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**THE INTERSTATE AND DEFENSE HIGHWAY SYSTEM**

**AS RELATED TO**

**THE DETROIT METROPOLITAN AREA**



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**MICHIGAN STATE HIGHWAY DEPARTMENT  
JOHN C. MACKIE, COMMISSIONER**

THE INTERSTATE AND DEFENSE HIGHWAY SYSTEM  
AS RELATED TO  
THE DETROIT METROPOLITAN AREA

MICHIGAN STATE HIGHWAY DEPARTMENT  
JOHN C. MACKIE, COMMISSIONER

Prepared By  
OFFICE OF PLANNING  
PLANNING & PROGRAMMING DIVISION

March, Nineteen Hundred Fifty-Eight

# MICHIGAN STATE HIGHWAY DEPARTMENT

LANSING, 26



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March 21, 1958

Mr. N. E. MacDougall  
Division Engineer  
Bureau of Public Roads  
123 W. Allegan Street  
Lansing, Michigan

Dear Mr. MacDougall:

We are submitting herewith for your consideration and approval, a revised plan for the development of a system of Interstate and Defense Highways and the Federal-aid Highways in the Detroit Metropolitan Area.

This revised plan of Interstate and Defense Highways, comprises the routes that are of the greatest general importance to the area, the state, and the national defense.

This plan is based upon a comprehensive and analytical study of all factors pertinent to the economic development and transportation problems of the area. It conforms with the recommendations of the Inter-regional Highway Committee and was guided by the criteria for route selection, as developed by the Bureau of Public Roads. It encompasses those routes which provide the greatest service to the area.

This report "The Interstate and Defense Highways in Relation to the Detroit Metropolitan Area" comprises three major revisions to the presently approved Federal-aided Highway systems: the relocation of Interstate Route 7 from a location west of Woodward Avenue to a new location east of Woodward Avenue; the relocation of Interstate Route 17 from east of Telegraph Road to a new location west of Telegraph Road; and the transfer of Southfield to the Federal-aid primary system.

This revised plan is of vital importance to the Detroit Area and to Michigan's progress in the completion of projects on the Interstate System. All of the Interstate Routes are part of Michigan's ten year program in the Detroit area. Your early consideration and approval is essential to initiating route surveys, right-of-way acquisition and ultimate construction of these vitally needed transportation facilities.

Sincerely,

*John C. Mackie*  
STATE HIGHWAY COMMISSIONER

THE INTERSTATE AND DEFENSE HIGHWAY SYSTEM  
AS RELATED TO  
THE DETROIT METROPOLITAN AREA

PART I

INTRODUCTION

Michigan is entering a new era in highway construction; a vastly accelerated program which will be productive of a system of highways adequate to the demands of an expanding economy is now underway.

The program was begun as a post war measure, being put into motion by the Federal-Aid Highway Act of 1944 and was given considerable impetus by the Federal-Aid Highway Act of 1956.

The additional monies made available under this act, coupled with the monies from Michigan Public Act 87 of 1955, enabled the Department to set up a program to retire the present obsolete highways in the most heavily traveled corridors in the state.

The scope of this new program is much larger than was ever contemplated. It makes it mandatory that a full scale critical review be made of all preliminary planning, especially where it concerns the Interstate System.

PURPOSE AND FUNCTION OF THE INTERSTATE SYSTEM

The greatest percentage of monies to be expended in Michigan's highway construction program will be concentrated on the Interstate System and connecting routes. It is evident that a review must be made of the presently approved system to determine if each specific section is feasible and if it will serve the purpose for which it was originally designated.

What is the purpose of the Interstate Highway System? Has the original concept been altered? Will the system which was designated by Michigan meet the criteria used for route determination?

These questions, and others, can best be answered by a chronological review of all matters pertinent to establishment of an Interstate System.

## A REPORT OF THE NATIONAL INTER-REGIONAL HIGHWAY COMMITTEE

In 1941 the President appointed the National Inter-regional Highway Committee and directed it to review existing data and surveys and to outline and recommend a limited system of national highways designed to provide a basis for improved inter-regional transportation.

The system recommended by the committee was comprised of approximately 39,000 miles with about 5,000 miles of that total being designated as circumferential or distributing routes.

In recommending the 39,000 miles system the committee was of the definite opinion that a 34,000 mile system would connect all larger cities in continental United States and afford good connections to Mexico and Canada. It was not, however, nearly so definite in its statement regarding the mileage necessary to serve the major metropolitan centers where circumferential and distributor routes would be added to provide the optimum system. The committee, in reference to the circumferential routes, stated; "Since their proper location and mileage can be determined only by detailed study of the needs and conditions of each city involved, the committee has merely estimated that the aggregate extent of such desirable and auxiliary routes will not exceed 5,000 miles."

The committee further emphasized the importance of the location of the routes in urban areas and devoted a considerable portion of the original report to the cities and of development of routes to adequately serve those cities. The principal points of consideration were: serving land uses, existing and potential, with good land conservation measures included in highway location practices; to plan routes to effectually distribute traffic into the peripheral areas; to effectually by-pass the greatest concentration of future planned land development and to afford a direct route to serve the central business district of the larger cities and to do all these things upon completion of a fully comprehensive and analytical survey of all data pertinent to highway development in the urban areas.

The Inter-regional Highway Committee selected a system and laid out principles for route selection, land acquisition and standards of design. It suggested establishment of an order of improvement priorities and listed land use factors as criteria for route location determination. But, in the final analysis these basic conclusions were reached:

1. The system, if it is to attract and serve a reasonably large proportion of the total highway movement, must connect as many of the larger cities of the country as its limited mileage will permit.
2. Whatever other facilities it may provide the system must incorporate adequate routes leading directly into the larger cities; including service to as many cities of 10,000 or more population as possible.
3. Especially in the more densely populated sections of the country, the general directions of the routes between larger cities should not be sacrificed for close approach to cities of substantially less than 10,000 population.
4. The routes in urban areas must be so located as to serve the city of today and the extended city of tomorrow with highway location, of necessity, determined by existing and potential land uses. It was concluded that this service would be provided by an integrated system of inter-connecting highways between major cities augmented by circumferential and distributor routes in the metropolitan areas.

#### THE FEDERAL-AID HIGHWAY ACT - 1944

The recommendations of the Inter-regional Highway Committee were written into law by the 78th Congress. This act prescribed that "There shall be designated within the continental United States a National System of Interstate Highways, not exceeding 40,000 miles in total extent, 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.

The routes of the National System of Interstate Highways shall be selected by joint action of the State Highway Departments of each State and the adjoining States, as provided by the Federal-Aid Highway Act of November 9, 1921, for the selection of the Federal-Aid System".

#### GENERAL ADMINISTRATIVE MEMORANDA

Subsequent to the enactment of the Federal-Aid Highway Act of 1944, the Bureau of Public Roads under date of February 1945, issued G.A.M. No. 268 outlining the principles of route selection, basic criteria and procedures to be followed in the designation, justification, and presentation of the maps, charts, and tables depicting the state's selection. Supplemental memoranda outlined procedures to be followed covering an inventory of the selected system and cost data to reflect the needs to bring the system to the standards established for Interstate Routes at that time. These memoranda also outlined the criteria to be used in the establishment of the circumferential routes to the system.

#### INITIAL SELECTION OF INTERSTATE ROUTES

Guided by the General Administrative Memoranda and the Rules and Regulations of the Bureau of Public Roads and with the fullest consideration of the principles of highway planning as outlined by the recommendations of the Inter-regional Highway Committee, Michigan proceeded to recompile basic highway planning data preparatory to carrying out the intent of Federal-Aid Highway Act of 1944 in the selection and designation of an Interstate System.

Michigan was well prepared to make the initial designation. A previous comprehensive study had been made in the designation of a Strategic network of routes to serve the national defense. Comprehensive origin-destination data indicated the major desire traffic movement between all cities of over 5,000 population. Classification data indicated those routes which were the principal transportation routes both intra-state and inter-state and also provided basic information regarding the movement of war material during the war effort. ✓

In July 1945, a report "Initial Selection of Interstate Highways in Michigan" was transmitted to the Bureau of Public Roads. The routes proposed for inclusion in the Interstate System were selected by adhering very strictly to the criteria and guides provided by the recommendations of Inter-regional Highway Committee, the Federal-Aid Highway Act and memoranda bulletins of the Bureau of Public Roads.

