function as *service extenders*, such as providing additional services in low-density areas where existing bus operations fall below minimal standards set by transit authorities. As capacity enhancers or service extenders, jitneys would typically

⁷To minimize travel time, Super Shuttle limits pickup or delivery stops to no more than three per one-way trips. Inbound trips to the airport require an advanced telephoned reservation; outbound trips may be either pre-scheduled or on-demand, depending on the policies of the local airport.

⁸Some jitneys use mini-buses that seat up to 25 passengers, though these are more the exception than the rule. Because of the many slight variations across jitney operations, jitneys defy any precise definition.

be competitively bid by a public transit operator, as they currently are in Houston. A third role is as a *transit feeder*, typically connecting residential areas to crosstown bus or rail routes, or connecting transit stops to workplaces, shopping malls, and campuses. A fourth role is providing *community-based transit*, connecting residents of lower-income neighborhoods to medical centers, shopping stores, community centers, and other destinations not too far away. The final function is jitneys that operate as *activity center connectors*, circulating in and around employment centers, shopping malls, sports stadia, tourist attractions, and so on. In practice, these last three functions — transit feeders, community-based transit, and activity center connectors — are normally performed by commercial (e.g., non-contracted) jitney operators, and are not always legal.

Table 1.1 defines jitney services slightly differently, according to how services are configured and the kinds of markets served. These three more generic types of jitney services collapse together some of the categories identified by Lombardo, as discussed above. One basic type of jitney is a circulator, which typically follows a fixed, circular route within a neighborhood or activity center. Most community-based jitneys operating in poor neighborhoods are circulators, looping between residences, shops, and other destinations. Atlantic City's jitneys, the nation's oldest publicly sanctioned operation, also function as circulators, running mainly up and down Pacific Avenue, ferrying workers, tourists, and others to nearby casinos, restaurants, and shops. A second basic type of jitney service functions as transit feeders, providing a many-to-one service — i.e., connecting multiple origins to a single place. Rail systems in Miami, San Francisco, San Jose, and San Diego feature privately operated jitney vans that funnel to and from transit stations, mainly during commuting hours.

The final class is what we call areawide jitneys, normally operating between multiple origins and destinations within a subregion on a fairly regular basis. In many Third World cities, most jitney services are many-to-many and areawide. In the U.S., New York and Miami have the most extensive areawide jitney-van services, serving mainly recent immigrant populations from the West Indies. Demand for these services is so great that most operate illegally and often openly. New York City's thriving commercial jitney industry is run mainly by Caribbean immigrants for Caribbean immigrants. Some vans operate between housing projects in the Queens and rail terminuses, while others haul commuters throughout the five boroughs, including Manhattan. Surveys show that 95 percent of New York's jitney passengers are former transit riders who value having a guaranteed seat and speedy, dependable services (Mitchell, 1992). Many independent "gypsies" are un- or under-insured, do not meet vehicle driver certification requirements, and adjust fares according to perceived market demands. Some are predatory, picking up radio calls and stealing prospective customers from authorized taxis. Political pressure to crack down on these illegal operators ebbs and flows; however, for the most part authorities have tended to look the other way rather than openly confront them.

1.4.2. Commuter Vans and Buspools

In contrast to other commercial shared-ride modes, commuter vans and buses provide prearranged, scheduled services and are usually targeted at large employment sites, in particular downtown white- and pink-collar office districts. Like a traditional employer-based vanpool, commuter buses provide few (origins) to one (destination) services, yet because they rely on paid drivers, they tend to cost more per passenger trip than vanpools. (Some commuter vans and buses serve multiple work sites, and thus are technically "few-to-few.") Commuter services tend to be quite posh, with riders enjoying comfortable seats with headrests, ample leg room, and a temperature-controlled environ. For this, they pay premium fares, sometimes as high as \$15 per day. Compared with the cost and stress of driving during congested periods and paying for downtown parking, however, most patrons feel it is a bargain.

Many commercial vanpools and buspools serve planned communities, like Reston in northern Virginia, Columbia between Baltimore and Washington, D.C., and the Woodlands, north of Houston. In the case of The Woodlands, over 15 percent of employed residents got to work by commuter bus or vanpools in 1990, many on Houston's extensive HOV network. Southern California has the nation's largest supply of private, unsubsidized commuter bus services. At its height in the late 1980s, over a dozen private carriers operated nearly 100 commuter runs each workday, many focused on large aerospace and high-technology employment centers in western Los Angeles and the San Fernando Valley (e.g., Warner Center, Burbank Media District). Some of the largest companies operate routes of 30-50 miles in length. Commuter bus operators have been able to turn a profit because they utilize labor more productively (e.g., providing charter services during off-peak hours) and pay lower compensation rates than Southern California public transit agencies. In addition, private drivers typically receive no split-time premiums or guaranteed pay, and far fewer fringe benefits than their public sector counterparts.

Unlike most commercial paratransit services, state rather than local regulatory authorities maintain jurisdiction over intercity common-carrier van and bus services. Prospective commuter van and bus operators must first obtain a certificate of "public convenience and necessity" from state regulators before initiating services. When competing bus services exist, or another operator alleges unfair competition, in many cases the new entrant must demonstrate that existing services are inadequate to serve the market, or that a new operation will in some way materially improve quality of services. Transit agencies often jealously protect their service territories, even when new services do not constitute a direct threat. Local transit, taxi, and intercity bus competitors are usually involved in the review of service applications, and any one of the reviewers can often protest loudly enough to block market entry. Private van and bus operators are also at a competitive disadvantage when public transit agencies preempt the best markets. And in spite of their substantially lower costs, many private providers have a hard time competing with transit fares that cover only 30-40 percent of operating costs (and often just 10-20 percent of full costs, including capital depreciation). Proposed cuts in federal transit subsidies, however, could over time reduce these fiscal distortions.

1.4.3. Employer- and Developer-Sponsored Shuttles, Vanpools, and Bus Services

Because they are promoted by state and federal air quality and transportation legislation, employer- and developer-sponsored shuttles, vanpools, and bus services are the least regulated and encumbered of all paratransit services. Employer-based vans and buses almost exclusively serve commuter markets and connect to a single workplace destination. Normally, the driver is one of the commuters, and receives no pay or a modest sum; this holds down costs. (Employer vanpools are also immune to the high unit costs associated with diurnal peaking of work trips since no split-time pay penalties are incurred.) In exchange, drivers normally are allowed personal use of vehicles during evenings and on weekends. Employer-based vans and buses are often sponsored by large firms, office parks, and Transportation Management Associations (TMAs); pooling workforces is sometimes necessary in forming a critical mass of workers who live close enough to each other to allow efficient routing and scheduling.

In response to Regulation XV trip reduction requirement (mandated by the South Coast Air Quality Management District), commercial vanpools have proliferated in Southern California during the past decade. In 1994, Commuter Transportation Services, Inc. (CTS),⁹ a nonprofit corporation that provides ride-matching services, monitored over 2,000 vanpools in the region. Over 50 Southern California employers with 1,000 or more workers currently underwrite the costs of employee vanpools. Another form of employer-sponsored paratransit are shuttle vans that connect rail stations to work sites. In the San Francisco Bay Area, over 100 employer-sponsored shuttle vans tie into transit stations on the BART heavy rail system, Santa Clara County light-rail system, and CalTrains commuter rail system each workday. Nine different light-rail shuttle runs in Santa Clara County carry around 20,000 passengers daily, making up 5 percent of all rail access trips in the county. In other parts of the country, notably Montgomery County, Maryland, and Central New Jersey, private developers have financed shuttles as a pre-condition to acquiring building permits.

In most states, employer- and developer-sponsored vanpools seating 15 or fewer passengers and operated by a driver headed to work are exempt from state certification requirements (as long as drivers have a chauffeur's license). States have jurisdiction, then, only when for-profit vanpools and subscription buses seek entry into the marketplace.

Nationwide, vehicle-pooling has steadily lost its market share of work trips, falling from 20 percent in 1980 to just over 13 percent in 1990 (Pisarski, 1992). Among the factors eroding vanpooling's ridership base, and working against employer-sponsored programs in particular, are decentralization, especially of employment sites; declining average firm sizes (thus making ride-matching more difficult within firms); expansion of variable work hours (partly in response to local trip reduction requirements); part-time homeworking, which further complicates ridematching; and the fact that most commutes are

⁹In 1995, CTS was taken over by the Southern California Association of Governments, the regional planning organization for the greater Los Angeles-Orange County area.

too short to attract vanpoolers. The only trend favorable to vanpooling is the increased mileage of HOV lanes, which grew from five miles (Bay Bridge and Lincoln tunnel) in 1970 to 378 centerlane miles in 1992, and is forecasted to exceed 900 centerlane miles in the year 2000 (Turnbull, 1992). The movement to create High-Occupancy Toll (HOT) lanes that allow free passage for vanpools (e.g., California's State Route 91 that opened between Riverside and Orange Counties in late 1995) would further stimulate the shuttle van sector in highly congested areas.

1.4.4. Commercial Paratransit

This study concentrates on the market opportunities and regulatory barriers related to what we call *commercial paratransit*, and what others have called *entrepreneurial*, or *free-enterprise*, or *competitive paratransit*. The essence of commercial paratransit is the provision of unsubsidized, for-profit services by entrepreneurs or private firms that are open to the general public. Commercial paratransit, as we have defined it, then, excludes services competitively contracted by public transit agencies (and thus subsidized) as well as specialized and restricted services (e.g., exclusively for the elderly and handicapped or those mandated by ADA). While commercial paratransit includes airport shuttle vans, we devote less attention to these services in this study since they are so well established and are in abundant supply. Technically, commercial paratransit does not include employer-sponsored or developer-supported services since these are normally restricted to employees or tenants, and underwritten by firms. However, some employer-sponsored shuttle vans, particularly in Santa Clara County, California, do allow non-employees to ride vans and involve no public subsidies. One might think of these as quasi-commercial paratransit services; as such, they are examined in this report.

The focus of this research, then, is on non-airport, non-ADA, non-contracted, and non-employer-subsidized paratransit services — that is, shared-ride taxis, jitneys, private minibuses, dial-a-ride vans, and subscription van and bus services. These are services for which, we believe, there is a potentially large market demand that is suppressed by an overly restricted regulatory environment and market distortions. In particular, these services, we believe, engender the kinds of features that would make them competitive with the private automobile in contemporary American life, especially to the degree that various market distortions (e.g., free parking, underpricing) are removed. They remain the "neglected options" identified by Kirby et al. (1974) in their seminal book on paratransit, *Paratransit: Neglected Options for Urban Mobility*.

In sum, paratransit represents a host of hybrid modes between the extremes of a taxi and a conventional bus. While paratransit encompasses the many options identified in Table 1.1, commercial paratransit refers to a more limited subset — competitive, free-enterprise services that are open to the general public.

1.5. EXPERIENCES WITH PARATRANSIT DEREGULATION

A central premise of this work is that America's commercial paratransit sector has been stymied by over-regulation and market distortions. Several important studies have been conducted on the effects

of regulatory reforms in America's taxi and jitney sectors as well as mass transit services, in general, in other countries, especially Great Britain. This section briefly highlights the key findings of these earlier studies.

1.5.1. Taxi and Jitney Deregulation

In the late 1970s and early 1980s, 22 U.S. cities experimented with taxi entry and fare deregulation. Also, San Diego, Los Angeles, Indianapolis, and several other cities allowed jitney services to be introduced. Most taxi reforms involved lifting or significantly raising the ceiling on taxi permits. These cities permitted ride-sharing in taxis, along with the introduction of zonal fares. Some cities also allowed exclusive-ride fares to vary. Taxi operators and transit interests fought these open-door policies, though to no avail owing to strong political leadership.

Several studies carried out in the 1980s evaluated the impacts of regulatory reforms in some cities.¹⁰ In almost every setting, the number of firms and cab service hours increased markedly following deregulation. Between 1979 and 1983, for instance, the total number of cab permits increased by 128 percent in San Diego, 30 percent in Seattle, and around 12 percent in Portland (Oregon). Small cab companies and private owner-operators proliferated the most. In Seattle, for instance, small fleets (those with four to 13 cabs) increased in number from nine to 23, whereas the share of cabs held by the three largest firms declined from 70 percent to 54 percent.

More cabs generally meant more and better service (in particular, shorter waits, fewer non-responses to phone requests, and cleaner vehicles). Total weekly hours of cab service in San Diego, for example, increased 26 percent during the first four years after deregulation. Passenger waits at major cabstands virtually disappeared in all three places. Average waits for San Diego's radio-dispatched cabs, moreover, fell from 10 minutes to 8 minutes in the first two years of deregulation. Decontrol also led to greater market specialization, with many smaller and newer operators concentrating on hail and long-haul business and the largest and older companies going after the phone-request and package delivery business.

Overall, fares remained essentially unchanged (in real dollars) following deregulation in most cities. In Seattle, price decontrols led to a variety of fare structures being introduced, including off-peak discounts and cut rates for repeat, advanced-reservation customers. Contrary to some fears, there were relatively few incidences of cabbies redlining or refusing to serve minority neighborhoods in U.S. cities with deregulated taxicab markets. Overall, free competition helped drive down or stabilize the costs of fares in high-volume business segments, but in some instances led to sharp fare increases for low-density areas or night services. Since most poor people reside in relatively high-density neighborhoods, the net incidence of fare decontrols was probably progressive (in terms of transfer effects among income groups).

San Diego's experiences with legalized jitneys were initially fairly successful (see Chapter Two for more details). Between 1979 and 1983, 15 jitney companies, owning a total of 48 licensed vehicles

¹⁰See Frankena and Paulter (1984), Gelb (1983, 1984), Cervero (1984, 1985), Zerbe (1983), and Reinke (1986).

and serving nearly 12,000 weekly customers, had entered the market. San Diego's new jitneys operated mainly on streets paralleling the light-rail trolley system (that opened in 1981) and main bus routes, concentrating on commercial strips, military bases, and tourist spots, such as hotels and airports. San Diego's jitneys and shared-ride taxis were allowed to set any fare they wanted, so long as they posted them in two-inch lettering in the front windows. For a five-mile trip from the airport to downtown San Diego, jitney fares remained about three-quarters cheaper than exclusive-ride taxi fares.

The most significant problem with taxicab and jitney deregulation in these cities was isolated incidences of price-gouging, particularly at airports, where tourists unaccustomed with local taxi services were easy prey. In response, Seattle, San Diego, and several other cities reinstated fare ceilings for airport cab services, and some cities placed moratoria on new cab permits altogether. Gradually, restrictions on taxicab supplies and pricing were reintroduced in many cases in response to complaints from established cab companies, transit authorities, and business merchants. Because of complaints from the local hospitality industry and tourist operators, during the mid- to late 1980s, San Diego officials suspended the issuance of new jitney licenses and began reregulating what a decade earlier was the most unrestricted, free-enterprise taxi market in the country.

Overall, all but four of the 22 U.S. cities that deregulated taxis in the late 1970s and early 1980s have since re-regulated services, generally imposing limits on market entry and setting fare ceilings. Because of the market imperfections and ridership profiles that are unique to the taxi industry (e.g., numerous out-of-town customers), one study concluded that government regulations are necessary to ensure fair pricing and adequate service quality (Price Waterhouse, 1993).

1.5.2. Deregulation of Bus Services in Great Britain

Great Britain has pursued the most sweeping bus transit regulatory reforms to date. As a centerpiece of the Thatcher Administration's privatization initiatives, there was nearly a complete deregulation of local bus fares, services, and controls over market entry and exit in all regions of the country except greater London, beginning in 1985. Also, publicly owned bus companies that had dominated local bus services were reorganized as separate for-profit corporations. The overarching goal was to create a market environment that was competitive, or at least contestable,¹¹ so that any monopoly profits or protection would be limited, if not eliminated.

Within several years of Britain's deregulation of local transit, the threat of contestable markets prodded most old-guard bus companies to significantly cut costs, mainly by changing work rules and winning wage concessions (typically two-tier wage scales with lower rates for newly hired drivers). Within the first full year of deregulation, total bus mileage in the nation had increased by 3.3 percent

¹¹Economists argue that in order to create a competitive market, it is not always necessary that there be multiple competitors, but rather that incumbents believe that a challenger could easily enter their markets — i.e., markets are contestable.

(Gomez-Ibanez and Meyer, 1990). Deregulation also stimulated new market-oriented services and innovations, in particular expansion of 12- to 25-seat minibuses. Where big buses were replaced by minibuses, customers were generally rewarded with more frequent and faster service without having to pay more (in large part because minibus drivers earned less). Not all areas of the nation enjoyed expanded services, however; as opponents of reforms had predicted, services during off-peak hours and in low-density areas fell following deregulation. Local authorities, however, typically contracted to restore services in areas bypassed by commercial operators (Balcombe et al., 1988).

On average, fares rose faster than inflation following deregulation, leading to a decline in ridership of 14 percent compared to pre-deregulation levels (Gomez-Ibanez and Meyer, 1993). Although many of the large incumbents suffered financial losses in the first year of deregulation, within several years most were turning a profit. And while some privatized bus services are still subsidized in Britain, proving that competition and subsidies can co-exist, the prospect of government support seems to have promoted innovations by providing a protected niche for new entrants to test the waters and experiment with new services.

1.6. REPORT ORGANIZATION

As noted, this study is divided into two parts. This first part examines the service, market, and performance features of commercial paratransit. Chapters Two and Three define commercial paratransit's market niches and experiences with unregulated services in a dozen or so U.S. cities. Both chapters also explore the market economics of paratransit — i.e., aspects of demand, supply, and costs. The second chapter focuses on three of the more traditional forms of commercial paratransit available to the general public — shared-ride taxis, jitneys, and commercial vans. Detailed case-studies are presented for these services in San Francisco-Berkeley, San Diego, Atlantic City, Miami, and New York. Chapter Three examines more specialized forms of commercial paratransit, like subscription vanpools, casual carpools, employer-sponsored shuttles, child transportation, and community-based car services. Chapter Four concludes Part I by drawing from the study findings.

The Part II report looks at commercial paratransit from a different angle — how regulations and public policies have shaped, and to a large degree, suppressed, the industry. Chapter One of Part II examines the legal, economic, and philosophical foundations for regulating private common-carrier passenger services in the U.S. This is followed by Chapters Two and Three, which review and critique the existing regulatory and policy environments affecting commercial paratransit at the local and state government levels, respectively. Chapter Four extends the analysis to the federal government level. Chapter Five concludes Part II by summarizing the salient findings of the study, suggesting policy reforms, and discussing the implications of reforms on future paratransit practice in the U.S.

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Chapter Two

Shared-Ride Taxis, Jitneys, and Commercial Vans

2.1. INTRODUCTION

The paratransit options most widely available to the general public, though not in all U.S. cities, are shared-ride taxis, jitneys, and their related cousins, commercial vans. This chapter examines these modes in terms of their service and price features, market characteristics, and overall performance, using a case study approach. It is followed by Chapter Three, which carries out similar analyses for more specialized paratransit services, like subscription van and buspools, child transportation, dial-a-ride vans, and neighborhood-based services. In both of these chapters, case analyses aim to highlight the unique market niches and urban mobility gaps that these paratransit modes serve. In that these two chapters focus mainly on for-profit, free-enterprise services, the undercurrent of governmental regulatory and policy issues surrounding these services are also addressed, partly as an entrée into more in-depth discussions on these issues later in the report.

Through case studies, it becomes evident that the distinctions between commercial paratransit services are often blurry. Some shared-ride taxis, for all intents and purposes, operate like jitneys. Some so-called jitney runs to train stops are virtually indistinguishable from shuttle van services. Informal neighborhood transportation services are a lot like shared-ride taxis. While there are always dangers in attempting to bound in what many ways is a continuum of paratransit services, boundaries are nonetheless drawn in this and the following chapter to help sort through and organize the evidence.

2.2. SHARED-RIDE TAXI SERVICE

In the hierarchy of paratransit service coverage, shared-ride taxis, with their potential to provide many-to-many services, stand at the very top. Today, taxi ride-sharing is permitted in most large U.S. cities, though it is usually restricted to downtown cabstands and major transportation terminals, like airports and inter-city train stations. It really has only been during times of gasoline rationing, such as during the Second World War and the Arab oil embargo of 1973-74, that taxi ridesharing has occurred to any significant degree. Today, taxi ridesharing is fairly rare, and where it does occur, it is usually an informal arrangement between unrelated parties waiting at cabstands heading to the same destination, most often between downtowns and airports. Over the past 50 years, the only significant commercial shared-ride taxi service in the U.S. existed in Little Rock, Arkansas; outside of airport access trips, taxi ride-sharing by unrelated individuals is today largely limited to certain niche markets, such as during commute hours in Washington, D.C., when cabs are in short supply and point-to-point connections between rail stations and major activity centers, like the Berkeley, California's, shared-ride taxi connections to a nearby racetrack. Subsidized shared-ride taxi services were sponsored by the Federal govern-

ment as demonstration projects during the 1970s, but none of these services survived once subsidy support was withdrawn.¹ Today, a handful of areas, like suburban Chicago, still rely on subsidized shared-ride taxis, though only for highly specialized markets, like serving elderly and disabled individuals.

Overall, even in large cities where it is permitted, taxi ride-sharing makes up less than 1 percent of all taxi trips, in part because many customers are highly time-sensitive and unwilling to endure extra delays, but also because few cities have zonal fare systems or allow flat fares to be changed other than to airports. Shared-ride taxi programs are also rarely aggressively marketed; thus, few customers are aware they can save money by hooking up with others. In parts of downtown Manhattan, Los Angeles, Chicago, and Atlanta, taxi ride-sharing makes up as much as 3 to 5 percent of all internal (i.e., within downtown) motorized trips.² In the early 1980s, several shared-ride taxis running services between Lindbergh Field and downtown San Diego were capturing around 2-3 percent of the airport ground transportation market. While people informally share taxi rides and split the fares to and from airports in all cities, this practice is today most common in cities, like Los Angeles, Atlanta, San Francisco, and Denver, where flat fares are charged between downtowns and airports.³

¹Shared-ride taxi demonstrations in cities like Davenport, Iowa, and El Cajon, California, were particularly successful. The Davenport shared-ride taxis carried over 1,000 persons per day in 1973, nearly 65 percent as many as the local bus system, for an average fare of around \$1.00 (Heathington et al., 1975). El Cajon's shared-ride taxis began in 1972 when the city contracted with Yellow Cab Company of San Diego to provide general-purpose dial-a-ride services to city residents. El Cajon's share-ride taxi demonstration program lasted longer than any other in the nation. In 1992, the city converted the service to a dial-a-ride minibus operation contracted through San Diego County (see Chapter Three). Even after Federal demonstration programs ended, shared-ride taxis for the elderly and disabled persons continued to expand in California, Michigan, and Minnesota, all states that dedicate sale tax revenues to public transportation. As in El Cajon, as Federal support for mass transit and state dedicated transit funds began to shrink, most subsidized shared-ride taxi services were discontinued in the 1980s because per passenger costs proved to be too exorbitant. These services were generally replaced by specialized dial-a-ride services for the elderly and disabled, sometimes offered through social services agencies. The decline of the nation's unsubsidized shared-ride taxi industry generally pre-dated when subsidized services began to falter. Besides Little Rock, non-subsidized shared-ride taxi services also existed during periods of the 1960s and early 1970s in Pensacola, FL, Long Island, NY, Danville, IL, Arabi, LA, Westport, CO, and Petersborough (Ontario) (Teal, 1978). Today, few shared-ride taxi trips are made in these places. Pensacola has maintained a fare system where the first passenger pays the amount on the fare meter, and the second passenger pays the difference between what the first passenger paid and the amount on the meter when he or she disembarks. Danville has retained a zone fare system to allow taxi ridesharing, but according to local officials, this is a rare event.

²There are no comprehensive data sources which provide precise information on taxi travel volumes, and certainly none on taxi ride-sharing. Estimates are based on interviews with staff members of local taxi commissions. In Manhattan, several cabstands north of Central Park will take multiple unrelated passengers to the Wall Street area for \$3.50 to \$5 per passenger. At the York Avenue-79th Street cabstand, shared-ride taxis have become a ritual. From 5 a.m. to 10 a.m. each weekday customers queue to catch a ride to Wall Street, four-to-a-cab, at a special fare of \$3.50 apiece. Anyone wanting to go elsewhere is out of luck; cabbies refuse to go anywhere but Wall Street, even though they are legally obligated to take all riders where they want to go (Lambert, 1995). In Los Angeles, all taxis can carry up to four passengers within a downtown cordon area for a \$4 fare. Chicago's shared-ride taxis operate between cabstands within the Loop district, and are thought to be fairly popular. Atlanta's shared-ride taxis charge a flat \$5 fee for intra-downtown trips.

³The flat rate between downtown Los Angeles and the International Airport (LAX) is \$24 per trip. Atlanta charges \$18 for trips between downtown and Hartsfield International Airport, or \$10 per passenger for two or

2.2.1. Little Rock's Shared-Ride Taxis

From the early 1950s until 1981, Little Rock had the most extensive shared-ride taxi service in the country. Prior to this, Little Rock's taxis provided only exclusive-ride services using meters. After several local taxi operators went bankrupt, the city granted an exclusive franchise to Black and White Cab to serve a 150-square-mile area. Because no public transit services existed at the time of this reorganization, Black and White Cab petitioned for and was granted the right to provide shared-ride services 24 hours a day, 7 days a week, using 75 vehicles. Except for emergencies, no exclusive-ride services were offered. Later, a second company, Capital Cabs, was also granted a shared-ride taxi franchise, pushing the citywide supply of cabs to around 100 (or 1 taxi per 1,500 residents).

To accommodate taxi-pooling, Little Rock introduced a 91-zone fare system, with zones generally increasing in size with distance from downtown. By the late 1970s, the fare for traveling within a single zone was \$0.65, with each additional zone costing \$0.35 to enter. The average trip traversed three zones, for a fare of \$1.35 (1978 dollars). The average taxi carried two to three passengers, meaning drivers were averaging \$2.70 to \$4.05 per trip, a fairly good income at the time.

Key to the success of Little Rock's share-a-taxi program was the practice of vehicle leasing. Taxi drivers leased cabs on a daily basis for a flat fee, receiving radio-dispatching services and insurance coverage in return. After paying lease fees and covering expenses for gasoline and maintenance, all other revenue collected belonged to drivers. With this arrangement, drivers behaved like independent businessmen, seeking to maximize income by responding promptly to ride requests, developing customer loyalties, and searching out new niche markets. Many began concentrating on certain sectors of the city, becoming the exclusive operators for some businesses. Some operated vehicles like veritable jitneys, operating up and down busy thoroughfares, picking up and dropping off customers along the way. Also, central dispatchers became so familiar with the rhythm and pattern of local trip-making that they became very efficient at linking drivers in the field to waiting customers so as to optimize routing and trip-chaining.

A combination of good, reliable service quality, aggressive marketing, and economies of scale (from centralizing dispatch and maintenance services) resulted in the delivery of very cost-effective shared-ride services. In 1977, Little Rock's shared-ride taxis were hauling more than 1.7 million passengers annually (or around 11 cab trips per capita). This was 300,000 more passengers per year than the local bus system, which was established in the 1960s, carried (Hall, 1978). By 1980, an estimated 6 percent of all motorized trips in Little Rock were by shared-ride cabs. Most customers were captive users — the poor, pre-drivers, seniors, and disabled individuals — although significant numbers of middle-class riders could also be found, especially in and around state office buildings.

more passengers. San Francisco is unique in charging less, a \$24 flat fare, for trips from downtown to airports than for exclusive passenger trips, which are metered fares over \$30. Between Denver International Airport and the city, there are different fares for 21 destination zones.

Shared-ride services came to an abrupt end when the Little Rock City Council passed an ordinance in 1981 replacing the zonal system with distance-based taximeters and stipulating that exclusive ride services be provided. Shortly thereafter, shared-ride services were eliminated altogether. A combination of factors — rising vehicle ownership rates, pressure from the public transit agency to reduce competition and stem ridership losses, and, according to some local observers, class and racial prejudices — led to the replacement of a very successful shared-ride service with a far more marginal exclusive and sometimes exclusionary taxi service.⁴ Three years before Little Rock's shared-ride services were eliminated, John Hall, President of Black and White Cab, who first championed the idea of taxi-pooling, stated at a 1978 national conference on "Taxis as Paratransit": "In my estimation, exclusive ride would eliminate 40 percent of our riders if it was implemented today." This proved an understatement. By 1982, one year after exclusive-ride services were introduced, Black and White Cab's annual ridership fell to around 550,000 from 1,350,000 five years earlier, a drop of 60 percent. Because taximeter fares rose to a \$1 flag drop and \$0.90 per mile, lost ridership income was generally made up by higher per-trip revenues. Thus, Little Rock's taxi operators did not rebel against the changes. However, while taxi drivers, the local transit agency (whose ridership rose), and higher-income, choice taxi riders generally saw themselves as well off or better off, the poor and other transit dependents saw their mass transportation service options and service quality drastically curtailed as a result of the change. Societal losses also came in the form of lower mass transportation usage and market shares — citywide taxi and bus transit trips combined fell from over 3 million to around 2.5 million annual trips from 1980 to 1990; for work trips, the combined taxi and transit modal split was only around 1.5 percent in 1990, down from over 6 percent a decade earlier.⁵

In close, at its prime, Little Rock's shared-ride taxi program was a smashing success because it served a genuine market demand, local government gave it a green light, and profit-motivated taxi firms made the system work — providing frequent, on-call, reliable services; aggressively marketing the shared-ride concepts; and creating an organizational structure that tapped into economies of scale and financially rewarded drivers for maximizing productivity by filling up taxicabs. Today, Little Rock's mass transportation sector is a shadow of its past — taxi ridership is less than half what it was two decades earlier, residents (especially the inner-city poor) have fewer travel choices, and local bus services are

⁴Services became more exclusionary in the sense that, as with many exclusive-ride taxi services across the country, some taxi drivers avoided serving minority neighborhoods in fear for their safety. Little Rock's business community pressured the City Council to introduce exclusive-ride services in part because of a desire for higher quality services to destinations like the airport, though another tacit explanation, according to some, was a desire for class segregation for common-carrier services.

⁵Sources: Federal Transit Administration, *1990 National Transit Database: Section 15 Report*. Washington, D.C.: Federal Transit Administration, 1991; U.S. Bureau of the Census, *Summary Tape Files 3A*; interviews with local taxi operators.

losing market share (just 0.96 percent of 1990 commute trips were by transit) and incurring high deficits per passenger (\$1.75 in 1993).⁶

2.2.2. Shared-Ride Taxis in the Nation's Capital

Today, Washington, D.C., is the only U.S. city that can still lay claim to having a citywide shared-ride taxi program. Taxi-pooling is complemented by an open marketplace that neither restricts the supply of taxis, nor controls when and where they operate within the District. Shared-ride taxis gained legitimacy when the U.S. Congress, which maintains veto power over local policies, passed a law in 1932 prohibiting the use of taximeters, installing a zone fare system instead. Today, the District contains 26 zones, with fares ranging from \$2.80 for an intrazonal trip to \$10.80 when traversing eight zones. Because zone fares penalize drivers when cabs sit in traffic congestion, there is a \$1.50 evening peak-hour surcharge. Financially, shared-ride services benefit drivers only — each rider still pays a single passenger fare. Interjurisdictional taxi fares are set by the Washington Metropolitan Area Transportation Commission (WMATA), depending on trip destination. Nearly 90 percent of taxi trips originating in the District start from downtown (zones 1 and 2), and most trips are short haul — one to three zones (\$2.80 to \$4.40, plus tips).

Ride-sharing is only allowed with the permission of the first passenger, and a deviation of more than five city blocks from the most direct route to that passenger's destination is not permitted. Given the initial passenger's destination, the driver may solicit other passengers heading in the same general vicinity. Drivers are not allowed to delay passengers by more than two minutes when recruiting a shared-ride customer, though such rules are virtually unenforceable. Because customers get no fare break for ridesharing, most District residents and workers request exclusive-ride services, though most accept taxi-pooling during rush hours when there is a shortage of cabs. Out-of-towners and tourists are generally more receptive to drivers' requests to pick up extra fares, both because they are unfamiliar with the system and are usually less pressed for time. Because most drivers concentrate on short-haul trips where fares turnover rapidly or hotels to serve the lucrative airport market, very little taxi ride-sharing occurs in practice, other than along busy boulevards during rush hour, between major downtown destinations, and trips originating from the downtown K Street Airport Bus Terminal or Union Station (terminal for Amtrak, Metrorail, and inter-city buses). Many cabbies will not leave Union Station during daylight hours until they have three passengers in the car (Photo 2.1).

The only time when shared-ride taxis have gained widespread acceptance appears to be when they were pressed into service by market forces and government decree. During the 1973-1974 gasoline shortage, the District's Public Services Commission (predecessor to today's Taxicab Commission) adopted a ride-sharing policy, issuing route message signs to drivers, encouraging them to pick up

⁶Sources: Federal Transit Administration, *op cit.*. U.S. Bureau of the Census, *op. cit.*



Photo 2.1. Taxicabs queueing for shared-ride customers at Union Station

multiple passengers, and marketing the importance of ride-sharing as a fuel conservation strategy. Within the first month of this policy, estimated taxi ridership increased by 80,000 additional fares per day from the level of 275,000 trips per day for the previous month — a 30 percent gain (Lyons, 1983). As real gasoline prices have fallen and new transit options have emerged for intra-District trips (most notably Metrorail), taxi ride-sharing has since fallen quite significantly. Although there are no hard numbers, informal interviews with a dozen or so District cabdrivers suggests that less than one in 10 off-peak trips and around two in three peak-period trips serve two or more unrelated parties.

