

LESSONS FOR TRANSPORTATION POLICY DRAWN FROM PUBLIC HOUSING, URBAN RENEWAL, AND OTHER FIELDS

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Goal achievement in transportation programs appears more likely if policy-makers, program analysts, and educators learn from the experiences of people in nontransportation programs. Expensive mistakes, dead-end approaches, and negative impacts that can be avoided in transportation policies are illustrated with analogies to the implementation problems and program impacts of public housing and urban renewal. Evaluations of public housing programs suggest that the mere provision of new mass transit facilities and services is unlikely to change the basic values and behavior preferences of many population segments despite the hopes of planners, environmentalists, and mayors. The transformation of large-scale, impersonal public housing programs to smaller scale, personalized, and home-owner rehabilitation programs has transportation analogies in pedestrian and private vehicle access improvement programs. Subregional transit services run by managers sensitive to community and traveler needs appear likely to improve population mobility more than investments in costly downtown-oriented line-haul systems. Evaluations of urban renewal programs suggest that urban transportation system management policies must consider the nature, extent, and incidence of negative social, psychological, and economic impacts associated with various strategies to reduce automobile ownership and use. As with relocation housing, comparable public transportation services must be available to affected car users, or adequate financial compensation should be made available. The paper concludes by specifying the institutional implications to reflect lessons from nontransportation fields. New services are suggested to help transportation suppliers and the traveling public. Professional transportation education improvements are recommended.

•PAST transportation policies have been unable to produce efficient services and facilities for all travelers. Current controversies have developed over the growing amounts of money for new programs, the irreversible damage to the natural and social environments from new construction, and the long-term financial drain of unprofitable, under-used operations that require public subsidies. Most unsuccessful programs not only consume scarce resources but also discourage further innovation efforts by professionals, politicians, and taxpayers. The essential message of this paper is that transportation policymakers who pay attention to relevant past experiences of policymakers in other public service fields seem likely to have a better chance of reaching their goals at lower cost than do those who ignore the lessons learned by other professionals. These lessons can advance the scope and quality of transportation policy, analysis, and planning. These suggestions can accelerate the maturation of transportation institutions by avoiding mistakes and dead-end approaches that inevitably waste resources and innovative energy. Lessons from nontransportation fields reveal fundamental behavioral and attitudinal patterns that must be considered in developing politically acceptable

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transportation system changes. An awareness of multidisciplinary policy and program development problems is desirable if solutions to these problems are to come about by interagency activities. This paper illustrates this learn-from-others approach. It draws on the fields of public housing and urban renewal, although many lessons could also be drawn from education, health care, and other public services. It is not intended to denigrate the many planning and technical accomplishments of the transportation field or to deny the failures of nontransportation programs. Rather, simple analogies are used to provoke the thoughts of people who make transportation policy, are involved in analyzing program alternatives, or train professionals in the transportation field. The concept of learning from others is intended to transcend the particular lessons that follow.

LESSONS FROM PUBLIC HOUSING

People involved with public housing have been slowly, painfully, and somewhat reluctantly learning their constituents' needs and have been evolving institutional policies and procedures to accommodate their constituents' preferences. A review of the evolution of their past value structures and programs provides many useful insights for transportation professionals. The most important general lessons are those that stress the importance of management that is sensitive to their constituents.

Professionals have consciously or unconsciously tried to project their own values into policies, plans, and activities for population subgroups holding different values than their own.

Professionals have appeared unaware of their own values and how their values affected both their perceptions and solutions of problems. In public housing and in public transportation, for example, the underlying values behind programs and policies reflected middle-class values for efficient, accident-free, basic structures located in urban areas. Designs and services reflected professionals' intuitions of how people were thought to behave or would be willing to behave rather than how they wanted to behave or actually behaved (5, 6, 8).

Large-scale public transportation systems are generally perceived by users and nonusers to be impersonal and dehumanizing for many trips.

Public programs that have been provided in a massive, strictly utilitarian way (such as high-rise housing projects or commuter-oriented public transit) have not satisfied important travel and nontravel needs of all the groups that the programs were intended to help. Both large apartments and 50-to-100-passenger vehicles have environments that are frequently standardized, institutional, crowded, and poorly ventilated. Their only internal distinctions are from vandalism or advertising signs. Both have been criticized for their lack of visual and verbal communication between occupants and the external environment. Socially, high-rise public housing and public transit generate fears of unwanted interactions with strangers, mix together age groups that annoy each other, and offer little privacy and social security for occupants. As a result of these factors, both have negative public images that seem extremely difficult to improve.

Programs are more successful if they provide facilities and services that are known to be most desired by the population segments to be helped.

