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DOT-TST-77-35

SOLVING PUBLIC PASSENGER TRANSPORTATION PROBLEMS: A NEED FOR POLICY REORIENTATION

**Volume II
Final Report
January 1977**

UNDER CONTRACT DOT-05-40096

Document is available to the U.S. public through the
National Technical Information Service
Springfield, Virginia 22161

Prepared for:

**U.S. DEPARTMENT OF TRANSPORTATION
Office of the Secretary
OFFICE OF UNIVERSITY RESEARCH
Washington, D.C. 20590**

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Date: 2-26-67

Technical Report Documentation Page

1. Report No. DOT-TST-77-35		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle SOLVING PUBLIC PASSENGER TRANSPORTATION PROBLEMS: A NEED FOR POLICY REORIENTATION				5. Report Date January 1977	
				6. Performing Organization Code	
7. Author(s) F. W. Davis, Jr.; K. Oen				8. Performing Organization Report No.	
9. Performing Organization Name and Address Transportation Center The University of Tennessee Knoxville, Tennessee 37916				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. DOT-OS-40096	
12. Sponsoring Agency Name and Address Office of University Research Office of the Secretary U. S. Department of Transportation Washington, D. C. 20590				13. Type of Report and Period Covered Final Report Volume II	
				14. Sponsoring Agency Code OST/TST-60	
15. Supplementary Notes OST Technical Monitor: John Stahr, TES-74					
16. Abstract Public transportation has declined because policymakers and outdated regulations have restricted the evolution of transportation systems which more closely reflect the mobility and life-styles of today. Public policy needs to take a consumer-oriented approach to public transportation by recognizing that all consumers do not have the same transportation needs and that one or two modes of transportation cannot satisfy these needs. This report argues that if public transportation is to become an efficient method of satisfying the transportation needs of a community, a brokerage or consumer-oriented approach should be adopted. The transportation broker will match specific individual needs with a broad array of transportation services, and overcome institutional, legal, and operational barriers to the development of new forms of transportation service.					
17. Key Words Passenger, public, policy, reorientation, social services, evolution			18. Distribution Statement Document is available to the public thru the National Technical Information Service, Springfield, Virginia 22161		
19. Security Classif. (of this report) UNCLASSIFIED		20. Security Classif. (of this page) UNCLASSIFIED		21. No. of Pages	
				22. Price	

PREFACE

Public transportation is undergoing a major change in emphasis much as it did between 1916 and 1940 when focus shifted from exclusive rail to a combination of rail and motor carriage. Now, as during the last transition, public policy is having great difficulty in adjusting to the evolving transportation trends of society. This paper presents a philosophical approach to dealing with these evolving trends and makes recommendations on steps needed to bring national, state, and local transportation policy in line with the new needs and services developing in our society.

A companion to this report is Increased Transportation Efficiency Through Ridesharing: The Brokerage Approach, which develops many of these ideas into greater detail. Just as this volume explains why it is necessary to explore new forms of personalized transportation services, the companion volume identifies institutional barriers, develops means for determining costs of various alternatives, and describes a procedure for organizing to implement the brokerage concept.

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Introduction

Public transportation is a major concern of public officials for two basic reasons:

1. There are large groups of taxpayers who are completely immobilized without public transportation. These public transportation-dependent include 54 million people too young to drive, 20 million over 65 who may be physically, economically, or emotionally unable to drive, and six million handicapped individuals.¹ There also are 78 million individuals (38 percent of the nation's population) who do not have drivers' licenses and are thus dependent upon someone else for transport.²
2. The United States is confronted with massive automobile related problems. Traffic congestion, actual or predicted fuel shortages, lack of parking facilities, and many other problems are occurring at a time of increasing resistance to the construction of new highway facilities. These problems are particularly acute in many of the older cities which are experiencing a rapid erosion of the tax base as workers and companies are choosing to leave the cities.

All levels of government have spent extensive sums to preserve public transportation.³ Yet, despite this increased spending, the percentage of trips via public transportation has continued to decline,⁴ operating costs have continued to soar, and increases in ridership have been achieved only at a very high cost.⁵ Even public transportation that has remained in the private sector has declined and its preservation now depends on future government support.

This report will attempt to show that the current public transportation dilemma is not caused by the lack of funding, demand or technology; the dilemma is caused by public policy which has yet to address the institutional problems that prohibit new forms of public transportation from evolving to meet new public needs. The report also will explore possible public policy positions which will allow effective public transportation to develop.

The Evolution of Public Transportation Policy

An analysis of the evolution of transportation policy provides an understanding of current public transportation policy. The evolution of policy can be simplified by separating its development into three stages:

Stage I

Formation of Stage I transportation policy began during the 1860s and was fully developed by 1920. Emphasis was on promoting the construction of fixed rights-of-way by private transportation companies. These firms purchased and operated their own equipment over their own exclusive rights-of-

way as common carriers on a for-hire basis. Subways, cable cars, trolleys and rail systems developed during this stage. Government regulations were developed to ensure that a common level of service was provided to all people and that no persons, place, or type of travel was unfairly disadvantaged by the transportation company (which in most cases operated as a monopoly).⁶

By 1920 these public transportation systems were having serious financial difficulties. The causes seemed to stem from several factors which included: over zealous regulations by public regulatory bodies;⁷ inflexible rights-of-way which prohibited carriers from adapting to changing industry, trade and commuting patterns;⁸ and the development of the more flexible and personalized service made possible by the private automobile, the bus and the jitney.⁹

Stage II

Evolution of Stage II transportation policy began with the Federal Highway Act of 1916 which emphasized the construction of public rights-of-way. Individuals and companies were able to purchase and operate private vehicles on the public rights-of-way. Private equipment manufacturers responded by producing and selling a wide variety of vehicles which met the specific needs of diverse market segments including large trucks, motorcycles, luxury limousines, small economy cars, motorized homes, four-wheel drive vehicles and bicycles. Thus, individuals could purchase vehicles suitable to meet their individualized needs and were no longer forced to conform to services available from existing public transportation systems.