Over the years, Washington's unrestricted, shared-ride taxi industry has come under frequent attack. A 1957 study commissioned by the U.S. Congress called for controlling supplies and replacing the zone rate system with taximeters as ways to improve service quality and reliability. Testifying before the House on behalf of restricted entry and metered fares, the General Counsel of the American Taxi Association stated that taxi operators find conditions in the District "little short of disgrace...It is the kind of condition," he testified, "that gives the entire industry a black eye."⁷ Congress members — themselves consumers of services — have generally remained skeptical of repeated attempts to tighten control over District taxicabs, rejecting several proposals over the past 40 years. In comparing taxi services in the

⁷U.S. Congress, Hearing Before the Subcommittee on Public Utilities, Insurance, and Banking of the House Committee on the District of Columbia, 85th Congress, 1st Session, at 124, 127, 1957.

District with those of other east coast cities, Kuehl and Olson (1974) found that such problems as discourteous drivers, discrimination, and overcharging were not due to Washington's open-entry, shared-ride status — other major cities had similar problems. Overall, the benefits of having plentiful cabs at reasonable fares offset the inconveniences, like older fleets, associated with a open market in the minds of most Washingtonians.

2.2.3. Shared-Ride Airport Taxis

Today, ride-sharing between downtowns and airports remains the largest niche market for taxi-pooling, normally through informal arrangements. For a period, before the airport shuttle van industry blossomed (see Chapter Three, Part II), some U.S. airports openly welcomed and indeed actively promoted taxi ridesharing. This was often the case in cities where cabs were in short supply during peak hours, particularly those with notoriously restrictive limits on taxi permits, like New York City. In 1979, a Share-a-Cab service was initiated at New York City's LaGuardia Airport. At the time, the Port Authority of New York and New Jersey faced continued problems of long queues at airport cabstands, especially on Friday and Sunday nights when demand was at its peak. The greatest demand was among air shuttle passenger wanting quick, low-cost transportation to Manhattan, about eight miles to the southwest. Besides exclusive-ride taxis, few other reasonable ground transportation options were available — limousine service was expensive and infrequent, while public bus transit involved making connections, transferring luggage, and for most travelers, unacceptable delays.

With Share-a-Cab, customers notified a curbside attendant of their destinations. Once three or more passengers heading to the same part of Manhattan (anywhere south of 60th Street) had formed, a taxicab would leave a nearby queue to serve the parties. The program was not an instant success. Drivers disliked the voucher system (which delayed payment) and ridership was low. The program, however, was later expanded from a side terminal to the main La Guardia terminal and vouchers were replaced by cash fares. Monthly ridership went from 5,100 in 1979 to 16,000 in 1982, then stabilized at around 7,000 from 1985 to 1988. Since at least three passengers were needed to form a shared-ride, drivers were assured a minimum of \$15 plus tips per trip (maximum of \$24), compared to \$12 for the average exclusive ride trip to Manhattan (in the mid-1980s). The program appeared to attract taxicabs into LaGuardia, evidenced by a shortening of passenger queues. Share-a-Cab drivers were also waiting no longer for customers than exclusive-ride operator (Comsis, 1986). Overall, a nice market equilibrium was in place.

LaGuardia's Share-a-Cab program was disbanded in 1990, a victim of expanded airport shuttle van and bus limousine services. Since these other ground transportation carriers were licensed through the state of New York or, in the case of cross-state services, the Interstate Commerce Commission, they did not face the same restrictions on supply as did New York City's taxicabs. Share-a-Cab operators thus lost customers as competition heated up. Franchised limousine bus carriers also sought to protect their monopolistic positions and, along with shuttle van operators, they pressured the Metropolitan

Taxi-board of Trade to discontinue the service. Formal airport taxi-sharing may have a life in New York City after all. In December 1995, a three-month demonstration of shared-ride taxis services between JFK International Airport and Manhattan (for a set fare of \$30 split among passengers) was initiated. This demonstration is testing the premise that by using smaller vehicles, shared-ride taxis can provide a higher quality service than shuttle vans by reducing the number of Manhattan stops, thus helping to further enrich airport access service options.

2.2.4. Berkeley's Racetrack Shared-Ride Taxi

A good example of a point-to-point shared-ride taxi that serves a unique market niche and a non-airport destination exists in the San Francisco Bay Area: the "racetrack taxi" that connects the North Berkeley Bay Area Rapid Transit (BART) station to the Golden Gate Fields racetrack. This seasonal service functions as a "service extender" to existing bus lines serving the racetrack. Horse race fans who ride BART can choose between a bus or a shared-ride taxi, at a fare of \$2 per one-way trip, or take a more expensive ride-alone taxi (at around \$10) to reach the racetrack, some four miles away (Map 2.1).⁸

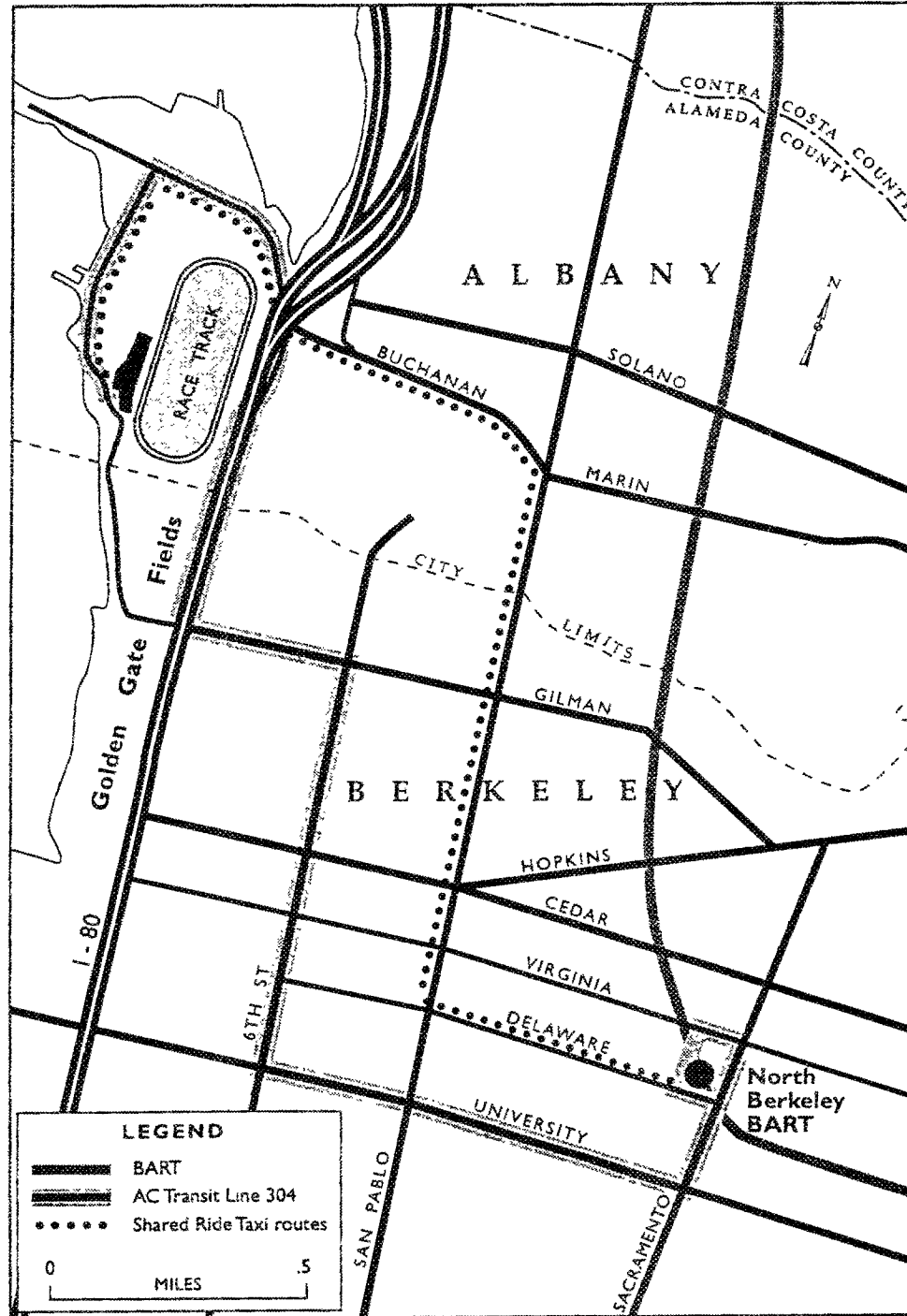
Around 10 independent taxi owners operate shared-ride services during the race season. Most taxis make two to three trips in each direction daily, carrying four to five passengers per trip. Two dollars per person is charged regardless of the number of passengers, thus generating between \$8 and \$10 per trip, about what a cabbie would make for an exclusive-ride, metered haul. (Taxi drivers, however, usually have to backhaul with an empty cab to pick up another load of race track fans.) Shared-ride fares are set to match those of the chief competitor, AC Transit's bus line 304.⁹ Neither Berkeley or Albany regulate taxi fares.¹⁰

Approximately 150 racetrack fans arrive at the North Berkeley BART station on weekdays, and around 450 arrive on Saturdays and Sundays. In-field surveys indicate that shared-ride taxis carry around 95 passengers on weekdays and around 320 on Saturdays and Sundays. Of all access trips to and from

⁸Golden Gate Fields abuts the bay at the western edge of the city of Albany. The race season begins in early February and runs through June. The track is open Wednesdays to Sundays and on holidays. All-day parking is available for \$3. The East Bay's major bus operator, Alameda-Contra Costa County (AC) Transit, operates Line 301 between the North Berkeley BART station and the racetrack. The shared-ride taxi operates a slightly more direct route than the Line 304. During the race season, passengers arrive at the North Berkeley BART station around 11:30 a.m. to 2:30 p.m. Racetrack goers return to BART between 3:30 p.m. and 6:30 p.m.

⁹Line 304 departs from the North Berkeley BART station every 30 minutes between 11:10 a.m. and 5:40 p.m. No transfers are issued or accepted on Line 204, nor is the monthly pass accepted. Unlike most shared-ride taxi runs, Line 304 stops to receive or drop off passengers between BART and the racetrack.

¹⁰Both the cities of Berkeley and Albany let the market determine the number of cabs operating within their jurisdictions and allow operators to set their own fares up to a ceiling maximum. Shared rides are permitted *de jure* in Berkeley and *de facto* in Albany. Neither cities report any problems with shared-ride taxi operators. The regularity of routes, self-regulation among operators, and ease of police enforcement of point-to-point services make illegal operations difficult.



Map 2.1. Routing of the Racetrack Taxi and AC Transit's Line 304

BART, then, shared-ride cabs capture over 60 percent of the weekday and over 70 percent of the weekend markets. AC Transit and exclusive-ride taxis serve the remainder.

With the same price and similar routing, shared-ride taxis generally win out over the bus competitor because of slight time savings (owing to fewer intermediate stops), preferences for traveling in small groups, customer loyalty, and what one taxicab operator describes as "herd mentality." Apparently, some bettors like the camaraderie of sharing cabs to Golden Gate Fields and the chance of gaining inside tips on the horses.

Based on interviews with drivers and other sources, we estimate the cost of operating shared-ride taxis by each independent-operator to be around \$29 per weekday (in 1994), including a pro-rated share of vehicle depreciation.¹¹ On a typical weekday, shared-ride taxi operators take home around \$35-\$40 in profit; on weekends, they clear slightly more, around \$50 per day.¹² Most drivers will forgo their place at the BART station or the Fields queues to respond to more lucrative dispatch calls (especially for trips to the airport). Most shared-ride drivers we interviewed are single males in their 20s and are Sikhs from the same region in India.

Comparing cost and performance between AC Transit Line 304 and shared-ride taxis is fraught with difficulties. AC's costs, which averaged \$76 per hour in 1994 (including capital depreciation but excluding debt service), are based on system-wide statistics. Jitney cost data include expenses attributable to passengers not traveling to the racetrack, such as for centralized radio-dispatch services. On an average weekday, AC Transit Line 304 costs more than three times as much per passenger trip as the shared-ride taxis (Table 2.1). For each racetrack trip served, shared-ride taxis earn about a dollar, while AC Transit's Line 304 loses about an equal amount. Fully seated shared-ride taxis also show significantly higher ridership productivity, carrying around 10 passengers more per total hour (including layover and deadhead time). Overall, the commercial racetrack taxi enjoys a significant cost and productivity advantage over its publicly supported transit competitor. Among the factors key to the racetrack taxi's success are: point-to-point service that holds down costs; destination parking charges; regular and predictable demand; customer loyalty; and a permissive local regulatory environment.

¹¹Estimated daily operating cost breakdowns are: \$16.20 for insurance; \$2.05 for maintenance; \$3.90 for gasoline and oil; \$5.30 for vehicle depreciation and debt financing; and \$1.25 for permits. The are amortized costs pro-rated for the share of time — normally two to three hours per day — of a typical eight-hour shift that taxi drivers concentrate on racetrack services. Most cabbies providing shared-ride services own their own vehicles, typically four- to five-year-old sedans that cost between \$4,000 and \$5,000 and that are kept for two to three years. A few drivers lease their vehicles from cab companies at around \$45 per day, plus gate fees of around \$45 per day (which entitles the driver to radio-dispatch calls). Owner-operators normally set aside around \$18 per day for insurance and maintenance. Liability insurance costs approximately \$5,000 per year. An average weekday of driving is about 70 miles, as much as half of which is for the shared-ride racetrack runs. Sources of data: field interviews with shared-ride taxi drivers; American Automobile Association, *Your Cost of Driving*, Washington, D.C., 1994; and Motor Vehicle Manufacturer's Association, *Motor Vehicle Facts & Figures*, New York, 1994.

¹²Net income estimates are based on an average of 4.2 round trips per weekday and 5.5 round trips per Saturday or Sunday, with an average of 4 passengers per round trip.

Table 2.1. Performance Comparisons of Shared-Ride Taxis and AC Transit Services for the Golden Gate Field Run, Average Weekday, 1994

	Operating Cost ^a / Passenger	Profit (Deficit) ^a / Passenger	Passengers/Total Service Hour
Shared-Ride Taxis	\$0.90	\$1.10	18.7
AC Transit Line 304	\$3.01	(\$1.01)	9.0
<i>Line 304 as percent of Shared-Ride Taxis</i>	234.4%	—	48.1%

^aCost estimates for Line 304 exclude debt service on capital purchases. Debt financing expenses are included for shared-ride taxis.

Sources: Field interviews with shared-ride operators; AC Transit, Short Range Transit Plan, Oakland, 1994; Federal Transit Administration, *Transit Profiles: The Thirty Largest Agencies, For the 1993 National Transit Database Section 15 Report Year*, Washington, D.C., 1994.

2.2.5. Shared-Ride Taxis in Close

While at one time shared-ride taxi services proliferated in a handful of U.S. cities like Little Rock and Washington, D.C., for the most part taxi-pooling has today been reduced to very limited and specialized niche market services — mainly point-to-point runs between downtowns and airports and, in the case of Berkeley and perhaps several other cities as well, between rail stations and sports complexes. In the case of Little Rock and the LaGuardia airport run, the demise of shared-ride taxi services was mainly a function of regulation — namely, providing a protected monopoly status to shared-ride taxis' competitors. However, experiences in Washington, D.C., reveal that regulation alone is not at fault. There, increased competition from subsidized intra-city bus and rail services, combined with market preference for single-ride services, have eroded shared-ride taxis' ridership base. In the absence of major technological advances that improve routing efficiency and policy shifts that eliminate transportation subsidies, it is likely that shared-ride taxis will remain a small and limited niche market service in U.S. cities.

2.3. JITNEYS

Perhaps more so than any other form of commercial paratransit, jitneys span the gamut of service options. Some, like San Francisco's downtown rail feeder, are point-to-point services, akin to a shuttle connector. Places with the most extensive legalized jitney services — Miami and Atlantic City — require jitneys to follow fixed routes and prohibit detours. Where illegal jitneys thrive — such as the neighborhood-based van services discussed in Chapter Three and Houston's illegal jitney discussed in Part II, Chapter Two — services tend to be flexible in terms of routing and scheduling. Flexible jitneys effectively serve a paratransit corridor, deviating from main routes as demand dictates.

Jitney services were revived in Los Angeles, San Diego, and Indianapolis during the 1980s; however, in the face of competition with subsidized buses, their return was generally short-lived in these cities. In 1982, the city of Los Angeles allowed several jitney operators to ply along Wilshire Boulevard in response to a fare hike and service cuts by the Southern California Rapid Transit District (SCRTD). Jitney runs stopped within a year because operators could not match SCRTD's \$0.75 fares and still

cover costs (Teal and Nemer, 1986).¹³ A "semilegal" jitney service has operated along King Drive and other parts of south Chicago for years, condoned by city officials yet not fully licensed or insured (Kitch et al., 1971). In 1994, Chicago legalized fixed-route jitneys for the under-served South and West Sides, although most jitney operators in these areas have chosen to remain unlicensed and uninsured in order to keep fares low and vehicles full (Suzuki, 1995).

The cases that follow highlight the three key functional roles of contemporary jitney services in the U.S. San Francisco's sole-surviving jitney is an example of a *rail feeder*, connecting a commuter rail terminus with the downtown Financial District. In San Diego, current jitney runs near the Mexican border function as *circulators*, connecting several large housing projects, an industrial park, and commercial strip to the border crossing. Lastly, a network of *areawide* jitney services currently exists in Atlantic City and Miami.

2.3.1. The San Francisco Jitney: A Commuter Rail Feeder

Today, a privately operated 20-seat jitney mini-bus runs between downtown San Francisco and the Southern Pacific Transportation Depot, the northern terminus of the Peninsula CalTrain commuter rail service. Officially sanctioned by the San Francisco Police Department (SFPD) as Jitney No. 97, this is the last remnant of San Francisco's once-flourishing jitney industry. A point-to-point feeder service, Jitney No. 97 provides hints about the kinds of cost-savings measures and lean service practices that are necessary to survive in an era of public transit subsidies and heavy-handed regulation.

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 the streets of San Francisco. Complaints from streetcar operators led to a jitney ban soon thereafter; however, the

¹³Los Angeles introduced several jitney experiments over the past two decades. In the 1970s, a strike by the Southern California Rapid Transit District (SCRTD) prompted local officials to authorize La France Transportation Company to operate a jitney along Wilshire Boulevard. The intent was to make taxicabs, which were reaping monopolistic profits from serving office workers along the Wilshire corridor, face greater competition from lower-priced jitneys, which charged a dollar per ride. Once the strike ended, however, competition from public buses, which charged only \$0.25 per ride, forced La France out of the jitney business after only a few months of operation (Siracusa, 1990; Lombardo, 1994). Los Angeles's second foray into private jitney services occurred in mid-1982 when California's Public Utilities Commission (PUC) authorized two carriers, Express Transit District (ETD) and Maxi Taxi, to operate along major arterials, including Wilshire Boulevard, in direct competition with SCRTD, which was financially unable to expand services at the time. At the height of the experiment, ETD operated 40 passenger vans on peak-hour headways as short as five minutes. It was estimated that ETD carried around 6 percent of peak-hour transit passengers along routes where they operated (Teal and Nemer, 1986). Surveys showed that a large percentage of ETD's customers were Latinos who liked riding in vehicles driven by other Latinos. The passage of Proposition A in late 1982 that provided dedicated sales tax revenues to SCRTD dealt the death blow to Los Angeles's nascent jitney industry. Lower public transit fares forced Maxi Taxi to fold even before initiating services, and ETD's services lasted only seven months.

Board of Supervisors lifted all restrictions in 1917 in response to a streetcar-workers' strike that threatened to cripple the city. By 1918, several thousand jitneys saturated the city, primarily hauling 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 tightening 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-cents fare. Twenty years later, there were 120 vehicles operating on two routes. The major one was the "Mission" jitney — a 24-hour, seven-day-a-week service consisting of 12-seater vans and minibuses that ran along Mission Street in the Mission district, a cultural melting pot of Hispanics and other ethnic minorities. A second jitney route, comprising only around 5 percent of the jitney fleet in the early 1970s, operated between the Southern Pacific Depot and Market Street, downtown San Francisco'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 minibus, 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, the city issued no new jitney permits after 1972. The Mission jitney was already waning by this time; of the 116 jitneys registered to operate on Mission Street in 1973, only 52 were in action (Griffin, 1986). The Mission jitney was particularly 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 (Municipal Railway, or Muni), jitney operators found it difficult to compete with BART's cheaper fares and faster service for intracity trips beginning and ending near BART stations.

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

By 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 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 converse with drivers and passengers in their native tongue, and lower incidences of crime than on Muni buses and trams.

From 1972 to 1978, even though no jitney 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. Almost overnight, this made

permits virtually worthless on the market. Permits were reverted back to the City upon the forfeiture of a permit by an operator, and, in practice, were not issued again.

An even more serious blow to the San Francisco's jitney sector was the sharp increases in liability insurance premiums. In step with Federal rules for inter-state carriers, California raised minimum liability insurance requirements to \$1.5 million in 1978 and again in 1985 to \$5 million, and the city of San Francisco followed suit. 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. 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 heightened police enforcement against 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).

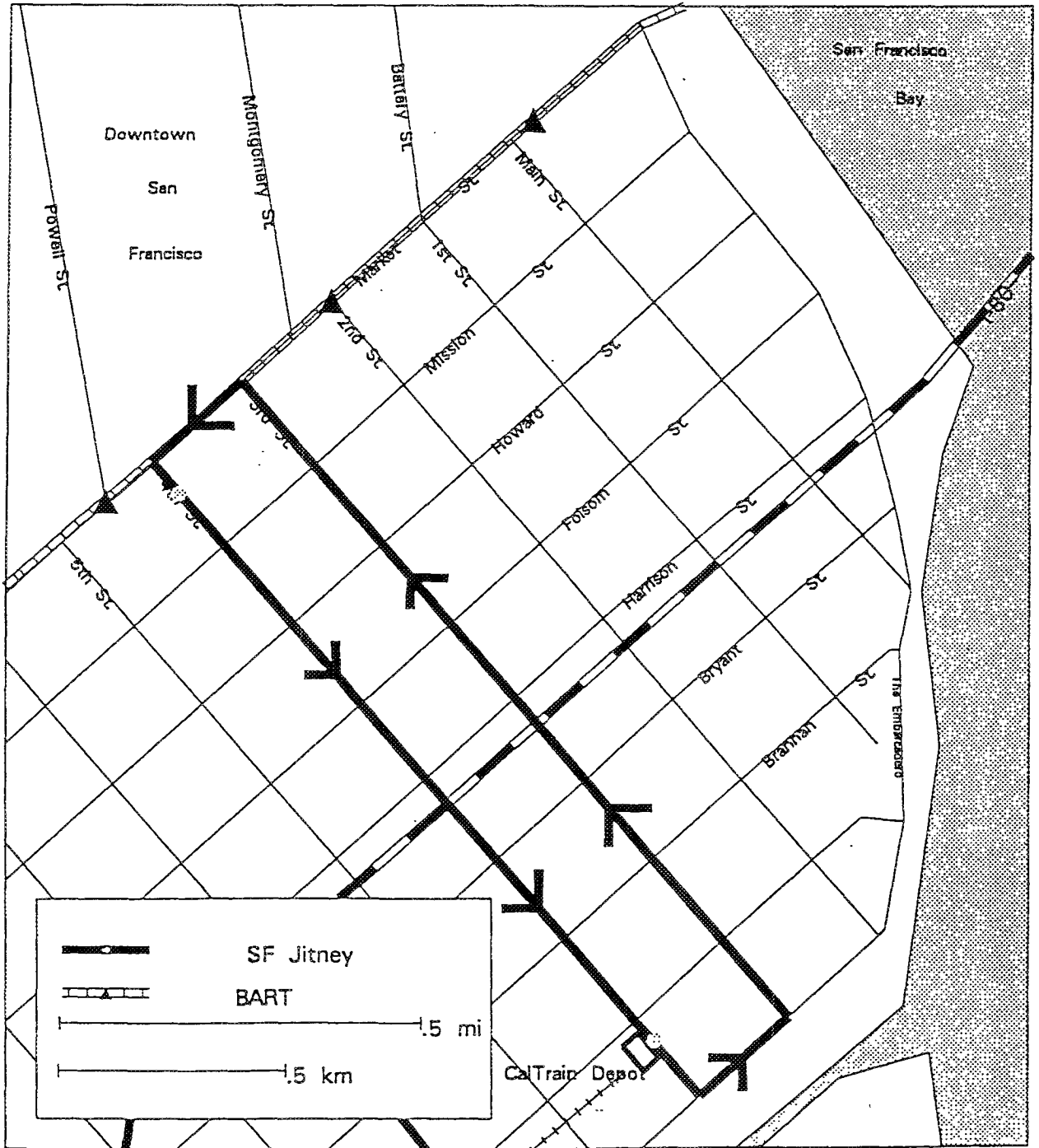
By the late 1980s, virtually every San Francisco jitney had ceased operations. A 1985 editorial in the *San Francisco Chronicle* lamented the passing of "another San Francisco institution, . . . and those doughty little cars that putter up and down Mission Street." San Francisco's once-vibrant jitney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

Part of the blame for the jitney's demise, however, lies within the industry itself. Over the post-war era, jitney operators in San Francisco were unable to effectively organize to protest minimum fares, routing restrictions, 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 redundancies, and coordinate services, as in much of the third world. Organizing and developing a single voice for effective advocacy proved extremely difficult.

The Sole Survivor

Today, a single jitney owner-operator remains. The sole survivor, Jesus Losa, has attained near-folklore status.¹⁴ Every weekday, Jesus 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 (Map 2.2). The blue bus is marked "jitney" and looks like it belongs in Tiajuana or Jakarta more than the streets of San Francisco (Photo 2.2). 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

¹⁴Mr. 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 means of intraurban transportation.



Map 2.2. Routing of the Jitney No. 97 Service between the CalTrain Depot and Market Street



Photo 2.2. San Francisco's Downtown Jitney Bus

serves an upmarket clientele. Loyal patrons give Mr. Losa rave reviews — in a 1988 *San Francisco Chronicle* article, one stated "I don't think I've ever missed a train with him" and another added "Jess really knows how to handle traffic" (Nolte, 1988, p. A2). 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. At an estimated average cost of \$0.75 per passenger (versus \$1.18 for Muni's motor buses), Jitney No. 97 nets around a quarter per passenger.¹⁵

Why is Jitney No. 97 San Francisco's sole jitney survivor? One reason is it hauls large numbers of people a short distance, and is able to complete circuits in time to meet incoming trains. Another is that Mr. Losa runs a no-frill, low-cost service, and works hard at his trade.¹⁶ Mr. Losa is a one-man business, driving and maintaining vehicles and taking care of all administrative chores (Photo 2.3). He

¹⁵Based on interviews, monthly expenses for insurance, gasoline, maintenance, and capital depreciation are estimated to be around \$3,800.

¹⁶As a one-man business surviving on a small profit margin, Mr. Losa has learned to be resourceful. 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.

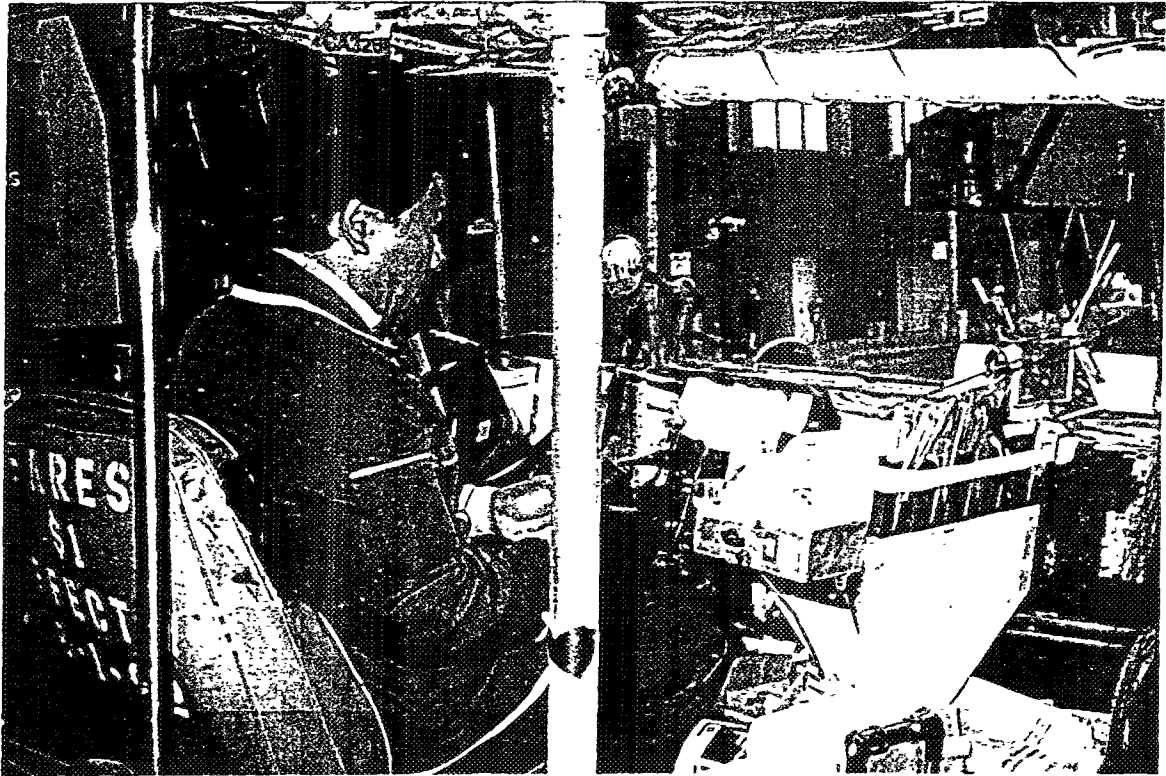


Photo 2.3. Jitney No. 97: One-Man Business

has no employees, thus relieving himself of expenses for employee health insurance, worker's compensation insurance, and paid vacations. If he is sick, which according to patrons is rare, the jitney simply does not run that day. Being an anomaly, Jitney No. 97 is not viewed by Muni bosses or taxi operators as a threat. Critics tolerate the jitney, and most San Franciscans are oblivious to it.

2.3.2. San Diego's Jitneys: Border Shuttles

Paralleling San Francisco's experiences, at the other end of the state, the San Diego region has witnessed a shake-out of the private jitney market in recent times. From a wide-ranging citywide service in the early 1980s, what was left 10 years later was largely a specialized, albeit successful, border shuttle service.

The 1980s: Rise and Fall of Citywide Jitneys

In 1979, the city of San Diego gained national attention when it legalized jitney services, in addition to deregulating taxis. With a large military and retirement population, and thousands of Mexican day-workers streaming across the border each morning, local taxi and charter van operators saw a potential market for jitney services, and pressed the City Council to revise local ordinances to accommodate them. The 1979 paratransit ordinance, which has not changed appreciably over the years, opened up the market to fixed-route jitneys seating up to 15 passengers and set no restrictions on pricing. Jitney operators only

needed to file their routes and tariff plans with the city, visibly display their fares, meet minimum insurance and fitness standards, and follow rules designed to reduce loitering and fare-hawking.¹⁷

Over the first few years, jitneys flourished in San Diego, reaching around 100 licensed vehicles operated by 15 companies in 1984. At its peak, weekly ridership eclipsed 15,000. San Diego's jitneys filled a market void, providing convenient and cheap transportation services to mainly transit dependents — military personnel, seniors, Mexican day-workers, and the poor. Most routes concentrated on linking downtown, military bases, and the Mexican border, and a few plied along boulevards connecting to tourist areas and Lindbergh Field, the international airport just north of downtown (Reinke, 1986). A steady flow of bi-directional traffic — Mexicans heading to the city, and navy personnel, seniors, and tourists heading to the border — meant jitney vans were often full, even on weekends and evenings. Jitneys were also a bargain. In 1984, a five-mile trip from Lindbergh Field to downtown San Diego cost \$3 by jitney compared to \$12 by exclusive-ride taxi.

As market competition heated up, however, problems began to surface. Some jitney and bus operators complained of unscrupulous and unfair practices, especially drivers stopping at bus stops for extended periods of time and hustling fares. At the recommendation of several task forces, the city amended the paratransit ordinance to create jitney holding zones, places where vans could queue for extended periods of time. In the 1988, the city transferred jurisdiction over jitneys and taxis to the Metropolitan Transit Development Board (MTDB), the regional transit planning and operating authority. Soon thereafter, a series of events — military cutbacks, economic recession, and growing competition from airport shuttles and the San Diego Trolley (which provides an economical ride from downtown to the Tijuana border) — began eroding away at jitney ridership. Complaints from the hospitality industry about overly aggressive jitney drivers led to the closure of jitney zones in tourist areas and the airport. By 1992, around 25 jitneys remained, operating in the San Ysidro portion of the city and serving the world's busiest border crossing. Today, only around 10 licensed and perhaps as many unlicensed jitney operators remain, providing short-haul services to almost exclusive Spanish-speaking customers.¹⁸ Thus, because of increased competition (including from subsidized providers like the San Diego Trolley) and exogenous events like base closures, what 10 years earlier had been a healthy, dynamic paratransit sector was by the 1990s reduced to a very specialized and limited niche service.

¹⁷The paratransit ordinance (No. 11) states: jitneys cannot remain standing on any public street in the city, except to load and unload passengers or when waiting in a holding zone; owners, drivers, or agents cannot solicit passengers on streets, sidewalks, hotels, public resorts, rail stations or airports; and jitney drivers must remain within 12 feet of their jitneys while in service.

¹⁸Evidently some former jitney operators switched from driving jitneys to driving more lucrative airport shuttle vans. These operators let their jitney licenses lapse, replacing them with California Public Utility Commission licenses for common-carrier services. State licenses are less restrictive than local jitney licenses, allowing service-providers to operate between cities and giving them the freedom to provide many-to-few services (versus point-to-point fixed route services).