So rigid was Michigan's adherence to the criteria that several routes were omitted in the selection at that time. Subsequent studies has indicated their importance to interstate commerce.

The routes selected at that time followed generally the existing locations in providing direct connections to the principal cities and industrial centers. In the process of selection there was encountered the same difficulty faced by the original Inter-regional Study Committee. There was not sufficient traffic and planning data available to realistically determine highway locations in and near the Metropolitan centers.

#### URBAN AREAS

A second report "Initial Selection of Interstate Highways - Urban Data" was transmitted to the Bureau of Public Roads to supplement the original report. This, in general, portrayed the location of the routes into urban areas and needed circumferential routes to serve through and by-passing traffic. The needs were justified at that time on the basic origin-destination data compiled from road user data.

The routes portrayed graphically were indicative of the need and the locations were intended to be generalized rather than specific.

The data employed in the analysis to determine the most suitable location of a route in the metropolitan centers from a multiple of choices was the best available data at the time. Detailed origin-destination data was just beginning to be collected. Very few cities had a comprehensive master street plan incorporating the type of Interstate facility planned to meet today's and tomorrow's traffic.



## THE ORIGINAL SELECTED SYSTEM - 1945

The value of the reports presenting Michigan's Initial Selection of Interstate Highways is firmly established. The data used and the manner of analysis and presentation was indicative of the merits of the routes. It must be remembered that they were presented as general locations serving traffic desires of interstate importance and were not intended to represent finalized locations.

The data employed in the selection of the rural routes was quite complete and lines indicated as locations will not be subject to drastic location revisions.

The amount of pertinent and factual data by which a comprehensive analysis of transportation requirements could be established in all urban areas was not readily available. This was particularly true in the greater urban complexes and painfully so in the Detroit Metropolitan Area. It is apparent that systems designated in the urban area without benefit of complete data should be subject to rather extensive revisions.

THE INTERSTATE AND DEFENSE HIGHWAY SYSTEM  
AS RELATED TO  
THE DETROIT METROPOLITAN AREA

PART II

A FUNCTIONAL REVIEW OF THE INTERSTATE SYSTEM

It has been more than twelve years since Michigan presented the initial selection of Interstate Highways. This has been a period of economic expansion - of tremendous and unprecedented land use development - of uncontrolled growth of areas surrounding the metropolitan cities.

The phenomena of "Interurbia" had developed before there was an awareness of the growth patterns which were responsible for generating and directing the development of practically all urban complexes.

It is apparent that a critical review of the designated Interstate System must be made in view of the above to determine whether each segment of that system can be constructed to function in the manner for which they were originally selected.

INTERPRETING AN EXPANDED ECONOMY

There are several facets in the field of highway planning which are productive of skepticism - they require examination. The basic factors which motivate and produce traffic with its attendant congestion are the movement of people and goods. These basic factors have not changed except in intensity and termini and the highway planner is faced with realization that the post-war designated system was based upon a very serious underestimate of the growth factors, and the factors which have been conducive to decentralization of population, industrial and commercial development.

To highlight this phase of operations the following must be considered:

POPULATION - In 1946 it was estimated that the continental United States would have a population in 1955 of 150 million people. The estimated population in 1955 was 167 million people or an underestimate of 17 million people. Of primary importance to the planner was the fact that the increase was primarily in the urban complexes, or fringe developments to the major cities.

VEHICULAR TREND INCREASES - Traffic trend curves were developed in 1946 particularly for the Michigan Highway Needs Study. This traffic trend increase curve, considered by many to be too optimistic, was actually so seriously underestimated that traffic predicted for 1970 was experienced as far back as 1953.

INDUSTRIALIZATION - Reflecting the growth of population and their demands for a multiplicity of products designed for better living, industrial expansion increased far beyond the estimates of highway and industrial planners. The principal industrial construction activities were centered in the areas surrounding the urban centers. It comprised the development of new industries and new facilities to house established industries who, for various reasons, found it necessary to move outward from within the central city. This process of decentralization was also activating and directing the establishment of large commercial installations or shopping centers in these fringe areas. The industrial decentralization has been causative of an increasing rate of outward movement of people to serve these industries.

This uncontrolled and totally unanticipated rate of growth in these fringe areas surrounding the cities resulted in the following:

The areas in which these activities were centered lacked adequate transportation facilities to serve these developments.

In many of the areas where it had been initially planned to provide a radial Interstate route to serve interstate traffic to and from the urban center, the land is so totally occupied by new land uses that any thought of route development on that axis must, of necessity, be abandoned.

Certain areas within the cities have seriously decreased in property value. These are usually the earlier settled residential areas and commercialized neighborhoods which surround the earlier established

"downtown" industrial areas. The possibility of acquiring these lands for highway purposes must be considered in conformance with the established "Urban Renewal Policies".

#### EXAMINATION OF THE PRESENTLY APPROVED INTERSTATE SYSTEM

A review of the presently approved Interstate System has been made to determine whether that system can function to the level of utilization for which it was designed.

If there are any routes that will not provide the service for which they were selected, then route location revisions must necessarily be made.

There are one of two reasons why a route could not function for full effectiveness; either the determinants used to govern location were faulty or incomplete, or the route was on an axis not of sufficient importance to have been placed on the system.

There is no evidence to indicate that the basic concepts and criterial guides which governed the initial selection of interstate routes were inadequate in scope or incomplete in presentation. It can be assumed therefore, that any route location judged to be undesirable is on a travel axis of lesser importance or on an axis where development is economically impractical.

In reviewing the system as designated, tentative or final locations, and as partially constructed, one thing is plainly evident. The strictly rural portions of the system as originally designated can, and will, be constructed on the axis on which they were originally shown. This did not happen by chance - the rural sections were selected by an analytical review of compiled transportation and planning data. Sound highway planning was possible because of the fundamentally sound data by which it was accomplished.

The routes within the urban areas, however, were selected without benefit of these basic data and preliminary examination has already proven that route revisions, principally within the Detroit Metropolitan area, must be affected. The proposed revisions are summarized in the concluding portion of this review.

## REVIEW - SUMMARY AND CONCLUSIONS

It was concluded from the review of Interstate routes in the Detroit Metropolitan area that two units of the presently approved system could not be constructed to provide the services for which they were designated.

The two routes are; (1) a portion of Michigan Interstate Route 7 (the Lodge Expressway and its northern projection) and, (2) Michigan Interstate Route 17 (the Southfield Expressway and its southern projection). The measure of the inadequacy of these routes as units of the Interstate system is herein defined:

### THE JOHN C. LODGE EXPRESSWAY

1. Except for a limited mileage at the southern extremities of this route, it does not follow the natural travel axis which is US-10 (Woodward Ave.).
2. From the point where the Lodge Expressway deviates from its closely paralleling association with US-10 it begins to lose its principal effectiveness - that of a direct approach to the city.
3. It traverses an area north of Base Line Road which has no corporate bodies, cities or villages, and where residential development is a very high level in property valuation.
4. The area is almost entirely residential in character with very little commercial installations and with almost a total exclusion of industrial development.
5. It does not serve any defense installations and its only defense function would be that of a city emergency exodus route.
6. The worth of a unit of the principal skeletal highway system, as related to the economy of the area it serves, can be measured by its ability to serve commercial vehicular movement. The amount of commercial carriers contained in the total traffic estimated for this route would be relatively low.
7. The majority of trips on this axis would be of a very low mileage with a preponderance of the movement local in origin and destination.

It is the considered opinion of the Michigan Highway Department that development of an Interstate route on this axis would definitely injure the economy of the land

through which it traverses without any material gain to the city.

#### THE SOUTHFIELD EXPRESSWAY - MICHIGAN INTERSTATE ROUTE 17

Michigan Interstate Route 17 was approved as a needed circumferential route. As a circumferential route it has two principal functions; it should provide a means for effectively by-passing the highly congested areas of the city and act as a distributor route to the existing and potential industrial areas on the periphery of the city.