Although this approach to providing transportation was popularly supported, it took 25 years to develop legislation which would solve two basic dilemmas:

1. How could the Stage II approach provide for the individuals who are not physically, economically, or emotionally able to purchase and operate their own vehicles?
2. How could the Stage II approach be encouraged without endangering the economic viability of existing fixed rights-of-way systems?

Stage II policy was finalized by the development of an elaborate regulatory process¹⁰ designed to solve these two problems. First, it preserved a strong viable for-hire, common carrier system by the granting of exclusive franchises to private companies willing to provide service on low-ridership routes in return for protection from competition on profitable routes. Thus, non-franchised individuals were prohibited from providing for-hire service even though they might provide better service at a lower cost. It was argued that the revenue from profitable routes was needed to support the legitimate franchised carrier who would be weakened by this "cream skimming" of ridership and profits.¹¹

The second dilemma was solved by bringing all modes of transportation under regulatory control. Rate levels could be regulated to protect the inherent advantage of each mode. Thus, taxi rates must be higher than bus rates which must be higher than rail rates since it was reasoned that the

public would abandon the modes that provided the poorest service unless there was an adequate rate level difference.

Stage II transportation policy was successful in promoting the growth of flexible, personalized transportation financed and operated with private funds. Life-styles, residential patterns and work locations changed as a result of the personalized mobility provided by the automobile. Meanwhile, public transportation declined until approximately three percent of both inter and intra-city trips by ground transportation were made by public transportation. Figure 1 indicates this rapid decline.

Stage III

As with virtually all transportation policies, Stage III policy, which evolved during the 1960s and 1970s, evolved only as crises developed. Society's transportation needs continually change; and as individuals and firms attempt to meet these continually changing needs by providing new services, conflicts develop as adjustments to the new conditions are made.

Thus, as Stage III policy evolves, the publicly provided rights-of-way and supportive parking facilities are becoming increasingly congested. While the demand for these facilities continues to increase, public resistance to additional construction also is increasing. Public policy has to shift from the promotion and planning of new highways and parking facilities to making more efficient use of existing transportation facilities.¹² Stage III transportation policy is following two primary approaches:

1. Increasing the vehicle capacity of existing highways. This can be accomplished through techniques such as computerized traffic control, metering of vehicles onto freeways, channelization and the use of exclusive bus and carpool lanes.
2. Increasing vehicle occupancy. This is accomplished through the aggregation of people into more efficient movement groups whether by car, van, bus or rail.

Stage III policy formation which began in 1964¹³ is still confronted with several dilemmas:

1. How can automobile users who have been accustomed to personalized and flexible automobile transportation be enticed to increase vehicle occupancy?
2. How can flexible, personalized service be provided to meet the special transportation needs of social service agencies, the handicapped, the elderly, the poor, and other transit dependents?
3. How can Stage III policy develop without endangering the exclusive franchises of existing companies which already are experiencing decreased ridership and rapidly deteriorating revenues?

Source: Statistical Abstract of the United States, U.S. Department of Commerce, 1974.

FIGURE 1

MODAL SPLIT TRENDS FOR INTERCITY TRIPS (1972)

4. How can Stage III goals be accomplished at a reasonable cost in newer, low-density urban and suburban areas where travel patterns are dispersed between many origins and destinations?

Transportation policy first reacted to the evolution of Stage III needs by attempting to reverse the decline of public transportation through massive public funding programs to rejuvenate the Stage II common carriers and to construct technologically advanced Stage I rail systems.¹⁴ These approaches have been plagued by high construction costs, the high cost of labor intensive bus operations,¹⁵ inflexible routes and rights-of-way and public unwillingness to adapt to the impersonalized service of the fixed-route, fixed-schedule carriers.¹⁶ Thus, the current public policy dilemma does not revolve around the recognition of the public needs, but around the inability to meet these needs while being limited to the exclusive use of existing franchise carriers.

The problems of developing Stage III transportation policy and services is compounded by numerous institutional factors which include:

1. Stage II franchised carriers--Before new forms of public transportation service can be provided, the exclusive franchise holder generally must be brought out. This is the foundation of Section 3 of the Urban Mass Transportation Act which provides funds for the purchase of city transit systems; section 164a of the Federal Highway Act of 1973 which prohibits public transit systems from competing with private companies for charter service; and the April 1, 1976, issue of the Federal Register which defines strict guidelines for competition between public and private carriers.
2. Existing employees--Before Urban Mass Transportation Administration (UMTA) funds can be used to provide any type of new service, the parties involved must negotiate an agreement with the local union(s) to ensure that the workers are not disadvantaged by the new service. Recently this protection has been extended to cover shared-ride taxi drivers and other providers of public transit service whether organized or not.¹⁷ Current contracts generally provide that any employee who is laid off because of a funded project will receive income protection for a period of up to six years or, at the employee's option, severance pay of up to 12 months salary.¹⁸
3. Local transportation authorities--In an effort to reverse the decline of Stage II public transportation systems, local communities organized public authorities to direct the operation of the transportation companies that had been purchased from the franchised companies. In many cases these authorities were given broad regulatory authority over all forms of transportation even though their main purpose was to preserve the public transportation

services provided by the then franchised carriers. These local authorities tend to protect their major charge, often to the detriment of new consumer-acceptable innovative services which are viewed as potentially competitive, whether they are or not.¹⁹

4. Local metropolitan planning organizations--These groups were established under Stage II policy in an effort to coordinate the planning and construction of new highways and other facilities with projected land use patterns and community goals.²⁰ The flow of public funds now is rigidly controlled by these agencies. Since the emphasis of Stage III will be to stress more efficient operation, management and utilization of existing facilities rather than long-term planning and construction, metropolitan planning organizations may have difficulty shifting emphasis from the planning of facilities and systems to multi-modal management and coordination.
5. State and Federal regulatory agencies--These regulatory agencies were organized to ensure that the best possible level of public transportation service was provided to the area as a whole. Since the regulatory agencies have no budget to purchase service, their only power is the authority to prevent a carrier from operating unless the operation is in accordance with the decisions of the regulatory agency. Thus, the only method available to ensure provision of service in the low density, unprofitable areas is the threat of complete franchise loss.

