

Four evening seminars met concurrently during the conference, and reports by the chairmen follow.

The Planning Seminar, chaired by Wegmann and Shuldiner, addressed the question, What should or can be done in the area of planning to aid in the solution of problems in public transportation?

The Research Seminar, chaired by Hoel and Schnell, addressed the questions, What is the role of research in aiding in the solution of problems in public transportation? What are some of the high-priority research areas that need attention? Who

should perform the research?

The Education and Training Seminar, chaired by Grecco and Satterly, addressed the question, What can be done in the field of education to stimulate and challenge individuals to enter the field of public transportation as a career?

The Legislation Seminar, chaired by Brand and Haines, addressed the question, What should or can be done in the legislative area (local, state, and federal) to aid in the solution of problems in public transportation?

PLANNING SEMINAR

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The Planning Seminar focused, as a point of departure, on the different requirements that long-range and short-range transportation planning imposes on the planning process. Long-range transportation planning was characterized by its comprehensiveness, particularly with respect to modal considerations, and by its concern for the relation of large-scale transportation investment decisions to a broad array of social, environmental, and urban development goals. Thus, long-range planning should provide guidance to short-range planning and associated programming, design, and implementation decisions.

By its nature, short-range transit planning must deal with rather immediate and practical problems such as cash flows and investment priorities, routing and scheduling of vehicles, and allocation of manpower—issues on which long-range planning is scrupulously silent. In general, neither the data nor the techniques are available to provide,

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in a timely and sufficiently detailed fashion, optimal or even demonstrably good solutions to these and the many other pressing problems faced by transit planners and operators. Those procedures that are used are poorly documented; consequently, the orderly development and dissemination of improved techniques are a slow and uncertain process.

STATEMENT OF PROBLEMS

The following specific problem areas were identified as being particularly germane to transit system planning:

1. Problems common to both long- and short-range transit system planning
 - a. Lack of responsiveness of planners to and involvement in long-range policy-making, including proposals for institutional change
 - b. General absence of qualified planning personnel in small- to medium-sized urban areas
 - c. General inability to predict the land use and developmental impact that would result from specific transportation decisions and lack of planning techniques capable of permitting the design of transportation systems that would tend to lead to the realization of desired urban futures
2. Issues specifically related to short-range transit system planning
 - a. Transit system design procedures, such as sketch-planning techniques (The status of transit planning is said to be somewhat akin to the status of the urban transportation planning process in the era when vehicle counts were the primary basis for planning and designing highway networks.)
 - b. Standards and criteria for transit system planning and operations, including those relating to economic characteristics of system operations, mobility, congestion, and overall system configuration, and suitable definitions and measurements of required criteria as well as the establishment of standards
 - c. Coordination with other elements of the urban transportation planning and design process such as street and highway improvement programs, TOPICS, and parking policies
 - d. Specific techniques to conduct transit system planning, design routes, schedule vehicles, and cut runs and information on transit demand from origin-destination data disaggregated to the level required to refine alternative designs

RECOMMENDATIONS

Based on the previously defined problems, the seminar recommended the following actions.

Criteria for Transit System Planning

A major effort should be undertaken to update the National Committee on Urban Transportation (NCUT) manuals first published in the 1950s. Existing transit system criteria and standards, although out of date, are still extremely useful to small communities where computers and systems planning capabilities are generally not available. The revised edition should be of a broader scope than the present edition, which generally deals mainly with economic criteria and then only from the standpoint of the transit operator. These criteria should be expanded to include social concerns, levels-of-service definitions and standards, and system continuity concepts. For example, development of level-of-service criteria comparable to the level-of-service concepts for highways, as defined in the Highway Capacity Manual, could help to

1. Determine geographic variations in transit service and convey this information along with statements of needs to policy boards;
2. Allocate resources in response to needs defined in terms of level of service so that it will be possible to define the cost required to implement a given level of service; and
3. Refine procedures for transit system financial planning to assist in assessing return on investment as a function of route structure, work output, or level of service.

Level-of-service standards could provide for consistent cost comparisons among various sectors of the city or different cities as a means of determining their relative need for financial assistance.

