But these Federal grants may only be used for facilities adjacent to Federal-aid highways. Since neither the heavily traveled Route 7 nor the Federally built Dulles Airport freeway is part of the Federal-aid highway system, this source of funds was not available to Reston, even in the unlikely event that the state or county governments were willing to pay the other half of the cost.

The Vital Role of Citizen Action

It thus appears that most of the credit for the success of the Reston express bus service must be awarded to citizen action. It was the citizens of Reston who rightly judged that a market existed for high-quality bus service, and who designed, promoted and managed the service, overcoming numerous obstacles along the way. An important prerequisite to their success was the existence of a vigorous civic group, the Reston Community Association, which provided the organizational sponsorship and support needed by a volunteer activity.

The RCA transportation committee performed two kinds of function that are usually missing when a new bus route is introduced. It took some actions that should accompany the introduction of any new product or service, but that are usually neglected by transit companies and regulatory agencies. And it provided some ingredients that can perhaps only be supplied by citizen participation.

Among the citizen actions that improved upon the usual performance of bus companies and public agencies were the careful studies of the needs of the prospective riders, and the hard work that went into the design of a service that precisely met those needs. Before and during the first year of operation, two surveys of Reston residents were conducted, to ascertain their interest in bus service and their preference as to schedules and routes. (The citizens also had the benefit of an earlier survey conducted by the developer.) Once the service was begun, the members of the transportation committee monitored its performance every day from vantage points on the bus, and adopted improvements as soon as possibilities were identified.

Of vital importance was the committee's promotional effort before and after the beginning of service. By distribution of leaflets, newspaper publicity, and personal contact, it succeeded in bringing the new service to the attention of a large proportion of Reston families before the first bus ran. Each expansion of the service was likewise intensively publicized. The promotional effort succeeded in the all-important task of conveying the idea that the bus service was a successful and permanent thing, so commuters could give up downtown parking spaces, dissolve car pools, or dispose of a second automobile with the assurance that they would not be left without transportation by abandonment of the bus service.
While transit companies may engage in analytical and promotional work when preparing to inaugurate new service, they rarely, if ever, perform these functions as thoroughly as did the RCA transportation committee.

The transportation committee also designed a kind of limited-stop service that the bus company had been reluctant to try. By making no stops between Reston and Rosslyn, the express bus saved many minutes and retained the ability to change its route over the intervening distance when desirable. The committee's judgment was vindicated by the growth of ridership, which soon passed the break-even point without any need to stop and take on more passengers at intermediate points.

Some other functions of the civic group went beyond what could be expected of a bus company or public agency. The RCA express bus service was the beneficiary of a large input of community spirit. The enthusiasm of Karl Ingebritsen and his associates was conveyed to other residents of the new town, who came to identify the express bus as a community project. It appears that some of the early riders were motivated not only by a rational calculation of the costs and benefits of alternative modes of travel, but by a desire to assure the success of a community undertaking. Once they were on the bus, this attitude was reinforced by the group spirit that quickly developed among the riders. The trip to and from the city became a positively valued social experience.

The citizen-sponsored bus also benefited from a degree of flexibility that the usual transit vehicle, operating on a fixed route in accordance with a certificate granted by a public agency, does not have. On the long stretch between Reston and the nearest stop in Rosslyn, the bus master could change the route at a moment's notice, in response to unusual traffic conditions or suggestions by riders or driver. The transportation committee could likewise make more permanent changes in response to road construction projects or seasonal fluctuations in traffic (such as the added traffic on some suburban streets when school opens in September).

There was also flexibility in the design of the fare schedule. Within the first few months, the committee adopted three alternative fares, offering progressively larger discounts to the purchasers of 10 tickets and a monthly pass. Its reliance on the pre-sale of tickets also helped to speed the service and simplify the driver's task by eliminating use of the fare box.

The bus driver was further aided by the presence of the bus master, who sold tickets, answered questions, and performed other service functions that often divert the attention of a bus driver from his endless struggle with rush-hour traffic. While these functions are
not in principle beyond the capability of a bus company, they are ruled out by the wage costs of placing a second employee on each bus. By enlisting citizen participation, the Reston Community Association brought back that long-gone member of the urban transit team, the conductor.

