

STUDY DESIGN FOR THE CONTINUING LAND USE - TRANSPORTATION STUDY 1972 - 1976

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STUDY DESIGN FOR THE
CONTINUING REGIONAL LAND USE-TRANSPORTATION STUDY
FOR THE FIVE-YEAR PERIOD FROM JANUARY 1, 1972 THROUGH DECEMBER 31, 1976

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

DECEMBER 1971

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Chapter I

INTRODUCTION

BACKGROUND

In January of 1963, the Southeastern Wisconsin Regional Planning Commission, in cooperation with the U. S. Bureau of Public Roads,¹ the U. S. Housing and Home Finance Agency,² the State Highway Commission of Wisconsin,³ and the constituent local units of government within the seven-county planning area, undertook a three and one-half year regional land use-transportation study designed to provide two of the key elements of a comprehensive plan for the physical development of the Region: a land use plan and a transportation plan.

Ancillary objectives of the regional land use-transportation study included:

1. Establishment of the complete pattern of movement of people and goods within the Region by highway and transit.
2. Quantitative analysis of the existing and the probable future transportation supply and demand on both a local and regional basis and the quantitative assignment of future traffic demand to the developing regional freeway and major arterial street and highway and transit systems of the Region.
3. Establishment of a coordinated and uniform data collection and analysis system that would readily provide, on a continuing basis, summary data on population, employment, motor vehicle ownership, land use, soil and water capabilities, recreation-related resources, travel origins and destinations, transportation facilities, public utilities, and financial resources for the Region. These data were to be available in a form suitable to assist federal, state, and local agencies of government and private investors in making development decisions.
4. Promotion of better understanding by public officials, planners, and engineers of the interrelationships existing between land use and transportation and of the factors influencing residential, industrial, and commercial land development within the Region, thereby providing a better insight into local and regional growth patterns.

¹Presently the Federal Highway Administration of the U. S. Department of Transportation (FHWA).

²Presently the U. S. Department of Housing and Urban Development.

³Presently the Division of Highways of the Wisconsin Department of Transportation.

5. Establishment of an increased awareness of the effect of each local community's plans on surrounding communities and on the Region and promotion of the coordination of the land use and transportation planning efforts of all levels of government within the Region.
6. Collection and analysis of data that would permit forecasts and recommendations to be made regarding future patterns of economic activity, population distribution, land use development, and long-term impacts of alternative transportation system arrangements; costs and benefits of alternative generalized transportation systems and specific transportation facility improvements; and programs for the best utilization of existing transportation facilities and for the construction of new transportation facilities as may be dictated by needs.

The initial regional land use-transportation study was essentially completed in December 1966 with the publication and adoption by the Commission of a land use plan and a transportation plan for southeastern Wisconsin, and the study thereby fully met its primary objectives and generally met all of its ancillary objectives.


The 1962 Federal Aid Highway Act requires that, in order to be eligible for continued federal aid for new highway construction, all urbanized areas in the United States must have underway a continuing, comprehensive, areawide transportation planning process carried on cooperatively by the state and local communities. The necessary transportation planning program must be supported by written memoranda of understanding between the state and governing bodies of the local communities in order to ensure that the planning decisions are reflective of, and responsive to, both the programs of the state and the needs and desires of local communities. The 1964 Urban Mass Transportation Act established similar areawide planning prerequisites to federal aid for transit system development. Therefore, even prior to the completion of the initial regional land use-transportation planning effort, the Commission, its constituent local units of government, and the affected state and federal agencies gave consideration to the establishment of the necessary continuing regional land use-transportation planning effort in southeastern Wisconsin.


Originally there were 44 local units of government within the Region that, as integral parts of the three urbanized areas within the Region, were directly affected by the planning requirements of the 1962 Federal Aid Highway Act.⁴ In the spring and summer of 1965, 43 of these 44 municipalities--the Village


⁴As a result of the 1970 U. S. Census, the boundaries of each of the three urbanized areas within the Region were expanded. This expansion served to make the planning requirements of the 1962 Federal Aid Highway Act applicable to 58 local units of government within the Region. (See Map 1) The 14 units of government so affected include Washington County, the Villages of Big Bend, Germantown, Grafton, Sturtevant, Sussex and Wind Point; and the Towns of Brookfield, Germantown, Grafton, Lisbon, Pewaukee, Norway and Vernon. The Wisconsin Department of Transportation is presently seeking the necessary resolutions with respect to areawide transportation planning from these units.

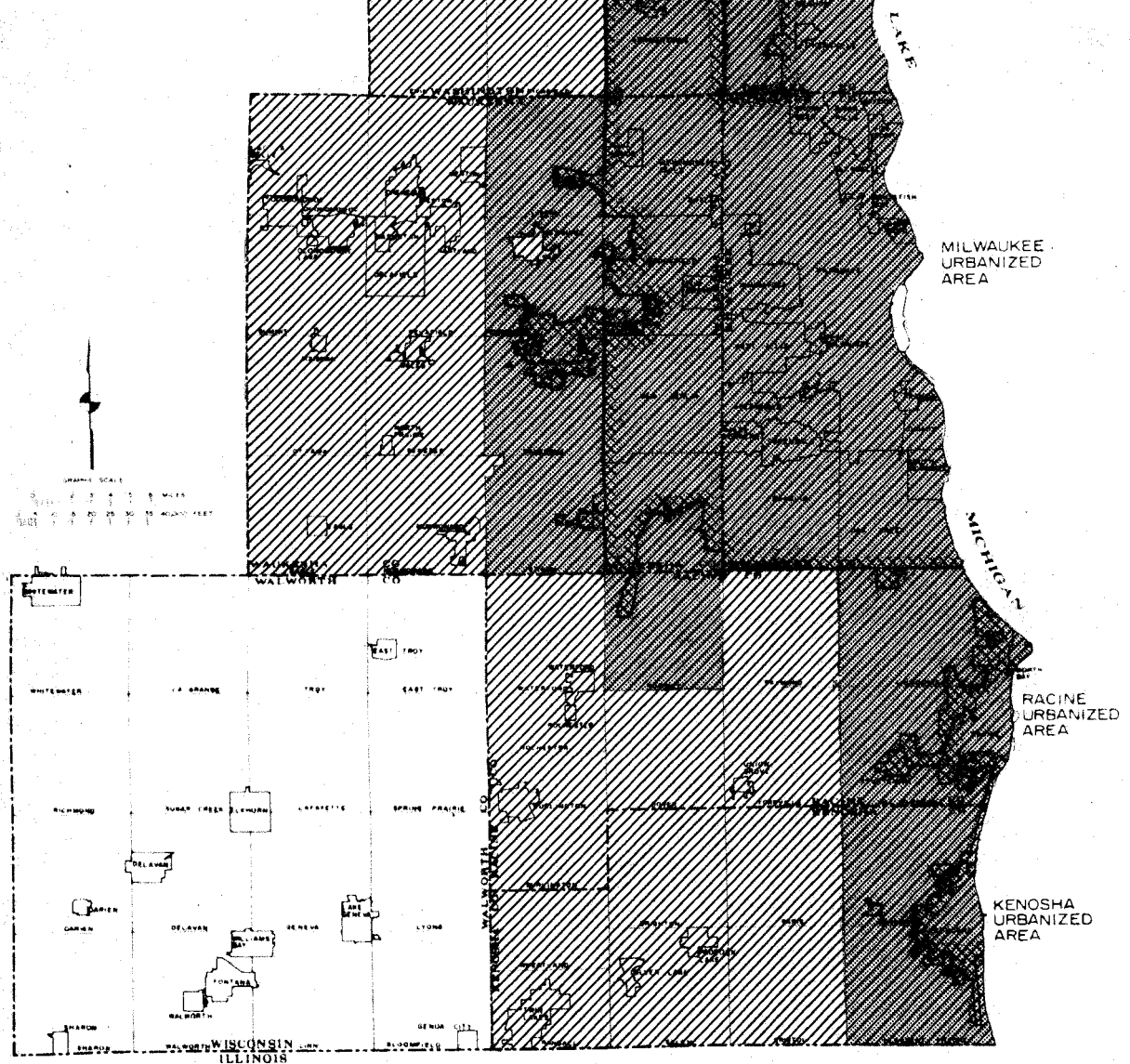
Map I
COMMUNITIES IN THE
SOUTHEASTERN WISCONSIN
REGION AFFECTED BY THE
FEDERAL AID HIGHWAY
ACT OF 1962

