

on what department policy is, they may inadvertently create it. They should use the policy group as a resource and allow the policy group to review all important statements.

Resource Paper

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Plans are often subject to 2 contradictory types of criticism. On the one hand, if they are made without the constraints of financial resources, the limitations of legislated powers and policies, and a realistic assessment of political factors, they can be criticized as being impractical and idealistic. On the other hand, if plans are developed within these constraints, they are often criticized as being too narrow and limited in scope and for attacking symptoms and not the underlying institutional-political basis of problems.

One way out of this Scylla and Charybdis of planning is to realize that different types of plans may be appropriate for different clients. A department that sees its role as implementing given policies and programs will undoubtedly require the latter, more practical approach. A department that intends to alter the framework of transportation activities and is willing to consider changes to institutions and budgets and programs will want the former, less constrained approach. In such a case, many of the plan's facility recommendations may never be carried out, but the plan may still be significant for the policy changes it ultimately achieves.

Increasingly as state transportation departments are formed, they raise questions of the institutional-political-financial framework of transportation, and they must deal with policy changes that affect this framework. Although planning for single purpose, narrowly determined problems may be simpler and safer, it will be increasingly unacceptable to states and other governments. Policy decision-making, therefore, must be a significant element in a statewide transportation planning process.

Numerous transportation policy issues need to be addressed by states and state agencies. The object of this paper is to define responsibilities and to discuss how states might meet the issues. Throughout, it must be recognized that the prevailing national and state situation is one of a multiplicity of separate, uncoordinated, and often conflicting modal policies. Whether the amalgamation of separate state policies, any more than a collection of separate federal policies, will represent a viable national policy remains to be seen.

TRANSPORTATION POLICY: THE PRODUCT AND THE PROCESS

To begin with, the Oxford English Dictionary defines policy as "a course of action adopted and pursued by a government, party, ruler, statesman, etc. Any course of action adopted as advantageous or expedient." Primarily, then, policy is a political matter, something made in a political arena by decision-makers who negotiate and act in the knowledge of what they want and of what is politically feasible. The words "adopted and pursued" suggest an element of forethought that goes beyond usual political considerations. Some prior analysis or planning, dealing with the issue involved, may condition or provide a basis for the policy decision to be made. In any event, policy is something concrete, a course of action no matter how hazy may be the words surrounding it. This course of action most frequently is set out in legislation and in budgets.

This suggests that the legislative and budgetary processes are a ferment of policy-making. Although this is true, that ferment is at a low simmer much of the time. Major shifts in policy are rare; policy changes are usually slow and sporadic. All too

frequently, they are inconsistent.

In many instances, however, the political-legislative-budgetary process does not address policy issues clearly. The usual piecemeal approach to isolated facets of policy issues, although appropriate to the particular concern of the moment and to the loose, ad hoc responsiveness of legislators to their constituents, frequently raises severe difficulties for executive agencies that are charged with implementing the statutes within prescribed budgets.

In addressing their responsibilities in the face of seeming if not real contradictions in the actions of the decision-makers, executive agencies find it necessary not only to ferret out what policies or policy objectives are intended but also to take a course of action in spite of policy conflicts. Some may act as policy-making bodies when no specific guidance has been given in areas of their responsibilities. The proper response in all such cases, however, is not a usurpation of legislative prerogatives but the exercise of policy analysis or policy planning.

Funk and Wagnalls defines planning as "to form a scheme or method for doing, achieving, etc. To have as an intention or purpose." Combining the 2 dictionary definitions yields the following for policy planning: "to form a scheme or method for achieving a course of action by a government, etc., that is advantageous or expedient." Webster defines analysis as: "separation of anything, whether an object of the senses or the intellect, into constituent parts or elements." (In view of the disparate inputs that must be considered in policy-making, we thought it appropriate to employ a variety of recognized sources to help reach unbiased definitions.)

The process to be discussed here combines elements of planning with those of analysis. For our purposes, the meaning of policy analysis should include the following: (a) the definition of transportation problems and the consideration of alternative solutions are to be systematic, employing such tools as systems analysis, and (b) the results of these analysis activities must reflect the realities of the legislative and budget-making processes and include recommendations that could be implemented within those realities. Recommendations that "we all love one another" may be good ethics and philosophy, but they are not operative as policy.

This initial focus on definition is not intended to split semantic hairs, but rather to contrast policy issue decisions with plan decisions. System and project planning identifies and specifies what facilities and services are desirable or necessary or appropriate for a particular time and place. (Services are included because a facility description is not sufficient, especially for public transportation modes—including regulated common carriers—where service is consciously designed and provided by an operator, in contrast with highways, where service is the product of facility characteristics and user volume.)

Policies, on the other hand, describe what is to be done, usually in general terms. Further, and more specifically, policies designate who is to act and how and within what limits the action is to be carried out. They deal with constraints, both financial and legal, affecting the authority, powers, and responsibilities of agencies and governments; the procedures, processes, and participants in decision-making and implementation; and the rules, standards, and criteria that are to be followed in transportation development. In contrast, transportation planning accepts such constraints as conditions within which to plan; it seeks to accommodate transportation needs or desires and does not consider whether those "needs" should be met or whether the constraints should be changed.

Policy Analysis-Planning

Policy analysis or policy planning precedes and follows policy determination. To formulate an adequate transportation policy requires that initial decisions be made concerning the quality of life, costs, and so forth within the context of the political process. With those decisions in hand, the planner or analyst can devise tentative parameters such as those concerning environmental standards, mobility requirements for special groups, and effectiveness of various modes in meeting various classes of travel demand. Detailed strategies to achieve selected goals can then be considered including use of

regulatory power, concentration on public transportation, and diversion of long-distance travel to bus, rail, and air carriers. This is not a sequenced process, however, but a dynamic iteration as decisions at one level affect those preceding and following.

It is necessary to identify the policy that, more often than not, is concealed within the language of the statute, regulation, manual, or budget allocation. Equally as important is tracing out the consequences of the various ways in which the policy might be implemented. This means that the consequences of a transportation policy must be followed through the existing institutions and circumstances of transportation and that the connections of that policy to concerns and considerations outside of the immediate transportation area should be clearly indicated. Further, the policy analyst must examine extratransportation policies for the impacts they may have for transportation.

A problem with many policy statements included in program or enabling legislation is that they are both broad and specific. They are broad in asserting general intentions—or assumed consequences—and, at the same time, are quite specific in the assignment of responsibilities and authority and in establishing procedures. All too often, however, a particular law, regulation, or procedure contains within itself contradictory implications for the intended policy. Further, it may diverge from other ongoing policies equally strongly held, even though they may be implicit. Procedures imposed may not be the best way to implement the policy in question because of too limited a consideration of alternatives. Often a policy as stated is inadequate in assigning responsibilities without commensurate authority or in providing insufficient financial capability. As one means of minimizing these shortcomings, the expression of a policy in legislation or direction of budgetary authorization should emphasize the objectives to be obtained.

The process of policy planning can be cast in terms similar to those describing system and project planning: identify problems, conceive alternative solutions, and evaluate their consequences. In the case of policy planning, however, the alternatives are not for facilities and services, but for authority, responsibility, rules, criteria, and standards. Policy analysis will note inconsistencies between specific rules on program categories and between general policy and program objectives. It will take into account discrepancies between authority and responsibility and recommend changes in jurisdictions and powers. It will measure the gap between financial resources and needs and recommend changes in program allocations, taxation schedules, or user-charge policies. The consequences of a given policy must be traced into facility and service plans in order to assess the impact of the policy on the achievement of goals and objectives.

Hierarchy

Given that there are policy processes proceeding in a mixture of independence and dependence at the federal, state, and local levels, examination of the policy process might appear to be hopelessly snarled. Some order can be made in this situation if we account that policy at one level is another level's condition or constraint.

The legislative process, in setting policy in law, creates an environment within which executive agencies must set their subordinate policies. Viewed in this way, the policy activity of the executive agency is, in our first definition, policy planning intended to achieve the course of action set out by the legislature. In like fashion, transportation planning of the several states in responding to federal policy is also engaged in policy planning, i.e., finding the method to accomplish the federal policy in light of parallel or conflicting policy set by their own legislatures as well as by other federal agencies.

A series of nesting Chinese boxes might be a simile for the policy process; the policy at one level encloses lower level policies while being contained within higher order policy.

Subordinate levels within the hierarchy engage in all aspects of the policy process. Within their purview, they develop and enunciate policy. In many cases, however, subordinate agencies must perceive the need for policy development or alteration to analyze existing circumstances and institutions and to recommend to higher authority policies

that can only be established at the higher level.

In every case, however, policy applies only to the level that enunciates it; that is to say, it is not policy for the federal level to say that, "Our policy is that the several states shall do thus and so." In this there is no course of action for the federal level. Any policy requires that the initiating level will pursue a course of action to achieve certain objectives. Although such a course of action may compel, induce, or suggest certain actions by lower levels, it cannot be construed to be the policy of the lower levels; that must come about through their own policy development mechanisms.

