



Increasing dependence on the automobile as a means of personal transportation, rapidly spreading urban centers, and declining intercity public transportation systems have resulted in decreased mobility for many people in urban environments. This problem first received national attention in the wake of the 1965 riots in Los Angeles and Watts when the connection between transportation and poverty was made explicit in the McCone report (1).

Several transportation demonstration projects were subsequently established by the Urban Mass Transportation Administration to bus ghetto residents to suburban jobs. Planned quickly, these demonstrations relied heavily on assumptions about travel demand and other related factors that had been useful in designing highways and CBD transit systems. Evaluation of 6 years of demonstration-project operations yielded some surprises and caused planners to question their initial planning assumptions. Some of the major differences are summarized here.

TRIP ORIGINS

Planners assumed initially that the disadvantaged were concentrated in small, residential "pockets," by and large in the inner city, and the early demonstration projects were designed accordingly. It is now clear that this assumption is not justified, even for ghetto residents. In Boston, for example, many riders of demonstration-project buses reported that they spent more than 15 minutes traveling from their homes to the bus stop (2). In Nassau and Suffolk counties on Long Island, planners observed that "low-income households [are] spread throughout the counties in very small concentrations. These concentrations are usually in remote areas that have inadequate or nonexistent bus service" (3). The assumption of concentrated origins breaks down entirely, of course, in low-density areas, where the origins of non-car-owning poor are very nearly as dispersed as those of car owners (4).

Resource Paper on the Transportation Disadvantaged

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TRIP DESTINATION AND PURPOSE

The dispersed destinations of the disadvantaged have been recognized for some time at least as far as the journey to work is concerned. In response to the dramatic increase in suburban industrial jobs in recent years (5), the bus demonstration projects attempted to serve as many of these locations as possible within financial and time constraints. The poor with work experience were quick to respond to these transportation improvements. For example, in a 46-person ridership survey of the Roxbury-Route 128 Express in Boston, 80 percent of the riders had some vocational training and their skill levels were generally high (2).

However, planners failed to recognize that the people whose mobility they were trying to increase were frequently not qualified for the jobs available. In Watts, for example, an employment drive referred only 15 percent of the 9,400 applicants to jobs and actually placed less than 6 percent (6). Planners subsequently recognized that the jobs that are available to the "hard-core" unemployed commonly involve long hours, weekend or evening shifts, no opportunities for advancement, poor pay, and other undesirable conditions. Low wages are such an important factor in deterring the poor from employment that Nassau-Suffolk planners concluded that "low-income persons cannot afford to accept jobs that pay a minimum wage. . . . After paying union dues, wage deductions, and transportation costs, their net pay is not enough to live on (3).

The dispersion of trip destinations among the poor for purposes other than work has also not been widely recognized. A surprisingly high proportion of demonstration bus riders were destined for some place other than employment. Ridership surveys of bus systems that have served suburban commercial and recreational areas as well as industrial job sites indicate the importance the poor attach to nonwork trips. In Washington and Minneapolis-St. Paul, for example, the proportion of nonwork riders often approached 20 percent (7). The importance of nonwork trips is especially significant for the large percentage of nonworking poor—the elderly, the young, and the low-income housewives.

MODE CHOICE

Demonstration-project planners initially assumed little or no car availability among the poor although, in fact, many poor do have cars available for some portions of their trips.

Limited information available about car pooling suggests that it accounts for a large proportion of the automobile trips taken by the poor, particularly the work trip. On Long Island, for example, surveys showed that only 32 percent of the riders used the demonstration-project buses for the round trip. This indicates that the remainder, some 68 percent, had some other form of transportation available (8). It is likely that this was some form of car pooling or ride sharing.

Poor car owners, however, are distinct from middle-class car owners because of a number of problems associated with automobile use. First, their cars are often unreliable. Research with the Watts demonstration project suggests that perhaps as many as 20 percent of the vehicles used by the poor are not reliable enough for the journey to work because of mechanical failure or vandalism problems (slashed tires) in the owner's neighborhood (9): "A number of Watts residents reported that they had actually lost their jobs because their cars were continually breaking down."

The evaluation of these demonstration projects and subsequent research on the problems of urban mobility raised some questions but left others unanswered. Thus, the Federal Highway Administration initiated a research project, which was conducted by Abt Associates, to identify the urban transportation disadvantaged, assess their travel demands, and determine the impact of inadequate transportation on their employment status and quality of life.