San Ysidro Border Jitneys

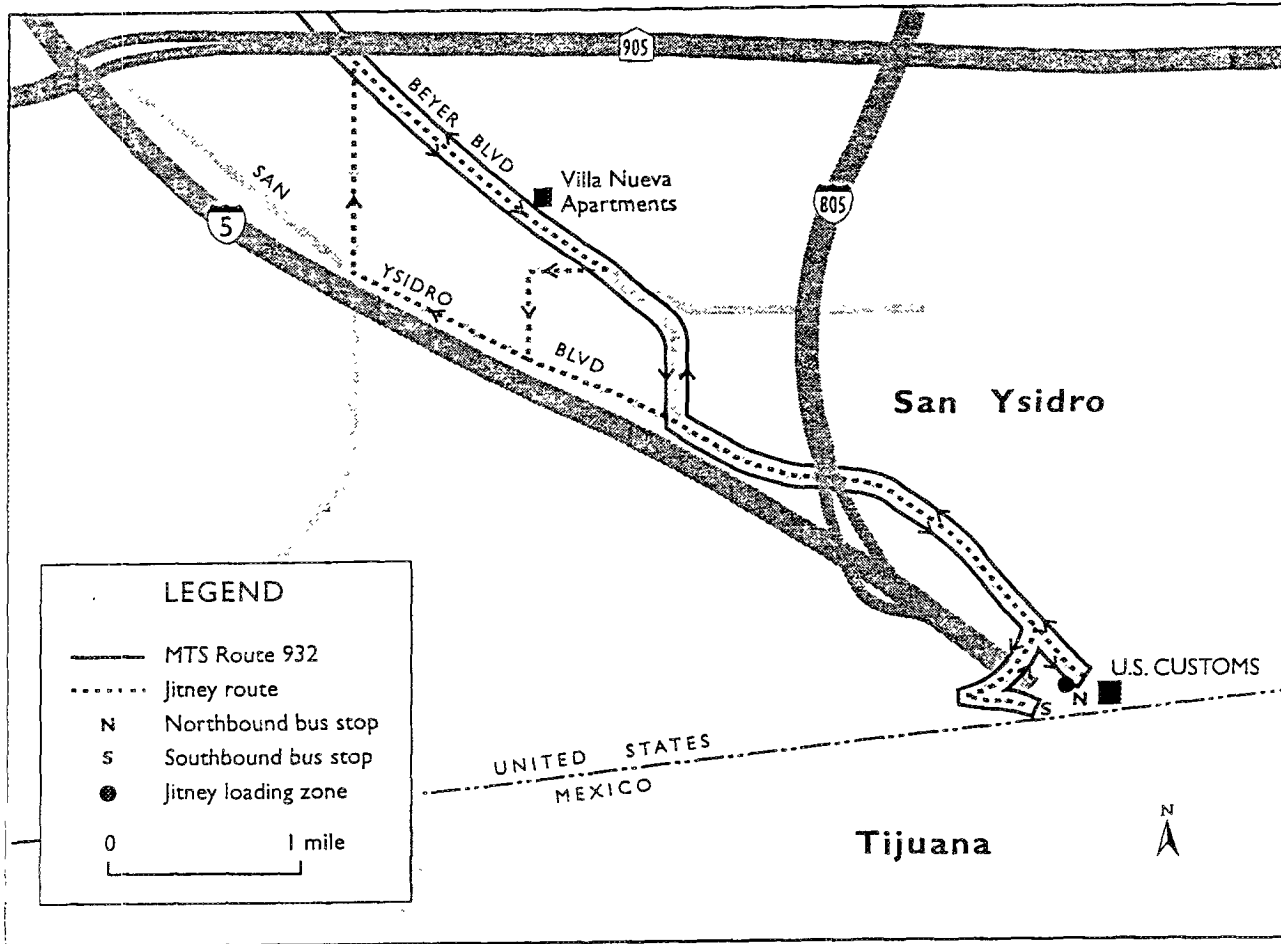
Presently, all 10 remaining jitney licenses are for the San Ysidro border area. MTDB has capped the number of licenses for San Ysidro at 10, hoping to avoid problems of jitney overcompetition that previously plagued the city. As shown in Map 2.3, jitneys run from the border crossing along San Ysidro Boulevard, the main commercial street in the area, to a large apartment complex (Villa Nueva) and to the edge of an industrial complex, making a six-mile loop. For much of the way, the jitney route matches the Metropolitan Transit System's Route 932.¹⁹ Jitneys are permitted to pick up and drop off passengers at bus stops and anywhere else a curb is not painted red. Most jitneys are bubble-top Ford Econoline vans that were previously used by rental car agencies as airport shuttles and are five to 12 years old.

All jitney trips begin and end at the border crossing, where the San Ysidro jitneys are allotted curb space for three vehicles (Photo 2.4). Nearby is the San Diego Trolley terminal and loading zones for other private transportation services, including Tiajuana shuttles, taxis, and inter-city buses (Map 2.4). Jitneys queue at the border area for as long as 15 minutes or until vehicles are full. During peak hours, jitneys waiting in a holding zone 900 feet away fill curbside loading spaces once they are vacated. Quite



Photo 2.4. Jitney waiting for passengers at the San Ysidro border crossing

¹⁹Route 932 is a contract service that runs from Centre City in downtown San Diego through the South Bay area and terminates at the San Ysidro border area. Southbound Route 932 terminates west of Interstate 5 and northbound Route 932 begins just south of the jitney boarding zone (see Map 2.3).

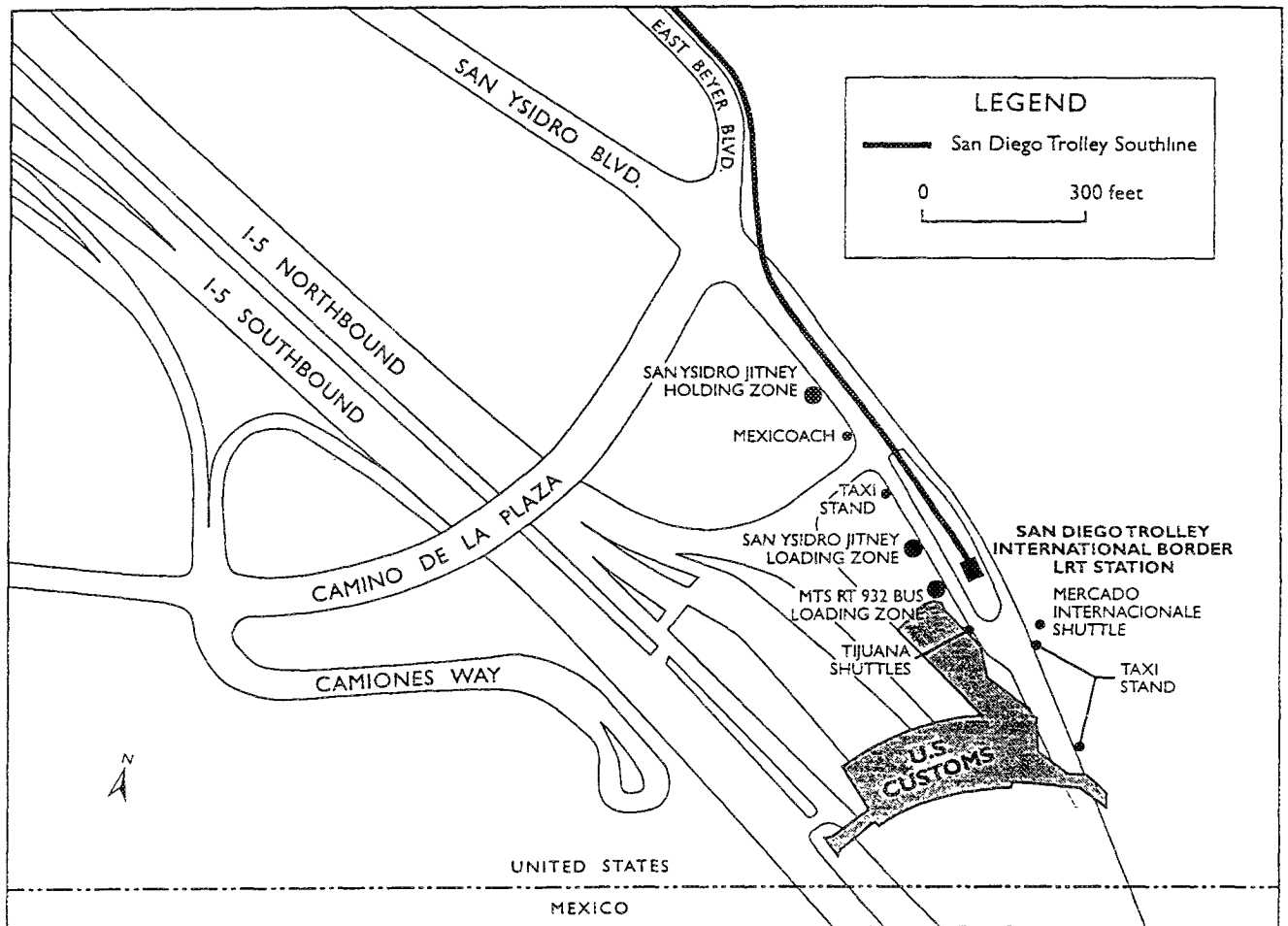


Map 2.3. San Ysidro Jitney and MTS 932 Routes

often, however, drivers circle the border area looking for fares instead of sitting idle in the holding pen. Whenever other drivers complain to MTDB officials, police usually step-up enforcement, though usually only for a week or so.

Presently, the going rate for a San Ysidro jitney ride is \$1, compared to \$1.50 for riding public transit (bus or trolley).²⁰ On an average weekday, the 10 jitney vans carry around 1,000 passengers, virtually all of whom are Latinos and regular customers. Marketing is by word of mouth. Most jitney riders appear to be captive — Mexican day-workers, kids heading to schools, low-income service workers, seniors going shopping, etc. Many non-captives, or choice riders, are making cross-border personal

²⁰Some drivers charge seniors \$0.75, what they would pay for a public transit ride. Small children sitting on their parents' laps travel for free.



Map 2.4. San Ysidro Border Station Loading Area

or business trips, opting to walk across the world's busiest border crossing rather than drive their cars and endure long queues at immigration check-points. On the Mexican side of the border, in Tiajuana, an even larger collection of jitneys and shared-ride taxis await arrivers. San Ysidro's jitneys are always full when leaving the border, sometimes with standing room only. Most trips are one to two miles, and turnover is frequent. During the ride, several conversations are usually going on in Spanish, with often-times the driver joining in. Small talk, combined with a small vehicle, make for an intimate ride.

Evaluating the cost performance of San Ysidro jitneys versus local bus runs is difficult because services are not directly equivalent — jitneys provide short-haul, localized services, whereas MTS line 932 is an intraregional route to downtown San Diego. Still, Route 932 is one of the highest-performing

public bus runs in the country, returning 83 percent of costs and incurring deficits of only 18 cents per passenger in 1994 (Table 2.2). Yet the San Ysidro jitneys outperformed Route 932, earning instead of losing 18 cents per passenger and generating revenues that exceeded full operating costs (including capital) by 22.5 percent.²¹ Cost savings were mainly due to lower wages — in 1994, San Ysidro jitney drivers earned \$4 to \$5 per hour (and no benefits) while contracted drivers for Route 932 earned \$8.31 per hour. Operating expenses for Route 932 will soon go up as the MTS replaces older buses with new, compressed natural gasoline (CNG) buses. Another factor in the jitney's performance edge, however, is higher average loads. In 1994, the 10 55-passenger coaches on Route 932 averaged just over 1,000 daily boardings and alightings at the border crossing terminal, not that much more than the 850 persons getting on and off of the 10 15-passenger jitney vans each day at the border.

In closing, in the course of a decade, the jitney industry of San Diego has gone from a fairly diverse citywide service to a highly specialized border-crossing circulator. A liberal regulatory environment helped nurture San Diego's upstart jitney industry; however, with time, the subsidization of

Table 2.2. Performance Comparisons of San Ysidro Jitneys and MTS Route 932, Average Weekday, 1994

	<u>Operating Cost^a/ Passenger</u>	<u>Profit (Deficit)^a/ Passenger</u>	<u>Cost Recovery Ratio (%)</u>
San Ysidro Jitneys	\$0.82	\$0.18	122.5%
MTS Route 932	\$1.03	(\$0.18) ^b	82.9%
<i>Route 932 as percent of Jitneys</i>	25.6%	—	47.8%

^a Cost estimates for Line Route 932 exclude debt service on capital purchases. Debt financing expenses are included for shared-ride taxis.

^b Although the adult cash fare for Route 932 is \$1.50, average fares are considerably lower because of the high volume of discount senior and student fares, and the use of discount passes.

Sources: Field interviews with jitney drivers; MTDB, Schedule of Base Statistics, B-10 Form, 1994; MTDB, *Metropolitan San Diego Short Range Transit Plan, FY 1993-99, 1992.*

²¹Cost data are estimates based on interviews of five San Ysidro jitney drivers. While jitneys run seven day per week, individual operators typically drive six days a week, at their discretion. For the approximately six-mile jitney loop, average weekly costs are as follows: gasoline and oil = \$120; insurance = \$77; maintenance = \$40; capital depreciation = \$27; licenses and fees = \$16; and labor = \$210. Thus, average weekly costs are \$490 compared to average revenue in-take of \$600, yielding a net weekly profit of around \$110. Drivers report high average maintenance costs because fairly old bubble-top vans are used and frequent stop-and-go wears down brake linings and tires. Amortized capital cost and debt service estimates are based on a \$5,000 purchase price for a used five-year-old vehicle, a seven-year ownership of the used vehicle, 100 percent loans secured at 12 percent interest, and a \$1,000 salvage value when sold (usually in Tijuana) at the end of the vehicle service life. Insurance premiums average \$2,000 every six months for the full set of liability coverage mandated by MTDB. Drivers report they often receive citations from police, usually for stopping in red curb zones to pick up fares. Included in the weekly license and fee expense is \$6, the pro-rated share of two \$152 traffic citations per year, what drivers say is typical. Only two companies own two jitneys and both hire hourly employees at minimum wage (\$4.25 per hour). Thus, most jitneys are independently owned and operated, incurring no significant administrative overhead expenses. Drivers report they take home around 35 percent of gross revenues, or around \$210 per week. Combined with the \$110 weekly profit, most drivers are earning only around \$16,000 per year.

public transit, coupled with military cutbacks and some degree of re-regulation, stunted its growth. Today, San Ysidro's publicly sanctioned jitneys face increasing competition from unlicensed "gypsy" operators who provide more demand-responsive service (compared to the 15-minute average headway of jitneys queued at the border). Overall, the San Ysidro jitneys are fairly marginalized services that are tolerated by detractors and largely ignored by most San Diegans. For those who ride them every day, however, the San Ysidro jitneys have found a loyal and appreciative following.

2.3.3. Atlantic City's Jitneys

Atlantic City, New Jersey, has the oldest continuing jitney service in the country. Its jitneys are also among the most heavily patronized — 275 trips per capita in 1995 — and most tightly self-regulated transit services in North America. And unlike elsewhere, much of Atlantic City's jitney clientele consists of middle-class workers who own cars. Equally impressive, Atlantic City's jitneys provide extensive urban transit services — 24 hours a day, 365 days a year — without any public subsidies.

These remarkable achievements are a product of both history and unique features of Atlantic City itself. Atlantic City's jitneys first entered the scene in March 1915, at the height of a paralyzing trolley strike. Two enterprising individuals, Frank Fairburn and S. W. Redmond, began driving their black model-T Fords up and down Atlantic Avenue, Atlantic City's main commercial strip, offering rides for a nickel. Within a year, nearly 500 jitneys of all makes and sizes were doing the same, operating when and where they chose with no regulatory constraints. Jitneys ran end-to-end along the four-mile Atlantic Avenue strip, adapting services to demand and staying out of neighboring communities so as to avoid state regulators. By late 1915, the Atlantic City and Shore Railroad, the trolley line operating along Atlantic Avenue, went into bankruptcy, a victim of jitney competition. The city responded by passing an ordinance in 1917 that forced jitneys off Atlantic Avenue and limited the number of licenses to 190, a number that has remained constant to this day. The jitneys simply moved one block to the east, on Pacific Avenue, where to this day they concentrate their trade.

Existing Jitney Services

During the first 35 years of service, passenger sedans were largely used to provide jitney services in Atlantic City. Following the second world war and to meet escalating demand, jitney sedans were replaced by 13-seat converted bread trucks, the vehicle configuration still in use today. Over the ensuing 50 years, Atlantic City's jitney services have remained essentially unchanged. Today, independent owner-operators drive their jitney minibuses along fixed routes focused on Pacific Avenue, the main thoroughfare paralleling Atlantic City's boardwalk and casino/hotel strip. A steady stream of jitneys run up and down Pacific Avenue during daylight hours, picking up and dropping off customers at designated jitney stops or when a vehicle stops at a red light (Photo 2.5). In this sense, Atlantic City's jitneys operate pretty much like conventional buses, though they follow no set schedules, a somewhat academic point since

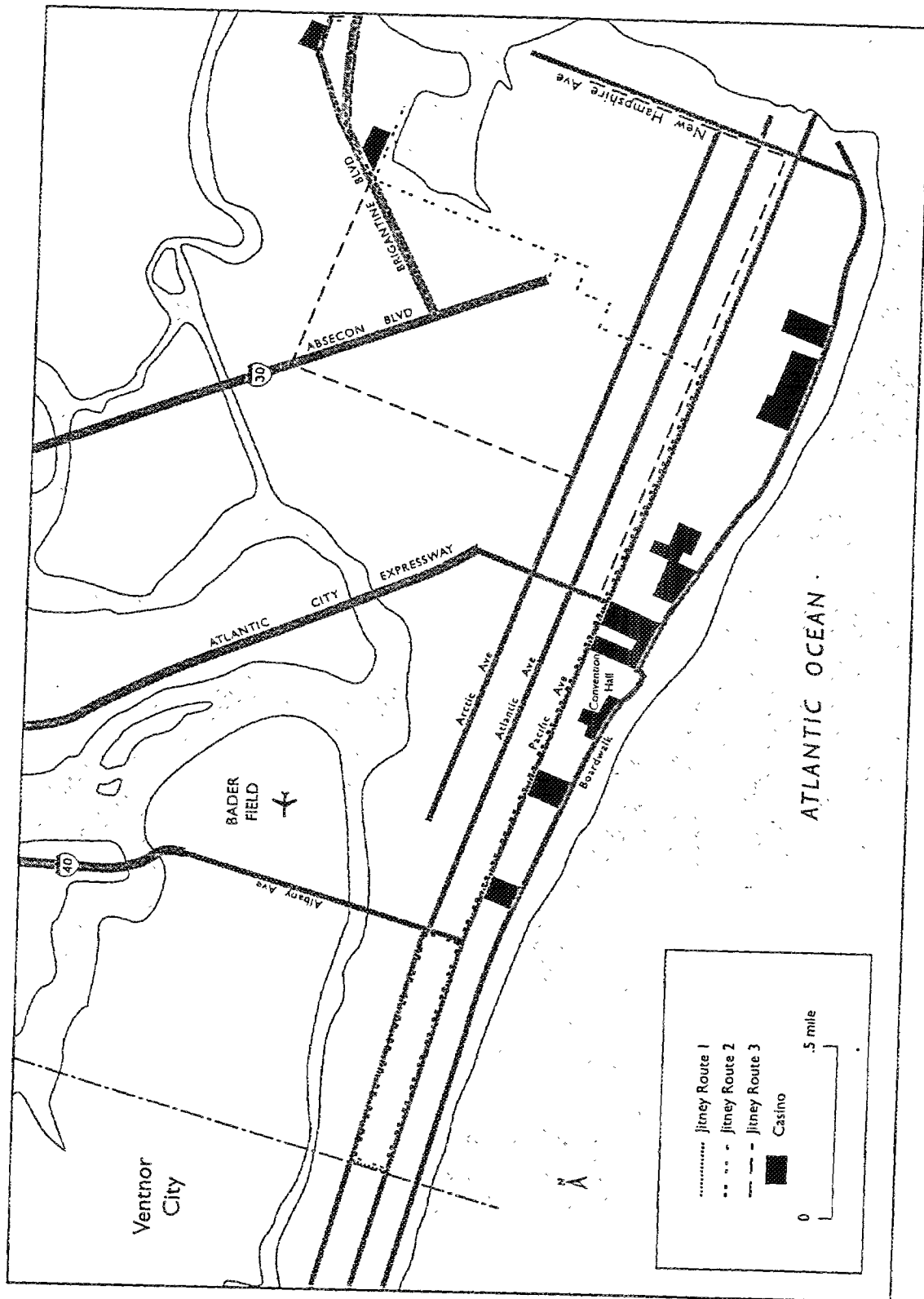
services are so frequent (averaging 2-3 minute headways along Pacific Avenue during busy periods and 5-6 minute headways other times from 6 a.m. to 6 p.m.). Today, Atlantic City has three fixed jitney routes (Map 2.5).

What most distinguishes Atlantic City's jitneys from conventional transit is that the driver is also the vehicle owner. By city ordinance, no sub-contracting is allowed. If a owner-driver is sick, the jitney vehicle does not operate that day. How much income owner-operators make comes down largely to how industrious and enterprising they are. Drivers tend to move briskly up and down Pacific Avenue, aided by synchronized traffic signals. They work hard at filling up seats, currently priced at \$1.50 per trip.²² City ordinances prevent standees, so key to financial success is frequent customer turnover. When pulling up to jitney stops, drivers stick out fingers to show the number of available seats; when vehicles are full, they indicate this with a sign hung on the windshield. Drivers tend to accelerate and decelerate quickly, trying to beat other drivers in the quest for customers. While this can at times make for an uncomfortable ride, especially for seniors (e.g., standard practice is to move as soon as the door is closed



Photo 2.5. Atlantic City Jitneys picking up customers at designated stops

²²Most jitney operators honor senior citizen fares, currently \$0.60 per ride for intracity bus services provided by Jersey Transit. Most seniors purchase multi-ride senior discount coupons at \$0.60 per ride. Drivers are reimbursed the value of all coupons returned.



Map 2.5. Atlantic City's Jitney Routes

and traffic lights turn green, regardless if the customer is seated), it also results in high vehicle efficiency — high loads per revenue mile of service.

Key to rapid customer turnover and efficient operations is the unique nature — both spatially and temporally — of travel demand in Atlantic City. Situated on a barrier island 48 blocks long and 15 blocks wide, Atlantic City has a compact and accessible settlement pattern. Its waterfront is dotted with casinos, hotels, restaurants, and other tourist attractions. A significant share of the city's workforce is headed to these destinations on a regular basis. This makes for very efficient bi-directional travel, minimal deadheading, and frequent on-off movements along the well-defined four-mile Pacific-Atlantic Avenue corridor. As 24-hour businesses, moreover, casinos attract employees and customers all hours of the day. Tourists also tend to provide a year-round customer base, including on weekends and in the late evening. Thus, Atlantic City's jitneys are not burdened by the extreme peaking problems that plague most American transit operations. Overall, Atlantic City provides a near-perfect operating environment for jitneys — frequent seat turnovers spread over numerous hours.

Today, Atlantic City's jitney ridership stands at around 11 million trips annually. This averages to some 63,000 annual trips per jitney vehicle — a higher level of vehicle utilization than that achieved by New Jersey Transit's bus division, which averaged 57,500 passengers per vehicle (for statewide urbanized services, including those under contract) using much higher capacity buses. (New Jersey Transit operates buses along Atlantic Avenue, though its market is primarily Atlantic City workers living in surrounding communities making inter-city trips; also providing inter-city services are some 1,200 daily casino buses and commuter rail services.) Since casino gambling was legalized in Atlantic City in the early 1980s, jitney ridership has increased by about 3 percent annually. Most patrons are regular customers who work at casinos, hotels, and business establishments along the Pacific-Atlantic Avenue corridor. That they loyally patronize the jitneys — despite fairly cheap commercial parking rates of around \$2-\$3 per day and the absence of much traffic congestion in Atlantic City — is a testament to the jitney's superior quality of service.

It is because of high productivity that mass transit services in Atlantic City are essentially non-subsidized. Drivers earn enough profit to maintain a middle-class lifestyle, though without having to work inordinately long hours.²³ Drivers work hard while on the job, but are rewarded with plenty of leisure time — at least three days off and typically no more than 30 hours of work per week. Drivers,

²³Examining the economics of the jitney business is problematic because all information is proprietary. For outsiders, only guestimates are possible. According to inside sources, the cost of owning (including vehicle depreciation and debt repayment), operating (including insurance, fuel, association dues, and fees), and maintaining an Atlantic City jitney is around \$40,000 to \$45,000 annually. Assuming an average fare of \$1.30 per trip (accounting for \$0.60 senior fares) and that the estimated 11 million jitney riders are evenly distributed among 180 jitney owners, this yields an average annual income of \$36,900 (using a mid-point \$42,500 annual cost figure). Drivers also build equity through appreciation in medallion values. A casual observation of the homes where jitney vehicles are parked throughout Atlantic City further suggests that most owner-drivers are earning more than the typical service worker in the city.

moreover, enjoy flexible work schedules, going in when they please and taking as much vacation time off as they want. It is the availability of substantial leisure time, while being able to maintain a middle-income lifestyle, that seems to appeal most to those in the business.

Regulation Through Route Associations

Over the years, the Atlantic City Route Association has evolved into a self-regulating organization with its own internal, somewhat rigid rules of operation. To a large degree, the Atlantic City Route Association, a non-profit, cooperative which dates back to the original jitney services of 1915, has subsumed the role of service regulator from the city. The Association has become so politically powerful that the city accedes to its wishes on almost all matters related to jitney operations. Municipal oversight is largely limited to matters of licensing, fare-setting, and jitney routing, though even in these areas the Jitney Association wields considerable influence. While Atlantic City officials have kept the number of jitney licenses at 190, this is done with the tacit support of the Association, whose members wish to protect their monopolistic positions and, in particular, their jitney investments. In mid-1995, the market value of a jitney medallion and accompanying vehicle was around \$160,000, up considerably from around \$100,000 five years earlier. Over the past decade, Atlantic City's medallion values have outpaced inflation and even outperformed the stock market, riding the wave of tourism and casino business.²⁴ However, these are largely monopolistic profits — a sign of an overly restricted jitney industry, one where limits on market entry have remained unchanged in 85 years.

The Atlantic City Jitney Association performs multiple functions. One, it organizes services so as to ensure high efficiency and minimum redundancy while complying with municipal requirements, the main ones being that there be continual services and that at least 10 jitneys operate on Pacific Avenue at all times. Second, the Association advocates and promotes the interests of its membership, particularly in matters related to pricing and service provision.²⁵ Third, it provides member services, such as a jitney station and garage (where all routes begin, multi-ride tickets can be purchased, route maps are available, etc.), routine vehicle maintenance, on-site fuel (at a discount), group liability insurance, and a driver's cafeteria. Lastly, the Association maintains internal rules of conduct, sets operating standards, runs its own traffic court, and serves as the arbiter of driver disputes.

²⁴Over the years, jitney medallion values in Atlantic City have followed the fortunes and misfortunes of the city itself. In the late 1950s when Atlantic City was a popular tourist destination, the cost of a jitney medallion with a used minibus was around \$6,000 (unadjusted). By the mid 1960s, when Atlantic City lost some of its luster and tourist business, the cost of a jitney franchise and minibus had slipped to as low as \$2,500. With the legalization of casino gambling in the early 1980s and the subsequent boom in tourism, the fortunes of Atlantic City's jitney-owners have risen in parallel.

²⁵In 1994, for instance, Atlantic City officials proposed a contraflow lane on Pacific Avenue. Fearing that the lane would slow down jitney operations, the Association organized a vocal protest, lead by jitney operators and their families, of the proposal. Bowing to political pressure, the contraflow lane proposal was quickly abandoned.

To perform these functions, the Jitney Association has a fairly elaborate internal structure. Its membership consists of all jitney owner-operators in the city, a number that fluctuates between 170 and 190 (the maximum number of licenses allowed). The Association is overseen by a full-time Director, who according to the organization's by-laws must be a former driver elected among members. The Director meets regularly with the Association's board, comprised of six drivers elected by their peers. Besides setting internal operating policies, the board members also serve as in-field supervisors, each of whom oversees the operations of 30 to 32 independent owner-drivers.

A particularly important function of the Association and its field supervisors is to rotate driving assignments among routes so that everyone gets a fair allocation. This is essential toward preventing overcompetition on the more lucrative Pacific Avenue corridors, mainly Routes 1 and 2, and ensuring at least minimal service provision on the least profitable corridor, Route 3, which mainly serves interior neighborhoods of the city.²⁶ Each driver has the same schedule on a staggered basis: two days driving Route 1 and then two days off, followed by two days driving Route 2 and then two days off, followed by one day driving Route 3 and then one day off, and then starting the cycle again. Drivers are allotted two shifts per day (e.g., 6-10 a.m. and 12-4 p.m.), and all are assigned several stints of late-night/early-morning services during the course of a month. If drivers decide not to work, supervisors are responsible for mobilizing other drivers to ensure minimal service levels are maintained.

On any given day, 90 jitneys ply along the three routes, with another 90 jitneys potentially in reserve. There are no fixed departing schedules, and when in the field, drivers adjust their own spacing. Supervisors monitor flows along routes they operate on, maintaining contact with their assigned drivers by citizens band radios. If demands are heavy in certain areas and slack in others, supervisors reassign drivers to different routes or directions. This has produced a form of "demand-responsive" paratransit, enabling jitney services to immediately react to shifts and aberrations in ridership.

To discourage overly aggressive driving and promote fairness, the Association has also adopted strictly enforced operating practices and rules of conduct. One is that a driver cannot pass another driver on a route unless the jitney vehicle in front is stopped picking up or dropping off passengers (Photo 2.6). If a driver infraction is observed by a supervisor or another driver files a complaint, the Association has its own traffic court. A jury of drivers' peers adjudicates these matters, and penalties can be severe for those found guilty (including stiff fines and several days suspension of driving). The worst punishment those found guilty (including stiff fines and several days suspension of driving). The worst punishment is a critical report to City Hall, which is likely to lead to a loss of the offender's mercantile license. The

²⁶Route 1 operates principally along Pacific Avenue and segments of Atlantic Avenue in the southern portion of Atlantic City. Route 2 follows a similar alignment to Route 1, though it does not go as far north on Pacific Avenue, instead dog-legging to the interior of the island to serve the Marina area, the newly emerging casino district that is currently the site of Trump Castle and Harrah's. Route 3 operates along a much shorter segment of Pacific Avenue than the other two routes, operating principally along secondary roads that connect the Marina area with the Inlet residential area at the northern edge of the city.



Photo 2.6. Route Association rules allow drivers to overtake jitneys only when vehicles are boarding or discharging customers at designated stops.

Association also instills a sense of discipline by maintaining a driver's dress code — a blue shirt, a ball cap with the Jitney Association's logo, and khaki pants.

Overall, through a combination of self-policing and self-regulation as well as efficient service practices, the Atlantic City Jitney Association has achieved what no other American city can lay claim to: an almost exclusively privatized intracity urban transit service that requires minimal government oversight and no government subsidies.²⁷ The Association and its members have been smart enough to recognize that the key to the long-term survival of Atlantic City's jitneys are policies that promote both efficiency and fairness. Thus, the Association has put into place rules and standards that prevent the kinds of problems that have historically plagued the jitney industry — e.g., cutthroat competition, overly aggressive driving, cream-skimming — from surfacing. Atlantic City's residents, workers, and visitors, in addition to jitney drivers themselves, have been the resulting beneficiaries.

²⁷In coming years, Atlantic City's jitneys may begin to receive external subsidy support. Presently, the Jitney Association has applied for Section 3 capital grants from the Federal Transit Administration to acquire new vehicles that they hope will have some of the charm of San Francisco's famed cable cars and similarly become an icon for the city. The Association has sponsored a competition for designing a new Atlantic City jitney vehicle that it plans to phase in over a five-year period. Casino owners are providing a 20 percent match to Section 3 grants for purchasing future vehicles.

In sum, Atlantic City demonstrates that successful fixed-route transit are possible if high-quality services are delivered. Part of the success is attributable to Atlantic City's unique history, physical layout, and character. However, a large part is also due to the entrepreneurial drive of jitney owner-operators and the evolution of an internal organizational structure that promotes self-regulation and self-enforcement.

2.3.4. Miami's Jitneys

In contrast to Atlantic City, jitneys in metropolitan Miami compete head-to-head with subsidized public transit services. Sociodemographically, Miami's jitneys have also historically served a more distinct market niche, namely Cubans and others of West Indies heritage, in addition to inner-city blacks. And unlike as in Atlantic City, there is no equivalent to a route association for organizing and internally policing jitneys in greater Miami. This, along with the fact that Miami presents a much larger and more complex urban setting for delivering private jitney services, has at times led to overcompetition and a mass influx of unlicensed, illegal jitney operators. As a result, local government has taken on an increasingly proactive stance in regulating and enforcing jitney policies in greater Miami, certainly much more so than in Atlantic City. For these and other reasons, Miami offers valuable insights into the opportunities and potential problems of expanding private jitney services in U.S. cities.

This section reviews five phases of jitney evolution in Miami: (1) traditional services (pre-1990); (2) proliferation of unlicensed operators (1990-91); (3) local government crackdown (1991-92); (4) emergency expansion (1992-93); and (5) maturation (post-1993). These phases follow the ebbs and flows of private jitney services in greater Miami, providing insights and lessons into the inter-workings of the industry as well as the intended and unintended effects of government policies on service practices. Miami's experiences also highlight the potential volatility of laissez-faire paratransit services in the U.S., suggesting when and where they might be best suited.