When urban or rural slum dwellers have inadequate toilet facilities or outhouses, housing experts try to help them by providing some or better indoor plumbing; they do not provide the "plumbing disadvantaged" with improved, air-conditioned outhouses. Hous-

ing experts neither infer that high outhouse use by the poor is indicative of sanitary facility preferences nor claim that people with indoor plumbing use it because they lack outhouses. Unfortunately, when people are immobile, transportation experts seem preoccupied with providing improved transit to the transportation disadvantaged who lack direct car access. Transportation professionals have not yet seriously tried to change the costs, laws, design features, or other conditions that would permit more of the transportation disadvantaged to gain access to the cars or other personal vehicles that they value more than transit. Unlike housing experts, transportation professionals commonly infer that the high proportion of the poor among the users of transit service is indicative of their mode preference and claim that many people with automobiles use them merely because they lack transit. Professionals seldom report or explain high automobile use even among those who do not own cars. Neither do they explain the low transit use by many people who have transit available.

The supply of facilities and services oriented toward one population group, such as middle-class male workers, has not changed the values and behavior of other groups, such as working-class, lower-class, female, or nonworking people.

Professionals providing housing and other social services of a caretaker nature have not learned how to change citizens' values and behavior (3). Professionals in public transportation cannot prudently assume that providing more and better transit will necessarily result in its use by the many people who currently do not value it (4).

Successful mobility projects will have to become more attentive to the appropriate scale of physical facilities and services.

New housing projects seem to place an emphasis on small-scale, low-visibility, and scattered site structures that are varied in design and appearance to accommodate the preferences of households of differing sizes and tastes. Increased attention is being given to varied degrees of private or collective ownership of property (such as in condominiums and cooperatives) and to finance and insurance institutions that make facility ownership, maintenance, and improvements possible. Rent subsidies paid directly to low-income, needy households have been tried to avoid inflationary changes in rent levels and encourage landlords to compete for tenants. Analogous, low-visibility approaches to mobility improvement merit serious consideration because they have potential effectiveness and relatively low public costs. Centrally controlled, monopolistic metropolitan public transit agencies may be less appropriate for subregional and neighborhood programs than community or competitive transit services that can be personally tailored to meet subgroup needs for local travel. Mobility improvement programs might be developed to finance, insure, repair, and maintain existing private vehicles. These programs would parallel recent housing program trends to recycle or rehabilitate older housing units rather than rely on completely new facilities (13). Similarly, approaches to channel travel subsidies directly to low-income travelers might prove to have net economic and other benefits over inflationary subsidies that are paid directly to noncompetitive transit agencies.

Management that is willing and able to anticipate and accommodate the short-term and longer term societal needs and desires of potential system users is one of the most necessary but most neglected factors associated with successful program development.

Popular housing projects are those in which managers respect their constituents' concerns (Table 1). Management determines many consumer-related factors consciously or unconsciously during design and operation that are rarely recognized in program evaluation. Examples include proper and timely facility construction, maintenance and cleanliness, crime prevention, supportive responses to requests for new services

Table 1. Implications of societal preferences for public system management.

Preference	Housing	Transportation System
Security from crime and violence	Management control of crime in public spaces	Management control of crime on vehicles and right-of-way facilities
Security from accidents	Maintenance of potentially dangerous mechanical, electrical, and other facilities	Maintenance of potentially dangerous facilities and vehicle features
Flexible user reservation or payment scheduling	Flexible occupancy dates or rent payment deadlines	Flexible vehicle reservation timing or vehicle use payment deadlines
Facility cleanliness	Absence of dirt, garbage, and vermin during construction, expansion, repairs, or day-to-day operation	Absence of dirt, garbage, and vermin during construction, expansion, repairs, or day-to-day operation
Products and services that permit fulfillment of psychological and other needs not strictly related to basic program objectives	Provision of soundproof housing space for private conversation, music, other noisy hobbies, and children's crying	Provision of soundproof vehicle space for private conversation, music, and children's noises
Varied degrees of property ownership	Private housing, condominiums, cooperatives, and short- and long-term rentals	Private vehicles, neighborhood-owned parking lots, neighborhood-owned shared vehicles, and short- and long-term vehicle rentals
Longer hours of service and facility availability during the day and on weekends	24-hour/day laundry facilities and ice-making and food-vending machines in large apartments and hotels	Longer hours of daily transport facilities such as midday parking or vehicle availability on holidays
Product differentiation	Different types, sizes, and features of housing depending on age, sex, and life cycle of household members	Different types, features, and purposes of transportation depending on age, sex, life cycle, and personal preferences of travelers
Management respect of users	Management that treats residents in a friendly, thoughtful, tolerant, courteous, and supportive manner and responds quickly to reasonable suggestions and complaints	Bus drivers and toll collectors who treat travelers in a friendly, thoughtful, tolerant, courteous, and supportive manner and respond quickly to reasonable suggestions and complaints
Maintenance of facilities not related to user safety	Maintenance of windows, ventilation, lighting, vending machines, and temperature-control devices	Maintenance of windows, ventilation, lighting, vending machines, and temperature-control devices
Programs to encourage private ownership or do-it-yourself activity	Government assistance providing home purchase and home improvement loans and subsidies, mortgage guarantees, insurance reform, tax credits, and deductions Short-term rental of power tools	Government assistance providing private vehicles, vehicle improvement loans and subsidies, vehicle finance loan guarantees, vehicle and driving insurance reform, vehicle and fuel tax credits and deductions Short-term rental of automobile repair facilities
Quality installation, repair warranties, and convenient servicing	Use of quality household appliances and fixtures that are repaired quickly and with little or no expense to product user Government-sponsored research on home construction	Use of quality vehicle components that are repaired quickly and inexpensively with little or no expense and inconvenience to product user Government-sponsored research on vehicle construction
Expansion of legal rights and services for system users	Tenants rights, tenant housing boards, and rent control commissions	Travelers' rights to service and traveler representatives on transit regulatory boards
Information about consumer products and government programs	Government and commercial publications on housing purchases and sales, home care, and decoration	Government and commercial publications on local and metropolitan travel and vehicle acquisition, sale, operation, maintenance, and decoration