LEGEND

 COUNTIES

 MUNICIPALITIES

 URBANIZED AREAS (1970)



of West Milwaukee being the sole exception--enacted formal resolutions agreeing to cooperate with the State Highway Commission of Wisconsin, through the Regional Planning Commission, in the required areawide transportation planning program. The 43 cooperating municipalities represented 99.6 percent of the population and 99.7 percent of the area of the civil divisions then affected. Cooperative action by local units of government on this scale was unprecedented within the Region and represented a major achievement in demonstrating the principle that the solution of areawide development problems can be achieved through voluntary intergovernmental cooperation. A copy of the kind of resolution enacted is reproduced in Appendix A, together with the full list of the local units of government which enacted the resolution and the dates of the enactments. With the adoption of these resolutions by the municipalities involved, pledging cooperation in the mutual utilization by the state and local municipalities concerned of the organizational structure and working arrangements established by the Regional Planning Commission for the regional land use-transportation study, that study fully met the organizational requirements of the 1962 Federal Aid Highway Act. Since the study already fully met the technical requirements of that Act, the means for the continuing, areawide transportation planning program within the Southeastern Wisconsin Region were formally established. On October 11, 1965, the Commission approved and published a Prospectus for a continuing land use-transportation study; and based upon this Prospectus, the seven constituent county boards agreed to provide the local funds necessary for the conduct of the continuing planning effort from July 1, 1966, through December 31, 1969. The State Highway Commission of Wisconsin, on behalf of the U. S. Bureau of Public Roads, as well as itself, and the U. S. Department of Housing and Urban Development subsequently entered into planning grant contracts with the Commission based upon the Prospectus; and the continuing study was thereby fully funded.

A Study Design was subsequently published in August of 1967 which outlined more fully the major work elements to be undertaken in the first continuing regional land use-transportation study and described the work program of that study in greater detail than did the Prospectus. The first continuing land use-transportation planning effort in southeastern Wisconsin was conducted in accordance with that Study Design through December 31, 1969, with the work progress, findings, and recommendations being published annually in the Annual Reports of the Commission, issued pursuant to Section 66.945(8)(b) of the Wisconsin Statutes. These reports were intended to constitute the primary documentation of the results of the continuing land use-transportation planning effort in southeastern Wisconsin. Primary emphasis in this initial continuing land use-transportation planning effort was directed at surveillance and plan implementation. Major work elements completed under the first continuing study included the completion of a jurisdictional highway system plan for Milwaukee County, including recommended capital improvement schedules for state and county trunk highway construction within the county through the plan design year of 1990; the initiation of jurisdictional highway planning programs in Ozaukee, Racine, Walworth, and Waukesha Counties; active participation in the Milwaukee County Mass Transit Technical Planning Study designed to implement the rapid transit and modified rapid transit proposals contained in the adopted regional transportation plan; and active participation in the corridor refinement and route location studies and attendant public informational meetings

and hearings for the additional freeway facilities recommended in the adopted regional transportation plan.

In the negotiation of a cooperative agreement⁵ for a continuing regional land use and transportation study in southeastern Wisconsin beyond December 31, 1969, the agencies concerned agreed that the continuing program would be conducted in accordance with two types of documents that together would meet requirements of the U. S. Bureau of Public Roads Instructional Memorandum 50-4-68, as amended. The first type of document was to consist of a general plan for the continuing land use-transportation planning program and, as such, to set forth the background for, and framework within which, the continuing areawide land use-transportation planning effort was to be conducted, including necessary information on the objectives of the study; the organization for the study; the general functions of the study; and the general scope, content, and timing of all recurring inventories, analyses, and forecasts and plan design and implementation efforts. This document was to consist of a revision of the Study Design for the continuing land use-transportation study, as published in August 1967, and was to be entitled Study Design for the Continuing Land Use-Transportation Study for the Five-Year Period from January 1, 1970 through December 31, 1974.

The first Study Design for the second continuing regional land use-transportation study was published by the Commission in December of 1969 and was intended to cover the five-year period from January 1, 1970 through December 31, 1974. Pursuant to the work program outlined in that Study Design, negotiations were begun in mid-1971 with the Wisconsin Department of Transportation for the funding of a completely new survey of daily travel within the Southeastern Wisconsin Region under the continuing regional land use-transportation study. During the course of those negotiations, the Urban Mass Transportation Administration (UMTA) of the U. S. Department of Transportation indicated its interest in the conduct of such a survey and in the participation of UMTA in the continuing regional land use-transportation planning process in southeastern Wisconsin. In view of the fact that the participation of a new federal agency in the continuing regional transportation planning process would require some changes in that process in order to more fully meet the specific interests and objectives of the new federal agency, it was agreed by all parties concerned that, prior to the initiation of any new travel survey in southeastern Wisconsin, the Study Design for the second continuing land use-transportation study should be revised and extended to cover the five-year period from January 1, 1972 through December 31, 1976. This report constitutes that revised document.

The second type of document is to consist of an annual operations plan which, within the framework of the general plan for the continuing work program, as set forth in the Study Design, is to set forth specifically but briefly the

⁵ See Appendix B for the cooperative agreement governing the conduct of the continuing land use-transportation study in the Southeastern Wisconsin Region as entered into by the Wisconsin Department of Transportation and the Southeastern Wisconsin Regional Planning Commission.

work elements to be conducted in each individual calendar year. The annual operations plan is to be prepared each year in time to permit review of proposed plans by the State Division of Highways, the Federal Highway Administration and by the Federal Urban Mass Transportation Administration prior to the beginning of the calendar year which the annual operations plan is intended to govern. This annual operations plan is to set forth, in addition to a description of the specific work elements to be accomplished during the calendar year, the staff and budgetary requirements for the calendar year and the allocation of the total study costs between participating agencies. (The Commission's operations plans for the Continuing Regional Land Use-Transportation Study for 1972 is set forth herein as Appendix C).

As already noted, this Study Design is a revision of the original Study Design for the second continuing regional land use-transportation study, as published in December 1969, and is intended to provide the general framework within which annual operations plans for the continuing study beyond December 31, 1971, can be developed. As such, the Study Design is intended to outline generally the major work elements to be undertaken in the continuing regional land use-transportation study, identifying and generally scheduling all items of a recurrent, as well as ad hoc, nature.

It must be recognized that new techniques, methods, and approaches will have to be developed as the continuing study progresses to deal with certain aspects of the work, not only to meet the unique problems inherent in the continuing study within southeastern Wisconsin but also to add to the overall knowledge of regional land use-transportation planning. For this reason, this Study Design has been kept sufficiently general so that latitude in the selection of specific techniques to accomplish the necessary work elements may be exercised by the study staff. Modifications may be necessary as the work progresses, and these will be recognized through the preparation of the annual operations plans and through the arrangement and conduct throughout the study of conferences and meetings with public and private groups directly concerned with the study methods and results. The Technical Coordinating and Advisory Committee on Regional Land Use-Transportation Planning, established as an integral part of the organization for the continuing study, will play an important role in the consideration and approval of such modifications as may be required from time-to-time.

