

THE ROLE OF PLANNING IN  
HIGHWAY LOCATION:  
INTERSTATE 75 AND TROY, MICHIGAN

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Robert K. Sloane

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## **ABSTRACT**

### **THE ROLE OF PLANNING IN HIGHWAY LOCATION: INTERSTATE 75 AND TROY, MICHIGAN**

by Robert K. Sloane

A case study involving the City of Troy and the Michigan State Highway Department demonstrates the highway planning process and the effect which an Interstate freeway proposal can have upon local planning goals and Highway Department administration. The selection of a freeway route location compatible with local planning objectives has resulted in an alignment which will contribute to the implementation of community and regional goals, economic development and improved local traffic service, in spite of slight adverse distance for long-distance traffic. Costs and benefits have been analyzed and the selected route was rationalized on a basis of advantage-disadvantage relationships to anticipated development.

Investigation of the planning process of Michigan's largest public agency illustrates a usual division of governmental planning activity: (1) delineation of broad goals and objectives by State and Federal legislation; (2) determination of policy derived from analysis and synthesis of these legislative planning directives; (3) organization of

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a detailed planning program designed to implement the policy decisions. Legislation leading to the building of highways is the responsibility of the Federal Government and the State of Michigan, which together provide the finances and personnel to accomplish this goal. Policy planning is the responsibility of the management team of the Highway Department, which derives methodology and deploys personnel for planning. Detailed planning is carried out by subordinate personnel of the Department.

Highway planning policy in Michigan is not well defined, although attempts have been made toward clarification through establishment of procedural methods for implementation of highway objectives. Detailed highway planning procedures are unbalanced. The gathering of traffic information is institutionalized and elaborate, while other planning considerations are relatively neglected. Virtually no forecasting or research is attempted to provide a basis for the future provision of highways. Appropriate pre-planning is often neglected in favor of expediency and management decisions.

The case study points hopefully toward several trends: an increased emphasis on comprehensive planning for highway routes; an acknowledgment of community planning efforts as a basis for State highway development; utilization of highway planning for purposes of economic development and implementation of local objectives. It indicates the need for research leading toward more definitive highway planning objectives for the State, and toward improved planning

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techniques coupled with better methods of administration and implementation of planning concepts. Improvements in inter-personal relationships within the Department are needed to include more individuals in the planning process and to maintain interest and stimulate Departmental loyalty. The philosophy of equating transportation planning with land use planning is gradually changing under the influence of public and Federal Government pressures. The evolution of a new planning era in the Highway Department is under way. When it comes about, a bright future for sophisticated highway planning seems assured.

**THE ROLE OF PLANNING IN HIGHWAY LOCATION:**

**INTERSTATE 75 AND TROY, MICHIGAN**

**By**

**Robert K. Sloane**

**A THESIS**

**Submitted to  
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## PREFACE

The formulation of this thesis has been based on several interrelated and interconnecting factors. Personal inclination, the source of employment, the work involved, and the personnel with whom the author has been associated established a set of circumstances which led, in logical sequence, to involvement and interest in situations and concepts which have been explored. These circumstances have been to the author's advantage in attempting to understand the highway planning process, and to discuss some of its potentialities and current trends.

The principal contributing factor to the basis of this thesis has been employment by the Planning Division of the Michigan State Highway Department. Since August of 1959, this vantage point has afforded a unique opportunity to become intimately acquainted with the highway planning process currently in use. It has additionally provided acquaintances with persons who have been most generous with time and friendly assistance in the completion of research for study of the process. Files have been accessible for assembling case study data. Informative assistance and opinions have been freely and candidly given with regard to the planning operation as now constituted and with recognition of its shortcomings and recommendations for its improvement.

A second contributing factor was the Planning Division work program, the projects of which led to the evolution of a procedural guide and structure for highway planning in Michigan. This guide was developed and published under the charge of another staff member and the author. Although not yet officially adopted as a portion of Division operating procedure, this project involved research that injected a major incentive to study of the planning processes operating within the Michigan State Highway Department. Based on this structural philosophy, two reports followed in relatively rapid succession, and each contributed significantly to this study as individual sequential steps. The first was the Chrysler Freeway study, a highway planning report of major proportions, in which the author's responsibility was supervisory and editorial in nature. The second--a direct outgrowth of the Chrysler study--was a smaller, more technical publication which the author was asked to prepare for presentation in a pending court case. Both of these publications included facets of the case study of highway planning which forms the crux of this thesis. The combination of contributing factors, including personnel listed below, led to further study of the Michigan highway planning process and the socio-political, economic, legal and other factors embodied in it.

#### Acknowledgments

This thesis would not have been possible without the wholehearted cooperation of the Michigan State Highway

Department. In the process of investigation and research leading to the formulation of a topic, the Department provided the opportunity for research to uncover the past correspondence and records concerning the case study of highway planning. Learning the process in actual use was furthered by the position of employment held during the period of writing. Analysis of processes utilized could not have been done without the backing and encouragement of staff members of the Department. Gratitude is extended to Donald Cruise, former Chief Engineer of the Office of Planning, Robert F. VanHoef, Director of the Planning Division, and Robert S. Boatman, Head of the Urban Planning Section, for permission to carry on the research and writing of such a critique. Staff members of the Urban Planning Section deserve special mention for their work on the illustrations adapted for this thesis.

A special word of appreciation is due Dr. Harry A. Doehne, Community Planning Specialist of the Department, for his encouragement and advice in the inspiration and formulation of the topic and thesis.

One of the keystones to the success of a thesis is proper presentation in final form. Miss Ruth Piaszek deserves thanks for tireless help in the accomplishment of this task.

Acknowledgment is extended to George Villican of Villican-Leman Associates who provided much of the background necessary for the case study. His firm also supplied base material for illustrations used herein.

The author reserves grateful acknowledgment for his advisor, Carl Goldschmidt, without whose guidance and suggestions the final form of this thesis would not have been achieved.

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## INTRODUCTION

The multitudinous facets of the planning process apply and relate to so many situations that a comprehensive study of the total land use planning process is virtually impossible. In an effort to comprehend the process as an entity, it is suggested that better understanding could be achieved by studying the procedures involved in the limited sphere of planning involving highways. The fast-moving pace of current highway development telescopes into a relatively short period of time the steps from initial planning to the implementation of plans and thus affords a ready case example. The completed processes leading from formulation to execution of plans for these routes spread over the entire range of highway planning. This encourages a study which can investigate the planning process from inception to implementation, and provides an opportunity to see the process as a total function, even though related to a specific item.

Michigan has recently assumed a position of leadership in highway development, with planning procedures which are relatively complex and unusual. For example, several acts of the Michigan Legislature state that highway facilities and improvements or alterations are to be accomplished by working in conjunction with the local municipalities through which the routes pass, and by fulfilling this work with the

consent of these municipalities. The requirements of this legislation give direction to the process of planning which must be undertaken in developing the highway network in Michigan. With a law that compels State and local cooperation, obtaining the required local consent has resulted in a more direct and workable liaison between the State and local communities in the planning of highways.

This thesis includes an examination of the process of Federal, State and local interaction which results in the location of highway transportation facilities in Michigan. To demonstrate the operation of this planning process, a highway plan has been traced from its inception through its regional origins and interconnections to its final adoption. Alternative routes which came under consideration were compared in relation to the sequence of planning steps and decisions which led to the determination of the final location of the freeway. Legal requirements and theoretical objectives were investigated to provide a backdrop against which the existing planning process could be silhouetted. From a study of these items, the background and operation of current highway planning procedures was delineated to determine the complications which result in the location of this feature of land use. Through analysis and evaluation, the effectiveness of the process was appraised, and some general notions were gleaned concerning its implications for the future of highway planning in Michigan.

## CHAPTER I

### PLANNING FOR GOVERNMENTAL ACTIVITY

Recent years have witnessed a ground-swell of interest in planning as a conscious and formalized activity. There is general public agreement that deliberate and rational planning is necessary to individual and collective well-being. In both private and public enterprise, planning has always been involved, if only for meeting problems when they arise. The rapid rate of change in the economy, in technology, and in population trends, resulting in conflicting demands on space and resources, has brought about the need for longer-range forecasts and plans to cope with envisioned conditions. Increasingly larger wages, the availability of more leisure time, specialization of individual functions and desires, automation, and a host of other changes have been emblazoned onto the American way of life. Private business has utilized these changes as tools to provide more opportunities for enterprising merchandising and to capitalize on the needs and wants of individuals. Indeed, current processes of advertising are working to develop new personal desires and standards on which individuals can expend their generally increasing resources gained from smaller expenditures of time and energy.

Forces and processes of change create demands which society at large must meet through the formalized methods

of government. The now-familiar features of urban sprawl demand the construction of streets, water supply and sewerage disposal facilities, schools, parks and high-speed, safe highways. Traditionally, the provision of these functions and facilities has resulted in sizeable government enterprises to satisfy demands. Recent spurts in urban growth have emphasized the need for these facilities and have simultaneously pointed out the pressing need for coordination and interrelation of all government-provided facilities to minimize potential conflict and waste of resources. Lack of coordination and interrelation in private business is ordinarily eliminated as a matter of course, except in very large organizations where coordination is frequently impossible to achieve completely. Until the current vast urban expansion began, this condition was often condoned in government because political or economic reasons prevented reform. Increased attention to the need for provision, coordination and interrelation of governmental functions and facilities has resulted in the current emphasis upon comprehensively planned community facilities and expenditures as a part of public administration.

#### Planning and Administration

In its simplest form, administration is dependent upon a thorough integration of the planning process into all its activities.

Administration may be thought of as a flow of energy from one level to another, from one phase of action to the next, never ending, and with all elements constantly merged in a single stream . . . . Planning . . . is a part of the flow of operations.

. . . . .  
 Planning may be used in a broad sense to include objectives and policies, or it may be used in a more limited way to indicate the logical formulation of work procedures. In any case planning has certain common characteristics: it looks ahead, takes the entire problem into account, divides it into its component parts, and provides a method of achieving goals by explaining what each part of the organization must do if the goal is to be accomplished.<sup>1</sup>

The process of administration is further described as:

(1) identifying objectives of the program, deciding what internal administrative policies will best achieve them, and then making plans so that the program will move forward in an orderly fashion to reach its proper goals, (2) organizing an administrative machinery by which the plans that have been decided on can be put into effect, (3) development of methods and procedures that are required, including the means of appraising results as the program moves along.<sup>2</sup> Because planning is clearly involved in all three of the phases, further consideration will be given to each.

### Identifying Objectives

Objectives have been defined as "ends toward which group activity in an organization is aimed,"<sup>3</sup> comprising "consistent and integrated general statements of understandings

<sup>1</sup>Marshall Dimeck, Gladys Dimeck, and Louis Keenig, Public Administration (Revised Edition; New York: Rinehart and Company, Inc., 1959), pp. 358-360.

<sup>2</sup>Ibid., p. 360.

<sup>3</sup>Harold Koontz and Cyril O'Donnel, Principles of Management (New York: McGraw Hill Book Company, Inc., 1953), p. 430.

which guide or channel the thinking in decision-making of subordinates."<sup>4</sup> Organizational objectives for government administration are necessary in order to establish a framework within which "decisions made will fall within certain bounds and contribute consistently to the attainments of objectives."<sup>5</sup> In a government organization, objectives may be originated by many individual sources, and they are ordinarily derived from the interests and values of the group or groups represented. Because of the varying number and composition of interests to be served by representatives in a democratic government, problems arise and are resolved primarily through the give-and-take of the process, resulting in some form of compromise. Derivative objectives thus become inextricably entwined with politics, the process of reconciling diverse opinions expressed by individuals, political parties, pressure groups, staff organizations, and legislative mandates.

Melville Branch, Jr. says that planning is a "rational, flexible, continuous, reasoned and intuitive process," which seeks to "analyze a problem situation as a whole, project it into successive stages of future time, in accordance with the past and present, and to derive a plan of action to achieve the objectives developed as a consequence of this examination."<sup>6</sup> According to this theory, objectives could be resolved as the

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<sup>4</sup>Ibid., p. 432.

<sup>5</sup>Ibid., p. 433.

<sup>6</sup>Melville C. Branch, Jr., "Planning and Operations Research," Journal of the American Institute of Planners, XXIII, pp. 168-175.

result of a process which leads from analysis and projection to a logical conclusion, without the distracting element of compromise. The apparent middle ground would include both methods of objective formulation in the processes of governmental administration.

To implement the expressed aims and goals of the broadly drafted objectives, policies must be determined as touchstones for organizational activity. Policies serve as consciously acknowledged rules of conduct that guide administrative decisions when problems arise involving a choice.<sup>7</sup> Koontz states that policies are of three types: (1) originated - flowing from objectives of the enterprise, with origins at any organizational level, (2) appealed - established by precedent of appeal for exceptional cases, (3) external - imposed by government, pressure organizations, etc.<sup>8</sup> The combination and integration of the three, with discrepancies, duplications, and contradictions removed, form the crux of government activity to be implemented. Once a decision is made on government policy, the administration of that policy is accomplished by various means: constitutional provisions; statutory provision; executive order; administrative order; instructions or directive procedures and rules; budgets and programs; and tactics and strategy.<sup>9</sup> Ranking order of importance for these items

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<sup>7</sup>Edward C. Banfield, "The Field of Planning." (Mimeographed.)

<sup>8</sup>Koontz, op. cit., p. 483.

<sup>9</sup>Dimock, op. cit., pp. 354-355.

may vary, but each is, in one way or another, a plan of action based on objectives and policies.

### Administrative Structure for Planning

The need for governmental planning arises when an alternative course of action is discovered. Due to limitations of space or resources, choices among various alternatives must be made. In governmental activity these choices are (or should be) political, in the sense that they should be representative of decisions based on a viewpoint as to that which will benefit the constituents of authority to which the decision-maker is responsible.<sup>10</sup> The process of planning involves those in political power, because of their inherent function of decision-making. Most government planning must operate within this contextual framework, even when established decisions or policies operate to thwart planning. It is possible that "a knowledge of what substantive decisions to make in the first place is more pertinent to general welfare than the technique employed."<sup>11</sup> The initial decision would thus appear to be the point from which planning begins. This correlates well with the conclusions concerning policy in the previous section.

To carry out the intent of the decisions which are made, the structure of government contains a hierarchy of the decision-making functions which establish the basis for the existence of bureaucracy. Despite some unpleasant connotations,

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<sup>10</sup> Robert Daland, "Organizing for Urban Planning: Some Barriers to Integration," Journal of the American Institute of Planners, XXII, pp. 200-206.

<sup>11</sup> Dimock, op. cit., p. 33.

bureaucracy is necessary in the most common usage of the term, which Millett describes as the large-scale organizational machinery which is required to do the work of government.<sup>12</sup> His thesis is that bureaucracy is properly subordinate to the function of governmental decision-making, just as the decision-making functions in turn are subordinate and responsive to the system of political power.

Each of the functions of governmental activity, whether or not coordinated and integrated, is characterized by inherent administrative apparatus or bureaucracy without which it could not operate. The policy-making function is ordinarily lodged in the legislative body (acting as a board of directors); the executive or management function is performed by the chief administrative officers with their staffs and cabinets; and the work-directing function is carried out by departments, divisions, bureaus, etc.<sup>13</sup> An important difference between government and business in this regard lies in the various levels of government which are involved, for local, state and Federal agencies are ordinarily included in each activity in some manner, along with relatively independent boards and commissions, which tend to "float" or remain aloof from the political constraints imposed upon the usual three levels.

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<sup>12</sup>John D. Millett, Government and Public Administration. (New York: McGraw-Hill Book Company, Inc., 1959), p. 11.

<sup>13</sup>Harmer E. Davis, "Some Considerations in Coordination of Transportation, Public Works and General Urban Planning," (Paper read at the Governor's Conference on California's Urban Areas and the State Highway System, February 24, 1960).

Because the person or persons making the political decision cannot be expected to be well-informed in all aspects of the complexities of governmental activity, the reliance must be placed on technicians who can visualize alternative solutions and predict probable consequences. The position of the technicians in the bureaucracy is a subject of contention.

Long-range planning relating to the physical form and character of the community far transcends the scope of administrative planning--in fact, is a function separate from it--and should neither be confused with nor subordinated to it.<sup>14</sup>

The opposing opinion favors a staff as the sole planning agent in the governmental structure.

Planning cannot hope to be truly effective in modern government unless a competent staff, under a ranking official with direct access to the top policy-making officials, is employed. The most important step in making planning effective is the education of top administrators to think of planning as essentially their responsibility, and to regard the planning staff as a group of specialized assistants to aid them in carrying out this responsibility.<sup>15</sup>

Though separate in theory, long-range planning and administrative planning must be coordinated in practice in order to avoid confusion. The coordinative instrument most often used, the independent or semi-independent citizen commission, provides an impartial viewpoint as an adjunct to government planning. The staff then serves as an intermediary

<sup>14</sup>Hugh R. Pomeroy, "The Planning Process and Public Participation," (in Gerald Breese and Dorothy Whiteman, An Approach to Urban Planning; Princeton, New Jersey: Princeton University Press, 1953, p. 10).

<sup>15</sup>Robert Walker, The Planning Function in Urban Government (Chicago: University of Chicago Press, 1950), p. 362.

between citizen commission and professional decision-makers. The chief value of this arrangement lies in the compromise position offered to both viewpoints without impairment of the precepts of either. This affords professional planners many opportunities to use long-range goals and policies and the statistical tools of their profession in applying planning where it has decided effect--in the day-to-day operations of government agencies.<sup>16</sup>

### Methods and Procedures

In order for the hierarchy of planning structure to operate successfully, codes of operation are established to implement policy. These may be derived from legislative mandates or through a continuous process of evolution based on experience, intuition, technology and research. Generally, these characterize the modes of operation used by staff members of the bureaucracy in day-to-day tasks of planning for alternative solutions to problems and for designing means of implementing the solutions through various strategy and tactics. When the operating procedures become rigid enough to be set down on paper, they are codified and quite often published for circulation and information. Methods and procedures of planning for governmental activity are extremely varied, and attempts to classify them, or generalize about them are limited. There are so many variations even within

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<sup>16</sup>Peter Nash and James Shurtleff, "Planning as a Staff Function in Urban Management," Journal of the American Institute of Planners, XXIII, pp. 144-150.

specific agencies that characterizations to cover more than one such agency are extremely difficult. For this reason, this portion of the discussion is necessarily abbreviated.

The remainder of the thesis deals with the operating techniques, characterizations and limitations of a governmental agency which is extremely large in its sphere of activity, and in expenditures allotted to it to obtain its particular goal. In many ways, the Michigan State Highway Department is atypical of governmental agencies in Michigan. First of all it is extremely well endowed financially, by virtue of the resources which it obtains from the designated funds received from the Michigan gas tax. Additional funds are obtained from the Federal Government, making this Department the largest State agency in terms of money expended on public improvements per year. Secondly, the Department is providing a service the results of which are readily viewed in all portions of the State. For the average citizen, State highways are perhaps the most tangible evidence of expended tax money and also that portion which he can use at will again and again. Because of this, the Department enjoys a larger public interest and discussion in its activities than any other State agency. Third, it is by far the largest of the State agencies, having consequently the largest staff engaged in physical, financial and administrative long-range planning. Because its planning activities directly or indirectly influence the well-being of more people of diverse background in the State, it is perhaps the most experienced in public planning activity, from inception of ideas to actual implementation.