When Georgia Public Service Commission attempted to preserve commuter service by this method, it was successful until four Trailway affiliates surrendered all intrastate authority rather than continue to provide unprofitable commuter service.²¹ If the carrier's franchise and/or revenue comes under a perceived "attack" from any potentially competitive force, the regulatory agency feels that the carrier will be powerless to carry out its mission. This situation causes authorities to be protective of the revenue of the existing carriers.

6. The insurance industry--Transportation works under a well-understood liability and insurance framework. The liability for personal injury or property damage rests with the owner of the vehicle and the driver or their employer. If the vehicle is operated for-hire even though no profit is made, then the driver and company is expected to use extreme care²² while the driver and owner of a "not-for-hire" vehicle is expected to exercise ordinary care.²³ Since insurance companies must charge premiums to cover operating costs and expected losses, the rates charged on public "for-hire" transportation must be high to compensate for the high probability of losses.²⁴ Also the insurance industry is reluctant to insure new types of service with which it has had no previous experience and no statistical data unless the service is provided by a large existing company or institution.

Since new services are generally provided by small enterprises, and since state laws prohibit operation without "adequate" insurance, new consumer-oriented services are stymied.

Likewise the traditional tort approach to bodily injury concentrates liability when light occupancy vehicles are used as encouraged by the new Stage III approach. If ten private vehicles carrying one passenger each are involved in an accident, each driver sues the car that hit them for personal injury. Thus, each vehicle is responsible for one bodily injury claim. However, if nine vehicles are parked and all travel in one vehicle, the driver's insurance must cover not only the occupant of another car but also all nine riders in the high occupancy vehicle.

This insurance barrier restricts the use of volunteers for social service agencies, inhibits drivers from hauling non-auto-owning neighbors, and makes neighborhood pooling a risky activity. Common carriers face the double impact of concentration of liability plus the lack of defense available under the "common carrier" liability standard and cannot economically survive the high insurance cost.

As a result of these institutional barriers, it has been costly and difficult for government to meet Stage III transportation needs. For example, it is virtually impossible to reduce peak hour automobile traffic by using traditional transit--it is not economically feasible. The peak hour nature of commuter demand (Figure 2) dictates the need for transit equipment during a very short period each day. Existing labor contracts usually require the use of full-time labor with explicit restrictions on work-splits.²⁵ Therefore, once peak hour demand for buses and drivers exceeds base period demand by 75 to 100 percent (depending upon contractual work rules), each additional driver and vehicle will be productive only for the peak hour trips. Consequently the cost of labor alone makes the commuter trip by public transportation prohibitively expensive even when the buses are full.²⁶

The transportation unions have generally been unwilling to allow employment of part-time workers unless the part-time workers agree to become full-time drivers as positions become available. It is argued that "moonlighters" do not have the same interests or goals as full-time drivers. Thus, under the "one-man, one-vote" union policy, part-time drivers could dilute the voting strength of full-time drivers. Peak hour commuter service utilizing full-time labor also requires extensive deadheading from bus barn to suburb and back to the bus barn after leaving the work site (Figure 3). This extensive empty mileage greatly dilutes any fuel savings which might be expected.

Local transportation authorities may be an example of an institutional barrier. These authorities may be unwilling to let new forms of service develop because they fear it might in some way "compete" with the franchised company, even though the new commuter service would relieve the pressure to provide services on those runs on which the franchise companies lose the most money--the commuter runs. Moreover, it is ironic that the availability of public funds to promote new public transportation services sometimes causes authorities to fear that they might lose future government funding to these new

Source: Smith, W., "Forecasting Transportation to Work," Proceedings of the Road Federation International Conference, Munich, Germany, 1973, pp. 17-21.

FIGURE 2
WORK TRIPS AS PERCENTAGE OF 24-HOUR TRIPS

$$\text{Efficiency} = \frac{BC}{AD + BD + CA} = \frac{\text{Loaded Miles}}{\text{Total Miles}} = \frac{11}{32} = 34\%$$

FIGURE 3

DEADHEADING OF EXPRESS BUS SERVICE

services if they are allowed to develop. State regulatory agencies, on the other hand, may be reluctant to let new types of public transportation services develop because they might offer competitive charter service which is now a profitable operation for the financially depressed franchised interstate carriers. Innovative services also can be prohibited from legally serving public needs because of the cost of insurance due to the difference in the "degree of car" between "for-hire" carriers and "private" carriers and the concentration of unlimited passenger liability.

The Evolution of Stage III Services

While public transportation policymakers have concentrated on the preservation and promotion of franchised rail and bus systems within the traditional Stage II institutional structure, Stage III services are developing rapidly to serve evolving public needs. This is in spite of the fact that many such services are often at best quasi-legal. The development of these new services outside of the mainstream of public transportation policy is analogous to the development of the motor transportation industry (truck, bus, jitney) outside of the mainstream of public policy and regulation prior to 1935.²⁷ Examples of evolving Stage III transportation services are outlined and discussed below.

Taxicabs

Taxicabs transport more people in urban areas than rail rapid transit systems and over one-half as many as bus transit systems. More revenue is generated by taxicab operations than the combined total of other mass transit operations.²⁸ In 1970, taxicabs generated \$2.2 billion in passenger revenue while the Stage I and II systems only generated \$1.6 billion in passenger revenue.²⁹

The level of taxi service available to a community is determined largely by local policy. A strict franchise system generally results in a limited number of firms and vehicles which charge high fares, but ensures service availability during unprofitable off-hours. Policies that allow freedom of entry offer many small business opportunities and result in more vehicles being available with lower fares: but these policies do not guarantee service availability in high crime areas or during unprofitable periods. For example, in 1970 the open entry policy of Washington, D.C., generated 11.3 taxicab licenses per 1000 population while New York City, with more stringent regulatory controls, had only 1.49 licenses per 1000 population.³⁰

Social Service Agency Delivery Systems

In 1975, approximately \$500 million in Federal and state funds were spent by human service agencies for client transportation services.³¹ This represented approximately 44 percent³² of the amount spent in the same year by UMTA for transit capital and operating assistance.