Traditional Services

Miami has a long history of private jitney services targeted at transit-dependent populations. Their origins can be traced to the early part of this century, when minority entrepreneurs began serving low-income enclaves north of the city that were without streetcar services. By the 1930s and 1940s, several jitney companies had formed, operating sedans between minority neighborhoods and service jobs in downtown Miami and Miami Beach. By 1980, three companies — Liberty City Jitney, King Jitney, and Dade Jitney — were licensed by the city to provide hail services on 28 semi-fixed routes. All three ran minibuses and sedans between predominantly black neighborhoods in north and northwest Miami, notably Overtown and Liberty City, to downtown. Most company owners leased their permits and vehicles to independent drivers for a flat fee. Drivers kept all fare receipts and covered operating costs.

Applications to operate new jitney routes and expand services outside of Miami's city limits led to the passage of countywide ordinances in 1981 and 1985 that, although regulatory in nature, reconfirmed the area's support for private paratransit services and the reliance on market forces to govern entry into the industry.²⁸ However, because new applicants proposed routes that duplicated or closely paralleled Miami Metrobus services or pre-existing jitney routes, several special studies and task force reports recommended against issuing new permits.²⁹ Thus, few new permits were issued in the 1980s, save for six temporary permits issued to jitney operators in 1986 to fill in service gaps caused by cuts in Metrobus services. Because of a public outcry at the loss of Metrobus service, Metro Dade Transit Authority (MDTA) later restored services in some areas and revoked the temporary permits of several jitney companies. This caused much bitterness among the affected jitney operators, and to this day is cited by Miami's jitney industry as evidence of the County's duplicity (Urban Mobility Corporation, 1992). Still, by 1988, the number of licensed jitney operators in Dade County stood at 11 (up from just 3 eight years earlier), and some 90 jitney vans and minibuses operated along 20 different routes serving predominantly African-American and Cuban neighborhoods.

Proliferation of Unlicensed Operators

During the 1980s, Miami's continuing influx of immigrants from Cuba and other Caribbean nations, many of whom patronized jitneys in their homelands, combined with local government's tight control of market entry, set the stage for private entrepreneurs to initiate unlicensed minibus services. The discovery of a loophole in a 1981 Florida statute that barred local governments from regulating intercity transportation services opened the floodgates to unlicensed jitneys in early 1990.³⁰ Privateers took advantage of the loophole to launch unlicensed "intercity" jitney services within metropolitan Miami, running between outlying municipalities, like Hialeah, Coral Gables, and Miami Beach, and downtown Miami. From early 1990 to early 1992, the number of jitneys operating in Dade County jumped from

²⁸Ordinance 81-17, enacted in 1981, formally established Dade County's responsibility for regulating passenger motor carriers, including jitneys. Ordinance 85-20, which remains the current policy of the Dade County Board of County Commissioners, embraced jitneys as a necessary part of the local transportation scene, though it set policies which prohibited expanded jitney services in major Metrobus or established jitney corridors.

²⁹A 1983 Jitney Policy Report, prepared by the Metro Dade Transportation Administration, recommended restricting new jitney services to areas outside of high-density transit corridors. This effectively precluded any additional jitney services. In 1987, a task force composed of County staff, representatives of the jitney industry, and transit interests was convened to consider ways of further expanding jitney services in keeping with growing Federal interest in privatization. Because of the task force's diverse make-up, little consensus was ever reached on major issues, resulting in a stalemate and inaction.

³⁰Section 341.102 of the 1981 statute reads: "No county or municipality shall unduly restrict or impose any economic regulation upon the use of nonpublic-sector buses engaged in intercity transportation, and any existing restrictions shall be invalid. However, a county or municipality may enact necessary safety and traffic ordinances." This meant that localities could not restrict jitney services beyond citing vehicles and operators for safety and traffic violations.

around 90 to an estimated 400, the vast majority of which were unlicensed.³¹ Jitneys could be found on nearly every major travel corridor in Dade County, outside of those in well-to-do and predominantly Anglo neighborhoods. Some entrepreneurs concentrated on high-volume corridors, like Flagler Avenue, Miami's major east-west thoroughfare, competing head-to-head with Metrobus services. Others targeted corridors with large tourist, senior, and service-industry populations, like Miami Beach. Some went after jitneys's "bread-and-butter" markets — low-income Hispanic and black neighborhoods. All charged \$1 fares, the same as Metrobus. Along the heaviest trafficked corridors — West Flagler Avenue and N.W. 2nd Avenue — jitneys became so "thick" that average headways during daylight hours were a mere 2 to 3 minutes. Paratransit's 1990-92 "open season" in south Florida proved quite volatile, however. With operators coming and going, and companies dividing and merging, jitney routes and services were in a constant state of flux. One study found that around 20 percent of surveyed jitneys stuck to a fixed route. Routes acted as magnets for 40 percent of the jitneys, as they oscillated in and around side streets, but always pulled back to main thoroughfares. The other 40 percent favored a particular area, roaming around 50 to 100 city blocks in search of customers (Parsons Brinckerhoff Quade and Douglas, 1993).

The proliferation of unlicensed jitneys brought sharp criticism from Metrobus officials, who charged jitney operators with cream-skimming — serving only profitable corridors and leaving low-demand areas, weekend operations, and other high-deficit services to Metrobus. Jitney operators countered that they served a distinct and different submarket — those who value shorter waiting times, faster travel, the ability to flag vehicles at will, and riding with others of a similar cultural background. One study, conducted by the Urban Mobility Corporation (1992), sided largely with the jitney operators. It estimated that Dade County's 400-some jitneys carried 43,000-49,000 weekday riders, or around one-quarter of Metrobus's weekday ridership. A survey of 570 jitney riders revealed that more than 50 percent "always ride the jitney" and only 31 percent said when deciding between catching a jitney or Metrobus, they use "whichever vehicle arrives first." Over 30 percent of the respondents, moreover, said they would use some other mode other than Metrobus if jitneys were not available. The Urban Mobility Corporation (UMC) study concluded that Metrobus lost around 10,000 daily riders due to competition from jitneys, and that only around one-fifth of jitney patrons were formerly bus riders. These numbers were derived based on declines in Metrobus ridership on routes with jitney competition over a 30-month period, adjusting for the effects of a fare increase during this time.

A 1994 study by the Center for Urban Transportation Research (CUTR) challenged the UMC findings, concluding that losses in Metrobus ridership corresponded very closely with the influx of unli-

³¹A 1992 survey, by Parsons Brinckerhoff Quade and Douglas (1993), found that 18 companies owned and operated some 340 jitneys, and 35 jitneys were owned and operated by individuals. Two of the 18 companies — Metro Jitney and Minibus Owners Association — operated around half of all known jitneys. The Owners Association was a loose confederation of independent owner-operators that coordinated services along six routes. The survey also identified nine primary jitney corridors in Dade County, all serving high-volume thoroughfares in direct competition with Metrobus services.

censed jitneys in three of four major corridors in where jitneys were most common. Part of the reason for the discrepancy lies in how the two studies measured ridership losses. The UMC report looked at ridership in the aggregate while the CUTR study examined changes in rates, specifically riders per revenue hour, thereby controlling for the effects of service changes. While the weight of evidence suggests that most jitney customers were not siphoned away from Metrobus, in some corridors, heavy competition clearly hurt Metrobus in the pocketbook, particularly at a time of sharp cuts in government subsidy support. While one might argue that Metrobus should have responded to lost patronage by curtailing bus services, union clout and public-employee labor protection laws effectively precluded such responses.

Notwithstanding the possible negative repercussions of unlicensed jitneys on Metrobus's finances, surveys and data from the 1990-92 expansion period provide a valuable glimpse into the market and performance characteristics of free-enterprise paratransit in a U.S. context. A 1991 survey by Behavioral Science Research, a Miami-based consulting firm, found that south Florida's jitney riders are predominantly low-income workers (78 percent earned below \$20,000 per year), and that a large proportion are recent immigrants (53 percent spoke no English).³² Many came from Jamaica, Puerto Rico, Haiti, and other islands of the West Indies where private jitneys are common. (In 1990, greater Miami had a larger share of immigrants from the West Indies, 5.5 percent, than any other U.S. metropolitan area.)

In terms of vehicle productivity and cost performance, jitneys generally outperformed subsidized Metrobus services. Such comparisons are problematic in that no single reliable data source on jitney services is available, nor are data across public and private operators exactly equivalent. In the 1992 study, the Urban Mobility Corporation derived ridership, vehicle supply, and operating cost estimates for Miami's jitney (for licensed and unlicensed services combined). Comparing these estimates with Section 15 data compiled for MDTA Metrobus services, Table 2.3 shows that jitneys averaged fewer passengers per vehicle, but were far more economical than Metrobus services. Of course, jitneys' lower average vehicle loads reflects the use of smaller vehicles. Still, despite the fact that Metrobuses typically have four to five times the capacity of private minibuses, jitneys averaged just 30 percent fewer passengers per vehicle in 1992. At an average operating expense of \$73 per vehicle per day, jitneys cost a fraction of what it took to operate a Metrobus.³³ With each jitney driver averaging 117 daily passengers at a dollar a head, the typical driver cleared around \$45 per day, comparable to a minimum wage for an 8-hour workday. This yielded a profit of around 40 cents per rider, compared to a loss of over a dollar per passenger for Metrobus. As with other paratransit services examined in this chapter, Miami's jitneys maintain a cost advantage because input costs — labor, equipment, overhead, etc. — are far cheaper. And competition keeps costs low.

³²This survey is summarized in the Urban Mobility Corporation's 1992 report.

³³These daily cost estimates are based on information obtained from a survey of jitney drivers, conducted by the Urban Mobility Corporation. The survey found that average daily cost broke down as follows: \$15 for insurance, \$20 for fuel, \$10 for capital depreciation, \$16 for maintenance, and \$11 for lease fees.

Table 2.3. Comparison of Ridership and Operating Cost Statistics Between Private Jitney and MDTA Metrobus Services, 1992

	Jitneys	Metrobus	Jitneys as % of Metrobus
Passengers per vehicle revenue hour ^a	16.3	31.5	51.8%
Annual passengers per vehicle in service ^a	30,900	43,700	70.7%
Daily operating cost per passenger ^b	\$0.62	\$2.07	30.0%
Daily operating cost per vehicle ^b	\$72.00	\$507.00	14.2%
Average profit (loss) per passenger ^a	\$0.39	(\$1.03)	—

^aFor jitney services, passenger trips are counted as single revenue-paying journeys. For Metrobus services, passenger trips are counted as unlinked journeys, which means each leg of a multi-leg trip is treated as a single trip. Thus, Metrobus ridership includes trip segments where transfers are used. This tends to inflate the count of passengers on Metrobus relative to that of jitneys.

^bCost estimates for jitneys include capital depreciation and debt service payments. Cost estimates for Metrobus services include capital depreciation on equipment, but not debt service.

Sources: Urban Mobility Corporation (1992), Federal Transit Administration (1992).

One other evaluation from this period compared Miami's jitneys and Metrobus, mainly from a consumer's point of view. After a week of jitney and transit riding, two reporters from *The Miami Herald* found jitneys to be far superior in terms of service frequency, speed, and "friendliness."³⁴ Metrobus earned higher marks for cleanliness, comfort, and driver vigilance. Services were rated similar in terms of price value. The reporters gave jitneys a five-star rating for friendliness, noting: "The minibus drivers were courteous and willing to work with passengers, whether it was stopping at a last-minute wave of a hand or giving change for a five-dollar bill. The atmosphere was friendly and folksy." Though highly subjective, this assessment highlights the fact that jitneys and conventional bus transit are qualitatively different. Despite problems, the 1990-92 period of jitney expansion in greater Miami meant local residents enjoyed far more service-price travel options than most Americans.

Local Government Crackdown

At the urging of Dade County politicians, Florida's state legislature passed an amendment in late 1990 that sought to close the loophole that allowed the proliferation of unlicensed jitneys. The amendment limited statutory exemptions to "intercounty" instead of "intercity" transportation, effectively restoring county control over jitney services. Soon thereafter, Dade County enacted legislation that authorized stricter enforcement, including the impoundment of illegal jitneys.³⁵ During the first year of

³⁴The article, *Minibuses vs. Metrobuses*, published in the April 14, 1991, issue of *The Miami Herald*, is reviewed in the Urban Mobility Corporation (1992) study.

³⁵The Ordinance, number 91-84, allowed the impounding of vehicles by County officers for such violations of the Motor Vehicle Code as failure to obtain a Certificate of Transportation, an operating permit, a chauffeur's registration, proper insurance, or safety inspection papers.

the ordinance, illegal jitneys multiplied so rapidly that their sheer numbers overwhelmed enforcement capabilities. In response, Dade County marshaled its resources in mid-1992 and made jitney enforcement a top priority. Working together, the Department of Consumer Services, Metro-Dade police, and regulatory personnel from other county agencies virtually eliminated illegal jitney services by late 1992. During 1992, over 1,200 citations were issued and nearly 700 vehicles were impounded. Early on, the county's crackdown seemed to only force marginal operators out of business. Many others quickly reclaimed impounded vehicles and placed them back into service. However, by mid-1992, stepped-up enforcement took many illegal jitneys out of circulation for good. Growing concerns over public safety made this imperative. A mid-1992 enforcement raid revealed the seriousness of the situation — 65 percent of jitney drivers were found to have no chauffeur's licenses and 48 percent were cited for safety violations.

For Metrobus, stepped-up enforcement yielded immediate benefits. Metrobus ridership for the month of July 1992 was 13 percent higher than in July 1991, while revenue increased by 19 percent (Center for Urban Transportation Research, 1994). Although MDTA had to add bus runs to make up for reduced jitney services, daily farebox revenue was up by around \$15,000 as a result of the enforcement campaign.

Emergency Expansion

Hurricane Andrew, which struck south Dade County with devastating force on August 24, 1992, brought new life to Miami's receding jitney industry. The disaster disabled 20,000 cars, dislocated over 200,000 residents, and damaged or destroyed 85,000 businesses. In the wake of this mass destruction, jitneys were quickly enlisted to provide emergency transportation services. A \$46 million grant from the Federal Emergency Management Agency (FEMA) enabled MDTA to hire four existing contractors to provide expanded services. A standard turnkey rate of \$28 per hour (revenue service plus deadhead hours) was negotiated with the four contractors. The contractors, in turn, recruited around 220 jitney operators, most of whom operated illegally just several months earlier, to provide legitimate services at a guaranteed rate of \$15 to \$21 per hour. Since most operators were averaging less than half these amounts as independents, many jumped at the opportunity to provide fixed-rate subcontracted services.

Dade County officials worked closely with jitney operators to quickly bring them into compliance with local insurance and safety standards. Vehicle inspections, for example, were conducted seven days a week, and loans were provided to upgrade minibuses. Since many jitney operators already had vehicles ready to go, were familiar with south Dade County, and knew how to operate minibuses efficiently, they were a natural choice for providing supplemental transit services. Enlisting their services effectively solved the illegal jitney problem since more than half of illegal operators became legally employed. Others were able to find more lucrative job opportunities in the massive cleanup and reconstruction efforts.

Within two weeks of the hurricane, jitneys were operating along 12 fixed routes in south Dade County, free-of-charge. A major trunk route was established along U.S. Route 1 (South Dixie Highway)

between Florida City (an area with a large migrant farm-worker population) and the Dadeland South station, MDTA Metrorail's southern terminus, a distance of some 15 miles (Photo 2.7). Branching out were feeder routes tying residential neighborhoods to make-shift shopping areas and employment sites. Minibuses operated on 5- to 10-minute headways for up to 18 hours a day. Services were adjusted almost daily to respond to shifting travel needs within the hurricane-impacted area. By the spring of 1993, "emergency" jitneys were carrying around 21,000 passengers per day. And by August 1993, one year after Hurricane Andrew, Metrobus ridership was up 35 percent on routes that had previously been plagued by illegal jitney competition.



Photo 2.7 . Private jitneys at the South Dadeland Metrorail Terminus provide "emergency" transportation services. A field inspector records hours of service and monitors operations to ensure only legitimate jitneys are operating.

Maturing of an Industry

County officials hoped to keep the 200 or so South Dade jitney operators legally employed once FEMA support was withdrawn in August 1993, yet the County Board of Commissioners ruled out any subsidy support to jitneys. Having become accustomed to guaranteed pay at up to \$21 per hour, few jitney operators showed an interest in providing unsubsidized paratransit services in south Dade County, away from jitney's traditional customer base in north Miami. FEMA-supported services

provided incomes far greater than what most operators were able to eke out prior to the hurricane. Most were not interested in returning to long hours and the hectic pace of pre-hurricane jitney services. Some operators used their profits from FEMA-supported services to open legal businesses of their own. More lucrative construction-related job opportunities pulled others away from the jitney industry altogether (Center for Urban Transportation Research, 1994). When the County initially requested bids for operating services in south Dade, all bidders sought guaranteed hourly pay of \$20 or more, and were thus rejected.

The County eventually negotiated with a single company, Red Top Transportation, Inc., to operate jitneys between Florida City/Homestead and the South Dadeland station, mainly along South Dixie Highway. This route serves mainly farm laborers and non-English speaking immigrants. Red Top continues to hold the certificate for this inter-city route, in most cases leasing vehicles, under the name of Metro Minibus, to a dozen or more independent operators for a fixed fee (Photo 2.8).³⁶ Unlike during the period of FEMA-supported jitney services, MDTA today has little involvement with the south Dade County jitney operations. Red Top and MDTA do accept each other's transfers for a \$0.25 fee and Red Top's certificate requires 30-day advance notice of service termination; however, in all other respects the south Dade Metro Minibuses operate as free-enterprise, entrepreneurial jitneys.

Besides the post-hurricane jitney route in south Dade, Miami's current jitney services pretty much resemble what they were a decade or more ago, prior to the proliferation of unlicensed operators. Presently, 13 companies are certified to operate along 21 designated routes (Photo 2.9).³⁷ By ordinance, no more than 30 percent of any jitney route can duplicate a Metrobus route. Most certificates pre-date the 1990-92 expansion period of unlicensed jitneys, with routes serving mainly low-income black and Hispanic neighborhoods in north and northwest Miami (Map 2.6). Recent permit holders are required to stick to fixed routes, whereas older operators, like Dade Jitney, King Jitney, and Liberty City Jitney, have been grandfathered to allowed semi-fixed (e.g., limited route deviation) services. The only other restrictions beyond proper licensing and insurance coverage are that vehicles carry no more than 15 passengers and operators commit to certain hours of operation.

Liberty City Jitney has today resumed its role as Miami's largest jitney operator, holding certificates for seven different routes north of downtown. Liberty City's routes and those of most other

³⁶Red Top initially acquired 45 minibuses from Metro Jitney, a pre-hurricane unlicensed jitney company that was eager to liquidate its assets. During the first year or so of non-subsidized services in south Dade County, Red Top charged operators \$100 per week, allowing operators to keep all fare receipts. Red Top provided vehicles, insurance, and made sure operators were properly licensed. Red Top initially also ran several feeder routes into the South Dixie Highway jitney trunkline, and required each operator to work one or two days per week on these less busy feeders. Today, only trunkline services operate, and some Metro Minibus vans are individually owned and operated. As the sole certificate holder, Red Top's role today is mainly one of leasing permits to owner-operators at a going rate of \$25 per day.

³⁷In late-1995, the following companies were certified to operate jitneys in Dade County: Dade Jitney, King Jitney, Liberty City Jitney, Sun Jitney, Marcello Jitney, Miami Mini Service, Conchita's Transit Express, Excel Transportation, American Jitney, Metro Minibus, Florida Jitney Transportation, Transit Express Jitney, and Meridien Jitney.

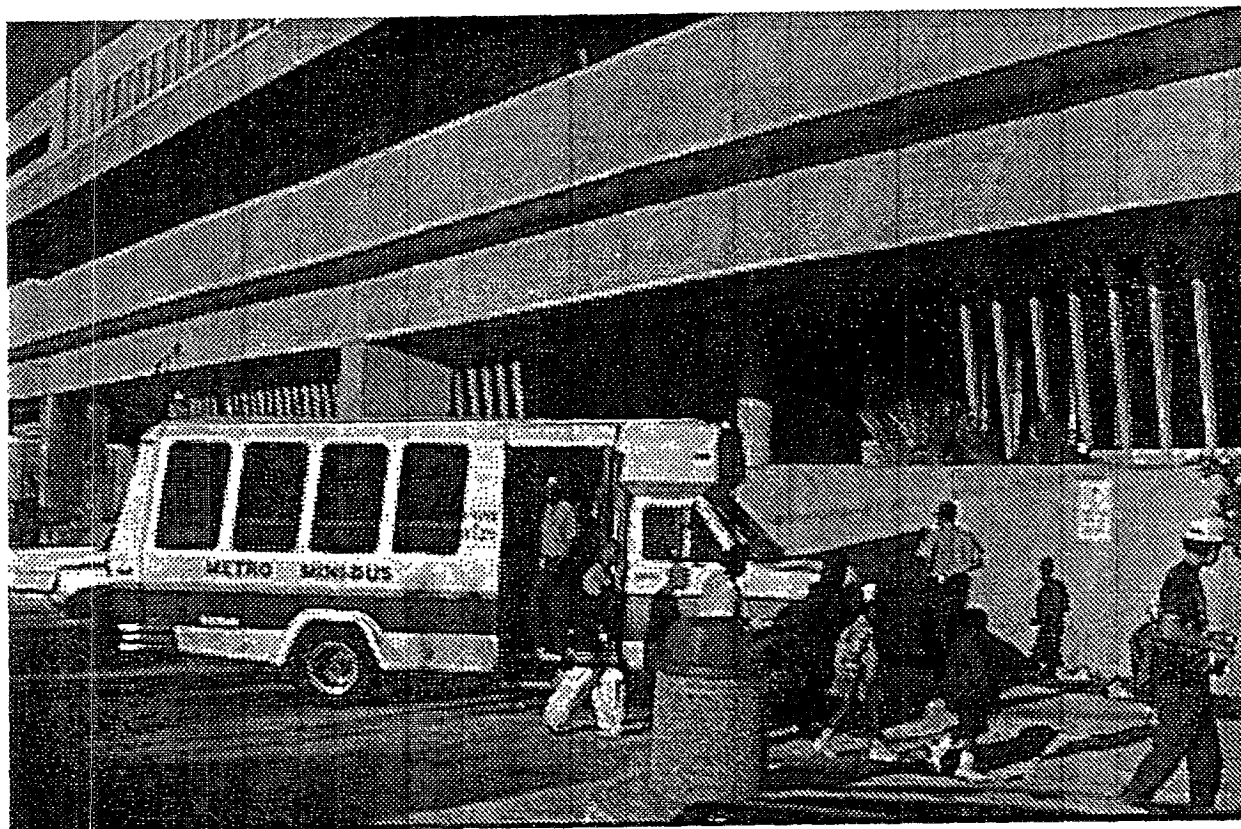


Photo 2.8. Metro Mini Bus at Dadeland South Station, providing the only remaining private jitney services in South Dade County

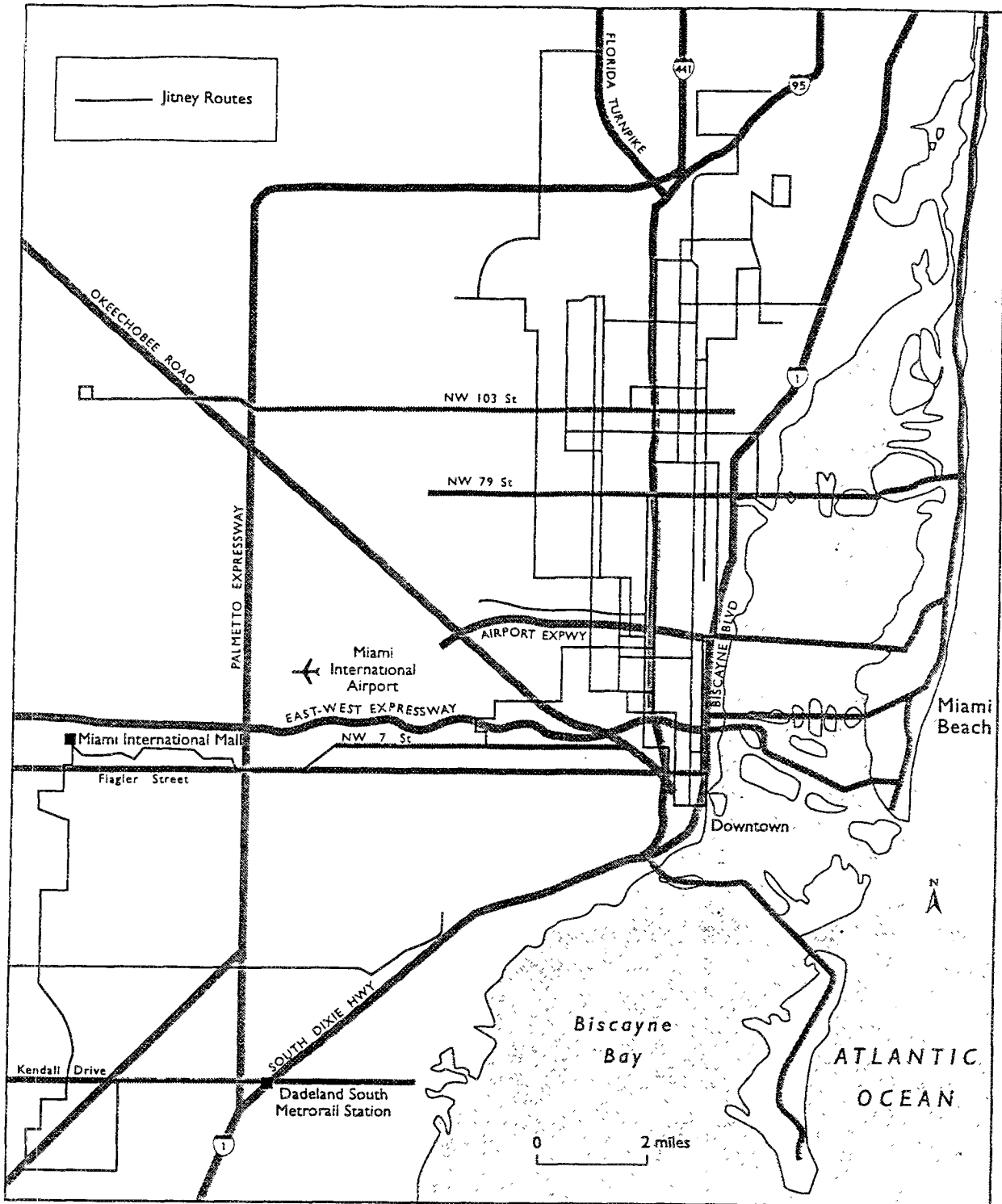
operators tie into the Government Center complex in downtown Miami, an important multi-modal transfer point where the 21-mile Metrorail and 1.9-mile downtown people-mover (Metromover) come together (Photo 2.10). Several operators — American Jitney and Transit Express — have sought to carve out new market niches, linking more middle-income neighborhoods in west and south Miami to the Miami International Mall; however, to date these services have been only marginally successful. This has discouraged operators from entering the Miami Beach market, where local officials have sought to replicate Atlantic City's experiences.³⁸ Unlike in Atlantic City, however, no route association has formed for organizing and advocating the interests of Miami's jitney providers. Overall, Miami's jitney industry remains as fiercely independent as ever.

³⁸In early 1995, officials from Miami Beach and MDTA convened a meeting of 10 jitney owners to explore the possibility of running legalized jitneys along interior roads paralleling the beachfront. Because of past failures in serving middle-class markets where Metrobus services compete, no one was interested in the Miami Beach route unless paid on an hourly contract basis.



Photo 2.9. Licensed jitneys operating along N.W. 2nd Avenue corridor, north of downtown Miami

While some unlicensed operators remain today, in general illegal jitneys pose nowhere near the problems they did in the early-1990s. In addition to the effects of Hurricane Andrew on Miami's jitney industry, the Board of County Commissioners passed an ordinance in 1993 that strengthened the ability of police to seize and impound illegal jitneys given "reasonable cause." Allowable fines were set as high as \$1,000 for a first violation, \$5,000 for a second violation, and \$10,000 for a third or subsequent violation. A third violation within a three-year period also means a vehicle can be seized and forfeited to the county. In recent years, two police motorcycle units have been assigned to jitney enforcement every day. In the continuing battle to circumvent rules and make money in the "informal" transport sector, some local entrepreneurs have begun operating larger and longer vehicles (over 30 feet long and



Map 2.6. Existing licensed jitney routes in Miami proper, exclusive of the post-hurricane inter-city route in south Dade County

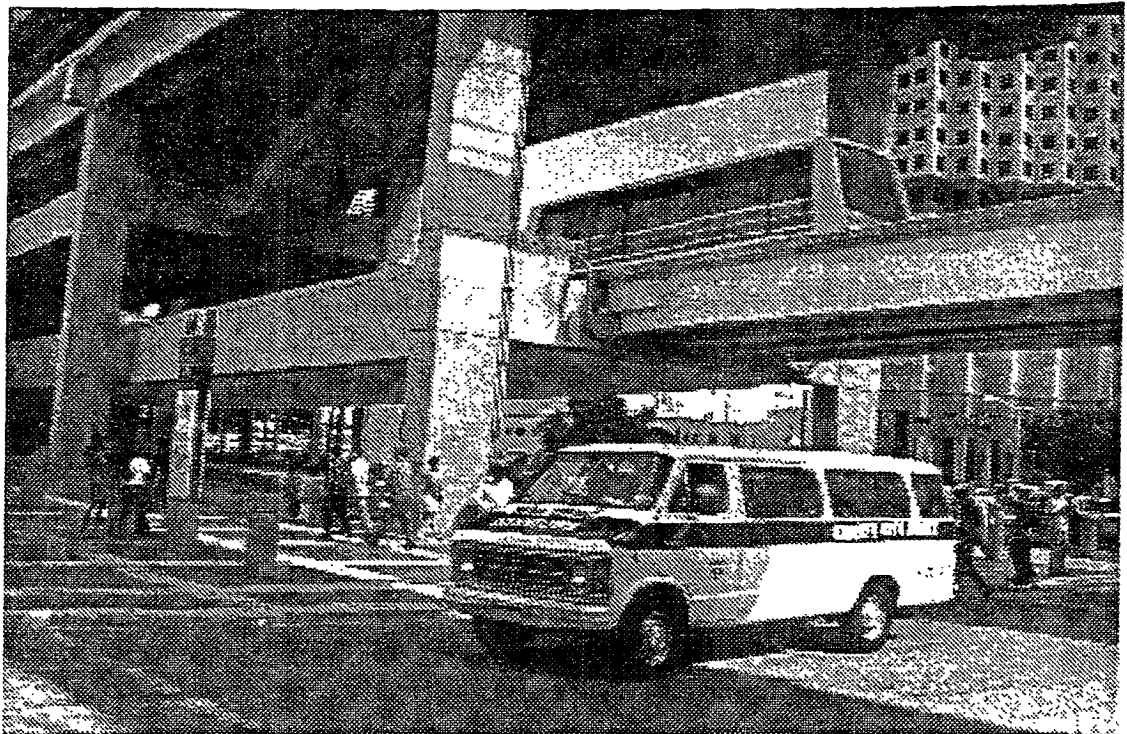
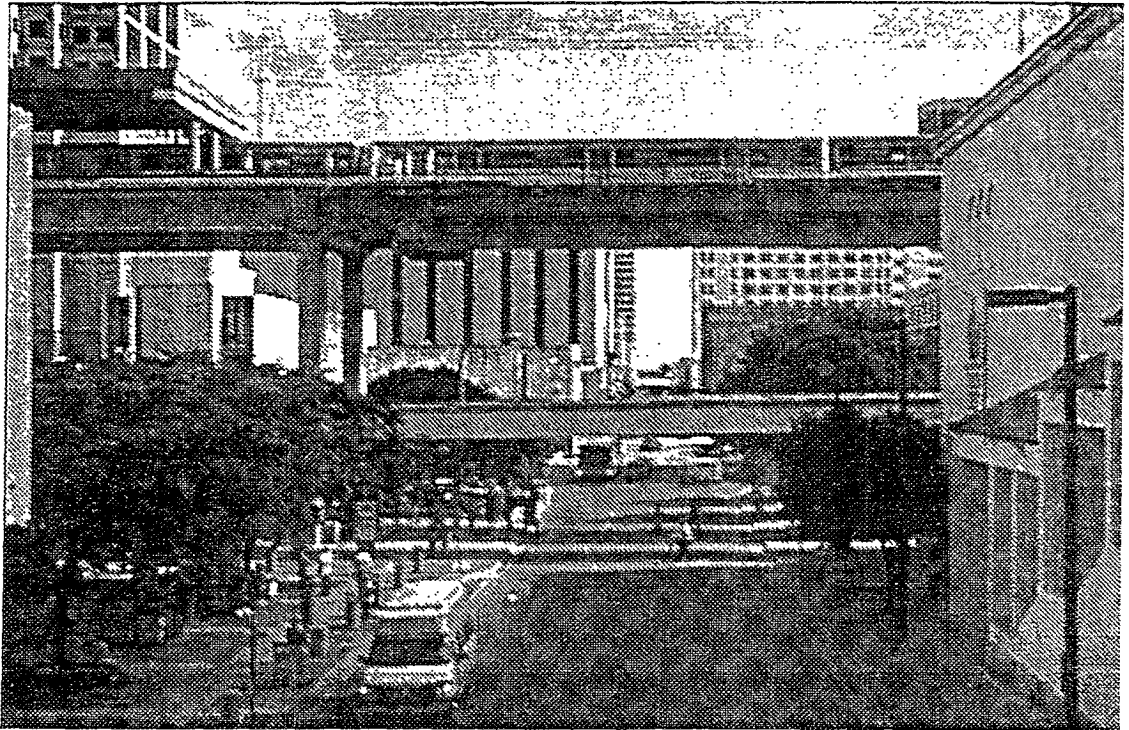


Photo 2.10. Public-Private Intermodalism at downtown Miami's Government Center complex. Jitneys tie into Metrorail (top photo) and Metromover (bottom photo) systems.

between 15 and 28 seats), using vans that served as airport rental car shuttles in a previous life. Since the County's ordinance does not explicitly refer to this size class of common-carrier vehicle, some enterprising individuals are challenging the system by operating this new, larger form of "jitney." The County has followed suit with a new proposed ordinance that would effectively ban these larger carriers by closing the loophole. In general, the willingness of private entrepreneurs to risk high fines and vehicle impoundment by operating larger minibuses is a sign of overregulation. The struggle to carve out new paratransit niches in greater Miami continues today despite stiff sanctions and intensified enforcement.