The Michigan State Highway Department provides one of the best opportunities for viewing a large-scale state planning operation, even though the planning is of a limited character. Its constantly changing field of operation necessitates that it continually experiment and adapt, insofar as possible. One of the most interesting of its recent planning efforts involves a set of circumstances, which illustrate some of the planning techniques evolving or lacking in the approach of the Michigan State Highway Department to a planning problem. Succeeding chapters include a case history of this effort and supplementary background information which will portray some of the aspects of the highway planning process in Michigan. The final chapters include an analysis of the case example, its relationship to the existing and probable future planning process in the Department and conclusions drawn from the experience of the study and research embodied in the thesis.

## CHAPTER II

### LEGAL FRAMEWORK FOR HIGHWAY PLANNING

Highway planning is thoroughly integrated into the administrative processes, preceding and flowing from the activity of every individual in the organization, in varying degrees. Each person or group involved in highway planning registers reactions and acts on the basis of the actions of another higher or lower individual or organization. The United States Congress and the Michigan Legislature, reacting to public desires and wishes, establish the legal means by which highways are provided: Federal and State laws provide the overall guiding principles and objectives of highway planning, and the necessary financial foundation of the Michigan State Highway Department. Department top management, working within this legal framework, establishes means for carrying out objectives by formulating policies and deploying available manpower and funds to best advantage. Working within Departmental policies and objectives, the detailed negotiating and "blueprinting" of final highway plans is achieved by the personnel of the Department. The implementation of these plans brings public reactions which could bring pressure on legislators to change the laws to reflect the unrecognized or neglected needs of the citizenry.

The legal framework for highway planning has been, to a very large degree, determined by the Federal Government, which is heavily involved financially in highway provision. In Michigan, detailed legal means of planning have been established by the State Legislature. Combined Federal and State laws form a framework within which highway planning must be accomplished, by (1) specifying the inter-agency relationships to be maintained throughout the stages of planning leading to adoption, (2) establishing responsibility for planning, (3) providing a financial basis for the implementation of plans.

Relationships between the State Highway Departments and the Federal Bureau of Public Roads have been specified by Congressional action. State and local governmental relationships are partially spelled out by Congress, but are generally relegated to state enactments. Responsibility for highway planning is defined by both Congress and the State Legislature, as are the complex financial arrangements and relationships developed over a period of many years, beginning in the early history of this country.

#### Federal-State Relationships in Highway Planning

Federal assistance for highway building began early in the history of Michigan. Roads serving military purposes were constructed by the fledgling United States Government as early as 1816. Other transportation needs were satisfied by water transport, and later, by the railroads. The vast development of rail lines served early transportation needs for the State and resulted in a pattern of urban settlement

based largely on rail junctions and centers of activity. After the Michigan Territory became a state in 1837, the Federal Government withdrew its support and the building of roads by governmental action was neglected until 1893, when the State Legislature approved the County Road Act.<sup>1</sup> In the intervening years, highways were constructed by privately organized toll road companies or by townships, or not at all. Planning for a complete system of these roads was ignored. Main roads followed Indian trails and paths utilized by pioneer Michigan settlers. Improved local roads generally followed the section line pattern established under the provisions of the Northwest Territory Act of 1799, through the work of Thomas Jefferson.

The Federal Aid Road Act of 1916 marked the beginning of renewed interest in the development of a system of public highways in which the Federal Government would share part of the costs. Although the law set minimum standards of construction and maintenance, responsibility for designation of roads to be made part of the system was delegated to the individual states.<sup>2</sup> A 1921 Federal enactment required the states to draft plans for an integrated state-wide road system in order for them to participate in Federal and state sharing of costs incurred through an expanded highway program. Foreseeing the need for further improvement of the Federal Aid System,

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<sup>1</sup>Michigan State Highway Department, Highway Needs in Michigan, (Lansing, Michigan, 1949), p. 33.

<sup>2</sup>Ibid., p. 38.

Congress in 1934 authorized establishment of state highway planning surveys to collect basic data for a long-range program.<sup>3</sup>

Federal aid to highways took the form of outright grants during the period of World War II. The Defense Highway Act of 1941 designated a network of nationwide highways considered strategic to the war effort. This network was to become the basis of the National System of Interstate and Defense Highways, first authorized by Congressional actions in 1944. Additional Interstate routes into, through and around urban areas were approved in 1954. The initial program for construction of the system was broadened substantially by the Federal-Aid Highway Act of 1956 which brought the original 40,000 miles up to 41,000 miles and launched the program of building the current Interstate Highway System.<sup>4</sup>

#### Evolution of the National Interstate and Defense Highways

In 1941 President Roosevelt appointed a National Interregional Highway Committee, "to investigate the need for a limited system of national highways to improve the facilities now available for interregional transportation, and to advise the Federal Works Administrator as to the desirable character of such improvement."<sup>5</sup> The work of the Committee

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<sup>3</sup>Ibid., p. 45.

<sup>4</sup>Chamber of Commerce of the United States, The Nation's Highway Program (Washington: Chamber of Commerce of the U. S., 1960).

<sup>5</sup>National Interregional Highway Committee, Interregional Highways, A Report of the National Interregional Highway Committee, Outlining and Recommending a National System of Interregional Highways, (Washington: Government Printing Office, 1944), p. 111.

culminated in a 1944 report, establishing the need for a national system of highways totaling 34,000 miles and interconnecting the principal geographic regions of the country. Based on a 1938 study, this system expanded previous recommendations by 8,000 miles and extended to all cities over 300,000 population. The principal determinations to guide the selection of this system were: "the interconnection of the larger cities in all regions, accommodation of short-run traffic in and about lesser centers insofar as practicable, and the creation of a system of optimum extent and maximum utilization. Routes selected for the system include those which reach to all sections of the country, form within themselves a complete network, and adequately serve a greater traffic volume than any other system of equal extent and condition."<sup>6</sup> Guided by the President, the Committee developed the system of highways on the premise that national needs are superior to local needs. The system proposed to connect as many of the larger cities and metropolitan areas as possible, using as bases their population distribution, manufacturing activity, farm produce, motor-vehicle ownership, defense-related industry, strategic network of defense highways, topography, and traffic flow. In mileage the system represented scarcely over one per cent of the Nation's entire highway and street system, but it was estimated that it would serve more than twenty per cent of the total street and highway traffic.<sup>7</sup>

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<sup>6</sup>Ibid., p. 4.

<sup>7</sup>Ibid., p. 40.

Although the interconnection of cities was considered to be important, ideal directness of connection between the largest centers was not attempted. Nearly ninety per cent of all highway traffic, a composite of long and short-range movement, was estimated to have either its origin and destination or both, in cities.<sup>8</sup> About eighty-five per cent of all trips were expected to be for distances of less than twenty miles, and only about five per cent for more than fifty miles.<sup>9</sup>

Concurrent with the establishment of the National Interregional Highway Committee, the Defense Highway Act of 1941 authorized funds for a system of highways of strategic importance from a national defense point of view. In 1943, Congress made provision for survey work leading to post-war highway construction. A recommendation was made by the Committee that these endeavors be integrated with the findings of its report, to the extent possible.

The President's National Interregional Highway Committee additionally established standards for the proposed national system of highways. Chief among these was the provision for limited access, the elimination of grade crossings and street intersections, and standards for design and right-of-way widths to provide for increased speed and safety on the new facilities, as well as the protection of capacity and longevity of use. The work of the Committee culminated in the enactment into law of many of these recommendations

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<sup>8</sup> Ibid., p. 40.

<sup>9</sup> Ibid., p. 47.

in the Federal Highway Act of 1944. An interesting recommendation, which has not been followed, urged excess condemnation of lands to acquire for the public at large the unearned increment of land value which accrues to areas in proximity of interchanges and locations adjacent to the highway.<sup>10</sup>

In 1949, a report by the Public Roads Administration, reiterated the need for the rapid development of the Interstate System of Highways.<sup>11</sup> Investigating the needs of national defense, the report stated that the System as designated coordinated admirably with defense needs, and that the standards established in 1944 were necessary for adequate capacity provision and protection. Investigation proved that the Interstate System of 1944 would carry twenty per cent of all rural traffic in 1949, and that the urban sectors of the recommended system would transport ten per cent of urban-oriented traffic throughout the country. Based on a detailed examination of the highways designated by the Federal Aid Highway Act of 1944 this report concluded that the most serious deficiency was the lack of ability to construct the System rapidly enough and to provide simultaneously for increases in motor vehicle traffic.

Approved in 1949, the Interstate Highway System follows the routes of existing Federal aid highways, linking

<sup>10</sup> Ibid., p. 7.

<sup>11</sup> Federal Works Agency, Highway Needs of the National Defense, A Report on the Highway Needs of the National Defense by the Administrator of the Federal Works Agency, (Washington: Government Printing Office, 1949).

together the largest cities in the country and interconnecting the principal geographic regions.<sup>12</sup> The Michigan Legislature by Act 87 (P. A. 1955) established a system of arterial highways, totaling somewhat less than 2,000 miles, to consist of multi-lane divided highways and to include the Michigan portion of the Federal System of Interstate and Defense Highways. Federal Legislation and administrative rulings specify that Interstate routes shall be constructed on a limited-access basis; Michigan statutes permit, but do not require limited access on the balance of the arterial system.<sup>13</sup> Following Federal standards, generalized Michigan sections of the Interstate System were selected by the State Highway Department and approved by the Public Roads Administration, now the Federal Bureau of Public Roads.

In the early stages of locating the case study route, Interstate 75, its alignment passed west of Pontiac. Studies initiated to determine this particular alignment were utilized by the enthusiastic supporters of a proposed Michigan Toll Road. However, the Toll Road project was abandoned with the prospect of toll-free limited access highways provided by 1956 Federal legislation.

The current highway-building era was begun through the enactment of the Federal-Aid Highway Act of 1956, which

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<sup>12</sup>Michigan Good Roads Federation, Highway Needs in Michigan (Lansing, Michigan, 1948).

<sup>13</sup>Michigan State Highway Department, A Policy on Urban Connections to Interstate and Arterial Routes (Lansing, Michigan, 1958), Appendix B.

codified all of the previously adopted Federal legislation and added extensive financial assistance to the development of the National System of Interstate and Defense Highways. The directive for locating these highways recognized the prerogative of the various state highway departments and directed that the Interstate routes be "so located as to connect by routes as direct as practicable, the principal metropolitan areas, cities and industrial centers, to serve the national defense, and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico."<sup>14</sup>

The Federal-Aid Highway Act of 1956 also formed a framework for a balanced system of highways, coordinating three other Federally-aided highway systems with the Interstate System.

Each Federal-aid system shall be so selected or designated as to promote the general welfare and the national and civil defense and to become the pattern for a long-range program of highway development to serve the major classes of highway traffic broadly identified as (a) interstate or inter-regional; (2) city-to-city primary, either interstate or intrastate; (3) rural secondary or farm-to-market; and (4) intra-urban.<sup>15</sup>

Highways identified in this legislation are (1) The National Interstate and Defense Highways (2) The Federal-Aid Primary System (3) The Federal-Aid Secondary System (4) Urban Highways. The latter three are commonly known as the "ABC" system of highways. Primary and Secondary Highway Systems

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<sup>14</sup>23 U.S.C. 103(d).

<sup>15</sup>23 U.S.C. 1.6(c).

with their Urban Extensions are major feeder routes and consist of two separate road programs and their extensions into the urban areas.

### Responsibility for Planning

General responsibility for the development of the various systems has been delegated to the state highway departments through the following statement:

The (Federal Highway) Administrator shall cooperate with the States through their respective State highway departments, in the construction of Federal-aid highways. Each State highway department . . . shall be authorized by the laws of the State, to make final decisions for the State in all matters relating to, and to enter into, in behalf of the State, all contracts and agreements for projects and to take action on behalf of the State as may be necessary to comply with the Federal laws and the regulations in this part.<sup>16</sup> (Emphasis supplied.)

This Federal legislation makes the state highway departments the responsible agents in highway development and in dealing with other Federal Government agencies. It does not, however, place specific planning obligations upon the highway departments, but it does establish them as the agencies which the states must use for the "selection or designation" of systems of Federally-designated highways, if the states are to receive aid for highway development.

To insure continuity in the direction of expenditures of available funds, systems of Federal-aid highways are selected or designated by any state that desires to avail itself through its State Highway Department, of the benefits of federal aid for highways.<sup>17</sup> (Emphasis supplied.)

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<sup>16</sup>23 U.S.C. 1.3.

<sup>17</sup>23 U.S.C. 1.6(a).

In the planning and locating of a highway, the highway department is almost always the responsible agent. "The State Highway Department shall be responsible for any project to be undertaken with the cooperation of, or with funds provided by, any other governmental instrumentality."<sup>18</sup>

(Emphasis supplied.) However, cooperative action is specified in selecting locations of the various types of highways. Routes in the Interstate System are "selected by joint action of the state highway departments of each state and the adjoining states, subject to the approval by the Secretary (of Commerce)."<sup>19</sup>

The Federal-aid Primary System is "selected or designated by each state through its State highway department, subject to the approval of the Secretary (of Commerce)."<sup>20</sup>

The Federal-aid Secondary System is "selected by the State highway departments and appropriate local road officials in cooperation with each other, subject to approval by the Secretary (of Commerce)."<sup>21</sup> Urban Highways are handled as extensions of the above.

Factors to be considered in the planning of highways were enumerated in the 1956 Highway Act:

The conservation and development of natural resources, the advancement of economic and social values, and the promotion of desirable land utilization, as well as the existing and potential

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<sup>18</sup> 23 U.S.C. 1.4.

<sup>19</sup> 23 U.S.C. 103(d).

<sup>20</sup> 23 U.S.C. 103(b).

<sup>21</sup> 23 U.S.C. 103(c).

highway traffic and other pertinent criteria are to be considered when selecting highways to be added to a Federal-aid system or when proposing revisions of a previously approved Federal-aid system.<sup>22</sup>

Research and planning projects are also permitted and are generally the responsibility of the state highway departments.

The Secretary (of Commerce) is authorized in his discretion to engage in research on all phases of highway construction, modernization, development, design, maintenance, safety, financing, and traffic conditions, including the effect thereon of State laws and is authorized to test, develop, or assist in the testing and developing of any material, invention, patented article, or process . . . Not to exceed  $1\frac{1}{2}$  per centum of the sums apportioned for any year to any State under section 104 of this title shall be available for expenditure upon request of the State highway department, with the approval of the Secretary, with or without State funds, for engineering and economic surveys and investigations, for the planning of future highway programs and the financing thereof, and for research necessary in connection with the planning, design, construction, and maintenance of highways and highway systems, and the regulation and taxation of their use.<sup>23</sup>

It should be noted that Federal legislation does not establish each state highway department as the final arbiter and decision-maker for the highway development function in each state. Federal-state cooperation is required by Federal legislation and may be enforced through the financial assistance which the Federal agencies offer for compliance with legislative requirements. Cooperation is further assured through provisions for mandatory approval by the Secretary

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<sup>22</sup><sup>23</sup> U.S.C. 1.6(c).

<sup>23</sup><sup>23</sup> U.S.C. 307(a) and (c).

of Commerce of all selected routes. Finally, and perhaps most important for the study of highway planning in Michigan, Federal legislation controls the general framework and basis for planning various systems in a given state, by reserving the right of approval or disapproval of projects to be given Federal aid.

#### State and Local Highway Relationships in Michigan

Early Federal highway aid was withdrawn when Michigan became a state in 1837. The development of state and local highways was delegated to private interests and to the townships, which were given road-building authority under a territorial law passed in 1827 and perpetuated in the State Constitution of 1850. Roads built under this system chiefly connected farms and township commercial centers, with no remaining funds to construct roads to other townships or from town to town. The first attempt to solve this problem was effected by six Bay County townships which joined with Bay City and West Bay City in 1883 to form a "Stone Road District" for the improvement and maintenance of roads traversing the area.<sup>24</sup> The success of this program led to the enactment of legislation permitting counties to establish road commissions. The County Road Act of 1893 permitted the counties to knit together the township roads into a comprehensible pattern. Nonetheless, there were only 200 miles of stone or macadam surfaced roadways in the State by 1900. The lack of success

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<sup>24</sup>Michigan State Highway Department, op. cit., p. 35.

of the county road building program was noted by Michigan bicyclists, who acted through local chapters of the League of American Wheelmen to initiate a State-wide system of highways.

In 1905, the State Legislature created the State Highway Department, authorizing it to cooperate with townships and counties in improving "leading public wagon roads outside of incorporated villages and cities," and to encourage highway construction through local initiative.<sup>25</sup> In this first provision for State highway planning, plans and assistance emphasized engineering considerations, and were designed to assist the local agencies, of which few could afford staff personnel to perform this function. As in many another pioneering venture, little forethought was given to overall comprehensive planning, excepting efforts made to piece together existing highway segments. As the chief officer of the Department, the Legislature provided that "in the year 1913 and every four years thereafter, a state highway commissioner shall be nominated and elected by the people of the State of Michigan ....."<sup>26</sup>

By 1913, 60,000 motor vehicles were registered in the State.<sup>27</sup> Increasing use of the automobile brought a demand for more and better highways. In 1913 the Michigan Legislature established a 3,000 mile state system of highways,

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<sup>25</sup>Ibid., p. 36.

<sup>26</sup>Act 283, P. A. 1909, as amended (Chapter V., Sec.2).

<sup>27</sup>Michigan State Highway Department, op. cit., p. 37.

specifying the cities through which the routes should pass. Requiring that plans drawn by the State Highway Department for routes between cities should be "concurred in" by local authorities, the Legislature gave local citizenry power to effectively determine route locations. Townships were given the responsibility for building these highways.

In 1916 Federal aid for highways became available. State legislative assent to the provisions of the Act was required before money apportioned through the Act could be expended in an individual state. In the Michigan assent to this aid, the State Highway Department was authorized to "make surveys, prepare plans and specifications and take charge of building and maintaining Federal aid roads in accordance with the 1916 Act and rules and regulations made thereunder and such amendments as may be made."<sup>28</sup> (Emphasis supplied.)

In 1921 the State Highway Department began to designate a Federal aid highway system in accordance with Congressional legislation which required the individual states to draft integrated state-wide road systems to be submitted for Federal approval. Along with increased authority, a State-wide bond issue gave adequate funds to the State Highway Commissioner for initiating and maintaining these highways. In 1925 the function became entirely a State responsibility with the removal of the county and township obligation of payment of funds toward Federal-aid roads. Although the

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<sup>28</sup>Highway Research Board, Special Report 48, Federal Aid Provisions on State Highway Laws: An Analysis (Washington: Highway Research Board, 1959).

responsibility of payment was retracted, local authorities retained the general principle of State-local cooperation with the requirement that they "concur in" plans drafted by the State Highway Department. This requirement for local concurrence in State plans was phrased in a somewhat different manner in the 1925 enactment providing condemnation powers for the construction of highways.