BASIC DEFINITIONS

As in the initial regional land use-transportation planning effort, the term "land uses" refers to the generalized human activities that group together to form the overall pattern of urban, suburban, and rural development considered at a regional scale. Particular emphasis is placed on those aspects of land use which, either through their individual or aggregate effects, are regional in scope and not only interact strongly with the need for major utility, recreational, and transportation facilities but also exert a heavy demand upon the natural resource base. These include large land-consuming uses, such as agriculture; regional park and open-space reservation; woodlands, wetlands, and surface waters; residential uses; and major commercial and industrial centers. These also include major concentrations of land use

activities, such as regional shopping and industrial centers and major transportation terminals. Local land uses, as distinct from regional land uses, will receive attention only as to the aggregate area required and approximate spatial distribution desired but will not be considered as to actual site location, as will the regional land uses.

Similarly, the term "transportation system" refers to the arterial street and highway facilities and to mass transit facilities considered at a regional scale. This transportation system, as identified in the initial study effort, is considered down to, but not including, the neighborhood level. Such transportation facilities as railways, airports, and seaports will be studied under this program only to the extent that they directly affect arterial street and highway and transit system development. The term transportation will therefore, be defined to include the intra- and interregional movement of people by highway and transit facilities and the movement of goods by truck.

It is important to note here that the continuing regional land use-transportation study is being carried out as an integral part of the comprehensive regional planning program for the Southeastern Wisconsin Region and that the scope of the total transportation planning effort carried out as a part of that overall regional planning program is intended to include all modes of transportation for the movement of both people and goods. Accordingly, the SEWRPC programmed the initiation in calendar year 1970 of a three-year comprehensive regional airport system planning program. The need for, the specific major work elements of, the organization for, and the costs of this major transportation planning effort are documented in a Prospectus published by the Commission in December 1969.⁶ The regional airport planning program and the continuing regional land use-transportation planning program are closely interrelated and carefully coordinated by the Commission. Areas of particularly close interrelationship include the supply of, and need for, good surface transportation facilities to the existing and proposed airports; the inventories of existing air transportation movement necessary to establish the complete pattern of air and interconnected surface travel; the forecasts of the demand for air and interconnected surface travel; and, of course, the recommended long-range airport system plan itself, with its impact upon supporting surface transportation facilities. The highway and transit system planning efforts under the continuing regional land use-transportation study and the airport system planning efforts under the regional airport planning program will thus serve to mutually reinforce, refine, and detail each other. Similar transportation planning efforts will be mounted by the Commission as the need dictates for rail and water transportation and transportation terminal facilities.

It is intended that full use be made in the continuing study of all existing and available surveys, studies, and reports and other data which will influence or affect phases of the continuing study and that additional data collection

⁶ See Comprehensive Regional Airport Planning Program Prospectus, Southeastern Wisconsin Regional Planning Commission, December 1969.

activities be conducted only as necessary to develop original data unavailable elsewhere or to supplement or update existing data. Where the term "will" is used in subsequent chapters of this report relating to work elements to be accomplished, it is intended to indicate that the work elements referred to are considered to be essential to the objectives of the study and, therefore, definitely will be accomplished under the continuing study effort. Where the term "may" is used, the work elements referred to are either considered desirable, but not essential, and, therefore, will be done only if staff, time, and budgetary limitations allow, or the work elements are such that their necessity remains to be determined through completion of the other work elements of the study. Staff, time, and budgetary limitations cannot be fully established at this time because of the unknown demands which plan implementation activities may place on the study resources.

OBJECTIVES OF THE CONTINUING STUDY

The initial land use-transportation study in southeastern Wisconsin focused on essentially two points in time: the base year 1963--in which various travel, transportation facility, socioeconomic, land use, and natural resource base inventories were conducted--and the target year 1990--for which socioeconomic land use, resource, and travel demand forecasts were prepared and for which the land use and transportation plans were designed, although the plans were staged for the years 1970 and 1980. Socioeconomic, land use, and traffic simulation models were developed in the initial study, which not only established the functional relationships existing between the growth of population and economic activity and land use within the Region and, in turn, between the demand for land use and travel but which provided a systematic and objective means for calculating the quantitative results of any given combination of regional activity, land use pattern, travel demand, and transportation network. The existence of the models obviated the need to puzzle over the surmised effect of changes in portions of the land use or transportation plan on other elements of these plans and continues to provide the means by which changes in regional growth patterns can be evaluated within a comprehensive framework.

The continuing regional land use-transportation study is intended to comprise an integral part of the total regional planning program in southeastern Wisconsin and, as such, to secure and maintain confidence in a commitment to the agreed-upon courses of action with respect to regional land use and transportation system development recommended in the adopted regional land use and transportation plans. This will require that the inventories, forecasts, and plans prepared under the initial study be maintained current, accurately reflecting the current stage of development within the Region and responsive to any departures of such actual development from such development as proposed in the adopted plans. The continuing study, therefore, has five specific objectives:

1. To meet the planning requirements of the 1962 Federal Aid Highway Act and the 1964 Federal Urban Mass Transportation Act, so as to continue to qualify the constituent state and local units of government concerned for federal aids in partial support of the development of highway and transit facilities within the Region and to assist in meeting the planning review requirements of Section 204 of the Federal

Demonstration Cities and Metropolitan Development Act and the U. S. Bureau of the Budget Circular Memorandum A-95 issued pursuant to the Federal Intergovernmental Cooperation Act.

2. To continuously update and revise the data collected in, and the forecasts prepared under, the initial regional land use-transportation study so that the full value of these data and forecasts can be realized and development decisions within the Region made intelligently upon current factual information.
3. To periodically update and revise the plans prepared under the initial study effort in light of changing conditions within the Region.
4. To provide for the continued integration of the land use and transportation planning efforts within the Region with other elements of the comprehensive areawide planning effort, including the preparation of watershed development, sewerage and water supply, airport, park, library, and community shelter plan elements.
5. Finally, and perhaps most importantly, to convert the plans prepared under the initial study effort into action programs for plan implementation.

The attainment of the foregoing objectives will require a continuation of the close working relationships established under the initial study between the Commission and those agencies of government and private organizations responsible for land use and transportation system development within the Region. It will also require a continuing modification and adaptation of the plans and means of implementation to changing conditions. Local planning and plan implementation efforts must continue to be closely coordinated with each other and with the efforts of the state and federal agencies involved, using the evolving documented long-range regional plans as a basis for such coordination. Moreover, the data collected, the plans prepared, and the plan implementation policies recommended in the initial planning effort must be extended in a meaningful manner as a basis for making development decisions within the Region on a day-to-day basis.

To meet the foregoing objectives, the continuing regional land use-transportation study must perform the five basic functions as outlined in the following paragraphs.