DEFINITION OF TRANSPORTATION DISADVANTAGED

The assessment of the travel demand of transportation-disadvantaged groups required a definition of the transportation disadvantaged. Previous research and demonstration programs have defined the disadvantaged in terms of income and assumed that improvements in the transportation system would improve the mobility of poverty-level households—largely helping them to gain better access to badly needed employment and social service opportunities. Income obviously is related to travel demand, the best understood relation being that between income and automobile ownership. The effect of income on the ability of the traveler to participate in the activity at the trip's end is also important. In fact, were the transportation system perfect and were there no other constraints on mobility, trip generation could probably be explained entirely by income.

But the transportation system is not perfect, and factors other than income constrain mobility. In fact, it is these other factors and their relation to the transportation system—not income—that the transportation planner has some influence over. Thus, to identify which system improvements increase the mobility of the disadvantaged and to evaluate their effectiveness, the planner must define disadvantaged in terms of travel behavior. An individual (or group) is transportation disadvantaged, then, if he takes significantly fewer trips, for any purpose, or has significantly longer travel times than would be expected for his income.

RESEARCH METHODOLOGY

The research began with a review of the literature that identified the characteristics that have been used to define transportation-disadvantaged groups; these included income, age, automobile ownership, automobile reliability, race, family size, and residential location. Because the literature generally focuses on only a few of these descriptors at once, a more systematic approach was taken to identify new groups.

Guttman scale analysis was chosen for this purpose. This scaling technique tests whether a given population can be ranked on a single dimension by the presence or absence of several characteristics thought to be related to that dimension, in this case, transportation disadvantage. Trip frequency and trip time were chosen as the criteria for ordering individual travelers on this scale, and 15 descriptors from the literature and a large data base for metropolitan Washington were used to construct them. Although no single scale including all of the descriptors turned out to be completely satisfactory, several descriptors repeatedly appeared together, in the same order, in most of the scales. These were

1. Number of cars (0, 1, or more);
2. Year of best car (older than 1965, 1965, or newer);
3. Trip time from home to work (less than 30 minutes, 30 minutes, or more);
4. Age (under 65, 65, or older);
5. Trip time for social-recreational purposes (less than 15 minutes, 15 minutes, or more);
6. Number of children under 5 (fewer than 2, 2, or more); and
7. Income (less than \$4,000, \$4,000, or more).

An analysis of the trip frequencies of persons in households having these characteristics, as well as those identified by the literature, was undertaken by using the data base from the Nationwide Personal Transportation Survey of 1969-70. Four income groups were defined, and descriptors were ranked (within each income category) according to the number of nonwork trips associated with each. Three traits—not owning a car, being elderly, and being nonwhite—appeared in the transportation-disadvantaged groupings consistently across all income categories. The inclusion of race as a descriptor of the transportation disadvantaged contradicts the results of the Guttman scale analysis but was consistent with the literature. Also appearing as transportation dis-

advantaged were persons in large households having only 1 car and persons in both large and small households having 1 old car—1965 or earlier.

These 3 approaches—the literature review, Guttman scale analysis, and analysis of the data from the Nationwide Personal Transportation Survey—identified 5 groups of transportation disadvantaged for further study: members of carless households, members of car-deficient households, elderly, nonwhites, and owners of old cars.

A detailed analysis of the travel behavior of these 5 groups was made by using data from the household interviews of the Nationwide Personal Transportation Survey and data from surveys taken in 3 types of urban areas: Washington, D.C., central core (10); San Antonio, Texas, sprawl (11); and Greensboro, North Carolina, growth center (12). Households were classified by income, which was held constant in comparisons of the travel behavior of groups defined as advantaged and disadvantaged. This control made it possible to examine the effects on the transportation disadvantaged of characteristics other than income—characteristics that would otherwise be "swamped" by evidence of the well-known and powerful relation between trip generation and income. The 4 income levels are given below. Findings about the travel behavior of each of these 5 groups are summarized in the following sections:

<u>Level</u>	<u>Dollars</u>
Poverty	Under 4,000
Low	4,000 to 6,000
Middle	6,000 to 10,000
High	Over 10,000

MEMBERS OF CARLESS HOUSEHOLDS

Data from the Nationwide Personal Transportation Survey indicate that approximately 15 percent of all SMSA residents live in households with no automobiles available. Based on a total SMSA population of 139 million, as determined by the census of 1970, this would suggest a carless population of approximately 21 million persons. About 80 percent or 16.8 million of those carless persons live in the central city, and the remaining 20 percent live in outlying suburban areas.