The role or, rather, the roles of the federal government in the hierarchy of the policy process are critical. By its action or inaction, this level compels response at lower levels, particularly by the states. For all of its impact, however, the federal government has yet to develop a total transportation policy or policy guidance for a concept of transportation that embraces all modes.

Although during the past 50 years the Congress and the executive branch have not developed a comprehensive national transportation policy, many policy-oriented studies have been conducted and quantities of data have been gathered. In 1942, for example, the National Resources Planning Board, at the request of President Roosevelt, issued a report, *Transportation and National Policy*. Among its recommendations was the creation of a national transportation agency "to coordinate all federal development activity in transportation." In 1966, the U.S. Department of Transportation was created. No unified transportation policy developed, however, either in the legislation creating the department or by the agency itself.

A further report titled *National Transportation Policy* was issued in 1962 by the Senate Commerce Committee, which called for balanced and coordinated regulation as well as promotion of transportation "to the end that the needs of the commerce of the United States, of the Postal Service, and of the national defense be met."

The lack of a coordinated national transportation policy may be the result of many causes. It is evident that any clear and comprehensive policy declaration capable of implementation would conflict with one or more established interests. On this account the Congress may find it difficult, if not impossible, to provide the policy leadership federal agencies need. This is not to say that federal agencies with transportation responsibilities lack policy guidance. What they do have are compartmentalized, separate policies that apply to their special responsibilities. The guidance for the Federal Maritime Commission, for the Federal Aviation Administration, for the Federal Highway Administration, for the Interstate Commerce Commission, and a host of others does not fall under a blanket policy for transportation as a whole. Although it may be said that these policies taken together constitute a national transportation policy, it can be better argued that multiplicity of long-set, client-oriented, separate policies impede the development of an overall policy.

These separate policies, expressed in law and regulation among the divided modal administrations and regulatory bodies, constitute another set of Chinese boxes. State and local policies might be nested within these separate boxes, but there is no set to enclose all transportation activities at all levels.

It should also be said that there may be philosophical opposition to the establishment of a national comprehensive transportation policy. The current Administration has put emphasis on a concept of "New Federalism." The principal elements include returning powers and initiatives to the states and local governments along with revenue sharing, executive reorganization, and deregulation of common carriers. Although there are merits in each of these elements, the overall impact is to lessen substantive national policy-making in the transportation field.

The view of the authors is that from a technical and administrative standpoint the absence of and the impediments to a national transportation policy are unfortunate. For all the unique circumstances among the states and for all the political considerations that must be weighed, the mounting crisis in urban transportation and in railroad transportation requires strong and effective policy guidance at the national level. Things may have to get a great deal worse, however, before sufficient pressure is brought to bear on the issue of national policy.

We cannot recommend waiting for crisis to impel action. The units of local govern-

ment and the states in particular have the responsibility to address transportation issues within a policy context and to bring their technical and political resources to bear not only to move the federal establishment but also to set examples for national action.

Conclusion

This brings us, finally, to a connection between policy planning and statewide transportation planning. This connection is illustrated by the content of the New York statewide master plan for transportation and others like it.

Such plans differ significantly from urban or regional transportation plans in that they are more than a delineation of facility and service plans for intercity passenger and freight systems at the statewide scale. They are more than a summary of urban and regional plans. The significant difference is their inclusion of recommendations for changes in federal, state, local, and private transportation policies. Some recommendations are for state and local action to be implemented through actions of the Department of Transportation. Equally important, the Department of Transportation must be an advocate for changes in the policy constraints set at the federal and state levels within which it, and other providers and operators of transportation, function.

It is hoped that the above discussion has brought out not only the characteristics of policy issues but also some idea as to how to deal with them. In summary, the outcomes and consequences of existing and proposed policies must be examined. For the former, past and current trend data may be instructive. One way—but not the only way—to trace out consequences is to make illustrative plans under present or assumed constraints or, alternatively, estimate plan output. The 1972 National Transportation Study is a good example of such quantitative policy analysis.

Policy outcomes must then be evaluated against goals. The traditional transportation evaluation goals—safety, congestion relief, operating efficiency, return on invested funds—are equally as valid for evaluating policies as for plans. Policy evaluation, however, must put heavy emphasis on the more general goals. Although noted in every planning report, these goals are difficult if not impossible to quantify and have often been overlooked by transportation planners. These are the goals of environmental and social sensitivity, mobility needs of special segments of the population or areas of the community, and an equitable distribution of the charges and benefits of transportation. In these areas, some form of system analysis appears to be most helpful.

All too often, policy recommendations are based on an apparent or intuited relation between the proposal and a desired goal. Usually it develops that certain consequences or circumstances have been overlooked and the policy, in consequence, fails. The professional can help in specifying the consequences and circumstances to provide a better backdrop against which the evaluation analysis can be made. He can then better suggest alternative policies or policy modifications whose outcomes will be closer to the desired goal. It is precisely this sort of role that the transportation planner can come to play.

To structure the following discussion of many and varied transportation policy issues, we have combined the issues into 6 groups:

1. Allocation of responsibilities for the provision of transportation facilities and services,
2. Decision-making process for transportation,
3. Integration of privately provided public transportation into the state system,
4. Changing the demand for transportation facilities and services,
5. Funds for transportation, and
6. Charging for transportation.

ALLOCATION OF RESPONSIBILITIES FOR THE PROVISION OF TRANSPORTATION FACILITIES AND SERVICES

The existing distribution and allocation of responsibilities for various elements of the transportation system is quite complex; probably no 2 states have the same mix. The present situation is a product more of accident than of design; it is the accumulation of many incremental decisions made to meet specific and seemingly separate problems that reached a crisis stage (e.g., the state and municipal rescue of transit systems when private operators fell bankrupt). The difference between what might be ideal and existing patterns of responsibility is further complicated by changes in transportation needs and in governmental capability to meet these needs—lack of competence, financial resources, or incentives in the agency or governmental level responsible.

A statewide plan will inevitably find that, if current jurisdictional responsibilities do not directly contribute to the cause of many transportation system inadequacies, they hamper or prevent their solution. Policy proposals to modify the jurisdiction and responsibility of governments are, therefore, appropriate parts of statewide transportation plans. Such proposals should be part of operational strategies devised to achieve the broad transportation goals of all levels of government and not simply to make things easier for one jurisdiction or another.

New Responsibilities for States

Continually there are pressures for new or altered responsibilities for state departments of transportation or other state-created agencies such as transportation authorities. For example, several states have entered the railroad business, generally acquiring the facilities and equipment of bankrupt railroads to prevent the abandonment of service. The federal government has assumed responsibility for almost all inter-city rail passenger service. In the future, as the federal government expands its involvement in rail freight operations, further pressures for state action will be more widespread.

Since the issue of rail branch-line abandonment is discussed in a later section of this paper, it may be sufficient at this point to note that state acquisition of rail property is only one of several options. Given the pressures for maintenance of freight service considered essential to local or regional economic activities, a regional or an independent branch-line operation might be a more appropriate solution. In such instances, the state may assist through using its condemnation powers to acquire the right-of-way or through providing seed money to start the new operation. Possible subsidy requirements should be made explicit so that all parties concerned may better weigh alternative approaches for economic stabilization or improvement. Before major financial commitments are made, measurements should be made of the efficacy of branch-line service maintenance versus other transportation solutions, such as truck service and piggyback service, or in comparison with nontransportation solutions, such as vocational training and tax relief, in achieving the basic economic goal.

Rapid transit systems typically are the responsibility of special authorities set up by the state or by cooperating local governments when, as is the usual case, service extends beyond the boundaries of a single local government. However, direct state ownership and operation are alternatives, as is the case in Maryland. The implications for wider responsibilities implicit in the freedom to shift funds between modes through the Federal-Aid Highway Act of 1973 will be increasingly important as programming of urban system improvements devolves on local governments.

Obsolete Jurisdictions

State responsibility for highways varies significantly among the states. In some, counties and towns have little or no responsibility; in others, a state may extend assistance to projects in lower jurisdictions in addition to supporting its own programs.

The recent highway classification study, a part of the 1972 National Transportation Study, brings out many of the inconsistencies in state responsibility. In New York, for example, a substantial number of miles of collector roads, especially in rural areas, are under state jurisdiction. On the other hand, a significant number of urban arterials, whose future investment needs will far exceed local capabilities under present financial arrangements, are under local jurisdiction.

A realignment of jurisdictional responsibilities to make that of the state commensurate with the interregional and major highways and roads of greatest investment needs was suggested in the draft of the New York State transportation plan. The draft received particular comment on this proposal, comment that questioned the financial and technical capabilities of local governments in rural areas to assume the substantial mileage and cost responsibilities that would be put on them. A modification to a simple functional classification as the basis for jurisdictional responsibility may be appropriate. Instituting changes in local aid formulas for highway maintenance may also be desirable.