Surveillance

Under the continuing regional land use-transportation study, regional development must be carefully monitored and analyzed in relation to the adopted regional land use and transportation plans, the forecasts and basic assumptions underlying those plans, and the techniques used in the preparation and evaluation of those plans, including the various mathematical simulation models. In addition, regional development must be monitored and analyzed in order to maintain both short and long term capital improvement programs current, and to permit evaluation of the continued validity of the planning data for use in

project design. Definitive data must be collected on the amount and spatial location of changes in actual population and economic activity levels, land use development, automobile availability, trip generation, mode of transportation utilized, travel patterns, transportation facility utilization, and on local land use and transportation plan development and plan implementation actions within the Region. These changes must be carefully analyzed in order to determine whether the forecasts and assumptions underlying the plans are holding over time and whether the plans and the techniques used in the preparation and evaluation of these plans remain valid. If changing conditions so dictate, the forecasts and assumptions underlying the plans, the techniques, including the simulation models used in the preparation of the plans, as well as the plans themselves, may require revision.

Reappraisal

Under the continuing regional land use-transportation study, the regional land use and transportation plans will have to be reappraised in light of changes in actual regional development as may be revealed by the surveillance function. Since the initial continuing study period extending from July 1966 through December 1969 was concerned with administering plan elements which were only recently completed and adopted, it was not anticipated that any major changes would be required in the plans themselves. More time has now elapsed since adoption of the regional land use and transportation plans; and certain significant changes in regional land use and transportation system development have taken place, as documented in the Commission's Annual Reports from 1967 through 1970. Consequently, plan reappraisal is expected to become more important in the second continuing study period extending originally from January 1970 through December 1974, and as hereby extended through December 1976.

The plan reappraisal process will be carried on at three levels of depth or intensity. The first level will consist of a routine annual review and analysis of the results of the surveillance program in order to determine whether or not actual development within the Region is occurring in accordance with the forecasts on which the regional plans are based. If this first level of reappraisal indicates that development is generally occurring in accordance with the forecasts and plans, the reappraisal process will be terminated at this level. If not, the second level of reappraisal will be undertaken, consisting of a review of the forecasts on which the plans are based. In any event, major review of certain forecasts and plan elements will be undertaken at regular 5- and 10-year intervals, regardless of the annual findings of the surveillance program. Again, if no significant changes are found, the reappraisal process will be terminated at this level. If significant changes in the forecasts and plan elements are indicated by the second level of reappraisal, a complete reexamination of the regional land use and transportation plans will be undertaken at the third level of reappraisal. In any event, such a complete reexamination will be undertaken at such time that a setting forward of the design year of the plan is required in order to provide an approximately 20-year plan design period. A flow chart relating these three levels of reappraisal to the surveillance, service and plan implementation, procedural development, and

documentation functions, on the one hand, and to the eight basic steps involved in the regional land use-transportation planning process, on the other hand is indicated in Figure 1.

It is also anticipated that, during this period, a new plan design year will have to be selected and preparation made for the major plan revision entailed in setting forward the target year of the land use and transportation plan, although the actual plan revision would probably not begin until after 1974. The simulation models utilized in plan preparation and in plan test and evaluation must be periodically reexamined in order to ascertain whether the rationale and assumptions underlying the models continue to remain valid.

Service and Plan Implementation

If the regional land use and transportation plans are to be converted into action programs, these plans and the data and forecasts underlying these plans must be extended to the sponsoring agencies and constituent local units of government as a basis for day-to-day development decision-making. This is necessary in order to assure the full integration of state, regional, and local development plans and plan implementation efforts. Plan implementation activities not included under the continuing land use-transportation study, but important to its success, include such major efforts as the preparation of subregional community plans and plan implementation devices and the preparation of additional regional plan elements, such as the regional sanitary sewerage system plan.

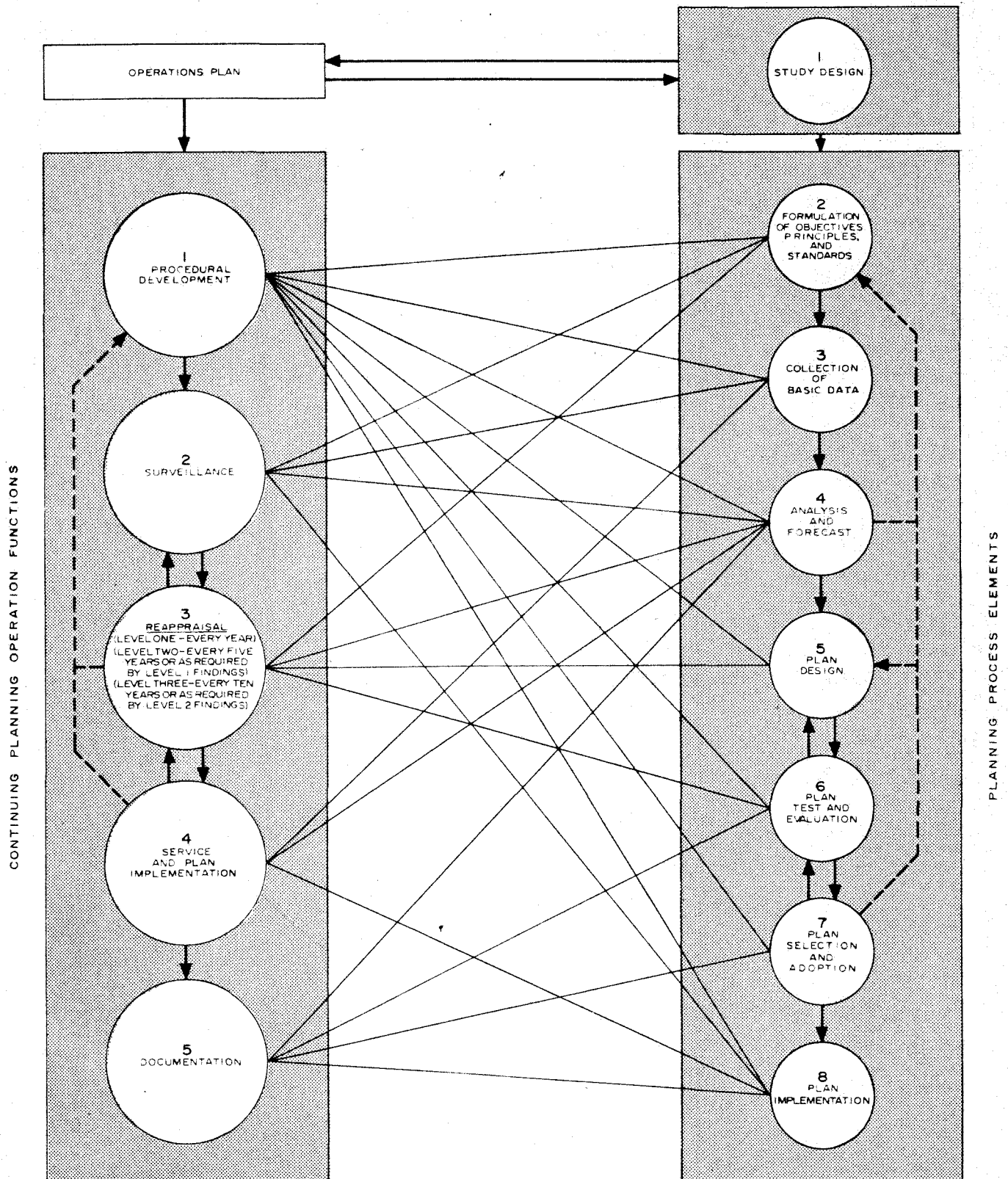
As a part of the service and plan implementation function, the Regional Planning Commission is able to and does provide both administrative and technical support services for any technical study grants which may be made by FHA or UMTA to public or private agencies within the Region, including such grants made in support of short-range improvement studies, system planning studies, special studies, preliminary engineering studies, and research and development studies. In so doing, the Commission extends to such studies pertinent data available in the Commission's files and makes available for application in the studies, as may be necessary, such planning tools as the Commission's traffic simulation models.