Another asset of citizen participation was the high level of talent that it brought to the operation of the express bus service. The men who were mainly responsible for the success of the Reston express were well-educated and held responsible positions in the Federal government or private industry. They were accustomed to applying sophisticated analysis to complex problems, and they had a strong drive toward accomplishment. Karl Ingebritsen had graduated from a top-flight Eastern liberal arts college and had earned a master of arts degree in history. He was an administrator in a Federal agency which dealt with world politics in all of its complexity. Pierce Gaver, a graduate of the U.S. Military Academy, was a systems analyst with a university-connected research and consulting organization, for which he had undertaken major tasks of analysis and organization as project leader and department manager.

The talent and enthusiasm that these men and their associates voluntarily applied to the bus project presents a striking contrast to the performance of the personnel of the typical bus company or regulatory agency, which rarely spends a significant amount of money on research and development and does not even attempt to compete with the more progressive industries and government agencies in recruiting the graduates of colleges and schools of business administration.

These personal attributes are by no means unique to residents of Reston. Men like Ingebritsen and Gaver can be found in many communities, and they can be enlisted in the effort to improve transit service. Just as fire-fighting services are obtained in rural communities by mobilizing the energies of young (and not-so-young) men for whom the sound of the fire alarm taps a very basic instinct, so in a metropolitan community many a professional man, confined all day with pencil and paper in an office cubicle, will gladly take some responsibility for the management of a small part of the "real world" of motion and mechanics. Thus citizen participation can help to make up for the managerial and personnel shortcomings of a moribund transit industry.

Limitations of Citizen Action

But there are limits to what can be accomplished by a citizen organization. The situation was unusually favorable in the new town of Reston. A realistic appraisal of citizen action should recognize the factors that limited the accomplishment of the Reston citizens, and the greater limitations that would be felt in a more typical community.
Citizen action depends, first of all, upon the citizens themselves. Its effectiveness is a function of the time, energy, knowledge, and skill that they are willing and able to apply to the projects that they undertake.

All of these resources are in short supply. Civic projects must compete with family responsibilities, recreation, social life, and many other activities for the spare time of a community's adult residents. A demanding job or a growing family may leave little energy for other activities. Some kinds of civic project require specialized knowledge not possessed by every citizen, and almost every project demands skills of organization, communication and leadership. It is little wonder, then, that few communities have as many well-qualified civic workers as they could use, and that many civic organizations lapse into a state of minimal activity between the occasional crises that stir citizen concern.

Reston was fortunate in this respect. The new town had an atypically large proportion of young, well-educated, affluent, and socially conscious citizens on which to draw for such a project as the express bus service. While neither a lengthy formal education nor a high income is a prerequisite to successful civic action, some kinds of education can provide skills and knowledge that are useful when citizens intervene in a complex process such as the operation of a transit system, and a good income can free a citizen to devote his spare time to community affairs.

Another limitation -- scarce financial resources -- is sure to be felt once citizens go beyond small-scale projects that can be put on a paying basis or financed by such traditional sources as membership dues and bake sales. This was a barrier to further progress by the RCA transportation committee when it sought to go beyond the commuter express service to such innovations as reverse-flow operation from the city to Reston industries, access to the Tyson's Corner shopping center, and internal circulation in the new town.

Effective citizen action also depends upon a supportive social and physical environment. In many urban and suburban areas, such support is sadly lacking. The growth of true communities is inhibited by the lack of well-defined boundaries in an unending landscape of urban sprawl, and equally by the lack of focal points that are easily accessible and that contain suitable meeting places and other facilities. The physical disorganization is matched by social disorganization. The civic, cultural, religious, and other groups are often oriented in different directions, for lack of a community center, and there may be no single civic organization covering an area that has a particular problem such as a need for improved transit service.
The Reston citizens were unusually fortunate in this respect. Both the design of the new town and its institutions -- community association, homeowners association, newspaper, and informal groupings resulting from shared interests -- were of great value to the citizen effort.

Another restraint on citizen action is the performance of other organizations which possess some of the necessary powers and resources. Citizen action is a means of accomplishing things that are not being done by government or other social institutions. But citizen organizations cannot be effective if such institutions preempt the field while failing to do all of the things that citizens desire.

At Reston, other organizations provided only a small amount of help, but at least they did not preempt the field. One of the most important advantages of the Reston citizens was, ironically, the fact that the bus company was providing no rush-hour service whatever. Had this been a typical suburban community, with slow and infrequent service during the commuting hours, the local bus company might have declined to provide charter buses for a new service that would compete with its scheduled operations.27

In such a case, an attempt by citizens to secure express service in the form of additions to the bus company's schedule would have encountered many obstacles that were absent from the Reston situation. Such express service would, by its very nature, be a proprietary undertaking of a profit-making corporation, not a community project, so it would not be likely to elicit as much support by the commuters or as much hard work by concerned citizens.