In many urban areas, arterials are built to expressway or other high-cost standards. Typically, a state highway system is not extensive in urban areas. Only since 1946 have urban roads been eligible for limited but growing amounts of federal funding, and only recently under the cost requirements of such arterial programs have many state governments responded by enlarging their jurisdictions in urban areas.

An alternative to enlargement of state jurisdiction within urban areas—and the attendant problem of responsible decision-making—is the pass-through concept, i.e., making urban highway funds available to local governments. The Federal-Aid Highway Act of 1973 gives local governments a major role in programming decisions in addition to their participation in metropolitan system planning.

Construction Versus Operation

Policies on the assignment of maintenance and operational duties and costs will also become increasingly significant as demands rise for new types of sophisticated and complex projects to improve urban streets and transit service. Joint highway-transit projects are an example. Such projects offer the potential for improvement at minimal community environmental and energy costs as well as construction costs. Traffic control signals, painting and signing, reversible lanes, and ramp metering are potential areas of operational improvements. In the future, pedestrian and bicycle paths, now eligible for federal assistance under the 1973 highway act, will receive increased attention. All of these projects, however, have major and continuing costs for operation and maintenance.

In some cases, responsibility for operation of certain aspects of highways is required of local governments (e.g., in New York State, lighting will not be provided unless local governments agree to assume the energy costs). In other cases, states contract with county or local governments for operation costs. Although the principle of state assistance and local direct operational responsibility may be attractive, whether this arrangement can ensure that minimum state standards will be maintained is not known.

In addition to the state-local question of transportation responsibilities is the matter of policy consistency among state programs. For example, the New York State Department of Education has a program to completely reimburse local school districts for school bus costs where sidewalks are not available. This has had a predictable impact on the provision of sidewalks by local governments and on their interest in offering to maintain them when they are included in state projects.

Federal-Assistance Policies

Although there is ample opportunity for the study of the allocation of responsibilities between state and local governments and for analysis of the broad spectrum of state policies as they affect such responsibilities, the overreaching concern should be the im-

fact of federal policies and programs. The inclination of the Urban Mass Transportation Administration to deal directly with local government on transit matters and the earmarking of urban highway funds to local governments and areas required in the 1973 highway act raise serious questions as to the state's role and its capacity to frame its own policy to achieve its own goals.

To the extent that a given state has capability, UMTA may elect to deal with the state. Behind this willingness, however, may be greater concern with conformance to the federal agency's goals than with the technical expertise of the state. Whether UMTA deals with the state or directly with localities, its program, as an expression of federal policy, is a condition affecting the state's ability to develop and implement its own transit policy. Further, the lack of a national overall transportation policy framework makes it difficult for the states to relate the independent UMTA policy in transit to an overall state transportation policy.

Although this federal conditioning of state policy-making has been part of every federal program, the impact on state-local transportation relations has been greatest in the 1973 highway act. Before addressing the act's provisions, we should discern the objectives that may lie behind the legislation and compare them with those of the states. In this, care should be taken to sort out the transportation objectives (they may be common for both the federal and state levels) from the institutional objectives of state agencies and from the broad issues of state sovereignty.

DECISION-MAKING PROCESSES FOR TRANSPORTATION

Decisions on transportation facilities and services are not made alone by agencies directly responsible for their provision. Increasingly there are complex formal procedures for the participation in and the review of transportation decisions. Impacts, other than on transportation service, may be at least as important as the direct effects of a transportation decision. Procedures and requirements for decision-making must be changed when, as is often the case, dissatisfaction with the transportation system can be attributed to inadequate consideration of the views of affected parties who are outside the existing process. It may often appear that the power to veto or halt transportation development has been granted to almost everyone; in any case, there has been no analogous broadening of the power, or responsibility, to achieve or act.

The state policies are crucial to decision-making because of the importance of state government in creating the powers and constraints within which agencies act. Equally important, the state is required to determine and implement procedures for the effectuation of federal policies. A statewide plan, therefore, will appropriately consider new policies, both legislative and procedural, to improve the process of transportation decision-making.

Traditional Transportation Decision-Making

Many transportation decisions appear to involve technical factors only, and transportation agencies probably make most of their decisions on the basis of internal criteria that reflect generally accepted technical standards and rules; they answer for those decisions primarily to their chiefs and to national professional organizations. This is the rule for many agencies headed by long-term commissions. Generally, this posture can be retained when the transportation need is clear-cut and there is a consensus in support of the agency's activities. In addition, a strong client group may exist with close links to the agency; the Corps of Engineers, the state highway departments, and regulatory agencies are examples. The major accountability of such organizations to the public is through the chief executive and legislative budget decisions rather than directly through programs or projects.

A critical policy question is how to make such agencies responsive to the public or even to the political process. There is increasingly a realization that affecting the long-range plan is not nearly so significant as affecting the programming decision on

what will be built this year and next. Examining the programming and budget process may be of some assistance. For some programs and agencies, the legislature decides the agency's actions by budgeting on a project-by-project basis, selecting from among those recommended by the agency. In other cases, the legislature votes on a program of projects the agency intends or is committed to implement. In still other cases, the legislature votes on a program budget with varying details about subprogram and area allocations, but not on projects.

Although a project-by-project or a list-of-projects action by the legislature might appear to be more subject to political considerations—as opposed to objective and rational factors—it may, in fact, not be so. Approval of a "blank check" may merely postpone the political trading to a later time, when it is done in secret. Proposing a list of specific projects requires some accountability to the public, including changes made in it. A governor or chief executive may wish to have the flexibility to trade projects for votes needed for some other issue. Granting that this is perhaps inevitable, making revisions to programs public may be the ultimate protection of the people from arbitrary governmental decisions. The Federal-Aid Highway Act of 1973 gives new powers to local governments over the programming of the Federal-Aid Urban System, subject to state concurrence. It will be of interest to see the impact of this broadening of responsibility and the new institutional arrangements that will evolve.

Independent Authorities

As a reaction to the "political influence" on agency decision-making, to bypass assumed deficiencies in executive agencies, and to achieve budgetary freedom, independent authorities have been set up in many cases. These authorities are often regional in character and are usually specific in their modal responsibility, such as toll roads, ports, and public transportation operations. They usually answer for their stewardship of transportation facilities to the bond market and bondholders, not to a legislature.

Clearly, the decision-making process for such authorities has been set outside of government. Although they generally are credited with getting things done, they are also often disliked and feared as being beyond public accountability.

Procedures to open the decision-making process to a wider spectrum of views and participants increasingly are being forced on such authorities. There is a built-in paradox, however; their separation from general governments and general government revenues and the strictures of their bond covenants make it difficult for them to take a comprehensive view and to accept increased project or system costs to achieve environmental, general community, or some minority group benefit.

What can be done to make decisions by such authorities more responsive? Clearly, the single-mode focus can be broadened; proposals are made to make these authorities multimodal, thereby enlarging their responsibility and permitting some reallocation of funds. More important, a multimodal responsibility inevitably brings a broader view of transportation options and potential solutions.

This approach, however, may have its effect delayed until existing bonds with their restrictive covenants are retired. It is also a question as to whether multimodal authorities will be successful in floating new bonds without restrictive, long-term cross-subsidy provisions. As long as the authorities must be responsible to bondholders, they are limited in their response to the general public. On the other hand, to abandon independent financing, the authorities would in effect revert to being agencies of government, again faced with budgetary constraints and perhaps other institutional disabilities.

Comprehensive Planning

The process for cooperative, comprehensive, and continuing transportation planning was mandated by the federal government more than 10 years ago as a new approach to improve the decision-making process for metropolitan areas. In spite of acknowledged inadequacies, the urban transportation study process has been accepted and continually

enlarged. The 1973 highway act provides additional funds for metropolitan transportation study groups to spend or allocate.

Transportation agencies at federal, state, and local levels and comprehensive planning agencies at state, region, county, and city levels are included in the process to facilitate the coordination of transportation plans with other metropolitan plans. In some urban areas, the metropolitan transportation study has been incorporated into a regional comprehensive planning agency or council of governments framework. Usually this broader agency is also the metropolitan clearinghouse of comment on all federally aided projects.

A serious policy question can be posed, however, about the grant to regional agencies of development and review powers for the urban transportation plan. This is precisely the level at which there are no government, no constituency, and no implementation powers. Studies should be undertaken to evaluate whether plans developed and reviewed in such situations are usable and realistic. From the implementing agency's viewpoint, it is important to determine whether such plans reflect program restraints and influences.

Regional agencies are rarely known and, like independent authorities, not directly answerable to the public. What can be done to make such agencies responsible? One direction is illustrated by the sporadic movements toward regional government among local jurisdictions. They have not been widespread, however, except for the transfer of limited municipal activities to an existing inclusive county.

Public Participation

In the 1960s many public programs felt the pressures for increased nongovernmental influence on decision-making. "Maximum feasible participation," a phrase coined for the antipoverty programs, is now being heard in the transportation area. Early steps in this direction were the expansion of the highway planning process to include 2 public hearings and, later, the requirement to prepare environmental impact statements. These measures were clearly intended to open the decision-making process for the earlier and more meaningful inclusion of social and environmental factors, many of which can best or only be judged by local communities or impacted-area residents.

