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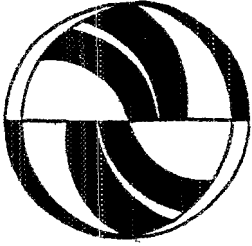
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**The Future of Transit:
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Elizabeth Deakin

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The Future of Transit: Market-oriented Services Will Include Small Vehicles

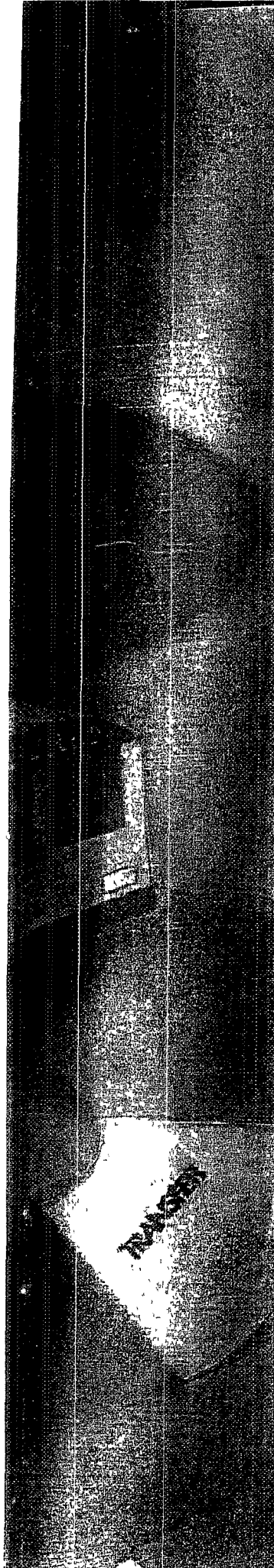
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The Future of Transit:

Market-Oriented Services Will Include Small Vehicles

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Transit operators across the nation are looking for ways to improve the quality of service they offer and increase customer satisfaction. One way they are doing this is to match services to markets. For many services, smaller vehicles are worth a try.

Today's small vehicles are sturdier and more reliable than ever, and they typically are quieter, less polluting, and more fuel-efficient than full-sized buses. These advantages make small buses a good option for many of the services transit operators provide. Small buses already are the vehicle of choice for many demand-responsive paratransit services, and they increasingly are finding other applications: as feeder services to transit, in residential neighborhoods, in suburban markets, and other situations where service is needed but a full-size bus is not. Small buses can complement a variety of other transit services, including those provided by large buses and rail. By matching vehicle technologies as well as service operations to particular markets, op-

The Future of Transit

erators can provide convenient, quality services in a customer-friendly, cost-effective way.

A few statistics illustrate the potential. More than 500 transit systems across the country currently provide transit service. In 2000, transit use grew to 9.4 billion passenger trips, up 3.5 percent from the previous year. Growth is continuing, with the number of trips served increasing by almost three percent in the first six months of 2001. Altogether, transit use has grown by 21 percent over the last five years - faster than highway use (up 11%) and faster, even, than domestic air travel (up 19% during the same period).⁽¹⁾

The largest percentage gains have been in rail systems, where trip counts are up about 4.5 percent over the past five years. But rail systems currently serve fewer than 25 urban areas of the US, and ridership on the 8200 route-miles of rail accounts for less than a third of the transit trips made in the US. Over two-thirds of the transit trips in America today are made

on buses, mostly operating on fixed route systems in some 322 urban areas. ⁽²⁾

The next few years will see substantial additional investments in transit. Some of the most visible projects will be for new rail starts, which are expected to capture the largest share of federal, state and local capital investment. Billions of dollars of rail projects are currently under construction, including 135 miles of commuter rail, 71 miles of light rail, and 28 miles of heavy rail. Scores of additional rail projects are in the development stages or are under study. ⁽³⁾

However, because the costs of rail transit are substantial, it is best suited to areas where demand for transit is especially strong. Many experts consider rail services to be most appropriate for corridors with intensive land development, with minimum average densities of 25-50 housing units an acre (or equivalent densities for commercial uses). ⁽⁴⁾ Although efforts to increase development around rail transit are underway, in most US cit-

ies, high-density development remains the exception, and so corridors where land uses are well matched to rail are relatively few in number.