Taken as a whole, members of carless households throughout the nation seem to take about 1 trip less per person per day than do people with the same income with 1 car. The difference in the total number of trips generated is much greater between 0- and 1-car households than between 1- and 2-car households. The difference is largely in the number of nonwork trips taken (Table 1). In the poverty and low-income categories, ownership of a car increases shopping trips more than trips for any other purpose. However, in the middle- and high-income groups, a car seems to have greater influence on social-recreational trip generation.

The mode choices of carless household members give some indication of how members of this disadvantaged group have accommodated themselves to their carlessness. Table 2 gives the percentage of all trips taken by automobile-driver, automobile-passenger, and public transportation modes for members of large and small households in the poverty, low-income, and middle-income groups. The accommodations vary according to the income of the traveler. Members of poverty households depend extensively on public transportation, especially when the household is large, but also borrow cars and share rides when possible. As incomes rise, there is more and more ride sharing, less use of public transportation, and continued car borrowing. At the middle-income level, the strongest tendency of the carless is to share a ride with someone else, and the use of both public transportation and borrowed cars decreases.

In sum, carlessness is associated with reduced participation in some essential but many potential rewarding activities and with inconvenience when these activities are pursued. The extent of ride sharing and car borrowing suggests that efforts to increase the mobility of the carless might focus attention on these accommodations and improve their convenience and reliability.

MEMBERS OF CAR-DEFICIENT HOUSEHOLDS

The Nationwide Personal Transportation Survey indicates that about 23 percent of the SMSA population or some 32 million persons live in households that are car deficient; that is, they have 4 or more members and only 1 car. Forty percent or 12.8 million of these persons live inside the central city, and the remaining 19.2 million live in the suburbs.

Data given in Table 3 do not show a consistent pattern of constrained travel by members of car-deficient households. However, persons in households that are car deficient and have adequate car availability take approximately 0.10 fewer trips daily than persons in households with adequate car availability.

Mode-choice data for car-deficient households indicate that the car is used intensively for all trip purposes. If the car is not available for the trip, different solutions emerge, depending on the income of the household. Data given in Table 4 show that, in general, about 40 percent of all work, shopping, and social-recreational trips are taken as automobile-driver trips, and the remainder of the trips are divided among automobile-passenger, public transportation, and other modes (generally taxi). With few exceptions, only a small percentage of all trips are by public transportation. However, public transportation is used as much as ride sharing or car pooling in the poverty and low-income groups, but the preferred mode is clearly the automobile in the middle- and high-income groups.

THE ELDERLY

The census of population for 1970 reports that there are 12.8 million persons in SMSAs who are 65 years of age or older. Fifty-three percent of them live inside the central city, and 47 percent live in outlying areas. The data given in Table 5 indicate that the decrease in trip generation by the elderly is split evenly between work and nonwork trip purposes. On the average, the elderly take 0.9 fewer nonwork trips per person per day than the nonelderly. In lower income groups, the elderly take only slightly fewer trips for social-recreational, shopping, and personal business purposes; in the higher income categories, these differences are very large.

The mode-choice data given in Table 6 show that the elderly in all income groups take most of their trips by automobile, although they use this mode slightly less than the nonelderly. In the higher income groups, some of the automobile trips by the elderly are diverted to other, unspecified vehicular modes. In general, the elderly are more likely than the nonelderly to be automobile passengers (as opposed to drivers) except that in the low-income group the elderly drive almost as much as the nonelderly. There is somewhat less use of public transportation among the elderly—probably attributable to the physical difficulties associated with this mode. Taxis, on the other hand, are used more extensively, but in higher rather than lower income groups—contrary to findings for other transportation-disadvantaged groups.

The mode choices of the elderly who do travel shed some light on where improvements might be made. The lessened use of public transportation and greater use of taxis, especially among higher income elderly, suggests that removal of physical barriers in transit could make this lower cost mode more accessible to the elderly. In addition, steps might be taken to reduce taxi fares for the elderly—perhaps through institutionalized group riding.