A statewide plan, within federal policy guidelines, can offer significant policy direction to the attempts at expanding participation in decision-making. An environmental action plan is now being developed by every state, pursuant to the Federal Highway Administration's interpretation of the implementation requirements of the National Environmental Policy Act. (The FHWA response to the responsibilities under the act is typical. Although the act gives FHWA the responsibility for an environmental action plan, FHWA has chosen to impose the requirement on the states and has used its funding control to ensure compliance. This could, of course, be interpreted as a federal policy to leave the states free to determine their own environmental policies and plans, i.e., the New Federalism, rather than as agency incompetence or a device for passing the buck.) Environmental action plans will most likely mean new staff with additional skills as well as agreements with other agencies for environmental and social aspects of the plan implementation.

There are serious concerns in the minds of many professionals that the greater weight of subjective and intuitive factors will submerge the consideration and importance of "real" transportation system characteristics and needs. The need to achieve a virtual consensus by bargaining and negotiation before action is the antithesis of a technically objective evaluation. There have been attempts at creating complex frameworks to structure such participatory decision-making. However, there is the real question as to whether these will achieve not the best but rather the minimally acceptable system. Given the apparent irreconcilable conflict between technical efficiency and effectiveness and participatory decision-making, it might be considered that the objectives of the new requirements are not transportation objectives. If good transportation facilities and systems come out of the process, they are only extra benefits of a process intended to accomplish something else. Again, the minimally acceptable

solution may indeed be the "best" solution possible.

Litigation

A further complication is the entry of the courts into transportation decisions. The National Environmental Policy Act appears to provide for judicial review of both the form and the substance of decisions by implementing agencies. Whether a court is the proper forum for such decision-making can be seriously questioned; however, once decisions become adversary procedures, this may become necessary. In any case, the potential of litigation for delay and death of transportation projects is clear.

Pass-Through Funds

An unstated but emerging national policy deals with the decision-making process by bypassing the states to give funds in some cases and decision authority in others directly to localities. General revenue sharing has already been implemented, and there are proposals for transportation revenue sharing as well. It is uncertain how state policies for the emphasis and priorities of transportation needs can be reflected in such circumstances.

The Federal-Aid Highway Act of 1973 provides for appropriate local government to propose a program, which conforms with metropolitan plans and is subject to state concurrence, for expenditure of urban system highway funds. Within federal guidelines, now being determined and promulgated, the state must set a policy and procedure for cooperatively developing metropolitan highway facilities and, since reallocation of highway funds is provided, transit facilities as well.

The need for public and special interest group participation may be even more crucial in program decisions than in project- and system-planning decisions. Methods for meaningful participation beyond the public hearing or unstructured response to draft reports must be sought.

To date, the major area of impact of the participatory policy has been in highway planning and development. It can be argued that, given the extent of existing highway systems, we can afford the time delays and the increased costs of public participation without seriously impeding highway transportation service. Whatever the merits of that argument, in the case of public transportation investment and development, extended delays in the face of a continuing fuel shortage may have too high a price. This is not intended as special pleading for transit; what is intended is a question as to the relative weight of social, economic, and environmental objectives in the decision process under extraordinary conditions.

It is suggested that the absence of a national energy policy has been a significant contributor to the development of the current fuel crisis. The continued absence of coordinated national transportation land use policies will undoubtedly adversely impact state policies and programs as states attempt to deal with these areas in a comprehensive manner.

INTEGRATION OF PRIVATELY PROVIDED PUBLIC TRANSPORTATION INTO THE STATE SYSTEM

As transportation planning has broadened its scope and increased its capacity to include more considerations (transportation and quasi transportation), the area of public transportation has received increasing attention. Central to this attention is the problem of regulation of privately provided transportation services to the public.

Regulation is viewed as an effective tool available to integrate such transportation into a state transportation system, but it presents perhaps some of the most difficult policy questions. Regulation, as a tool, is most attractive when one considers that all rail freight is regulated, as are most air passenger and freight service and the move-

ment of materials through pipelines. Common carrier truck service and some marine facilities and services are regulated. Bus service, where not municipally owned or under the control of public authorities, is subject to regulation, and taxi service is under municipal regulation. With powers to control rates and prescribe service, state regulatory agencies appear to be in a strategic position to effect the integration of the public transportation system into an overall scheme.

Traditional Regulatory Theory

Although efficiency and economy have been guiding principles in transportation planning, the regulation of transportation has not considered these elements to be of prime importance. Historically, transportation regulation has pursued broad social and developmental goals, including the control of monopolies, without any particular concern about efficient transportation.

The regulation of transportation has been more closely tied to public utility regulation than to transportation and takes much of its philosophy from the economic and consumer protection concerns of other public utility regulation. The principal purposes of such regulation include grants of special privileges supporting or strengthening monopoly position, protection of consumers by control of quantity and quality of service, protection of consumers by control of rates charged, and protection of consumers and the general investing public from financial manipulations by "insiders" in public utility holding companies. Given the public acceptance of these purposes, regulators have received sufficient powers to achieve them. Presumably, the same powers could be employed to help achieve desired transportation purposes. To do so raises institutional and policy conflicts.

The regulation of common carrier transportation, dating back to the middle 1880s, has been characterized by pursuit of social and developmental goals. In the late nineteenth century, railroads were the principal movers of freight in the United States and constituted an almost complete monopoly. There was little competition on the inland waterways and, save for local drayage within urban centers, railroads carried the great bulk of goods and commodities. In part to control these monopolies, the Interstate Commerce Commission was created in 1887. More significantly, however, the ICC had a broad socioeconomic purpose or goal to foster the development of the western portions of the country through its regulatory powers.

The principal tool of the commission in pursuit of the development goal was rate regulation. Through a system of internal cross subsidies, the railroads were required to move produce and raw materials (the basis of western economies) at less than compensatory rates. These losses were more than made up by excessively high rates on manufactured goods. As long as the railroads were monopolies and constituted a complete cartel, it was possible to pursue this broad public policy and help bring about the settlement and improvement of the western regions without adversely affecting the financial health of the railroads.

With the advent of the automobile and the truck and the huge public investments in highways, the railroads could no longer monopolize long-haul transportation. The high-rate manufactured goods were diverted to trucking, weakening the railroads' financial position. Yet, railroads were still necessary, and it was still deemed necessary to control them. To effect this control and not leave the railroads open to eventual decline through competition from unregulated truck transportation required that the freight "cartel" be enlarged to include trucking. Thus, in 1938, common carrier motor trucking also fell under ICC control.

The technology and economics of trucking, however, are such that it has not been possible to make the cartel complete, leading to the decline of regulated freight service, whether rail or truck. As freight rates continued to reflect considerations other than the cost of transportation, high-volume shippers, particularly manufacturers of high-rate products, found shipping in their own trucks increasingly desirable and profitable. This free, unregulated choice diverted the high-rate finished goods from common carriage, which was left with the unprofitable bulk movements. Rate adjustments

to help relieve the common carriers resulted in increasing diversion of shipping to private, unregulated carriage. In the meanwhile, common carriage has contracted as a result of railroad bankruptcies and abandonment of service and decline in the number of common-carrier trucking firms.

A comparable, although less discouraging, story can be told for airline service. The regulation of air travel parallels the regulation of freight transportation insofar as mandated service and internal cross subsidy are concerned. As part of the Civil Aeronautics Board certification process, airlines are required to serve lesser centers that cannot offset the costs of the service provided. This policy of serving a broad range of communities irrespective of their ability to meet costs requires that the fare structure recoup losses on some segments with extra returns from densely traveled segments. By and large, this process of cross subsidy has worked better in the airline industry than in surface freight transportation because of the minimal competition offered by private, unregulated air travel. One reason may be the explicit separation of regional airlines serving the smallest communities and their direct subsidy by the federal government.

The measure of the impact of airline cross subsidies is seen in the experience of carriers not regulated by the CAB. In California, for example, the air fare on Pacific Southwest Airlines, an intrastate carrier, for the Los Angeles-San Francisco flight is about half the fare that CAB-regulated carriers are required to charge. As might be expected, PSA's load factors are considerably higher than those of the regulated airlines on this run. Because it is a high-density route, the competition from PSA has a negative impact on the ability of the other lines to absorb losses from their more lightly patronized routes.

These summaries are intended merely to illustrate the basic problem in attempting to account for private transportation in a total transportation planning policy. With narrowly focused objectives, reenforced by institutional separation, there is great difficulty in bringing together the areas of public transportation planning and private transportation regulation in a common program. Although there are compelling reasons why transportation planning has interests in and concern about transportation regulation, the latter has not demonstrated parallel concern about its effects on total transportation systems or about the effects of transportation development policies on its own area of responsibility. With this asymmetrical situation, care should be taken to see that transportation planning policies that involve regulation do not simply reflect planning interests. To completely subvert transportation regulation to current transportation planning concepts may entail the loss of public benefits in other areas of concern. Because these 2 aspects should be joined to effect a total transportation program, transportation planning must extend its scope of attention to include the economic and developmental concerns that lie behind regulation.