The state highway commissioner and boards of county road commissioners are authorized and empowered to take property and property rights under the provisions of this act within the limits of any incorporated city or village in this state: Provided, however, that before any proceedings are taken under this act involving the taking of any property or property rights in any city or village for the changing, altering, opening or widening of any street or highway, said street or highway shall be taken over as county road or designated as a state trunkline or federal aid highway, as the case may be, and the consent of the village or city council by resolution so to take over or designate said street or highway as a county road or state trunkline or federal aid highway shall be first obtained."<sup>29</sup> (Emphasis supplied.)

Act 352, providing for condemnation for highway development, first established the provision for consent by resolution of local authorities in cities and villages in cases involving condemnation for highway improvement. Additional requirements for local consent to State action were included in the legislation through which roadside control was permitted. This enactment provided for the construction of limited and controlled access highways, but with local approval.

Whenever the state highway commissioner and any county, city or village shall agree

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<sup>29</sup>Act 352, P. A. 1925, as amended Sec. 1(1).

to acquire, construct, or improve any CONTROLLED access highway or highways as defined by this act, the state highway commissioner shall procure plans and specifications for such project and an estimate of the cost thereof. The board of county road commissioners and the board of supervisors of the county and the legislative body of such city or village shall, by resolution, approve such plans, specifications and estimate of cost.<sup>30</sup>

### Responsibility for Highway Planning

The legislative framework remained relatively unchanged until 1951, when a comprehensive new Michigan Highway Law was passed. This enactment provided specifically for road classification and fund allocation, but its broad scope established the planning pre-eminence and approval powers of the State Highway Department, through delegation of power to the State Highway Commissioner.

All state trunkline highways now or hereafter established as provided by law, shall be constructed, maintained and improved in accordance with the provisions of this act under the direction, supervision, and control of the state highway commissioner.<sup>31</sup>

The responsibility for the planning of State trunklines in Michigan is clearly in the hands of the State Highway Commissioner, and, consequently, the Michigan State Highway Department. However, responsibility for planning is somewhat unclear without a knowledge of what constitutes a trunkline highway. The definition of a trunkline highway is unusually circuitous:

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<sup>30</sup>Act 205, P. A. 1941 and 1950 (Ex. Sess.)

<sup>31</sup>Act 51, P. A. 1951, as amended Sec. 1(a).

The state trunkline highway system of this state shall consist of all roads, streets and highways, either located within or outside the limits of incorporated cities and villages now or hereafter constituted state trunkline highways pursuant to the provisions of the statutes of this state. All roads, streets and highways included in the state trunkline highway system, as constituted and defined in this section, shall hereafter be known officially, and may be referred to for all purposes, as state trunkline highways.<sup>32</sup>

It would appear that a trunkline is a road, street or highway designated by the State Highway Commissioner to be included in the State trunkline system. Referring to the historical development of the Federally-aided system of highways in Michigan, it would seem that those highways registered as primary routes would constitute the trunkline system, along with additional important roads and streets which complete the network, with or without Federal aid.

### Financial Influences

Highway financial responsibility is quite well-defined in Michigan legislation and influences the planning of highways in numerous ways. Under an elaborate system of allocating funds, the State Highway Department shares the cost of highway provision with not only the Federal Government, but with most of the local jurisdictions in the State, depending upon the type of roadway to be constructed (interstate, primary, secondary, or urban). All municipalities of over 30,000 population bear a relatively heavy responsibility in paying the costs of highway planning and construction. Counties also share

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<sup>32</sup>Ibid., Sec. 1.

extensively in highway financing, depending on their respective populations.

Because State and local agencies must, in certain instances, share the costs of financing the improvements projected, the required agreement between them is often contingent upon whether or not the local agency can pay its proportionate share. This in turn influences the extent of improvements which may be projected for a specific city, and directs the course and timing of construction programming for each segment of a proposed system. Legislative limitations upon cost sharing in cities over 30,000 population rarely provides barriers to agreement on plans. The distribution of highway improvements in a five-year construction program assures that no single city will be forced to bear an excessive amount of highway construction improvement costs during a given period of time.

The sharing of responsibility has led to a difficult situation in which the local municipality is forced to forego a needed improvement if it cannot bear its share of the costs. Similarly, the sharing permits the richer municipalities to take strides not available to those with a low tax base. Political repercussions abound, because the municipality does not have to share in the costs of a planning solution advanced by the State Highway Department if it does not agree with it, thereby disrupting the State programming and planning functions simultaneously. The plans thereupon have to be reconsidered, taking valuable timing privileges away from the programming function, which has prorated projects throughout

the State on a basis of relative needs and ability to pay. Local and State financial processes must be correlated with one another to achieve a system which can be planned and developed with some regard to the probable availability of funds.

### Citizen Involvement

The entire planning process provided by State and Federal legislation is nearly devoid of the inclusion of private citizens. However, citizens are involved in the planning process in at least two ways. First, the elected representatives of the people are individuals who have final say, the decision-making power in the State organization for highway planning. Representatives to the State Legislature, elected by the populace, determine broad objectives and policy measures and delegate the administration of this policy, along with substantial decision-making powers, to the State Highway Commissioner. The Commissioner, also elected, uses a campaign platform of policy derived from and arranged within the broad limits established by the Legislature. Subordinates also work toward the wishes of the electorate as directed by the delegation of this decision-making power. The policy of the elected Commissioner is transmitted through his subordinates to lower echelons of administration and execution. This process in itself carries back to the Commissioner from the lower ranks of personnel, who, being also citizens of the State, often influence and alter policy at the levels of execution.

The second broad means of citizen involvement is inherent in the process of holding a public hearing. Planning

for any state highway construction projects involving Federal aid (and nearly all do) is subject to citizen review by means of a public hearing. The basis for hearings is contained in Federal legislation.

Any State highway department which submits plans for a federal-aid project involving the bypassing of, or going through, any city, town, or village, either incorporated or unincorporated, shall certify to the Secretary (of Commerce) that it has had public hearings, or has afforded the opportunity for such hearings, and has considered the economic effects of such a location. Any State highway department which submits plans for an Interstate System project shall certify to the Secretary that it has had public hearings at a convenient location, or has afforded the opportunity for such hearings, for the purpose of enabling persons in rural areas through or contiguous to whose property the highway will pass to express any objections they may have to the proposed location of such highway.<sup>33</sup>

This legislation involving planning considerations sets the stage for more specific policy determination and for the further execution and administration of highway policy. It should be noted that the legislation does not specify how the planning process shall be carried out, aside from the establishment of vague objectives and certain responsibilities. The State Highway Commissioner is designated to determine the planning policies which will lead to effective highway development.

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<sup>33</sup><sub>23</sub> U.S.C. 128(a).

## CHAPTER III

### HIGHWAY PLANNING POLICY FORMULATION

Stemming from the overall objectives inherited from legislative action are the policies of planning--further steps designed to augment the objectives and provide a more detailed basis for deploying forces to accomplish the ends established in legislation. Policy formulation provides the means by which broad goals are transformed into specific procedures for action, by guiding management and forming the bases from which detailed planning emanates. Policies provide for rational solutions to problems within the framework established by legislation, providing more specific and efficient ways and means of attaining overall objectives, while simultaneously allowing for flexibility to permit adjustments to changing and evolving conditions.

In a practical context, overall policy may appear to be nonexistent. This is especially true in a government situation, where expressions of policy could be potentially binding or damaging to elected officials. Nonetheless, policies do exist, however piecemeal or disguised. Examples include the program for building highways which has become a recognized part of the State Highway Commissioner's policy, put forward as an expression of definitive action and good will. Policy

for guidance in engineering design, construction, and maintenance of highways exists in the form of general standards which shall be met in provision of the highway service. However, policy to guide the planning of highways has not been made so precise as the programming and the standards which have become an integral part of overall policy. There are many potential reasons why this has happened, including public opinion in favor of safety and efficiency standards, attempts towards individual empire-building in planning, lack of appreciation for comprehensive planning, Departmental anxiety to "build roads" fast, etc. Perhaps the most important reasons for the lack of guiding policy in planning are the difficulties involved in establishing such policy, and the difficulties of maintaining an established policy with some hope of continuity through the various changes in executive and legislative management.

#### Evolution of Highway Planning Policy

The policy of planning within the Michigan State Highway Department has evolved gradually over a period of years. The exigencies of the immediate situation in the early years of highway development promoted planning on the basis of traffic need, attempting to gain an interconnected system which would adequately carry traffic throughout the State. Despite the merit of a viewpoint which emphasized the logical immediate need for traffic service, there has been a gradual recognition of the greater implications of highway planning, sometimes within, but more often outside the Department. The first indication of this trend was the legislative provision

which required State and local cooperation in planning new highway routes. A second was Congressional delegation of permanent funds for research in all phases of highway planning and development. Perhaps the most important current influences upon highway planning have evolved because of increased Federal activity in highway building since 1956 and because of the popular recognition of the need for comprehensive planning. Federal aid has gradually increased until the support is now given on a shared basis that divides the costs of highway planning, design, engineering and construction. With the enactment of increased financial aid to the Interstate Highway System by virtue of the 1956 Act, Federal participation was increased to ninety per cent of the costs of developing the Interstate framework of freeways for the nation. This incentive was a major step toward the increasing pace of nationwide highway construction. With increased aid, the Federal Government established standards of access control, design, etc. to be applied to the developing freeway network throughout the country. The establishment of standards was a milestone in providing adequacy of design and construction.

Simultaneous with the inception of the Interstate System was the phenomenal growth of the field of planning. Interest in planning since World War II had reached a new peak by 1956, a year in which the country had just experienced an unprecedented period of urban growth and expansion of investment in business and industry. The growth period appeared certain of continuing, and pre-war notions of a potentially stabilized

population had disappeared. Realization of the need for planning rode the crest of this wave of thought. Because highways afford an excellent method of influencing this development for the better, planning considerations were included in the 1956 Federal highway regulations.

By recognizing the importance of highway development to the economic and social well-being of the nation as a whole, these developments gave renewed emphasis to planning, and were influential in establishing land use planning considerations as part of the overall highway planning process. Federal interest in promoting the coordination of highway and community planning prompted highway departments to take a second look at the past development of planning operations. Consideration of engineering and traffic service were no longer paramount; land use planning began to share the stage with formerly all-important considerations.

### Methods of Planning

The process of planning is quite clearly spelled out by Michigan laws dealing with responsibility for planning and financing. However, actual methodology is not defined so minutely. The bases for the methods of highway planning are inherent in the Highway Act of 1951, which instructs the State Highway Commissioner to "make surveys and plans . . . of the state trunkline highways. For the purpose of securing a more direct and favorable location, minor changes in the line of any road may be made when, in the judgment of the state highway commissioner, the changes make for the safety of the public travel."<sup>1</sup>

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<sup>1</sup>Act 51, P. A. 1951, as amended, Sec. 1(a).

To keep a running inventory of highway needs in Michigan, the 1951 legislation provided that "the state highway commissioner shall make a continuing study or survey of highway conditions and deficiencies throughout the state in order to reevaluate highway needs at regular intervals and thereby keep current the results of the study contained in the 1955 reports entitled "Modern Highways for Michigan, an Engineering Base for a Fiscal Report" and "Financing Modern Highways for Michigan."<sup>2</sup> This enactment provides a basic tool for highway planning in Michigan. Through it, data may be collected by means of a continuous analytical process of examination and evaluation.

In order to provide for a complete sharing of the highway planning activity, cooperation in planning is specifically permitted by the Highway Act of 1951. Special care is afforded to assure that the State, counties, and incorporated cities and villages may each "enter into agreements with" an agency from another level of government, for the purpose of planning.

The state highway commissioner may enter into agreements with boards of county road commissioners and with incorporated cities and villages to perform work on any highway, road or street, and such agreements may provide for the performance by any of the contracting parties of any of the work contemplated by such contract including engineering services and the acquisition of right-of-way in connection therewith . . .<sup>3</sup>

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<sup>2</sup>Ibid., Sec. 9(a).

<sup>3</sup>Ibid., Sec. 11(g).

Similar provisions permit county road commissions to enter into agreement with the State Highway Department, cities and villages, or other county road commissions.

### Highway Planning Procedural Guide

Early State legislation concerned with highway development began a cooperative planning process of local and State agency interaction for highway planning, by implication recognizing a local prerogative in land use planning. The development of a broader highway planning philosophy has evolved from the process of interaction by the Michigan State Highway Department with other governmental agencies. Working with the City of Detroit and the Wayne County Road Commission, the Department formed a tri-partite agreement for the purpose of highway building. To synchronize the efforts of these three agencies, and to permit the division of work and responsibility, to define planning report requirements, management of the Highway Department requested that a guide be prepared which could function as a specification for highway planning studies.

Such a guide was prepared in cooperation with the participating agencies. The published result, a report entitled "Checklist for a Highway Planning Report," found ready application in a Detroit Expressway study, and permitted the coordination and controls required by the Department.<sup>4</sup> It is utilized not only by organizations with which the Department

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<sup>4</sup>Michigan State Highway Department, Checklist for a Highway Planning Report (Lansing, Michigan, 1960) ii.

cooperates, but is also used within the Department, as a guide to the preparation of highway plans and planning reports.

The policy established in written form by the Checklist is not new to the Department. Portions of it are required by law; others exist in a highly informal manner. More than any other Highway Department publication, however, it expresses a policy for the orderly planning of highways in Michigan. Because it provides essentially for the planning of highways within a framework which envelops the entire community, region, or State, the Checklist includes considerations once considered to be outside the realm of highway planning. The underlying philosophy exemplified is that few economic, social or physical considerations are not related to the development of highways. The Checklist therefore enumerates considerations which should apply in the formulation and analysis of highway proposals and plans. It stresses city planning criteria and regards the measurement of community characteristics as being necessary to assure that a highway facility would be an integral element in overall community design, planned with these aspects in mind. Planning for various alternatives is encouraged because comparative analysis is obtained by application of the itemized considerations to potential solutions.

The Checklist outlines a step-by-step procedure for the conduct of highway planning studies to be used in compiling and organizing basic planning data necessary to the solution of highway planning problems. These four major steps form the basis of the Checklist.<sup>5</sup>

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<sup>5</sup>Ibid., p. ii.

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1. An inventory and description of the study are to determine present conditions.
2. A forecast of future conditions based upon the inventory of existing conditions and established trends.
3. An analysis of what must be done to provide possible alternatives that will satisfy the forecasted future requirements.
4. A recommendation of a best solution on the basis of the comparative analysis of alternatives.

A more detailed Checklist outline can be found in Appendix I.

The process of highway planning outlined by the Checklist is based on the assumption that the basic process would be the same whether applied to an urban or a rural situation. In this way, the procedural outline is intended to be educational and informational, illustrating the great number and variety of considerations which pertain to any highway planning problem. It assumes that the process would be the same whether plans were being drafted for one route or for an entire system of routes. The general approach and the concepts embodied in the Checklist were drafted to encompass and meet situations normally encountered in the planning of any highway, and to provide a common procedure to follow even though the complexity of study and amount of data should vary substantially.

The comprehensive highway planning which is suggested by the Checklist conforms to no particular organizational pattern. It was not based on the internal structure of the Highway Department, for the reason of avoiding patterns which

would prohibit its use by another organization with which the Department might collaborate. Similarly, this planning process was organized in such a way that it would use the broad talents of many professions, and not be dominated by any one specialization, viewpoint, or philosophy. In this way it recognizes the necessity for sharing the responsibility for highway planning functions. Administration of the considerations outlined in the Checklist would be divided among various local and State agencies best equipped to carry out a particular study or aspect of highway planning. Coordination of the processes involved would doubtless be the function of one of these agencies, but responsibility for the planning activity as a whole would be mutually shared by participating organizations.

Although the steps included in the Checklist planning process are theoretical and perhaps too all-inclusive of considerations which are applicable, there is a firm basis in reality. Most of the steps of the process are already in practice in the Michigan State Highway Department. These steps exist in various stages of development. Several of the enumerated considerations, such as traffic study and analysis, were made precise long ago and have become a firmly entrenched part of the departmental planning process. Other Checklist considerations have more recently become part of the work of the Department, and more will presumably be added. Items mentioned in the Checklist are becoming more and more a part of the process of planning for highways, as increasing

value is placed on the comprehensive pre-planning of public works. A question looming large appears to be determination of who should carry out the items mentioned.

### Deploying Forces for Planning

A complex and interrelated stratification of authority plans for the future of Michigan's highways. The functions of providing highways in this State are performed by specialized agencies, divided and subdivided into divisions and sections, each of which plays a particular role in the overall structure. Legal requirements have dictated that the Michigan State Highway Department should perform certain functions. These functions have, in turn, given rise to the growth and development of specialized divisions of authority. As the responsibility of each of the many divisions of the Department grew, sub-sections were formed to carry out the functions more adequately. These sub-sections have, in general, remained with the parent division, but at times there has been a splintering process resulting in a new organization or division to perform a specified function grown too large for the former division to manage. The splintering process has also resulted from attempts of top management to end proclivities of one individual to build a personal empire of authority within the Department.

Planning functions in the Highway Department are generally centered in and about the Office of Planning, which encompasses the Divisions of Planning, Route Location, and Programming. The Planning Division is charged with the selection

of generalized solutions to highway planning problems, based on a comprehensive study of existing and future community considerations and traffic service needs. After this work of initial planning is completed, the Route Location Division selects from the generalized solutions the possible alternatives which meet the prerequisite of solving the problem. Final selection of a specific recommendation results from the interplay and coordination of work by both divisions. To meet established needs, the recommendation is given a priority rating of urgency and is scheduled for construction by the Programming Division, which also inventories road conditions and potential needs, tabulating its findings for the generalized work of the Planning Division. The Programming Division serves the additional function of supervising and auditing funds allocated to local governmental jurisdictions for highway development. Many other Departmental sub-sections and divisions are involved in the work which results in the final selection of a project for construction. For instance, Traffic Division of the Office of Engineering must be consulted to determine existing and proposed traffic operations in a projected improvement area. The Geometric Design Section of Traffic Division must be consulted to determine the feasibility of certain of the recommendations which involve curves, turns, superelevations, etc., in the proposed improvement.

Specialized attention within the Planning Division is divided among three subsidiary sections: Urban Planning Section, which directs the planning of urban highway systems;

Systems Planning Section, which provides for rural roads and highways; and Origin and Destination Studies, which coordinates large-scale surveys of traffic between Planning and Traffic Divisions. These sections perform their subsidiary functions with the help of specialized personnel. The hiring of professional planners has brought new tools to carry on the preliminary work so integral to adequate highway planning. The use of computer methods in estimating land use and the distribution of predicted traffic onto new highway systems is beginning to be integrated into the overall planning functions of the Division.

Because highway planning requires specialized attention in any given situation, the Systems Planning and Urban Planning Sections are involved in all stages of the planning process. The functions of inventorying existing conditions which determine the location of a highway facility are carried on by them, as are evaluations of local forecasts of future characteristics. Where no such forecasts exist, an attempt is made to derive the necessary information from any source available. Analysis is the principal function of both sections, and is accomplished by collating all data derived from the inventory and forecast phases. Conclusions or recommendations are not attempted for any particular problem until local officials and planning agencies are contacted. The usual procedure is to contact the local or county road and street planners and administrators prior to contacting those in political power to work out details of background necessary for the planning work, and to resolve minor differences. When

local officials contact the Highway Department in support of particular projects, the process is ordinarily expedited.

