

2. The transfer of experienced and able highway engineers to the planning survey from other Department units.
3. The wholehearted cooperation of the Public Roads Administration in all of the planning activities the State has undertaken.

URBAN PLANNING PROBLEMS

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Planning an adequate highway transportation network for an urban area is now recognized as the basic task in the solution of the larger problem of planning for the many-sided development of the area as a whole. In view of the successful use of data gathered by the highway planning surveys in reaching vital decisions relative to rural highway planning it is reasonable to suggest that the more complex urban conditions can be dealt with by the methods which the surveys have developed.

The present selection of routes for the national system of interstate highways is an outstanding example of using the highway planning survey data for administrative purposes. The relative importance of these intercity routes was determined on the basis of rural and state-wide scope.

It is true that highway planning survey data for comparing the relative importance of routes in the metropolitan areas is sparse. There is not nearly enough information for use in selecting and designating urban circulatory and distributory routes as recommended by the national Interregional Highway Committee. It appears that the final selection and designation of these supplementary routes will have to wait until the additional data for the urban areas now being collected by the metropolitan traffic studies is available.

The states have gained valuable experience in interpreting and using the rural and state-wide data collected by the highway planning survey. This experience can be studied and applied to the urban planning problem with profit and efficiency. The character and principles of state-wide highway planning and urban highway planning are similar but the circumstances of administration and operation are quite different.

The cities are responsible for comprehensive planning, street maintenance, and street operation. In many instances, however, they do not have an adequate understanding of their

own problem. To a large extent this lack can be remedied by intergovernmental cooperation. Such cooperation needs to be developed.

These conditions exist and they have to be recognized in establishing principles, policies, and procedures for attacking the urban highway planning problem.

In view of limitations imposed by these conditions, this discussion will consider the use of the highway planning survey data in approaching the cities and initiating the urban planning studies. It will deal with the Michigan State Highway Department's background of experience for urban highway planning and with the principles and policies which are guiding its operations in this field.

Urban Highway Planning in the War. The Michigan State Highway Department has always cooperated with the urban communities in the construction and the maintenance of urban state trunklines. Before the war it worked with the cities in relieving specific traffic congestion and instituting alternate routes for trucks and for by-passing traffic. It engaged in widening, reconstructing and resurfacing city streets with the cities sharing in the cost.

In Detroit a special origin-destination traffic survey was made in 1941 for the location and design of a crosstown expressway that had been planned by the department. Although the results of this study are not completely interpreted, they have been used extensively in the location and design of two expressways: one extending across Detroit, and the other located on a principal radial leading to the central business district. The products of this study were used continuously in planning and locating the Detroit Industrial Expressway giving access to the United States Army bomber plant at Willow Run. Highway planning survey data were used in a series of reports that justified the project and convinced the federal agencies governing critical materials that the expressway had to be built for the plant to operate and produce its four-engine bombers on schedule.

These experiences served to introduce the urban highway planning problem in the state highway department. As a result, the department recognized that there is a problem in the cities and that its solution requires a great deal more than the then current street widening and resurfacing programs.

Highway Needs and Finance. Through its use of highway planning survey data for administrative purposes, the department also recognized the need for intergovernmental cooperation in studies of common highway transportation problems. As a result of this recognition the state highway commissioner initiated a

study of highway needs and finances.

At a meeting of the board of directors of the Michigan Good Roads Federation, he explained the problem and suggested that the Federation sponsor a state-wide study of highway transportation including not only the state, but the county and city systems of highways. The Federation appointed a highway study committee which included representatives of state, county, city, and private transportation interests.

The committee has organized and is now in the process of formulating policies and a work program. It has employed an engineer-director who will outline, correlate, and expedite the study. His work will be financed with highway planning survey funds matched with contributions by the principal public and private agencies involved. The committee has accepted the state highway commissioner's offer of staff and technical assistance by the highway planning survey.

In examining the highway planning survey data to be used in the project, two serious deficiencies have been found:

1. There are few basic values for determining either the operating costs of highway transportation or its part in the functioning of Michigan's economy, particularly the automotive industry.

2. There is very little highway planning survey data for use in the urban phases of the study.

The solution of Michigan's total highway problem is urgent and its careful and understanding consideration by the legislature is essential. The immediate objective of the committee is to inform the legislature of the problem in such fashion that it will sponsor a thorough and comprehensive study of the whole subject.