Over 63 different distinct Federal social service programs have been identified.³³ These programs are coordinated by such diverse groups as the

Department of Agriculture, the Appalachian Regional Commission, the Department of Housing and Urban Development, the Veterans Administration, the Department of Transportation, the Department of Labor and the Community Services Administration. This does not include the many charitable, nonprofit institutions, state agencies or other non-Federal institutions which also are involved heavily in social service transportation. Ironically, now that so much Federal funding is available, many of the labor work rules which severely restricted the effectiveness of mass transit are beginning to evolve in the social services areas. In many cases their services could best be provided by volunteers or part-time owner-operators, but agencies do not have this option because of the concentration of liability approach to insurance.

Church Buses

As churches were built in suburban areas after World War II, Stage I and II public transportation systems could no longer service parishioners. Therefore, churches purchased low-cost vehicles (\$130 to \$300 per seat) which are driven by volunteers. This enabled churches to provide transportation which meets the individualized needs of church members. Those churches that purchased buses discovered that Stage II regulations exempted churches from regulations on charter activities; thus they began actively to expand service to meet community charter needs. There are now more church buses in many areas than regulated public transit vehicles and intercity buses combined.³⁴ These church buses are considered private vehicles and thus receive low insurance rates. With the availability of 16(b)2 funds to purchase church vehicles, this type of service should continue to grow rapidly and become a major supplier of public transportation.

School Buses

In communities where school bus service is provided under contract to the school board, the private operators provide a steady source of charter service during the summer, on weekends, and between school trips. In 1973, approximately 240,850 school buses were in use³⁵ as compared to 60,105 transit vehicles and 20,800 Class I intercity buses. One method used to avoid regulatory restrictions is to lease the school bus and have a separate company supply the driver so the service can legally be considered to be private carriage. In many cases, the Stage II regulation provides a strong incentive to use a nonprofessional driver to avoid the high cost of obtaining drivers and vehicles which can only be obtained from the more expensive franchised carriers.

Company Commuter Service

Many firms which are not serviced adequately by traditional public transportation have started on their own commuter service. The Environmental Protection Agency has prepared a partial list of 33 firms currently operating ridesharing programs.³⁶ Some of these programs are extensive. For example, Minnesota Mining and Manufacturing operates 75 vans, the Tennessee Valley Authority in Knoxville operates 21 buses and 99 vans, Continental Oil Company operates 35 vans and the Aerospace Corporation operates 13 vans.

These efforts have been so successful that approximately 30 companies formed the National Association of Vanpool Operators in Fall 1976 to coordinate the dissemination of information to other firms and to point out the barriers posed by Stage II regulation which prohibits other firms from starting their own programs.

Carpools

The energy crisis of 1973 resulted in a reevaluation of the use of carpools as a viable method of increasing vehicle occupancy. It was discovered that 47 percent of all private auto commuters travel in carpools.³⁷ This represents approximately six times the number of people who use traditional public services.³⁸ A vehicle occupancy rate of 1.33 indicates that four people ride in three vehicles or up to 50 percent of all commuters are ridesharing.

Private Commuter Buses

A number of private or cooperative buses are presently operating. One private company hauling commuters from northern Virginia to Washington, D. C., using part-time drivers has been so successful that its revenues have increased from \$66,000 in 1969 to \$965,000 in 1974 and \$1.7 million in 1975.³⁹ In the Norfolk area in Virginia, numerous bus owner-operators collectively haul over ten percent of all military employees to area bases.⁴⁰ Reston Commuter Bus Incorporated (a formal nonprofit corporation) leases 34 buses a day to haul residents from Reston, Virginia, to Washington, D. C.⁴¹

In all of the above examples of evolving Stage III systems, none have attempted to provide broad, area-wide coverage such as Stage I and II public transportation systems. Instead, service was tailored to meet the specific needs of the individual riders. Commuter service, for example, is arranged so that individuals are picked up at predetermined points and delivered directly to the employment center at the time most convenient to the transportation consumer. Travel times are approximately equal to auto times and there are none of the transfers, walks, or waiting periods that detract from Stage I and II services.

Stage III Policy Development

While Stage II policy was primarily designed to promote privately owned vehicles operating on public rights-of-way, Stage III policy stresses better utilization of existing facilities and equipment. Stage II policy provided public transportation mainly for those unable to own and operate their own vehicles; Stage III policy will emphasize the use of public transportation to accomplish industry and community goals such as controlling the cost of transportation-related expenditures, promoting desired development patterns, controlling air quality, and "liberating" the suburban spouse from chauffeuring duties. Public transportation cannot achieve these goals until the services offered meet user needs as well or better than the automobile does. Stage III policy will not develop until the following points are realized and operationalized by policymakers.

1. *Public transportation is a growth market which offers extensive opportunities for private business when institutional barriers are removed so that new markets can be served with a new combination of services.* The Stage II franchised public transportation carriers currently serve the high density urban areas, the intercity trips along major routes (Greyhound, Trailways, etc.), long distance charter trips, short distance circulatory trips (taxi) and school trips (school buses). Groups that are not being served include commuters, residents of low density suburban areas, social service agency clients, the handicapped, short distance charter groups, rural residents and shoppers with packages that are too heavy to hold for a long period. Many of the Stage III services such as church buses, club buses, car rentals and gypsy cabs are developing to meet these previously unmet needs.

2. *There is a diversity of needs that must be met with a diversity of services.* Commuters desire express service arriving at the work site three to ten minutes before work begins. Senior citizens would utilize short-term charters that would take them shopping or to special events and provide return service to their homes. School children need transportation for activities after school and on weekends such as scout troop trips, ball games, field trips, and extracurricular activities. Social service agencies need to provide transportation services for very young children to and from day care centers as well as trips for the elderly to meal centers and medical centers. Some form of transportation should also provide for the handicapped such as wheelchair passengers, the deaf, the blind, and even patients on stretchers. Each of these needs requires a different type of service, a different size and type of vehicle, and a different routing and scheduling procedure. Each service has a different peak hour schedule and demands different extra services.