The seminar suggested that the NCUT manuals be updated by bringing together all interested parties and allowing them to exchange information. It is recommended that the Highway Research Board undertake the leadership role in this effort and be responsible for identifying interested persons and organizations, identifying sources of financial support from organizations such as UMTA and FHWA, and providing staff and organizational support. A steering committee should be established as soon as possible to formulate strategy and establish the timing of subsequent implementation steps.

Transit System Planning and Operations Workshop

Since many of the current transit system sketch-planning techniques may be classed as more art than science, it is recommended that a workshop be held to assess the state of the art and to suggest ways in which improvements to these techniques may be brought about. For example, it would be desirable to bring together experienced individuals responsible for designing and testing the feasibility of extending bus routes to determine whether their experience could be codified in a set of guidelines that in turn could be further refined to allow development of computerized routines and operations research techniques. In general, it is recommended that lines of communication be established between planners and consultants working with highly sophisticated techniques and transit operators utilizing more pragmatic approaches. Based on common data and situations, a comparison of the procedures used would be of value to determine whether significant differences occurred in the resulting bus routes. Only through a better comparison of procedures can improved sketch-planning techniques evolve through the marriage of computer techniques with on-line operating experience. It is suggested that an organization such as UMTA take on the responsibility for organizing these workshops.

Better Data

Closely related to the improvement of sketch-planning techniques for transit system planning is the need for better data, particularly origin-destination data at the proper level of disaggregation in sufficient amounts and at reasonable cost. Currently, adequate data on transit ridership are generally not available; most of the data collected represent point counts rather than passenger access and egress patterns or actual trip origins and destinations.

It is recommended that alternative techniques be explored for the collection of origin-destination data suitable for transit planning. One procedure recommended for further study was the use of surveys at work sites to gain information on journey-to-work trips more expeditiously than is now possible in the conventional home interview survey. In turn, techniques must be established to facilitate the storage and easy retrieval and analysis of the resulting data.

Dissemination of Information

In general, a need exists to improve the dissemination of the results of research and planning studies and to present this information in a form that is easily accessible and understandable by professionals on a broad level.

RESEARCH SEMINAR

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D.C.

Although there exists today an overriding concern with current financial problems within the transit industry, the need for research is clearly evident. For example, a major deficiency of the railroad industry was a failure to engage in basic research. Instead, there was a heavy emphasis on immediate problems, and as a result fundamental technological studies such as wheel-rail interface analysis and tunnel ventilation are just beginning to be completed in this country. Accordingly, the viewpoint of the group was that, in addition to the crisis atmosphere surrounding public transit today with its attendant fiscal problems, a concerted research effort to determine the role and capabilities of various urban transportation alternatives within the next decades should be undertaken.

A balance between technological research and institutional factors should be considered. Although technological research into new systems of transportation is an important part of the continued activities in the urban transit area, the institutional, political, social, and economic factors have the largest impact on the ability to solve present and future transportation problems. The issues can be exemplified by determining, for example, what the effect will be of the elimination of a particular type of service such as the effect that would occur when there is a strike. The focus on the consumer—his needs, demands, and preferences—and the potential problems that the consumer has in improving his mobility are aspects of transit research.

The dissemination of the results of research that already exists, together with a better interchange of information, is an important part of research activity. Current results, if known and used, could result in the better application of present technologies and systems and an earlier solution to transit problems. The gap between practice and research must be bridged so that the researcher understands the needs of the practitioner and the practitioner understands the techniques, approaches, methodologies, and results that can be expected from research. There is a great deal more that can be done with what we now know and what we already have if this information can be better harnessed.

The potential of the taxi industry should not be overlooked. The taxi should be viewed as a transit mode. Better integration with other transit facilities as well as innovations in security and surveillance should be considered as research areas.

Many strategies must be defined with respect to the application of different transit technologies. For example, the solutions that are appropriate in small cities are different from those in medium cities, and order of magnitude results should be known that can be implemented easily and at low cost. How do the various subsystems fit together? In what way can systems design be better utilized to improve performance? What are the relative roles of various technologies, and where are they best applicable?

Additional research needs concern the impact of labor in urban transportation and its effect on new systems development, for example, demand-responsive systems. Motivation and behavior, together with means of improving productivity and the participation