The National Military Establishment described the circumferential routes as potentially of greatest value to national defense - it would seem especially prudent to exercise extreme care in locating these routes.

An examination has been made of the route as it is presently approved on the Southfield location and the following comments negate its worth:

1. The route traverses a highly urbanized area and could not possibly be construed to be a by-pass route.
2. The route of US-24 (Telegraph Road) is three miles west of this location and has already developed into an urban arterial highway.
3. A considerable area west of the city is now urbanized and this trend to urbanization will envelop new areas in a very short time which are now rural in character.
4. An industrial corridor is now well established in this western peripheral sector of the city which will not be served by the Southfield route.

It has been determined that the Southfield Road location could not serve as an effective circumferential highway.

There are also other points to be considered, namely;

1. Southfield is an essential part of the Detroit area arterial system, and presently is operating at, or near its full capacity. It will continue to be a principal internal distributor route and the volume of traffic on this route will not diminish after the completion of the proposed north-south circumferential Interstate route.

2. Southfield with a preponderance of "short haul" traffic must logically be developed as a free access highway.

The inequities of the Interstate system, as presently approved, dictated a restudy of the entire area. This has been accomplished and an Interstate Highway Development Plan is now presented for review and approval.

THE INTERSTATE AND DEFENSE HIGHWAY SYSTEM  
AS RELATED TO  
THE DETROIT METROPOLITAN AREA

PART III

A Highway Development Plan  
Interstate and Connecting Highways - Detroit Metropolitan Area

The Michigan State Highway Department has begun a series of related planning studies from which will be evolved a master plan for highway development in the Detroit Metropolitan Area.

The essential elements of the plan will be a classification of area land uses with each area classified as to its ability to attract traffic and the designation of a system of highways to serve the needs as expressed by this study.

This selected highway network will serve the entire area and will be comprised of Interstate routes, other major state highways, city and county arterial thoroughfares and local roads and streets. Because of the complexities inherent in this huge urban sprawl which has Detroit as its hub, a considerable amount of time will have elapsed before a fully integrated system of highways at all administrative levels can be designated. The urgency of the Interstate System construction program demands an immediacy of action in the process of locating the routes for that system. It would be a serious error to delay the designation of the Interstate and connecting routes until such time as the total transportation requirements of the area were established.

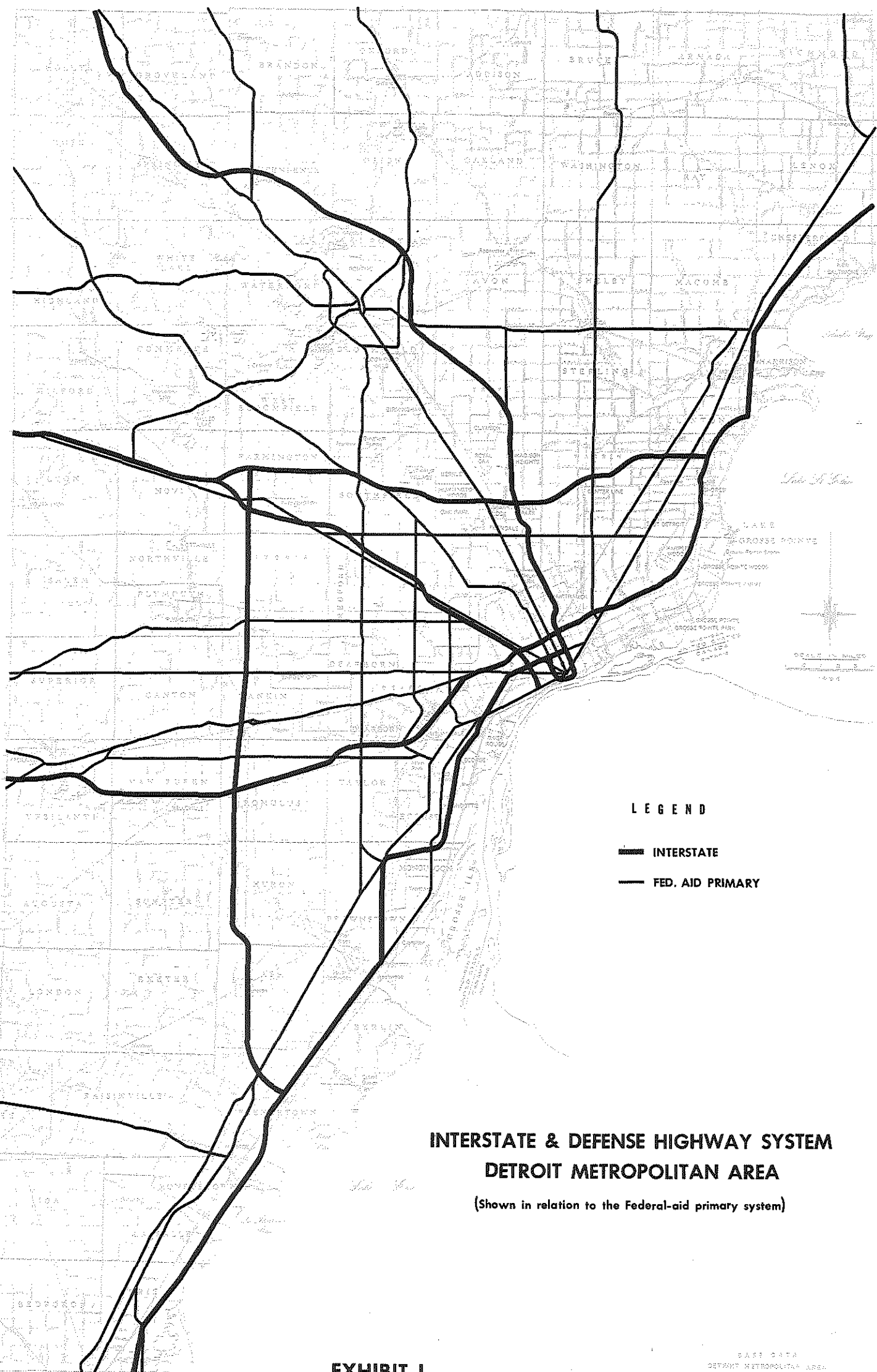
The highway planning studies in the Detroit Metropolitan area are sufficiently advanced to ensure the feasibility of the Interstate route locations as shown in Exhibit I of this report.

Determination of Transportation Needs - Basic Criteria

LAND USES - EXISTING AND POTENTIAL

A determination of highway requirements in any region must be based on the development of commercial, industrial, educational and recreational interests within the foreseeable future





**LEGEND**

- INTERSTATE**
- FED. AID PRIMARY**

**INTERSTATE & DEFENSE HIGHWAY SYSTEM  
DETROIT METROPOLITAN AREA**

(Shown in relation to the Federal-aid primary system)

It is an accepted fact that the design of a highway or of a highway structure, if it is to have adequate capacity, must be predicated on the Design Hour Volumes which it can expect in a period twenty years hence. It is therefore, reasonable to plan ahead and envision the size and character of our urban areas in a like period of years.

The first area of study then is concerned with an inventory of basic land uses now established and an awareness of the pattern of future land use development.

In this phase of operations the Department is especially fortunate. Within the Detroit Metropolitan Area there are in operation several city and county planning commissions who have been engaged for the past several years in producing a land use plan which, complete with zoning ordinances, will regiment and control future development.