Transition Planning. Since the end of the war the department has expanded the planning and traffic division for better traffic engineering service and for initiation of the highway planning survey in the study of urban planning problems. An urban planning section is one of three sections that have been added to the division.

The data from the 1941 origin-destination traffic survey which demonstrated the need for a crosstown expressway in Detroit are now materializing in the Edsel Ford Expressway and are being used in the location and traffic design of that modern crosstown artery. The Detroit traffic engineering bureau conducted a series of traffic surveys and made a study of the data collected by the various wartime committees concerned with the transportation of workers. The data compiled by the bureau and the department is being used in the traffic design features of both the John C. Lodge and the Edsel Ford expressways.

These data are compiled in tabular-graphic form and are furnished to the design groups for interpretation and use. All local traffic design and structural design plans are reviewed by committees comprised of representatives of the state, county and city who are concerned with administration, planning, and design.

In reviewing the plans the individual members of the committee suggest changes they believe will result in greater economy and efficiency. In this fashion a large number of desirable changes are recognized and authorized.

An important product of the committee work is the broadening viewpoint of its members and the realization that a complete origin-destination traffic survey for the Detroit metropolitan area is needed to complete the planning of these two expressways and integrate them in the future expressway and arterial street system of Detroit. They are becoming convinced that highway planning survey data are needed for urban expressway planning and for efficient progress in the location and design of such arteries.

Some of the members of the committee realize that the comprehensive city plan should be advanced to the stage where the desirable land uses are known and where the expressway and arterial plan can be approved by all interested agencies. Many of the changes of design initiated by differences of opinion can be attributed to the fact that the Detroit city plan lacked the sound factual support of these basic features, such as complete origin-destination data.

In the fall of 1945 a metropolitan area origin-destination traffic survey was conducted in Port Huron, a small but important city at the outlet of Lake Huron on the principal international route to Canada and the New England states. This year a survey has been conducted in three other cities: Kalamazoo, Muskegon, and Lansing. Four more cities are scheduled for similar studies in 1947.

The initiation of the surveys and the progress of the field work have been very satisfactory. The usual difficulties have been encountered in analyzing the results and preparing the tabulations for interpretation. The greatest difficulty is encountered in finding and employing highway engineers and planning technicians qualified by training for this new field of highway planning.

This short experience has developed principles, policies, and procedures that are essential for the use of the data in the study of urban planning problems. They are expected to produce results that will be mutually satisfactory to the city, the state, and the Public Roads Administration.

Principles. The provision of highway transportation road and street facilities, and their maintenance and operation, are government functions. It has long been recognized that the nation and the state have a vital interest in those highways that have a predominately transportation function. In recent years it has been realized that this interest extends over the transportation highways into and through the cities. This recognition is the result of using the state-wide highway planning survey data to identify state and national highway problems. It was found that a large part of highway transport is between the cities; a smaller portion is between the cities and their contributory rural areas for marketing, shopping, social recreation, and the distribution of goods; a small fraction is entirely rural.

It can be presumed that the states are primarily interested in the arterial streets that radiate from the center of the city and extend through suburban and rural areas to similar cities and metropolitan centers. There are undoubtedly other interests for the state highway department in the cities. Highway planning survey data should be collected and used to identify these interests. Parking and terminal facilities are a part of highway transportation. Currently it appears that the study of these two elements should have a high priority in any state highway planning survey program.

A majority of the traffic on the radiating arterial streets is composed of local movements between and among the districts of the city and the outlying population centers that comprise the marketing area. These arterial streets for the most part have been planned and constructed by the cities. The cities maintain them and they direct and control their traffic.

Each urban transportation problem is primarily a local problem that can be solved most satisfactorily by local administrative action with counsel and assistance by the state. Moreover, the magnitude of the urban transportation problem in most cities is so great that the local government needs technical assistance in planning, enabling legislation, and financial aid. The highway transportation arteries in the cities have a state-wide and nation-wide importance.

The approach to the problem will be particularly difficult in those states where there is urban-rural antagonism and where the cities lack confidence in the sincerity of the state administration. The approach in these circumstances requires an intelligent, sound administrative policy. The plan of procedure should be sufficiently flexible to permit changes that will improve intergovernmental relations as the work progresses.