3. *People will not use the public transportation service unless the services are comparable or better than the transportation options currently available.* United States policy has traditionally sought to maintain a high degree of individual freedom. It is doubtful that government would be successful in forcing people to use less convenient forms of transportation by restricting the use of the automobile. Where automobile usage restrictions become unbearable, people will move to new residential areas without restrictions unless a viable transportation alternative is available.⁴²

4. *There is no shortage of vehicles, drivers, funding, or technology for the development of successful public transportation--only institutional barriers which limit society's ability to use what is already available.* There are over 130 million vehicles available for use in the United States. This represents approximately three seats for every man, woman and child.⁴³ Sixty-two percent of the population hold valid drivers' licenses.⁴⁴ Funding is available from credit institutions, insurance companies, and banks.

5. *Public transportation policy needs to develop a market (middleman) orientation as opposed to a product (production) orientation.* Most consumer products were originally sold by manufacturing firms which were specialists in manufacturing, engineering and design. During the mid 20th Century, consumer-oriented middlemen such as Sears, Western Auto, Merrill Lynch and NAPA (wholesale auto parts) developed. These firms produced no products, but coordinated the distribution of products⁴⁵ produced by other firms.

The taxi companies and commodity truckers are already pursuing this middleman concept. They offer a telephone number, advertising and sales efforts, dispatching, repair service, gasoline, insurance packages, and possible financing. The vehicles are owned and operated by individuals who purchase any combination of these services from the taxi company. Public transportation companies should continue to adopt this well-established approach. The public transportation companies will serve as the central clearinghouse for service requests and then dispatch the requests out to independent owner-operators who specialize in providing the specific type of service requested.

6. *Public transportation has limited economies of scale and thus there is little reason to centralize its operation.* The low cost of purchasing the vehicles (\$4,000 for a cab, \$7,500 for a van, \$15,000 for a school bus, \$20,000 for a used bus, \$80,000 for a new bus), the low percentage of cost required for maintenance and parts, and the ready availability of maintenance services and fuel negates major savings by expanding fleet size. Any advantages that do accrue from expanding fleet size are easily offset by the difference in care given to the vehicles by owner-operators as compared to employee drivers who may have little interest in the vehicle they are driving.

7. *Emphasis should be on tailoring of specific services to meet specific needs rather than on planning large transportation networks.*⁴⁶ People generally make every effort not to use a transportation network if there is any other way they can obtain the specific service they desire. They dislike learning timetables and will avoid trips where they have to transfer vehicles, or will drive somewhere rather than walk to the corner to wait for the bus. Waiting time is more of an obstacle than riding time. When people have a choice, most would rather pay more (15 to 20 cents per mile) for a service that meets their individual needs than suffer the inconvenience of meeting the transportation network's schedule, even though the cost is much lower (2 to 6 cents per mile).

Unfortunately, public transportation has been declining for over 30 years; thus, when efforts are made to reorient public policy to Stage III, existing public transportation institutions often react negatively. Yet, the existing franchise companies can realize new opportunities for public acceptance of its services as part of an expanded public transportation market which will also include expanded use of taxicabs, jitneys, school buses, church buses, vanpools, carpools, company work buses and other paratransit forms.

Coordination of Stage III Policy

Coordination is an essential element of Stage III policy. The objective of this coordination is:

1. To provide the consumer oriented services that are most effective in attracting individuals from single occupancy to multiple occupancy vehicles;
2. To make maximum use of existing facilities and equipment, both public and private;

3. To stimulate the use of private funds to reduce reliance upon public subsidies;
4. To use the lowest cost alternative where two services equally meet public needs;
5. To promote a variety of services to serve the diversity of user needs;
6. To promote fuel efficiency by matching demand with supply as closely as possible to eliminate empty miles and unused seats;
7. To promote labor efficiency by matching demand and supply as closely as possible to eliminate unused labor time;
8. To emphasize the location of demand and the rational aggregation of travel groups so that the most efficient forms of transportation can be scheduled and promoted;
9. To emphasize the flexibility of the coordinating process so that it may respond to changing consumer needs as rapidly as possible; and
10. To encourage individual citizens to assume some of the coordinating effort to minimize the operating role of government.

There are three historical methods for coordinating transportation services. These include:

1. *The granting of exclusive franchises on a geographic or type of service basis.* This approach to coordinating transportation, popular during Stage II, shifted the responsibility of coordination to one operator who was then held accountable to a regulatory body. The major problem with the regulated franchise approach is that regulatory agencies may control levels of service so strictly that the company is unable to react to changing market conditions, gradually losing its market share. This has been true for both inter and intra-city bus and rail service.⁴⁷ Today franchised ground transportation systems serve less than three percent of the intercity and intra-city markets.

The franchise approach to coordinating public transportation also ignores the fact that there are many diverse transportation needs in an urban area and prohibits all but one or two types of service. Therefore, groups such as commuters who desire public transportation opt to use the more personalized, although more costly, automobile to obtain service that better meets their needs.

2. *The purchase and operation of all transportation services and facilities by a central public agency.* This coordination approach has been popular since public funds were made available for transportation by the Urban Mass Transportation Act of 1964, especially with the availability of operating subsidies in 1975. This approach also requires that all coordination be done by one agency that is accountable to a citizen authority or board which should see that the public interest is protected.

Public ownership changes none of the disadvantages found in the franchise approval except that it removes the economic constraint inherent in private, non-subsidized operation. It may result in additional disadvantages.

Groups with vested interests such as equipment suppliers, labor unions, construction companies and trade groups have greater bargaining strength when there is one organization with which to negotiate and when that organization is protected from private sector competition. Transportation authorities must either meet the demands of those supplying the service or suffer a strike, a boycott of supplies and a possible stoppage of all public transportation service in the area. Since special-interest groups may have exerted political pressures to assist in obtaining funding, their influence is strong and well-recognized.