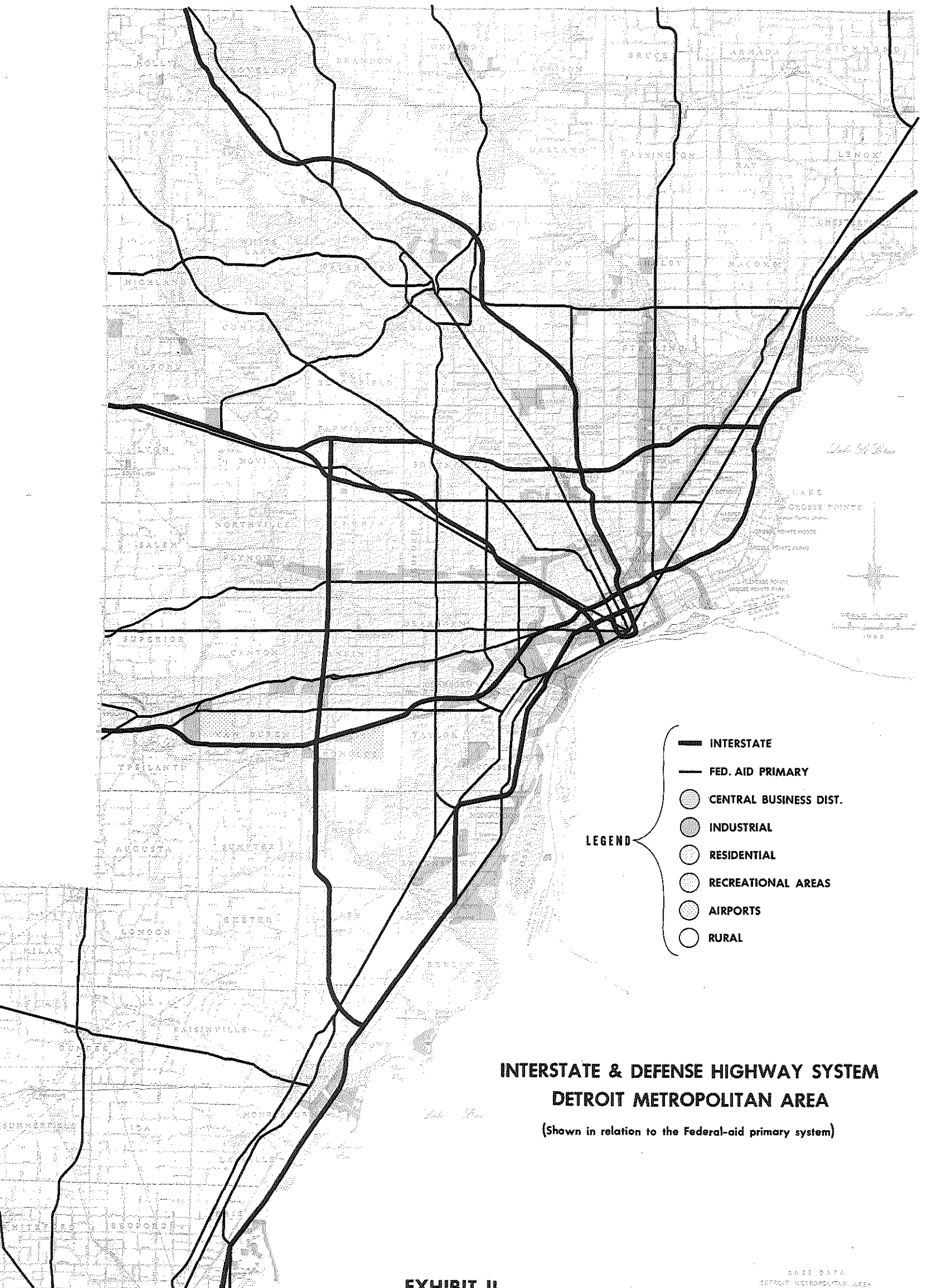
For purposes of this report, a land use plan prepared by the Detroit Metropolitan Area Regional Planning Commission is presented as Exhibit II. This land use plan is authoritatively representative of the composite thinking of the individual planning agencies of the area who have separately and collectively engaged in fully comprehensive, analytical studies.

The projection of planned land use development shown on this map is to the year 1970. While it would be desirable to have had the land uses projected to the period of 1980 it is not necessary for location of the Interstate route increments of the area highway system.

This can be safely said because it is known that the location of interstate routes, especially in the fringe areas will stimulate and direct the character of land use development of the area it traverses.

#### LAND CONSERVATION

A factor which is inherent in land use planning is land conservation. Every effort has been made to acquire lands for highway development which will aid in land conservation practices. Blighted areas of low property value will be acquired in cooperation with the Urban Renewal Administration and substantially good areas



- LEGEND**
- INTERSTATE
  - FED. AID PRIMARY
  - CENTRAL BUSINESS DIST.
  - INDUSTRIAL
  - RESIDENTIAL
  - RECREATIONAL AREAS
  - AIRPORTS
  - RURAL

**INTERSTATE & DEFENSE HIGHWAY SYSTEM  
DETROIT METROPOLITAN AREA**

(Shown in relation to the Federal-aid primary system)

will be protected by fringing those areas with highway locations which will prevent the spread of the blighted neighborhood pattern.

#### TRAFFIC STUDIES

The major transportation system of out-state Michigan was guided by a state-wide origin-destination traffic study; the principal cities of the state were linked together as indicated by the results of that study. The most important of the city inter-connecting routes were of national importance and were designated as units of the Interstate System. This system of city connecting routes must necessarily be implemented by circumferential and distributing routes in the principal urban areas.

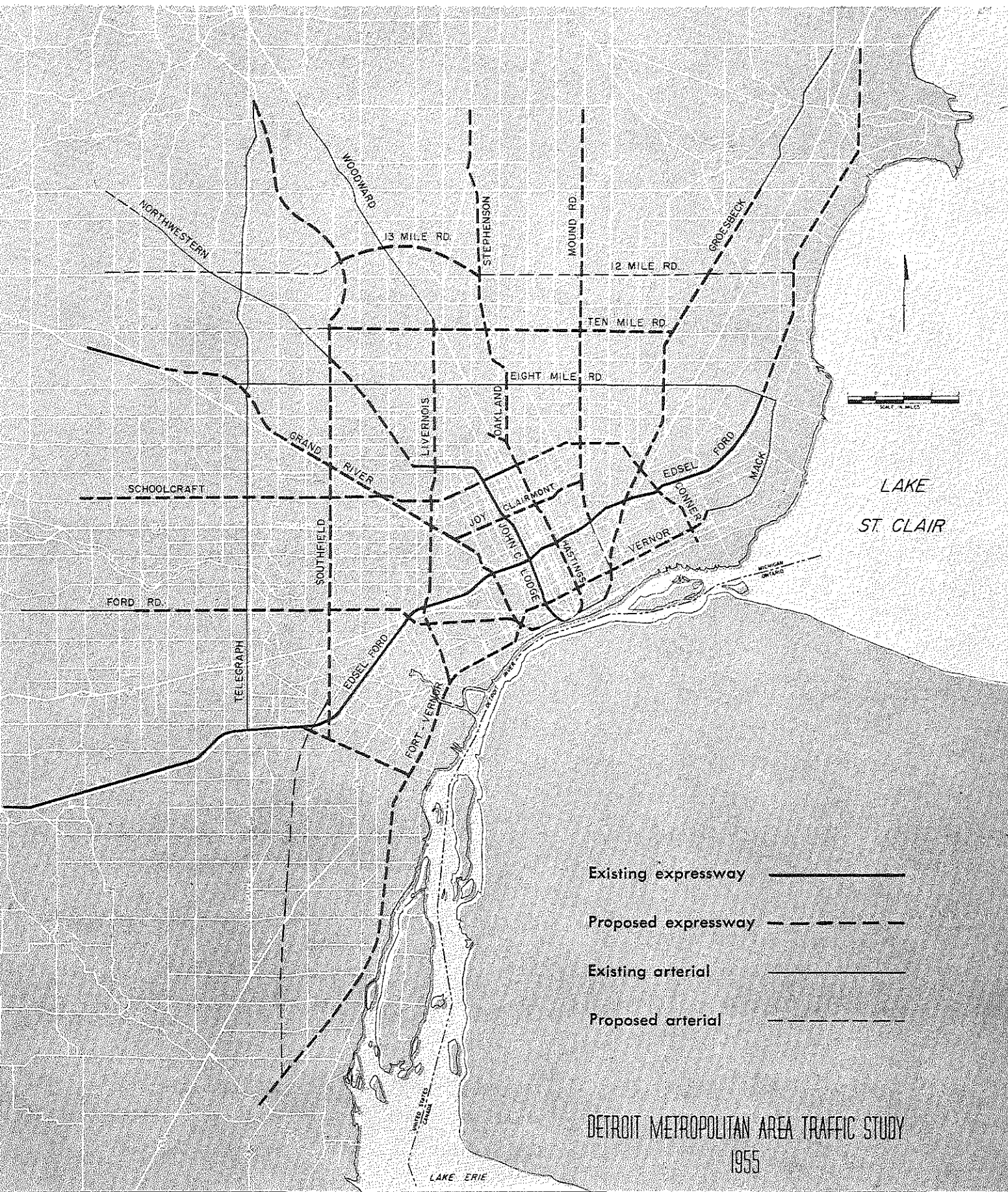
In order that the routes in the urban areas would be located for full effectiveness it was necessary to obtain origin-destination data for urban places. With the data compiled from this type of study it would then be possible to select a system of distributing and circumferential routes which could be developed with the city-to-city routes in a program which would ensure maximum utilization.