Miami's Jitney Experiences in Summary

Overall, Miami's jitney industry has come full circle, returning to its roots after a flurry of episodic events — a statutory loophole that spawned a rash of unlicensed operators, and an act of God that prompted local government to temporarily legitimize formerly illegal operators. Miami's jitney industry today serves mainly transit-dependent populations, just as it historically has. This "settling in" occurred, however, only because of stepped-up enforcement against illegal operations and the withdrawal of hurricane-related subsidy support. It still is not obvious, however, whether Miami's traveling public is better off today as a result. Research suggests that during the heyday of "open market" jitney operations, jitneys provided valuable transportation services and carved out a substantially new market niche. Metrobus lost riders and revenues; however, this was largely due to head-to-head competition, even though Metrobus had the advantage of subsidy support. While government's role in regulating jitneys to protect public safety is unimpeachable, the rationale for restricting market entry among prospective operators who meet public safety and fitness standards is hard to defend. In addition to more vigilant enforcement, an appropriate policy response in the wake of increased jitney competition would have been to lift entry restrictions so that operators meeting safety qualifications became legitimate, combined with selective curtailment of Metrobus services. Stiff political resistance — from transit unions, middle-class residents, and other beneficiaries of traditional transit — largely precluded such policy responses. Striking the right balance between government oversight of jitney services and free-market competition remains a significant challenge in greater Miami, just as elsewhere in the U.S. Still, Miami's policy-makers deserve some credit for allowing private jitneys to continue serving more transit-dependent populations at a time when most American cities have regulated all forms of private paratransit competitors out of existence.

2.4. COMMERCIAL VANS

A final form of paratransit reviewed in this chapter is the feeder and commuter vans that ply the streets of New York City, providing both connections to rail stations and express runs to Manhattan. Some are licensed; however, most are not. In many ways, these vans operate like jitneys, following fairly

established routes and responding to curbside hails. However, unlike most jitneys, a significant number of vans follow routine schedules, provide long-haul services, are veritable subscription services with the same regular customers, and operate only during peak periods. Compared to jitneys in Miami, Atlantic City, and San Diego, moreover, licensed vans in New York are not held to specific routes, and thus are more likely to make slight detours and route adjustments. More generally, New York City's paratransit sector is a hybrid, taking on features of jitneys as well as regularly scheduled subscription vanpools and informal community-based services. Like airport shuttles, some vans provide few-to-one (or few-to-few) services; however, unlike airport shuttles, they rarely carry advanced-reservation fares or are radio-linked to dispatch centers. Overall, commercial feeder and commuter vans form an industry that is unique to New York City — home to the nation's largest population of people of Caribbean ancestry, the nation's most extensive rail network, the nation's densest and most populous urban centers, and one of the most heavily regulated taxicab industries in the country.

While free-roaming commercial vans can also be found in northeast New Jersey,³⁹ they have become a more prominent fixture of the local transportation scene in New York City than anywhere. Many observers contend that shared-ride vans, equipped with automated communications technologies and that operate like airport shuttles but to multiple destinations, are the model for successful paratransit of the future. The Reason Foundation, an influential libertarian think-tank based in Los Angeles, has gone on record in support of automated forms of New York-style commercial vans as the ideal paratransit solution for Southern California (Poole and Griffin, 1994). For these and other reasons, experiences in New York City deserve closer inspection.

2.4.1. Commercial Vans in New York City

Compared to Miami, Atlantic City, and other places with formal jitney services, New York City's paratransit history is fairly short. In the late 1970s, Caribbean immigrants began informally hauling Queens residents to subway stations using passenger sedans. A 1980-81 transit strike triggered an explosion in the city's van population, as entrepreneurs, almost exclusively from the Caribbean, initiated their own transit services. Vans quickly replaced private cars as the vehicle of choice. The heaviest concentration grew around Long Island Railroad stations in the Jamaica section of southeast Queens. Jamaica developed mainly during the post-war auto era, and thus has, by New York standards, fairly low densities and meager subway services. Populated largely by Puerto Ricans, Jamaicans,

³⁹Because of the heavy interstate traffic between New Jersey and the greater New York and Philadelphia metropolitan areas, most New Jersey-based inter-city operators are regulated by the Interstate Commerce Commission. The ICC is decidedly pro-competition, concerned mainly with willingness, ability, and fitness to provide service. State and local authorities are fairly powerless in controlling market entry. Thus, it is under this unique situation that private van services have emerged in New Jersey. Many operate between northeastern New Jersey and the Port Authority Transit Terminal (PATH) in mid-town Manhattan, duplicating bus runs. Associations have emerged, offering assistance in securing ICC licenses and obtaining insurance. The associations also try to control service practices, though these efforts have been largely ineffective.

Haitians, and other Caribbean islanders, and according to locals, historically ignored by city transit officials for this reason, southeast Queens was a natural breeding grounds for commercial paratransit. Throughout the 1980s, van activity spread to Brooklyn and the Bronx, and commuter runs into Manhattan became common. The New York State Department of Transportation (NYSDOT), until 1994 the regulator of intrastate van services, granted legal authority to van operators who could demonstrate a demand for their services and meet fitness and safety standards. Most, however, never bothered to obtain proper licensing, operating with little constraint along the busiest city bus routes and corridors served by private bus carriers, like the Green Bus Company and Jamaica Bus Lines in southeast Queens. Mimicking established bus routes has earned illegal vans the tag, "shadow bus routes."

One estimate places the number of illegal, unlicensed vans, taxis, buses, and private cars today roaming the streets of New York City at over 75,000, though no one knows how many there are for sure. What is known is that their sheer numbers have overwhelmed enforcement capabilities. A *New York Times* reporter notes:

A police officer gamely ticketing one van after another on Flatbush Avenue on a recent morning said he thought the van traffic was uncontrollable. Two or three sailed by for every one that he ticketed (Mitchell, 1992, p. A16).

For the most part, New York City's vans are still overwhelmingly driven and patronized by blacks from islands of the Caribbean. Like Dade County, New York City has large concentrations of Caribbean immigrants (over 400,000 in 1990, comprising over 5 percent of total population), an important cultural dimension to the proliferation of private van services (Boyle, 1994). Passengers are mostly working people who rely on prompt and dependable paratransit services to reach their jobs. The van industry's customer base has diversified some in recent years, owing mainly to the start-up of commuter van services from Staten Island to Manhattan that cater to a mix of ethnic groups. Research and anecdotes alike reveal that customers prefer vans over subsidized city buses — despite sometimes questionable safety — because they are faster, more comfortable, cheaper, pass by more frequently, make fewer stops, provide guaranteed seats, and take people closer to their destinations.⁴⁰ (Much of the vans' speed advantage stems from aggressive driving — making detours to avoid traffic jams, exploiting gaps in traffic flows, staying away from congested areas at particular times of day, etc.). Some patronize vans partly out of loyalty to black-run businesses. The willingness of most drivers to drop passengers off at the front door, accept subway tokens, make change, provide information, and chat with patrons along the way is appreciated by many.

⁴⁰A late-1988 survey of feeder van customers at the Jamaica Center in Queens revealed the relative importance placed on these factors (Grava et al., 1989). The share of respondents who stated they chose a mode based on six different factors varied as follows for van versus bus riders: convenient pick-up — 48 percent (vans) vs. 4 percent (buses); close drop-off — 46 percent vs. 36 percent; faster service — 63 percent vs. 20 percent; fewer stops — 15 percent vs. 9 percent; and more comfortable seats — 10 percent vs. 5 percent. (Most respondents identified more than one factor.) Overall, 88 percent of surveyed van customers versus 74 percent of surveyed bus patrons said they were satisfied with the service they received.

The two main classes of New York City's commercial vans — feeder and commuter services — are discussed below. A third type of commercial paratransit, car services, is also briefly reviewed.

Feeder Vans

Feeder vans operate at the neighborhood level, shuttling residents in outer boroughs to subway stations and community centers. The Metropolitan Transportation Authority (MTA)⁴¹ estimates between 2,500 and 5,000 feeder vans roam the outer boroughs each day, preying off it and private bus firms. Fewer than one in 10 feeder vans have licenses, and even those holding certificates routinely break rules, like loading passengers at bus stops. Areas with the highest concentrations of feeder vans, shown in Map 2.6, are: Jamaica Center (along Jamaica, Archer, and Parsons Avenues) in Queens and the Flatbush Avenue and Utica Avenue corridors in Brooklyn. Around 500 vans prowl Flatbush Avenue each work-day, mirroring one of the city's busiest bus routes, B-41, from the Flatbush Avenue subway station to downtown Brooklyn. The Long Island Railroad station at Jamaica Center attracts as many as 350 vans and 25,000 van patrons each day (Photo 2.11).⁴² Smaller centers of activity have spawned in parts of the Bronx — along Grand Concourse, Westchester, Fordham, and White Plains Avenues.

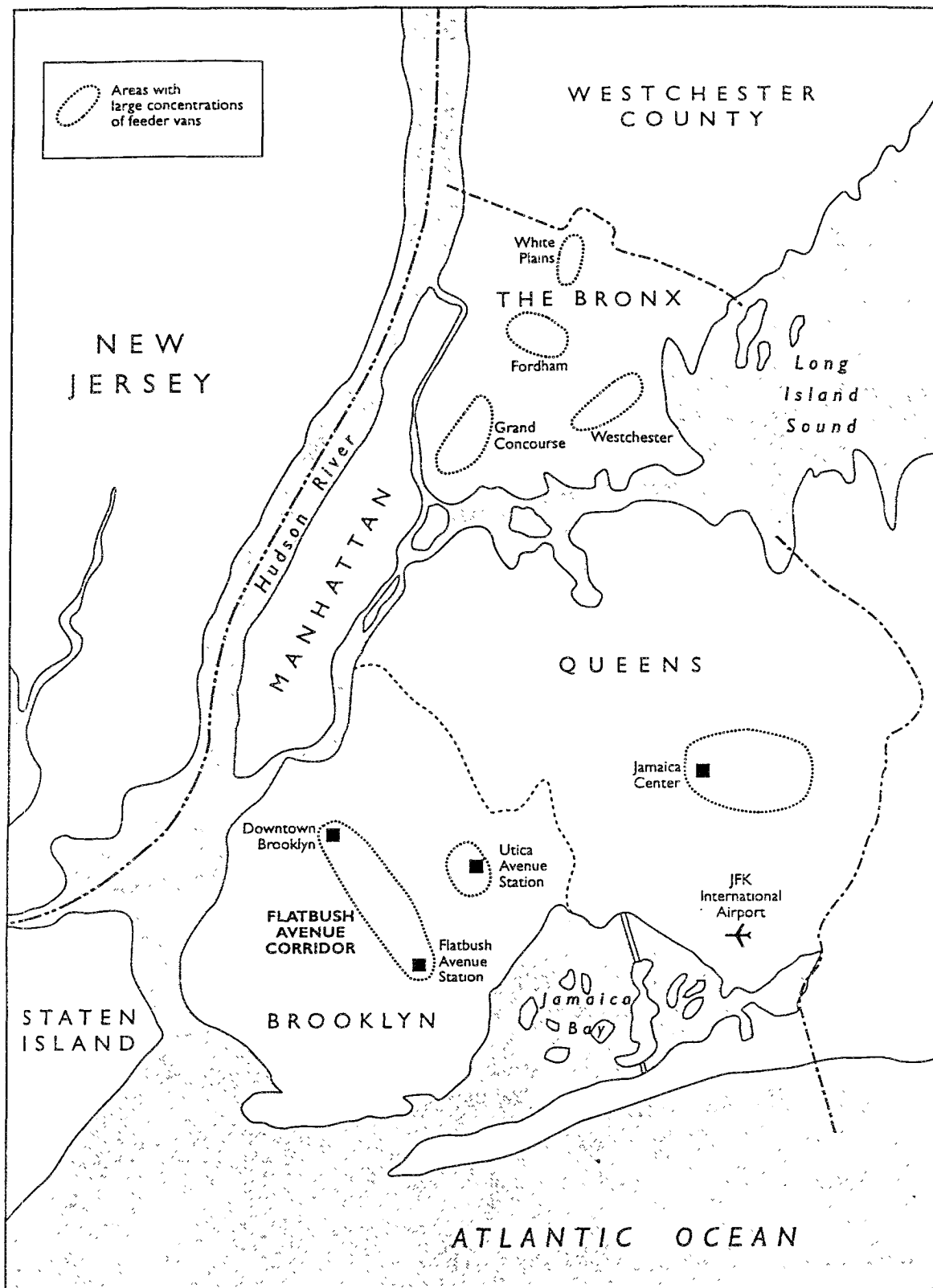
One unflattering account, published in a transit trade magazine, characterized New York's informal feeder services as:

. . . groups of dented vans, some with legal license plates, others with stolen ones, that weave around public buses on the same route and careen into bus stops outside the subway exit. There the unkempt, often unlicensed, often illegal alien drivers bleat passengers at a dollar a piece... in flagrant violation of state and city laws. . . . (Read, 1991, p. 16).

Feeder vans are indeed notorious for preying on NYCTA's customers, duplicating the paths of established bus routes and illegally soliciting passengers at bus stops. One study estimated that at least 27 percent of bus routes operated by NYCTA and franchised companies face direct competition from feeder vans (Trommer and Goldenberg, 1994). It is not uncommon for van drivers to call out public bus route numbers at stops to inform potential passengers of where the van is heading. Feeder vans are so "thick" in parts of Brooklyn and Queens that average headways are as short as two minutes. Van fares are usually below those of competing public transit services, but have historically risen, lagged by a year or two, to match increases in public transit fares (Boyle, 1994). However, some van operators have kept fares at \$1, even though local bus fares have risen to \$1.25, in order to reduce the need to make and

⁴¹MTA functions as the region's umbrella transportation organization, overseeing transit operations and policymaking. The operating division of MTA responsible for subway and bus services within New York City is the New York City Transit Authority (NYCTA).

⁴²Van activity at Jamaica Center has been closely chronicled over the years. A 1988 survey counted 19,100 daily passengers (Grava et al., 1989). The same study found 72 percent of van trips were for work, and 15 percent were for going to school. Other studies estimated between 20,000 to 25,600 daily van patrons converging on Jamaica Center in the late-1980s (Milder, 1988; Clift, 1989). Surveys also showed that around one in five access trips to the Jamaica Center subway station were by van (Milder, 1988).



Map 2.6. Parts of Brooklyn, Queens, and the Bronx with high concentrations of feeder van services



Photo 2.11. Vans queuing for customers at Jamaica Center in southeast Queens

handle change — important to a business that relies on speedy customer transactions. Most vans are owned and operated by the same individual, though some van owners lease their vehicles for a set fee.

Commuter Vans

Commuter vans provide express services from the outer boroughs to lower and mid-town Manhattan, making one or two trips per peak period. They usually compete head-to-head with NYCTA or franchised commute bus services. Their popularity lies in providing faster service in better equipment at a lower fare than subsidized competitors. Some of the larger 20-passenger minibus operators provide first-class services — free coffee, on-board televisions, and overhead reading lamps. Passengers usually pay a cheaper fare than for equivalent NYCTA commuter services — \$3.50 versus \$4.00 in 1992. Many commuter vans originate in Staten Island, cross the Bayonne bridge into New Jersey, and take the Holland or Lincoln Tunnel into Manhattan.⁴³ Because they cross state lines, Staten Island-based vans fall under the jurisdiction of the far more permissive Interstate Commerce Commission.

⁴³A 1991 study found other areas with significant numbers of Manhattan-bound commuter vans each morning to include: Co-op City and Riverdale in the Bronx, Bath Beach, Bay Ridge, and Coney Island in Brooklyn; and Queens Village, Flushing,

In the mid-1980s, an estimated 700 to 1,100 private commuter vans crossed the bridges into Manhattan each morning, carrying 15,000 to 17,000 passengers (New York Department of City Planning, 1984; Comsis, 1986; Grava et al., 1989). Most operated without certification or in some improper manner (e.g., underinsured), and over 95 percent of commuter van patrons formerly took public transit. A more recent study found around one-half of vans coming into Manhattan to be licensed (Savas et al., 1991). Presently, 33 New York-based companies and 365 vans are authorized to provide commuter services into Manhattan.

Car Services

Sedans and station wagons that transport low-income patrons to shops, clinics, job sites, airports, and other destinations are the city's fastest growing paratransit sector. This industry is sharply bifurcated between legal and illegal operators. Legal ones, known as "for-hire vehicles," cater to higher income markets, playing a vital role in a city where only half of households own a car and where taxis are scarce outside of Manhattan and airports. City ordinances limit for-hire cars to providing pre-arranged services. The legal car industry is quite large — some 30,000 licensed vehicles dispatched from 600 base stations serve 170,000 to 300,000 passenger trips per day, 5-8 percent of all non-walk trips made in the city (New York City Taxi and Limousine Commission, 1993). In contrast, up to 20,000 illicit private cars — also called "gypsy cabs" — operate along main arterials in low-income area each day, relying on street hail for customers. Like vans, gypsy cabs often raid bus stops, picking up several passengers for \$1 each. Gypsy cabs are the least organized and most blatantly illegal form of private paratransit services in the city. Virtually all vehicles are unlicensed, untested, and un- or under-insured. As discussed in Chapter Three, many illegal cars specialize in serving shop trips. In Brooklyn, hawkers soliciting patrons leaving the Kings Plaza Shopping Center have become a common site; gypsy cab drivers pay hawkers a small commission for each passenger lured in. "Bogus cabs," painted yellow and sporting a rooflight so as to make them hard to distinguish from licensed cabs, thrive in north Manhattan and the Bronx due to a shortage of medallion taxi service.

2.4.2. Public Concerns

The most serious concern with New York's commercial vans is public safety. Because competition is so intense and enforcement is hit-or-miss, vans are all too often operated with reckless abandon. Drivers regularly cut buses off to reach passengers first. Uncoordinated van loading and unloading clogs up busy boulevards (Photo 2.12). In Manhattan, vans queuing up in mid-afternoon to haul workers back to the outer boroughs have caused gridlock. In Brooklyn and Queens, vans loitering and cruising around subway stations disrupt the operations of public buses and legitimate operators.

Astoria, Howard Beach, and Jewel Avenue in Queens. Around 10 percent of commuter vans heading to Manhattan come from New Jersey (Savas et al., 1991).

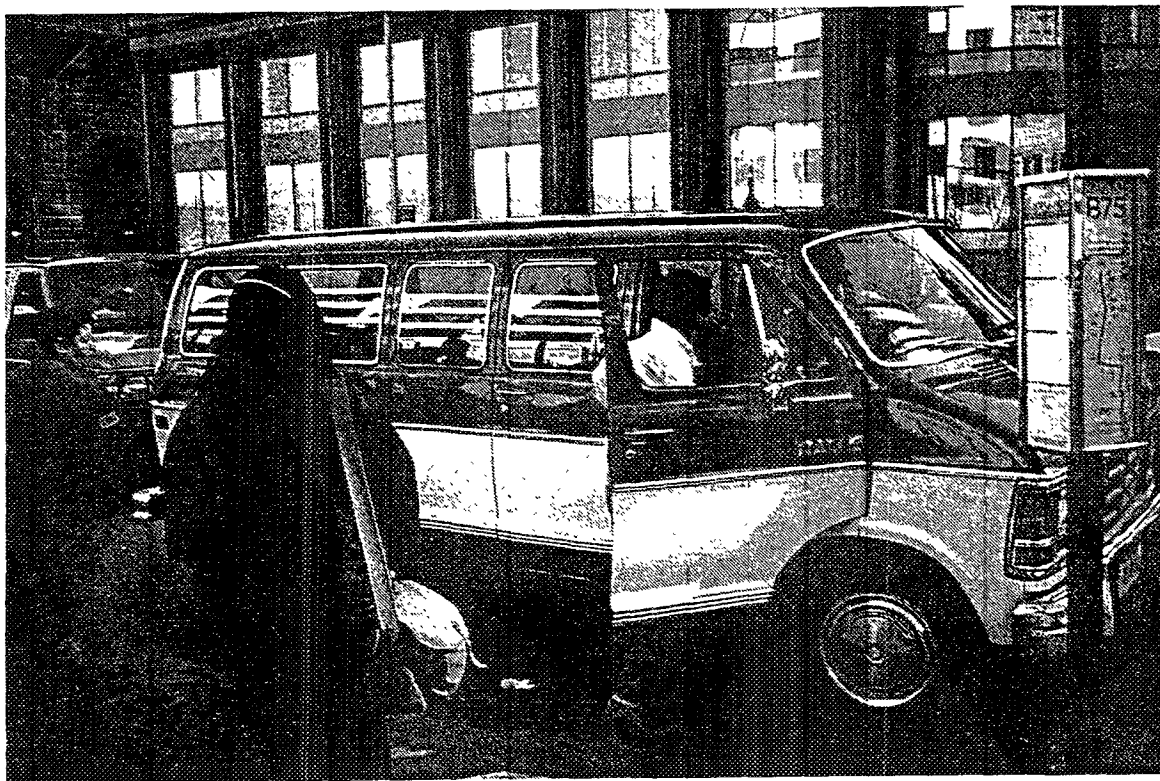


Photo 2.12. Illegal loading at a bus stop

As noted, most van drivers are unlicensed and without insurance. Some have long rap sheets, and too many are engaged in illicit, underground activities, like smuggling drugs. In a few well-publicized cases, overly zealous drivers have caused serious accidents and fatalities.⁴⁴ Safety, however, lies in the eyes of the beholder. One study found some customers view vans as safer than public buses because drivers will not pick up drunks, roughnecks, or gang members (Metropolitan Transportation Authority, 1992). For the most part, van operators are hard-working immigrants with few job prospects who believe they can live the American dream by becoming paratransit entrepreneurs. The prospect of being ticketed and paying fines is of little concern, even though the average van driver working busy bus routes earns only \$20,000 to \$25,000, a meager amount for one of the world's most expensive cities (Fried, 1994). Most have no alternative.

Another concern is the fiscal impact of illegal services on public transit agencies and licensed bus operators. MTA estimates it has lost as much as 15 percent of revenues to illegal vans on some of its most

⁴⁴The incident that caught the most press attention occurred in 1991, when two Brooklyn residents were killed and three others injured after a van jumped a curb. The operator never had a driver's license, had received four summonses for driving illegally, and the van itself was not registered, insured, or inspected (Read, 1991).

heavily-impacted bus routes. Citywide, the overall loss to the transit authority has been put at \$30 million to \$50 million annually, or 7 to 10 percent of bus revenues (Metropolitan Transportation Authority, 1992; Fried, 1994). In the Jamaica Center area, MTA estimates it loses \$8,500 in fare revenue per day. Jamaica Bus Lines, the major franchise bus carrier in southeast Queens, saw its monthly patronage cut in half, from 747,000 in 1981 to 366,000 in 1991, because of excess competition from illegal vans, according to company officials (Read, 1991).

On the positive side, even critics acknowledge benefits from commercial van operations. As a home-grown industry, vans provide jobs to tens of thousands of New Yorkers, including ancillary businesses that maintain and service vehicles. They also provide mobility at a time when financially-strapped transit systems are unable to expand services. Likewise, they provide valuable back-up in case of a transit strike, no idle matter in a city so dependent on transit that a work stoppage can bring near paralysis. And they accomplish all of this without government subsidies.

2.4.3. Van Regulations

Van regulation in New York City is complex, involving multiple layers of bureaucracy and oversight. Today, three different municipal departments are involved in the review of applications for van licenses, and enforcement efforts bring together as many as six local and state offices.⁴⁵ With so many illegal vans in such a large, diverse city, regulation and enforcement require tremendous public resources and efforts.

Historically, New York state maintained jurisdiction over intrastate carriers. A Certificate of Convenience and Necessity was used to regulate market entry. Because state regulators routinely approved applications for new van services, local transit officials successfully lobbied to have controls shifted to the municipal level. In 1993, the New York State Senate and Assembly enacted enabling legislation that effectively transferred all regulatory authority over commercial van services to New York City. Soon thereafter, the city passed an ordinance, that took effect in mid-1994, that has clamped down on how legalized vans operate. Most stifling has been the provision that vans serve customers on a *pre-arranged* basis only, thereby barring all street hails. With the exception of lower Manhattan, the municipal regulation also prohibits vans from soliciting, picking up, or discharging passengers at any point along a NYCTA or private bus line. Obtaining a Certificate of Authority to operate a van has also become more difficult, requiring applicants to demonstrate the service will fill an unmet public need and giving NYCTA and private carriers the right to comment upon and protest pending applications; for the past

⁴⁵Presently, the New York City Department of Transportation (NYCDOT) acts on all requests for van licenses, with review and comment by the Metropolitan Transportation Authority (MTA), the Taxi and Limousine Commission (whose regulatory jurisdiction lies mainly with taxicabs, limousines, and for-hire cars) as well as private bus companies and individual citizens. Enforcement sweeps have been led by the New York City Police Department, with the assistance of the New York City Police's Surface Crime Unit, NYSDOT Motor Carrier Investigators, the Taxi and Limousine Commission, transit police from multiple rail authorities including the NYCTA and Long Island Railroad, and the NYCDOT.

several years, NYCTA has protested all applications and in many cases has wielded virtual veto power.⁴⁶

The new law also permits seizure of a vehicle by a police officer or deputized agent of the Taxi and Limousine Commission, the designated enforcer of van regulations, if there is reasonable cause to suspect it is being operated without a license.⁴⁷ With the new law in hand, the city's top transportation official is optimistic about the future, contending "the legislation provides tools to end the urban warfare on the streets of New York between vans and buses" (Fried, 1994, p. 43).

Because of these tough new rules, no new van licenses have been issued since 1994, nor will any likely be in the near future. Few van operators seem interested in becoming "legitimate," limited to serving phone-in travel requests and operating on local streets. And few seasoned operators seem fazed by these new rulings. During candid interviews with a *New York Times* reporter, a veteran Jamaican operator vowed "we're still going to work along the bus routes because that's exactly where the people are." Another maintained "even if they don't give us the bus routes, we're going to do it there — we would not be able to make money on the side streets to pay the taxes and the insurance you'll have to have" (Fried, 1994, p. 43).

2.4.4. Van Enforcement

In the early 1990s, local authorities began cracking down on illegal van operators.⁴⁸ Periodic enforcement raids continue today, entailing mass field inspections, spot checks by unmarked cars, and foot patrols at subway stations where the vans congregate. Illegal vehicles are towed, passengers are expelled from vehicles, and drivers are fined and sometimes arrested on the spot. The vehicles of repeat offenders and gross violators are routinely seized and forfeited.

In recent years, enforcement efforts have intensified. In 1993, some 4,000 illegal vans and gypsy cabs were seized citywide, a 27 percent increase above prior-year seizures. During an 18-day period in early 1995, city police issued 1,400 summonses, made 40 arrests, and seized 85 vehicles. From a revenue standpoint, enforcement sweeps have proven quite successful. In a concentrated enforcement "experiment" along Brooklyn's busy Flatbush Avenue corridor in early 1992, ridership rose by 27 percent on

⁴⁶All applications are evaluated by NYCDOT in terms of possible negative impacts on existing mass transit services. Applicants must secure "public support statements," an informal written affidavit of support by community backers of the proposed service. An unwritten rule is that 10 public support statements qualifies for the authorization of a single van. Some have successfully solicited the support of long-time customers. One operator submitted over 1,000 support statements, theoretically allowing authorization for 100 vans. Authorizations are valid for no more than two years. They are subject to mandatory revocation in cases of multiple offenses, like failing to meet insurance and safety inspection requirements, hiring unlicensed drivers, or violating operating rules (e.g., picking up customers at bus stops).

⁴⁷A second violation within a five-year period brings a maximum fine of \$2,500 and a possible vehicle forfeiture. The city can also place a block (based on the vehicle identification number) on the registration of any vehicle operated in violation of local van regulations.

⁴⁸The enforcement campaign involved deputizing participating enforcement personnel to issue "Notices of Violation" (NOVs). NOVs are issued for violations of laws pertaining to safety inspection, proper licensing, or vehicle operations (e.g., picking up street hails or operating along bus routes). NOVs carry a penalty of \$500, with maximum fines of \$5,000.

affected NYCTA bus routes. Increased fare receipts more than covered enforcement expenses. A year after the experiment, one bus route retained a 20 percent revenue increase compared to pre-enforcement levels. A subsequent sweep in the Jamaica Center area yielded similar results (Boyle, 1994). At times, van owners have voiced their displeasure over stepped-up enforcement, staging demonstrations and tying up streets in a major show of force.

Overall, enforcement crackdowns have provided only ephemeral relief. The city's illegal van population today remains essentially unchanged. There simply are not enough resources to sustain intensive enforcement efforts, and for New York City's Police Department, ticketing illegal vans is not a high priority. Crackdowns have had the biggest impact on how licensed vans operate. Most legal operators have supported and cooperated with enforcement campaigns targeted at illegals since they stand to gain more riders as a result. Still, legal operators are livid over being barred from bus routes, arguing that detours to side streets greatly inconveniences their customers. Yet heightened enforcement has pressured many into staying off major boulevards. Legal jitneys in Queens now post signs in their windows indicating they will not stop at bus stops.

Critics charge that enforcement has become an issue only because regulatory standards are too high. Regulators, they contend, set standards for middle-class folks, ignoring the willingness of many lower-income immigrants to sacrifice comfort and a certain threshold of safety in return for a break at the farebox and faster services. First-world standards are being imposed on a population accustomed to third-world-type paratransit services.

2.4.5. Other Policy Responses

Though they openly complain about the poaching practices of commercial vans, New York City transit officials concede that vans are here to stay and thus efforts must be made to integrate them into the region's urban transportation system. One recent initiative, spearheaded by the NYCDOT (regulator of the city's curbspace), has been to erect van stops and create staging zones to facilitate passenger drop-off and pick-up in some of the city's most popular van corridors.

Service and Fare Reforms

Another policy response has been to make municipal and franchised buses more competitive with commercial vans. One way of doing this is mimicking their operations.

Along some corridors, NYCTA buses will now stop anywhere along the route, though normally only during "owl" service hours (10 p.m. to 5 a.m.). Plans are also under way to create more dedicated bus lanes in major van corridors in hopes of giving public and franchised buses a speed advantage.

In 1993, the MTA sought to undercut the competition from vans by offering a \$1.50 round-trip fare (known as a "Fare Deal") along five Queens bus lines, instead of the normal \$2.50. A round-trip on a van costs \$2.00. During the first two years, revenues from ridership gains offset losses from lower fares

according to MTA. The Fare Deal program has since been extended to popular van corridors in Brooklyn and the Bronx as well. In a recent interview of a group of riders at a bus stop outside a subway station in the Bronx, a *New York Times* reporter found few would be won over by a fare break: "... more than anything else, the illegal vans's promptness and door-to-door service made them more attractive; most said they would keep taking the illegal vans" (Onishi, 1994). MTA's own analysis has shown enforcement crackdowns to be twice as effective in winning back patrons as reduced round-trip fares (Trommer and Goldenberg, 1994).

Another fare strategy has been to charge a single fare as a way to encourage residents to ride NYCTA buses as feeders to subway stations. Historically, patrons have had to pay separate fares for bus and subway rides. At Jamaica Center, MTA has introduced a 25-cent bus-subway transfer (versus \$1.25 for a single fare). Ridership on bus lines feeding into Jamaica Center increased 30 percent during the program's first year, and new-rider proceeds have offset revenue losses from discounts.⁴⁹ Also on the horizon is a pre-paid, stored-value transit pass, called MetroCard, that can be used anywhere on MTA's bus-subway network. Automated fare collection is currently being installed at 69 subway stations throughout the city. One-dollar fares and drivers' willingness to provide change have always given vans a service edge over public buses. The MetroCard should even the field. MetroCard has already spurred innovations in the van industry. One Queens van owner recently introduced a weekly pass program, and several others soon followed suit.

Organizational Responses: Associations

The long-term success of New York's commercial van sector likely also lies in forming cooperatives to advocate the industry's interests and coordinate services, just as jitney operators have done in Atlantic City. In the Jamaica area of Queens, several cooperatives have formed in recent years. One of the first was the Jamaica Association of Van Owners/Operators (JAVO), initiated in 1989 mainly as a lobbying organization devoted to legitimizing neighborhood van services.⁵⁰ A JAVO Passenger's *Bill of Rights* was prepared, along with a decal and seal of approval (Figure 2.1). JAVO was instrumental in rallying public support for commercial vans at several state hearings held to review the case for licensing vans. JAVO, however, never gained the support of the largest and most influential operator in the area, Queens Van Plan, and as a result was short-lived.⁵¹ Queens Van Plan, however, helped spearhead the

⁴⁹This is according to an internal MTA memorandum cited in the Viewpoints section of: *Newsday*, Speed it Up, July 22, 1994, p. A36.