Policy. In the metropolitan areas, comprehensive highway planning is a function of local government. It is an activity that requires public understanding, cooperation, and contribution for success. The highway transportation arteries constitute the framework of the comprehensive city plan and the means for circulation in the city. The state highway departments should contribute their experience and knowledge and all the highway transportation data available for the formulation of the arterial street plan by the city planning agencies. The city planning agency can cooperate with the department in adjusting the arterial street plan for the most efficient and economic service to both local and state highway traffic.

In the city the people depend on their local government for adequate and satisfactory service. They expect their government to secure counsel, guidance and assistance from the state and federal agencies in the solution of problems involving state and national interests. Administrative decisions should be made by local authorities in cooperation with the state in such a way as to assure equal consideration of all the interests involved. Satisfactory results will be a credit to the local authorities, but they also reap the criticism resulting from mistakes. This is an element of the political economy to be given first consideration in the urban highway planning policy.

The support of the public is required to successfully carry on an arterial street plan. The informed public will support the plans when they understand the needs and their interest in highway transportation. The press, the radio, and the local leadership should be kept informed of the results of the work as it progresses.

In Michigan, it is the policy of the state highway department to require city assistance in financing the field work of a metropolitan area origin-destination survey. It is believed that a financial interest, though small, will encourage local responsibility and interest in using the results of the survey in the solution of their problems. The Michigan Highway Planning Bureau analyzes the results, produces the tabulations and makes the interpretations involving state trunkline traffic interests. As this information is produced, it is furnished to the city without charge. The city is free to call on the Highway Planning Bureau to make any machine tabulation of information that they want.

The cities are told that the state highway department is anxious to cooperate in the solution of their urban highway transportation problems in any fashion satisfactory to the city. In the discussion of their problem, the merits of a metropolitan urban area origin-destination survey are explained. The department recommends the survey as a good means for

collecting the information needed for the study. It is explained that the city is free to decide on a survey or attempt a solution with usable existing information. They are told that the state recognizes the necessity for an initial arterial street plan based on existing information. The state is willing to review, mutually adjust, and approve these plans without a survey. The city of Detroit chose the latter method.

Procedures. Michigan cities are becoming interested in the metropolitan area origin-destination studies. They initiate inquiries for information and their local leadership encourages state representatives to come in and explain the surveys to interested groups. In this manner the local government officials become interested in and then anxious for a survey. The uses and benefits of the survey are explained to the local legislative body and they formulate and pass a resolution requesting that a survey be made with financial participation by the city.

The state manages the survey with experienced supervisory personnel and it operates the external stations with experienced crews. Some local group satisfactory to the city administration is advised of the qualification requirements for internal survey interviewers and for office workers, and suggests local women for employment. So far the cities have placed the responsibility for city cooperation with the city engineer or the city planner.

The results of the survey are assembled and coded by temporary employees in the city offices of the survey. When the survey is completed and the coding finished, the files are transferred to the highway planning survey office in Lansing where the tabulating cards are punched and verified. The results of the survey are analyzed from all feasible angles to derive expansion and adjustment factors. These factors are incorporated in the tabulating cards and the prescribed tabulations prepared.

A report, explaining the characteristics found in the analysis, the derivation of the expansion factors, and the formulation of the tables, is written and copies are furnished the city. This report, which includes the tabulations, has a single objective: to inform the persons who will use and interpret the data. It is believed that a thorough understanding of the characteristics, deficiencies, and derivations, is required for intelligent use in making interpretations.

The first phase in using the data involves a series of graphic and tabular analyses. Methods are being designed that will assure sound interpretations that are based solely on data. They should not be influenced by bias or slanted by preconceived opinion. When interpretations are satisfactorily completed, they will be incorporated in a second informative

report for use by city planners, highway planners, and highway engineers

When the state trunkline and arterial street plan have been worked out and approved by the interested agencies, a comprehensive report for public information will be published. In the interim it is likely that specific project informative reports will be required to secure public support for a major improvement.

Conclusion Sound arterial planning is a basic element in any practical city plan. To be sound, an arterial plan must be built on a thorough study and comprehensive understanding of the traffic requirements of the community, its people, and its business. Such factual information can and should be obtained and interpreted by employing the proved methods of the highway planning surveys. In this work the state and urban highway authorities can find a field of common interest where their cooperative efforts will yield results of lasting benefit to both.