

Discussion of Resource Paper

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Pecknold has written an extremely thorough, comprehensive, and thoughtful paper on the subject of methodology for statewide planning of passenger transportation systems. The paper identifies the changing environment and evolving set of issues with which individuals and agencies responsible for the planning and development of transportation service and facilities at the state level must contend, summarizes the present status of planning and programming methodology as it is applied by individual states, and recommends how statewide planning and programming methodology must evolve if it is to respond to the rapidly emerging demands cited. The recommended research projects include time and cost estimates and priorities.

There are several major themes in this paper that I find to be particularly noteworthy and should like to discuss.

1. Pecknold recognizes that current evolving statewide methodology has and will continue to have a substantial basis in the methods and techniques developed from the urban transportation planning (UTP) studies. At the same time, he warns that care must be taken in the future if this cross fertilization is to remain profitable. Mistakes and failures accompanying the UTP processes must be exploited, just as have their successes. On the other hand, the issues and relations involved in planning and programming at the state level may severely diminish their appropriateness and may not be directly amenable to the techniques and processes that have succeeded at the urban level.
2. The author also proposes that the evolving statewide methodology be flexible, open, and responsive to a wide range of issues and demands, many of which are unforeseen at this time. Furthermore, he highlights the historical absence of a strong and effective linkage between the transportation planning function and project programming. This deficiency, by the way, is not only symptomatic of statewide planning, but has plagued most urban transportation programs.
3. Pecknold concentrates on the requirements for better methods of predicting travel demand on a statewide basis as the primary target for improved methodology, although he recognizes other areas in which planning methodology is deficient.

With respect to the first point, the problems cited by the author regarding existing methodology as well as his recommendations for improvement maintain a distinct bias toward a planning process that is overwhelmingly directed at the evaluation of system investment alternatives, of both a short- and long-term nature, albeit in a manner that is increasingly responsive to other issues such as environmental impacts and citizen participation.

Clearly capital investment planning and programming will and should continue as a major focus of the planning process; however, it is evident that transportation agencies, at all governmental levels, will be competing with increasing intensity for capital resources in the future and solutions will be required that make more efficient use of existing transportation infrastructure. The paper does not devote adequate attention to the need for analytic methodology with which low-capital planning alternatives can be examined.

The UTP experience, which has heavily influenced Pecknold's presentation, is also, I believe, responsible for the exclusively public-sector orientation of his recommendations. State transportation planning and programming interact either directly or indirectly with the operations and viability of privately supplied transportation service. This requires explicit organizational and policy considerations; I believe there are also methodological implications as well. The paper also does not address the question of incorporating transportation regulatory responsibility into the set of actions and options that should be considered in the development of statewide transportation plans. In many states, this function is not within the purview of the transportation planning and development agency, although it is in some states. In both instances, a

thorough transportation planning process must account for the potential use of regulatory reform or modification as a key element of the overall state planning strategy. How this can and should be incorporated is an area deserving future research and methodological development.

I support Pecknold's suggestion that the planning process evolve such that a variety of tools become available for examining a wide variety of issues at different spatial and temporal scales. I would extend this notion and suggest that the basic methodology that supports this may also have to cover a wide structural range. For example, the traditional network simulation type of analysis may be perfectly appropriate for corridor or short-term planning but not for long-term multimodal systems in which specific routes or projects are not or should not be the primary issue.

There are classes of models, which have attracted attention and which have been successfully applied, that rely on aggregated relations between transportation system supply and demand. Models of this type could prove of great value for examining resource allocation alternatives at the state or regional level where the question is not what specific routes or corridors should be developed and with what priority but how much increase in transportation supply will be required in the state or subregion during the next 10- to 20-year period if transportation service is to be maintained at approximately existing levels or improved to some specified level. Whether we call them sketch-planning or macroanalytic models, they could fill a very important place in the total supply of available methodology. An added attraction of such models is that they are relatively quick and inexpensive to operate so that a large number of alternatives can be examined. A program of research and development in this area should be identified and given a high priority.