Michigan began a series of Origin-Destination studies in 1945 with Port Huron as the guinea pig. In the succeeding years, fourteen major cities in the state were the target of these studies and climaxing a successful decade of urban fact finding with the Detroit Metropolitan Area Traffic Study.

The results of this study were published in 1956. A major phase of that report was a presentation of an expressway development plan. The plan was fundamentally sound and represented a system of minimum mileage which would serve the heaviest traffic desire patterns in the area; Exhibit III. The more important of these desire lines were incorporated in our plan for Interstate highways in the Detroit Metropolitan Area.

#### NEEDS STUDIES

In accordance with a resolution of the Michigan Legislature a state-wide engineering study was made to determine highway needs and deficiencies and to propose a plan for providing adequate highway, road and street facilities to serve the needs of the people through a period of twenty years.



- Existing expressway —————
- Proposed expressway - - - - -
- Existing arterial —————
- Proposed arterial - - - - -

DETROIT METROPOLITAN AREA TRAFFIC STUDY  
1955

DETROIT TRAFFIC STUDY AREA

**FINAL EXPRESSWAY PLAN**

**EXHIBIT III**

This study was conducted by the Engineering Committee of the Automotive Safety Foundation. The results of this study was presented to the Legislature, in October 1955, in a report "Modern Highways for Michigan, an Engineering Base for a Fiscal Plan".

A review of this report is especially interesting in connection with the present study to seek an adequate Interstate highway system in the Detroit Urban area. An excerpt of that report is here presented as Exhibit IV.

This exhibit, "Interstate Routes and Urban Connections - Detroit Area" represents the extent of an Interstate system which this engineering staff proposes as, ". . . . the least mileage which should be included in the Interstate System and its necessary urban connections in the Detroit Area".

The mileage of the suggested network of Interstate highways for the City of Detroit as shown in this needs study is much more extensive than is being proposed at this time. It is not the position of the Department to suggest that the Interstate system designated in the Automotive Safety Foundation report is too extensive; as a matter of fact the basic premise of the Department must be summarized as follows:

1. The system was designated by an agency recognized as being expert in this type of highway research.
2. The data with which they worked was quite complete in all details.
3. It can be concluded that the system as designated was commensurate with the needs developed by their study.

These facts are apparent; (1) the system as proposed by the Automotive Safety Foundation was supported by a logical sequence of justification and (2) the system as presently proposed by the Department is part of that system but less extensive in mileage, (3) it therefore follows that a selection of a system of lesser mileage, but consisting of the most important units of the larger system, is an eloquent testimonial attesting to the desirability of the routes presented in the Department's present plan of Interstate highways in the Detroit Metropolitan Area.

# INTERSTATE ROUTES AND URBAN CONNECTIONS DETROIT AREA



*This map shows in blue the expressways selected for purposes of this study as the least mileage which should be included in the Interstate System and its necessary urban connections in the Detroit Area.*

Excerpt from  
MODERN HIGHWAYS FOR MICHIGAN  
October 1955

EXHIBIT IV

The facts established by this study in highway needs is presented as basically sound determinants for route selection and designation.

#### HIGHWAY CLASSIFICATION

Michigan has developed a sound base for determination of a long range plan for highway development - this base consists of a process in which all roads were classified in their order of importance in accordance with the predominant functions each road segment will serve.

To establish a classified register of transportation facilities it was first necessary to classify all areas of traffic attraction in the state. The ability of an area to attract traffic, in varying amounts, is a definite indication of the type of transportation services which will be required to adequately serve that area.

The social, economic, governmental and industrial activities of the state are carried on, in and from these places. These activities are the generative powers of traffic and every populated place furnishes its part in carrying on these functions - a part that varies in intensity and amount, depending upon such factors as the extent of its trade area, its overall area of influence, the population it serves and the part it furnishes in the economy of the state or region in which it is located.

When the places have been classified according to the degree of traffic generating power each place possesses, then the highway connecting these places are classified. The highways can logically be so classified because the relationship between the functional usage of a road reflects the relative importance of the places of traffic attraction characteristics which they connect.

This is, of course, a brief thumb nail description of the process of highway classification as developed by, and practiced in, Michigan. It has resulted in a completely classified system of State trunklines and county roads in the State and is the base by which determination is made for the inclusion of roads in the Federal-



Aid Primary and Federal-Aid Secondary Systems.

The same principles and procedures which guided and directed the classification of highways in rural Michigan can be applied to the Urbanized Area of Metropolitan Detroit.

Within that area there are industrial, commercial, social and recreational installations as expressed in the land use plan. Each such installation has been classified as to its relative importance as a traffic attractor and a classified register established. As in the procedures of classification in rural Michigan, the next logical step was to inter-connect those places with a system of integrated highways designated in accordance with the predominant service each was to perform.

The highways in the Detroit Metropolitan area have been classified and the system of Interstate Highways designated for the area are a direct result of that portion of the entire transportation review.

#### THE MAJOR SKELETAL SYSTEM

To produce a fully integrated system of highways in the greater Detroit urban area, careful consideration must be given not only to the Interstate system but to the other inter-connecting arterial highways which will effectively distribute the traffic.

The functions of the major routes will be that of penetrators, distributors and circumferentials. As is implied in the name, the penetrator route must penetrate the areas of greatest concentration of land use and carry traffic as directly as is practical to those areas. It will of course function also as a distributor route providing a means of interchange of traffic to other routes serving other areas of concentrated land use. The function of the distributor route is to carry traffic along, or from, the principal entering routes to their areas of destination.

A high percentage of all traffic converging on an urban area will be carried on the system of penetrating and distributing routes. There are, however, a great number of vehicles whose destinations are in the periphery of the urban area or in places beyond that area. The primary purpose of the circumferential route is to pro-

vide a means of by-passing the most heavily developed land uses and to act as a distributor route to the industrial and commercial corridors in the peripheral areas of the urban places.

In locating the north-south circumferential route for the Detroit-Metropolitan area three basic premises were made.

1. There will be an urbanized area which will extend southward from Detroit to join with the north growing urban area of Toledo.
2. It will be a highly developed area with tremendous commercial installations and with a heavily developed industrial corridor.
3. It will be served by a penetrator route which will be effective if a route is provided to siphon off traffic whose destinations are in the western and northern portion of the area or to destinations beyond the area.

It is concluded that the north-south circumferential route must be far enough to the west to ensure that the route proposed as a by-pass will not be serving as an urban arterial route in the future.

#### SYSTEM INTEGRATION

The Interstate and Defense System designated to serve the Detroit Metropolitan Area will be no more effective than the capacities of the other major arterial highways into which must be poured the collected traffic streams.

It is a must that the total highway system at all administrative levels will be inter-connected in a manner to provide adequate interchange to all principal points of traffic attraction.

The achievement of a full and complete integration of highway systems was a principal consideration in the designation of the Interstate and Defense Highway System for the Detroit Metropolitan Area.

#### A PLAN AND A PROGRAM

In order that a program for highway construction can be successfully launched, an overall long range plan for highway development must be established.

It is only by having a master plan that we can chart the improvement of road projects and be assured that each such incremental development will be a component unit of a fully integrated system.

This master plan for highway development in the Detroit Metropolitan Area is not a nebulous thing - it is a definite plan with definite objectives.

While planning studies are not as yet complete in all detail, they are sufficiently advanced to establish route improvement priorities for the best interests of a logical phase development plan.