Railroad Branch Lines

The experience of New York State may be instructive in this regard since once-independent transportation regulation has been brought into the Department of Transportation and, hence, has made the need to adjust regulatory and facility planning policy more compelling.

For example, the department has addressed itself to the question of rail branch-line abandonments in the context of the rail crisis in the northeast. It has brought together its resources in transportation planning and regulation and in policy development to formulate policy and a program to contribute to a solution. It reflects the needs for area economic development and support in highway facility planning and is equally concerned with rail service. The department sees that giving the common carriers in New York the fullest competitive opportunities so as to reverse the trend toward the dominance of profitable freight markets by private carriers is in the interest of shippers and consumers. Unchecked, this trend will ruin common carriage altogether; the shippers who could not afford to provide their own private carriage would ultimately have no service.

Against this background, preserving the strongest possible system of main-line rail services that private enterprise can provide is first necessary. These high-volume services are those for which there is an overwhelming public need. Loss of these lines would be economically and environmentally unacceptable. Unprofitable branch-line services should be converted into self-sustaining units if they are to survive.

With readjusted regulatory controls to foster opportunity and incentive for common carriers, the department is devising a new program to assist local branch-line interests in making arrangements necessary to secure freight services. This new program bears, for the present, the name "the negotiated solution." This is a mechanism whereby the department can bring together the parties with an interest in the preservation of a particular freight service and enable them to seek ways to ensure that a service covers its operating costs.

The parties to the negotiations include the railroad that, desiring to retain traffic and reduce costs, can examine its rate structure, change service patterns, sell the facility to a local operator at a favorable price, or offer better service or rate at a main-line transfer point; the shippers who, desiring to retain rail service, can agree to a higher rate, make annual traffic guarantees, divert business from a motor carrier, or purchase stock in a new local operation; the community that, desiring to retain an economic base served by rail, can provide property tax incentives to the existing or new operator or assume grade-crossing maintenance responsibilities; and the operating unions that, desiring to retain branch-line jobs, can agree to work-rule changes. In addition to acting as a broker to the interested parties, the department, under this program, provides detailed economic evaluation of branch-line operation and proposed alternative operating proposals.

The negotiated solution is more comprehensive and superior to the existing ICC abandonment procedure that has the character of adversary proceedings. Moreover, the solution works, as indicated by the following:

1. Boston and Maine Ossipee Branch—Here a traffic guarantee and extra per car-load payments, coupled with union agreements to reduce crew size, headed off an abandonment;
2. Penn Central Quarryville Branch—Here shipper agreement to the Pre-Paid Revenue Supplement Plan permitted Penn Central to restore service to a flood-damaged line; and
3. Cooperstown and Charlotte Valley—Here a new locally sponsored short line was created to preserve service on a Class I railroad branch line in New York State, and shippers and other local interests purchased stock in the new corporation to cover start-up costs.

There are, of course, other courses of action open and other policies that might be followed, including subsidy payments, government ownership and operation, service contracts, and substitution of truck service for rail service. In each case, rigorous examination must be made of costs and consequences against a background of broad political, economic, social, and developmental policies. All of this requires capability to gather and interpret information on the impact of any given policy approach on rates and service and on local economies and job markets. At the same time, an appreciation for transportation facility and system efficiency and effectiveness must be retained.

CHANGING THE DEMAND FOR TRANSPORTATION FACILITIES AND SERVICES

A group of several issues for statewide transportation planning involves attempts by government to solve or alleviate transportation problems by affecting the demand for transportation, in its magnitude and characteristics. Transportation agencies traditionally have focused on improving transportation facilities—adding to the supply of roads, airports, and transit facilities—as a means of dealing with congestion, accidents,

pollution, and other problems.

There are significant problems and difficulties in the continued addition of new and better transportation facilities and their effectiveness is being questioned more and more. Although the tremendous attention and investment devoted to transportation facilities have yielded an improved transportation system, the problems these improvements were aimed at alleviating often persist because of increased demand. Proposals are now being raised that deal with transportation problems through changes in the nature and amount of transportation demand. The subject of this section is changing demand not through the provision of facilities and services but through policy changes.

Policy changes that can affect transportation demand may be direct or indirect. Changes in the geographic pattern of activities can alter the amount and characteristics of transportation demand indirectly. Policy proposals that may affect directly the peaking characteristics of transportation demand include staggered work hours and car pools. Also being pursued are policies to affect the pollution generated and the accidents caused by transportation through changes in vehicle characteristics and driver behavior. And recently, direct limitations on travel and transportation fuel have been suggested and applied to limit energy consumption. Each of these areas holds questions for transportation policy analysis.

Land Use and Transportation

The first explicit, quantified interrelations between land use and transportation date back a generation to pioneer transportation studies such as those in Detroit and Chicago. They reflected the first efforts at understanding and reflecting this relation in the development of metropolitan-scale transportation plans. By estimating trip generation and linkages between land uses and by assuming current relations and parameters, they estimated transportation demand of a future population and land use pattern to provide the basis for transportation system planning.

Subsequently, attempts were pressed to make this process dynamic and to reflect the impact of proposed transportation service on land development. The method of reflecting the accessibility impacts of transportation on growth patterns is still being refined and requires continued research.

Throughout the evolution of the process development, there has been debate on how much this future land use pattern should be a projection or a plan and whether it should reflect the most likely pattern of land development or rather patterns designed to achieve comprehensive planning goals. In our experience, there is little real difference in these approaches. Most statewide and metropolitan plans are not at variance with basic trends. They propose neither to halt or limit growth nor to divert population to different regions of a state. Regional plans do not propose a radical restructuring of metropolitan patterns. Rather, they aim generally to accommodate expected growth by modifying distributions and densities within quite narrow limits and to coordinate this growth with the provision of public services. Similarly, transportation plans are generally geographically "balanced" with little favoritism for one area or another.

Such planning has been open, however, to the charge that it is mere trend analysis and that, rather than seeking to change the future, it completely accommodates to trends and is, therefore, self-fulfilling in giving more of the same. Although land use, on which much of transportation planning is dependent, has not followed any plan, land use plans seem always to crumble before economic pressure. In a general sense, then, land use is also subject to trend analysis.

The greater error, however, has been the disinclination of comprehensive planners to look at the basic policy planning issues. Planning, by and large, has not engaged in policy formulation or in the iterative process necessary to develop basic policy. Such activity was thought to be political, unprofessional, imprecise, and not technically objective. Besides, transportation planners were not asked to come in. The consequences of this technically oriented, narrow approach are plans that are unlikely to be implemented not only because of nontechnical citizen resistance but also because of technical shortfalls. For example, no transportation or comprehensive plan has

reflected on the energy required to make it go; fuel efficiency was not a parameter. Today, perhaps, we would agree that it should have been.

The results of these land use and transportation trends have been apparent for many years. The low-density, scattered pattern of suburban residential, commercial, and other activities requires a large and increasing amount of travel and, therefore, additional transportation facilities and services to function. The cost of facilities and of operations on this system—in accidents, time, pollution, fuel, and dollars—is seriously questioned. Proposals are continually made to alter the pattern of metropolitan and state land use to reduce travel demands or to make them serviceable by modes other than the automobile. Policies range from (a) using the selected provision of transportation, water supply, sewerage, and other services to alter the character of land development, to (b) changing the development control of government through zoning and subdivision regulations to achieve different patterns, to (c) changing taxation, federal mortgage guarantee policies, floodplain insurance policies, school support programs, user charge, and other policies that encourage the evolution of a desirable pattern.

Selective Provision of Transportation Facilities and Services

That transportation should be used to encourage a desirable community pattern is clearly accepted in principle and reflected in the general goals of a transportation study. But, given limited resources, to invest ahead of growth is to deny transportation improvements and accept congestion and other unpleasant consequences in other areas. Such a policy is equally difficult to apply in the provision of water and sewer facilities, education, and other public services. As has been noted previously, the character of most land use plans is such that rarely have they been heeded. Transportation investments, where they have been linked to land development goals, have been in more clear-cut support of major public and private development or redevelopment projects.

The effectiveness of accessibility improvements or restrictions in changing the rate and pattern of land development, unfortunately, is still unknown despite the many land use impact studies and the major investments made in land development during the past decade. For one thing, new transportation facilities add service to a basic transportation system that is rather well developed already, and increases in accessibility are a matter of degree. It could be predicted that the use of transportation facilities to achieve land use changes, in the absence of a coordinated set of governmental policies and investments, would be resisted by transportation agencies. Such investments are likely to be ineffective and to be in conflict with meeting other transportation needs.