### Coordination and Control

To insure effective coordination and the successful accomplishment of planning work, certain basic procedures and controls have been officially established to act as guidelines for planning. Standards of design provide a touchstone for the planning of routes and simultaneously give identity to a particular system of routes. The freeway network is thus characterized by wide rights-of-way, grade separations, access control, etc. Similar standards govern the planning of every type of roadway and influence the direction and form which the final route will take. Michigan's highway standards have been derived from Federally sponsored suggestions, and adapted to the peculiar needs of the State.

Within the organization of the Office of Planning, coordination operates by means of a loosely-knit, informal system. Few official reports are transmitted between divisions, except at the completion of a project assignment or upon request. Requests and replies are handled by memoranda, but are usually sent only in confirmation of verbal questions or statements. Staff information moves in both directions through the structure of authority and responsibility. An approach utilizing interdivisional task forces of selected personnel is often employed to avoid involving an entire section in deliberations of a particular problem. This promotes interest in specific projects, as well as an immediate knowledge of

individuals who are well acquainted with specific items.

The complexity of operations within the policy framework has discouraged the development of a planning process that is totally discernible. The inner functionings of the process are masked within the various divisions, sections, and even individuals to the extent that the relatively clear-cut lines of the Checklist planning process scarcely seem applicable. The complex and interlocking character of organizational roles in highway planning is illustrated by a description of the operational process, actual blueprinting or detailed planning operations currently utilized by the Michigan State Highway Department.

## CHAPTER IV

### OPERATIONAL ASPECTS OF DETAILED HIGHWAY PLANNING

Evolving over a number of years, the process for determining the future improvement needs of the highways in Michigan has become highly systematized, complicated and detailed. Current projects of routine maintenance and improvement, as well as major new facilities or relocations have been based on an almost mechanistic study of existing facilities, which receive exacting examination to determine the urgency of need for improvement. The total process of studying highway needs is outlined in the steps which follow; it should be noted that the functions mentioned were not performed entirely by one division, but that the process is generally contained and coordinated within the Office of Planning. These operations are here discussed within the generalized headings suggested by the Checklist in order to derive a basis for comparison and contrast.

#### Inventory of Existing Conditions

One of the principal tools upon which the Department has relied as basic data for highway planning is the various methods of inventorying traffic flow. A thorough traffic inventory and analysis ordinarily provides an indication of the geographical places where people wish to go

and from which they are coming. Because of this tie to places, large scale urban traffic studies have taken into consideration the major uses of land to determine the principal causes of traffic movement, as well as the general directions of heaviest volume and demand. In most urban studies of traffic, volumes were counted at points outside the city called the external stations, and were supplemented by sample interviews of traffic moving solely within the urban area. These volumes were noted by type of vehicle, number of occupants and purpose of trip.

Accumulated data were grouped and coded according to zones designated on the basis of generalized land uses. The data for each trip were recorded on business machine cards and tabulated automatically. In more sophisticated studies now evolving, additional data are entered on the cards to determine the probable routing of each trip, and tabulations are made to determine volumes which can be expected on any particular street or route in the urban area. Similar processes are being employed in the assignment of traffic to future highway and street systems.

In rural areas, the process was not as complex as that suggested above. Rural area traffic counts were obtained by a series of permanent traffic-counting machines stationed throughout the state, and by portable machines moved about the state as the need for traffic data developed.

To supplement the traffic information, detailed engineering analyses were accomplished on each highway,

bridge and rail crossing in the State.<sup>1</sup> A study of State-wide scope required the cooperation and active participation by all road and street jurisdictions throughout Michigan. Because of its State-wide interests and organization, the State Highway Department served as coordinator of the project. State and local officials reviewed procedures of operation. Evaluation of local road systems was carried out by each county engineer, with assistance from the Department when needed. Through cooperative effort, each participating authority gained full knowledge of its own problems.

Standards governing physical design of various types of roads and streets were a basic instrument in the Departmental data gathering process. Design specification and codification enabled the measurement of existing highways on a sound and uniform basis. On the basis of many years of research, national standards for road design have been formulated by the American Association of State Highway Officials, in cooperation with the former Public Road Administration, and now with the Federal Bureau of Public Roads.

In the determination of Michigan highway deficiencies, standards take account of special conditions and needs. Considerations involved in choosing State standards included road purpose, traffic volume, vehicle characteristics, overall costs, and safety elements.<sup>2</sup> Road purpose was derived

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<sup>1</sup>Automotive Safety Foundation, Modern Highways for Michigan, An Engineering Base for a Fiscal Plan (Lansing, Michigan, 1955), p. 23.

<sup>2</sup>Ibid., pp. 27-30.

from a highway classification process. The remaining factors were gathered from individual study of each community, county, and district in the State, and from characteristics of vehicles, and personal travel habits. Highway width was standardized from studies of types of vehicles and the speeds at which they are operated. Desired speed and the classification of each road determined road alignment, super-elevation, and sight distance requirements. Vehicular power and loads determined the maximum gradient permissible on a highway facility. Anticipated loads and traffic volumes determined the thickness and type of road surface to be provided, and the strength which must be built into bridges and sub-grades.

Total costs are, of necessity, a consideration in planning for expenditure of public funds. A cardinal rule for the minimization of costs is the policy of locating a highway as directly as possible. The relative cost of maintenance and operation of the facility must also be taken into consideration to eliminate unnecessary expenditures after projects are completed. Costs incurred by users must be considered, even though somewhat difficult to determine. Safety, as a major consideration, often raises total costs through the need for improved highway design. Divided highways, grade separations, improved intersection design, and access control augment costs, despite the acknowledged elimination of interferences to smoothly flowing traffic and subsequent savings of costs to users. Weight and size restrictions help preserve the adequacy of the road, by eliminating

the necessity of changing design to accommodate vehicles larger than the road design permits.

Planning and design are not totally contingent upon the above considerations. Obviously every road cannot be constructed to ideal standards, due to limitations of funds and the lack of need for high standards on every road in the State. Tolerable standards have thus been established to provide roadways and structural conditions which provide minimum levels of service, convenience and safety to motorists.<sup>3</sup> These standards permit a more logical rating of the needs of the State roads and streets, all of which probably need some degree of improvement. With the limitations imposed by tolerable standards a better perspective is obtained for scheduling improvement of the most urgent projects in an orderly fashion.

#### Forecasting Future Conditions

In order to determine the probable future function of a State highway, a method of classification has been devised to group together those roads which provide similar service and function. Classification is a device which permits orderly improvement of all roads and streets in accordance with their importance to the economy of the State and the individuals within its boundaries. It provides a framework upon which a sound financing plan may be based and administered.

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<sup>3</sup>Michigan State Highway Department, Highway Needs in Michigan (Lansing, Michigan, 1948), p. 114.

A systematic determination of all the classifications of State highways was prepared by the Planning Division of the Michigan State Highway Department in 1953. According to that survey, the roads and streets of the State serve three functions: (1) primary transportation service, (2) community service, and (3) land service.<sup>4</sup> According to this classification method, routes of primary service connect major points of State-wide traffic interest. Community service routes connect and collect traffic from places of county-wide interest to the primary system. Land service routes provide access to farms, homes, and important shopping or market centers. These functions quite reasonable overlap, and the routes are subsequently duplications of one another on occasion.

Using this systematized method of classification, populated places and points of traffic concentration have been ranked according to their relative importance as traffic attractors or generators. This ranking is based on a study of population of each center and its tributary area, its banking resources, its area of influence as measured in newspaper circulation, wholesale and retail trade, and area in square miles.<sup>5</sup> The relative Statewide traffic attraction importance of each is measured in terms of the average annual number of trips made per passenger vehicle attracted to the

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<sup>4</sup>Michigan State Highway Department, A Method of Rural Road Classification (Lansing, Michigan, 1950), p. 2.

<sup>5</sup>Ibid., p.6.

place. Hence, traffic desires may be known and the relative importance of each segment of the entire State highway system connecting these varied places may be established as a guide to the administration of the many facets of highway provision.

Highway planning depends to a large degree on anticipated traffic volumes. The degree to which a road must be improved will be based on usage as determined in total volumes of traffic and by commercial traffic. Because roads are built to last for many years, traffic estimates used as a basis for planning must include travel increments expected during the life of the facility. To these estimates must be added the traffic which may be attracted to the roadway by reason of its improvement. Unless these factors are taken into account, a newly built facility could quickly become obsolete because of inadequate capacity. A given type of highway will economically carry traffic loads within a certain range, but when volumes exceed the limits of this range, different planning considerations become necessary.

Traffic estimating in the Highway Department is in the province of the Traffic Division, which utilizes land use and population distribution as a basis for its estimates of future volumes, and coordinates its origin and destination surveys with the Planning Division. The processes used are quite subjective, and are often open to question. A more thorough analysis and forecasting method appears to be emerging from the continued efforts of the Traffic Study

personnel in Detroit. Beginning with an extensive traffic analysis, the Detroit Study has continued its work to become the prototype of large metropolitan area traffic study projects. Original traffic data are being kept up to date through estimates of current population, land use development and economic activity. Spot checks on selected estimates test the accuracy of its methods, in order to assure validity of future prognostications. This objective approach will probably be utilized increasingly by the Department, as thoroughness increases and the margin of error decreases.

#### Analysis to Determine Deficiencies

The data gathered in the inventory and forecast processes are utilized as a basis for analytical efforts to determine the deficiencies and subsequent needs of Michigan's roads. Deficiency measurements were accomplished by comparison of existing conditions with tolerable standards. Each road section was evaluated in terms of its adequacy to carry traffic, as well as for its structural conditions. The type and cost of improvement necessary to meet the standards were estimated for all sections of highway. Where deficiencies were found, required improvements were determined and costs were estimated on the basis of the construction standards established for each type of road or street. A point score indicating the degree of deficiency and the required improvement was awarded to each road section, based on its individual conditions and characteristics. This provided a numerical basis, when totalled, to use in estimating highway improvement needs.

Estimates of Michigan's highway needs were then expressed in three basic elements: (1) existing highway deficiencies which have accumulated over the years, (2) annual replacements required in future years while accumulated deficiencies are being eliminated, (3) annual maintenance work needed to keep the road plant in proper condition.<sup>6</sup> The determination of existing deficiencies resulted in the beginning of a system of giving priority to the improvement of these roads most obviously in need of improvement. Additional deficiencies were determined by applying to existing highways the traffic estimated to utilize the facilities in the foreseeable future. By projecting the life-span of the existing facility, and relating this to anticipated traffic, further deficiencies were recorded. Total highway needs thus included not only accumulated deficiencies, but any replacements required during the years while present deficiencies were being overcome.<sup>7</sup>

Using past experience, probable yearly replacements were estimated. Future annual requirements for maintenance of the highway plan depend upon changes in the development of road and street systems, and on revisions in required improvement standards of construction and maintenance. The codification of these deficiencies was permitted by a process similar to that utilized in the recording of the existing

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<sup>6</sup> Michigan State Highway Department, Highway Needs in Michigan, op. cit., p. 114.

<sup>7</sup> Ibid., p. 116.

plant facilities. Rating forms were devised to include the indices of deficiency in tabular form, permitting a numerical rating for analysis of the accumulated deficiencies, the replacement needs, and the anticipated maintenance costs.

### Formulation of Conclusions

When the deficiencies and replacements were determined, a priority schedule was established for all the projected improvements. Priorities were fitted into a plan for annual programs to meet the total highway needs. The plan, of necessity, covered a fixed period of years and was divided into annual programs of accomplishment, encompassing total highway needs, and providing not only for the elimination of present deficiencies in the highway plant but for meeting future replacement and maintenance requirements.

The selection of a program period was based on annual costs, as related to the number of years over which it was desirable that the system should be improved. Obviously a short period of time would have resulted in larger costs per year to fulfill the objective of an adequate highway system. Conversely, the program could not be extended too far, because of inflation, and because of the unknown characteristics and changing uses of vehicles. The rapid increases of population distribution and commercial and industrial changes dictated a relatively short period of time to permit the re-evaluation of the highway building program as road improvement needs change. This flexibility permitted administrators to make changes in the light of changing conditions. The

continuing trend toward increased design standards has provided limitations upon the amount which may be accomplished in a given period of years. Other problems will no doubt arise in the future to impose limitations upon currently programmed improvements.

The preceding description illustrates most of the currently formalized methods of planning utilized within the Highway Department. However, a great many other factors operate within the Department to influence the planning of highways. Many of these defy description and are perhaps best illustrated through the use of a case example. The operations described in the following chapter are illustrative of the process which stems from the foregoing determinations of highway deficiencies and needs. Case study data and materials have not been extended to include the foregoing factors, because of possible duplication and because of the paucity of information available concerning the specific route to be examined. Additionally, the process of planning in the case study was extraordinarily rapid, and conceivably might have omitted some of the considerations mentioned above.

## CHAPTER V

### A CASE STUDY IN HIGHWAY PLANNING

The City of Troy, until 1955 a township, is located adjacent to the heavily urbanized finger of developed land which extends northward from Detroit toward Pontiac. With the inexorable push of urban development, the City seems destined to become a full-fledged community within the metropolitan area. Land development has been limited, taking the form of scattered development generally concentrated along the "mile" roads and in the southern portion of the land area encompassed by the City limits. Most of the modest residences of the City are concentrated in areas near the municipalities of Clawson, Royal Oak, and Madison Heights, which adjoin Troy. Quite a few higher-income residences have been built on land adjoining Bloomfield Township, in the northwest area of the City. Industry has tended to concentrate in a corridor bisected by Stephenson Highway; the notable exception is the Chrysler Corporation, which has purchased a large block of land in the northwest portion of the City for development of a technical and research center. Construction of this project has not yet taken place, but Troy officials and corporation representatives are confidently planning for the existence of the large facility. Commercial areas are generally scattered; under

construction is a large shopping center, to be called Troyland, at the corner of Maple and Livernois Roads. The largest semi-public land use is the White Chapel Cemetery. Most of the remaining portion of the City is undeveloped or utilized for agricultural pursuits.

City officials have not been lethargic in providing for the future of Troy. Shortly after the incorporation of the City, steps were taken to provide for its orderly development and progress, by retaining of a firm of planning consultants to draft a community master plan, zoning ordinance and building code. Several studies by this firm were completed prior to the beginning of plans for Interstate 75, the Walter P. Chrysler Freeway. Planning studies included the drafting of a major street system, which called for a freeway to replace Rochester Road on a north-south alignment through the city. This route had been selected on the basis of the work by the Detroit Metropolitan Area Regional Planning Commission, which proposed a comprehensive, integrated system of freeways for the entire metropolitan area. At the time the regional plan was suggested, the exact location for the Chrysler Freeway had not yet been decided in the Highway Department.

#### Basis for Selection

Examination and investigation of the planning process involved in locating Interstate Route 75 in Troy was simplified because only one route and one city were involved. To have taken a larger circumstance and more than one route would have involved a great many complications which would

have unnecessarily lengthened the study process. Feasibility of study was further encouraged by the availability of correspondence and research material, all of which has only recently been resolved into an alignment through the City. For clarity, only meetings and decisions which were formally organized and reported have been included or mentioned in the case study. As a matter of course, meetings held in the preparation of a highway plan are not ordinarily formal, when held at staff level with local officials and/or technicians. Official statements and letters which have ensued are based on these informal workings of the planning process, and are not necessarily exact reports of work carried out at that level. They represent important decisions or courses of events which determined either a route or a segment of the entire plan which was ultimately adopted.

The location of Troy at the northern fringes of the metropolitan area of Detroit makes the case study more significant, because it is anticipated that a great deal of future highway planning and construction will be carried on in similar urban or urbanizing situations. The construction of Interstate freeways in metropolitan areas will receive particular attention in the immediate future. Troy may thus prove to be an example for the evolving State and local relationships in highway planning in Michigan. Interstate 75 is to be located on a completely new alignment through Troy, which is still relatively open in character, and the route is the only major freeway likely to be constructed in the vicinity. The freeway represents a certain stimulus

to City growth and economic development. The configuration of the route and its relationships to existing land uses and circulation facilities will have a decided effect upon future land uses and values. Because of its importance to City development, local officials have taken a keen interest in the specific location of the freeway.

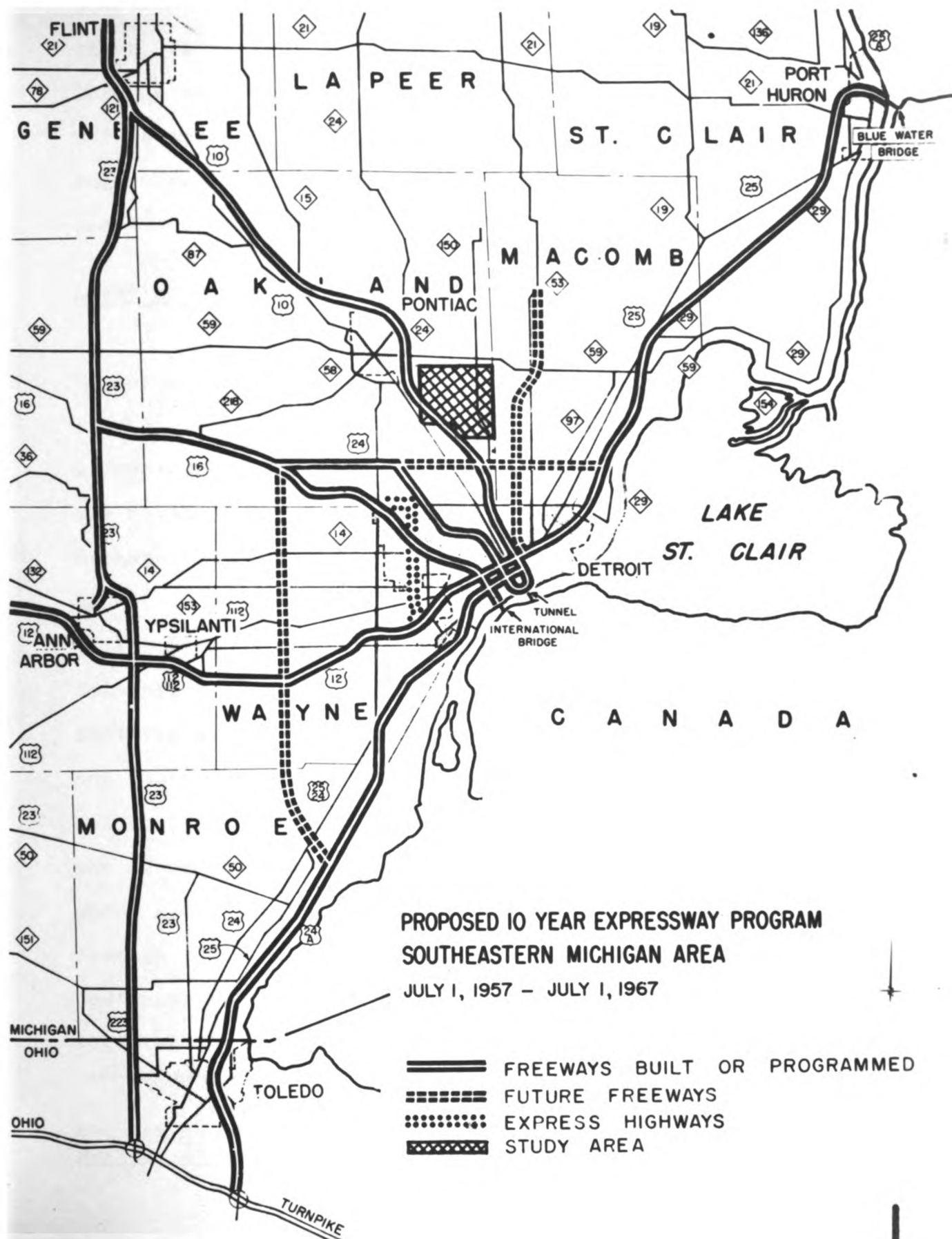
The time period involved in the planning process establishing the route through Troy was astonishingly short. This is partially due to the speed with which Interstate highways are being planned, designed and constructed throughout the country. It is also due to the relatively immediate evolution of State and local cooperative effort in Troy. Visible evidence of the degree of compromise is afforded by the physical configuration of the route through the area. The indirect routing through Troy has caused I-75 to be labelled the "stairstep" route because of the right angle turns which it negotiates.