As an integral part of the service and plan implementation effort under the continuing regional land use and transportation planning program, the Regional Planning Commission will prepare annually short-term, as well as long-term, highway and transit priority improvement programs and will, within statutory constraints and staff and budgetary limitations, promote the implementation of such programs in every way practicable. With respect to transit, the proper pursuit of the service and plan implementation functions will require the strengthening of staff skills in the transit operations planning area; and such strengthening will be pursued within the continuing study.

The Commission has been intimately involved in ongoing planning and support services to plan implementation agencies concerned with both highway and transit system development within the Region, and such planning and services have extended to include operations planning. For example, the Commission has

Figure 1

RELATIONSHIP BETWEEN U.S. DEPARTMENT OF TRANSPORTATION
CONTINUING PLANNING OPERATION FUNCTIONS¹ AND
SEWRPC PLANNING PROCESS ELEMENTS



¹See "Operation Plans for Continuing Urban Transportation Planning", INSTRUCTIONAL MEMORANDUM 50-4-68, Federal Highway Administration, Bureau of Public Roads, U.S. Department of Transportation, May 3, 1968.

made special studies for the principal transit operator within the Region in order to assist that operator with operations planning for improved transit service, particularly Freeway Flyer service. The Commission has provided support services to the Milwaukee County mass transit technical planning study,-- a study partially funded by federal grants from both FHWA and UMTA--and has accomplished certain important work elements under that study, including the preparation of detailed transit system development objectives, principles, and standards; the preparation of demand forecasts through application of the Commission's traffic simulation models; and the conduct of the land use planning operations necessary to the successful completion of that study. The Commission has been intimately involved in the Milwaukee County--Allis Chalmers Manufacturing Company dual mode research study,--a study partially funded by a federal grant from UMTA--again providing assistance with the demand forecasting necessary to an analysis of the economic, as well as physical, feasibility of development of a true small vehicle dual mode transportation system to serve the South-eastern Wisconsin Region. Finally, the Commission has been involved in special transit system improvement studies for the Racine and Kenosha urbanized areas. In this manner, special-purpose plan implementation, operations planning, and research studies relating to transportation facilities and services within the Region have been fully integrated into, and made consistent with, the ongoing regional land use-transportation planning effort. The continuation of such administrative and technical support services is considered essential to regional plan implementation, and to avoiding unnecessary duplication of efforts and attendant costs. The basic planning and engineering data required for the development of improved transportation services within the Region for both highway and transit services and for both short-range and long-range improvements--can best be collected on a continuing basis at the regional level and extended to the interested and concerned line agencies as needed. In this respect, it should be noted that the agencies responsible for the construction, operation, and maintenance of highway and transit facilities within the Region will actively participate in the definition of the data requirements for the preparation of both short-range and long-range transportation improvement programs through the technical advisory committee structure established for the continuing study and, wherever possible, through the assignment of staff to the continuing study.

It is also important to note here that the surveillance, plan reappraisal, and service and plan implementation functions are inextricably interrelated and, as such, require a truly comprehensive, as well as areawide, approach. For example, the surveillance function may reveal certain changes in land use development in the Region, which may, in turn, require changes in the type and location of transportation facilities and services to be provided to certain subareas of the Region, or in the staging of the provision of such facilities and services, thereby affecting the plan reappraisal, as well as the service and plan implementation functions.

Procedural Development

Rapidly changing technology will require a continual reappraisal of the techniques and procedures used in the initial and continuing land use-transportation study phases and the development of new techniques and procedures as necessary. In order to avoid duplication of effort, the U. S. Department of Transportation,

Federal Highway Administration, is encouraging each major metropolitan, or regional, transportation study in the United States to focus its procedural development efforts on one phase of the land use-transportation process. It is proposed, therefore, that major attention be focused in the southeastern Wisconsin study on developing better land use planning techniques, including the development of a land use plan design model. In addition, it is anticipated that further progress will be made towards integrating land use and transportation planning and plan implementation. Better methods will be sought for use in land use and transportation plan design and for use in the collection of basic data concerning such elements of the natural resource base as soils, surface and groundwater, woodlands, wetlands, and wildlife habitat.

Documentation

In order to present properly the results of the continuing land use-transportation planning process, an Annual Report, summarizing the results of the surveillance, reappraisal, service and plan implementation, and procedural development efforts, will be issued to the participating federal, state, and local units of government and to interested private citizens. The Report will summarize any success or failure in plan implementation, as reflected in major land use and transportation facility development within the Region, and will recommend required changes in the forecast plans and plan implementation efforts. In addition, planning reports, technical reports, and technical records will be issued on a work progress basis, as required.

Budgetary, staff, and time limitations preclude giving equal weight and attention to the foregoing five functions of a continuing regional land use-transportation study. During the first continuing study period, extending from July 1966 through December 1969, major emphasis was placed upon two of the five functions: 1) surveillance and 2) service and plan implementation. During the second continuing study period, originally extending from January 1970 through December 1974, and as hereby extended through December 1976 these two functions will continue to be emphasized. Increasing attention will, however, be focused on the reappraisal function and preparations made for a setting forward of the plan design year and major revision of both the land use and transportation plans beginning in 1975. The surveillance function will continue to be emphasized, not only because of its fundamental importance to any sound continuing planning operation but also because of its extreme importance to a planning function which is entirely advisory. If state, county, and local officials and private developers are to be expected to continue to seek the advice of the Regional Planning Commission on development decisions prior to making these decisions, then the Commission must continue to have a better fund of knowledge about factors affecting development than any other agency operating in the same geographic area. The initial regional land use-transportation study provided the Commission with just such a fund of knowledge. The continuing land use-transportation study must maintain the position of that fund of knowledge.

The service and plan implementation function will continue to be emphasized because of the importance of converting the adopted regional land use and transportation plans to action programs. The success of the regional planning effort must ultimately be measured, not in terms of the technical excellence of the

areawide plans that may be prepared or even by the scope and depth of the basic planning and engineering data which this effort may assemble, important as this latter function may be, but rather, in terms of the ultimate effects that the areawide planning operation will have on the evolving regional settlement patterns. That effect can only come about through effective plan implementation. The attention given in comprehensive areawide transportation planning operations throughout the nation to the development of planning techniques and to the refinement of these techniques has, to date, been out of proportion to the attention given to implementation of the plans produced by the techniques.

Because almost five-years will have elapsed since the completion and adoption of the regional land use and transportation plans and because a United States decennial census which was conducted in 1970, providing an excellent bench mark for plan surveillance, the reappraisal function will receive major emphasis in the second continuing regional land use-transportation study. It is not only expected that some significant developments will have occurred within the Region that will require plan reappraisal and perhaps plan revision, but also that preparations will have to be made for the setting ahead of the plan design year.

The primary emphasis under the second continuing regional land use-transportation study on surveillance, reappraisal, and service and plan implementation, coupled with the fact that the Commission is an operating, and not a research agency, requires that only limited attention be devoted during the second continuing study to the procedural development function. The development of a land use plan design model was completed by the Commission under a separately funded planning and research demonstration project from the U. S. Department of Housing and Urban Development (Project No. Wis. PD-1). Further procedural development will be confined to the application and refinement of this model, to the application and refinement of the socioeconomic and land use simulation models developed under the initial regional land use-transportation study, and to efforts to further integrate land use and transportation planning and plan implementation. Finally, the very nature of the continuing study operation is such as to necessitate a limited documentation function. Unlike the initial land use-transportation planning effort, which produced two major planning reports published in four volumes, five technical reports, and 12 technical records totaling 2,119 pages of printed report material, the output of the first continuing regional land use-transportation study effort produced only one major planning report,⁷ one technical report,⁸ two technical records,⁹ two special memoranda

⁷ SEWRPC Planning Report No. 11, A Jurisdictional Highway System Plan for Milwaukee County, March 1969.