Land use plans heretofore have not aimed consciously at minimizing transportation needs. The clustered suburban center, the high-density corridor alternating with open space areas, and the high-density downtown with concentrated commercial activities are patterns that intuitively were thought would minimize transportation demands and make them easier to serve with bus or rail rapid transit. However, the transportation requirements of such patterns have not been demonstrated explicitly or convincingly to the public. Although the current fuel shortage may quicken the public's interest in such considerations, further research is needed to indicate both the transportation system and service implications and requirements and the change in life-style necessitated by alternative land use patterns.

Changing Government Control of Development

Government has direct powers over the development of land through zoning and subdivision regulation. Based on the police power of government to control nuisances, these capabilities have been expanded considerably. There are limits, however, beyond which application of these regulations becomes a taking of property for which compensation must be granted.

To date, zoning has not been a firm foundation on which to base proposals for signif-

icant change in land use patterns to achieve transportation or other goals. Zoning has proved to be transient and weak when faced with the pressures of commercial and other development. In one area of partial effectiveness, the preservation of neighborhood homogeneity, it is attacked on social grounds. In most states, zoning is the power of the smallest of local governments—cities, towns, and villages. As long as the residents of these areas are affected financially by location decisions of commercial or industrial users, land use planning principles are a weak advocate against financial gain.

There are proposals for enlarging and rearranging the powers of government over land use. Specific controls may be set at the state, regional, or county level; in New York State, the Adirondack Park Agency has been granted broad powers over the character of private land development within a large, designated mountain area. Logically, these powers tend to be general at the higher governmental level, sufficient only to constrain or require local plans to reflect regional goals. A major conflict with the principles of local responsibility and home rule is inherent in this.

Some of the most ambitious powers may be found in, or inferred from, new environmental legislation. The federal coastal zone program and the national land use policy act under consideration by the Congress will require states to set up appropriate means for controlling land development in designated impact areas. Major transportation facilities and major traffic generators, and the travel they generate, are among the types of projects whose impacts must be assessed. The pressures to use these laws to effect major changes in state or local patterns are likely to cause major controversy, especially if the public is not fully aware of, and does not accept, the new patterns and their concomitant changes in life-style.

Changing Government Policies to Affect Land Development

Many present land use pattern trends can be related to governmental tax policies. At the local level, governments are particularly dependent on the property tax as a source of revenue. As has been noted, as long as the property tax remains and the burden of education, welfare, and other significant costs are localized, their pressures will run counter to a rational metropolitan or statewide development concept. Equally, the combination of low taxes on raw land and capital gains tax advantages for its sale will encourage isolated speculative land holding and, consequently, the scatteration of land development. The increased use of agricultural zones may contribute to this problem. Cheapness of transportation and many public and publicly regulated services that are provided on an average-cost basis also contribute to this pattern when they do not truly reflect the cost of providing services in low-density areas.

Land use patterns are intimately connected with the life-styles of individuals and with the operations of businesses, institutions, and other activities. Significant changes in land use to achieve gains alleged for transportation and other public services will have to be demonstrated far more clearly to the public before it will relinquish its habits. Research must be directed at clarifying the actual cost of facilities and services for land use patterns of different densities and shapes. Data explaining more clearly what life-styles will be like are also required. Research must also be directed toward estimating the impact of transportation facilities and services and the susceptibility of area growth rates and patterns to such impacts. These must be explored with varying assumptions of coordinated and, as at present, conflicting policies.

Peaking Characteristics

Congestion concerns not only the number and location of trips but also their temporal pattern. The peaking of travel, caused in large part by work trips beginning and ending within a narrow time period, is a major cause of congestion and the need for more facilities and services. Peaking is particularly difficult for transit services because of the requirement to provide system and service capacity to meet the demands of work travel. Staggered work hours and car pooling to change work-trip automobile oc-

cupancy are changes suggested toward alleviating transportation problems.

Staggered work hours have already shown significant reductions in peaking and in congestion at rapid transit stations in lower Manhattan. Staggered work hours have frequently been used in large buildings and by major employers; what is new are policies and actions to encourage their application in urban centers by diverse establishments. The problems of coordinating within and among establishments are serious, but work has already indicated that by no means are the traditional hours necessarily optimal. In this connection, the 4-day workweek would help in reducing peaking characteristics if a longer workday resulted. This, however, may have undesirable consequences for fixed rail transit where its capacity would be but partly needed during 3 days of the week. The lower total number of trips would mean lower gross transit revenues.

Automobile occupancy is particularly low for the work trip, increasing its impact on metropolitan highway congestion. Policies on parking and the use of streets and toll facilities can encourage car pooling. Such steps have been used already in several instances with good effect. The limits of public acceptability, especially with reverse discrimination against single car occupancy, are not known.

Already matching computer programs are being used to facilitate car pooling, but they were brought on by the immediate energy shortage rather than with an eye to congestion relief. These immediate experiments should be carefully studied for consideration in long-range policy and plan development. As part of these experiments and for long-range application, the individual and community gains that policy changes will achieve should be made known.

Accidents and Pollution

Accidents and pollution are 2 transportation by-products that everyone agrees should be minimized. Transportation agencies claim as benefits for expressway and transit proposals the safer and less polluting travel they divert from streets.

In both of these areas, however, changes to vehicle characteristics through governmental policies, including legislated or promulgated requirements, are alternatives to facility and service provision. Ideally, one would desire a balancing of costs of vehicular changes versus the provision of additional facilities and services, even though the costs of changing the vehicle are borne generally by private individuals. However, major investments for pollution control or safety are apparently easier to make through policies affecting the private sector than by direct government action. To invest \$500 million in safety improvements at a cost of \$50 × 10 million cars a year—achieved by fiat—is easier administratively than to meet the problems of funding and programming \$500 million annually in safety programs for highways.

Perhaps most significant, policies explicitly setting performance standards for vehicles have set them at levels unattainable at present, and the means and cost of attaining these levels are not known. Perhaps only where the objective is clear will the public accept commitments of major magnitude. Compare the relative ease of financial commitment to the Interstate program with other specific government programs and projects that have unclear objectives and consequences.

A third area for seeking accident reduction, other than the vehicle and the facility, is the driver. Policies for higher standards for the qualifications of drivers and for the enforcement of alcohol and other driver regulations have received continuing interest. Little is known, however, about the effectiveness of these actions. Clearly, acceptance of increasingly restrictive policies on automobile drivers will be difficult so long as metropolitan and state land use patterns are so automobile dependent.

Energy and Transportation

Energy for transportation and other activities is now quite limited, and this situation increasingly is being reflected in the availability and cost of fuel. For the long range,

rationing is a poor mechanism for solving basic problems. Energy limitation can and should be reflected in energy costs; predicting the consequent changes in the characteristics of vehicles and travel can be attempted, and the traditional planning process should be able to reflect them properly.

For the short range, critical policy proposals concern dampening the demand for transportation and investing in energy-efficient modes. The impact on the poor and on specific locations of alternative price and priority schemes are being discussed currently and need not be explored here. Priority for public transportation modes, in the absence of sufficient fuel for private transportation, is logical and is readily accepted.

A careful monitoring of these short-range energy policy responses can be of major help in ascertaining what might be effective policies to affect travel. This can help in long-range planning, particularly in the area of fuel price changes, which directly affect the need for an optimum mix of transportation solutions.

Conclusion

Fresh attention is being paid to policy changes that are seen to affect the demand for transportation as an alternative to transportation facility and service investments. Such policies must be considered in statewide planning because of state governments' responsibility for the legislation, authority, and other institutional constraints, powers, and procedures by which the transportation system is provided and functions. The state must also play a strong advocacy role in proposing and then in interpreting and applying national policies. This area has long been neglected on the assumption that current policies and institutions are fixed or inevitably correct. The sacredness of current policies, both explicit and implicit, has been denied, and transportation planning can never be the same.

FUNDS FOR TRANSPORTATION

The financing of transportation facilities has received a great deal of emphasis in the past few years. The recently completed 1972 National Transportation Needs Study indicates that there is a growing gap between the identified transportation needs or plans and the ability to finance these plans. The lack of financial commitments renders the transportation planning process fairly ineffective because the plans must of necessity be based on some estimate of funding, which in turn dictates the desirable level of service. Therefore, some mechanism for determining and ensuring a long-term commitment of funds is extremely desirable from a transportation viewpoint.

Transportation expenditures by states usually do not change radically from year to year in either total amount or modal allocation. Frequently specific revenues are earmarked for transportation, federal and state appropriations for some programs are determined by formula, and the magnitude of program budgets generally changes by small increments. This is good for transportation planning in that some basis is provided for future resource projection, but bad in that the magnitude of the total transportation expenditure and its allocation is difficult to alter. A statewide plan will appropriately contain recommendations for the level of funding both in total and by major program area because funding provides the necessary guidelines to subsequent system and project planning.

Transportation Needs and Plans

A distinction must be made between plans and needs. Transportation needs are determined typically by setting "tolerable" standards, generally physical and geometric; comparing conditions on the existing system with these standards; and estimating the improvements needed to bring deficient segments of the system up to standards and the costs (often "design" standards set above the tolerable standards). Needs are not

usually constrained by funding, nor are environmental, social, and economic factors explicitly included. Since benefits achieved are not explicitly estimated for comparison with costs, there is no way to assess the desirability of alternative standards other than by their cost.