NONWHITES

Data from the 1970 census indicate that there are approximately 18.8 million nonwhites living in SMSAs. Seventy-seven percent of these groups live in central cities, and the remaining 23 percent live in outlying suburban areas.

Data on trip frequency for work and nonwork purposes for whites and nonwhites (Table 7) indicate that trips by nonwhites for nonwork purposes are constrained the

Table 1. Average number of trips per person per day by trip purpose and household income and car ownership.

Purpose	Poverty			Low Income			Middle Income			High Income		
	0 Car	1 Car	2+ Cars	0 Car	1 Car	2+ Cars	0 Car	1 Car	2+ Cars	0 Car	1 Car	2+ Cars
Work	0.19	0.39	0.20	0.38	0.45	0.47	0.41	0.55	0.59	0.53	0.55	0.60
Shopping	0.11	0.46	0.20	0.07	0.37	0.31	0.09	0.43	0.49	0.19	0.41	0.46
Social-recreational	0.27	0.55	0.94	0.22	0.48	0.58	0.19	0.79	0.73	0	0.74	0.76
Personal business	0.12	0.24	0.17	0.13	0.34	0.45	0.14	0.41	0.46	0.07	0.34	0.45
Other	0.78	0.62	0.76	0.72	0.70	0.85	0.89	0.61	0.63	0.66	0.64	0.68
All nonwork trips	1.28	1.87	2.07	1.14	1.89	2.19	1.31	2.24	2.31	0.92	2.13	2.35
All trips	1.47	2.26	2.27	1.52	2.34	2.66	1.72	2.79	2.90	1.45	2.68	2.96

Note: Sample size was 5,302 persons.

Table 2. Percentage of trips of persons in carless households with 1 member employed by trip purpose and mode and household size and income.

Household Size	Purpose	Poverty				Low Income				Middle Income			
		Auto Driver	Auto Pass.	Public Transit	Other	Auto Driver	Auto Pass.	Public Transit	Other	Auto Driver	Auto Pass.	Public Transit	Other
Small (1 to 3)	All trips	14	25	28	33	13	31	19	37	3	40	18	39
	Work	16	24	49	11	14	45	28	13	13	31	44	12
	Shopping	44	0	56	0	29	57	14	0	0	50	50	0
	Social-recreational	0	65	35	0	8	46	38	8	0	89	11	0
Large (4+)	All trips	0	17	39	44	2	29	19	50	17	0	8	75
	Work	0	20	80	0	0	21	71	8	0	0	100	0
	Shopping	0	0	0	100	33	0	67	0	100	0	0	0
	Social-recreational	0	0	100	0	0	85	15	0	100	0	0	0

Note: Sample size was 258 persons.

Table 3. Average number of trips per person per day by trip purpose and household size, income, and car ownership.

Purpose	Poverty		Low Income		Middle Income		High Income	
	4+ Members 1 Car	4- Members* 2 Cars	4+ Members 1 Car	4- Members 2 Cars	4+ Members 1 Car	4- Members 2 Cars	4+ Members 1 Car	4- Members 2 Cars
Work	0.45		0.32	0.77	0.42	0.75	0.44	0.80
Shopping	0.34		0.32	0.63	0.36	0.42	0.34	0.34
Social-recreational	0.63		0.25	0.85	0.65	0.67	0.62	0.71
Personal business	0.18		0.38	0.32	0.33	0.40	0.24	0.49
Other	0.95		0.65	0.62	0.65	0.42	0.73	0.47
All nonwork trips	2.10		1.60	2.42	1.99	1.91	1.93	2.01
All trips	2.55		1.93	3.19	2.41	2.66	2.37	2.81

Note: Sample size was 2,066 persons.

*Too few households to provide reliable data.

Table 4. Percentage of trips of persons in households with 4+ members and 1 car by trip purpose and mode and household income.

Purpose	Poverty				Low Income				Middle Income				High Income			
	Auto Driver	Auto Pass.	Public Transit	Other	Auto Driver	Auto Pass.	Public Transit	Other	Auto Driver	Auto Pass.	Public Transit	Other	Auto Driver	Auto Pass.	Public Transit	Other
All trips	39	54	7	0	60	29	11	0	49	49	2	0	48	45	7	0
Work	67	26	0	7	62	24	14	0	62	31	7	0	53	28	19	0
Shopping	34	66	0	0	39	33	28	0	41	57	2	0	54	42	4	0
Social-recreational	39	61	0	0	54	46	0	0	44	56	0	0	38	61	1	0

Note: Sample size was 1,444 persons.