Potential suppliers of much needed Stage III transportation innovation generally are small and without political influence. Therefore, they may be effectively excluded from serving the public where public transportation is coordinated by a central agency. Thus, the public has no acceptable public transportation and continues to use private vehicles.

3. *Coordination through government purchasing of services through competitive bidding.* The purchase of virtually all public goods except urban transportation and rail passenger service has traditionally been through the competitive bidding process. Public transportation services could also be purchased through the bidding process. A regional authority could identify the services which the private sector is willing and able to provide at no cost to the public treasury. Where private operators are willing to provide the service according to the coordination of the marketplace, they should be encouraged to do so. When the private sector is unwilling to provide the various services needed, but the public authority still feels the service is warranted, the service could be provided through competitive bidding on a periodic basis. Bids could be for multiple or single routes, with the use of public or private vehicles, with or without maintenance contracts, etc. The competitive bid procedure currently is used by governmental units for the purchase of dump truck service, school bus service and some social service activity. There is no reason why it could not work just as well for other forms of passenger transportation.

Before Stage III services are allowed to develop, transit authorities will have to realize that no one system can meet all needs and that innovation of new services is an important part of progress. Thus, the regional authorities will realize that their main responsibility is:

1. To determine the transportation needs of the residents of the community; and
2. To make sure that residents can obtain services they need at the lowest cost.

Thus, the authority must maintain an arm's length relationship with all transportation service suppliers and evaluate each on its ability to meet consumer needs.

The Brokerage Function

As the transit authority changes its role from the operator of service to the promoter and coordinator of service by all operators, a marketing or brokerage orientation toward the provision of transportation services will emerge. The brokerage concept and Stage III services are based on several basic assumptions. These are:

1. There is no shortage of transportation facilities or equipment in the United States. Approximately 130 million vehicles were operated in 1973 in the United States.⁴⁸
2. Drivers are plentiful. In the United States there were 125 million licensed drivers in 1974.⁴⁹ In addition, many drivers are currently unemployed or underemployed and would welcome additional income.
3. There is no shortage of transport technology. Current manufacturers make a wide variety of vehicles. These can be modified for specific needs where necessary.
4. There is no shortage of financing. Banks, finance companies, credit unions, and insurance companies are willing to advance funds to purchase transportation vehicles.
5. The provision of public transportation is basically a small business activity. Exclusive franchises or governmental monopolies are the only factors which deny public transportation opportunities to small and/or minority businesses.
6. Transportation service has no value in and of itself. Transportation is only valuable when the service is used and that use accomplishes beneficial personal or social purposes.

The function of the broker will be:

1. To determine individualized public transportation needs;
2. To determine potential suppliers or public transportation services;
3. To determine those factors that will inhibit potential suppliers from meeting individual transportation needs;
4. To modify government policy to encourage rather than inhibit public transportation innovation; and
5. To contract through competitive bidding with the private sector to provide nonprofitable but essential services.

Examples of Stage III Brokerage

Policymakers familiar only with Stage I and II network approaches may find it difficult to visualize how the Stage III brokerage approach provides

transportation service. The following section, therefore, illustrates how a broker could accomplish three basic community goals.

GOAL 1: To improve the efficiency and effectiveness of public investment in transportation facilities and services.

The Golden Gate Bridge District in San Francisco discovered that bridge traffic was saturated during the peak commuter hours and new capacity was required. The construction of a new bridge was not politically acceptable. The district attempted to solve the problem by first purchasing a fleet of 188 new 53 passenger buses. The buses were well-received by commuters, but labor agreements prohibiting the use of part-time drivers made the provision of peak hour service too costly. Since only 35 of the buses could be used for a second trip each day, 20 buses were taken out of service to control deficits.⁵⁰

Additional commuter bus service was then obtained from private suppliers on a competitive bid basis. Next, the district initiated a program to purchase 12 to 15 passenger vans which would be operated by the commuters themselves and garaged at the workers' homes each evening. Finally, private van-pools using vehicles owned by the driver themselves were encouraged through promotional programs and toll reductions.

The Tennessee Valley Authority (TVA) has begun the construction of the new Hartsville, Tennessee, nuclear plant. Construction will take five years and employ 5,000 persons. TVA entered into an agreement with the Tennessee Department of Transportation to either build an 11 mile highway by Interstate standards at a cost in excess of \$7 million, or maintain a vehicle occupancy rate of 3.2 for the duration of the project. Electing the latter alternative, TVA plans to charter approximately 20 buses and operate 100 to 150 vans. They are also aggressively promoting carpools.⁵¹

The Bridge District and TVA both used personalized Stage II transportation services to provide virtual door-to-door service that is comparable with the private automobile in terms of travel time. In both cases, new construction was avoided by the use of a variety of effective and efficient Stage III services.

GOAL 2: To provide mobility to the public transportation dependent.

Each community feels an obligation to provide service to the elderly, handicapped, young, poor and other groups that are transportation dependent. Where these groups are heavily clustered in high density areas, usually in the older section of the city, Stage II public transportation systems appear to be effective. Many transit dependents, however, cannot be provided public transportation service using Stage II systems. Senior citizen complexes, for example, are now being built in rural or suburban auto-oriented communities. Such complexes do not generate sufficient demand to economically justify Stage II public transit service. Such complexes might, however, justify a part-time driver using the family van to offer a three hour shopping tour including stops

at the bank, utility company, and cafeteria. They could offer assistance with packages and charge \$1.75 per person with groups of eight to ten people. Contracts could be made with local school bus operators, local churches, van, station wagon or taxicab owners to provide service to the residents of these senior citizen complexes. The same approach could be used to provide transportation service to other groups of transportation dependents.

GOAL 3: To reduce automobile related problems such as traffic congestion, energy consumption, parking, and air pollution.