As stated earlier, the author concentrates heavily on the requirements for developing better travel demand models and, more precisely, models that are of the disaggregated, behavioral variety. Substantial research activity, supported by a great deal of professional interest in travel demand models of this class, has recently been initiated but deals primarily with travel in urban areas. The positive attributes of this type of model are relatively well known by now and are effectively presented by Pecknold. I am a staunch supporter of continued development of better behavioral modeling techniques and agree in principle with the author's conclusion that there must be expanded research in the development of this class of model for application to statewide planning problems. My only disagreement with the paper is one of emphasis. Although the prospects for payoff with behavioral models are great, the fact remains that they have not yet proved themselves in an operational context. That is, their advantages over existing statistical techniques remain to be demonstrated in a conclusive way. Furthermore, it is not obvious that they will prove to be as advantageous in regional or statewide planning as they appear to be in urban planning. On the other hand, such models have distinct advantages over traditional techniques, not the least of which is their ability to explore low-capital or operational alternatives as well as service improvements that result from major capital investments.

In addition to the need for better travel demand tools, there are major needs for methodological improvement in a number of complementary areas. Few tools are available that treat the supply of both urban and intercity transportation facilities. Rational decisions with respect to investment in transportation facilities or operational and pricing options cannot be expected if the planner or decision-maker cannot relate the effects of changes in system supply or operation to the changes in transportation performance and service. Furthermore, sound recommendations regarding investment and operating options cannot be made unless the analyst and planner can estimate their associated costs and benefits. Supply models that relate the costs associated with attaining different levels of performance change are therefore essential and should be addressed in future research efforts. In addition, much more attention has to be given to the development of transportation performance measures that relate to demand decisions and that at the same time can be used by agencies to measure the changes in transportation service over time and the effectiveness of specific programs.

Pecknold makes a strong case for improved methodology for measuring the distributional characteristics of transportation improvements. However, I would argue that

the benefits of improved models of this nature will be mitigated if concurrent advances are not made in evaluation methodology by which the full range of benefits and costs, quantitative and nonquantitative, associated with particular alternatives can be fully displayed for the use of decision-makers and the public in making trade-offs and choices. Again, methodology has been developed primarily in the urban transportation area and may not be adequate for the scale and range of impacts involved in planning statewide systems or subsystems.

Three additional research areas were either only briefly touched on in the resource paper or not examined at all.

1. Given the changing climate with respect to environmental impacts and the growing interest of federal, state, and local government in better control of land development and resource management, I believe more emphasis should be placed on research directed at methodology that permits better estimates of the influence of transportation improvements on the nature and location of economic activity and the role that transportation planning and programming can have in supporting comprehensive and economic planning for the state.

2. Some research is needed in the area of normative planning and modeling, that is, the development of methodology that accepts as input a desired or planned configuration of land and activity arrangement and produces as output the nature and sequence of a transportation improvement program that most efficiently supports that end state. Progress on these kinds of models has not been overwhelming in the past. However, changing attitudes on behalf of government and the public make their potential utility of growing value and interest.

3. Better fiscal and financial planning methodology is needed. It is clear that grandiose long-term investment plans developed without any thought concerning how they will be paid for are of rapidly declining interest at all governmental levels. Planners and decision-makers must have the tools with which to make relatively accurate assessments of the feasibility and impact of alternative financing mechanisms. Such tools must estimate not only the likely yield of such alternatives but the distributional impacts on the population and the effect upon demand.

I cannot conclude my remarks without strongly endorsing Pecknold's discussion of the continuing statewide planning process and in particular the interdependence between long-term system planning and time-staged project planning. Although I recognize that the proposed scheme is mostly conceptual at this point, I believe it holds the prospects for some very exciting and fruitful methodological development. The paper presents a comprehensive assessment of where we are today in terms of statewide transportation planning and programming methodology and where we ought to be investing future research funds.

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Two major points in Pecknold's excellent resource paper should receive additional emphasis: the type of methodology to be used to consider the question of environmental quality and the concept of equity of investments in transportation.

The coverage was extremely good of those techniques being tried in the states that have a formal program of statewide planning. But what is being done in the less organized states? Each state is going about the job of assigning priorities, building projects, and dividing transportation funds among regions and types of projects that fit into their legislative mandates. How are all these decisions arrived at? How are