⁸ SEWRPC Technical Report No. 7, Horizontal and Vertical Survey Control in Southeastern Wisconsin, January 1968.

⁹ SEWRPC Technical Record, Volume 3, No. 1, February 1968 and Volume 3, No. 2, December 1969.

reports,¹⁰ and three annual reports,¹¹ totaling 736 pages of formal printed report material.

The documentation effort of the second continuing regional land use-transportation study is anticipated to parallel that of the first such study, with the continued production of annual reports and the production of a limited number of planning reports, primarily relating to the preparation of jurisdictional highway system plans, technical reports, technical records, and special memoranda as required. This more limited documentation effort is consistent with the experience under the first continuing study, which indicated that greater effort would have to be devoted to directing development decisions on a day-to-day basis; and, therefore, more emphasis would be placed upon, and effort would be required to produce informal documentation in the form of letter reports, staff memoranda, and oral presentations before governing bodies than in the form of formal printed reports, although some of the latter, as indicated, will be issued.

OVERVIEW OF THE LAND USE-TRANSPORTATION PLANNING PROCESS

The initial regional land use-transportation study employed a seven-step planning process by which the Region and its principal function relationships could be accurately described both graphically and numerically, the complex movement of people and vehicles over highway and transit facilities simulated, and the effect of different courses of action with respect to regional land use and transportation system development evaluated. The seven steps involved in this original planning process were: 1) study design, 2) formulation of objectives and standards, 3) inventory, 4) analysis and forecast, 5) plan design, 6) plan test and evaluation, and 7) plan selection and adoption. Each step in this planning process included many individual operations which had to be carefully designed, scheduled, and controlled to fit into the overall process. These steps were fully described in Chapter II of SEWRPC Planning Report No. 7, Volume 1, Inventory Findings--1963, May 1965. The end results of this planning process were not only regional land use and transportation plans scaled to future land use, travel, and resource demands and consistent with regional development objectives, but the beginning of a continuing planning process that permits modification and adaptation of the plans and the means of implementation to changing conditions.

The continuing planning process involves one step in addition to the aforementioned seven-step process, namely, plan implementation. It is this eighth step which was pursued most vigorously in the first continuing land use-transportation study and which, if the recommendations contained in the adopted

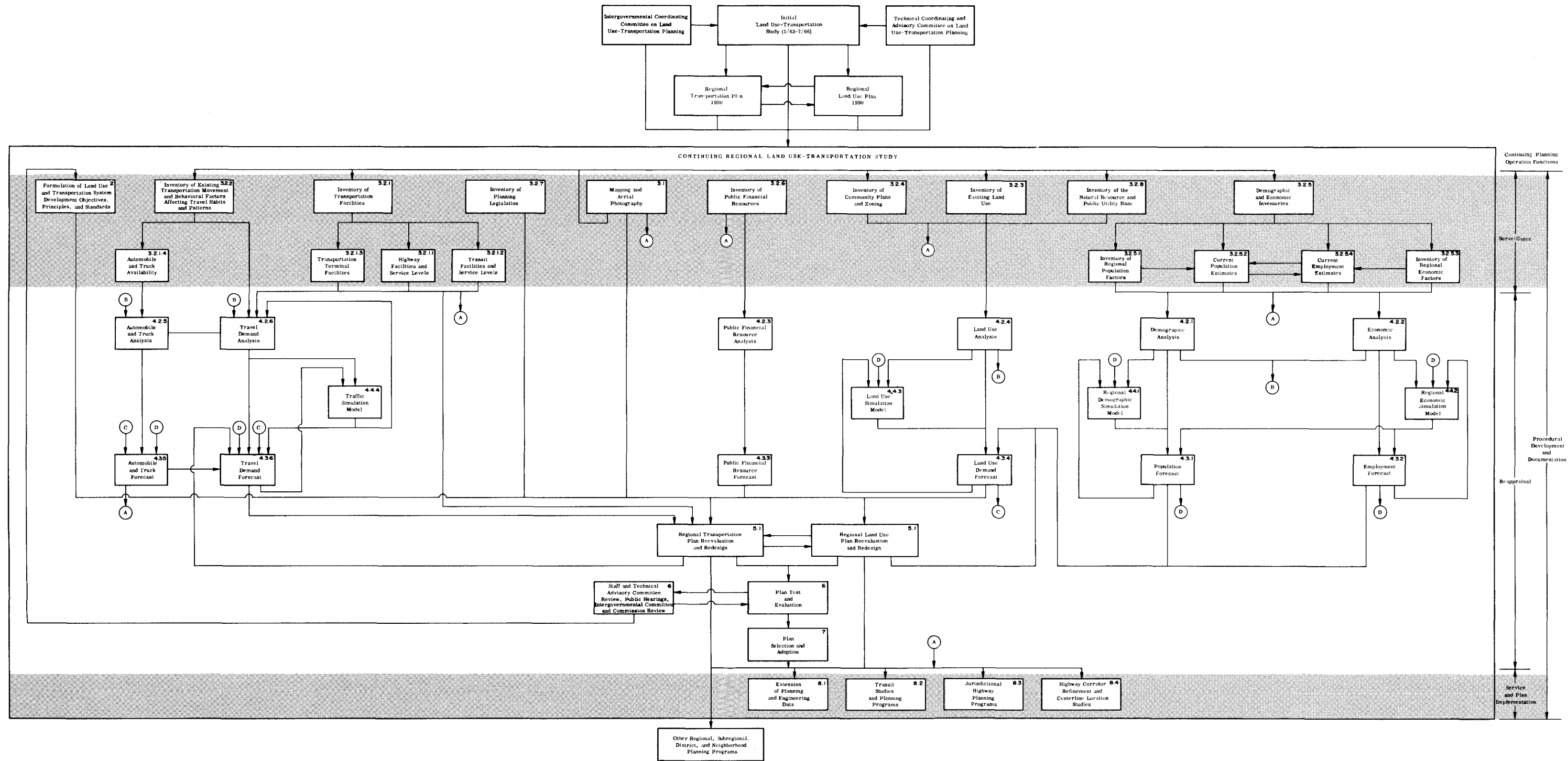
¹⁰"Transit System Development Objectives, Principles, and Standards Prepared for the Milwaukee County Mass Transit Technical Planning Study," Southeastern Wisconsin Regional Planning Commission, March 1969; and "Staff Memorandum Prepared by the Southeastern Wisconsin Regional Planning Commission for the Milwaukee County Expressway and Transportation Commission on Areawide Planning Considerations Involved in the Location of the Proposed Stadium and Bay Freeways," Southeastern Wisconsin Regional Planning Commission, April 1969.

¹¹1966 Annual Report, 1967 Annual Report, 1968 Annual Report, Southeastern Wisconsin Regional Planning Commission.

plans which were prepared under the initial land use-transportation study are to be brought to fruition, must also be pursued in subsequent continuing land use-transportation study programs. The continuing regional land use-transportation planning effort must, therefore, be designed to permit the continued application of the initial planning process by maintaining the inventories, analyses, and forecasts, in a current state; revising the development objectives and standards; and revising the plans and the recommendations concerning plan implementation, as necessary. The relationship between the five continuing operation planning functions and the eight-step planning process is shown in Figure 1.