The efficiency of all vehicles used during the peak hours would be increased by a comprehensive program of ridesharing. The broker needs to survey firms, locate commuters who want to share rides, find drivers and pool vehicles, suggest rates and insurance coverage and encourage the formation of commuter groups. The broker would work with employer appointed commuter coordinators for local coordination of the program. Defensive driver training also should be given to all pool drivers to professionalize the pool, improve safety and reduce insurance costs. Pools can be formed in buses, cars, vans or any other type of vehicle that meets the needs of the individuals. Only through such an organized approach can ridesharing significantly mitigate auto-related problems.

In accomplishing each of these goals, the primary role of the broker is to eliminate regulatory and insurance barriers. The broker must convince public transit authorities, planning agencies, unions and franchise carriers to let new forms of transit provide new service to meet needs that are not now being met. The coordination of government policy and activities is perhaps the most important element of the Stage III broker since it is difficult for a large organization to coordinate a wide array of services for individuals. Thus Stage III specialization of service may best be provided by individual owner/operators with local governmental agencies coordinating to make the innovation service possible.

Conclusion

Public transportation has declined because policymakers and outdated regulations have restricted the evolution of Stage III systems which more closely reflect the mobility and life-styles of today. Public policy needs to take a consumer-oriented approach to public transportation by recognizing that all consumers do not have the same transportation needs and that one or two modes of transportation cannot satisfy these needs. It is the contention of this report that if public transportation is to become an efficient method of satisfying the transportation needs of a community, a brokerage or consumer-oriented approach should be adopted. Stage I, II and III services each have a place when they provide the services needed by society. Problems arise, however, when one type of transportation service is promoted and emphasized at the expense of other methods.

The evaluation of Stage III transportation policy will emphasize the need for coordination of all modes, ownership forms and diverse services to better

meet consumer needs. There is no shortage of demand for public transportation where the service truly meets individualized personal needs. The automobile is used so extensively because it offers the flexibility needed by today's consumer, even though the consumer pays a high price for this flexibility. If the same transportation flexibility can be offered at a lower price, it will be used enthusiastically by the consumer.

FOOTNOTES

¹U. S. Department of Commerce, Bureau of the Census, Census of Population: 1970; and Schnell, John, "Public Transportation and Transportation Needs of the Elderly and Handicapped," Paper presented to the Highway Research Board, January 1974.

²The World Almanac: 1976, (New York: Newspaper Enterprise Association, 1976), pp. 126, 201.

³Net Federal expenditures for transportation in 1974 were \$4.538 billion. \$1.149 billion or 25 percent of the total amount was used for mass transit. This does not include state and local government expenditures. See Coleman, William T. Jr., A Statement of National Transportation Policy, (Washington, D.C.: Department of Transportation, 1975).

4 Trend of Total Passengers (in millions)

<u>Year</u>	<u>Rail</u>	<u>Trolley</u>	<u>Bus</u>	<u>Total</u>
1945	12,124	1,244	9,886	23,254
1950	6,168	1,658	9,420	17,246
1955	3,077	1,202	7,250	11,529
1960	2,313	657	6,425	9,395
1965	2,134	305	5,814	8,253
1970	2,116	182	5,034	7,332
1975	1,804	78	5,068	6,950

Transit Fact Book 1975-1976 edition, (Washington, D.C.: American Public Transit Association, 1975), p. 32.

$$\begin{array}{l} \text{5} \quad \frac{1975 \text{ subsidy}-1974 \text{ subsidy}}{1975 \text{ ridership}-1974 \text{ ridership}} = \frac{\$403,853,000}{15,000,000} = \$26.92 \end{array}$$

This computation shows that \$26.92 was spent per rider in 1975 to increase transit ridership. See Transit Fact Book 1975-1976 edition, (Washington, D.C.: American Public Transit Association, 1975), pp. 28,32.

⁶For more detailed discussion see Pegrun, Dudley F., Transportation: Economics and Public Policy, (Homewood, Illinois: Richard D. Irwin, Inc., 1968), pp. 287-311; and Locklin, D. Phillip, Economics of Transportation, (Homewood, Illinois: Richard D. Irwin, Inc., 1966), pp. 197-207.

⁷For a more detailed discussion see Locklin, D. Phillip, Economics of Transportation, (Homewood, Illinois: Richard D. Irwin, Inc., 1966).
11, 12.

⁸ National Transportation Policy, (Doyle Report), Preliminary Draft of Report to the Senate Committee on Interstate and Foreign Commerce 87th Congress, 1st Session, (Washington, D.C.: U.S. Government Printing Office, 1961), Part VII.

⁹ Smerk, George M., Readings in Urban Transportation, (Bloomington, Indiana: Indiana University Press, 1972), p. 8.

¹⁰ This regulatory philosophy was perhaps best stated in the Transportation Act of 1940. Although the Act applied only to interstate rail, motor, water and pipeline transportation, the concept was used in numerous state and local ordinances to regulate intrastate and urban transportation systems.

¹¹ For more details on this subject see Davis, Frank, Jr. et al., Increased Transportation Efficiency through Ridesharing: The Brokerage Approach, Chapter VI.

¹² Secretary of Transportation, William T. Coleman, Jr., has suggested that Federal urban policies "require as a condition of Federal funding the development and implementation of transportation system management plans to improve the efficiency of existing facilities and transit services and conserve energy (e.g. carpools, exclusive bus lanes, higher parking fees)" See Coleman, William T., Jr., A Statement of National Transportation Policy, (Washington, D.C.: Department of Transportation, 1975), p. 8.

¹³ Urban Mass Transportation Act of 1964. Public Law 88-365.

¹⁴ Estimated Investment in Urban Public Transportation

1970-1979
(millions of 1969 dollars)

<u>Transportation Mode</u>	<u>Outlay</u>	<u>Percentage</u>
Rail Rapid Transit		
Fixed Facilities	\$19,930.6	60.8
Rolling Stock	1,107.3	3.4
Suburban Railroad	2,275.6	6.9
Busway/Guideway		
Fixed Facilities	6,080.0	18.5
Rolling Stock	447.3	1.4
Conventional Bus Transit	<u>2,943.8</u>	<u>9.0</u>
TOTAL	\$32,784.6	100.0

Hilton, George W., Federal Transit Subsidies: The Urban Mass Transit Assistance Program, (Washington, D.C.: Institute for Public Policy Research, 1974), p. 84.