and facilities, and lack of severe restraints on preferred behavior (11). Although neglect of any 1 or 2 preferences will not necessarily result in program failure, positive long-term program responses will probably require that each preference be accommodated as much as possible. Negative responses to neglect by housing management have led to rent strikes, vigilante groups, high tenant turnover and vacancy rates, vandalism, and other forms of protest. Transportation system management will likewise have to accommodate the same basic consumer preferences or they will encounter protests such as low system usage, transit fare cheating, high ridership turnover, vandalism, and verbal abuse of transit vehicle operators (Table 1).

Public policies should expand mobility options for all population segments to reflect each segment's legitimate rights to the systems available to other groups.

Many of the positive attributes associated with successful program management are associated with the rights of users. Examples include citizen participation on regulatory boards and consumer protection offices and guaranteed access to management information. The civil rights movement has set other relevant precedents by discouraging

arbitrary institutional restrictions on behavior and property ownership based on factors such as age, sex, and race.

Transportation officials appear likely to be under increasing pressure for more equitable treatment of the disadvantaged population segments. The elderly and the physically handicapped have already promoted recent legislation to increase their access to transit systems. Pressure will grow from groups such as the young, racial minorities, and the poor. If housing program experiences are indicative of future trends, the female traveler segment will become the most politically important population segment to pressure for restructuring transportation systems and management.

Most individuals value their rights to travel freely and use whatever available means they can secure from their families, friends, or communities or what they can secure by their own efforts and labor. They oppose family or government constraints on their travel that would be applied on the basis of age, sex, or other demographic attributes. As individuals, they hope that institutional mobility constraints (such as restricted licensing for young or old people, restricted automobile financing for women, or restricted automobile insurance for young males and the elderly) will be found to be arbitrary and unfair discrimination by the courts unless these constraints accurately reflect an individual's ability to move safely, pay bills, or otherwise behave in an acceptable fashion.

Taxpayers who generally object to providing public services for people who appear unwilling to help themselves (those who object to welfare payments for employable individuals) question or challenge their responsibilities to provide transit for other population segments who could travel by cars but prefer not to use them. This response is heightened for taxpayers who feel transit does not or cannot serve their travel requirements. These citizens are especially piqued by transit because of the public visibility of daily transit operations, public referenda to raise bonds for new transit construction, and political disputes over local taxes to subsidize transit deficits. Instead of supporting more publicly subsidized "chauffeured" transit services, these citizens challenge everyone's rights to public transit and argue in favor of government or institutional support of their rights associated with self-sufficient transportation including more widespread and effective driver education and vehicle repair classes for high school students and adults, access to consumer information, antitrust action to lower car costs by fostering competition among manufacturers and suppliers of parts and fuel, consumer warranty enforcement and fair insurance policy protection, retention of basic car access in bankruptcy cases, and similar legal actions.

LESSONS FROM URBAN RENEWAL

Experiences with urban renewal slum clearance programs are directly relevant to the development and implementation of 2 controversial transportation policies: (a) managing the automobile to reduce its negative impacts on society and (b) constructing expanded or new transportation facilities that involve land clearance. Both policies could disrupt individuals' established life-styles and affect the characters of communities if implemented immoderately.