This report constitutes the first step of the eight-step planning process for the second continuing regional land use-transportation study. Work proposed to be accomplished in each of the other seven steps is described in the succeeding sections of this Study Design. The major work elements of the continuing land use-transportation study in southeastern Wisconsin are diagrammed in Figure 2.

Figure 2
MAJOR WORK ELEMENT DIAGRAM
CONTINUING REGIONAL LAND USE-TRANSPORTATION STUDY IN SOUTHEASTERN WISCONSIN



Chapter II

OBJECTIVES, PRINCIPLES, AND STANDARDS

Since planning is a rational process for formulating and meeting objectives, the formulation of regional development objectives was a necessary task undertaken in the initial regional land use-transportation study effort. The advisory committee structure created by the Commission for the regional land use-transportation study¹² provided a practical and effective means by which public officials, technicians, and citizen leaders could become involved in the regional planning process; and it was through this committee structure that the initial formulation of the regional development objectives was channeled. As described in Volume 2 of Planning Report No. 7,¹³ the proposed regional development objectives were augmented by supporting principles and their quantification and relationship to the physical development plans facilitated by the preparation of detailed land use and transportation system planning standards.

The application of the land use and transportation system planning standards, along with an assessment of the extent to which the standards were satisfied and, therefore, the development objectives achieved under each of the alternative plans, was instrumental in facilitating the final selection of the recommended land use and transportation plans. Thus, the objectives and standards served a most significant purpose in the plan design, evaluation, and selection phases of the initial planning process.

The regional development objectives formulated under the initial regional land use-transportation planning effort were necessarily conditioned by the then existent knowledge of conditions within the Region, as well as by the then present state of planning at the state, regional, and local levels. It is, therefore, possible that, with the passage of time, with the attainment of additional knowledge about the Region, and with the fulfillment of certain of the adopted regional development objectives through plan implementation, as well as with the failure to fulfill others, a major reevaluation of the regional development objectives may become necessary.

The continued validity of the basic objectives on which the adopted regional land use and transportation plans are based, as well as the relative priorities which the citizens of the Region may assign to each of these objectives and to other objectives not directly related to land use and transportation system development, being ultimately derived from community values, can probably best be assessed through the process of the human interaction which takes place in

¹²See SEWRPC Planning Report No. 7, Volume 1, Inventory Findings--1963 pp. 7-9.

¹³See SEWRPC Planning Report No. 7, Volume 2, Forecasts and Alternative Plans--1990, Chapter II.

the established political system as the implementation actions for various plan proposals are advanced over time. Thus, a very pragmatic approach is proposed to be taken to any reappraisal of the regional development objectives through assessment of community reaction to proposed specific plan implementation actions. Under such an approach, continued adverse public reaction or response to plan implementation proposals might indicate a need to reevaluate the specific objectives, principles and standards for their continued relevance. Conversely, favorable public reaction will be appropriately recorded in the context of plan implementation achievement. Care will have to be exercised to ensure that any reaction--adverse or favorable--not only truly reflects the values of the citizen body as a whole within the Region and not the values of a small "pressure" group, but also that the reaction reflects long-term, stable values and not ephemeral reactions. To this end the attitudinal and personal opinion surveys proposed to be undertaken as a part of the new regional travel inventory will be extremely valuable. These surveys will provide information covering public preferences for not only various types and levels of transportation facilities and services but also for various housing types and locations. When analyzed in relation to the results of the accompanying behavioral studies of travel habits and patterns and housing locations these surveys will provide an excellent measure of not only current public attitudes and opinions but of changes in these attitudes and opinions over time, and therefore a sound basis for considering needed revisions in regional development objectives and standards.

A major reevaluation of the regional development objectives or of their supporting principles and standards will be undertaken when the surveillance activities indicate that such reevaluation is necessary either as a result of plan implementation or, the lack of such implementation, or as a result of the attitudinal surveys proposed to be conducted as a part of the new regional travel survey. Care will have to be taken, in any case, that the elapsed time since the adoption of the regional land use and transportation plans and the development objectives and standards which these plans express will have been long enough to provide the necessary base of experience from which to make such a major reevaluation.

Under the first continuing land use-transportation study, the transit system development objectives, principles, and standards formulated and adopted under the initial regional land use-transportation study were refined and detailed for application in the Milwaukee County Mass Transit Technical Planning Study. It is anticipated that, as other specific plan implementation programs are mounted, the adopted regional land use and transportation development objectives, principles, and standards will continue to be reviewed, refined, detailed, and revised as appropriate. A recent example of such refinement of the regional development objectives is set forth in the Lake Freeway Location Report prepared for the Wisconsin Department of Transportation By Consoer, Townsend and Associates. In this report the seven regional transportation system development objectives were restated into 15 route-location objectives, and the rank-based expected value method of plan evaluation¹⁴ was applied under each objective

¹⁴The rank-based expected value method of plan evaluation was adopted by the SEWRPC from a technique used extensively in corporate and military decision-making and applied to the evaluation of three alternative regional development plans. For a more thorough review of this adoption, see Chapter VI, SEWRPC Planning Report No. 7, Volume 2, Forecasts and Alternative Plans--1990.

against four alternative route locations. In the application of this plan evaluation technique, each alternative is rigorously and systematically subject to a rank-ordering procedure designed to evaluate the extent to which the objective is met or satisfied. This evaluation procedure carries the dual benefit of not only placing the objective itself under careful scrutiny but of facilitating the selection of a plan or route from among the various alternatives presented. It is anticipated that future plan implementation actions will continue to be related in a comparable manner to the adopted regional development objectives. It is also anticipated that these objectives, principles, and standards will be expanded under such programs as the regional airport planning program, undertaken by the Commission, in cooperation with the federal, state, and local units of government concerned. It should be noted that any such review, expansion, refinement, or detailing of the regional land use or transportation development objectives, principles, and standards will be documented as an integral component of the continuing land use-transportation planning program.

Finally, under the second continuing land use-transportation study, it is proposed to continuously monitor and reevaluate the planning standards which support the regional development objectives. It is anticipated that this be accomplished by comparing the recommended planning standards with the results of the various current inventories conducted under the surveillance function and, through such comparison, to assess the continued validity and relevance of the recommended standards, as well as the degree of progress being made toward the meeting of the standards.

Chapter III

COLLECTION OF BASIC DATA

Reliable basic planning and engineering data collected on a uniform, areawide basis are absolutely essential to the formulation of workable development plans. If these plans are to be implemented and, as necessary, adapted to changing conditions, these inventory data must be maintained in a current state through a surveillance function. Thus, a continuing data inventory operation becomes the major, and most important, element of the necessary surveillance function. The data inventory operation described herein entails the collation of data collected by other operating agencies, as well as the collection of new data by the Commission itself. In order to avoid duplication of effort, secondary data sources will be used wherever possible.

The necessary surveillance function of a continuing regional land use planning operation requires that factual data must be maintained current on the existing land use pattern; on the potential demand for each of the various major land use categories; on the major determinants of these demands; and on existing local development objectives and constraints, as well as on the underlying natural resource and public utility base and the ability of this base to support land use development.

The necessary surveillance function of a continuing regional transportation planning process requires that factual data must be maintained current on the existing and potential demand for transportation between various points within the Region and outside the Region; on the relative demand for alternative modes of transportation; and on the major determinants of these demands, as well as on the existing and potential supply of transportation system capacity.

The methodology or techniques to be used in the surveillance function are intended to be indicated in only very broad general terms herein. The specific techniques proposed to be used will be detailed and documented in appropriate staff memoranda as the study progresses and will be subject to appropriate advisory committee review and approval prior to implementation.