Table 5. Average number of trips per person per day by trip purpose, household income, and age.

Purpose	Poverty		Low Income		Middle Income		High Income	
	> 65	< 65	> 65	< 65	> 65	< 65	< 65	> 65
Work	0.11	0.38	0.19	0.48	0.39	0.56	0.37	0.59
Shopping	0.29	0.24	0.27	0.28	0.24	0.42	0.27	0.44
Social-recreational	0.38	0.46	0.41	0.42	0.49	0.72	0.29	0.74
Personal business	0.10	0.22	0.24	0.31	0.24	0.41	0.20	0.41
Other	0.62	0.77	0.52	0.76	1.07	0.63	0.69	0.67
All nonwork trips	1.39	1.69	1.44	1.77	2.04	2.18	1.45	2.26
All trips	1.50	2.07	1.63	2.25	2.43	2.74	1.82	2.85

Note: Sample size was 5,187 persons.

most. Nonwhites throughout the nation take from 0.4 to 0.9 fewer nonwork trips per person per day than do whites; the greatest difference is in the highest income group and the smallest in the poverty group. With respect to trip purpose, nonwhites appear to be most disadvantaged in pursuing social-recreational activities but are also disadvantaged in the frequency with which they shop (in higher income groups) or conduct personal business (in lower income groups).

Nationwide data on mode choice among nonwhites show less use of the automobile (especially as automobile drivers) and greater dependence on public transportation (Table 8). The data indicate further that this may be attributable to lower rates of car ownership, and programs to facilitate car ownership by minority group members could improve mobility.

Members of poverty-level minority groups also depend more on taxis. According to the nationwide survey, 6 percent of their trips are by that mode. The flexibility and low-investment cost of taxi travel give it great potential for improving the mobility of poor nonwhites.

OWNERS OF OLD CARS

The Nationwide Personal Transportation Survey in 1969 and 1970 indicates that at that time approximately 27 percent of the SMSA population had only 1 car, which was a 1965 model or older, that is, about 4 years old. Forty-seven percent of the owners of old cars or 17.2 million persons live in the central city, and 53 percent or 19.8 million live in the suburbs.

Data given in Table 9 show that an owner of 1 old car takes an average of 0.2 fewer trips for all purposes than an owner of 1 new car. The problems of an old car seem to affect social-recreational trips most, but work trips are also constrained. Old-car owners rely more heavily on public transportation for the work trip (Table 10) and on other modes for work and other trips. One can infer that these differences result from the lessened reliability of older cars, and perhaps better automobile maintenance could alleviate these disadvantages.

RECOMMENDATIONS

For the long term, the members of carless and car-deficient households would best be served by federal investment in the development of new transportation systems that have characteristics similar to the private automobile. These systems will respond to the needs of people who do not have ready access to private transportation and who are not able or do not wish to assume the burdens of automobile ownership. However, because of the long lead times required for development and introduction of new systems, several interim measures should be taken to alleviate the inequalities in mobility.

The U.S. Department of Transportation should develop and disseminate guidelines for the organization and operation of car-pool information systems. The information should cover both work and nonwork trips and be distributed through such potential organizers as employers, state employment offices, shopping center managers, churches, charitable organizations, redevelopment and housing authorities, neighborhood action groups, and operators of recreational, health, and social service agencies. Opportunities for federal subsidy—direct or indirect—to car poolers should be identified and developed.

Federal action should be taken to make driver training and licensing programs more widely available, especially to people who do not own cars. Because this would encourage more car borrowing, it should be accompanied by efforts, perhaps toward requiring additional insurance coverage, to reduce the risk to an automobile owner of lending his car.

Data suggest that poverty household members who have no car available would make more use of public transit if it served their residences and trip destinations better. Interim efforts should be made to evaluate the accessibility of transit in poor neighborhoods and improve the level of service (subsidized as necessary) wherever possible.

Table 6. Percentage of trips by trip purpose, household income, and age.