Automobile management is a coordinated strategy employing economic, institutional, and other action to reduce future automobile ownership and use. It is a critical element in the transportation control plans being encouraged by the Environmental Protection Agency, the Federal Energy Administration, and other government institutions seeking to reduce energy consumption, pollution, and similar negative aspects associated with automobiles. Automobile management is also considered a required urban transportation planning element by the Federal Highway Administration and the Urban Mass Transportation Administration, which are seeking to reduce traffic congestion, improve transit efficiency, and increase urban mobility. Effective automobile management strategies could encompass a wide variety of approaches and methods. Some strategies, such as improved engine design and better traffic engineering, are likely to win public acceptance because they help achieve the objectives without restricting automobile use or forcing automobile travelers to change their behavior. Unfortunately, most recent

technical studies raise the possibility that such popular strategies might perpetuate or encourage an even higher future level of automobile use and ownership. The studies conclude that, if transportation systems must be changed to achieve long-term objectives, some combination of large-scale restrictions on automobile use (for example, widespread parking space reductions in cities and much higher fees and taxes for car ownership and use) coupled with extensive improvements in transit availability and quality will be required to be part of automobile-management strategies (7, 12).

The analogy between slum land clearance and immoderate, large-scale automobile management efforts is thought provoking, although abstract and perhaps a little far-fetched. In urban renewal, there is a large-scale, arbitrary clearance of buildings from a renewal site. Similarly, severe arbitrary restrictions on automobile use (such as parking limitations and high automobile registration fees) would indiscriminantly clear drivers or automobiles off the roadways.

New transportation facilities, such as busways, stations, maintenance buildings, and vehicle storage yards, are basic elements of many proposed transit and highway improvements in urban areas. As cities become more intensely settled, these facilities will increasingly require demolition and clearance of existing structures. Simultaneously, the scope of federally required analyses of environmental impacts is likely to be expanded to include more economic, social, and psychological factors. Lessons from urban renewal land clearance programs are directly relevant to transportation planning because the displacement process, its problems, and its impacts tend to be similar regardless of the reasons behind land clearance.

The following lessons relate urban renewal experiences and issues to automobile management, but the lessons can also be applied to actual land clearance for transportation facilities. Three general lessons emerge: (a) Restraints on automobile use should be logically related to specific objectives; (b) restraints should be imposed only with conscious awareness of the nature, extent, and incidence of many negative economic, social, and psychological consequences; and (c) adequate compensation, including acceptable public transit, should be provided before restraints that severely affect individuals' life-styles are imposed.

Controversies over disruptive transportation programs such as automobile management might be minimized by adopting an impact analysis and implementation strategy based on sensitive, pluralistic assessment of current and future conditions.

As a result of the controversies over total land clearance, people in the urban renewal field have begun to evolve a more sensitive approach to the analysis of land clearance situations. They gradually learned that areas slated for building clearance first had to be analyzed to see what functions existing structures provided occupants and users and determine how well the structures performed those functions. This analysis had to incorporate valid measures of the perceptions and values of both the local people and the policymakers and planners. They then had to determine how well the rebuilt areas would fulfill the existing (or desired) needs of residents and provide for adequate and timely relocation services and similar replacement structures and neighborhoods that met those needs outside the cleared area (3, 14). They either had to understand why opposition to clearance projects developed and find ways to reduce the conflicts hindering project implementation or they had to modify or drop their renewal plans. Evaluations of controversial clearance programs have also had to compare anticipated and actual impacts. Developing a similar strategy for disruptive transportation programs such as automobile management seems necessary if public opposition is to be overcome and negative impacts are to be reduced.

Disruptive transportation policies are being fostered by the same set of middle-class goals and assumptions that fostered controversial renewal policies.

Both controversial renewal policies and disruptive transportation policies are city

oriented and make assumptions that past renewal experiences suggest are unrealistically optimistic. Urban renewal goals reflected desires to eliminate unsafe and dirty slums and the illegal or immoral activities that blighted those areas; urban renewal was intended to create opportunities for physical development that would improve the quality of life in cities and provide safe, sanitary, and efficient structures that met high institutional design standards. Transportation goals likewise reflect desires to eliminate traffic congestion, save fuel, clean the air, improve safety, and otherwise improve physical conditions in cities. Implicit in past renewal and proposed automobile restraint and transit enrichment approaches are questionable assumptions. Some of these assumptions are that the policy values are shared by the public, that restrictive or prescriptive standards of quality can and will be enforced by laws, that compensatory programs will be implemented in a timely and appropriate manner, and that the approaches will be effective in reaching the goals that are in the public interest.

Understanding of the social and psychological functions of vehicle ownership and use must be increased.

Early renewal programs considered only the physical condition of the slum structures to be cleared. Planners did not examine how the structures provided basic shelter needs. More important, perhaps, planners failed to understand that many social and psychological needs of the users of these structures were being satisfied in these areas (3, 8, 10).