#### Interstate 75 and Troy

The location of Interstate 75 through the City of Troy hinged upon the selection of a generalized route leading from Detroit north to the corridor of cities which includes Pontiac, Flint, Saginaw, Bay City and Midland. Local plans dating back to the 1920's located the route west of Woodward Avenue, the primary artery connecting these cities. Results of subsequent studies, notably the large-scale Detroit Area Traffic Study of 1953-1955, concluded that the route would be more advantageously located east of Woodward. This

conclusion was based on a greater concentration of population, motor vehicle ownership, traffic volumes, and defense-related and other industrial development in that area.

When the alignment was resolved to be routed east of Woodward, location through Troy became mandatory. Based on a generalized location east of Pontiac and Woodward Avenue (US-10) a "planning corridor" was established to define the limits of the area within which the highway development would be contained (See Map 1). The corridor area was determined by the Planning Division, which utilized information from the Detroit Area Traffic Study, the Detroit Metropolitan Area Regional Planning Commission, and other studies which involved the Troy area. The northernmost and southernmost points of study were determined by the larger, more general statewide plans. The specific segmental study area was determined to extend from the intersection of the Chrysler Freeway (I-75) and Holbrook Avenue, in Detroit, to the point of intersection with M-24 (Square Lake Road) southeast of Pontiac. The lateral limits of the corridor between these two points were chosen to: (1) mesh with distributing routes in the Detroit urban area, (2) bypass urbanized areas as closely as possible without interfering with future growth, (3) provide access to existing county roads which are, or will be, principal routes in the area, (4) provide access to areas planned for development, and simultaneously utilize the best



construction area possible.<sup>1</sup> Within the limits of this corridor, final selection of the generalized route was made through the City from north to south. Route location studies were started late in 1957, and informal discussions and meetings were held between officials of the Highway Department and the City of Troy.

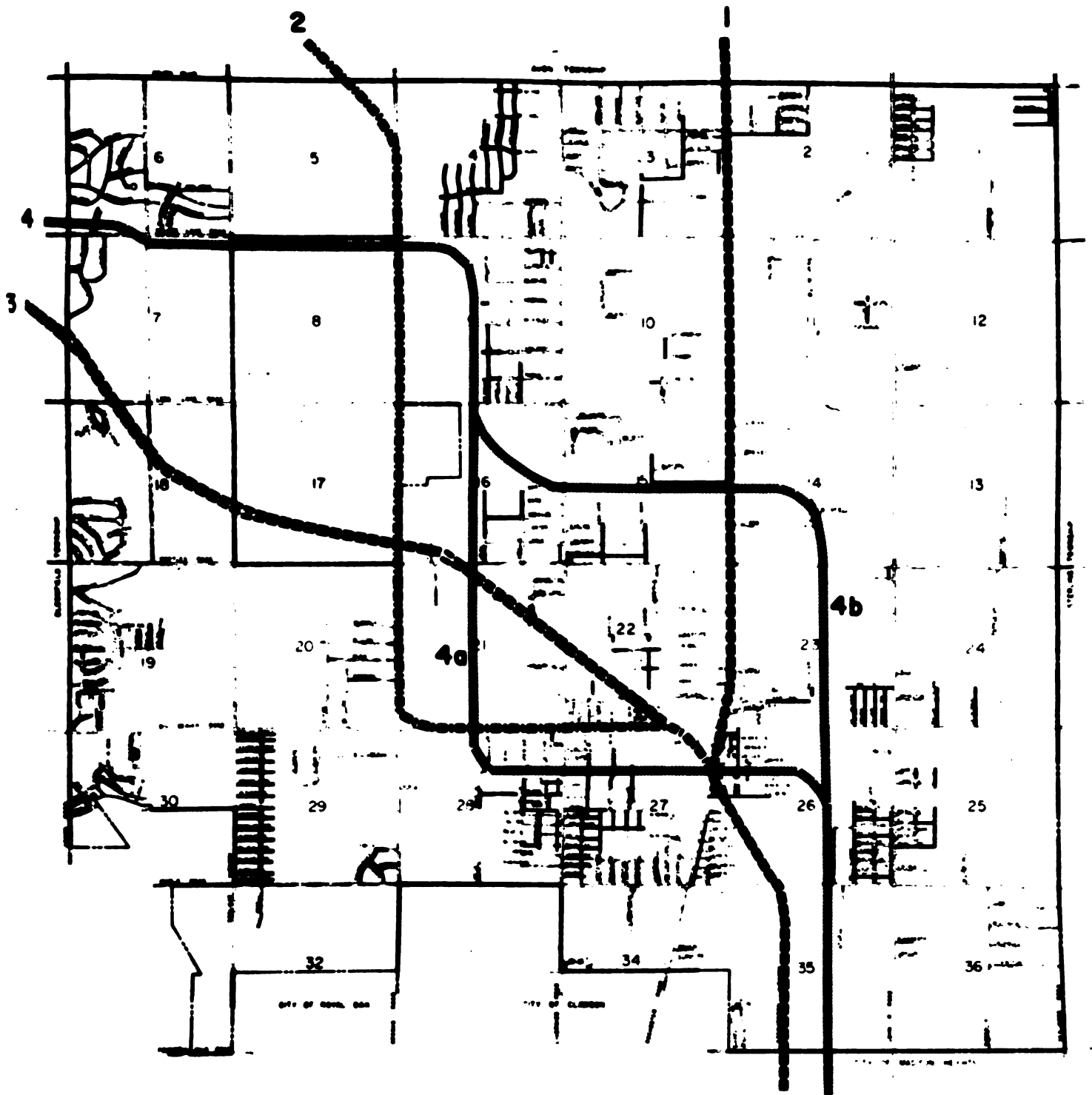
#### Locating the Route

In January, 1958, representatives of the Chrysler Corporation met with Highway Department officials to discuss the location of the I-75 Freeway in relation to the 1,700 acres of land that the Corporation had purchased for the development of an engineering and research center in Troy. Because the center is to be rather large, employing some 8,000 - 9,000 persons initially, the proposed route will be utilized by many of these persons in traveling to and from this place of employment. In March and again in April representatives from the Chrysler Corporation, the City of Troy, and its planning consultants met with Highway Department officials regarding the proposed location of the route. In the first meeting, the consultants presented the alignment which generally paralleled Rochester Road, extending north through the City (Map 2, route #1). At the second of these meetings, the planning consultants presented an idea for the location of a route which would follow Big Beaver Road and

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<sup>1</sup>Michigan State Highway Department, The Interstate and Defense Highway System as Related to The Detroit Metropolitan Area (Lansing, Michigan, 1958).

**THE**



# ALTERNATIVE ALIGNMENTS



A MASTER PLAN STUDY

**CITY OF TROY MICHIGAN**

CITY OF TROY PLANNING COMMISSION VILCAN-LEMAN & ASSOCIATES PLANNING CONSULTANTS

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Crooks Road through Troy, bending toward Pontiac upon reaching South Boulevard, the northern Troy City Limit (Map 2, route #2). This route had been derived from the master plan recommendation for thoroughfares and from meetings with local officials and the Chrysler Corporation. The Michigan State Highway Department thereupon presented a conception of a route derived from location criteria established for the freeway through the Pontiac area (Map 2, route #3). This route was located within a mile wide corridor which extended from the point of entrance of the freeway at the south of Troy, (Stephenson Highway and Fourteen Mile Road) on a diagonal alignment to a point at which intersection could be made with the new east bypass of Pontiac (Interstate 75) and the connection to Woodward Avenue and Telegraph Road (M-24 and Square Lake Road).

At the next such meeting in June, 1958, the City of Troy and its consultants objected to this diagonal route (Map 2, route #3) for the reasons: "that it created a number of triangular parcels, bounded by the proposed expressway and existing section line roads. These triangular parcels are too small in acreage to allow adequate residential development, in an area planned, zoned, and developing in the highest category of single family residential use."<sup>2</sup> West Bloomfield Township residents and officials present at this meeting demonstrated concern over the diagonal alignment because it would pass through a section in their township

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<sup>2</sup> Minutes of Meeting with local officials, June 17, 1958.

which was primarily developed in homes valued at \$40,000 or more, and because it would bisect a school site in that area. At this point, Route 4a (Map 2) was presented by Troy's planning consultants.

#### Stairsteps in the Freeway

With Route 4a, the stairstep plan began to evolve. Several details brought it into being: (1) The route, entering Troy, was moved to the east of Stephenson Highway approximately 1,200 feet. The Highway Department indicated that this was imperative due to Twelve Town Drain plans. (2) The northern leg of the alignment was turned westward along Square Lake Road to connect with a fixed point of interchange southeast of Pontiac. (3) The route was made to parallel Big Beaver Road in the southern portion of Troy, in order to delineate and service the large proposed industrial area in that location. (4) The route was designed to delineate and separate the City's proposed neighborhood or school attendance areas.

Because of the strong local feeling for the alignment, the Route Location Division of the Michigan State Highway Department agreed to make a study of the suggestion that Route 2 should be moved from a line adjacent to the west side of Crooks Road to the quarterline about one-half mile east of Crooks Road (Route 4a).<sup>3</sup> The study was resolved to compare the diagonal line established within the corridor

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<sup>3</sup>Ibid.

(Route 3) and Route 4a. In October, 1958, the Michigan State Highway Department presented Route 4b, which the planning consultants preferred to Route 4a. The consultants advised the Troy Planning and City Commissions that either of the routes (4a or 4b) would be acceptable insofar as the future land use plan was concerned. Both Routes 4a and 4b conformed with the requirements of the Federal Interstate and Defense Highway System and the standards of the city plan for Troy.

On January 14, 1959, a special meeting of the Troy City Commission was held to discuss the route of Interstate Freeway 75 through the City. At this time, the representatives of the State Highway Department submitted to the City Commission two alternative resolutions relating to locations providing for two routes through the city. (Routes 4a and 4b) The result of the meeting was Resolution #59-42, which approved the alignment of Route 4a through Troy. (See Appendix II.)

Following City approval of Route 4a, State Highway Department officials met with the Troy City Manager, the planning consultants and representatives of the Oakland County Road Commission to detail the plans for the route. Interchange location and minor line shifts were discussed at this time. Because of the difficulty of developing the strip of land remaining between White Chapel Cemetery and the adjacent existing and proposed residential area, the local officials suggested that the freeway abut the cemetery land, if possible.

The Troy Meadows Case

In April of 1959, a hearing was held in Oakland County Circuit Court to determine the validity of a local contention that Troy's alignment decisions were being made on the basis of vested interests of City Commissioners.<sup>4</sup> The principal contention was that three commissioners "contrary to the provisions of . . . the Troy City Charter, each had a financial interest other than the common public interest in the location of either one or both of the proposed routes." The attorney for the defendants stated that the "interest of the said three commissioners is a "common public interest" as opposed to a direct personal or "financial" interest as prohibited by the City Charter. "The taking of their property by condemnation or the construction of the highway in close proximity to their property might be just as liable to affect them adversely as favorably."

Although the Commissioners were found to have been involved in questionable procedures in deciding the location for the freeway, the importance of the case was the establishment of validity for the generalized stairstep route through Troy. One of the questions asked by the plaintiff was: "Are the proposed locations and specifically that location contained in the resolution passed on January 14, 1959, so vague and indefinite as to constitute a failure to comply with the necessary statutory provisions, which require the passage

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<sup>4</sup>Troy Meadows Property Owners' Association vs the City of Troy and John C. Mackie, Oakland County Circuit Court Case No. C-32687.

of a resolution by the City of Troy prerequisite to any proceedings on the part of the Highway Commissioner for the opening of any state highway or expressway?" This question was answered in the negative. Quoting another case, the judge wrote that "a resolution such as here involved, need not set forth the exact location of a proposed highway . . . The resolution of January 14, 1959, gave consent of the City only as to proposed alignment or general route." The court thus concluded "that the resolution which gave consent to the proposed alignment of the highway was proper, although it does not include and does not pretend to include all the items of consent required by the pertinent part of Michigan Legislation."<sup>5</sup>

#### Public Presentation

On July 9, 1959, a public hearing was held in Royal Oak on the route of Interstate 75 from Eight Mile Road in Detroit to a connection with Perry Street and Opdyke Road in the north-east part of the City of Pontiac. Approximately 200 persons attended the hearing, and questions were answered by representatives of the State Highway Department. All testimony was recorded.

On September 29, 1959, the Troy City Commission met with Highway Department representatives to review the suggestion that the alignment through the City of Troy be reconsidered. The meeting was open to the public and was organized in the same manner as the public hearing in Royal Oak.

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<sup>5</sup>Ibid.

Statements recorded at these hearings were studied and no reasons were found to change the alignment. Near the conclusion of the meeting, the State Highway Department representatives informed the City Commission that surveys and design would proceed in conformance with the contractual arrangements with the City originally initiated at a legally constituted, special Commission meeting by adopted resolution on January 14, 1959.<sup>6</sup>

One year later, on September 27, 1960, the City Commission again met with Highway Department officials to discuss a resolution that would rescind the City approval of the alignment through the City of Troy. The resolution had been moved as a result of controversy over the proposed location of the interchange of the freeway and Adams Road. It was pointed out that the City would probably not receive much support in court since the City Commission had already approved the alignment and had supported the alignment (in the Troy Meadows Case) only a year previous. In view of the discussion, the Commission defeated the resolution and thereby supported the previous resolution of approval.

#### The White Chapel Cemetery Alignment Problem

On April 17, 1959, the State Highway Department was asked for information regarding the alignment of the freeway in the immediate vicinity of the White Chapel Cemetery. The request came from attorneys representing Otto Tino, who at

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<sup>6</sup>Letter from J. D. Cruise to H. W. Matzinger, September 30, 1959.

that time owned property adjacent to the cemetery in Section 16 of the city. The letter stated that the attorneys had "petitioned the City of Troy to rezone the property for cemetery purposes," and that the "City Planning Commission was receptive to rezoning if the route of the freeway is along the quarter section line of Section 16."<sup>7</sup> The letter went on to inquire if the public hearing had yet been held and to request a copy of the final engineering report, which at that time had not been issued.

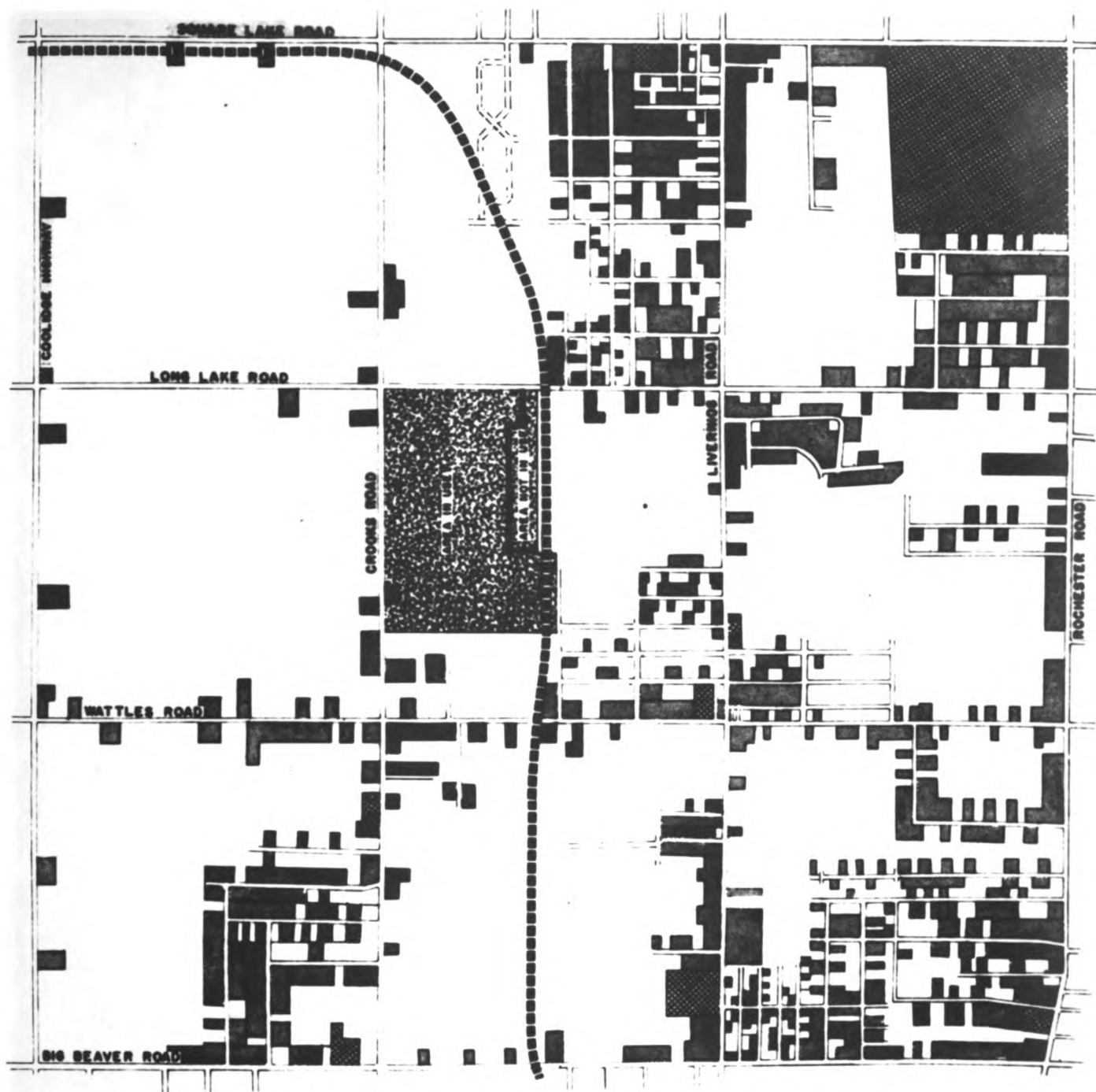
On August 26, 1959, following the public hearing in Royal Oak, but prior to the Public Hearing in the City of Troy, the White Chapel Association acquired 13.5 acres by land contract from Otto H. Tine along the east side of the cemetery. This was not the first time that the cemetery property had been enlarged. In 1957, White Chapel acquired from Magruder Jones 21.187 acres, lying at the southeast corner of the cemetery. Legal title to this land was established by decree of the Judge of Oakland County Circuit Court in connection with a bill to quiet title. These parcels of land became important when the route was located through the area. Initial route location studies had placed the freeway alignment on the quarter section line adjacent to these properties. Because the alignment extended west of the quarter line, it involved taking approximately 300 feet of the former Jones

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<sup>7</sup> Letter from Harry S. Stark, Attorney, to J. D. Cruise, Chief Planning Engineer, Michigan State Highway Department, April 17, 1959.

property and a few feet the full length of the former Tino property. (See Map 3.)