The Michigan State Highway Department prepared a "Proposed Ten Year Expressway Program - Southeastern Michigan Area" which was released on November 7, 1957, see Exhibit V. This program was a result of planning studies in the Detroit Metropolitan Area.

This proposed ten year expressway program has been accepted by all the local highway and planning agencies contained in the greater Detroit area and its successful consummation will be with their aid and support.

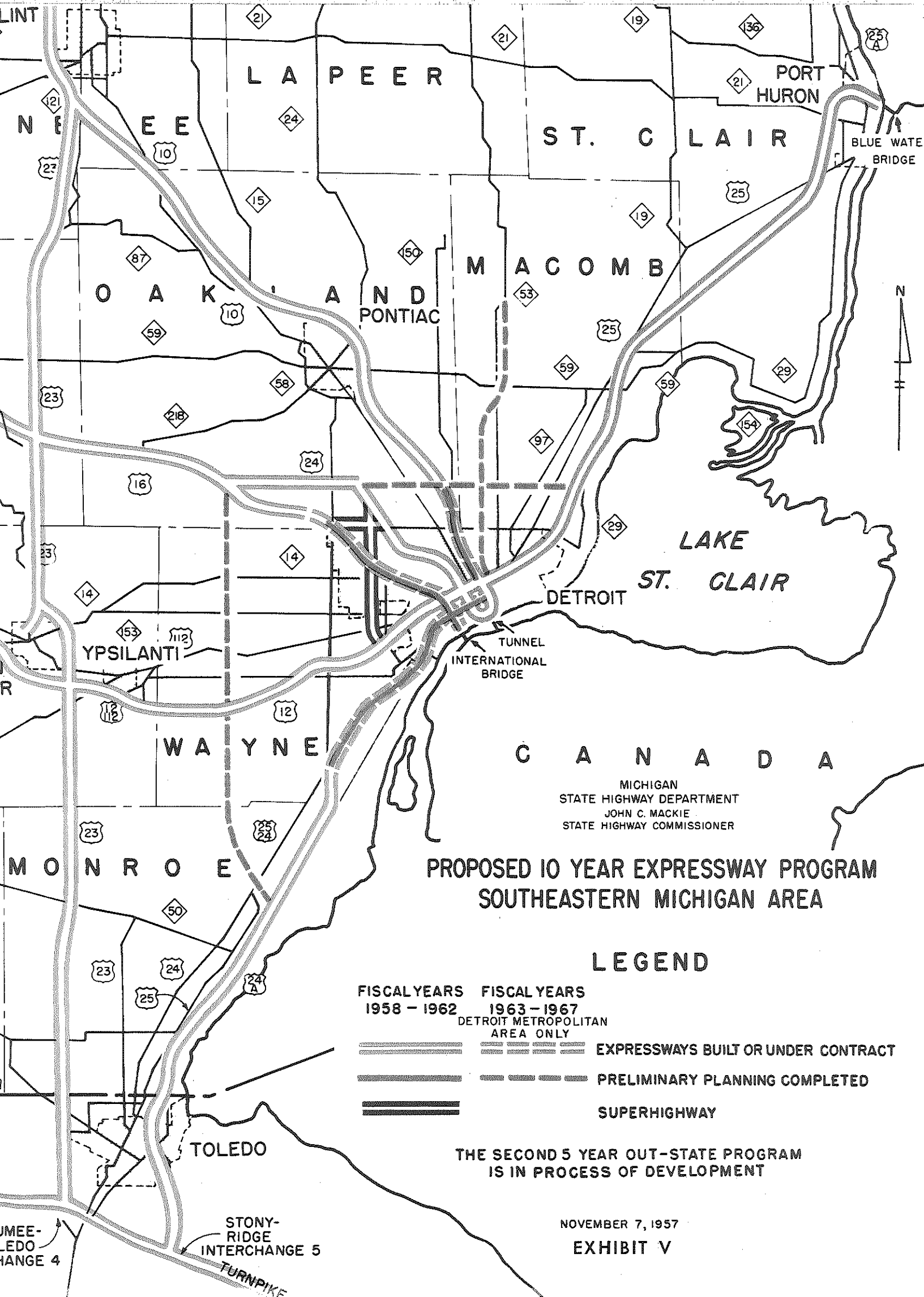
#### ROUTE REVISIONS AND JUSTIFICATION

There are three major revisions of the presently approved Federal-Aid system which must be affected before further action on the highway development plan can be taken. It is the considered opinion of the Highway Department, and the local governmental agencies in the Detroit area with whom they are cooperating, that each revision is highly desirable.

#### REVISION OF F.A.I.-7

A portion of Michigan Interstate route 7 should be revised from a point north of Pontiac into the center of Detroit. It is presently approved on the west side of US-10; it is proposed that it follow a line to the east of US-10.

This suggested location is qualified by every route location guide which was provided in the Bureau of Public Roads memorandum, "Criteria For Selection of Interstate Routes".



L A P E E R

S T . C L A I R

M A C O M B

O A K L A N D  
P O N T I A C

L A K E  
S T . C L A I R

W A Y N E

C A N A D A

M I C H I G A N  
S T A T E H I G H W A Y D E P A R T M E N T  
J O H N C . M A C K I E  
S T A T E H I G H W A Y C O M M I S S I O N E R

**PROPOSED 10 YEAR EXPRESSWAY PROGRAM  
SOUTHEASTERN MICHIGAN AREA**

**LEGEND**

- |                                    |                                    |  |
|------------------------------------|------------------------------------|--|
| <b>FISCAL YEARS</b><br>1958 - 1962 | <b>FISCAL YEARS</b><br>1963 - 1967 |  |
|                                    |                                    | <b>EXPRESSWAYS BUILT OR UNDER CONTRACT</b> |
|                                    |                                    | <b>PRELIMINARY PLANNING COMPLETED</b>      |
|                                    |                                    | <b>SUPERHIGHWAY</b>                        |

THE SECOND 5 YEAR OUT-STATE PROGRAM  
IS IN PROCESS OF DEVELOPMENT

NOVEMBER 7, 1957

EXHIBIT V

N E E

P O R T  
H U R O N

B L U E W A T E R  
B R I D G E

Y P S I L A N T I

D E T R O I T

T U N N E L  
I N T E R N A T I O N A L  
B R I D G E

M O N R O E

T O L E D O

S T O N Y -  
R I D G E  
I N T E R C H A N G E 5

J M E E -  
L E D O  
I N T E R C H A N G E 4

T U R N P I K E

This memorandum provided a list of definitive standards to govern the selection of routes for the National System of Interstate Highways. An examination of the proposed route east of US-10, to be known as the Walter P. Chrysler Expressway, would almost appear to be the location used as an example in setting up the standards.

Consider the following:

Standards 1 & 2 state, "The routes selected should connect as directly as possible the maximum number of cities of various population groups" and ". . . maximum service to principal metropolitan areas as well as specific cities". See Exhibit VI.