Most transportation research has also considered only the physical condition of transportation systems and their technical attributes (availability, speed, costs, and the like). Detailed information about vehicle ownership and travel requirements, as well as social and psychological factors associated with ownership and travel, is still missing. We still overlook some of the major reasons why private vehicle ownership and operation have become so important in American life, and why resistance to automobile restraints is so great. These reasons can only be tentatively suggested. They appear to involve entrenched patterns of land uses, family life, sex roles, and other basic aspects of American culture. People appear to feel compelled to secure their own transportation partly because other family members or communities seem unable or unwilling (legally or morally) to provide convenient household or public transportation that can satisfy complex requirements (such as travel involving multiple destinations, off-peak hours, nonlocal destinations, courtship, or clandestine movement). Driving and vehicle ownership provide many population segments (especially females and those considered disadvantaged) with what many families, home settings, schools, jobs, public transportation, and other societal activities, traditions, and social institutions could not or would not provide: feelings of freedom, independence, adulthood, equality with other people, sexual identity, physical or emotional security, and, in some cases, status; means of nonverbal self-expression, relaxation, privacy, skill, challenges, and excitement; and the ability to help other people.

Transportation vehicle restraint policies that neglect these social and psychological functions of vehicle ownership and use are likely to be more controversial than land clearance programs. Many more people are likely to feel threatened by the loss of ways of fulfilling their basic human needs. Among certain population segments, such as working-class males, alternative ways to fulfill these functions are becoming less possible or desirable than they used to be. Widespread opposition to automobile restraints is likely to continue unless enough people are reassured that the proposed restraints will not eventually affect them in major ways.

The extent to which current travel and modal choices satisfy social and psychological needs must be identified.

Urban renewal programs incorrectly presumed that residents in the clearance areas found their old, unsafe, or dirty structures and the illegal or immoral neighborhood activities so unsatisfactory that clearance was justified to improve the quality of their lives and the quality of the city in general. Had most residents been queried about their

satisfaction with existing conditions and their own priorities of housing problems, however, their answers would probably have forced planners to rethink whether drastic clearance measures were appropriate to help improve people's lives. Transportation programs also should not presume that the negative conditions associated with vehicle use (traffic congestion, fuel consumption, pollution, accidents, visual clutter) are so unsatisfactory that the harsh vehicle restriction measures needed to eliminate them would be justified. Instead, all population segments, including motorists and nonmotorists, should be asked about their satisfactions with existing conditions, their perceptions of travel problems, and their priorities for problem-solving programs. Most of the population is probably not dissatisfied enough to justify significant restrictive measures.

Restrictions on vehicle use should be selective, reasonable, and related to the objectives behind the imposed restrictions.

Selective clearance of only the most decrepit or dangerous buildings in slum areas provides us with a precedent for road clearance policies that are more likely to win public acceptance than "broad-brush" clearance policies. Automobile restrictions to alleviate congestion, for example, ought to discriminate between automobile use that can be replaced by transit service and automobile use that cannot be replaced by transit, or it ought to discriminate on the basis of car size. If a restriction on automobile use is intended to reduce air pollution or gasoline consumption, it should be applied on those terms rather than include all vehicles or have an arbitrary limit on road access by hour or area (9). If safety is a goal, restrictive programs should focus on removing repeat traffic violators, drunk drivers, and other dangerous drivers from the roads. They should not restrict individual young or old drivers unless they are likely to cause accidents. Administrative complexity should not be used as a reason to rule out a selective and reasonable restrictive approach, because public tolerance of the complexity might be higher than its tolerance of restraint approaches that are easier to administer but less fair.

Restraint on clearance programs coupled with timely substitution or replacement programs could leave many people better off, but these approaches would usually also involve a higher total investment than previous conditions would.

In successful urban renewal programs, people who are relocated into new housing pay higher rents for better housing; housing costs for residents of the reconstructed renewal areas are also higher than prerenewal levels. When spot clearance and renewal are used, land values generally increase and social pressures often result in increased rehabilitation investments on uncleared structures. In very successful programs, higher tax revenues from renewal property and income taxes generate sufficient surpluses to pay the additional costs of relocation housing. Everyone ends up with better housing, but total payments for housing after renewal are higher than before renewal. Restraint programs to reduce automobile use are similar in concept. Some automobiles would be restricted from use of the roads and their occupants would be provided with public transit that would satisfy their travel requirements, probably at considerable public cost. Motorists who would continue to drive would enjoy better driving conditions (faster speeds, more safety, better fuel economy) but would likely be charged more money to do so. Surplus revenues from car ownership and driver charges would theoretically be used to pay for the substitute transit system. Motorists and transit passengers would end up better off after roadway use restrictions, but total transportation costs would likely be higher, too.