When the Route 4a was located, it was intended that the freeway should serve as a differentiating line between the cemetery and the adjacent residential neighborhood, a basic principle of land use planning. The line originally established was based on existing land uses derived from aerial photographs taken especially for the study of the corridor of the Walter P. Chrysler Freeway. At the time that the line was established in 1958, the cemetery had made no indications of purchasing the property beyond its existing east boundary. Indeed, the adjacent Tino property appeared to be totally unimproved, except for two farmhouses on East Long Lake Road. Based on this information, the planning consultants and the Highway Department located the alignment on the quarter-section line, between the cemetery and the adjacent neighborhood. This would have permitted the cemetery to expand into the Tino property, even though the recommended alignment takes some of the land at the southeastern portion of the cemetery, in the Jones-White Chapel parcel. Later, the Cemetery Association acquired the Tino property, which at that time was affected somewhat by the right-of-way for the freeway. Revision of the alignment by the Highway Department eliminated all contact with the Tino property, except that the freeway right-of-way abuts directly against it. The former Jones property remained a portion of the intended right-of-way. Because this area is in use for surplus earth



# EXISTING LAND USE

- RESIDENCES
- BUSINESS AND INDUSTRY
- PUBLIC AND SEMI-PUBLIC USES
- WHITE CHAPEL MEMORIAL CEMETERY
- PROPOSED ROUTE

0 500 1000 2000 3000 4000



3

disposal, it was felt that its acquisition for freeway right-of-way was neither distasteful nor improbable. The adjusted alignment still separated the cemetery lands, which are not yet fully developed, from the residential land adjacent on the east, and provided expansion room for the cemetery when the other portions become completely developed.

In February of 1960, the White Chapel Memorial Association lodged a formal protest which stated the following contentions: "A. Taking of the area affected will disrupt a long-term cemetery plan which has cost thousands of dollars. B. Many existing improvements, especially underground, will be definitely and seriously affected by the taking. C. The land proposed to be taken would deprive the cemetery of the sale of from 7,000 to 10,000 burial spaces. D. The route precludes making the best use of the intervening areas, because it may be necessary for the cemetery to expand into that additional approximate  $13\frac{1}{2}$  acres between the Tino property and the quarter section line. Expansion of White Chapel's already large payroll to Troy residents and its further development as an outstanding community beauty spot are desirable to the City of Troy."<sup>8</sup>

A solution advanced by consultants for the White Chapel Memorial Association was a relocation of the alignment approximately 200 feet to the east side of the quarter section line. This arrangement avoided most of the cemetery property,

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<sup>8</sup> Letter from White Chapel Cemetery Association to Commissioners of the City of Troy, February 18, 1960.

except that the line still crossed the northeast and southeast corners of the areas suggested for cemetery development. Other correspondence indicated the following reasons for moving the Highway Department alignment. "A. The Cemetery Association was not contacted by the Highway Department and was not aware that the proposal would affect them. B. Michigan law precludes the taking of dedicated cemetery property by condemnation except for widening of existing highways. C. The Highway Department has not properly estimated the cost of this property, which will be fantastically high."<sup>9</sup>

The Highway Department reaction to this letter was: "A. The Association had ample notice of Highway Department plans through the public hearing, route location discussions and local newspaper coverage. B. Act 352 specifically authorizes the taking of cemetery property for highway purposes. C. The estimate of the cost was realistic. D. Shifting the alignment would involve taking additional homes and a factory."<sup>10</sup>

In view of the protest by the Association, the Highway Department reevaluated its recommended route and changed the alignment to the extent that it avoided completely the taking of any of the former Tino property. Also, the Highway Department took the suggestion offered by the Association and studied their proposal for considerations in costs, alignment,

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<sup>9</sup>Letter from Irving J. Rubin to Commissioner John C. Mackie, April 25, 1960.

<sup>10</sup>Ibid.

property acquisition and effect upon the community land use, traffic service, economic development and school service-neighborhood areas. Having already altered its alignment to meet part of the Cemetery Association demands, the Highway Department returned to the Association and to the City with the appraisal of the two alternatives. Local officials and the Department were unanimous in opposing the additional change, and the Cemetery Association entered a writ of estoppel upon the construction of the route, citing the conflicting legislation which prohibits the condemnation of cemetery property in the development of a new highway alignment.

The outcome of the current litigation is not yet apparent. The design of the highway has been carried forward, nonetheless, and the Department and Bureau of Public Roads seem confident that this route will be constructed, despite the outcome of the case. If the case would be lost, the route could probably be adjusted eastward onto an alignment somewhat more expensive, because it is not totally vacant. Otherwise, the freeway route through Troy appears certain to remain as proposed and adopted in Route 4a, the stairstep alignment.

## CHAPTER VI

### IMPORTANCE OF THE CASE STUDY

The chief value of the case study of Troy has been the revelation of several trends which appear to be significant to the planning for urban highways in Michigan. Primary among these is the evidence of genuine cooperation between State and local agencies in the location of highway routings through urbanizing land. In conjunction with the spirit of cooperation, compromise has resulted in a route which is compatible with not only State requirements, but with local and regional desires and objectives in planning. Similarly, the route demonstrates the new emphasis on considerations of community importance, which now has attained a stature equal to the previous emphasis on traffic service and economy in alignment. Perhaps most significantly, it suggests the need for continuation and refinement of the planning process utilized by the State in locating urban highway routes. Taken individually, these items shed light on planning considerations which appear necessary in order to ensure the best location for all such routings, for in an urban area, overall highway planning errors could be magnified into major community catastrophies.

Community Land Use Development

Highways such as I-75 constitute an important element to the development of a young city, indeed perhaps the most important element in inducing early growth and prosperity. Troy seized this opportunity to further its own community aspirations, and represents somewhat of a pioneering community. Few other Michigan cities have had the courage and the leadership with which to strive toward a comprehensive planning point of view. Frequent changes are ordinarily suggested by local communities on the basis of adjustment to existing conditions. In Troy, the emphasis was on long-range development of the City, rather than on a short-range advantage to be gained from highway routing. It is interesting to note that adopted policy has resulted in a somewhat slower rate of growth for Troy than that experienced by adjacent municipalities without development plans. Troy's rate of development, if slow, will be well-regulated and directed, to assure the maximum advantages of full usage of community resources and potential.

Troy's planning program, in process at the time I-75 was located, has continued and is still working through a contractual basis with the consulting firm. The local plan, although not static, has served as a statement of local policy for the development goals to be attained by the community and provides a framework for the consideration of any actions in relation to the potential future of the City. A period of unprecedented growth is foreseen for Troy in its location

near the burgeoning Detroit and Pontiac metropolitan areas. Geographical location, and improved traffic service facilities make Troy a prime target for population immigration. Population estimates contained in the master plan were only slightly higher than actual figure of 19,058 obtained by the 1960 U. S. Census.<sup>1</sup>

Master plan studies for the City of Troy indicate that it will grow at a vastly increased rate and not at the rate recently experienced. Based on a theory of complete saturation of its land area (with all land in use), Troy could maintain a total population of 134,000 persons.<sup>2</sup> Because saturation of land is neither likely nor possible, the estimate has been tempered with other considerations: area rate of growth, building activity, persons per dwelling unit, sewer service, and limitations on development such as flood plains and swamp area and industrial development. With these modifying factors, the population has been estimated to reach 96,750 in 1980. A more conservative estimate comes from the Detroit Metropolitan Area Regional Planning Commission which estimates that the population of the City will reach 82,000 persons in 1980.

Coupled with population growth and increased commercial development, an expanded industrial base is expected.

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<sup>1</sup>Vilican-Leman & Associates, Neighborhood Planning Units, City of Troy (Berkley, Michigan, 1956), pp. 10-14.

<sup>2</sup>Ibid., p. 10.

These expansion factors will bring still more population, commerce and industry. Obviously, this spiral of development will have to be controlled. One method of control is provided by the City's zoning ordinance which aims for orderly civic development with recognized objectives in mind. Because of a combination of economic and social considerations, certain land areas will be developed in greater or lesser densities than others. Land which is readily accessible and available for use will determine to a large extent which part of the City will develop first. Troy's topography provides few serious limitations upon development of any kind. Certain areas considered unsuitable for development may be controlled and utilized in such a manner as to avoid problems for the City in years to come. Parts of the City will have natural advantages for commercial and industrial development--location factors such as major transportation, concentrations of population and direction of urban expansion. Others will more logically become residential areas, providing housing for area employees and shoppers. Zoning will assist in controlling the density of development and the areas which will be developed in the various types of uses.

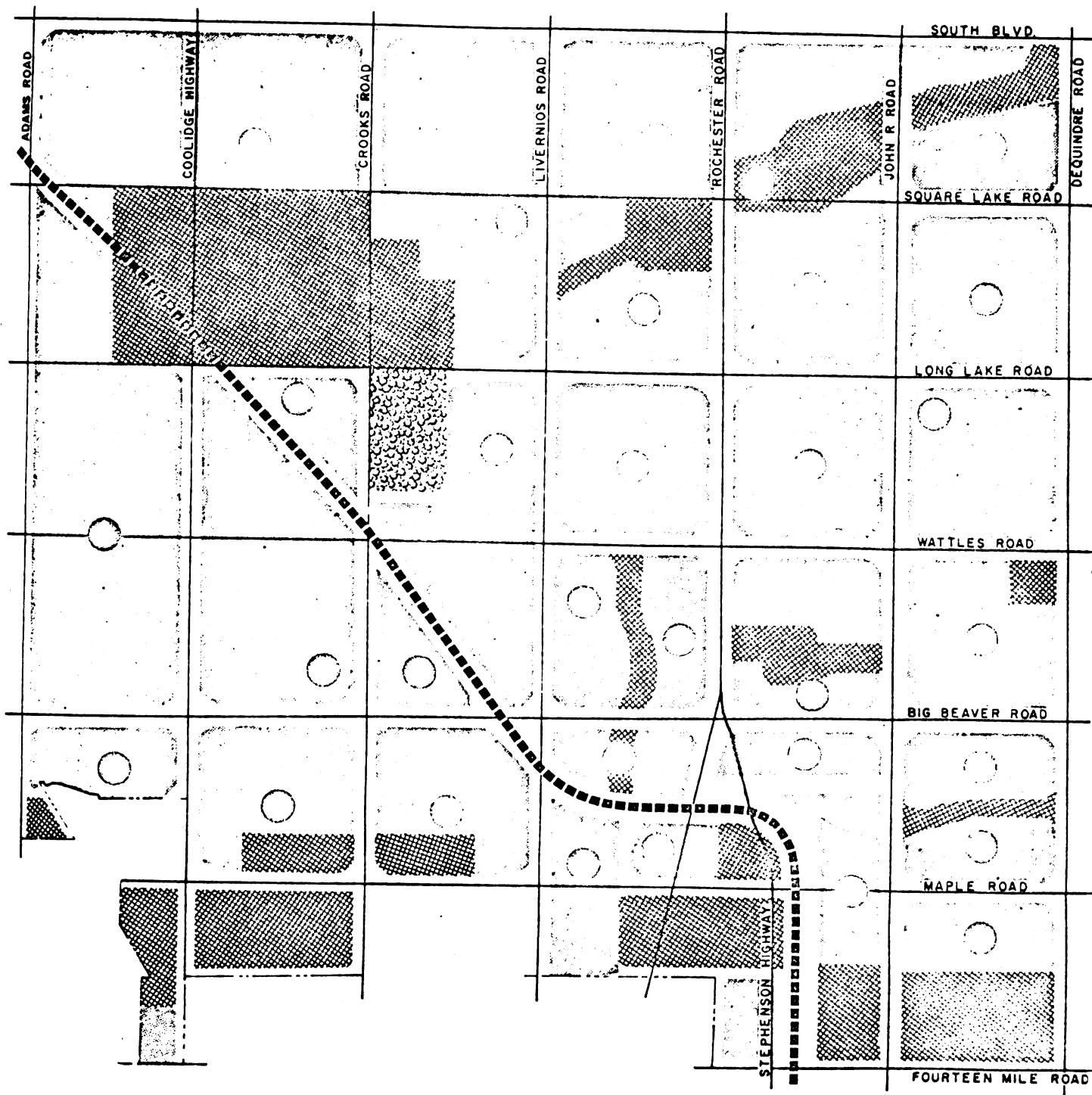
Another guide for controlling expected growth in Troy and providing for urban services is the neighborhood concept, a working theory based on a self-contained unit of residential land with its nucleus in an elementary school, playground and neighborhood park. Local shopping is provided at the periphery of the neighborhood, abutting adjacent

neighborhood units. Boundaries of the neighborhood are created by such physical barriers as major traffic ways, or natural and man-made obstacles. The majority of through traffic is diverted to these major traffic routes and very little passes through the area designated as a neighborhood.

Neighborhood units in the City of Troy are organized along these lines.<sup>3</sup> Because most of the land of the City is predominantly agricultural and open in character, the land was proposed to be developed according to the following principles: industrial establishments should be concentrated in the southern portion of the City nearer the existing population and transportation concentration; population and residential densities should be graduated from south to north, because of existing population concentrations in the south; major thoroughfares should be developed to serve primarily north-south movement, because of existing trends in that direction. Troy's neighborhood units are thus largely north-south units, because of the influence of traffic movement and the major arterial routes. (Maps 4 and 5) They are generally larger in the north and northwest portion of the City, where a lower density of population is expected. Because proposed Routes 4a and 4b are located in a stairstep fashion, they tie in more appropriately with this neighborhood pattern. The pattern will be reflected in the need for public services, utilities and education-recreation facilities. In the master plan, standards have been established for use in providing

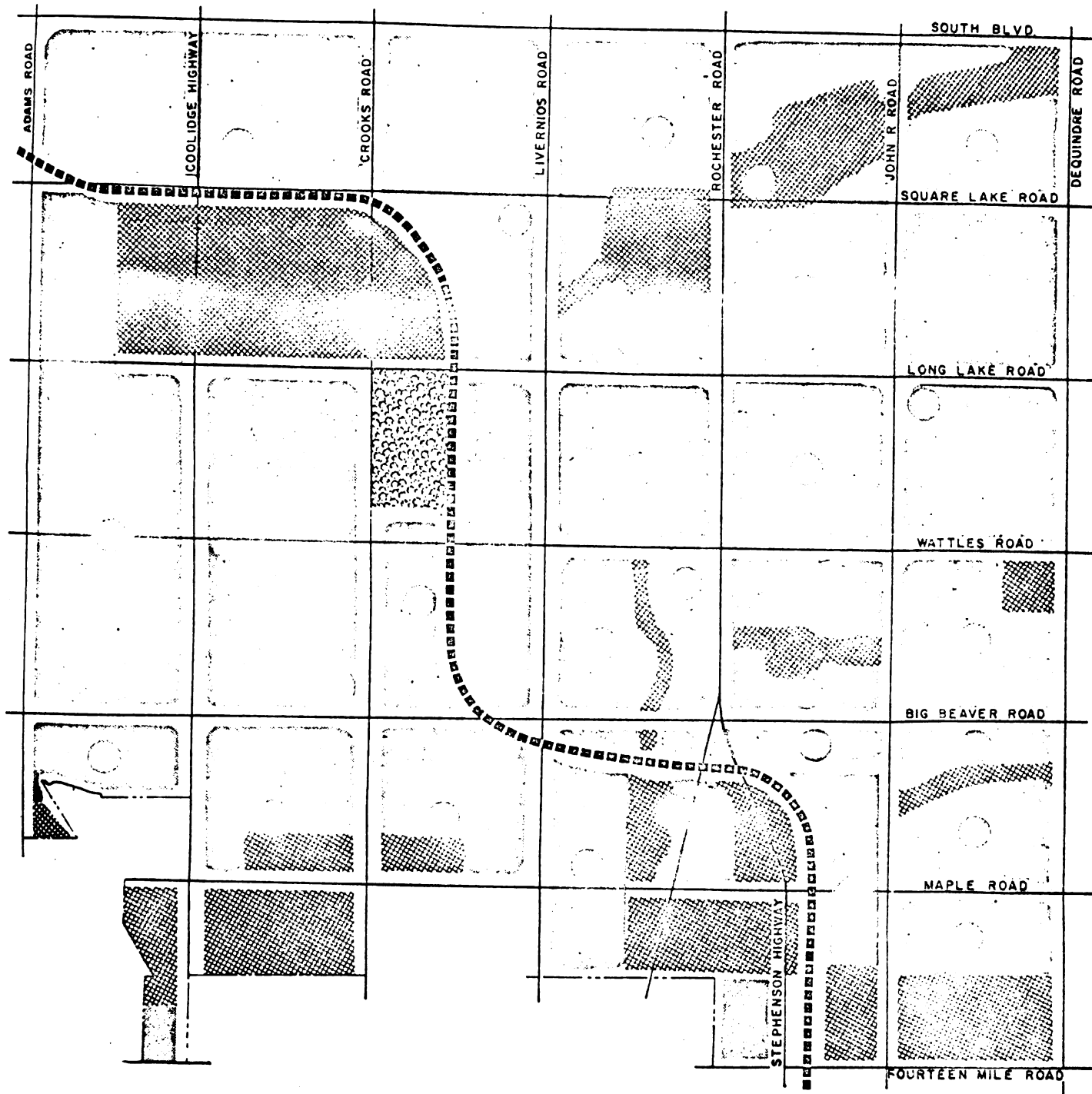
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<sup>3</sup>Ibid.



ALTERNATIVE ROUTE 3

# PROPOSED SCHOOL ATTENDANCE AREAS



ALTERNATIVE ROUTE 4a

# PROPOSED SCHOOL ATTENDANCE AREAS

these necessary items. To follow these standards, the land use pattern has to be controlled within rather well-defined limits to provide for the decision of where and when to locate public improvements.

The consultants for the City prepared the basic information in Maps 4 and 5 which show the potential effect of the freeway on the neighborhood units, as developed in Routes 3 and 4a. The diagonal alignment (Route 3) results in the fractionalization of the neighborhood units assigned to the western part of the City. The results of such a development are: difficulties in zoning caused by creating a number of triangular parcels, acreages too small to allow adequate residential development; some hazards for school children, who are forced to cross major thoroughfares to get to their respective schools; property values endangered by more thoroughfares interlacing residential areas, thus encouraging more non-residential intrusion and subsequent infringement upon residential values. Fractionalization of neighborhood units may also result in the need for provision of more play and recreational facilities, if parks and playgrounds were no longer located at the center of the neighborhood, the most accessible location for all residents of the particular area.