⁵⁰With grant support from the federal Urban Mass Transportation Administration, in 1988 researchers from the City University of New York, Columbia University, and several private firms held a series of meetings that brought together van owner-operators in southeast Queens, leading to the formation of JAVO. Federal funding support reflected an interest in promoting transit privatization at the time.

⁵¹Queens Van Plan (QVP) was the borough's first licensed feeder van service. It initiated services during the subway strike of 1980 and quickly became the largest provider of van services in southeast Queens. QVP has evolved into a formal

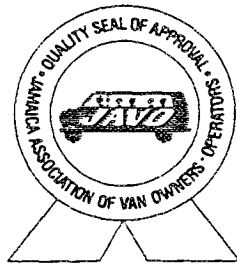
formation of JAVO's successor, the Interborough Alliance for Community Transportation, better known as the Alliance. The Alliance has adopted many of the same goals of JAVO, though it has a less visible presence, with its leaders opting to operate more behind the scene. All licensed van operators in southeast Queens — numbering 215 in mid-1995 — have joined the Alliance. The organization is perceived by most driver-members as a vehicle for fighting their common nemesis — the MTA. While MTA and the Alliance share one common objective — to rid the streets of illegal van operators — on most other matters, the two organizations are usually poles apart. Like Atlantic City's route association, the Alliance has also begun to police itself, mediating driver disputes and sanctioning those who flagrantly violate operating rules.

2.5. TRADITIONAL PARATRANSIT IN SUMMARY

The paratransit modes reviewed in this chapter — shared-ride taxis, jitneys, and commercial vans — are traditional in the sense that they have been the longest-standing shared-ride services available to the general public. In a few areas — the San Ysidro border, north Miami, Atlantic City, and parts of Queens and Brooklyn — they have become the workhorse of the local transit system. Most of these cases share common characteristics. One is serving a specific subpopulation, defined partly in terms of income (e.g., poor inner-city residents without cars) but mainly in terms of ethnicity. In south San Diego, Miami, and New York City's outer boroughs, an overwhelming majority of paratransit customers are of Hispanic background. The explosion of commercial jitneys and vans in Miami and New York City, many of which are unlicensed, paralleled the surge in immigration from the Caribbean in both places. Predictably, beside foreign foods, dance, and song, these new Americans brought with them other parts of their culture, including an affinity for small-vehicle forms of paratransit. While heavy-handed regulations and stepped-up enforcement have suppressed their numbers in these and other cities, the steady influx of people with Hispanic backgrounds into the U.S. makes it inevitable that jitneys and vans will continue to proliferate in many large urban centers.

It remains to be seen whether private jitneys and vans can ever gain a market foothold in middle-class America. Atlantic City's jitneys have succeeded in luring middle-class car-owners to mass transit, mainly through providing frequent, reliable services at good value, though this is partly attributable to the uniqueness of the city itself — a compact tourist town with a steady stream of traffic. White collar professionals also share taxi rides in Washington, D.C., at airport curbsides, and at downtown cabstands where point-to-point trips are common. As reviewed in the next chapter, middle-class Americans have

corporation, with a president and administrative staff. It currently oversees 53 vans on the street. Drivers own their own vehicles and become members by buying shares in QVP, entitling them to licensing, group liability insurance, and use of the corporate logo. Drivers also pay QVP a monthly fee for radio-dispatch communications, routine maintenance, and use of an off-street parking lot. Radio communications are primarily provided to alert drivers of accumulations of waiting passengers, congestion spots, and police whereabouts. The price of QVP membership is kept secret; in the late-1980s it was estimated to be as high as \$5,000 (Grava et al., 1989).



JAVO

PASSENGER'S

BILL OF RIGHTS

The JAVO Quality Seal of Approval may be displayed only in Vans owned and driven by individuals who have pledged to adhere to JAVO'S Code of Service and Conduct. Every passenger on a van displaying the JAVO Quality Seal of Approval is entitled to the full protection of the JAVO Passenger's Bill of Rights.

As a JAVO Van Rider, you are entitled to:

1. Safe, reliable and courteous service.
2. A clean, comfortable, well-maintained van that meets New York State safety and vehicle inspection requirements.
3. A van authorized as a common carrier by New York State and displaying proper livery license plates and operator identification on the dashboard.
4. A van carrying public liability insurance equal to or greater than New York State requirements.
5. A licensed, fully trained driver, neatly dressed and well mannered, whose name and photograph are posted on the dashboard.
6. Compliance with all vehicle and traffic laws and regulations.
7. Dependable departures and full schedule information.
8. Safe, orderly procedures for loading and unloading passengers.
9. Fair and reasonable rates.
10. Diligent investigation and timely redress of complaints.

If you have a complaint against a van displaying the JAVO Quality Seal of Approval or would like more information, call
JAVO HOTLINE: (718) 712-3421.

Figure 2.1. JAVO Passenger's Bill of Rights

been most attracted to pre-arranged, subscription services, like vanpools and buspools. Besides the near-ubiquitous airport shuttle vans, other specialized services catering to middle-class clients that have emerged include neighborhood-to-subway shuttle runs and child paratransit.

This chapter demonstrated that jitneys, vans, and shared-ride taxis provide significant performance advantages over conventional bus transit. On a cost-per-passenger basis, where bus operating expenses are typically understated, commercial paratransit had a decisive edge. Berkeley's racetrack taxipools and Miami's jitneys cost 70 percent less for every passenger carried than comparable public bus services. With San Ysidro's jitney runs, per-passenger costs were 20 percent lower, only because these jitneys compete with one of the most productive bus routes in the country. While Berkeley's shared-ride taxis and Miami's jitneys carried, on average, half as many passengers per hour as their subsidized competitors, they did so with vehicles with five to 10 times less capacity. Perhaps most telling are the results of passenger surveys in Miami and New York City. In both places, paratransit customers consistently preferred jitneys and vans over buses for their frequent services, speed advantages, convenience, guaranteed seats, and user-friendliness. One-third of Miami's surveyed jitney riders said they would have walked, driven, or foregone the trip rather than ride Metrobus if jitney services were not available. These are powerful findings, clearly showing that paratransit services in these cities have carved out distinct market niches. While jitneys and vans have taken customers away from public bus systems, they have done so mainly by providing superior services, without subsidies.

To date, restraints on market entry have spawned illegal jitney and van operators in cities like Miami and New York City, and most certainly in other places as well (see the discussions of community-based paratransit in Chapter Three). The chief policy response has been enforcement sweeps and crackdowns. There is clearly a need for safeguarding public safety. Most jitney and van operators acknowledge that their industry is plagued by too many unfit, unlicensed operators. Some argue, however, that "one-size-fit-all" standards are wrongheaded, ignoring the tremendous diversity of the traveling public. Should everyone be forced to ride in vehicles that are fairly new, meet high liability insurance requirements, and have comfortable, padded seats, paying a premium fare for these provisions? Must van riders in southeast Queens and jitney patrons in San Ysidro, many of whom come from countries where customers give up quality and accept higher risks in return for cheaper fares, be forced to travel in American-style comfort? One can turn the matter of regulatory violations on its head, focussing less on ways of strengthening enforcement and more on ways of loosening or "flexing" regulatory standards.

Overall, shared-ride taxis, jitneys, and commercial vans provide valuable transportation services in areas where they have survived. Legal or otherwise, they have emerged to serve unmet consumer demands, often going into areas poorly served by mass transit systems. Their potential to serve other submarkets, like middle-class customers, is largely unexplored because of regulatory and policy restrictions. Notwithstanding such barriers, a few more specialized forms of commercial paratransit have

emerged in recent years that have begun to tap into such markets. It is to the experiences of these alternative services that we now turn.

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Chapter Three

Ridesharing, Shuttles, and Neighborhood-Based Services

3.1. INTRODUCTION

This chapter complements the previous one by exploring the various service, market, and performance features of commercial paratransit; however, here we look at versions that are more specialized, serving specific clientele or a more definable market niche. The paratransit options discussed in this chapter are defined more in terms of how services are organized — e.g., pre-arranged, advanced reservations, employer-supported, developer-sponsored, community-based — than the kinds of vehicles used or where and how they operate. Indeed, many of these services operate like jitneys, shared-ride taxis, or commuter vans, as discussed in Chapter Two. However, what distinguishes the paratransit offerings discussed in this chapter is the fact that customers are making related trips for similar purposes, often on a regular basis. It is this relatedness of trip-making that allows services, like employer-sponsored vanpools or supermarket shuttles, to be organized and adapted to the special needs of travelers.

3.2. SUBSCRIPTION VANS AND BUSES

Subscription van and bus services organized and operated by private carriers gained popularity during the 1970s; however, with time, most of these services have been taken over by government agencies and supported by subsidies. The very nature of subscription services is regularity — both of supply and demand. Subscription services often focus on the commuter market, with "subscribers" paying private operators in advance for a pre-arranged, agreed-upon amount and quality of transportation services.

Many early subscription services started in what at the time were remote new towns, like Reston, Virginia, and Columbia, Maryland, well outside of the service jurisdictions of public transit authorities. However, as metropolitan areas expanded outward to envelop these new towns and exurbs turned into suburbs, most commercial, commuter-based subscription services came under the wings of regional transit operators, county governments, or third-party brokering agencies (e.g., Commuter Computer in Southern California). Still, several commercial paratransit industries that operate on a subscription basis remain today, catering to fairly unique market niches, notably child paratransit services and residential-based vanpooling. Besides being pre-arranged, pay-in-advance monthly services, the subscription offerings reviewed in this section differ from the commuter services discussed in Section 3.3 in that they are organized by residents, developers, or private carriers rather than employers.

3.2.1. Private Commuter Buses and Vans

In the 1970s and 1980s, successful private bus operations thrived in metropolitan Los Angeles, Washington, D.C., New York-New Jersey, Boston, Houston, and Norfolk-Virginia Beach, where thousands of suburbanites traveled to work centers scattered through each metropolitan area, sometimes in comfortable coaches offering headrests and guaranteed seats (Moriok and Viton , 1980; Multi-Systems, 1982; Giuliano and Teal, 1985). Many of these earlier services were organized by private bus companies themselves. Since these subscription buses typically made a single round trip per day, companies often redeployed buses in the midday for charter services.

In the Woodlands, north of Houston, and the Meadowlands in Bergen County, New Jersey, two rapidly growing edge cities during the early 1980s, over 25 privately operated commuter buses served their respective residents and employees on an average weekday in the early 1980s (Cervero, 1989). Metropolitan Boston had the largest number of unsubsidized regular-route commuter buses at the time -- a fleet of over 300 intercity buses operated by 15 private vendors that carried some 15,000 people to work each day, more than commuter rail services (Giuliano and Teal, 1985). In the Hampton Roads area, some 95 private commuter vans, 150 buspools, and thousands of carpools connected suburban residents to military installations in Norfolk and Newport News in the late-1970s, capturing around 15 percent of work trips to these destinations (Comsis, 1982).

The lure of government aid led to the conversion of many earlier subscription van and bus programs to public sponsorship. With public ownership, as much as 80 percent of the cost of purchasing vans and buses was covered by government grants, in addition to shares of operating costs. To subscribers, going public meant economizing on commuting. Many regional transit agencies that entered the subscription bus business smartly contracted out their services to private companies, thus keeping wage levels comparable to what they were under private ownership. Effectively, then, the transfer of subscription bus and vanpool services to public ownership meant gaining access to capital subsidies, a transfer payment that benefitted local authorities and suburban commuters alike.

Among the U.S. transit agencies currently involved in the commuter bus business in a big way are PACE Transit (suburban Chicago), Houston Metro, and Golden Gate Transit (GGT) and San Mateo Transit (SamTrans) in the San Francisco Bay Area. In 1992, GGT contracted out for long-haul services on 22 commuter routes, most tying Marin and Sonoma County residents to jobs in downtown San Francisco's Financial District. Some services are effective quasi-public, as in New York City. There, six private bus lines operate over 20 express routes, carrying some 60,000 workers to Manhattan jobs each day (or around half of bus trips into Manhattan).¹ The city helps underwrite the cost of these services

¹Private operators providing express bus services to and within New York City include Green Bus Lines, Jamaica Buses, Triboro Coach Corporation, Command Bus Company, Queens Transit Corporation, Steinway Transit Corporation, Liberty Bus Company, and New York Bus Company.

and, by granting firms exclusive franchises for specific routes, shields express operators from direct competition (other than from the illegal operators discussed in Chapter Two). Notwithstanding these subsidies and protections, private express bus operators are relatively cost-effective — in 1990, their average operating cost per vehicle mile was around 30 percent lower than of the New York City Transit Authority's express bus and cross-town services (Savas and Cantarella, 1992). Supplementing these express bus franchises are the 600 or so private commuter vans, half of which are unlicensed, that descend on Manhattan each morning (see Chapter Two)

Even states have gotten into the commuter bus business. Because of the growth in inter-city and cross-state commuting, Maryland's Mass Transit Administration today contracts with private carriers to provide express bus runs, called "Flyer Services," that feed either into Washington Metrorail stations (e.g., Shady Grove, Silver Spring) or major employment centers in the Baltimore region. Over 7,000 Maryland commuters patronize these express services each day, paying fares that cover 60 to 80 percent of operating costs.

Washington state dominated in the provision of transit agency-sponsored vanpool services in 1993, with Seattle Metro comprising over 40 percent of the national total (Table 3.1). In all, 15 percent of vanpool services provided by public transit agencies in the U.S. were privately contracted (Federal Transit Administration, 1994). The average publicly-supported vanpool recovered an estimated 60 percent of fully-allocated costs (including depreciation and debt service) through fares, a high recovery rate by public transit standards though still a far cry from two decades earlier when private subscription services generated profits.

While subsidized vanpools are now the industry norm, privately initiated, organized, and financed vanpools can still be found today. Many serve long-haul commutes that extend beyond the service jurisdictions of public transit agencies. An example is a reverse-commute vanpool that operates between the Oakland-Berkeley area of the East Bay and the University of California at Davis, a distance of around 80 miles each way. Organized by 14 employees of the University who got together on their own by communicating through fliers and word-of-mouth, the vanpool operates each weekday as a "one-to-few" service, collecting participants at the El Cerrito BART station parking lot and reverse commuting along Interstate 80 to several parts of the Davis campus. Participants lease their van from VPSI, Inc., a national van leasing company, and split monthly fees (including a \$70 tab for one of the participants to schedule drivers and weekend usage) evenly, coming to \$10 per day in 1995. Because California state law allows a 40 percent tax credit — up to \$480 per year — for vanpooling expenses, the true cost to participants is closer to \$7 to \$8 per day.² Driving duties are rotated. Members have access to the van on weekends by scheduling use in advance. Overall, most vanpools serving Bay Area resi-

²In addition, employer-provided ridesharing benefits, like free parking, are fully exempt under California tax law and exempt up to \$75 per month under Federal tax law.

Table 3.1. Largest Vanpool Programs Sponsored by U.S. Public Transit Agencies, 1993^a

	Total Vans in Operation	Percent Contracted	Passengers per Vehicle Mile	Annual Passengers (1,000s)	% of Agency Total by Vanpools	
					Passengers	Vehicle Miles
Seattle (Metro), WA	509	0.0	8.9	2,161.5	2.6	7.6
Chicago (Pace Transit), IL	116	12.1	9.5	522.3	1.4	6.1
Snohomish County, WA	70	0.0	9.4	230.3	4.5	10.6
Brevard County (SCAT), FL	69	100.0	4.0	258.0	34.2	42.5
Richland-Ben Franklin, WA	62	0.0	8.4	315.9	4.2	26.2
Tacoma (Pierce Transit), WA	61	0.0	10.5	219.8	2.1	7.8
Bremerton County, WA	45	0.0	6.8	119.3	3.7	11.9
Winston-Salem, NC	35	0.0	122.7	151.1	4.1	22.5
Phoenix (RPTA), AZ	33	100.0	9.4	148.9	9.8	26.8
Orlando (LYNX), FL	29	100.0	7.5	100.5	0.9	7.1
Spokane, WA	25	0.0	11.6	73.1	0.9	2.7
Olympia, WA	19	0.0	4.4	94.9	2.8	12.0
Charlotte, NC	18	0.0	11.0	127.5	1.1	5.4
Birmingham, AL	16	0.0	7.5	114.9	1.9	7.8
Nashville, TN	16	0.0	7.0	68.1	1.0	7.0
Norfolk (TRT), VA	16	0.0	11.3	74.6	0.9	3.7
St. Louis (MCT), MO	15	106.0	11.0	77.3	7.2	9.8
Orange County (OCTA), CA	12	0.0	11.5	27.6	0.1	0.4

^aFor agencies operating or contracting for at least 10 vanpools.

Source: Federal Transit Administration, 1993 National Transit Database, Section 15 Report Year, Data Tables. Washington, D.C.: Federal Transit Administration, U.S. Department of Transportation.

dents — approximately 700 according to RIDES for Bay Area Commuters, the regional rideshare brokering agency — are owned or leased by private individuals; there are comparatively few vanpool programs sponsored by employers or transit agencies, in part because state law provides tax breaks that make it economical for vanpoolers to foot their own bills.

3.2.2. Child Paratransit Services

Chauffeuring children and teenagers to school and weekend events has become a boom business in the 1990s, fueled by the growth in two-income, working parents. Child van services provide individually customized door-to-door transportation to and from school, after-school activities, orthodontist appointments, music lessons, and weekend social and sports events (Photo 3.1). Currently, around 250 firms across 43 states operate specialized van services for children on a contract, subscription basis, with over two-thirds located in the northeast (NJ, MD, VA), midwest (MI, IL, IN), California, and Florida.³ Some are "mom-and-pop" operations that use one or two vans, many times run by husband and wife teams where one drives the van and the other solicits business and answers telephone calls out of their home. More typical are firms that run two to three vans, operated by two salaried (non-unionized)

³Some of the information in this section was obtained from an interview with the Director of the National Child Transportation Association, which maintains a national inventory on many, though not all, service-providers.



Photo 3.1. A Child Transportation Van providing weekend service in Marin County, California

drivers who maintain contact via cellular-phone with the owner/manager who operates out of his or her house. A handful of companies in greater Los Angeles, Denver, Washington, D.C., San Francisco, Detroit, Ft. Lauderdale, and other cities are much more substantial operations, with anywhere from 10 to 32 vehicles, an administrative office, a maintenance garage, and centralized radio-dispatching facilities.

The two industry leaders, Kids Kab (based in Oakland County, Michigan) and Kanga Kab (headquartered in New Jersey), initiated services in the early 1990s. Kids Kab was started when Pamela Henderson, a working mother of three children in Birmingham, Michigan, distributed 200 fliers in the spring of 1991, offering to transport neighborhood children to and from school and special activities. In the first three days she received over 600 responses (Orski, 1993b). At first, all trips were scheduled by hand and three vans carried about 50 kids per day. By 1993, Kids Kabs expanded into a far-flung network of 27 franchises in 12 states that collectively carried 50,000 riders per month. Kids Kabs soon spawned numerous imitators. Some franchisees overcapitalized too quickly and in the face of increased competition, within a year's time went out of business. Today, Kids Kabs has 18 franchises across seven states, averaging around 38,000 riders per month, down some 25 percent from two years earlier.⁴ The

⁴The first franchise was awarded in July 1991, and since that time Kids Kabs has received several thousand franchise applications. Today, a franchise goes for \$28,000. Franchisees must be located in areas that have 7,000 to 10,000 children between the ages of 3-17 within a seven-mile radius.

largest Kids Kabs franchise, run by the founder-owner in Michigan, operates 17 12-passenger Ford Econoline vans and maintains a fully automated routing and billing system.

Service practices across the industry are fairly similar. Because safety and security are uppermost in parents' minds, children are usually issued photo identification cards that become their van admission ticket. Children are not left unattended unless greeted at the door by a parent or other pre-approved person. To allay parents' fears of turning their children over to strangers, drivers are carefully screened, including extensive background checks, driving exams, and personal interviews. Often, mothers, retirees, and school bus drivers are hired at modest hourly wages. The largest child transportation carrier in the country, VanGo out of Encino, California (with 32 vans and over 9,000 monthly trips), reports that only 15 percent of driver applicants are hired. In terms of eligibility, companies normally set no age limit, though few carry children younger than three years old or who are not toilet trained. VanGo will serve infants and toddlers as long as they are accompanied by a licensed nanny.

A standard industry practice is to charge a fixed monthly fee based on a minimum number of rides per month. According to the National Child Transportation Association, fees range from \$4.50 per trip in small rural areas to \$8 per trip charged by large operators in big cities.⁵ For large firms like Kids Kab, parents normally pay around \$2,500 to \$3,000 per child for the school year and extracurricular activities (as late as 7 p.m.). VanGo averaged monthly revenues of around \$80,000 in 1995, like most carriers, catering to predominantly upper-middle-income suburban households. In most cases, parents first pay a registration fee and then arrange their child's travel itinerary in advance. Services are normally pre-paid the first of each month, eliminating the need for children to carry and drivers to collect cash, and providing operators a cash flow advantage.

The bread-and-butter market for child transportation services is school trips, making up over half of all contracted trips. During midday, some operators provide charter services to day-care centers, senior citizens, and airport travelers, or engage in package delivery.⁶ After-school hours are usually dedicated to extracurricular activities, like gymnastic classes and tennis lessons. On weekends and when school is out of session, operators focus on other markets: birthday parties, summer camps, shopping malls, recreational theme parks, and sports events. VanGo has set up its own summer program, "Summers on Wheels," that for \$300 per week takes children and teenagers on daily excursions to the beach, Disneyland, and other Southern California attractions. In Florida, one enterprising operator convinced a local orthodontist to schedule children in groups so that van trips could be efficiently consolidated.

⁵Most carriers charge flat fares per trip. In large metropolitan areas, a distance surcharge is normally added. VanGo of Southern California adds distance surcharges based on increments of four miles per trip. To avoid excessive deadheading, VanGo limits its services to a 50-mile radius of the San Fernando Valley.

⁶Kids Kab, for instance, changes its distinct red and blue vehicle identification signs to accommodate other markets. Sometimes a "white-out" magnetic sign is used when transporting teenagers who are embarrassed to be identified as "kids." When transporting seniors, a sign that says "Big" is often added so that the logo reads "Big Kids Kab" (Orski, 1993b).

Overall, the industry has shifted away from providing telephone-requested services on short notice to pre-arranged contract services with parents, schools, day-care centers, sports camps, YMCAs, and other groups.

As inter-city carriers, child transportation services are normally regulated by states. Because they limit services to a specific clientele (children) and operate on a contract basis, they are typically licensed as charter services, a designation that impose few regulatory constraints other than meeting minimum liability insurance coverage and driver fitness standards. All businesses operate vans that carry 15 or fewer passengers, thereby avoiding more stringent insurance requirements. No states have yet enacted regulations that are specific to the child paratransit industry; however, California is presently exploring this possibility. Because children are our most cherished and precious resource, it is just a matter of time before tighter controls over this industry can be expected. Like airport shuttle vans, however, the market demand for specialized child transportation services is too entrenched and powerful for heavy-handed regulations, as in most other commercial paratransit sectors, to survive politically. Overall, after a period of market shake-out, the child transportation industry is now reaching maturity, providing a highly specialized paratransit service that has become an permanent fixture on the urban mobility scene.

3.2.3. Residential-Based Commuter Services

Another unique example of subscription services are vanpools and club buses initiated by either residential developers or residents themselves. Thus, unlike most ridesharing programs that are organized at the "destination end" (i.e., workplace), these programs organize trips at the origin, or "residential end." Two of the most significant initiatives to date were both based out of planned communities on the fringes of large metropolitan areas — the Reston Commuter Bus for residents of Reston Virginia, and the Homeowner Vanpool set up for residents of the Antelope Valley in north Los Angeles County.⁷ Because residents of these suburban communities often worked at different offices in the same general vicinity — i.e., federal offices in the nation's capital in the case of many Restonians, and downtown or west Los Angeles's aerospace complex for many Antelope Valley residents — community-based subscription van services were cost-effective.

Vanpools and buspools with many-to-one routing are only attractive for long commutes, typically 20 miles or longer, because only then is the time spent picking up other passengers en route a small share of total door-to-door travel time. Reston and the Antelope Valley met this criterion. While Reston's subscription service was organized by residents, in the Antelope Valley, the residential devel-

⁷In the early 1960s, commuter groups in Marin, Sonoma, and Napa Counties in northern California contracted with private bus companies to operate services north of the Golden Gate Bridge; however, these services were soon taken over by the Golden Gate Bridge, Highway, and Transportation District (GGBHT). Similar events occurred in metropolitan New York-New Jersey and greater Boston in the 1960s.

oper, Kaufman & Broad Corporation, initiated and marketed vanpools. The Woodlands, a new town 27 miles north of Houston, operated similar residential-based subscription van services in the 1980s. None of these residential-based subscription services exist today, all having been taken over by public entities; however, their experiences provide glimpses into the working of alternative models of commuter transportation services.

Reston Commuter Bus

The Reston Commuter Bus (RCB) was organized in 1968 by a group of Reston residents who were looking for a commuting alternative for the 22-mile trip into Washington, D.C. No express public bus services were available at the time. The residents formed a cooperative and contracted with a private company to provide high-quality commute runs using spacious, temperature-controlled coaches with tinted glass and comfortable seats. The cooperative managed RCB's buspools to ensure that revenues covered contract costs and produced a small profit to pay administrative expenses. Additional runs were not contracted until a waiting list of prospective subscribers would be sufficient to cover costs. RCB's monthly ridership catapulted from just over 1,000 passengers in 1968 when services began to 57,000 in 1977. This outpaced Reston's population growth — 3,000 to 30,000 — over the same period. By the late 1970s, around one-third of Reston residents who worked in downtown Washington, D.C., were RCB subscribers. Coaches averaged nearly 30 passengers per revenue hour of service, an impressive level of vehicle productivity, even by today's standards (Multisystems, 1982).

A combination of bad business decisions by the RCB contractor and an expansion of the service jurisdiction of the Washington Metropolitan Area Transit Authority (WMATA) led to RCB's demise in 1979. RCB's per-passenger-trip cost had risen from just over a dollar in 1974 to \$1.50 in 1979, so public takeover of service was welcomed by many subscribers. During most of the 1980s, WMATA used eight large-size vans to make some 75 express runs per day between Reston and Washington, D.C., with rides booked on a month-to-month basis. Today, Fairfax County has taken over express bus services, now called the Reston Express, which provides commute-hour runs for some 2,500 passengers per month to the District and employment centers along the Dulles corridor. This is considerably below what RCB was serving nearly two decades earlier, despite Reston's population having grown to 58,000 and employment base to 30,000 in the mid-1990s. Overall, job decentralization, expanded employer-sponsored vanpools, and the opening of private toll facilities like the Dulles Greenway have cut into the market base of residential-based commuter services in metropolitan Washington, D.C.

Residential-Based Subscription Vanpools

In early 1992, Kaufman and Broad Corporation, one of the largest single-family homebuilders in Southern California, launched an experimental subscription vanpool program. Called Homeowner Vanpools, at its height the program operated seven vans (12 to 15 passengers) that carried around 100

Antelope Valley residents to jobs in downtown Los Angeles, west Los Angeles, Edmund Air Force Base, and employment hubs in the San Fernando Valley. Vans were leased from VPSI, Inc.; subscribers paid between \$69 and \$205 monthly, depending on the size of vehicle and distance traveled, and also split gasoline costs. Van drivers commuted for free and got unlimited use of the vehicle during non-commute periods. By managing the program and placing the company's name and logo on the vehicles, Kaufman and Broad felt it enhanced its corporate image and marketability of its properties. In 1994, however, the program was taken over by Commuter Transportation Services (CTS), Inc., Southern California's regional ridesharing agency, in part because being run through CTS or sponsored by employers meant participants could receive rebates as high as \$100 per month from the Los Angeles County Metropolitan Transportation Authority. Also, a downturn in the regional economy and sluggish home sales prompted Kaufman and Broad to stop participating in the program and refocus its efforts. Still, by all accounts, the Homeowners Vanpool program was a highly successful, if short-lived, experiment with residential-based ridesharing.

The story in The Woodlands was quite similar. In the mid 1980s, The Woodlands Corporation, developer of the new town, sponsored The Woodlands Commuter Services vanpool program because public transit did not service the area. Vanpools were provided on a monthly subscription basis and priced to recover full costs. By 1990, however, subscription vanpools to and from The Woodlands were taken over by Brazos County, replaced by publicly subsidized express bus services.

One place where residential-based subscription services remain today is in fast-growing Montgomery County, in large part because of the County's 20-year-old Adequate Public Facilities Ordinance (APFO). The ordinance stipulates that developers must commit to trip reduction measures before building or occupancy permits are issued. The Robey Road Commuters Association, for instance, was formed by a single-family-home builder to provide free minivans to groups of homeowners and renters who rideshare. In this instance, vanpools functioned as a congestion mitigation measure that satisfied the APFO requirements and allowed the developer to continue building homes.

3.3. EMPLOYER-SPONSORED RIDESHARING

Empty automobile seats are probably the most wasted resource in the urban transportation sector. By far, the most successful initiatives to fill these seats to date have been organized and funded, in total or in part, by large employers. In a nationwide study of 160 employer-sponsored carpool and vanpool programs, Wegman (1989) found average ridesharing rates of 17 percent and benefit/cost ratios of 2.2 to 21.2. Although employer vanpools are not pure commercial paratransit services, in the sense that many companies help underwrite costs, nonetheless they represent examples of paratransit

provided by the private sector absent of government subsidies.⁸ And in most cases, the majority of costs are covered by beneficiaries, the workers themselves.

3.3.1. Ridesharing Successes

In the 1970s and 1980s, ridesharing programs launched by Rockwell International in Golden, Colorado, Lawrence Livermore Laboratory in Alameda County, California, and Tennessee Valley Authority in Knoxville, Tennessee, attracted 60 percent or more of all employees to carpools and vanpools (Dingle Associates, 1982; Multisystems, 1982). Other corporate-sponsored programs with employee participation rates exceeding 40 percent during the 1980s were found at Fluor Corporation central Orange County, California, Tektronix, Inc., of Beaverton, Oregon, the 3-M Company of St. Paul, Minnesota, Transnational Motor, Inc. of Grand Rapids, Michigan, and Puget Power and U.S. West of Bellevue, Washington.⁹ Motivated by factors as diverse as deferring parking expansion costs, conserving energy, and being good corporate citizens, these firms also offered incentives like preferential parking, free lunches, travel allowances, raffle gifts, and subsidized group auto insurance to lure workers into carpools and vanpools.

The most successful employers-sponsored vanpool programs in recent times have been sponsored by TransAmerica in San Francisco (19 percent vanpool modal split), Arco Oil Company in Los Angeles (14 percent), Allergan, Inc., in Orange County (9 percent), and tenants of the Bishop Ranch Office Park in San Ramon, California (9 percent). Presently, around 70 vanpools serve Bishop Ranch employees; part of the cost for these services are written into the long-term leases signed by the 195 business tenants who reside in Bishop Ranch, a condition the city of San Ramon placed on project's developer. U.S. West in Bellevue wins top honors for the highest non-drive-alone modal splits for a company outside of a CBD — 74 percent, consisting primarily of carpools (Comsis, 1994). This is a remarkable achievement for a suburban employer, and is mainly the product of no-nonsense parking policies: namely, limiting supplies (one space per three workers) and charging commercial rates for single-occupant parkers (and making parking free for vehicles with three or more occupants). In con-

⁸Financially, vanpool and carpool participants gain both directly and indirectly from employer assistance. Both direct and in-kind contributions from employers — like free parking, cost-sharing for van leases, and insurance underwriting — are exempt from Federal income taxes up to a value of \$75 per month.

⁹Not all of these high ridesharing rates were sustained over the long term. In the late 1980s, for instance, fewer than 10 percent of 3M employees were ridesharing, about the same share found for most other St. Paul area employers, despite the company's continuing support — hiring a full-time coordinator, ridematching assistance, vanpool subsidies, preferential parking for vans, and subsidized transit passes. The drop in vanpooling has been attributed to some employee turnovers and relocation, as well as the expansion of flexible work hours (thus complicating ridematching) (KT Analytics, 1989). Experiences in California likewise reveal that high rates of employee participation in commute option programs are difficult to sustain indefinitely (Orski, 1993b). Three of five suburban employment centers in the San Francisco Bay Area saw a slow but steady attrition in the rate of ridesharing and transit usage during the first five years of trip reduction efforts.

trast, another nearby office building in downtown Bellevue provides more than one space per worker at no charge. Commuting habits in this building are strikingly different — 85 percent of workers drive alone and only 8 percent carpool or vanpool (Cervero, 1993). In a recent nationwide assessment, Reid Ewing (1993) concluded that aggressive employer-based ridesharing incentives can reduce daily vehicle commute trips to worksites by 5 to 15 percent; if substantial parking charges are levied as well, this number climbs to 20 to 25 percent or more.

Along some corridors, HOV lanes have been equally valuable in attracting commuters to vanpools and carpools.¹⁰ The 11-mile-long Shirley Highway HOV in northern Virginia saves vanpoolers an average of 20 minutes per trip relative to general traffic lanes; as a result, carpools and vanpools comprise 57 percent of person trips and 92 percent of vehicles on the HOV lanes (Kain et al., 1992). Other major vanpool carriers are HOV lanes on the San Bernardino Freeway, San Francisco Bay Bridge, the Lincoln Tunnel and Gowanus Expressway connecting to New York City, Seattle Interstate 5 North, and Dallas's Interstate 305 (Table 3.2). The high passenger throughput relative to the number of vehicles on the Shirley Highway HOV lanes testifies to that facility's popularity with vanpoolers, a significant number coming from affordable housing enclaves in the fast-growing exurban counties of Prince William and Fauquier in northern Virginia.