Restraint or clearance programs are typically implemented without the provision of adequate substitution or replacement programs for the displaced.

Historically, a lack of replacement plans in renewal programs has occurred for several reasons. In some cases, those developing restraint programs involving items such as strict building code enforcement naively presumed that the added costs of bringing structures up to high standards would simply be absorbed by property owners and that no loss of housing stocks or business would result. Programs sometimes presumed that a surplus of satisfactory substitution housing already existed and that displaced residents could find this housing and relocate with no difficulty. Public agencies innocently or intentionally avoided replacing structures (such as bars or pool halls) whose functions were unknown or distasteful to middle-class planners. In still other cases, political pressures for rapid implementation of clearance programs coupled with frustratingly high financial and social costs of providing substitution housing resulted in land clearance activity without adequate replacement housing.

Automobile restraint programs have already been imposed (at least temporarily) without the provision of adequate replacement transit service for displaced motorists. Restraint programs using high vehicle standards were developed on the assumption that the added costs of safety, pollution, energy, and damage-reducing bumpers would be absorbed by car owners with no loss in vehicle purchasing. In other cases, public transit that could replace socially acceptable automobile trips was assumed to exist, and unacceptable trip purposes have been naively or intentionally overlooked. Political pressures for car restraint measures (as in the case of the 1974 energy crisis) coupled with impossibly high costs of rapid increases in transit service resulted in the implementation of fuel rationing measures without transit improvements.

Lack of substitutes for cleared facilities and services results in economic hardship for many displaced people, especially those who are generally considered disadvantaged.

Typically, the populations first affected by rising housing costs and clearance threats were poor people with the lowest discretionary spending levels—young parents with growing families, the unemployed, and the elderly. Their responses to higher costs included attempts to raise family incomes, reduce household expenses not directly related to basic shelter, and cut nonhousehold expenses. In most cases, however, incomes could not be raised by higher job earnings, and many households could not make further cutbacks in their already low housing expenditures. Those who stayed in renewal areas or moved outside renewal areas frequently had to spend less money on non-housing budget items and more money to receive the same or a worse level of housing. The economic consequences of automobile restraint programs would probably be similar. Initial increases in automobile costs would affect low- and moderate-income motorists with little budgetary discretion or additional income-earning potential. Cutbacks could be expected in automobile expenses not related to basic vehicle performance (such as maintenance of safety and exhaust systems). More car repairs would be done by car owners. The market for lower cost stolen cars and car parts would probably increase. There would be gradual and small increases in informal car pooling, but many people likely to be displaced by restraint programs have already been involved in reasonable cost-cutting car-sharing operations. In the longer term, drivers would try to buy or use the least expensive automobiles they could find, but competition from economy-minded, wealthier car buyers would raise the purchase costs of efficient, small new or used cars. In short, the poor would have to pay more to drive cars than before and necessary household goods and services would still have to be forgone. When car drivers felt that they could no longer continue to own or use their cars, they would have to invest more money or time in public transportation, or they would have to reduce their mobility and make fewer, simpler, and shorter trips.

Lack of substitutes for restricted vehicles results in social and psychological hardships for many displaced people, especially the disadvantaged.

Loss of access to automobile transportation appears to generate emotional and psychological responses (sadness, depression, withdrawal, isolation, anxiety, insecurity) similar to the responses of people who have lost homes and neighborhoods to renewal projects. These responses have occurred when strong family and friendship bonds have been disrupted by involuntary relocation out of old neighborhoods. After automobile loss or forced home relocation, both displaced residents and motorists (especially the less experienced, less educated, and peer- and family-oriented populations) feel overcome by the increased distances that are perceived to separate them from former relationships and activities. School or college attendance, dating, friendships, and shopping choices become more localized. Increased use of alcohol and other drugs is likely to be substituted for recreational travel. Finally, expressions of frustration and resentment from prohibitive costs of automobile travel would be likely to increase vandalism of buildings and existing transit properties and intensify family conflicts. Unfortunately, the abilities of non-middle-class dislocated population segments to avoid reduced mobility will be limited. They lack information about transportation and communication, have strong needs for face-to-face contacts, or have negative attitudes toward using some of the available means of overcoming increased distances.

Unintended population segments and institutions may benefit from automobile restraint policies at the expense of others that should be helped or not harmed.

Many renewal policies intended to help low- and moderate-income households and communities ended up helping wealthier populations and institutions. Renewal projects often removed the structures owned by the poorest or middle-income owners, raised the values of redeveloped and adjacent property and directly benefitted the affluent homeowners, prosperous chain stores or commercial establishments, and major corporations. Renewal programs also resulted in indirect, seldom publicized windfall financial benefits for certain real estate speculators, banks, and insurance companies (1).