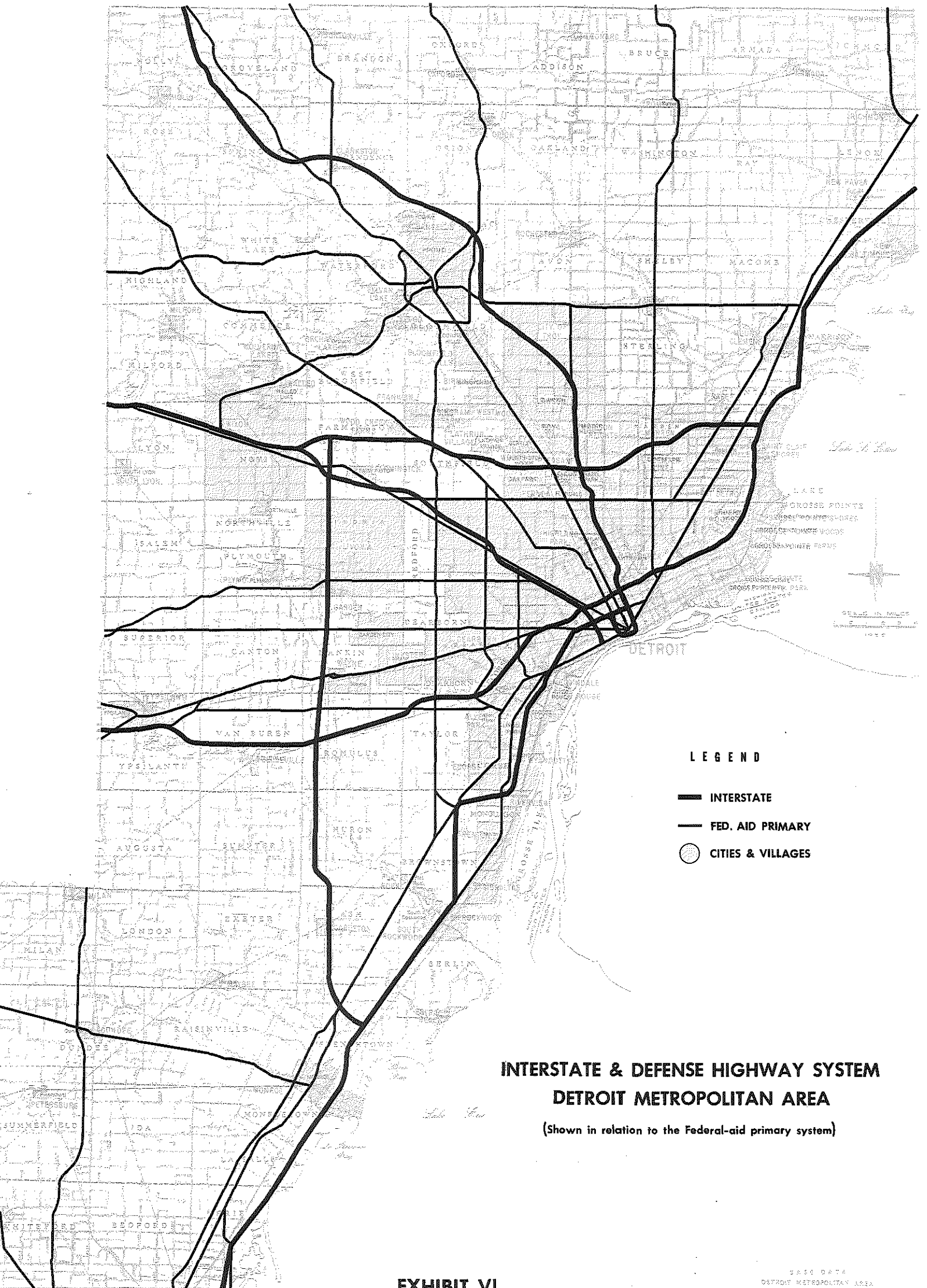
Standards 3 & 4 - These are concerned with serving the greatest density of rural population. It is sufficient to say that the area traversed by the Walter P. Chrysler is the fastest growing area in the entire state.

Standard 5 - Relation of route to manufacturing activity. An examination of the land use plan is ample evidence that this location will serve an immense concentration of industrial activity. This industrial activity is now of great proportions and the advent of a route through this corridor will be an impetus to future expansion.

Standard 6 - Relation to agricultural production - This route will lead towards the Michigan thumb area which is now devoted almost entirely to agricultural and horticultural pursuits. The importance of this area is becoming increasingly more important as the outward expansion of the urbanized area of Detroit is taking more lands from agriculture.

Standard 7 - Relation of route to concentrations of motor vehicle ownership. It is evident that in this most populated area of work commuters largely employed by the motor car industry, that vehicle ownership is as large as any area in the United States.

Standards 8 & 9 - Relation of route from the standpoint of national defense and to military establishments - war industry. The Walter P. Chrysler route fringes an industrial area whose activities during the



**LEGEND**

- INTERSTATE
- FED. AID PRIMARY
- CITIES & VILLAGES

**INTERSTATE & DEFENSE HIGHWAY SYSTEM  
DETROIT METROPOLITAN AREA**

(Shown in relation to the Federal-aid primary system)

years of World War II helped earn for Detroit the title of "Arsenal of Democracy".

Standard 10 - Relation to routes of highest traffic volumes. This route is along the heaviest traffic desire line from Detroit to the north. In terms of serving the economy of the region the most important item will be the tremendous volumes of commercial vehicles which will be contained in the total traffic stream.

Standard 11 - Relation of route to topographic features. The route is located in an area where deviation from a direct line because of topography is negligible.

Standard 12 - Cooperation with the Department of Defense. This route has been prominent in planning activities of the local units of civilian defense. It is located in a manner to move men and machinery from and to vital war manufactories most expeditiously and will serve as a major emergency exodus route from Detroit.

This route serves the most highly concentrated area of economic development in the entire Detroit Metropolitan area - it is, so to speak, the nerve center of a vital industrial sector. It is recommended that early approval of Interstate system status be given to the Walter P. Chrysler Expressway.

#### REVISION OF F.A.I.- 17

The presently approved route begins at a connection with F.A.I.-5 in the Rockwood area thence northerly across F.A.I.-2 following the Southfield highway axis to a point near the Michigan Base Line Road. It is important that this route be relocated to a position where it can function in the manner for which it is being designated; a circumferential route.

It is well to exercise extreme care in the selection of a circumferential route when designing a total transportation system for an urban area. The principal functions of such a route are to provide a means to carry through traffic around the city between various approach highways and to serve as distributor routes for activities conducted in the peripheral areas and to serve the movement of traffic with local origin and destination within the metropolitan area.

Many states have, in the past, constructed by-pass routes so near to the core of the cities that they became urban streets almost overnight. Michigan can be listed among the unfortunates who have suffered from this lack of foresight.

A notable example of what can happen is evidenced by the plight of Telegraph Road, US-24. When this highway was constructed it was considered by many to be, "away out in the country". Throughout a greater part of its length it is now functioning as an urban area highway serving passenger car traffic primarily of local origin and destination. It is continuing to lose its effectiveness as a by-pass route as the urban area grows.

It is a valuable but costly lesson to be short-sighted in highway planning matters - it will not bear repetition.

The route here proposed as a circumferential route is sufficiently far removed from the center of the city that it can serve as a by-pass route and will distribute traffic to the ever growing industrial corridor along the lands it traverses.

For the most part it traverses parcels of land with little or no development at present and where land acquisition can be made without disrupting an established economy.

It is highly important that approval of this proposed revision be granted in order that lands now available will not be swallowed up by the rapidly growing urban giant which is Detroit.

#### THE SOUTHFIELD EXPRESSWAY

It has been often said that the Interstate System will function as well as the inter-connecting highways which carry distributing traffic to and from the Interstate system routes. If the system of inter-connecting highways are inadequate, then the Interstate system units will be inadequate.

The case in point here is the Southfield highway location. It is presently an urban area highway under the administrative direction of the Wayne County Road Commission. It is the position of the Highway Department that this road should be



placed on the State's trunkline system and be included in Michigan's Federal-Aid primary system.

Consider the following:

1. The volumes of traffic which have been forecast for the year 1975 will reach daily peaks in excess of 100,000 vehicles.
2. A high percentage of traffic on this route is made up of work commuters whose residence is in Oakland County and whose work destinations are the various factories near the southern terminus of the highway.
3. It can be concluded that, because the traffic is dense, and because its origin is considerably removed from its destination, that the route carries traffic of state trunkline characteristics and should therefore be a unit of the State's trunkline system.

It is recommended that this route be approved for inclusion in the Federal-Aid primary system.

#### THE PROPOSED INTERSTATE SYSTEM - COSTS AND BENEFITS

The Interstate and Defense Highway System can never be assumed to be inflexible. It must be elastic enough to incorporate desirable changes especially where those revisions can be supported by a wealth of evidence.

It is, of course, equally true that there are definite limitations which must be considered when revisions to the system are proposed; mileage and money.