Mode	Poverty		Low Income		Middle Income		High Income	
	> 65	< 65	> 65	< 65	> 65	< 65	< 65	> 65
Automobile driver	29	32	42	43	45	49	30	52
Automobile passenger	26	27	25	27	22	34	28	32
Public transit	6	11	6	6	1	3	1	3
Taxi	1	0	0	0	1	0	1	0
Other	38	30	27	24	31	14	40	13
All trips	100	100	100	100	100	100	100	100

Note: Sample size was 5,187 persons.

Table 7. Average number of trips per person per day by trip purpose, household income, and race.

Purpose	Poverty		Low Income		Middle Income		High Income	
	Nonwhite	White	Nonwhite	White	Nonwhite	White	Nonwhite	White
Work	0.28	0.26	0.39	0.45	0.55	0.55	0.52	0.58
Shopping	0.21	0.28	0.17	0.31	0.28	0.44	0.11	0.46
Social-recreational	0.22	0.51	0.20	0.49	0.32	0.77	0.46	0.76
Personal business	0.14	0.18	0.05	0.38	0.31	0.41	0.21	0.42
Other	0.74	0.70	0.78	0.72	0.75	0.63	0.67	0.67
All nonwork trips	1.31	1.67	1.19	1.90	1.66	2.25	1.45	2.31
All trips	1.59	1.93	1.58	2.35	2.21	2.80	1.97	2.89

Note: Sample size was 5,302 persons.

Table 8. Percentage of trips by trip mode, household income, and race.

Mode	Poverty		Low Income		Middle Income		High Income	
	Nonwhite	White	Nonwhite	White	Nonwhite	White	Nonwhite	White
Automobile driver	16	37	23	48	37	50	45	52
Automobile passenger	24	28	19	29	27	35	21	33
Public transit	17	7	18	3	9	2	10	3
Taxi	1	0	0	0	1	0	1	0
Other	42	28	40	20	26	13	23	12
All trips	100	100	100	100	100	100	100	100

Note: Sample size was 5,302 persons.

Table 9. Average number of trips of persons in households with 1 old or new car by trip purpose and mode.

Purpose	Automobile Driver		Automobile Passenger		Public Transit		Other		All Trips	
	Old Car	New Car	Old Car	New Car	Old Car	New Car	Old Car	New Car	Old Car	New Car
Work	0.31	0.41	0.09	0.11	0.05	0.04	0.01	0.01	0.46	0.57
Shopping	0.23	0.24	0.16	0.18	0.01	0.01	0	0.01	0.40	0.44
Social-recreational	0.32	0.35	0.30	0.39	0.01	0.01	0.01	0.02	0.64	0.77
Personal business	0.22	0.27	0.11	0.09	0	0	0	0.02	0.33	0.38
Other	0.11	0.14	0.12	0.13	0.01	0	0.40	0.35	0.64	0.62
All nonwork trips	0.88	1.00	0.69	0.79	0.03	0.02	0.41	0.40	2.01	2.21
All trips	1.19	1.41	0.78	0.90	0.08	0.06	0.42	0.41	2.47	2.78

Note: Sample size was 1,016 persons.

Table 10. Percentage of trips of persons in households with 1 old or new car by trip purpose and mode.

Purpose	Automobile Driver		Automobile Passenger		Public Transit		Other	
	Old Car	New Car	Old Car	New Car	Old Car	New Car	Old Car	New Car
Work	67	72	19	20	11	7	3	1
Shopping	58	56	40	41	2	2	0	1
Social-recreational	51	45	46	51	1	2	2	2
Personal business	65	69	32	24	2	1	1	6
Other	17	22	19	21	1	2	63	55
All trips	47	50	35	33	3	2	15	15

Note: Sample size was 1,016 persons.

Several other actions would also benefit particular transportation-disadvantaged groups. The extensive use of taxicabs by poor nonwhites suggests expanding the availability of this mode to provide additional demand-responsive service. Investigations should be undertaken on the possibility of stimulating ownership of taxicabs by minority group members, especially by blacks in ghetto locations. Taxicab transportation could also be brought closer to the financial capabilities of elderly persons. Special fares for shared rides should be considered and tested by taxicab companies. The Federal Highway Administration should evaluate demonstration programs of this type where they are now in operation.

All of these recommendations would benefit owners of old cars. In addition, guidelines for the organization and operation of automobile repair courses should be developed and widely disseminated to potential organizers such as the YMCA and YWCA, local entrepreneurs, and the Small Business Administration.

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