The beneficiaries of renewal programs tended to be subsidized by lower income or working-class nonbeneficiaries. Relatively discernible subsidies include regressive, broad-based sales and property tax revenue collected to pay for public renewal expenses and forgone taxes (between announcement of demolition and completion of renewal reconstruction) that were not recovered from taxes paid by renewal program beneficiaries. Less visible and seldom documented economic subsidies include the net losses of real incomes of displaced households and businesses and the undesired investments and tax increases incurred by property owners and tenants who remained in renewal areas only because reasonable alternatives did not exist.

Automobile restraint programs could have similar intended and unintended effects. Restraint programs are likely to reduce road use by low- and moderate-income households and businesses while improving roadway and vehicle conditions for the more affluent ones. Unprofitable extra transit service would likely serve city employers and affluent, rush-hour commuters from the suburbs to the central business district, or off-peak, affluent suburbanites, not the poor. Most additional unprofitable transit service would be subsidized from regressive sales and property taxes collected from transit system nonusers. Various cross-subsidies among poor and rich jurisdictions or motor vehicle user groups are possible, depending on the nature and location of automobile restraint charges and publicly borne automobile expenses. Undesired losses in real income by motorists who do not value the benefits of automobile restraints are another form of hidden subsidy.

Unless the fundamental conditions that generate automobile use are changed on a metropolitan scale, restraint programs are likely to shift the location and timing of the negative impacts of automobile use and could even result in the overall worsening of the impacts that the restraint programs were intended to minimize.

The endurance of "undesired" automobile use has its analogy in the endurance of slum-like conditions after renewal land clearance. Planners have hoped that building code enforcement, slum demolition, and renewal would eradicate structural decay and the illicit activities in slums. Post-clearance evaluations, however, revealed that decay and illicit activities had merely reappeared in other neighborhoods; no changes to the fundamental economic and other underlying factors that made slum conditions arise had been a part of the renewal process. The shift of slum condition locations had widespread negative consequences. Worsened housing conditions spread to scattered lower density communities. There, these conditions were harder to improve with centralized or institutional programs than they were in city centers; dispersal lowered the visibility of the housing problems and brought benign neglect and inaction, especially in inner suburbs.

In retrospect, renewal land clearance programs may have been suboptimal efforts that lowered overall metropolitan housing conditions for many people. Slum dispersal following land clearance spread its negative impacts to many places and accelerated the blight and decline of surrounding areas. Instead of inspiring significant improvements in the quality of urban life in many cities, renewal contributed to the suburban migration of the moderate-income middle-class and blue-collar households and businesses that were essential to the vitality and spirit of cities. Slum clearance and renewal also failed to increase the total available urban housing stock.

Similar impacts could result if many automobiles are restricted or cleared from downtown and city center roads. Unless activity scheduling, residential preferences, and land uses are changed, private vehicle travel will continue to be necessary. Diversions of automobile drivers to transit commuting might reduce some of the negative effects of vehicle operation in cities, but these effects will probably just reappear on the fringes of city centers. Increased difficulties from using personal transportation together with the advantages of faster transit will hasten suburban residential and employment development, just as past congestion and faster commuter rail systems and highways have done.

If dispersal of automobile use occurs, negative automobile impacts will be harder to reduce. Unless land uses are controlled and travel distances fall substantially, community transit will be a less practical and economical substitute for automobiles. The scattering of externalities will make them less visible and could lead to their neglect.

The final potential ironies of significant automobile mismanagement are (a) the possible reduction in the quality of urban life, (b) an increase in the overall level of externalities that prompted automobile restraints, and (c) a reduction in physical mobility. Dispersal of city residents and jobs (because of hardships of automobile use or faster transit) will reduce the resources of a city to provide services and amenities for remaining residents and visitors. Increased single-family housing could result in more inefficient sprawl development and more consumption of scarce resources (such as land and heating fuel oil) than if current land use patterns are preserved. Significant restraints on automobile use, declines in automobile ownership, and lack of transit that matches the service characteristics of automobiles will reduce the ability of many people to travel. In short, transportation control plans involving concepts of major vehicle restraints and removal must be conceived and implemented in ways that have broad public objectives in mind—these plans should not create counterproductive suboptimal technical and institutional systems that are more economical and efficient for commuting trips but that have net negative overall impacts on metropolitan residents.

NEEDED INSTITUTIONAL CHANGES THAT REFLECT THESE LESSONS

There appears to be a long-term, perhaps inevitable, trend toward government institutions that provide 1-stop, comprehensive services to both suppliers and the public.

Federally sponsored examples in other fields include the Tennessee Valley Authority, model cities organizations, and new communities. The development of federal and state departments of transportation reflects this trend.