Previous to the adoption of the I-75 location, the Detroit Metropolitan Area Regional Planning Commission had drafted a tentative transportation plan for the region, including a freeway on the general alignment of the Stephenson Highway. In most of the area through which it passed, this proposed

freeway route differed from the Highway Department recommendation only in detailing of exact location, but in Troy, it diverged considerably from the stairstep routing. In the discussions leading to the formulation of the route, most of the regional goals were met, even though the adopted route did not follow the Regional Commission's original recommendation. Points which were not met are principally concerned with the indirect routing and adverse distance which the compromise route portends.

In the case study, the "thinking out" process had been completed by both local and regional agencies, and overall principles of freeway location determined. The confrontation by the Highway Department with plans for a route in a particular traffic corridor did not deter these agencies. Both were prepared to present tentative suggestions which complied with overall development objectives. Local planning prerogatives were fully exercised and, in a period of changing techniques and experience in highway planning, cooperative planning became a reality.

### Freeway Operations

An outstanding characteristic of the Interstate Highway System is the prevalence of local traffic which it is expected to carry. On urban routes such as the Chrysler Freeway, it is anticipated that as little as ten per cent of the total traffic volumes may ultimately consist of long-range state traffic. Because it is oriented toward urban needs, the freeway should justifiably serve those needs better than

it does the small percentage of long-distance trips. One of the methods in which it serves Troy and surrounding municipalities is by intersecting major local thoroughfares more nearly in the center of areas from which future traffic is expected to originate. Hence, the stairstep routing avoids the duplication of services provided by parallel Woodward Avenue and Stephenson Highway, which serve existing urbanized areas. These routes will be supplemented by I-75, a facility designed to draw off long-range traffic volumes and traffic generated by the City of Troy and its neighbors. The configuration of the route will be no impediment to a high-speed, efficient flow of traffic, because of design features which will soften the curves and permit free-flowing movement and interchange without hazard.

The adopted location is a decided improvement to the service of traffic destined for the proposed Chrysler Technical Center. The expected ultimate 12,000 to 18,000 future employees of this center will come from all parts of the metropolitan region. Access from the diagonal routing would have been afforded via interchanges located south and west of the Chrysler property. Neither of the interchanges would have led traffic directly into the center of employment, but through proposed residential areas some distance from the main area of the Center. The proposed stairstep alignment provides an interchange directly east of the Chrysler property, tying into Crooks Road and directly into the heart of the Center.

Overall operations of the freeway are substantially improved by the location of the stairstep alignment. The

route supplements not only the major high-speed arteries through the area, but also the local gridiron of streets, by providing an additional facility which may be used in place of any of these local routes for relatively long-range travel. The route serves to implement local plans for arterial routes by intersecting with few local streets and attracting long-range traffic which would use local streets to reach the freeway.

### Costs and Benefits

One of the most controversial points of discussion in locating I-75 through Troy was the relationship between relative costs and benefits of the proposed stairstep alignment compared to the diagonal route. The principal contention was that the adopted line was too expensive, because of the extended mileage and construction involved in implementing the plan which proposed the strange configuration. To determine the importance of the proposed route to community traffic and land use patterns, as well as its contribution to sound community development, a comparative analysis of costs was undertaken, together with a quantitative estimate of the benefits to be realized as a result of its implementation. Cost-benefit analysis is commonly accomplished to determine priority rating of the most important construction project from the standpoint of community and state service. The most urgent project is then programmed prior to others which are less important, provided it meets the necessary political and economical conditions.

Because a straight line offers the least adverse distance in both construction and in user costs, this has been a primary criteria for highway planning in the past. In this framework, the physical aspect of the plan appears absurd. It does not follow established lines of travel within the Detroit Metropolitan Area, nor does it exactly parallel the existing facilities which it is designed to relieve. When viewed on a map or aerial photograph, the configuration of the route appears to serve no purpose, particularly since there are no nearby topographical or man-made features which could prompt diversion of the route. The physical aspect of the plan indicates neither the reason for placement of the route nor the relative merit of the adopted location.

The difference in costs was, in fact, not as great as a cursory examination might indicate. Cost of right-of-way and construction of the relatively direct diagonal route were some \$200,000 less than that of the stairstep alignment. Property damage resulting from the diagonal alignment raised costs of property acquisition by intersecting and bisecting properties at angles which caused expensive damages to property and rendered some properties unusable. Less property damage resulted from the location of the stairstep route, which was located perpendicular to most of the boundaries of the properties which it touched, and was consequently less expensive in the acquisition of right-of-way.

Costs to users of the proposed highway were also estimated to be higher on the stairstep alignment, arising from

the extended distance of travel required. As a general guide, the diagonal line was determined to be the best location from the point-of-view of the long-distance user, because it involved the least mileage for the distance covered, and required fewer turning movements and less wear-and-tear on vehicles. However, for the short-distance user, comprising the majority of estimated traffic on the proposed facility, the stairstep route portends several benefits and advantages. The proposed alignment more effectively serves the community of Troy by connecting to local major thoroughfares within a relatively short distance from all the potential residential areas of the City. One of the most important savings in user costs resulted from the estimated number of vehicles expected to use the interchange near the Chrysler Technical Center, the principal generator of traffic in the Troy vicinity. The diagonal alignment would have caused employees who came from all parts of the region, to travel between the Center and the freeway interchanges on local roads, and somewhat indirectly. The motorist savings resulting from one year of user costs accruing to this movement could conceivably exceed the initial difference in cost of building the more satisfactory stairstep alignment.

### Cooperative Planning

The case study illustrates rather clearly the result of compromise in highway location. A strong local plan firmly established the position of the community in regard to plans which would directly influence its well-being and

future economic development. The flexible State plan was based on a generalized scheme or planning corridor designed to serve a specific function regardless of the selected location. Utilizing local planning concepts, the route assumes a strange alignment, which still serves State needs well, without substantially higher costs. Quite logically, there has been jealousy and resentment on the part of both local community and State officials involved in the planning process. Cooperative highway planning is a new field of endeavor for highway officials, and is not recognized by them as the best method available for this purpose. In the case study, efforts by both levels of government resulted in an excellent utilization and integration of respective resources and qualifications. The local governmental planning agency derived planning concepts which it chose to emphasize in guiding its future development. The State determined the general course of the route through Troy, and worked with the City in determining the alternative alignment which best suited all of the requirements of State, regional and local highway needs.

Because the Highway Department was not concerned with the detailed relationships of land uses, the local community took the lead in this endeavor, pointing out inherent advantages of local comprehensive planning and the benefits to be derived therefrom. The plan presented by Troy was well formulated, documented, and withstood the test of reasonableness, with a method of preparation which involved a representative portion of the community, public agencies and

officials, as well as lay citizens and groups. The State, as legal agent for the planning of highway routes, bore the chief responsibility for the development of a route which would best serve the people of the State and of the nation. The community then worked in conjunction with the State in order to achieve the route which best meshed with its objectives.

Local officials consequently appear to be well pleased that community goals and objectives expressed in the master plan are already in process of being implemented. Certain Highway Department officials seem content that the plan has been ably presented, agreed upon, and programmed for construction. The Bureau of Public Roads, after some delay, has given final approval to the project, and will participate in financing the Interstate highway. All seem to agree that the best possible route has been achieved under the particular circumstances. But the lack of complete agreement on this alignment is reflected in the various court cases, which have involved the Department in litigation with local people over right-of-way for the proposed route. There are also Highway Department officials who have misgivings about the peculiar configuration of the alignment through Troy. There was reluctance on the part of the Bureau of Public Roads, which objected to the alignment and which withheld approval until several additional alternatives had been studied for I-75 in the corridor from Detroit to Pontiac.

In planning the I-75 location, the City of Troy had several decided advantages. First, as a new community, a certain amount of pride caused the City to assert its right of assisting in location of the facility which was to have so profound an effect upon its physical features. Second, the route was almost certain to pass through Troy on any alignment chosen, hence the City could utilize its legally required approval to thwart attempts by the Highway Department to locate the freeway in a location unsatisfactory from a local point of view. Third, because of the interplay of personalities, both strong and weak, the governmental agency with the preponderance of strong-willed individuals could force the weaker staff agency into some compromise suitable to both. A complex situation with a number of interacting personalities, the planning process in Troy was markedly influenced by interpersonal relationships. Very persuasive and dominant personalities of specific persons led the decisions rendered by the City, while the contrasting Highway Department leadership was mixed in feeling about the proposals, and consequently indecisive and divided in action. Department representatives were also willing to concede limited aspects of the plan in order to resolve the location rapidly into a form that could be transformed into construction plans. Additionally, the volatile opposition and character of the demands of the City were difficult for the Department to comprehend, and subsequent meetings literally forced the Departmental representatives into partial submission to

City demands. The primary factor leading to the final plan for route development was the vociferous opposition and leadership contained within the community of Troy. Local consent was given to the route when it was resolved into an alignment which conformed with general land use development objectives.

Several years ago, this could have been an outstanding triumph for local planning. Recent trends within the Highway Department have pointed toward a change in the prevailing thought regarding city planning and rebuilding. Current public opinion seems to revere planning as a panacea for many of the difficulties formerly incurred in city development. Because of this, the location of highways has taken on a new significance to urban places, which now tend to regard a freeway or new highway as an impetus to continued or renewed economic health.

The public aura surrounding planning has been exemplified in other ways, through public support for local planning agencies and professional staff members. Planning is viewed as the rational thing to do in order to assure community growth and revitalization. Local communities recognize that a great deal can be gained from the planned development of local resources and the revitalization of the existing urbanization. Because of this, there is an increasing tendency to become more self-centered, and for local communities to regard askance the state or Federal agency which attempts to upset the social or economic future of the locality.

## CHAPTER VII

### HIGHWAY PLANNING TRENDS IN MICHIGAN: A CRITIQUE

Democratic government has been called an umpire, acting in the position of resolving conflict.<sup>1</sup> The reconciliation of diverse opinions is indeed an important governmental function, instituted to assure stability and progress in society. From this conciliatory process, a series of compromises and political decisions arise to give shape to governmental action. The chief benefit of the process is that it forces our governing agents to think, talk, bargain and explain before they act.

#### The Trend Toward Planning Comprehensively

To be effective, highway planning must consist of a total analysis of a problem in all of its facets, and its consequences, both anticipated and unanticipated. Above all, it should occur before the highway planning agency is committed to any specific course of action. Otherwise, the process becomes, as in the not-so-distant past, a justification of hastily conceived schemes for highway development. Planning by its very nature is forward-looking and

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<sup>1</sup> Marshall Dimock, Gladys Dimock and Louis Koenig, Public Administration, Revised Edition (New York: Rinehart and Company, 1959).

dynamic, implying future activity or results almost by definition. It cannot come after the fact or as justification of a predetermined route decision, else it is of little value in the overall development of highways. Admittedly, highway planners who were previously guilty of making decisions before accumulating planning data have, at times, been forced into such a situation by the pressing needs of the moment. Mistakes have sometimes been well-acknowledged, and attempts have been made to forestall their recurrence.

Planning for the vast complex of freeways in Detroit was not done by intuition but rather as a result of many years of local planning, which was tested by machine assignment of traffic, then redrafted and retested until the result provided the best answer to the City's needs for traffic service. Significantly, the drafting of the routes and the methods of testing originated from research in the field of land use planning, and integrally involved land use in combination with population and economic data as a basis for approximating the future composition and distribution of auto users in the Detroit region. Recognizing that a piecemeal approach to the problem will not bring about a successful solution, the State Highway Commissioner has requested that a full urban state highway plan be drafted prior to the undertaking of any urban highway projects in Michigan. This assures a comprehensive approach to the planning of urban areas, with each segment of highway programmed as part of an overall plan of long-range improvements.

Acknowledgement of land use planning as an element in highway planning has resulted in the designation of the Urban Planning Section as the agency to cope with an attempt to solve some of the perplexing problems of locating highway routes in urban and urbanizing situations. This Section has now been staffed with professionally-trained personnel capable of evaluating local planning operations in connection with highway planning, in order to derive the best highway solution for both the State Highway Department and the local community. These personnel take the local area as a project, study the community development factors which influence highway location and, with the help of local planning officials, derive a plan which will satisfy traffic service needs, as well as local development interests. In most cases, planning activities and projects which local area governments have underway or completed are accepted and utilized as a basis for highway plans.

Land use planning has not been the specific responsibility or interest of the Highway Department; hence, if local land use plans can be integrated and reconciled with state needs, planning work moves forward rapidly. If local plans are non-existent or unacceptable for highway development, the Department is forced to seek other alternative bases for its plans. In one such case, the Highway Department developed a community land use plan for a community which did not already have one in existence. Experimenting with the idea, technicians of the Highway Department completed

basic data-gathering and projections of future development within the community, deriving a plan based on future economic, population, and land use characteristics.

Although it was completed with full knowledge and cooperation of local officials, the plan and the process of deriving it was considered unacceptable locally and summarily rejected. The experience resulting from this plan led to a different approach in achieving local plans, where no planning now exists. Current procedures involve encouragement of local planning endeavors through the local hiring of planning staff personnel or through retaining a consultant for the necessary studies.

In those Michigan communities which have begun planning operations, the Highway Department takes these into consideration when planning its routes through an urban area. These planning operations have the backing of local people and public officials, and as such have a stature which should not be overlooked, notwithstanding occasional faults which the planning may seem to reveal upon closer examination. The utilization of these planning endeavors in the planning of state highways tends to be time-consuming, and makes the planning functions of the Highway Department more complex. Results are generally better, however, and serve to lower costs by avoiding duplicate planning effort. Possible sources of conflict are bypassed, and greater public support is achieved by working toward locally formulated desires, as expressed in local plans and recommendations.

Land use plans must be considered subject to the identical sentiments, procedures, and whims which lead to any other kind of plan for the public betterment. Being formulated for the public welfare, their general bases lie embedded in constitutional and statutory law and legal terminology which has grown with the nation. Admittedly, some of the ideas in the plans may be no more than dreams, but if the community has become convinced that it expresses local betterment sufficiently and economically, the ideas should be either encouraged or discouraged in planning. Total lack of recognition or acknowledgement is worse than a discouraging reply, and might thwart planning at the level from which it springs, and at the place currently in need of the greatest encouragement.

#### Objective Formulation

Despite the new emphasis on planning, the establishment of objectives has been somewhat overlooked in the process. Objectives have been laid down in a substantial way by the determination of needs for the highways, but routes and facilities selected for construction have seldom been given much forethought as to the ultimate aims to be accomplished. Objectives which are determined to derive the desires and goals of the people of the community and of the community as a whole, once formulated, are subject to review, rejection, and modification through the normal community policy-making procedures. Even when not clearly stated, objectives exist and may be clarified through a process of



attempting to set them down for examination and review by those having decision-making power. By stating objectives generally at first, and more explicitly later, it is possible to gain statements of goals to be maintained throughout the planning process.

Using community or State objectives, as the case may be, the highway planner could begin to determine alternative courses of governmental action. A careful analysis of the community structure, the past and present governmental policy, and the facts which are basic knowledge about the community can provide a sound background for uncovering methods to use in attaining objectives, and for considering the potential and the limitations discovered in investigation. An additional objective to be served is the economic development of the area through which a highway passes. Giving access to an efficient highway facility will result in a great deal of increased land values, changes in land uses, and speculation upon real and supposed opportunities.

Perhaps the objectives of highway development are more obscure, and have thus far eluded the Highway Department. A clear distinction of highway purpose and function has been expounded by few. According to John T. Howard, the function of highways is to carry traffic, while the purpose is to serve the community. He continues by referring to the lack of clear-cut reasoning behind much of the highway planning which is practiced today.

If a highway is so designed and built that it produces a pattern of land development and

population distribution that worsens the livability and efficiency of a metropolitan area rather than bettering it, that highway is a disservice to the community--even if it carries traffic to capacity and all the traffic seems to want to go where it is carried.<sup>2</sup>

Items which could be included as Highway Department objectives might, in the long run, make increased use of capital investments. For instance, the recognition of the need for a comprehensive transportation network might have resulted in dual use for a route such as I-75 in the Detroit region. Planning for highway coordination with a mass transit system on an existing rail alignment or a potential future right-of-way could have afforded the opportunity for coordination of this freeway with such a project. Michigan freeways are not yet being designed with mass transit as even a secondary objective, nor are the transportation facilities utilized to implement other regional and community planning aims. Open land was sought as highway right-of-way, and the route parallels existing routes, duplicating some service for most of the distance from Detroit to Troy. Incidental design elements such as buffer strips of plant materials have not been added as amenities of the facility.

Agreement on objectives is difficult to attain, because objectives obviously vary according to situation and individual. Highway locations should reflect the relationships between land uses, but new uses are most often

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<sup>2</sup> John T. Howard, "Impact of the Federal Highway Program," Planning 1957, American Society of Planning Officials, October, 1957, p. 39.

required to adjust to the provision of a highway, as has happened in the past. Social and economic characteristics of the community, as bases for highway location, are regularly forsaken in favor of economy of construction and road user costs. Original research is discouraged in favor of serving immediate needs, with research and experimentation only if the time and money becomes available. State-wide traffic service is emphasized to the detriment of local needs, and the predominance of urban traffic, most often local in character, is not served as well as State or rural needs. Highway planning effort does not ordinarily lead to several different alternative solutions, permitting routes built today to be located in such a manner that future links and extensions can be aligned in one of several differing directions. The highway planning process thus loses a desirable element of flexibility to permit future decisions to be made as the exigencies of the time and place demand.

#### Economic Development

The importance of highway location at this present time is well-recognized, for the emphasis and publicity given the development of the Interstate Highway System has drawn a great deal of public attention and concern upon highway planning. The impetus to economic growth given by new highways will be tremendous, and can be a key to prosperity for many of the local communities throughout the states. Economic development does not always occur as a result of the highway location, but the access provided by good transportation

does tend to make some sites preferable to others. For example, the freeway which will afford access to the Chrysler site in Troy not only improved the desirability of that particular site, but tended to add to other parcels of land in Troy the desirable characteristics which will be conducive to industrial development.

Economic development is not one-sided; as the local communities prosper, the State shares in the expanded wealth of activity, increased employment, new businesses and services, etc. According to the New York Metropolitan Study editors, a transportation network supplying fast access to customers, suppliers and labor force may be a condition sine qua non for development.<sup>3</sup> It is ironic that this is sometimes overlooked in highway location and that full advantage is not taken of the ability of a highway planner to exploit the resources of the State to the utmost, in urban as well as rural regions.

Inherent in this type of planning are other factors which become important in recognizing economic development potential. An important aspect is land conservation. Every effort should be made to conserve land for homes, businesses, agriculture, and industry where it is consistent with modern highway design practice. Similarly<sup>2</sup>, effort should be undertaken to assure the conservation of the public investment in

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<sup>3</sup> Kirk R. Petshek, "Review of the New York Metropolitan Study," Journal of the American Institute of Planners, XXVII, p. 95.

highways. Controlling access of a proposed highway throughout its length acts as a stabilizing influence on the entire area, permitting long-range planning without fear that a relocation will again disrupt persons and property. Also, the highway maintains its capacity because of the elimination of stops and roadside friction.