The nature and timing of each addition and improvement in such a service would depend upon the decisions of the bus company's management rather than the citizens, so a more pessimistic attitude and a slower rate of expansion would be likely. The routes and schedules would have to be firmly established and adhered to until changed by a quasi-judicial proceeding, so adjustments could not be made in prompt response to changing traffic conditions or updated information on the work schedules of the riders. Fares would be fixed in accordance with a systemwide schedule, and quantity discounts would not be permitted. When rising costs necessitated a fare increase, it might be long delayed by legal proceedings, causing a decline in working capital and preventing service improvements. Collection of fares could not be delegated to citizens -- in fact, very little of the bus master's function would be tolerated in a conventional bus operation.

27. However, President DeStefano of the WV&M Coach Company has expressed a willingness to consider adjustment of regularly scheduled service for suburban communities, in order to clear the way for civic groups that wish to inaugurate express bus service of the Reston type.
Thus the Reston experience underlines, by contrast, some of the ways in which citizen efforts to improve transit service are likely to be handicapped by the archaic, quasi-judicial regulatory structure and the hidebound management which are generally found in urban transit service.

The Reston express bus service was likewise handicapped by the policies of the agencies controlling the highways between the new town and Washington, which showed little inclination to help expedite the movement of buses. No amount of citizen effort and community spirit can enable buses to overcome the delays on congested highways. Only public agencies -- highway departments, police departments, park agencies, etc. -- can institute the traffic arrangements needed to speed the buses, such as reservation of a lane for them on the approach to a bottleneck.

* * *

This analysis leads to the conclusion that citizen action can be a valuable ingredient in the improvement of transit service, but its success is likely to be severely limited in most cases by the organization and procedures for operating and regulating transit service, by auto-oriented management of highway traffic, by an unsupportive urban environment, and by the limited time, energy, knowledge and resources of the citizens themselves. The powerful effect of these forces is suggested by the very uniqueness of the Reston experience -- there is surely no evidence of a nationwide surge of citizen action to improve transit service. The Reston success story does not appear likely to be often repeated without special stimulus.

This situation calls attention to a basic philosophical difficulty in any proposal for voluntary citizen action. If such grass-roots action is in fact desirable and possible, why is it not already forthcoming in sufficient quantity from the citizens of every community? Anyone who advocates this approach is ultimately obliged to propose some new stimulus to elicit action that is now lacking.

Where the obstacle to action is a lack of awareness of the need or an unwillingness to change, the stimulus might simply take the form of information and exhortation. This could be provided in a general way by newspapers, television and radio stations, and public officials with access to the mass media. More specific action could be taken by staff personnel of a local government or transit operator, carrying the message to local civic groups and soliciting their participation in a program of transit improvement.

Where greater and more complex obstacles are encountered, the stimulus might have to take a more substantial form. If citizens see the need for better transit service and want to take action to
meet the need, but do not know how to go about the task, they might be provided with technical information and guidance. If they lack the resources needed to launch a civic project (especially for their all-important communication and publicity functions) a modest amount of financial assistance might enable them to act. If they are blocked by archaic organization and procedures for the regulation and management of urban transit, those should be reformed. If their efforts are limited by an unsympathetic management of the highway system that ignores opportunities to facilitate bus operation, the highway policies should be changed. In the longer run, the urban development process should be reorganized to produce a physical environment, whether in the form of new towns or other urban forms, that supports citizen action to meet community needs.

Such stimulus and reform should come primarily from government, since it is already deeply involved in urban transportation and possesses many of the essential powers and resources. This would be a worthwhile undertaking for any state or local government. In the case of Reston, for example, the government of the rapidly urbanizing state of Virginia might seize this opportunity to show its concern for, and ability to cope with, the urban transportation problem by providing some of the missing ingredients of transportation improvement for Reston. Equally suitable would be such an effort by Fairfax County, perhaps with some state assistance.

However, past experience suggests that the state and local governments are not often likely to give a timely response to new urban needs. Even if a few states and localities (perhaps including the state of Virginia and Fairfax County) should do so, most state and local units are experiencing so much difficulty in keeping up with the day-to-day demands of traditional governmental functions that they are not likely to devote much attention to such innovations as assisting citizen efforts to improve transit service.