3.3.2. TMAs and Ridesharing

In the late 1980s, Transportation Management Associations (TMAs) gained popularity as forums for advocating the mobility interests of firms in edge cities and large-scale office parks. At the time, many companies began handing over to TMAs such functions as ridematching, rideshare marketing, and occasionally sponsorship of carpools and vanpools (Cervero, 1986; Orski, 1988). Some TMAs, like those representing the Hacienda Business Park and Bishop Ranch east of Oakland, El Segundo in west Los Angeles, and Tysons Corner in northern Virginia, focused much of their efforts on providing companies ridesharing services, mainly in response to mandatory trip reduction ordinances enacted by local governments. A 1992 survey found that 63 percent of 150 nationwide TMAs provided some level of programmatic support for vanpools, and 38 percent did likewise for buspools (with services usually brokered through the TMA to a third-party contractor); the same survey showed that 33-40 percent of TMAs provided carpool/vanpool subsidies and around 20 percent arranged for free or discount parking for ridesharers (Ferguson et al., 1992).

¹⁰A study of the opening of HOV lanes on State Route 55 in Orange County, California, in the mid-1980s, for instance, found that 57 percent of the carpools and vanpools did not exist previously when there were no HOV lanes (Weseman, et al., 1989).

Table 3.2. Major Vanpool and Carpool HOV Facilities in the U.S., 1992

	No. of		Length (Miles)	A.M. Peak Hour HOV		Description
	Directional Lanes HOV Freeway			No. of Van & Carpool Vehicles	Passengers	
Washington, D.C: I-395 (Shirley)	2R	4	11.0	2,573	11,276	Exclusive lanes, Freeway ROW
Seattle, WA I-5 North	1E	4	4.6	7,691	9,476	Concurrent flow lanes
I-90	1W	3	6.2NB/ 7.7SB	6,070	6,798	Concurrent flow lanes
San Francisco, CA I-80 (Bay Bridge)	4W	5	2.3	2,325	8,273	Concurrent flow lanes, Toll plaza bypass
Dallas, TX I-30E	1E	4	5.2WB/ 3.3EB	7,000	7,600	Contraflow lanes
New Jersey/New York SR 495 (Lincoln Tunnel)	1I	3	2.8	4,475	7,380	Contraflow lanes
Gowanus Freeway	1I	4	2.0	3,794	7,569	Contraflow lanes
Los Angeles CA I-10 (San Bernardino Freeway)	1E	4	12	1,374	4,352	Exclusive lanes, Freeway ROW

Notes: R = reversible W = westbound only NB = northbound WB = westbound
 E = each direction I = inbound only SB = southbound EB = eastbound

Sources: Turnbull (1992), Kain et al. (1992).

Increased employer and TMA involvement in promoting ridesharing failed to stem the tide of rising solo-commuting, however. Between 1980 and 1990, ridesharing lost almost 4 million commuters across the U.S., from about 19 million to about 15 million, reducing its market share of work trips by one-third, from almost 20 percent to just over 13 percent (Pisarski, 1992). Average vehicle occupancy for commutes dropped from 1.15 to 1.09. Even Houston, which embarked on developing the nation's largest HOV network in 1984, saw around 70,000 ridesharers switch to solo-commuting during the 1980s. Research suggests that a combination of cheaper gasoline prices, rising labor force participation among women, and increasing suburbanization were largely responsible for commuters giving up ride-sharing in favor of solo-commuting during the eighties (Federal Highway Administration, 1994).

3.3.3. Ridesharing and Regulations

With the passage of the Clean Air Act Amendments of 1990, the driving force behind rideshare programs in more recent years has been government regulation, specifically requirements that non-attainment areas introduce Transportation Control Measures. In California, the South Coast Air Quality Management District enacted its own requirement, Regulation XV, mandating that large employers reduce drive-alone commutes to their work sites and prepare annual trip reduction plans identifying TCMs they plan to implement. Several years after Regulation XV's 1988 enactment, fewer than a third

of large employers in greater Los Angeles subsidized employee vanpool and carpools; more common were "low-cost, low-impact" activities like rideshare marketing programs and preferential parking for carpoolers and vanpoolers (Giuliano et al., 1993; Orski, 1993a). There were exceptions, however. The TMA for Warner Center, an edge city in the western San Fernando Valley, formed one of the largest vanpool networks in the country in the wake of Proposition XV. By 1992, the Warner Center TMA featured a fleet of 75 15-passenger vans (with VPSI as the contractor), supported by such incentives as guaranteed ride home (in case subscribers have midday emergencies or end up working late), preferential parking, and transportation vouchers. Throughout Southern California, Commuter Transportation Services, the regional ridesharing broker, reported that over 2,000 vanpools existed in 1994, and some 50 firms helped underwrite their workers' ridesharing expenses.

Despite Regulation XV's good intentions, drive-alone rates in the Los Angeles basin rose from 77.2 percent in 1992 to 80.6 percent in 1994. Even the Northridge Earthquake of January 1994 that brought down major freeway stretches in Los Angeles failed to change commuting behavior very much — in the aftermath, only around 4 percent of Los Angeles County commuters switched to carpools and vanpools (Commuter Transportation Services, Inc., 1994). Partly because of these disappointments, the California Legislature terminated the state's eight-year experiment with trip reduction mandates in late 1995, opting instead for voluntary initiatives that allow employers to substitute "emissions equivalency" programs, like remote sensing (to determine if any employees's cars are gross-emitters) and vehicle scrappage programs.

3.4. CASUAL CARPOOLS

Not all ridesharing programs in the U.S. have been formally organized. Perhaps the most *laissez-faire* form of transportation "privatization" in the U.S. are casual carpools, wherein commuters spontaneously organize themselves to ride to work with strangers. Casual carpooling, popular in greater San Francisco-Oakland and Washington, D.C., with some activity also in Denver and Pittsburgh, differs from hitchhiking in that dozens of individuals gather at transit stops to catch rides from motorists looking to fill vacant seats. Carpools form because there is a direct incentive — usually both time and monetary savings. In the Bay Area, around 8,000 commuters form three-person, one-way casual carpools each weekday in order to shave 20 minutes off the morning commute and avoid \$1 bridge tolls by using the HOV bypass lane leading to the Bay Bridge toll plaza (Beroldo, 1990; Brock, 1993). There, casual carpools has evolved as a many-to-few form of commercial paratransit — people residing in "many" locations all over the East Bay gather at transit stops and freeway entrances to catch rides to a "few" locations in downtown San Francisco, like the Transbay bus terminal and BART sta-

tions along Market Street.¹¹ Recent surveys show that around 55 percent of Bay Area casual carpool drivers and 90 percent of casual carpool riders used to commute by some other non-drive-alone means — either in formal carpools or vanpools, or by mass transit (Brook, 1993). Most prefer casual carpools because the ride is free and they have a guaranteed, and often more comfortable, seat. They also usually get to work faster than transit and definitely faster than commuting alone. Perhaps the most important lesson from the casual carpool experience is the importance of providing incentives — like HOV lanes — in luring Americans over to ridesharing.

Mostly well-dressed professionals of all races, male and female alike, the Bay Area's casual carpoolers line up at well-known spots leading to the Bay Bridge, and catch the first car — be it a subcompact or luxury model — that pulls up (Photo 3.2). Some staging zones are near transit stops, giving people the option of riding a bus or train in case, in the rare occasion, no driver comes by. At the busiest pick-up points, a steady stream of cars and passengers hook up during most morning hours. Two passengers at the head of the "people queue" get in the first car in the "vehicle queue," and usually after a brief greeting, the carpool dashes off to the city. No money changes hands between the driver and passengers. Because strangers are co-occupying the vehicle and many value some privacy in the morning, there is an unwritten code of conduct — little conversation, no radio music, and no smoking.

In that the average Transbay BART commuter incurs operating deficits of \$1.30 per trip (ignoring capital costs) and deficit levels are even higher on AC Transit's Transbay routes, casual carpools function both as "load shedders" (relieving public transit operators of having to expand costly peak-hour services) and "deficit skimmers." While taxpayers should be grateful for the casual carpool phenomenon, public transit agencies in the Bay Area have long tried to eliminate them from competition on the grounds that these services are robbing them of revenues. This is certainly borne out by surveys — in 1985 and 1987, between 76 and 85 percent of casual carpool passengers formerly got to work by transit (Beroldo, 1990). Since large transit operators like BART and AC Transit typically exhibit diseconomies of scale, or no better than constant returns, the only thing casual carpools are guilty of is succeeding in an imperfect marketplace (i.e., one where both public transit riders and single-occupant motorists accumulate substantial subsidies).¹² Nonetheless, AC Transit has restructured its fare policy so that

¹¹More casual carpooling takes place in the Bay Area than anywhere else. However, unlike other sites around the country, casual carpooling in the Bay Area is decidedly a unidirectional phenomenon — to downtown San Francisco in the morning. Casual carpooling does not work well in the evening for several reasons. One, there are no time savings because, except for one freeway on-ramp, there are no HOV lanes in the eastbound direction. Neither are there any eastbound tolls. Also, East Bay destinations are scattered all over.

¹²Perhaps the most perverse effect of casual carpools is that many fill up suburban park-and-ride lots at BART stations in the morning. A 1986 survey by BART counted 570 commuters parking in the Orinda station lots (which collectively hold 1,380 cars) and joining casual carpools. Of course, casual carpoolers are behaving rationally in taking advantage of free parking spaces, just as BART commuters. The appropriate policy response to this problem is to charge for parking, not just at BART stations but everywhere, under the simple logic that parking



Photo 3.2. Casual Carpools forming near freeway on-ramp in Oakland

Transbay express bus commuters pay a double fare for east-bound afternoon services. This has dampened but by no means eliminated the incentive for casual carpooling. Hundreds of East Bay commuters are willing to pay two-way bus fares for one-way service given the opportunity to receive what many perceive to be a superior carpool ride in the morning. One might argue that an efficiency-minded organization would have responded to a reduction in peak-hour service by curtailing operations and perhaps redeploying equipment and personnel to other corridors. Unfortunately, such responses are rare among transit agencies that operate as public monopolies and that rely on subsidies to shield them from the burden of rising operating costs. And as discussed in Part II, Chapter Four, public transit employees are represented by powerful labor unions that fight efforts to curtail services in fear of workers losing jobs.

3.5. FEEDER SHUTTLES AND CIRCULATORS

Another increasingly popular form of paratransit supported by the private sector has been shuttle vans that either feed into transportation terminuses, typically rail stations, or circulate within neighborhoods or activity centers. Today, most feeder runs, like the Reston Internal Bus System (RIBS) and

spaces have some resource scarcity value (in the form of occupied land, materials, and maintenance). That is, the problem does not lie with casual carpooler parking free, but rather with nearly *all* commuters parking free.

Orange County's minibus connections to Metrolink commuter rail stations, are government-supported.¹³ On rare occasions, unsubsidized privateers have made a living operating regular-route shuttles.¹⁴ Where service gaps remain, however, employers, developers, and others have shown a willingness to step in and sponsor shuttles for their workers and tenants. These private shuttles, of course, are not philanthropic gestures. Businesses have some financial stake in introducing them. An employer who has relocated offices to the suburbs may initiate a shuttle run from a transit stop to the new location as an incentive for retaining existing workers (e.g., Princeton shuttle, discussed below). To remain competitive in attracting the best workforce, employers in remote campus-style office parks may sponsor a noontime shuttle to nearby shopping centers (e.g., Bishop Ranch shuttle). Shoppers' shuttles may be funded by downtown businesses (e.g., Tampa, Florida; Portland, Oregon), suburban merchants (Walnut Creek, California), or transportation management associations (e.g., Tysons Corner, northern Virginia). And property developers may be required to provide shuttle connections to transit stops as a traffic mitigation measure (e.g., White Flint shuttle outside of Washington, D.C.)

Table 3.3 summarizes the various types of feeder shuttle services that are financed, at least in part, by private interests that are currently operating in the U.S. Experiences with these services are discussed below.

3.5.1. Developer and Employer Shuttles

Two of the first rail shuttle services in the U.S. were sponsored by developers and tenants of Bishop Ranch and Hacienda Business Park, both large-scale employment centers 35 miles east of San Francisco. In the mid-1980s, Bishop Ranch contracted for two 41-passenger buses to connect employees of companies leasing office space to the Walnut Creek BART station (and during lunchtime to a nearby

¹³RIBS, funded by Fairfax County using proceeds from development proffers, features five buses that make a bi-directional 8-mile loop between six village centers and the Town Center of Reston, taking 40 minutes. The 22-passenger shuttle vans stop for hail requests anywhere along the route and charge a quarter per ride. Ridership has jumped from 5,200 per month in 1990 to around 18,000 per month in 1995. In early 1994, OCTA contracted for over 200 small buses and vans to provide feeder connections to the six Metrolink stops in Orange County. Within the first year of service, the feeder vans and minibuses were handling over 3,000 passengers per day, well above what was projected. Free-of-charge, the feeder buses serve around 10 percent of access trips to Orange County Metrolink stations. Other publicly funded shuttle programs operate in Memphis, Chicago (Pace Transit), San Mateo County (CA), Marin County (CA), San Diego County (CA), Contra Costa County (CA), Tampa, Boston, Dallas, and Danbury (CT).

¹⁴The only known example of this at present is an airport shuttle serving residents of Poway in San Diego County. Poway is an upscale, suburban community with the highest median income of any incorporated city in the county. In 1983, the county began an airport shuttle run. Peerless, Inc., operated the service under contract from 1988 to 1993, and gained popularity among many well-to-do residents who could have afforded a taxi but preferred the shuttle. In late 1993, the county awarded the shuttle contract to a new provider. Peerless decided to continue operating the airport shuttle on its own, dropping its fare \$0.50 below what the city-funded shuttle charges in hopes of profiting from a loyal customer following. Many Poway residents continue to ride the unsubsidized Peerless shuttle to the airport.

Table 3.3. Types of Feeder Shuttle Services Involving Private Sector Support Operating in the U.S.

	<u>Description</u>
<u>Employer-Sponsored</u>	
Stamford, CT: Pitney Bowes, First Stamford Place Shuttles	Short shuttles between offices and Metro North commuter rail stations, free to employees
Princeton, NJ: Forrestal Center shuttles	Connect the office park to the Princeton Amtrak station, sponsored by four corporations on a cost-sharing basis
<u>Developer-Sponsored</u>	
Montgomery County, MD: White Flint Shuttles	Two circulators that link offices and shopping centers to the White Flint Metrorail station, free to anyone
Friendship Heights Shuttles	Shuttle links condominium project to Metrorail and shopping mall, financed by condominium association fees
Fairfax County, VA: Tysons Corner Shuttles:	Minimus feeders to transit stops and shopping malls, operated by two high-rise residential developments
<u>Public-Private Partnerships</u>	
San Mateo County, CA: Consolidated shuttles	Combined six private employer-sponsored shuttles that serve BART and CalTrain commuter rail with more productive series of feeders co-financed by employers and joint-powers agreement
Santa Clara County, CA: LRT shuttles	Eight jointly funded fixed-route and demand-responsive shuttles carrying over 1,000 passengers per day between LRT stops and work sites, free to anyone
Tampa, FL: Downtown shuttle	Co-sponsored by Hillsborough Area Regional Transit and the private sector, shuttles connect downtown Tampa and the Westshore business park with the city's historic district, port, hotels, and retail district

shopping center); around 4 percent of Bishop Ranch's eligible work force took advantage of the free shuttle connections. Two of Bishop Ranch's tenants, Pacific Bell Telephone Company and Chevron Corporation, operated their own shuttles. By the early 1990s, both of these services were canceled because of escalating costs, though Bishop Ranch itself has retained an on-site midday circulator.¹⁵ At its height, Hacienda's shuttle was even bigger — five buses tied the Park to the nearest BART station, 12 miles away, for a dollar one-way fare; in the wake of an economic recession, this service was eliminated in the early 1990s as well.

Two examples of unsubsidized employer shuttles presently operating are rail feeders in Connecticut and a bus inter-liner in Memphis. Pitney Bowes Corporation of Stamford, Connecticut, contracts for a shuttle that carries 140 workers per direction per day between the Metro North commuter rail station and the firm's international headquarters. Nearby, First Stamford Place operates a similar

¹⁵These abandoned shuttle services were subsequently picked up by BART and Contra Costa County. The BART Express, contracted by BART, and County Connection, contracted by the County, provide regular services to the Walnut Creek and Bay Fair BART stations for \$1.15 to \$1.30 per trip. The Hacienda Park Owners Association offers free BART Express passes to all workers in the Park as a mitigation measure in compliance with a local trip reduction ordinance (enacted by the city of Pleasanton). Likewise, Bishop Ranch's developers cover full costs for all workers in the complex who ride the County Connector feeder bus to and from the Walnut Creek BART station.

service as part of a development agreement. In Memphis, the owner of a care facility for the elderly operates a shuttle that picks up employees dropped off at the terminus of a Memphis Area Transit bus stop and carries them to the worksite some four miles away.

Property developers and consortiums of employers have also gotten into the shuttle business. In fast-growing Montgomery County, Maryland, the developer of the Nuclear Regulatory Commission (NRC) near the White Flint Metrorail station introduced two shuttle runs in response to the County's Adequate Public Facilities Ordinance (APFO). Even though NRC itself is right across from the Metrorail station, by introducing the shuttle service the developer was able to secure development permits by enabling employees of offices beyond walking distance of the station to more conveniently access Metrorail. Currently, four 22-passenger vans ply the one-mile White Flint loop and two-mile Executive Boulevard loop every 10 minutes in the peak and 15 minutes off-peak. The fare-free service is 100 percent developer-financed and available to anyone. Presently, around 1,000 customers ride the shuttles each workday. Vehicles are packed during the peak. During noontime, many areawide employees hop on the shuttles to access the White Flint Mall and White Flint Plaza. According to the shuttle coordinator, at least one employer in the White Flint area bought an office building on the shuttle route because of the shuttle's presence.

Residential developers have also backed shuttle services in recent years. The Rotunda and Montebello, two high-rise residential complexes in Tysons Corner in northern Virginia, operate mini-buses for the half-mile trip to major bus and subway lines and shopping malls. At Friendship Heights, near downtown Washington, D.C., a small bus shuttles apartment dwellers to a nearby Metrorail station and neighborhood shopping center. In each case, residents financed the shuttle services through annual condominium fees (Orski, 1993c).

Presently, the largest multi-employer feeder shuttle service is sponsored and funded by four corporate tenants of the Princeton Forrestal Center, a 1,600-acre research and office park in central New Jersey. These companies relocated to Forrestal Center from Manhattan in the 1980s. To ensure their New York City employees could conveniently get to work, they contracted with a private company to operate mini-buses between the Center and Princeton's Amtrak station, seven miles away. These peak-hour feeders operate on 25-minute headways that are designed to meet incoming and outgoing trains. Employees ride for free. The feeder buses serve around 160 trips per day at an average contract cost of around \$2.50 per trip. This compares to an average operating cost of \$2.83 per passenger trip for public bus services operated throughout New Jersey by New Jersey Transit Corporation in 1993.¹⁶ Since contract costs include capital expenses while the cited costs for New Jersey Transit do not, the privately supported feeder buses average at least a 30 percent cost savings relative to

¹⁶Source: Federal Transit Administration, *Transit Profiles of the Thirty Largest Agencies, for the 1993 National Transit Database, Section 15 Report Year, 1994.*

publicly operated services. To further increase productivity, the Princeton shuttle's private contractor redeploys minibuses during off-peak hours and on weekends to provide feeder connections between Amtrak and a regional shopping center in nearby Plainsboro township.

3.5.2. Public-Private Partnerships

In the San Francisco Bay Area, a number of innovative partnerships between the private sector (e.g., employers, business park developers) and rail transit operators have formed in recent years to provide feeder shuttle services.¹⁷ These groups have coalesced primarily because there is a direct financial incentive — AB 434, a state law that allocates proceeds from a vehicle registration surcharge specifically to programs like feeder shuttles.¹⁸ In all, over 150 public-private shuttles (excluding those related to airport access or ADA-activities) operate in the region (Cervero et al., 1995). Seventy percent provide peak-hour connections to rail stations; the remainder feed into park-and-ride lots, interconnect campuses (of high-technology firms, hospitals, and universities), or circulate within activity centers, like suburban downtowns (e.g., Walnut Creek). All co-sponsored shuttles are privately contracted.

San Mateo County Shuttles

A public-private partnership success story is the consolidation of six private shuttles into a system of three shuttles sponsored by the Multi-City Transportation System Management Agency (MTSMA), a joint powers authority created by eight cities in northern San Mateo County. The six earlier employer shuttles fed into BART and CalTrain commuter rail stations. Their schedules overlapped and runs were unproductive, averaging fewer than six passengers per hour at a cost of around \$4 per passenger trip. For example, Genetech, a biomedical firm with 2,000 employees, ran a single shuttle van to the San Mateo CalTrain station. Homart, a nearby property management firm with 2,500 workers housed in a large office building, ran a single minibus to BART and CalTrain stations. Between the two companies, just three trips to CalTrain and one to BART were possible during the commute period. With the formation of MTSMA, the two shuttles were replaced by two mid-size coaches providing 8 runs operating on 20-minute headways to BART and six runs on half-hour headways to CalTrain. Average monthly ridership on the consolidated runs has shot up to 5,100 passengers on the BART shuttle and 2,200 passengers on the CalTrain shuttle (Murray et al., 1995).

¹⁷Most Bay Area shuttles are co-funded by employers. Currently, the Emery Go-Round Shuttle that ties employment centers and residential projects to BART and an Amtrak station in Emeryville, a booming enclave of high-end job growth north of Oakland, has the largest developer contributors. The Emeryville Developer Group has funded over half the expenses for the free shuttle service as conditions of approval for development permits.

¹⁸AB 434 allows air quality management districts to impose a surcharge of up to \$4 on motor vehicle registrations to fund transportation projects that 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 shuttle service to rail and ferries" and "rail-bus integration."

Santa Clara County's Light Rail Shuttles

The most extensive network of rail-feeder shuttles in the Bay Area operates in Santa Clara County. Presently, eight shuttles tie into the County's light rail transit (LRT) system — an 18-mile at-grade line that links downtown San Jose to the Silicon Valley to the north and residential neighborhoods to the south. Services are co-sponsored by employers and the local transit operator, the Santa Clara County Transportation Authority (SCCTA), with funding assistance from the regional air quality district.¹⁹ The shuttles were conceived as feeders for residents and workers who are beyond walking distance of LRT stops, such as in the Silicon Valley where low-density, master-planned office parks dot the landscape.

The eight existing LRT shuttles operate as both fixed-route and demand-responsive services, depending on the hour of day (Table 3.4). Most shuttles follow prescribed routes, with set stops and timetables (with headways varying from 5 to 30 minutes during peak hours) (Map 3.1). Three of the shuttles — Metro/Airport, IBM, and Kaiser/Santa Teresa — provide off-peak services on a dial-a-ride basis (requiring 10- to 15-minute lead times). All shuttles are free (Photo 3.3). Collectively, Santa Clara's LRT feeders transport over 1,000 workers per day, most of whom are well-salaried professional workers.²⁰ This accounts for around 8 percent of access trips to and from LRT stops, a very high market share by national standards. The benefits of high shuttle-rail access are counted not only in lower public outlays for park-and-ride lots, but also reduced tailpipe emissions.

Santa Clara County's privately contracted shuttles have been fairly cost-effective — the average contract cost was \$2.64 per passenger trip in 1993. This is considerably below the operating cost

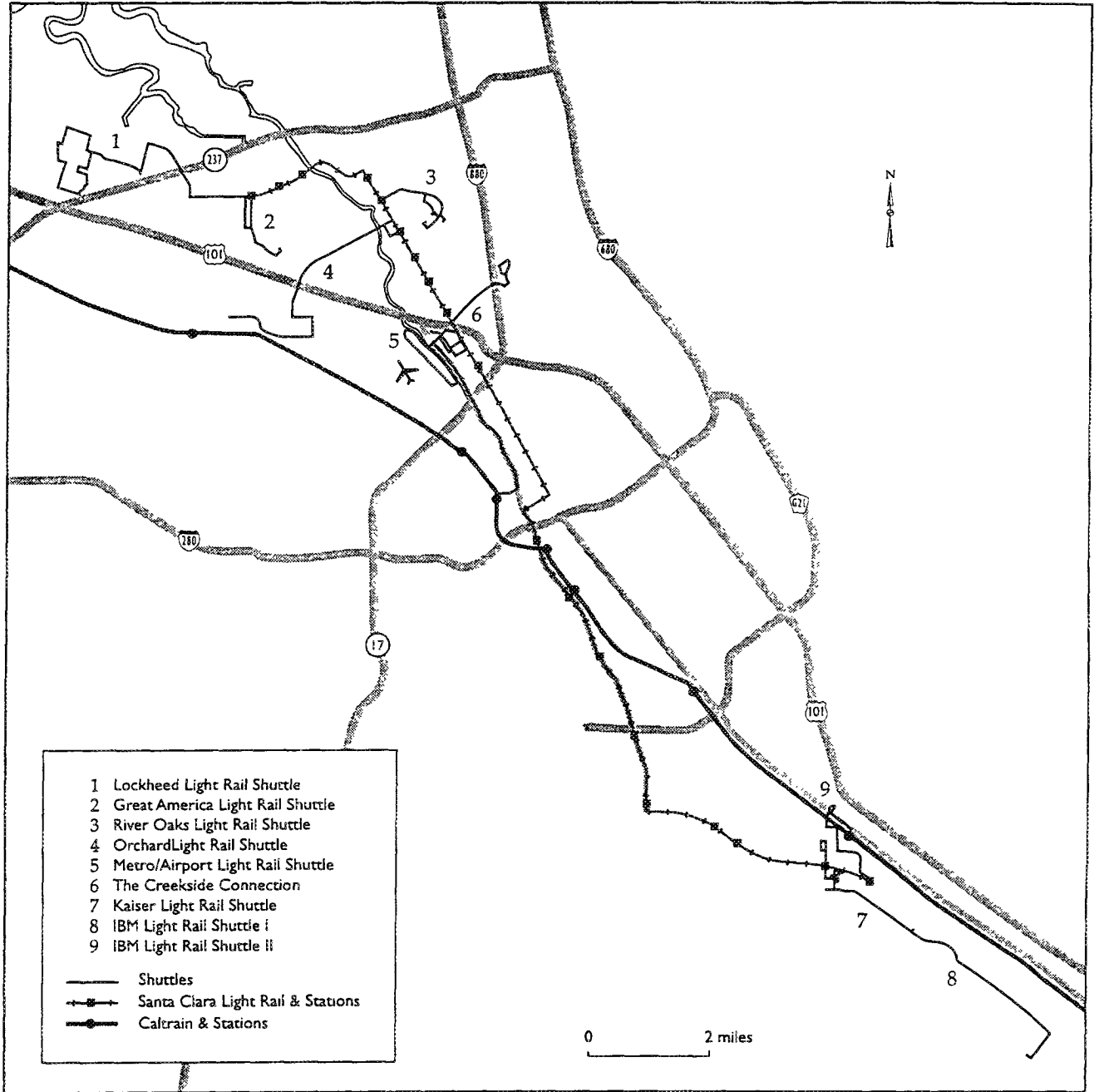
Table 3.4. Santa Clara County LRT Shuttles: Levels of Service, 1994

LRT Shuttle	Year Service Initiated	Peak Service Type	Peak Headways	Non-peak Service Type	Average Daily Ridership (one-way trips)
Metro/Airport	1988	F	10 min. & 20 min. - am 5 min. & 10 min. - pm	F/DR	235
Great American	1988	F	15 min.	n/a	345
Lockheed	1994	F	30 min.	n/a	30
River Oaks	1993	F	20 min.	n/a	45
Intel	1993	F	25 min.	n/a	30
IBM	1994	F	15 min.	DR	190
Kaiser	1994	F/AR	on request	F/DR	85
Creekside	1993	FR	30 min.	n/a	40

Notes: F = Fixed route DR = Demand Response n/a = no service available

¹⁹In fiscal year 1993-94, SCCTA's light rail shuttle program received \$380,000 in AB 434 funding from the Bay Area Air Quality Management District. It has principally been because this funding that public-private partnerships of shuttle services have expanded in the Bay Area.

²⁰While most services are targeted at Silicon Valley employees, the shuttles are often used by others, such as Mission College students, airport passengers, and patrons of the Great America Theme Park. Although employers help underwrite the services, since public monies are also involved, anyone is allowed onboard.



Map 3.1. Fixed Routes of the Santa Clara County LRT Shuttles

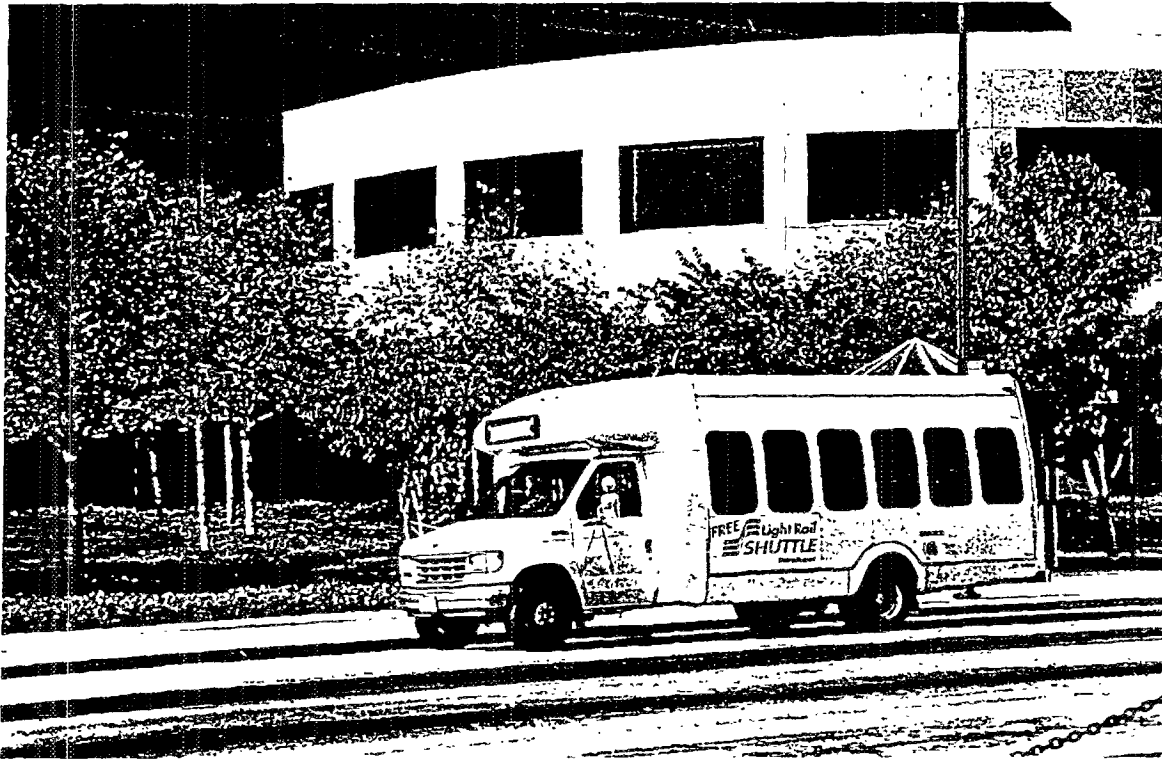


Photo 3.3. The Metro/Airport "Free Light Rail Shuttle." Shuttle connects LRT stations with San Jose International Airport, Metro Plaza, and large employment centers like Gateway Office Park.

(ignoring debt service) of \$4.15 per passenger for several SCCTA fixed-route bus services that connect Silicon Valley office parks with LRT and CalTrain stations.²¹ On a cost-efficiency basis, the shuttles also enjoy a substantial edge: they cost \$41.15 per revenue vehicle hour to operate in 1993, compared to \$106.82 per revenue vehicle hour for the comparison bus routes. Most of the LRT shuttles' cost advantage comes from lower compensation and wage rates; while SCCTA's bus drivers and LRT attendants are unionized, most shuttle operators are not.

Overall, it has been their role in attracting motorists to LRT commuting that make Santa Clara County's LRT shuttles most noteworthy. Silicon Valley's auto-oriented built environment — typified by sprawling, campus-style office parks, acres of parking asphalt surrounding work sites, and stand-alone buildings — has meant most origins and destinations are well beyond walking distances of LRT stops. Good-quality feeder connections have thus become necessary for the long-term survival of

²¹This is the average unit cost for SCCTA bus routes 40, 41, 43, and 44. The cost estimates are based on SCCTA's in-house cost allocation equation that imputes costs on the basis of \$40.40 per revenue vehicle hour and \$1.29 per revenue vehicle mile of service. While capital depreciation and administrative overhead costs are imbedded in these unit costs estimates, debt service expenses are not.

LRT. Unless convenient shuttle connections between LRT stops and work sites are available, most of Silicon Valley's well-paid workforce will forego the hassle of LRT commuting and drive instead, particularly given that nearly all have a free parking spot waiting for them. The LRT shuttles, then, play a small but important and growing role in inducing rail travel. 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.

Tampa's Downtown Shuttles

The Bay Area is not alone in crafting public-private partnerships that sponsor efficient shuttle connections. Together with the private sector, Hillsborough Area Regional Transit (HARTline) in Tampa has recently initiated several services using creative financing approaches. One shuttle, launched in late 1994, provides noontime service between the Westshore business park and downtown Tampa, with its historic district, restaurants, and entertainment attractions. Because of Westshore's campus-like setting, nearly all workers previously drove to reach off-site restaurants. Now, over half of lunch-time access trips to downtown restaurants are by shuttle. In early 1995, an all-day shuttle running from the Port of Tampa, where cruise lines and the aquarium are located, to downtown hotels and restaurants was also initiated. Funding has come from an assessment district formed by the Downtown Partnership, contracts with thirty restaurants, and development income from the Port Authority. Because of sensitivity to environmental conservation, shuttle buses in downtown Tampa operate using both compressed natural gas and electric batteries.