System planning has a broader framework; it evaluates the cost of alternative system solutions against the estimated value of transportation benefits and in some cases other goals as well. Such plans are not usually constrained by available funding, however. A plan to invest up to the desirable rate of return in every transportation problem area may require more in total than is available. The 1972 National Transportation Study showed rapid transit and highway system plans for most urban areas far in excess of any reasonable anticipated funding. These plans are more properly called "needs" also.

Such needs planning is perhaps useful as a first step in an iterative process in justifying and supporting budgets and in funding requests. But a problem may arise for subsequent transportation planning and programming if there is a continued discrepancy. The 1972 National Transportation Study found in total and in most states a large discrepancy between the needs based on current planning and standards and anticipated resources for transportation.

The discrepancy between plans and resources is usually dealt with by the selection of the highest priority or payoff projects each year. The result after several years may be an inconsistently developed system, some elements improved to high standards and improvement to others postponed beyond the planning period. A system half overdeveloped and half underdeveloped is scarcely the wisest expenditure of public funds.

Urgently needed, as soon as a discrepancy is noted, is a serious reconsideration of current standards and plans to make them consistent with future transportation resources. Future transportation resources are not necessarily projections of current revenues, but rather decisions by policy-makers based on service objectives, performance standards, and their view of financial capabilities. Subsequent system and project planning can then be conducted with confidence that the products are achievable. Rigidity of physical and service standards, both federally mandated standards and commonly accepted engineering standards, may be an impediment.

Of particular interest are service standards proposed as a matter of social concern: For example, mobility for the handicapped is an accepted goal of transportation plans; economic development for depressed regions of the nation is also an accepted goal. Usually these goals are met either by allocating a total fund without explicit standards or by setting explicit standards without the total cost being known. In either case, analysis of the standards set, their cost of application, and their effectiveness would greatly improve decision-making.

In many cases, there are alternatives to the provision of transportation to meet these same social needs. Job training and tax relief are viable alternatives to transportation improvements for area economic development, and bringing services to clients by relocation or mobile service centers is an alternative to individual transportation service. Without a careful analysis of the alternatives, including those outside of transportation, there is a potential for waste of resources. Unfortunately there is little knowledge of the effectiveness of investment in transportation or, for that matter, of many of the alternatives to it.

Funding Arrangements

Trust fund financing has been the subject of a great deal of controversy and discussion in the past 2 decades with respect to transportation. The establishment of the Highway Trust Fund in 1956 to provide continuing funding for the Interstate highway program has drawn a great deal of criticism as well as praise from both opponents and proponents of highway construction. The debate has intensified in recent years as the Interstate system nears completion, and the use of the Highway Trust Fund revenues for nonhighway purposes is being suggested.

There is no generally accepted theoretical basis for trust fund financing. In fact, the establishment of a trust fund generally violates pure economic and political theory.

Although there is a general consensus that economic theory requires users to pay the full costs of services in the long run, the theory does not extend to the point of applying these user revenues back to the system that produced them. Economists only recently have been concerned about the economics of public expenditures. Even now, however, economists feel that economic analysis of the efficient allocation of resources can only be an input into the political decision-making process for public expenditure decisions. They feel that the political process should not be artificially constrained by trust funds.

The debate for and against trust funds generally centers around 8 major characteristics of public expenditures.

1. Continuity of funding. Some public expenditures extend over a long period of time or require a long planning and development period and thereby a long-range commitment of funds. Other programs are short-range in nature, and funding decisions can be made on a regular (annual) basis.

2. Political and budgetary review. Changing social priorities or fiscal situations call for the ability of changing funding programs to keep up with these changes. A key responsibility of the political decision-making process is to be able to sense these changes and to assign priorities to those programs that will do the greatest public good. Of course, the discussion under this characteristic assumes a highly capable decision-making process whose sole intent is serving the public good.

3. Impact on other governmental programs. Financing at a higher level of government has strong implications on the financing of programs by lower levels of government. The prime example of this is in the highway program where the Interstate highway program developed at the federal level has had a strong impact on the financing of other highways. Where state funds can be applied in a 90-10 ratio for Interstate highways and a 50-50 ratio for other highways, the construction of non-Interstate highways has lagged far behind the Interstate program for the past 10 to 15 years.

4. Full-cost recognition. Economic theory requires that the full cost of providing services be recognized and charged to the users unless there are some compelling social objectives that require other funding strategies. For example, in transportation the objective of maximizing the use of public transportation for social purposes such as reducing congestion, minimizing pollution, or minimizing noise might require that public transportation be priced below its full cost.

5. Supportive administrative apparatus. Proposed financing mechanisms must have the proper devices for administering the funds in a manner that is consistent with the objectives of the financing program.

6. Equity. Equity characteristics are concerned with the notion of consumer sovereignty, total expenditures, fair-share payments, distribution of direct and indirect benefits and costs, and general welfare criteria.

7. Jurisdictional responsibility. The current disparate pattern of the jurisdiction among national, state, county, and city governments with their overlapping network of functions raises the question of the optimum pattern of jurisdictional responsibility. The establishment of institutional arrangements with appropriate functions, sizes, and incentives is a basic step in implementing social public policy.

8. Funding arrangements. It should be understood that funding arrangements are a major type of "carrot" or incentive influencing the actions of other jurisdictions. The degree of flexibility granted, however, is the degree of freedom to ignore those purposes and policies intended by those providing the funds. It may be, however, that given the condition of state governments, trust funds might be devised that build into the funding mechanism some provisions that would minimize the objections to this type of arrangement. Alternative arrangements for a state transportation fund include the following:

a. Modal trust funds. One alternative funding mechanism that has been proposed in the past is the establishment of modal trust funds. Although this approach has some merit to those who advocate the use of user revenues to be put directly back to the facilities that produce them, it eliminates the flexibility of funding from the state execu-

tive and legislative level. An additional problem that has been recognized at the national level is that, when transit trust funds have been proposed in the past, there were no readily apparent sources of user funds that could be directly dedicated for transit purposes. Placing user taxes on an industry that already has a huge, rapidly growing deficit is extremely difficult. Highway and aviation trust funds appear to have the ability to be self-sustaining. An additional problem is that the concept of a mode is an abstraction. For example, the provision of peripheral parking lots for park-and-ride service is both a highway and a transit facility. Car pooling, dual-mode vehicles, and containerization of freight movement also make detailed determination of modal characteristics extremely difficult.

b. Funds by function. Functional trust funds can be envisioned at 2 levels. At the highest level of aggregation, a functional trust fund might be similar to the President's proposal for restructuring federal government according to function, for example the function of community development or the function of economic affairs. The primary objective, then, for each function is to encourage that function, and the allocation of funds within subprograms is responsive to current issues and long-term goals. A second functional fund structure involves only transportation programs, and functional identification is of 3 major program types: urban passenger programs, intercity passenger programs, and freight programs.

c. State transportation fund. Under this fund, all transportation revenues go into the fund, and all expenditures are paid out of this fund. This setup is similar to the Maryland transportation fund. However, there are many problems inherent in this type of funding mechanism. For one, there are both public and private transportation providers. Therefore, channelization of funds into and out of this trust fund for much of private enterprise would require separate mechanisms. The assignment of resources and responsibilities among the different levels of government would be an extremely difficult situation. Finally, the notion of cross subsidies would be inherent in any such transportation trust fund, for most of the revenues would come from highway and aviation sources and many of the expenditures would be for other programs.

d. Partial state transportation fund. Only the state's share of costs and revenues is involved in this funding mechanism. Here the primary problem is the determination of what the state interest is in transportation, what share of the costs is state responsibility, what revenues are for state use, and what revenues should be turned back to communities.

e. Combination state fund and regional fund. This funding concept combines the previous 2 concepts, the state transportation trust fund and the partial state fund, into a state fund to be used for state purposes and a series of regional funds to be used for those types of projects that have only regional or local significance. The problems inherent in this approach are the problems of intergovernmental programming coordination and the proper allocation of responsibilities and resources among the different levels of government. The degree of state control over the expenditures of the regional funds becomes a primary consideration as does the state authority to shift the funds collected in one region to another region for state purposes.

CHARGING FOR TRANSPORTATION

The various means for collecting and raising funds for public investments in transportation facilities and services are the product of historic evolution rather than of comprehensive consideration. A state department of transportation will be concerned with policies on charging for transportation because the amount and method of collecting money affect the demand for, and use of, transportation facilities and services; and the method and amount of revenues collected set the resources available for transportation, especially for those modes receiving all or part of their costs from fixed or user charges.

Consequently, proposals for charging and pricing policies are frequently suggested as ways to alleviate transportation problems to meet transportation goals. The general goal—equitable distribution of costs and benefits—may be found among the planning goal

pantheon, but takes on most significance in the assessment of policies for transportation charging.