In the absence of state or local action, it is reasonable to expect the Federal government to provide some stimulus and support for citizen action. As long as urban transportation is a governmental problem and a national problem, there is clearly a role for the national government. Federal support of citizen participation in the management of the transportation system could become part of a coordinated program for the improvement of urban transportation, embracing Federal aid for highways, grants and loans for urban mass transportation facilities, and other kinds of action. If existing Federal aids were made contingent on reform of policies and practices at the state and local levels, many of the obstacles to improved management of the urban transportation system, and to effective citizen participation, might quickly fall.

Whatever the Federal government may do along these lines, it is hoped that the publication of this study will stimulate those who
read it -- citizens, public officials, transit executives -- to take action within their own spheres of responsibility to apply the lessons that are to be learned from the Reston experience. In many parts of the Washington metropolitan area (and in many other metropolitan areas) there are communities with strong civic organizations that might well attempt to emulate the Reston Community Association by organizing express bus service that is tailored to the needs of their members. Where citizens do not take the initiative, the management of the local bus companies might go to the civic organizations with specific proposals for a joint effort to improve bus service, rather than simply responding to random citizen complaints. County and city governments could also lend impetus to such efforts by recognizing their responsibility for the quality of transit service within their territories and directing specific staff personnel to work on this problem in cooperation with citizens and transit companies. Regulatory agencies (in this area, the Washington Metropolitan Area Transit Commission) could make an important contribution by taking a more active part in the design and promotion of new and improved services, rather than simply regulating the performance of services inherited from the past.

To make a really substantial contribution to the improvement of urban transportation, such efforts would have to be carried forward on a larger scale than anything we have yet witnessed, and would have to be accompanied by complementary changes in the character of new urban development. It appears that urban transportation, like so many contemporary urban problems, demands a more complete restructuring of our institutions than anything so far considered: the abandonment of the present pattern of suburban development (ill-planned sprawl) and the channeling of new development into well-planned new communities whose physical design and social institutions will support a rational transportation system; and a thorough overhaul of the archaic and ill-coordinated structure of organizations that are collectively responsible for the management of the urban transportation system.
APPENDIX

A Comparison of the Reston Experience with Some Federally Financed Demonstration Projects

While the Reston citizens failed to obtain Federal assistance, their project compares favorably with the group of "demonstration projects" in various urban areas that have been supported by Federal funds under the Urban Mass Transportation Acts of 1962 and 1964. The Federal legislation authorizes grants for "research, development and demonstration projects in all phases of urban mass transportation . . . which will assist in the reduction of urban transportation needs and the improvement of mass transportation service." The Reston project might be called a "non-Federally financed demonstration project," which has been more successful and has provided more useful information than many of the Federal projects.

Of special interest are some points of similarity between the Reston express bus service and some of the most successful Federally aided projects. Such similarities are contributions to our growing body of knowledge about what must be done to meet urban transportation needs.

One of the most innovative and successful of the Federal projects was a bus service between residential areas and industrial plants in Peoria and Decatur, Illinois, conceived and directed by the staff of the state university's bureau of economic and business research. Such service appeared to have a faint chance of success, since well-paid blue-collar workers have generally shown a strong attachment to the automobile, especially where there is ample free parking, as was the case in these two cities. In fact, an earlier demonstration project had concluded that

Special service during peak hours to industrial plants, which have free and available parking for employees, will not recover operating costs


from fare-box revenues unless the equipment and operator is otherwise available and not utilized.\(^3\)

But the Peoria-Decatur service attracted a sizable ridership and was continued on a profitable basis after the Federal subsidy terminated.

The most important features of the Peoria-Decatur project were precise adaptation of the service to the requirements of the commuters, continuing personalized treatment of the riders, and intensive promotion. In each city, the employees of the industrial plants were asked about their interest in a tailor-made bus service. The residences of those who expressed interest were plotted on a map, and special bus routes were laid out to pass within a block of each residence. The bus schedules matched the starting and quitting times of the plants served. Uniformed stewardesses occasionally rode each bus to monitor the service and receive any criticisms or suggestions. When not riding the buses, they spent full time administering the operation. There was intensive promotion of the service at the plants, as well as in the mass media.