For most areas, buses provide a less expensive, highly flexible transit option. Indeed, as the ridership statistics show, buses are the workhorses of American transit systems. Nationwide, more than 75,000 buses are currently in transit fleets, operating on 162,000 miles of routes. ⁽⁵⁾ Some of these bus routes serve central cities or run along older suburbs' arterials where streetcars formerly ran. Many others, however, extend into low-density suburban areas, where they provide service on relatively sparse networks. Of the 54,000 bus route-miles added between 1975 and 1995, most were located in growing suburbs. ⁽⁶⁾

Transit operators are devoting considerable effort to improving bus services in both cities and suburbs. New bus equipment offers vastly improved comfort over the vehicles in use in earlier years, and the vehicles are cleaner, quieter, and more appealing than before. Investments in operations and management, often using new technologies like vehicle locator systems, have improved reliability and on-time performance.

Operators also are experimenting with new approaches that offer significant potential for improving service quality. For heavily utilized routes where buses must travel on congested streets and highways, Bus Rapid Transit (BRT) is being tested as a way to increase the level and quality of service. BRT combines signal priority systems, reserved lanes, and bus-friendly intersection redesign, all selected to increase bus speed and avoid traffic delays, with fare prepayment and low-floor, wide-door buses that speed boarding and alighting. This combination of improvements is designed to significantly shorten bus travel time and increase service reliability; boosting customer satisfaction and improving transit resource utilization. BRT makes sense especially for corridors where longer-distance trips are concentrated and where bus stops can be spaced far enough apart to permit higher operating speeds. ⁽⁷⁾

In downtowns, operators are using specially designed buses to provide

shuttles and circulator systems. Some of these vehicles are powered by alternate fuels, making them clean and quiet. Special services also are being developed in a number of university communities, where campus shuttles link to regional transit services and joint passes offer a discount to users, often paid for by student fees (8)

While buses operating in these downtown and high density corridors often run full, many other bus services, especially those in low density areas, carry relatively few passengers. Light demand means that on many routes, only a fraction of the seats of a full sized bus are occupied. Empty seats in turn mean high costs and, on a passenger mile basis, high emissions and fuel use

Even in high density areas, however, buses carry light loads at some times of day. Midday, night time, and weekend services are often well under capacity. Even rail systems often experience low ridership in late night services.

¹ Yet reducing service is not the answer. Many of the riders in low-density areas are dependent on transit for basic mobility; the same is true for riders during off-peak periods. Reduced service would hurt these transit users and deter others from considering transit. Other strategies for reducing costs are far preferable

Small buses can be one such strategy, reducing costs while maintaining or even improving service quality. In addition to using less fuel and lowering other vehicle costs, the small buses also are more maneuverable than their larger counterparts, and work well on routes traversing narrow residential streets, steep slopes, and sharp curves. This makes small buses a neighborhood-friendly alternative.

Some operators already have begun to use small buses on suburban routes and feeder routes that have modest demand. Many more routes would be possible candidates for small buses. Importantly, there is evidence that small buses are a winner with riders. In focus groups and surveys conducted by several Bay Area operators and by the University of California, respondents preferred the smaller buses' design and comfort levels, and felt they fit better in neighborhood applications. (9)

Transit operators know that the future of transit depends on giving people services that meet their travel needs in a fast, safe, efficient way. By choosing vehicles and operations to best serve user characteristics and travel patterns, transit operators can manage expenses while meeting user needs. Particularly in the suburbs and for off-peak services, small vehicles are likely to be part of the transit future (6)

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- 4) See, e.g., Pushkarev, B. and J. Zupan, Public Transportation and Land Use Policy, Bloomington Indiana University Press, 1977; Transportation Research Board Special Report 257, Making Transit Work. Insight from Western Europe, Canada, and the United States, Washington, DC, 2001.
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- 6) Pickrell, op. cit.
- 7) See, e.g., LADOT's MetroRapid program, which also is using CNG buses to reduce emissions
- 8) Campus shuttle services and student-supported links to regional transit are offered at a growing number of campuses including UC Berkeley, UCLA, and the University of Colorado
- 9) Based on communications with transit board members in the Bay Area, and on work done by Deakin (forthcoming)