### Rethinking Traffic Considerations

The new emphasis upon comprehensively planned highways is undergoing scrutiny by old-time employees within the Highway Department. There is considerable misgiving about the degree of compromise to which the Department was subjected in the Troy Case. Intra-Departmental discussion is concerned with the needs of local traffic superseding that of long-range interstate traffic for which the highway is supposedly intended. Compared to earlier days in Michigan and contrasted with present conditions in some other states, the planning processes in Troy and the resultant illogical appearance of the route are humiliating to the "old-timers" in the Department.

Within the Michigan State Highway Department, planning of highways has been historically relegated to administrative decision-makers, who plan by the simplest methods available, gathering facts which appeared as obvious truisms, examining apparent traffic desire, and locating generalized corridors on this basis. Routes have been planned by conjecture, intuition, and the experience of having planned previous routes in a similar manner, with traffic usage despite

the lack of "planning frills." Traffic has utilized the routes, often with great efficiency, and savings of time and human life. The reality most consistently overlooked was the probability of route use regardless of its location, unless it is exceptionally circuitous or badly designed. The most frustrating consequence of emplacing highways in this manner is the loss of development potential resulting from an expedient or unwitting location.

There has also been a renewal possibility lost, because it was cheaper and more expedient to traverse vacant or agricultural land rather than attempting to clear up a bad situation. Frequently the best quality of agricultural land has been taken for road-building (for who would argue that these lands are not also the best for construction of highways). The bad situation which might have been erased still exists, perhaps magnified more than it would have been if arrested when possible. An additional example of lost considerations of economic effect and potential is afforded by the practice of paralleling old highways with new ones, destroying the economy of the old, which might have remained useful for carrying traffic for many more years.

The philosophy of the "old timers" has been well stated:

With transportation as a premise, the planning philosophy becomes a very simple one. It is this and no more. Our economy functions by and through transportation, automotive or otherwise; without transportation it would cease to function. Therefore transportation comes first, and always first; the other elements and features

of our physical environment and our social needs must be adjusted to the basic transportation plan.

Just as there is but one philosophy for planning, there is but one touchstone for testing plans. IF THEY ARE GOOD TRANSPORTATION, THEY ARE GOOD PLANS.

Apply the test as you will, it always works . . . . If it is good transportation it is good planning, And not otherwise."<sup>4</sup> (Emphasis in the original.)

The sharing of this philosophy has led to a common and easily rationalized desire to serve traffic by the most expeditious, least costly means. Local, regional or State plans for land use and economic development have never attained this emphasis, and have been totally overlooked at times.

The highway classification system, a method alleged to give bases for highway planning, is illustrative of the lack of emphasis upon objective planning. As previously described, the highway classification system is essentially a means of telling which areas will need to be served by State highways, relative needs in comparison with one another, and the priority which must be placed upon the development and improvement of connections between places. A first class highway gets preferential treatment in this system because it joins areas of primary traffic attraction. However, the determination of the various attracting power of Michigan places has been based on only those factors which were readily

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<sup>4</sup> Michigan State Highway Department, A Policy on Urban Connections to Interstate and Arterial Routes (Lansing, Michigan, 1958), Appendix A.

obtainable, demonstrating the relative lack of understanding of the potential of these places. No attempt has been made to measure potential growth and economic activity of each individual place. It is implicit that each will grow in the same manner and at the same expansion rate as in the past, with little change in relative importance to the state as a whole. Because there have been no other estimations of the potential growth of all Michigan urban places, the Highway Department has been justified in utilizing available information which is readily accessible in recorded form.

The classification system uses several indices to determine the relative trafficattracting power of each urban place: the population of the center and its tributary area, its banking resources, its area in square miles, and its regional area of influence as measured through newspaper circulation and wholesale and retail trade. Any one of the indices utilized by this method could distort an entire estimate, as in the use of banking resources. In such cities as Detroit and Lansing, there are banking headquarters with subsidiary branches throughout the State. This index is weighted more heavily in headquarter cities, because all bank resources are recorded for each banking office and headquarters, and not for the branch banks.

Newspaper resources provide another uncertainty in estimating the relative traffic attraction of urban planes. The circulation areas of city newspapers will vary, as with Detroit, Grand Rapids, and Chicago newspapers which circulate freely throughout the Lower Peninsula. The area of influence

which a northern Michigan newspaper enjoys could be as great as that of a major city of the southern areas of the State, thereby distorting the relative weight of this item toward the northern cities.

Other factors which are used in classification are more meaningful, but the emphasis in each is on past trends, with little attempt made toward prognosticating future activities. However, even if the system were as rational as possible, with an astute combination of community and State development estimates as its basis, it might still be utilized very little in the actual planning process. Traffic volumes and characteristics have continued to dominate in locating a highway, in determining the need for its improvement, in planning the improvement, in design and construction, and in operating and maintaining the improved facility.

A critical benefit resulting from traffic emphasis in highway planning has been the recognition of the metropolitan area as a basis for analysis. Traffic does not respect municipal boundaries; and consequent problems of traffic of the central city are concurrent with those of its tributary region. The local viewpoints must sometimes be assimilated for the good of the whole, particularly when planning cannot proceed because of local opposition. In cases having no incorporated cities within the study area or corridor, the problem of local consent is avoided. A plan which by chance coincides with local desire has a decided potential for survival in planning stages. Where the locality has no planning program, and no ideas concerning State proposals, there is

little recourse for local option but submission. Land use planning in either case takes no precedence over traffic satisfaction, except when the two are readily reconciled and blended.

### Federal Influence

Since the inception of Federally aided highway construction, the influence of the Federal road agency in highway planning has been felt through the approval power reserved by the Commissioner of Public Roads. The most recent influencing factor, and the one which most directly forms the basis for the consideration of local desires, resulted from the 1956 Highway Act:

It is hereby declared that the prompt and early completion of the National System of Interstate and Defense Highways . . . is essential to the national interest and is one of the most important objectives of this Act . . . . Insofar as possible in consonance with this objective, existing highways located on an interstate route shall be used to the extent that such use is practicable, suitable and feasible, it being the intent that local needs, . . . shall be given equal consideration with the needs of the interstate commerce.<sup>5</sup> (Emphasis supplied.)

Recent trends in Federal Bureau of Public Roads leadership have more clearly spelled out the need for planning improvement. In a letter from Ellis L. Armstrong, Commissioner of the Bureau, the following was stated: "Highway plans not only must be adequate for future traffic needs but must also be in harmony with and be an integral part of overall plans

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<sup>5</sup>23 U.S.C. 101(b).

for urban area development and growth. Such highway planning should take into account desirable future land use patterns, residential, commercial and industrial development, social and recreational improvements, costs and other similar factors related to the orderly development of the community."<sup>6</sup>

This evolution of thought has its origins in the Sagamore Conference on Highways and Urban Development, held in 1959 at the Sagamore Center of Syracuse University, N. Y. This conference emphasized that local governments should prepare comprehensive plans for the development of the communities, embracing land use plans, transportation plans including public transit where needed, and a program of land use controls. The conference also noted the necessity for consultation between state and local authorities in the development of transportation plans, to the end that the urban arterial highway plans would be based on and consistent with the overall plans for urban development and growth.<sup>7</sup>

In various ways, Michigan highway plans have felt this influence. The State Highway Commissioner's recent policy request that all cities and urban areas have an overall State highway plan prior to the construction of any part or segment of construction is a reflection of this trend.

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<sup>6</sup>Letter from Ellis L. Armstrong to Regional and Division Engineers of the Bureau of Public Roads, November 25, 1959.

<sup>7</sup>Sagamore Conference on Highways and Urban Development, Guidelines for Action. Booklet based on the National Conference on Highways and Urban Development, held October 5-9, 1958, at the Sagamore Center, Syracuse University, Syracuse, New York.

This plan is to be cooperatively developed by State and local officials, to the end that it will implement collective planning goals by basing proposals on both the local land use plans and State needs. Hence, State plans are based on local master plans to the extent possible, the chief limitations being financial resources.

An additional limitation to State and local cooperation on planning may be provided by an unwittingly grandiose local plan which is either incapable of being implemented because of costs or because of the lack of unitary planned sectors which may be programmed as resources become available. Neither local nor State plans have priority in such instances. Local plans may have an edge, by virtue of the requirement for cooperative agreement on the plan. However, the State has an equally persuasive lever in the programming of funds for construction. This lever is becoming less important with the influence of a political need to provide highways throughout the State, and through public and Federal pressures to implement local planning desires whenever and wherever possible.

Federal influence is also felt in the impetus toward a coordination of highway proposals with the planning phases of other projects receiving Federal aid. An outstanding example of this type of integrated planning is the coordination of highway and urban renewal activity. Coordinative planning is a mutually established policy which stems from a meeting of the Secretary of Commerce, acting for the Bureau of Public Roads, and the Administrator of the Housing and

Home Finance Agency. Required background information in the preparation of renewal areas is a statement from the State Highway Department describing the relationship of highway plans and locations to the suggested renewal schemes. Highway Department procedures for study in an urban area now include the specific investigation of renewal projects already underway or projected, taking cognizance of the existence of renewal projects. In some instances, highways thus provide a guiding force toward clearance of undesirable land uses or serve as a skeleton upon which the structure of an urban renewal area can be formulated.

## CHAPTER VIII

### CONCLUSIONS

The case study of Troy indicates an unusual amount of interplay of state and local planning to achieve a satisfactory result, illustrating the newly found spirit of cooperation which appears to be taking an increased importance in state highway planning in Michigan. As such, its ramifications should be commended to both local and state agencies as an initial step in the appropriate direction in which highway planning should be heading. State and local cooperation of this type should be continued. A state agency should not have such excessive confidence in the competence and judgments of its employees that it tends to undermine the effectiveness of good working relationships with local officials. Similarly, there should be cultivated a healthy respect for locally determined needs, and plans for improvement, to the extent that these ideas are incorporated wherever possible in the formulation of the state highway plans and programs. This should not eliminate the need for using all available factual data as a basis for highway plans and decisions; it should serve to strengthen this requirement, because the assistance obtainable from local planning endeavors makes easier the task of the State Highway Department in its planning

work. The "Checklist for a Highway Planning Report" illustrated the need for gathering data, without establishing the place from which it should be derived. By using all available local information as suggested in the Checklist, a more comprehensive approach to the problem will have been attained.

The legislative requirement for local approval is perhaps the most important aspect of the highway planning process in Michigan. Through this procedure, a local voice in highway planning is assured, if recognized and grasped by local officials. The requirement assures the State Highway Department of local interest and cooperation in highway project planning and in financing, if such is part of the local duty. It also expedites the planning for total needs of the community, and not for traffic-oriented requirements alone. Short-sighted projects with political backing are eliminated if they do not fit into an overall plan, because of the Highway Commissioner's requirement that no urban project be built unless a comprehensive plan for area highways has been drafted. Although public hearings are still required, their weaknesses are avoided through the incorporation of local needs and desires' throughout the process, rather than at a meeting held to air viewpoints and discuss a plan after it has been formulated. Finally, cooperative planning injects an aspect of responsibility into the attitude which the community must maintain toward the provision of highways.

In a metropolitan context, although vastly more complex, cooperative planning of highways provides some measure

of realization of local community position in the overall framework of governmental and physical integration into one unit. The general lack of metropolitan governing agencies causes inequities, and sometimes a void, in the sharing of necessary functions for large urban areas. In the instance of highways, the State Highway Department serves as an agency to deal with intergovernmental provision of the necessary facilities, with a viewpoint that attempts impartiality and equity in providing transportation routes for an entire urban area. Because each government within a metropolitan complex is vitally interested in plans which directly or indirectly affect its area of jurisdiction, cooperative planning in this situation is exceedingly complex. In the absence of an intergovernmental political entity with which to deal, the Department must deal with individual local governments or with the regional planning agency, if such exists. More cooperation with such agencies is desirable, but increased efficiency could perhaps be attained through the use of a metropolitan ad hoc agency with the function of highway study and planning. Such an agency would, no doubt, be more familiar with local needs and problems than the State Highway Department, which has already numerous tasks with which to cope.

In dealing with either local or regional planning agencies, it is desirable to maintain a high level of personal contact between governmental officials and technicians to obtain a total integration of communication which will lead to a comprehensive proposal for the solution of area transportation

problems. Closer contact with cities and local officials could result in a better system of communication, with each agency feeding back into the highway planning process an estimate of the needs of local jurisdictions in relation to State resources and needs. Cooperative formulation of policies and objectives could be a part of the function, with an improved system of inter-agency communication. However, decision-making will necessarily be the function of a limited number of persons of authority.

Many of the major location decisions still appear to be based on intuition and experience, and very little on factual data. This is due in part to the emphasis upon an engineering approach, which has become entrenched because of its stress upon economic considerations and a strength of conviction which comes from experience. This ingraining of engineers is maintained by the State Civil Service Commission which protects certain jobs solely for engineers, and is condoned by most of the top management of the Highway Department. Competition between engineer and planner is rather blatant, with the edge in favor of the engineer. Comparatively new in the highway planning field, the professional planner does not yet comprehend all aspects of the trade and can still be easily circumvented and bypassed, despite a position of authority. There is a tendency for engineers to group together and assume functions and techniques peculiar to planners. Land use planning, computer, and linear programming techniques introduced by professional planners have won recognition as

distinctive contributions which a planner can offer, and it appears likely that the position of the planner in the Highway Department is ascending. Differences between engineer and planner may become more narrow as each finds his niche to fill in the bureaucratic organization of the Department, but it will undoubtedly be a long period of time before the two professions can be completely integrated without jealousy or prejudice. Meanwhile, the preferential treatment given to engineers results in a relatively short tenure for the professional planner, who can find greater opportunity elsewhere.

Formal internal organization within the Office of Planning seems well-defined and logically oriented, with relatively little need for changes other than minor modifications. Personnel within the organization defy organizational regimentation and perform their functions in certain ways, which, although within the context of the formal organization, appear somewhat contradictory to it. For instance, although Planning Division is charged with the responsibility of locating only generalized routings for Michigan highways, there is an overlapping of functions, in which the Route Location Division is called upon to assure that the routes generally located on a map represent sound engineering principles. This results in a unique sharing of the function of planning, with the Planning Division consulting not only Route Location Division but also Programming Division and the Geometrics Section of Traffic Division to assure that the route will be sound, safe, efficient, and economical.

In like manner, the Programming Division often works to derive plans which can be utilized in formulating estimates of local needs in a particular area. Although this function may reflect the failure of Planning Division functioning, the plans often achieve programming and implementation, with only a cursory review by the Planning Division. This tends to make detailed planning a process of justification of conclusions achieved with very little basis. With present programming methods of priority ratings and scheduling of projects for five-year periods, this is becoming more rare as a means of highway planning, primarily because of the lessening of pressures for rapid construction of needed highways, and because there is now a larger number of personnel aware of past bad judgment and expensive mistakes.

Time is running out on the first big phase of the Interstate highway building program in Michigan. What will come next is open to conjecture. In all probability the Highway Department will at last have time to briefly regroup, analyze itself, reorganize and perhaps initiate research projects which will lead to new and improved methods of planning and financing highways to supplement a completed Interstate System. By the time of this completion, there may be a severe need for the assumption by the Highway Department of more than one function in order to cope with changing transportation technology. In any event, there would appear to be a bright prospect for the place of planning in the Michigan State Highway Department. The beginning of hopeful changes is already manifest and the future holds more.

## **APPENDIX I**

## **OUTLINE FOR A HIGHWAY PLANNING REPORT**

### **I. INVENTORY EXISTING CONDITIONS**

- A. Determine current thoroughfare system and relate to other systems and modes of transportation.**
- B. Obtain data on movement of goods and people in the area and identify their traffic desires.**
- C. Describe the features of the community in terms of:**
  - 1. Economic Situation**
  - 2. Land Use**
  - 3. Population**
  - 4. Land Development Plans**
  - 5. Physical Characteristics**

### **II. FORECAST FUTURE CONDITIONS**

- A. Project economic data to determine future economic structure of the area including effects of new highway facility.**
- B. Project population data on basis of past trends and economic forecasts.**
- C. Determine probable future land use based on population and economic forecasts.**
- D. Determine future traffic volumes based upon economic, population, and land use forecasts.**

### **III. ANALYZE DATA AND PROPOSALS**

- A. Determine deficiencies and needed improvements of the present system.**

**B. Select reasonable possible alternative solutions:**

1. Source of alternatives
2. Possible solutions

**C. Evaluate all rational proposed alternative routes and solutions that will meet the needs of both the overall system and local requirements:**

1. Relate each alternative proposal to existing and forecasted conditions
2. Consider design and construction factors
3. Examine cost estimates
4. Determine benefits and disadvantages
5. Determine possible land use controls

**IV. DRAW CONCLUSIONS AND MAKE RECOMMENDATIONS**

**A. Select most desirable of alternative solutions.**

## **APPENDIX II**

CITY OF TROY  
County of Oakland, Michigan

RECEIVED

RESOLUTION OF APPROVAL  
OF ALIGNMENT

JUL 23 1959

ROAD LOCATION ENGINEER  
STATE HIGHWAY DEPT., LANSING, MICH.

By 115-1-1-1-1

Motion by: Commissioner Duncan

Supported by: Commissioner Yanich

BE IT RESOLVED, that the proposed alignment of Interstate Route 7 through the City of Troy as evidenced by a certain map as submitted to the City of Troy along with a letter of transmittal, on January 14, 1959, by the Michigan State Highway Department, is hereby approved.

THE DESCRIPTION of the alignment is as follows:

Starting at the south city limits of the City of Troy at a point approximately 1080 feet east of Stephenson Highway; thence northerly to East Maple Road; thence westerly crossing Rochester Road and Stephenson Highway near the junction of these roads, and crossing Livernois Road about 1650 feet south of Big Beaver Road (16 Mile Road); thence northerly crossing Wattles Road about 2400 feet east of Crooks Road and East Long Lake Road about 2400 feet east of Crooks Road; thence westerly crossing Crooks Road about 1300 feet south of Square Lake Road and Coolidge Highway just south of Square Lake Road; thence westerly but crossing Square Lake Road near the north one-eighth corner; thence westerly crossing the west city limits of the city of Troy (Adams Road) at a point about 600 feet north of Square Lake Road.

AND, BE IT FURTHER RESOLVED, consent of the City of Troy to take over and designate this route extending through the city as part of the State trunkline system, is hereby granted the Michigan State Highway Department.

YEAS: Costello, Duncan, Sutermeister, Yanich

NAYS: Gray, Yeokum

Absent: Smith

CERTIFICATION

I, J. Lawson Lockhart, Troy City Clerk, do hereby certify that the above resolution is a true and correct transcript taken from the Minutes of the Special meeting of the Troy City Commission held on January 14, 1959.

*J. Lawson Lockhart*  
J. Lawson Lockhart  
City Clerk

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