¹⁵ National Transportation Policy, (Doyle Report), Preliminary Draft of a Report to the Senate Committee on Interstate and Foreign Commerce, 87th Congress 1st Session, (Washington, D.C.: U.S. Government Printing Office, 1961), p. 599.

¹⁶ Ibid., pp. 585-589.

¹⁷ All mass transit employees are covered. The act does not define terms. Legislative history shows that Congress intended to protect the urban mass transportation industry employees. UMTA determines the scope of the definition of "mass transit." "Affected employee" is determined by the "specific project" and the Secretary of Labor.

¹⁸ Agreement between the American Public Transit Association and national labor associations which serves as the standard 13C Agreement for urban areas as a condition of funding under the Urban Mass Transit Act of 1964 as amended. See sections 6(a), 7(a) and 13.

¹⁹ Symons, Richard, "An Analysis of Selected Cities' Regulatory Factors that Impede Implementation of Paratransit Forms," Unpublished dissertation, The University of Tennessee.

²⁰ See Federal Aid Highway Act of 1962.

²¹ Four Trailway affiliates surrendered all intrastate authority on November 17, 1975.

²² There are only five situations where a carrier can waive responsibility for injury to passengers or cargo:

1. Acts of Good
2. Acts of Public Enemy
3. Acts of Public Authority
4. Acts of the Shipper
5. Inherent Nature or Vice of the Goods

²³ Ridesharing and the Knoxville Commuter, (Knoxville, Tennessee: The University of Tennessee Transportation Center, August 1975), pp. 195-196.

²⁴ Beginning vanpool programs for example found that coverage as a private carpool ranged from \$200 to \$400 dollars, but if they received a certificate or permit as a "for-hire" carrier the insurance cost would increase to as much as \$1,500. The same comparison exists between "not-for-hire" school buses and church buses and "for-hire" work buses using the same vehicles and drivers.

²⁵ Work-splits refer to the procedure of requiring drivers to operate two or more work shifts to complete an eight hour work day. Some labor contracts limit the amount of "spread time" (time from beginning of initial work period to end of the last work period). For example, a contract may specify work to be within two shifts and a twelve hour period.

²⁶ For more detail on this subject see Davis, Frank, Jr. et al., Increased Transportation Efficiency Through Ridesharing: The Brokerage Approach, Chapter V, Comparative Economics of Public Transportation.

²⁷ See Motor Carrier Act of 1935.

²⁸ Institute for Defense Analysis, Economic Characteristics of the Urban Public Transportation Industry (Washington, D.C.: U.S. Government Printing Office, 1972).

²⁹ Ibid., pp. 2-42

³⁰ Ibid.

³¹ Telephone Conversation with Suanne Brooks, Atlanta office, Health, Education and Welfare, June 25, 1976.

³²
$$\frac{500,000,000}{1,149,000,000} = 44\%$$
 National Transportation policy

Statement by William T. Coleman, Jr., 1975, Appendix 11, Table 1 indicated \$1,149,000,000 or 25% of net Federal transportation expenditures were for mass transit.

³³ Transportation Authorities in Federal Human Services Programs, (Atlanta, Georgia: U.S. Department of Health, Education and Welfare, 1976).

³⁴ Survey taken by Malcolm Baird, Director of Urban Mass Transit, Department of Transportation, Nashville, Tennessee.

³⁵The World Almanac: 1976, (New York: Newspaper Enterprise Association, 1976), p. 126; Transit Fact Book 1973-1974 edition, (Washington, D.C.: American Public Transit Association, 1973), p. 19; and Gap, William, Summary of National Transportation Statistics, (Washington, D.C.: U.S. Department of Transportation 1972), p. 11.

³⁶Forstater, Ira and Twomey, Ed. Vanpooling: A Summary and Description of Existing Vanpool Programs, (Washington, D.C.: U.S. Environmental Protection Agency, 1976).

³⁷Carpool Action Programs and Incentives, (Draft copy), Report of the Secretary of Transportation to the United States Congress, (Washington, D.C.: Department of Transportation, 1974, p. 2.

³⁸Ibid., p. 19.

³⁹Annual Reports to the Interstate Commerce Commission by Colonial Transit Co., Inc.

⁴⁰Personal Correspondence from Jim Echols, Executive Director, Tidewater Transportation Commission, July 22, 1974.

⁴¹Telephone conversation with Don Morin, Chief, Public Transportation Branch, Federal Highway Administration, June 17, 1976.

⁴²"Are All Big Cities Doomed?" symposium, U.S. News and World Report 80: 49-56 (April 5, 1976).

⁴³The World Almanac: 1976, (New York: Newspaper Enterprise Association, 1976), pp. 126, 127.

⁴⁴Ibid.

⁴⁵Davidson, William R., "Changes in Distributive Institutions," Journal of Marketing, January 1970, Vol. 34, No. 1, pp. 7-10

⁴⁶Levitt, Theodore, "Management Myopia" from Marketing Managements and Administrative Action (New York: McGraw-Hill, 1968), pp. 17-24.

⁴⁷As shown earlier, the ridership of the franchised carriers has decreased substantially from 1950 to 1975, while ridership on the non-franchised private vehicle systems grew rapidly. Ridership decreased 59.4 percent for intercity bus, 46.6 percent for intracity bus transit, and 41.7 percent for intercity rail and 65.7 percent for intracity rail service during this period. See Transit Fact Book 1975-1976 edition, (Washington, D. C.: American Public Transit Association, 1975).

⁴⁸The World Almanac: 1976, (New York: Newspaper Enterprise Association, 1976), p. 127.

⁴⁹Ibid., pp. 126, 201.

⁵⁰Personal Correspondence from Dick Sadler, Senior Para Transit Developer, Golden Gate Transit District, San Francisco, California, February 23, 1976.

⁵¹Telephone conversation with Stan Stokey, Program Manager, Employee Transportation, Tennessee Valley Authority, Knoxville, Tennessee, June 17, 1976.

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