The proposed system will increase the mileage but will cost considerably less money to build. As a basis of comparison the following is presented:

| <u>Route F.A.I.-7</u>            | <u>Mileage</u> | <u>Estimated Cost<br/>(1957 Cost Index)</u> |
|----------------------------------|----------------|---|
| John C. Lodge Expressway         | 39.6           | \$210,771,000                               |
| Walter P. Chrysler<br>Expressway | 40.1           | \$162,993,000                               |

This results in an increase of only 0.5 miles but with a cost decrease of \$47,778,000.

| <u>Route F.A.I. - 17</u>          | <u>Mileage</u> | <u>Estimated Cost<br/>(1957 Cost Index)</u> |
|-----------------------------------|----------------|---|
| Southfield Expressway<br>Location | 26.1           | \$121,370,000                               |
| Proposed Location                 | 37.3           | 48,235,000                                  |

The proposed relocation of the north-south circumferential route will involve an increase in mileage of 11.2 miles but with total expenditures decreased by some \$73,135,000.

The completion of the Interstate system in as fast a time as can possibly be managed is this State's goal. Inasmuch as the availability of money for construction is a principal factor in the speed by which the system is completed, it is of paramount importance that the system as here proposed will call for a smaller outlay of money - smaller by the significant amount of \$120,913,000.

It is the considered opinion of the Michigan State Highway Department that this proposed increase in Interstate mileage in Michigan is entirely warranted.

There are additional routes in Michigan which are carrying substantial amounts of traffic that is interstate in character - these are instances where interstate system status would be highly desirable but not necessary for effective planning measures to be initiated. This, however, is not the case with the revisions proposed in this report. These revisions are vitally necessary if the Interstate construction program is to go forward in Michigan.

As a measure of further emphasis upon the importance of an adequate Interstate system in the Detroit Metropolitan Area, attention would be centered on the part this area shares in the economy of the nation; consider these facts. Detroit is one of the largest regional market centers in the Great Lakes area, a fact that certainly will not be diminished by the completion of the St. Lawrence Seaway project. It is also a national market center. Here, within a few miles of Detroit, is resident a consumer population of some 35,000,000 people. An equally amazing fact of Detroit's importance to the nation is this; almost a quarter of America's consuming public can be reached from Michigan by truck traveling between dawn and dusk.

These are factors of commerce and industry which result in traffic - traffic which must be moved efficiently on an adequate network of Interstate highways.

Other planning and highway engineers have been extremely cognizant of the importance of the area in which Michigan is located. The following paragraphs are excerpts from the recently published pamphlet, "The New Highways: Challenge to the Metropolitan Region". It contains a series of selected papers prepared as a background for a symposium sponsored by Connecticut General Life Insurance Company, September 1957.

A map of the United States is presented, Exhibit VII, in which is shown boundaries delineated by the type of activities which govern the people resident in them. Attention is centered on the Northern Urban Area: in an article by E. A. Ackerman, Director, Water Resources Program, Resources for the Future Inc., are some realistic statistics; "At present there would appear to be three types of urban area distribution. The most distinctive is the relatively dense concentration of urban areas in the Northeastern-Midwestern manufacturing belt. Within a Northeastern-Midwestern area containing only eight percent of the country's land area, there were in 1950 forty-three percent of the resident population of the nation and sixty-eight percent of the manufacturing employment".

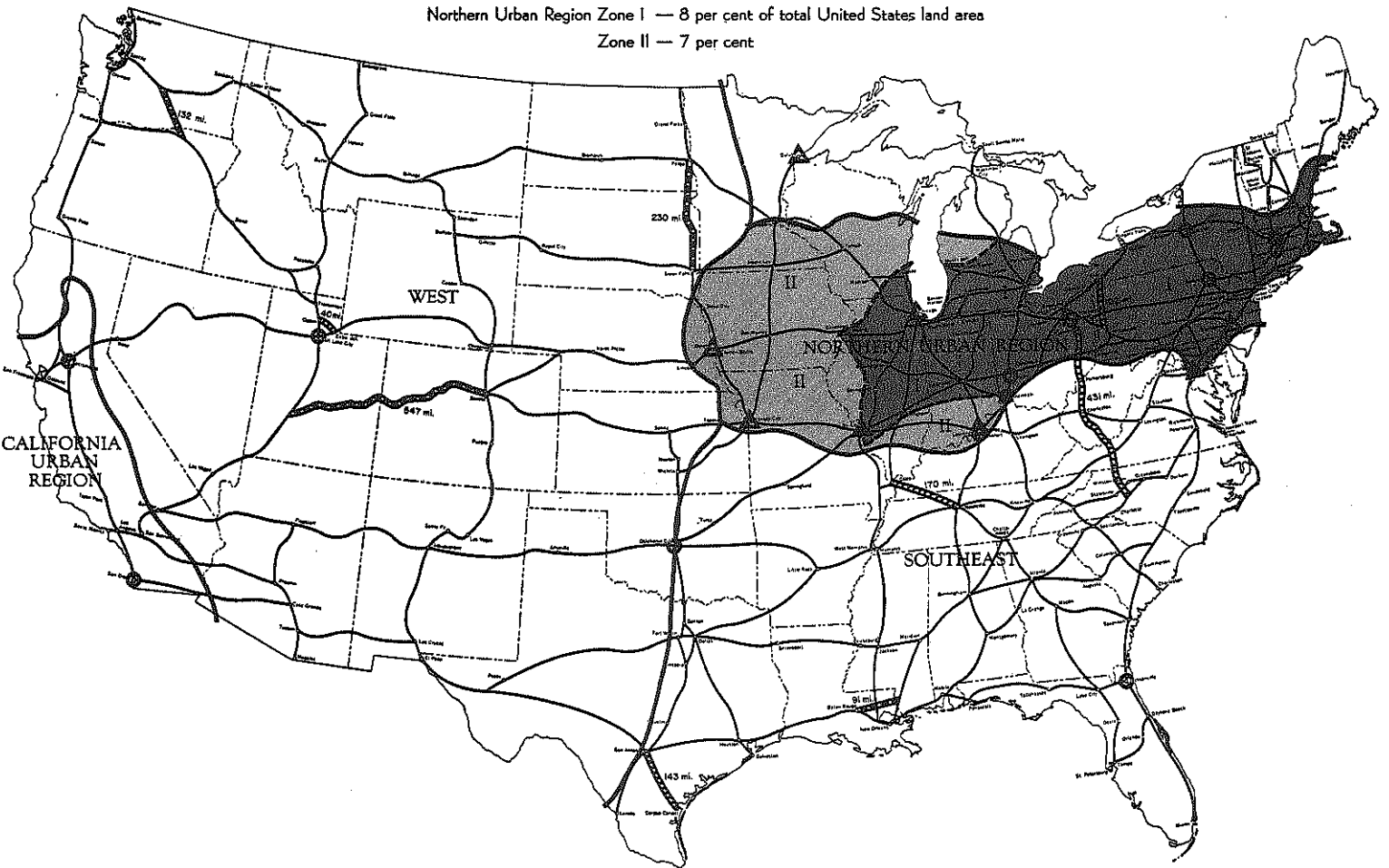
This strongly knit urbanized area is continuing to grow and its growth will demand an adequate system of Interstate highways. It is a responsibility of planning engineers to engage in reasonable and logical forecasts of the shape, size and intensity of the multi-functional activities which produce this growth and to plan to keep the transportation facilities at a par with economic expansion..

There has been an extreme reticence in some quarters to disturb the mileage of Interstate routes as is presently allocated. But, when it is realized that the planned Interstate System in this northern urban area, as shown in Exhibit VII, will have about 10,100 people for each mile of expressway in 1975, where the remainder of the country will have less than 3,400 persons per mile, the system would seem to deserve some review.

# THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS

OCTOBER 17, 1957

Northern Urban Region Zone I — 8 per cent of total United States land area  
 Zone II — 7 per cent



## LEGEND

- Routes previously designated.
- - - - - New routes for designation under 40,000-mile authorization.
- · - · - New routes for designation under 1,000-mile authorization.
- △ Urban places with new urban connections under 40,000-mile authorization.
- Urban places with mileage earmarked for new belt routes under 40,000-mile authorization.

The problem of providing an adequate system of Interstate highways in the Detroit Metropolitan area is a challenge. A challenge that has been met with a fully comprehensive study which has resulted in a logical plan for development of an Interstate Highway System for the Detroit Metropolitan Area.

\* \* \* \* \*