From this perspective, several policy questions typically proposed can be examined: free bus service, greater or lesser use of tolls on facilities, and "raiding" highway trust funds for transit use.

In each case, a policy analysis would be undertaken to ascertain what the demand and usage impact of various modes is, which people or areas are being subsidized and whether they are the ones to whom we wish to transfer public resources, and what the proper geographic or user community or interest is over which costs should be spread, considering external social costs and benefits.

The present hodgepodge of transportation charging policies involves a varying mixture of tolls, gas and tire taxes, fees and special licenses, fares and commodity rates, general income, property, and sales taxes to support public costs of transportation systems. In some modes and in some communities, public facilities are provided for privately operated vehicles; on the other hand, Amtrak provides public service on nationally owned and tax-paying facilities. The national (and New York State) waterways systems are probably unique in making no charge for the use of facilities.

There is a continual debate as to whether user charges fully support one or another mode; the questions are difficult to answer because of varying bases of estimating and allocating costs. Our object here is not to settle or even pursue this issue, but rather to consider the need for, or value of, attempting to reach a balance of charges and costs.

From a pure economic viewpoint, users should be charged for the actual costs of facilities and services used. Transportation uses resources that can be applied to other needs and desires of society. Pricing transportation too low will encourage its wasteful use—the use of the wrong mode or simply too much total travel. Pricing transportation too high will again encourage the use of the inappropriate mode in terms of social cost or inhibit the use of transportation where it, rather than other uses, would be a valid and efficient employment of resources. The economic and social development of a state or community can be impeded thereby. Indirect benefactors should be charged only to the degree that costs are or can be passed on by users.

Economists, however, recognize the ability and the responsibility of government, unlike private enterprise, to modify this theoretical balance in the interest of broader concerns such as (a) externality of costs and benefits, (b) equitable transfers of resources among the population, and (c) ease and economy of administration and collection.

A direct charge for the facility or service cannot or would not reflect external costs or benefits. The use or construction of highways has social and environmental costs—air pollution and community disruption—that are not normally met by those who impose such costs. In such cases, it is quite appropriate to increase the user charge over that required to build the facility alone in order to reflect these costs. Ideally, the added revenues can be used for fair compensation if a means of such compensation can be found. At the same time, such a policy decreases the demand for such facilities to more appropriate levels.

An extension of the same concept is justification of investment in public transit on the basis of its external benefits—a reduction in automobile congestion and attendant costs attributable to diversion of some automobile travel. This is counted in a benefit-cost relation and is a proper charge to the automobile user. At the extreme, the preservation of transit is a legitimate cost to be put on automobile drivers if it can be demonstrated that the abandonment of transit would increase their congestion and other costs.

The costs of serving certain segments of the population or areas of the community or state may far exceed typical unit costs, but, as a matter of social justice or equality of opportunity, they are often accepted generally. Transportation for the handicapped and aged is now recognized as a public responsibility. The need for economic viability of depressed regions is also seen as an acceptable social goal whose costs should be borne by the public. These costs are more properly put on the entire community rather than a particular segment.

Sometimes charging true costs is impossible because of the nature of the transportation and the difficulty of identifying users. For the use of many transportation facilities and services, one cannot buy a ticket or pay a toll; the costs of attempting to do so would be impractical.

Frequently, the cost of service varies by time of day, by route, or by subsystem. However, it seems both necessary and convenient to charge a fixed fare or rate. To varying degrees, private enterprise prices its products in this fashion, and such pricing is accepted.

As a result of these policies, cross subsidies are prevalent in transportation. Cross subsidies are transfers between users by inadequate charges on some and excess charges to others. The user who pays more than he should is subsidizing the other, even though the total revenue may balance the costs on a systemwide basis.

Cross subsidization and regulated private transportation has received much study. Since it is under public regulation, it is possible for political and social pressures to favor certain regions, products, lengths of trip, and users. This is not uncommon in the complex set of rates and tariffs. Other cases of cross subsidization arise when unit costs change significantly because of technological and volume changes, but the price structure does not or cannot respond so rapidly. This is acknowledged policy of regulatory agencies: Stronger and more profitable lines and routes are coupled with weaker or losing lines and routes. The policy is possible in cases where a true monopoly or cartel exists. The attempt to continue such a policy where a monopoly no longer exists can be disastrous, as the nation's railroads have found.

(The wisdom of continued cross subsidies in those areas of public service where monopoly does exist can be questioned. Constant charges for electric and telephone service, for mail, and for other public services to dispersed users for whom revenues do not meet costs encourage a pattern of metropolitan sprawl as much as does "free" transportation.)

In the case of highways, the assertion that user charges support highway costs is usually made or challenged on a national or statewide basis. It is rarely considered on a substate or subregional basis. But it can be asserted that the fuel and user taxes obtained from or assigned to many roads contribute revenue for the construction of other roads that may not return their costs. Revenue raised per automobile registration, per operator's license, and per gallon of fuel consumed is not directly related to the use or cost of particular facilities. Since the basic capacity of many highways is sufficient for much of the day, the cost of supplying additional capacity by widening or using parallel facilities to relieve peak-hour congestion should logically be borne by peak-hour users for whom the extra capacity is needed. A constant charge per gallon is an undercharge to these users and encourages an overuse of roads at the peak hour when transit in many cases is a real competitor.

The perverseness of present policy can also be seen in the policy of some toll bridge and tunnel authorities and rail operators in offering discounts to quantity users. The minimum usage is set so as to give advantage primarily to the commuter, the user for whom the most costly peak-hour capacity must be provided.

It is also now proposed that rationing of scarce resources by increased tolls and charges be used to depress demand or to divert portions to public transportation. This is not illogical, although ease and cost of administration and the potential for its enforcement or avoidance must be considered.

Parking policies are another manifestation of cross subsidization. Increasingly, parking is provided by employers, retailers, institutions, and other developers as a matter of course. When charges are made, they are often a fraction of the true cost of construction and maintenance, and the remainder is absorbed as a business or public expense.

The transit rider is rarely offered a similar subsidy. The automobile driver, with high mobility, is free to choose, but the transit rider is "captive" to the transit system and, therefore, bears the full cost of the trip (other than that which general subsidies provide) as well as the costs of the automobile driver's parking, inasmuch as such costs are reflected in the price of goods and services purchased or used.

Given the income characteristics of transit riders, public and private parking sup-

pliers act so as to transfer from the less affluent to the well-to-do. This is hardly in line with general social goals. But charging the true costs of parking would probably disadvantage downtown or central city interests, which are in a poor position to discourage the shopper or employer. The regulation of private company or establishment parking is a new idea, and its acceptability is not yet tested.

The extensive public waterways improvement program has already been noted as an area of subsidy. The report of the National Water Commission recognized the unreasonableness of the free provision of costly waterway improvements to users and its detrimental effect on competing carriers—especially railroads. Many public ports are subsidized by local governments to achieve assumed economic benefits.

Discussion of Resource Paper

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The main problem in discussing transportation policy planning is that the word "policy" signifies different things to different people. The dictionary definitions of the word are far too general to give it real management sense.

To exemplify, consider 2 places on a map. One represents the place we want to get to, the other represents the place where we are. Now, some people say we can have a policy that we are going to try to get to the other place. Thus, the President enunciates a policy to make the nation self-sufficient in energy production within 10 years or a policy to revitalize railroads and improve the quality of urban transportation. These policies are very much like goals or objectives. In a different manner, some people view policies as a step along the way—a policy to underwrite transit through subsidy grants. Many people have not thought to differentiate between these 2 kinds of policy, and perhaps that is not important.

What is important is the way policy or policies affect us. In fact, policy constitutes the basic framework under which we try to carry out the responsibilities entrusted to us. We are, therefore, concerned as to whether policies are good or poor.

Do we have any influence on whether policies are good or bad? At the state level, policies are made largely by the governor and the legislature; at the national level, by the President and the Congress. How do they derive them? In most cases, policies are recommended by some special advisors employed by them, perhaps consultants; the state transportation agency, or some other state agency or office. Federal agencies that recommend policies to the President and Congress tend to be influenced by what is being done by state and local agencies. State and local transportation agencies, therefore, should try to create—through recommendations—the framework of policy they want to govern their operations.

What is a good policy? Basically, good policy is needed policy. First, we need policy to keep our activities directed toward the goals and objectives the governor and legislature want pursued. Second, we need policy to tell us what the governor and legislature want from us. Third, we need policy to establish courses of action—program action and management action—that we should take in the pursuit of objectives.

Good policy is also worthwhile. We want to get to the other place on the map, and it is worthwhile to get there. That is policy number one. We do not know exactly where the place is, but we think it's northeast. So we decide to take off in a northeasterly direction. That is policy number 2. We have no idea how far it is, but we know we will need a certain amount of money each day and arrange to have that sent. That is policy number 3. We discover the place we are trying to get to is really due north, and, even though we did not get there, we are at least closer than we were before.

How many government policies are formulated in just about that way? If judgment is reasonably good, we will be closer than we were. If judgment is bad, we have wasted