

measures of change. For example, is the higher structuring of land use toward that of New York City, as compared to Los Angeles, a good or a bad thing?

In creating a data bank one should consider that the BART impact studies should last over a period of 10 to 20 years. Present emphasis should be on the data to be collected, and some of the questions of measurement and interpretation can be deferred until the impact of the BART system can be measured in 5 to 10 years. The priority now is to capture the data from which later impacts of the BART system may be assessed.

## PANEL 2: IMPACTS ON TRAVEL VOLUMES AND TRAFFIC FLOW CHARACTERISTICS BY ALL MODES

Norman Kennedy, chairman

Following the recommendation in Zettel's paper, the panel directed its attention to considerations of traffic volumes and traffic flows as the initial starting point for the impact research. The panel thought that, because the primary purpose of the BART system is to relieve the traffic congestion problem, the impacts of the BART system must be measured primarily in terms of traffic volumes and traffic flow changes. If there are no significant changes in traffic volume and traffic flow, the BART system will not have a major impact on other transportation modes, land use, or on the economic, social, or environmental characteristics of the region.

The panel divided its considerations into 4 major topic headings: (a) major parts of proposed research, (b) significant items of research, (c) roles in research and action programs, and (d) possible beneficiaries of impact studies.

The panel defined 4 major parts for research: (a) research on methodologies—for example, how to improve home interview techniques, accident data for transit, and coordination of data collection with other agencies; (b) data collection activity and data base structuring; (c) interpretation of data; and (d) evaluation. The panel thought that some of the present survey techniques, though satisfactory, were extremely costly, and better ways were needed to obtain data. For example, the current home interview technique is costly and has a number of deficiencies. Research on how to collect similar data would be worthwhile. One suggestion for collecting data on the journey to work is to use an interview technique at the work site instead of at home.

The panel identified 3 items as being significant for research: (a) transportation consumers; (b) the transportation system; and (c) individual corridors. The research related to transport consumers should consider effects of automobile ownership, trip-making by mode, and trip lengths by mode. The data would most likely be obtained through interviews. Research relating to the transportation system should consider effects of persons making trips and vehicles making trips, system speeds, system accessibility, terminals, system safety, system reliability, system costs including travel costs, and comfort and convenience. Such data probably could be collected through traffic counts, studies, and interviews. Research related to the individual corridors—bridges, gateways, and selected freeways—is in progress and has been for quite some time by a number of agencies. A great deal of data is available from these various sources. Data on traffic flow and traffic volume were collected in the recently completed BATS study. The 1970 Census will reveal information on the journey to work, and presumably data systems initiated by BATS will be continued.

The third major heading—roles in research—was selected as an attempt to define the techniques in getting research in this area started and coordinated. One suggestion was to have a joint committee to coordinate the research and collect the data, perhaps under the auspices of the Regional Transportation Planning Committee. Another suggestion was to divide the responsibilities and have the Regional Transportation Planning Committee undertake research related to the transportation consumer and individual corridors and have universities or other research agencies undertake research relating to the transportation systems.

The panel considered the possible beneficiaries of such impact studies. Among possible beneficiaries are local communities and BARTD for consideration of system extensions; other cities in planning comparable systems; federal, state, and local agencies for funding and transportation policy making; and transportation analysts in evaluating models and prediction techniques and evaluating their accuracy.