New Institutional Services to Transportation Suppliers

Many lessons from nontransportation fields still need to be translated into institutional policies, programs, and projects. Many do-it-yourself low-cost modes, such as walking, bicycling, hitchhiking, motorcycling, and telephone and home-delivery services, remain neglected, even though they are used for or instead of local travel. Major efforts to reduce the strong modal prejudices of highway and transit groups are still needed if integration of all transportation modes and communication is to occur (2). New programs are needed to evaluate and improve local transportation supply in non-metropolitan areas, to develop finance and loan guarantee mechanisms for public and private construction and vehicle operations, and to plan how quickly, how much, and with what options new or expanded public transportation systems are to be implemented. Greater legal efforts relating to labor contracts, antitrust actions against supply manufacturers, tax laws, insurance coverage, and intergovernmental relations seem warranted because they have major potential benefits for transportation supply.

New Institutional Services for the Traveling Public

An increasing share of most institutions' activities and resources needs to be related to the potential users of their supplied services and to the general public that is affected by the institutions' facilities and services. Transportation supply as currently produced has to be recognized as necessary but not sufficient to increase mobility and reduce unwanted travel.

Federal and state transportation programs must be expanded in concept to parallel the development of other institutions beginning with greater efforts to assess and explain the economic, social, and psychological functions provided by existing transportation and communication modes. These functions must be viewed qualitatively (as well as quantitatively) and from the perspectives of groups of travelers and nontravelers. We must learn what values influence each group's behavior and attitudes, what each group sees as its important travel problems, how each group adapts to problems, what barriers limit each group's problem-solving abilities, and what transportation department activities can remove these barriers. We also need to learn how each group has been affected by increases or reductions in mobility, particularly in financial, social, psychological, and political terms.

The legal divisions of transportation departments will have to handle a broader range of issues and activities relating to travelers. A review of housing and renewal lessons suggests that issues of citizens' rights to mobility and institutional restrictions on travel deserve more attention. Legal actions permitting or requiring ongoing citizen participation in planning and regulating transportation facilities, services, financing, or other management areas will occur in response to shortcomings of public hearing procedures and inadequate representation of travelers in supplier decision making. Consumer rights relating to transportation purchases and services will become more recognized; legal counseling will be solicited either within transportation departments or by external consumer advocacy agencies. Travelers' tax and insurance issues will require legislative and administrative action. Transportation departments and other regulatory bodies will probably assume additional responsibilities for compiling and distributing all forms of consumer information relating to local transportation and travel. The legal divisions of transportation departments will have to become involved in compensation programs that pay for damages and losses associated with land clearance displacements, imposed vehicle restraints, and crimes and accidents involving transportation systems.

New Services for Professionals in Transportation Fields

The activities that have been described will require institutions such as transportation departments to expand recruitment and training of many new professionals in policy analysis, research, planning, law, and systems management. Issues of supply and demand must be conveyed effectively. Educators must help students identify their own behavioral values and biases, learn the conflicting values of the various suppliers and travel markets who compete for institutional aid, and find ways to minimize conflicts and undesired impacts.

SUMMARY

Certain societal precedents and trends are evolving that seem likely to advance public policymaking, particularly in the transportation field. Support for comprehensive, diversified subgroup services can be identified from nontransportation fields such as housing and urban renewal. Planners must find improved methods to anticipate subgroup needs and priorities, their response rates, their incurred costs and benefits to transportation improvements, and implementation barriers to be encountered. Transportation system designers and managers need to learn how to modify construction or operation features to increase the marketability of their services wherever possible. They must recognize, too, that mere provision of new transit facilities and services is unlikely to change the basic values and behavioral preferences of many population segments. The past inadequacies of large-scale, conflict-ridden, impersonal public housing and other social service institutions have led to smaller scale, more personalized, self-help programs whose transportation analogies are pedestrian and private vehicle access improvement programs. Subregional transportation programs managed by local residents appear more likely to improve mobility than large-scale investments in conventional public transit facilities and insensitively managed services.

Generalizing from the experience of total land clearance programs associated with urban renewal, policies designed to improve the general welfare, which nonselectively restrict certain behavior such as rush hour automobile driving, should not be hastily adopted. Consideration must be given to the social, psychological, and economic dislocations and harm that are likely to affect some population groups more than others. As with relocation housing, individuals displaced by such restrictions should be accommodated by existing comparable transportation alternatives that permit continuations of life-style and need fulfillment. Otherwise, adequate compensation for disadvantaged travelers is required.

Policymakers have to give more attention to the nature of people's rights to public services, the equitable distribution of resources and services, the balance of public and private interest, and the ways in which professional values affect the planning process. Transportation policymaking will continue to improve only as it identifies and responds to the issues, ideas, and preferences of all segments of the population and as it learns the difficult lessons revealed in the policymaking of other fields.

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