This service was well received by the industrial employees in both cities. In Peoria, where a very large industrial plant offered an especially great potential, the operation expanded in a little more than one year to 21 routes with an average of 26 subscribers per route. The monthly fares ranged from $9.25 to $14.50. Thus in the industrial cities of Peoria and Decatur, an astute university-based management used Federal funds to institute a service having many features similar to that which the Reston citizens were able to develop by their own efforts in a new town setting. The tailor-made routes in the Illinois cities provided the same closeness to homes that was largely achieved in Reston by the layout of the new town, and in each case the buses were timed to fit the work hours of specific groups of riders. The stewardesses provided the same personal attention as the Reston bus masters (plus an element of glamor that was lacking on the Reston buses). Promotional efforts by a few large employers and expenditures on the mass media achieved the same purpose as the neighbor-to-neighbor promotion of the Reston service. Both projects learned the hard way that a single regular driver is essential to high-quality service. In each case, the riders helped to make the service a success:

It was found that the passengers themselves contributed significantly toward maintaining good

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service. A cordial club-coach atmosphere was soon established.4

The importance of the personalized service and promotion, and of a service-oriented management, was underlined by the experience after the Federal grant terminated and management of the project was transferred from the university to the local bus company. The stewardesses were removed, some of the special services (such as a backup taxi service in case of a bus breakdown) were abandoned, and the promotional effort was reduced. The ridership trend soon shifted from upward to downward. (A fare increase also contributed to this outcome.)

Another Federally financed project served a population more nearly comparable to the Reston commuters. An express bus service (the "Metro Flyer") was inaugurated between suburban Towson and downtown Baltimore, Maryland.5 The bus route began at the edge of a suburban shopping center where commuters were permitted to park their cars and board the bus. The route passed through a middle-income residential area and then proceeded non-stop for 11 miles on a freeway to the central business district. Service was provided all day in both directions (initially 11 round trips, subsequently increased to 14), but the bulk of the ridership was generated on three round trips (increased to six) timed for suburbanites working in the city. The fare was 50 cents. Ridership rose from 169 in the first month to 469 in the twelfth.

This operation was similar to the Reston express service in that it had a short suburban pickup run and a long non-stop trip to the central employment area. The "Metro Flyer" had the advantage of building on an existing local service, from which about one-fourth of its riders were diverted. The Towson service also had a much larger tributary population than the Reston express -- an estimated 21,500 persons as against 6,000 after one year of service at Reston. Median family income was about $2,000 less than at Reston, which would also favor transit ridership. But only about 41 percent of the Towson workers were employed in Baltimore City, and the proportion working in the central employment area was probably no more than one-half of the Reston proportion.


5. Metropolitan Transit Authority of Maryland, "The Metro Flyer": A Suburban Express Bus Service to Downtown (Baltimore, 1967).
Since the Towson buses were serving a typical suburb rather than a new town, they had to spend more time in stopping for passengers along the streets of the community, and a larger proportion of the riders drove their automobiles to the bus line.

One of the most valuable features of the Towson bus, like the Reston express bus, was a schedule precisely fitted to the needs of the commuters. As patronage grew, the management of the "Metro Flyer" found that addition of extra "sections" of certain trips was preferable to the scheduling of new trips at other times, even though the latter approach would reduce headways. But this project, like the one at Reston, was hindered by inadequate equipment. While air-conditioned suburban coaches were used, the bus company did not have enough vehicles to meet the growing demand on the new route. Some of the riders had to stand, and this inconvenience noticeably retarded the growth of patronage.

At the end of the one-year project, the "Metro Flyer" was carrying about 180 suburbanites into the city each day -- about 50 percent more than the four Reston buses carried after a year of operation. While operating costs were somewhat greater than revenues during the entire year, the bus company was able to continue the service profitably after the Federally financed project terminated, by eliminating some midday trips.

Similar express bus service was introduced on seven radial routes in the Saint Louis metropolitan area with the aid of a Federal grant. Each route had six inbound and outbound peak-hour trips, and a few trips at other times. Fares ranged from 35 to 70 cents. There was an intensive promotional campaign. Ridership on these routes increased from 1067 in the first month to 2363 in the twelfth. Five of seven routes were continued profitably after the project ended, and a sixth was continued with modification. An analysis of the results concluded that such service could expect to attract between 15 and 20 percent of the persons living near the routes and employed in the central business district. One of the most important variables affecting the drawing power of the Saint Louis routes was the accessibility of the bus stops to nearby residential areas -- in contrast to the Reston situation, access was often hindered by strip commercial development, heavy traffic without traffic signals, etc.

These Federally financed projects lend added support to some of the main conclusions to be drawn from the Reston experience. However, none of these projects had the benefit of the citizen participation which appeared to be so important to the success of the Reston express bus service.

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