

# Current Techniques to Shape the Urban Form

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•IT IS difficult to determine the proper critical approach to a subject as broad as urban form. In this case, however, it would seem best to break it down into the following components: travel patterns, transportation systems, land-use activities, and goals.

## TRAVEL PATTERNS

Planners currently know a great deal about metropolitan travel patterns, factors influencing the number of trips made each day, and the number of trips generated by various land uses. Knowledge of the ways in which these trips are distributed throughout the metropolitan area, when combined with good estimates of land development, enable the planner to forecast traffic quite effectively.

However, a second generation of traffic models is now being developed which requires even more detailed knowledge of travel patterns. In the larger metropolitan areas, for example, it becomes necessary to stratify work trips by income class or by occupation, because new trip generation equations are sensitive to the accessibility of people to the particular activities involved in their trips and to the competition between types of activities. Further, techniques of trip distribution need to consider both the impedance to travel and the spatial arrangement of opportunities. In the case of modal split techniques, the special characteristics of the zones of origin and destination are weighted by the levels of service provided by various modes of travel to those zones.

Many of these improvements are being incorporated, either partially or entirely, in recent studies. They are helpful to regional analysis, but they also point up shortcomings in knowledge at the microscopic level. Still relatively unknown are the travel characteristics of the local hardware store, bakery, or post office; the seasonal, weekly, and hourly fluctuations in their trip generation; and their causes.

In addition, the influence that detailed site planning has, or can have, on trip making has not been firmly established. How much will the provision of pleasant walkways between homes and shops, or between homes and work places, reduce auto driving? How much can increased transit orientation in residential design increase actual transit usage?

Detailed investigation of these areas of concern should certainly produce findings valuable to the planning of areas, whether downtown-renewal or suburban-community, of our cities. Once these plans are set in concrete, there is not much that can be done to change them, and it is of great importance that they be done well, that they reflect the most accurate knowledge of traffic possible, and that they be designed to cope effectively with the traffic demands of the future.

## TRANSPORTATION SYSTEMS

In recent years considerable information has been gained concerning transportation systems. Knowledge of speed-volume relationships is improving and is being used to develop better theories of traffic flow.

However, there is much still to be learned about system operation. Such factors as the effect of travel time or fares on usage are not well enough known, but should be made more clear by the additional application of traffic models.

As in the case of travel patterns, understanding of transportation systems is better on a regional than on a neighborhood level. Techniques are beginning to be developed to apply this understanding to the smaller area, and proper use of these techniques will be necessary to the planning of downtown, urban-renewal, and suburban-community locations.

The present development of cities is making clear the necessity to modify some previous concepts of the urban street system. The concept of radial expressways feeding a downtown loop is yielding to that of a more decentralized system of freeways with concentrated transit service downtown. The planners of Leningrad, USSR, have recognized this change, and are modifying their original loop-radial plans to reflect it. This service of downtown by a generalized grid system of streets, in conjunction with concentrated transit, is also developing in many American cities.

A review of the classic concepts of street systems at the community or neighborhood level has begun. Swedish planners are using extensively, and experimenting with, specialized streets. The success or failure of these streets, which usually have controlled access, will no doubt be reflected in the future street systems of this country.

Transit service is also undergoing intensive review. The concept of special "transit streets" for new residential neighborhoods deserves exploration as a possible means of providing optimum transit service in the suburbs. In downtown areas, special bus services like the Minibuses in Washington, D. C., are being tested and observed for the improvement they may provide in older, more compact areas.

Better urban development in the future will depend greatly on efforts made today to modernize the concept of the transportation system. Research and experimentation to bring about this modernization is taking place in many fields and in many places. It will remain for planners to keep up with the developments and to use them.

#### LAND-USE ACTIVITIES

Although there is considerable existing knowledge in this field, there has not been sufficient explanation of the interrelationship among land-use activities, transportation systems, and travel patterns. As a result, metropolitan growth models reflect only the crudest of these relationships.

Some experimentation with the effects of various land-use alternatives on transportation requirements has begun. It appears to indicate that no particular regional configuration has a greater effect on transportation than any other. Studies on a regional scale in Baltimore-Washington, Hartford, and Minneapolis-St. Paul are the basis of this inference, and thus no conclusion can be drawn for its validity on a neighborhood scale. The importance of the neighborhood, then, requires continued research and experimentation into its specific behavior.

In the general area of new urban forms, American planners are only beginning to experiment. New town development, like that of Reston, Va. and Columbia, Md., although somewhat derivative from British experience, involves much that is new. In Sweden, there is experimentation with town centers built around transit stops. It is to be hoped that these developments will bring some answers to questions of walking, as well as transit and vehicular, patterns. In particular, will the anticipated residential, commercial, and industrial forms of Reston result in the predicted pedestrian patterns? Will the proposed development of activities along the busways of Columbia bring about the expected level of transit usage? Such insight will help form the basis of research that will permit improvement of the national environment.

#### GOALS

Recognition of the goals of metropolitan development is the most complex of the problems which must be faced, and is further aggravated by being only recently recognized as such by planners, and by the fact that it has not been effectively integrated into the planning process.

There are two types of techniques for goal establishment. First, on a regional basis, methods are required to determine accurately the overall goals of the large area in question. On the neighborhood level, techniques are needed that will reflect not only the goals of the locality, but also the effect on the people of the construction of some "goal," like a freeway, through the neighborhood itself.

The interdisciplinary approach to goal establishment used in planning Columbia, Md., has shown the advantages which can result from such an approach to the environment. The desires of educators for a new 4-4-4 school system (four elementary years, four intermediate years, four high school years), along with the contributions of sociologists, led to the development of a new type of neighborhood. It differs from the classic form in that it would consist of two or three hundred homes built around a store, a swimming pool, and a small elementary school. The desire of transit authorities for linearity in these neighborhoods led to the placement of the bus system in its own right-of-way, so that children might move freely and safely around the town. Thus, these features of the new town are the products of varieties of experience, as reflected by the feelings of many specialists and brought together by the planner. It would appear, then, that the crucial procedure is not the consideration of the impact of land use and transportation on each other. It is, rather, the use of all disciplines and all interests to design cities as integral projects. Such integral design demands that local and regional goals for development be consistent with knowledge of all forms of land-use patterns and activities, travel patterns, and transportation systems.

#### CONCLUSION

A look ahead is in order. Better techniques are needed for planning the development of large and small areas: techniques for the New York region and others for the lower tip of Manhattan Island. It appears that, in many ways, planning has over-emphasized the regional configuration, and underemphasized the community, in which most lives are spent. This paradox is apparent in the new developments around Stockholm, Sweden, where the planned nature of the community is less obvious than the consistency of that community with the residents' goals. This is not to say that large-scale planning should not continue. However, "big" planning should not be allowed to overshadow the important "little" efforts, with which most people live out their daily lives.