3.6. DIAL-A-RIDE SERVICES

The distinguishing feature of dial-a-ride (DAR) paratransit is its demand-responsiveness — whenever a trip request is made by telephone, a vehicle (typically a van) is dispatched within a relatively short period of time to serve the trip. DAR is usually a door-to-door service. As such, DAR operates like a phone-in shared-ride taxi. Today, nearly all DAR services are subsidized and targeted at a special groups, like senior citizens. The only commercial DAR serving the general public of any magnitude are airport shuttles. These are discussed in Part II, Chapter Three, in the context of recent state regulatory reforms aimed at promoting head-to-head competition in this sector.

In 1970s, several privately contracted DAR services open to the general public were initiated as demonstration projects, subsidized with both local and Federal dollars. Three of the largest programs were launched in El Cajon, California, Danville, Illinois, and Davenport, Iowa, with dial-in shared-ride taxis providing curb-to-curb services in each place. While in the early years, transit's officialdom had high hopes for DAR, with time the cost of underwriting these services proved prohibitive. Few general-public DARs survived beyond the 1980s. Figure 3.1, which compares the performance of DAR versus fixed-route bus services, underscores the uphill struggle facing demand-responsive, curb-to-curb para-

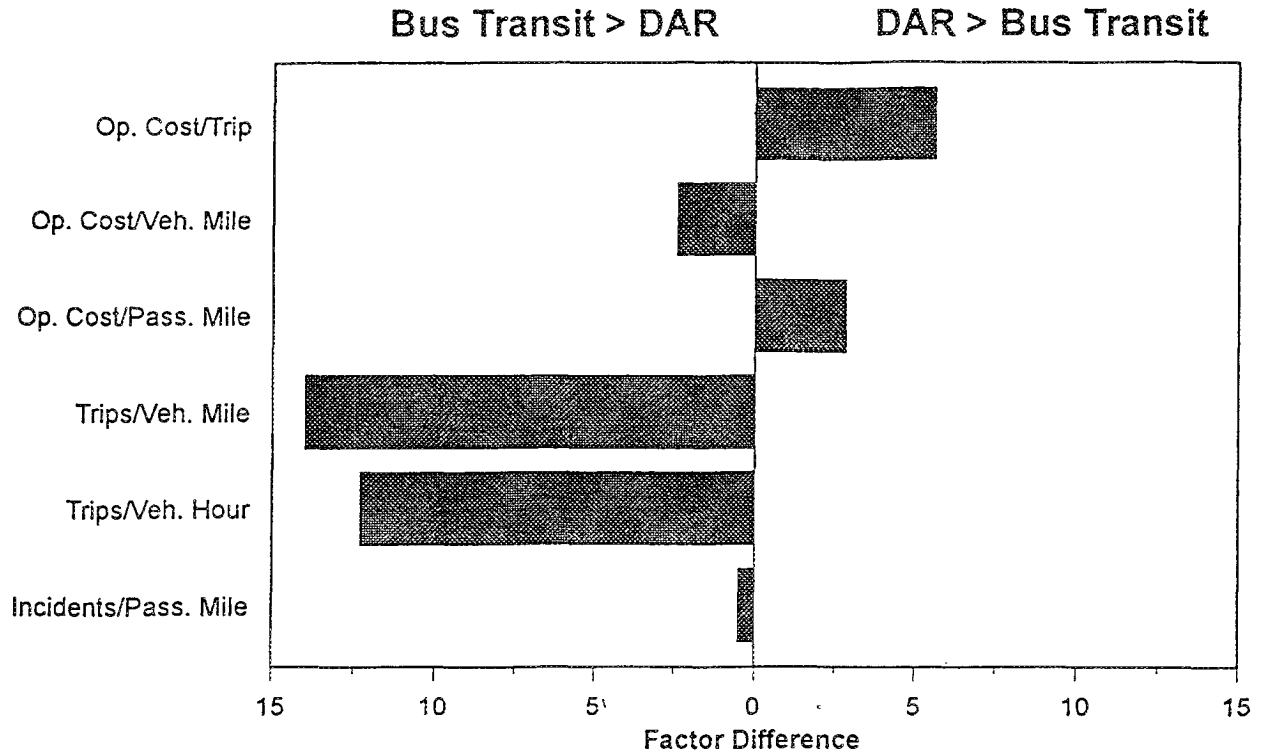
transit services.²² In 1993, the operating cost per passenger trip of DAR was more than five times that of bus transit — \$10.38 versus \$1.79. While DAR cost less to operate each mile, because of its much lower average loads, its cost per passenger mile was nearly four times as high — \$1.39 versus \$0.36. On any service-effective criteria, DAR fares poorly against bus transit; in 1993, for instance, U.S. bus transit averaged 14 times as many passengers per vehicle revenue mile as did DAR — 2.94 versus 0.21. It is because of numbers like these that, in the midst of continuing government cuts to transit, many localities have limited their DAR activities to special services for the elderly and disabled populations that comply with ADA requirements.

Notwithstanding DAR paratransit's high costs, general-public DAR services remain prominent in parts of Southern California — Orange County, Riverside County, and San Diego County — as well as a handful of other areas, like Dallas-Ft. Worth, Chicago, Rochester (NY), Norfolk-Virginia Beach, and Hamilton (OH). Hamilton, a city of 61,000 some 25 miles north of Cincinnati, has replaced nearly all of its fixed-route service with DAR minibuses and vans that circulate within designated "wedges" of the city, providing door-to-door service. Travel between wedges occurs via several mainline routes and a downtown "pulse-point" where customers transfer to another van or minibus. Orange County has a similar zoned DAR system, with minibuses and vans responding to ride requests within designated 10-12 square mile areas; those wishing to travel outside the zone of origin must transfer to another vehicle at a zone boundary.²³ The Norfolk-Virginia Beach region has a variety of fare options for the general public to patronize the Maxi-Ride DAR system, including one-zone monthly Fare Cutter Cards of \$20 plus \$1.35 per trip and All-Zone Cards (good for traversing any of 10 zones) for \$38 plus \$0.80 per trip (Photo 3.4). In several U.S. cities, notably Portland (OR), Danville (CT), and Contra Costa County (CA), general-public DAR is more specialized, functioning as feeders into rail stations. Although some general-public DARs are quite punctual, requiring only one-hour advanced reservations (e.g., Portland, Ft. Worth), in most cases one-day advanced notice is necessary.

No area of the country has accumulated a longer history of experience with general-public DAR services than metropolitan San Diego. In 1973, officials from El Cajon, a suburb 15 miles east of down

²²Data are for services operated by U.S. public transit agencies only (i.e., excluding services contracted by social services agencies) in 1993. DAR services operated by public transit agencies include those that are restricted to the elderly and handicapped and other special clientele, in addition to general-public services. Source: Federal Transit Administration, *National Transit Summaries and Trends*, Washington, D.C., 1995.

²³The Orange County Transportation Authority (OCTA) has one of the largest DAR services available to the general public, featuring 238 19-passenger minibuses and vans that served 1.8 million passenger trips in 1993. OCTA's DAR service is restricted to seniors and the disabled except during peak hours, when a subscription service is available to the general public. A party of five or more passengers traveling to a single destination, referred to as a "group load," can travel through up to four zones without changing vehicles. Group load trips must be arranged at least one week in advance. OCTA's DAR services are expensive — around \$40 per vehicle revenue hour and \$7.50 per passenger trip — in part because the fleet is 100 percent wheelchair-accessible.



Source: Federal Transit Administration, Section 15 data, 1993

Figure 3.1. Comparison of Performance and Productivity Between Dial-a-Ride and Bus Transit Services Operated by U.S. Public Transit Agencies, 1993

town San Diego, contracted with San Diego Yellow Cabs, Inc., to provide a "turnkey" DAR service, called the El Cajon Express. Yellow Cabs was the chief architect, designing, operating, and refining the service subject only to minimum service criteria. As designed, the El Cajon Express operated 7 days a week, 24 hours a day anywhere within the city; for trips to destinations outside of El Cajon, vehicles operated like exclusive-ride, metered taxis (Urban Mass Transportation Administration, 1976). By 1980, ridership on the El Cajon Express grew to around 600 trips per day, and at a dollar fare per trip, the service covered around 30 percent of its cost, comparable to fixed-route bus services in the area. The same year, the El Cajon Express was averaging over 8 passengers per vehicle hour, a very high rate of productivity for a suburban, community-based service. Other suburban communities, like La Mesa, Coronado, and Lemon Grove, soon followed suit, contracting for their own general-public DAR services. In all cases, contractors were reimbursed on a per passenger-mile basis.

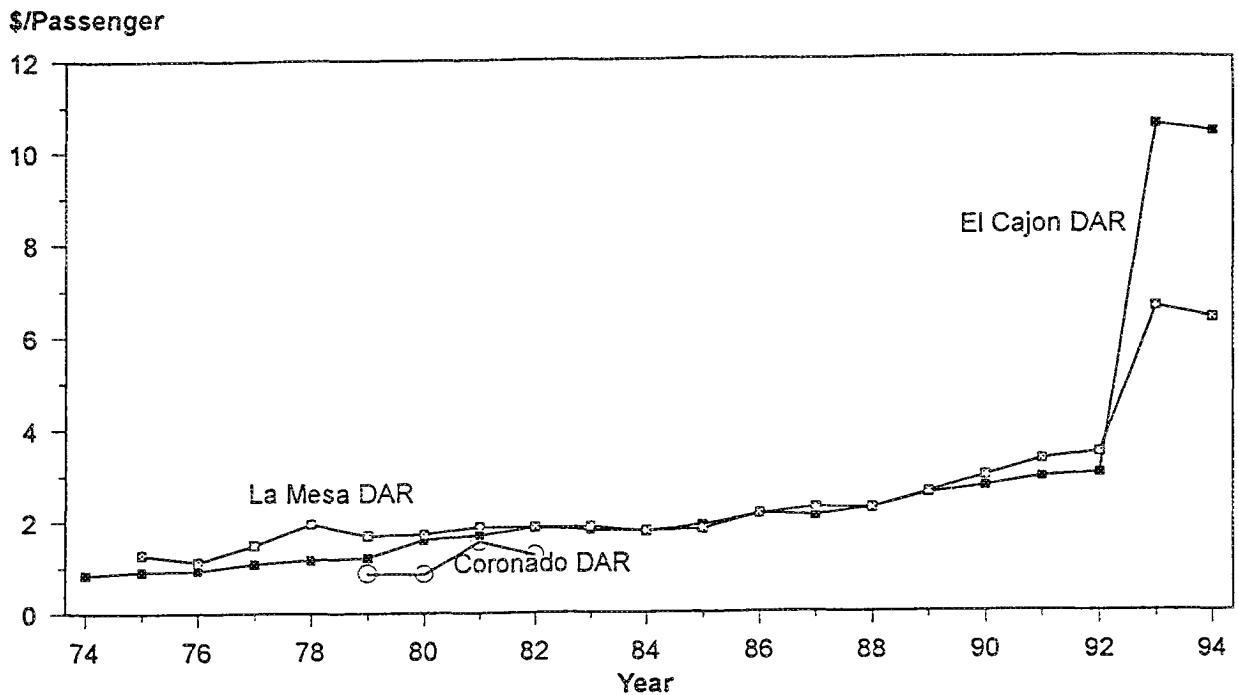
As San Diego's trolley line extended into the eastern suburbs in the mid-1980s, thus providing another mobility option for the region, and the cost of curb-to-curb contract services continually rose, the financial performance of general-public DAR services began to falter. Figure 3.2 shows that the subsidy per passenger trip climbed steadily during the 1980s. By 1990, each passenger trip on the El



Photo 3.4. A Maxi-Ride DAR van serving the general public in Norfolk, Virginia

Cajon and La Mesa DARs incurred around a \$3 deficit. Feeling the fiscal strain, both cities decided to replace their per passenger-mile subsidies with a fixed monthly contract amount set according to an agreed-upon miles of service. Yellow Cab opted not to rebid on these less lucrative services. Instead, DAR was contracted to the county transit operator, the San Diego County Transit System (CTS), in 1992. With an increase in fare to \$4 per trip (from one-third to half this amount in previous years), ridership on El Cajon's DAR plummeted to only 60 per day, a tenth of what it was a decade earlier. Today, the deficit per rider exceeds \$10. La Mesa's DAR has fared only slightly better. Given such poor performance, it is unlikely that the San Diego region's general-public DARs will survive much longer. Presently, both El Cajon and La Mesa are considering replacing them with fixed-route shuttles that feed into San Diego Trolley stations.

Overall, the future of general-public DAR in the U.S. is not very promising, outside of special niche services, like commercial airport van services or ADA-sponsored services. What could save DAR, however, is technology. The advent of low-cost, high-performance computer hardware, moderately priced scheduling and dispatching software, off-the-shelf automatic vehicle location technology, and electronic mapping software could eventually give rise to a far more efficient and cost-effective form of DAR services than is known today. Orange County uses advanced automated technologies to promptly and effi-



Source: Metropolitan Transit Development Board, Metropolitan San Diego Short Range Transit Plan, FY 1995-2001, 1995.

Figure 3.2. Trends in Subsidies per Passenger, General Public Dial-A-Ride Services in Metropolitan San Diego, 1974-1994, in unadjusted dollars

ciently serve nearly 2 million annual DAR trips, mostly targeted at seniors and disabled persons, though services are also available to the general public on a 24 advanced reservation (Teal, 1993).

3.7. COMMUNITY-BASED PARATRANSIT

A final form of paratransit is the informal network of private cars and vans that provide transportation to major destinations in and around residential neighborhoods. Community-based forms of paratransit thrive in many poor, minority, inner-city neighborhoods where vehicle ownership levels are low and licensed taxicabs rarely come by. With such a large captive market, thousands of enterprising inner-city residents who own cars and vans have sought to fill this market void, providing prompt, reliable transportation to supermarkets, health clinics, shopping centers, sports venues, and other destinations for a fee. Nearly all are illegal, and most vehicles are un- or under-insured. Yet public officials tacitly allow what has varyingly been called "hacks," "black cabs," "gypsies," and "bandits" to operate since the middle class and upper-crust establishment are largely oblivious to and unthreatened by their existence.

Several researchers have gone to great lengths to covertly study this illicit phenomenon, applying what social scientists call participant-observation techniques — namely, they or their assistants became illegal neighborhood-based paratransit operators. Peter Suzuki, a Professor from the University of Nebraska, quickly became an expert on the subject after driving what he calls a "vernacular" cab in a predominantly black neighborhood of Omaha for over a year. In Omaha, underground cabs work from storefronts known as "delivery stands," and respond to call-ins handled by telephone dispatchers (often the owners) and a few walk-ins. Omaha's storefront cabs operate with little interference from local law enforcement and regulatory agencies, resulting in "a quasi-dual cab system: vernaculars for the black community and the other four regulated cab companies for the rest of Omaha" (Suzuki, 1995, p. 133). More informal are drivers working from telephone booths or roaming the streets without a fixed center, estimated to number as high as 1,500 in Philadelphia.

Every large city seems to have its own version of neighborhood-based paratransit that caters to the poor (Suzuki, 1985, 1995; Farkas and De Rouville, 1988). Boston's illegal shared-ride cabs serve the working-class and black communities of Roxbury and Dorchester, and focus primarily on shop trips. There, a group of long-time drivers working out of a Roxbury mall have formed their own association. More formalized is the network of some 400 hacks that wait for customers outside of supermarkets and shopping malls in inner-city Baltimore. Some 25 social clubs in Baltimore are also served by these hacks. Chicago's unlicensed jitneys have similarly grown into a full-fledged, internally organized industry. Between 200 and 300 jitneys operate in the poorest neighborhoods of west and southside Chicago, working out of grocery stores, bars, and other businesses, employing as many as 5,000 drivers (Kitch et al., 1972; Suzuki, 1995). A network of citizen-band radios and even cellular phones are used to dispatch drivers in the field to waiting customers, usually for short-haul trips. Operators openly advertise their services by means of business cards distributed throughout local neighborhoods. Recently, Chicago officials have sought to legalize jitneys as a way of improving service quality and safety in the south and west sides. In Los Angeles and New York City, illegal cabs and jitneys compete with licensed taxi cabs for everything from the lucrative airport market to short downtown trips, often flagrantly violating rules (e.g., queue hopping, soliciting at bus stops). Nearly all of Los Angeles's bandit cabs are driven by Latinos. No one really knows how many "gypsy cabs" and illegal jitneys operate in New York, with numbers ranging from 8,000 to 45,000 (Suzuki, 1995). As noted in Chapter Two, most of New York's illegal car-operators come from the Caribbean, loiter around bus stops and shopping centers for customers, and have established "turf."

The most in-depth and illuminating study to date on illegal neighborhood-based paratransit services was conducted in Pittsburgh by Otto Davis and Norman Johnson (1984). Hiring student research assistants to be illegal jitney drivers, Davis and Johnson were able to gain insights into both the culture and mobility roles of this underground industry. They found that station house jitneys —

operating out of apartments, gasoline stations, grocery stores, or garages — were the most prevalent form of illegal paratransit. In the early 1980s, Pittsburgh had around 45 station houses in predominantly black neighborhoods. The second most common service concentrated on picking up customers at supermarkets. In total, around 500 illegal operators plied the streets of Pittsburgh in the early 1980s, twice as large as the number of legal taxi operators. The researchers found that prospective jitney riders used sign language and codes to communicate with drivers, thus avoiding authorities. They also found that illegal drivers were no more likely to have an automobile collision than licensed cab drivers, and almost regardless of distance, jitney operators undercut cab fares by around 15 percent. In Pittsburgh and elsewhere, unlicensed services have managed to survive the authorities because they serve the very neighborhoods that many licensed cab drivers refuse to enter.

Not all community-based paratransit is illegal or unsanctioned. In many parts of the country, special neighborhood mobility programs have been mounted in hopes of improving the accessibility of inner-city poor residents to job opportunities. The Nickerson Gardens Resident Management Corporation (NGRMC), for instance, is a non-profit organization managing a 5,000-unit public housing project in south-central Los Angeles. In the late 1980s, the NGRMC launched a government-assisted program of vocational training, job placement, child care, and small business creation for residents of Nickerson Gardens. The Corporation soon discovered that inadequate transportation was a serious obstacle to many residents finding and retaining jobs. Poor bus services and excessive transferring caused some residents to be late for training classes and job interviews. With local assistance, the NGRMC organized a neighborhood mobility program that uses vans to connect residents to job sites and child care centers. The van system employs Nickerson Gardens residents as drivers, dispatchers, mechanics, and supervisors, thus expanding job opportunities within the neighborhood. In recent years, similar community-based mobility programs have surfaced in poor neighborhoods of Chicago (ACCEL program), Little Rock (JOBLINKS), and at least a dozen other U.S. cities.

Lastly, another version of neighborhood-based transportation services that has gained recent attention is "car co-ops." Neighborhood car-sharing has caught on in several German cities. Called *Stattauto* (city car), Germany's car co-ops have around 3,000 members who share cars on an advanced reservation basis.²⁴ Since there are far more subscribers than cars, nearly all trips involve ride-sharing. A small group in Eugene, Oregon, has recently formed a neighborhood car co-op modeled after the German experience (LaFond, 1994).

²⁴Members of *Stattauto* who wish to use a car simply phone into a reservation center. Schedulers try to consolidate car usage to the extent possible. In Berlin, where the first German car co-op was formed in 1988, a variety of automobiles are distributed around 14 parking lots. Car keys and travel logs are kept in safe-deposit boxes at lots, to which members have magnetic card-keys. Members fill out travel reports for record-keeping and accounting. *Stattauto* bills monthly for kilometers traveled, hours of use, and any taxi rides that are charged to members' cards. Becoming a *Stattauto* member requires a \$600-\$1,000 subscription fee, modest monthly dues, and on-time payment of monthly car-lease expenses.

3.8. SPECIALIZED PARATRANSIT IN SUMMARY

In sum, an assortment of special "niche market" paratransit services can be found across the U.S. today. Although regulations and market distortions have no doubt suppressed these specialized services below what they might otherwise be, there is now enough of an accumulated history of these services to provide glimpses into their promise as players on America's future urban mobility scene. Private commuter buses and vans proliferated throughout the U.S. in the 1970s, however over the past two decades these services have increasingly been taken over by local authorities or employers. A handful of residential-based commuter van services continue today, both formal and informal. More unique have been child paratransit services and what arguably is the most free-enterprise form of commuting, casual carpools. Feeder shuttles have also gained popularity. On the other hand, dial-a-ride vans, offering perhaps the highest quality services of any paratransit option, has been relegated to very limited market niches, like airport transport and curb-to-curb access for the physically disabled, because of their high costs.

Some of the comparisons presented in this chapter between specialized paratransit and conventional fixed-route bus transit underscore the inherent cost-effectiveness advantages of commercial transportation services. The contract cost of running Princeton's corporate-sponsored shuttles, for instance, are around 12 percent less per passenger than the unit costs for public bus services in the same area, even when public capital outlays are not counted. In Santa Clara County, LRT shuttles enjoy an even greater cost advantage — around 36 percent less per rider than public buses that also function as feeders. While some of the cost savings are a result of low wages paid to paratransit operators, the adaptation of service levels to match and the use of vehicles in off-peak hours for activities like charter services have also raised productivity.

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Chapter Four

Part I Summary and Conclusion: Commercial Paratransit — Service Options, Markets, and Performance

4.1. PARATRANSIT AND POLICY

Today's most pressing and troubling transportation-related problems — traffic congestion, air pollution, and inaccessible neighborhoods — demand that bold and creative approaches to reducing reliance on the private automobile and improving efficiency in urban travel be introduced. In America's mobility marketplace, the automobile has reigned supreme because it is best suited to serving contemporary travel patterns — suburb-to-suburb journeys, multi-leg trips, spontaneous travel demand, etc. — in addition, according to some studies, to being substantially underpriced. Public transit's falling fortunes — declining market shares, soaring operating costs, diminishing productivity — stem, to a large degree, from the fact that traditional fixed-route, fixed-schedule, large-vehicle transportation is unable to effectively compete with the private car given today's settlement and travel patterns. We have experimented with publicly owned, operated, and subsidized traditional transit services in this country for some three decades now, and tens of billions of dollars later, the results have not been terribly impressive. Nationwide, ridership has remained fairly flat and service practices have remained more or less the same.

Might not it be time to try a radically different approach to transit service delivery in the U.S., one which is more responsive to shifting travel patterns and public policy concerns? Commercial paratransit, we would argue, offers the kinds of service features and inherent adaptability that would make mass transit far more competitive with the private automobile. Of course, there will always be a role for mainline bus routes and fixed guideway systems where high demand levels and economies of scale warrant them. However, such services should not be at the *exclusion* of alternative forms of mass transportation. In combination, widespread commercial paratransit services which complement mainline bus and rail systems — along with other policy initiatives, like higher motoring fees — could go a long way toward enhancing mobility in metropolitan America.

Without question, the bane of America's mass transit industry has been the continuing spread and dispersion of new growth into the suburbs, exurbs, and beyond. Low-density environs have never been traditional mass transit's natural habitat and never will be. Almost by definition, mass transit needs "mass," or density, to be successful. In light of this, there has been a growing interest in recent years in redesigning America's cities and suburbs so that they are more conducive to transit riding — i.e., have higher densities, greater land-use mixtures, and more pedestrian-friendly site designs. Proposals for creating transit villages around rail stops and neo-traditional villages linked by guideway systems embrace such thinking (for example, see: Calthorpe, 1993; Katz, 1993; Downs, 1994; Bernick and Cervero, 1994). An inherent flaw of such initiatives, however, is that they put the transportation "cart" before the land use "horse."

That is, they are built on the premise that cities should be planned and designed to support some pre-conceived notion of what is "good" transportation — namely, rail and bus systems. Transportation should be serving neighborhoods, towns, and regions, not vice-versa. We don't consume transportation for its own sake, but rather for the sake of reaching jobs, schools, clinics, shops, etc. It is these places, and the joys, services, and personal gains we derive from them, that really matters, not transportation *per se*.

The problem with pursuing transit-oriented development planning as a means of reshaping travel demand and reducing automobile dependency is that it runs counter to the unshakable lifestyle and consumption preferences of the vast majority of Americans (accepting, of course, that artificially cheap automobile transportation has helped to feed such preferences). Surveys consistently show that 90 percent or more of Americans prefer large-lot, single-family living to apartments, condominiums, and high-rise development (Altshuler, 1980; Bookout, 1992). As urban development patterns continue to be market-driven and cities continue to spread outward, building new rail systems and expanding traditional fixed-route bus services are unlikely to yield significant mobility dividends over the long run. Nor will transit village schemes and neo-traditional development ideas find much political favor or market acceptance.

Paratransit represents an entirely different paradigm for coping with suburban development. It more or less accepts the low-density, sequestered lifestyle preferences of most Americans, and tries to effectively adapt to the suburban-exurban landscape. Thus, paratransit is a transportation response to established land-use patterns and preferences, not vice-versa. It remains the closest thing yet in the mass transportation field to a supply-side strategy that begins to mimic the operating characteristics of the private automobile.

4.2. SERVICE DELIVERY AND ORGANIZATION

While there is a tendency to dwell on the "hardware" characteristics of paratransit, such as sizes and types of vehicles, it is really paratransit's "software," or service make-up, that is most distinguishing. As a hybrid of bus transit and the private car, paratransit offers a wide spectrum of service features that are consonant with the shifting nature of urban travel. As reviewed in this report, many of the travel attributes that are increasingly sought by Americans are provided by paratransit, in one form or another:

- *direct, door-to-door service* — shared-ride taxis, dial-a-ride, vanpools, carpools, neighborhood cars
- *frequent service, short headways* — jitneys, vans, shared-ride taxis
- *demand-responsive* — dial-a-ride, shared-ride taxis, neighborhood cars
- *relatively few fixed-route stops* — jitneys, vans, shuttles
- *comfort, guaranteed seat* — carpools, vanpools, buspools, shared-ride taxis
- *no parking required* — shared-ride taxis, jitneys, shuttles, dial-a-ride, neighborhood cars
- *friendly environs* — jitneys, vans

Of course, paratransit can never match the service features of private automobiles in certain areas, like on-call availability and personal privacy. Accordingly, paratransit will never have the breadth of applications of a car. Inherently, then, paratransit is and always will be a *niche market* service. It is a complement, not a substitute.

One of the greatest values of commercial paratransit is that it stands to expand and enrich our travel *choices*. For many Americans, the choice of driving versus taking an exclusive-ride taxi versus riding a conventional bus is no choice at all. Expanding transportation service-price options would better reflect the ever-widening diversity in movement patterns and make-up of the traveling public itself. For example, it is commonly accepted that the privacy afforded by the private automobile is one of its great virtues. This, however, reflects traditional cultural norms. In Miami, New York, and other cities, some customers value jitneys and vans because of their congenial and homespun qualities. Many like traveling in vans and minibuses because they invite social interaction. While some urbanites avoid jitneys out of concern over safety, others feel more protected in jitneys since owner-operators are more careful in who they allow on board.

One basic distinction in the commercial paratransit options examined in this volume is whether services are immediate-response or pre-arranged. Here again, paratransit's diversity is apparent. Immediate-hail services, like shared-ride taxis and neighborhood cars, begin to match the convenience and responsiveness of the automobile, though for this a premium fare is charged. Routine travel, such as for going to work or chauffeuring kids to after-school events, offers the opportunities to customize and economize on services. Private vanpools and kids kabs are examples of market responses.

Paratransit finds further variation in the organization of services. One aspect of organization is sponsorship. Some options, like jitneys and neighborhood cars, are pure entrepreneurial services that have no sponsors. Others, in particular shuttles and vanpools, are initiated and underwritten by employers or developers. Today, virtually all shuttles and most dial-a-ride services are contracted out on a competitive bid basis. Another organizational dimension pertains to owner and driver relationships. With many shared-ride taxi and jitney services, for instance, vehicle owners and certificate-holders lease sedans and vans to drivers for a set daily or weekly fee. This arrangement encourages efficiency since the harder drivers work and the more productive they are, the more profit they make. In other instances, jitneys are owner-operator enterprises — such as in Atlantic City and the one-man jitney business in downtown San Francisco.

Another important organizational dimension of paratransit is the level of individualism versus cooperativeness. Ridesharing, for instance, runs the gamut from ad hoc, laissez-faire initiatives, like casual carpools in the Bay Area and northern Virginia, to regional brokerage services and TMAs. In areas like New York City and Miami, the jitney-van industry is highly atomistic, with independent owner-operators vying for customers and continually trying to out-manuever each other. In Atlantic City, where a route association has existed for nearly 80 years, jitney services are centrally coordinated and

controlled. Cooperatives enable paratransit services to be rationalized, allow for economies of scale, and promote self-regulation. In the absence of market competition, however, they can also become virtual cartels, charging inflated prices for services that are unresponsive to shifting travel demand. An open marketplace offers the best opportunity for striking a balance in levels of competition and coordination within the commercial paratransit industry.

4.3. MARKETS

The cases reviewed in this study reveal that the market for commercial paratransit services is segmented along two lines: spatially and socio-demographically. Spatially, paratransit markets vary in terms of trip-making patterns and geographic extent. At one extreme are the one-to-one services — such as commuter van runs between a park-and-ride lots and office parks. At the other are many-to-many services — such as shared-ride taxis and dial-a-ride vans. Even within paratransit sectors, however, the spatial pattern of travel can vary greatly. In the case of jitneys, for instance, San Francisco's downtown jitney operates point-to-point whereas Miami's jitneys make multiple stops and willingly deviate from routes for an extra charge. Some paratransit, like shuttles and neighborhood cars, serves a small geographic area, whereas others, like vanpools and subscription buses, traverse 100 miles or more per trip. It is the inherent flexibility and adaptability of small-vehicle transportation that enables commercial paratransit to effectively serve neighborhoods and megalopolises alike.

Socio-demographically, commercial paratransit is segmented by income, stage of lifecycle, and ethnic-cultural composition. Both income and stage of lifecycle relate to what transportation planners classify as "captive" versus "choice" riders. Most immediate-response, fixed-route, and curbside hail services — shared-ride taxis, jitneys, dial-a-ride vans, neighborhood cars — cater to low-income populations and carless households. There are exceptions, however, like casual carpools, which serve mainly white- and pink-collar workers. The young and the old are also normally considered captive users, with highly specialized forms of paratransit, like kids kabs and dial-a-ride van services, today available to serve their unique travel needs. Choice paratransit users — i.e., those with cars and the income means to drive if they really need to — have gravitated more toward pre-arranged, routine forms of commercial paratransit, like subscription vanpools and feeder shuttles. While it is apparent that commercial paratransit has segmented itself, to a certain degree, along class lines, as an industry it is no more stratified by income, race, and ethnicity than other forms of common carrier transportation.

The hallmark of commercial paratransit in the U.S., then, is that it is a *niche market* industry. It fills in the gaps and expands the service options of urban transportation along the continuum between private automobile travel on one end and conventional fixed-route transit on the other. Its strength and promise lies in its diversity.

4.4. PERFORMANCE

Just as commercial paratransit occupies the middle ground between private cars and conventional transit with regards to services and markets, its relative performance also spans the extremes. In fiscal terms, some modes — like jitneys and shared-ride taxis — cost far less on a per-passenger basis than conventional bus transit. Cost savings of 20 to 70 percent per rider were found among the cases examined. For other services, notably dial-a-ride vans, it can cost as much as five times more to haul a passenger as on a fixed route bus. For jitneys, vans, and taxis, costs savings come mainly from lower-priced labor inputs. However, cost performance is also enhanced by high productivity, specifically high average loads and fairly rapid seat turnover. Some pre-arranged, regularly scheduled paratransit services, like subscription buspools, can be costly because of amenities, like the provision of comfortable padded seats and air-conditioning; however, full costs are recovered because discriminating customers willingly pay for such premiums. Other pre-arranged services, like employer-sponsored vanpools and carpools, economize on costs through free labor, specifically spreading driving chores among co-workers. Overall, in terms of cost performance, commercial paratransit again engenders diversity.

Perhaps the most important financial advantage of commercial paratransit is that, unlike public transit, it generates profits instead of deficits. Given the fiscal cutbacks facing America's public transit industry today, the expansion of more entrepreneurial, commercial transportation services seem unavoidable. While critics charge that the poor will suffer as a result, other remedies — like user-side subsidies — are available for redressing inequities. Moreover, the history of commercial paratransit is certainly not one of ignoring poor neighborhoods. For jitneys and neighborhood car services, low-income areas have traditionally been their market base.

From a productivity standpoint, commercial paratransit consistently underperforms conventional transit on a per vehicle basis; however, this is due simply to lower passenger capacities. On a per-seat basis, most forms of (non-dial-a-ride) paratransit consistently hold a decisive edge over bus transit. In other areas, like service reliability, accident rates, and schedule adherence (where timetables are maintained), commercial paratransit is generally on a par with bus transit.

When transportation's "objective function" is broadened to include other considerations, like the effects on the environment and neighborhood accessibility, commercial paratransit generally receives high marks. Reducing tailpipe emissions and per capita energy consumption, for instance, is directly a function of diverting trips from low-occupancy to high-occupancy vehicles. Experiences in Miami with jitneys and numerous cities with successful ridesharing programs suggest that cost-effective paratransit services can draw customers from single-occupancy automobiles, rather than simply siphoning passengers away from other mass transit modes. Experiences with casual carpools and other forms of ridesharing likewise reveal that paratransit incentives, notably HOV lanes, coupled with drive-alone disincentives, like commercial parking rates and tolls, can induce even greater modal shifts.