3.1 MAPPING AND AERIAL PHOTOGRAPHY

3.1.1 General Base Maps

General base maps of the Region are required to provide a medium for recording and presenting in graphic form the results of the planning studies as well as the natural and man-made features of the Region. A secondary purpose of the general base maps is to permit the information collected in the various studies to be related on a continuing basis to the geographic area from which it is taken, and particularly to permit geographic identification of data by machine methods.

General-purpose regional base maps have been prepared by the Commission and are available for the continuing study. These maps portray each county in the Region at scales ranging from 1:24000 to 1:96000. In addition, a great many special-purpose maps have been prepared by the Commission, including large-scale topographic, planimetric, and cadastral maps of certain subareas of the Region. All maps prepared by the Commission under any of its several planning programs will be available to the continuing study. It will be necessary, however, under the continuing study, to update certain of the general-purpose base maps in order to reflect changes brought about by street and highway construction, transit service extensions or abandonments, revisions in corporate limits lines, and changes in certain topographic features.

In addition, certain of the special-purpose maps derived from the base maps may have to be adapted to reflect changing conditions and techniques. Specifically, the maps showing traffic analysis zones and districts and the transportation system networks and the physical and operational characteristics of the levels in these networks will be updated to reflect changes or additions to the arterial street and highway and transit systems and revisions in the zone and district boundaries necessitated by changing conditions and analytical techniques. The scheme of traffic analysis zones for the Region will be reviewed and evaluated in preparation for the proposed new regional travel survey particularly in areas where new development has occurred or where the quantity of trip generation has increased substantially since 1963. In these areas it may be necessary to delineate new traffic analysis zones as sub zones of the original zones. The node numbering scheme used for the base year network maps will be revised to conform with the scheme used for the design year maps and to take maximum advantage of the diagnostic data summaries available from the current battery of traffic assignment computer programs. State plane coordinates of all link-intersections (nodes) in the updated arterial street and highway and transit networks will be determined and appropriate procedures developed for application of automatic data plotting. Finally, the network mapping system will be revised to provide maximum compatibility with the overall base mapping scheme for the Region and to provide for easier and more efficient graphical analyses and data retrieval operations.

Special maps will be prepared displaying such data as current traffic volume counts, count station location, travel time band, link capacity, and average trip lengths by link as required for the continuing transportation planning effort.

All updating of the general-purpose base maps will be accomplished by the Cartographic Division of the Commission staff. Revisions in corporate limits lines will be made annually from municipal plat maps, furnished by the Division of Highways of the Wisconsin Department of Transportation, showing current corporate limits lines and streets and highways open to traffic. Changes in

cultural features, such as stream and lake shorelines, street and highway pavements, railway, airport, and harbor facilities, were made in 1967 under the first continuing study from ratioed and rectified high altitude aerial photographs provided by the Division of Highways at a scale of 1" = 2000', having a date of photography of November 1966 and an original negative scale of 1" = 6000'. Such updating will be required at regular five-year intervals beginning in 1970 and will require the preparation of such photography under the continuing land use-transportation study at regular five-year intervals beginning in the spring of 1970. Updating of special-purpose maps will be accomplished either by the Commission's Cartographic Division or, in certain cases, by the Land Use and Transportation Divisions.

3.1.2 Detailed Planning Base Maps

In order to carry out the plan implementation recommendations, as set forth in SEWRPC Planning Report No. 7, Volume 3, Recommended Regional Land Use and Transportation Plans--1990, additional 1" = 100' scale, two-foot contour interval maps, based upon a monumented control survey network relating the U. S. Public Land Survey system to the State Plane Coordinate System, were prepared under the first continuing study and, under special supplemental agreement with the State Highway Commission of Wisconsin, for portions of the proposed Belt and Bay Freeways. Such maps were prepared under the initial regional land use-transportation study and under special letter agreements with the State Highway Commission for the proposed Bay, Belt, Lake, and West Bend Freeways. The maps were intended to provide the basis for the official mapping of these proposed freeways by local municipalities and the Division of Highways of the Wisconsin Department of Transportation and will thereby provide a most important plan implementation device essential to the advance reservation of right-of-way for these important freeway facilities. Additional large-scale base maps will be prepared under the continuing study only as required and under special agreement with the Division of Highways.

All the horizontal and vertical control survey data collected under the large-scale mapping efforts carried out under the initial and first continuing regional land use-transportation studies, as well as such data collected by county and local units of government under compatible large-scale mapping efforts, were collated and published under the first continuing study in SEWRPC Technical Report No. 7, Horizontal and Vertical Survey Control in South-eastern Wisconsin. These survey data will be updated periodically, as needed, under the continuing study; and revised inserts to Technical Report No. 7 will be issued for use by state and local governments and private engineers and land surveyors operating within the Region.

3.1.3 Aerial Photography

New aerial photography of the entire Region was taken in the spring of 1963 under the initial regional land use-transportation study at a negative scale of 1" = 2000' and in the spring of 1967 under the first continuing regional land use-transportation study at a negative scale of 1" = 1600'. Ratioed enlargements of this photography were prepared in each case on stable base material at a scale of 1" = 400' in order to provide the basic original data source and the new data source for the necessary updating of existing land use information and of basic data concerning certain elements of the natural resource base.

New aerial photography of the Region, resulting in the preparation of ratioed enlargements at a scale of 1" = 400' from low altitude photography at a negative scale of 1" = 1600' and in the preparation of ratioed and rectified enlargements at a scale of 1" = 2000' of high altitude photography at a negative scale of 1" = 6000', will be required at regular five-year intervals beginning in the spring of 1970. The low altitude photography will be required to provide a means for the delineation and measurement of current land uses essential to updating the existing land use inventory and monitoring land use development in relation to the adopted regional land use plan. This photography will coincide with the 1970 Federal Census of Population and Housing and will provide an excellent basis for comparing the actual land use development and trends in such development with respect to the 1970 land use pattern that was recommended in the staging of the 1990 adopted regional land use plan. The high altitude photography will be required to update the Commission's base maps and provide the only practical means for adding new cultural features to those maps.

In addition to providing a high quality data base for the identification of cultural features and a historic record for census and land use information, the aerial photographs will also provide current information for inputs into such land use-transportation study work elements as the jurisdictional highway system planning programs, land use and transportation plan implementation studies, such as mass transit and highway corridor refinement studies and related land use planning efforts and the regional airport planning program, as well as several special regional and subregional studies concerning the natural resource base, special facilities and utilities, and community planning assistance. Current high quality aerial photographs of the Region are a major and indispensable planning tool and are not only utilized daily by many general-and special-purpose units and agencies of government operating in southeastern Wisconsin which are involved in both long-range and short-range planning and plan implementation programs but are also utilized by private agencies and individuals in the preparation of development plans which can serve to implement the adopted regional land use and transportation plans.

3.2 INVENTORIES

3.2.1 Inventory of Transportation Facilities

3.2.1.1 Highway Facilities and Service Levels

The inventory of the existing arterial street and highway system and of the existing service levels on that system, carried out under the initial regional land use-transportation study, will be maintained current on an annual basis. The functional classification of the total existing street and highway system, which classifies all streets and highways within the Region into the following categories--freeways, expressways, parkways, and standard arterials--will be reviewed annually in cooperation with the Technical Advisory Committee and, in this manner, will be maintained current. Consideration will be given to the establishment of further functional subclassifications of the regional arterial street and highway facilities in order to permit a closer correlation with state highway plan, national functional, and TOPICS arterial classifications. In addition, the functional classification will be reviewed as an integral part of the preparation of jurisdictional highway plans for each county within the Region, as recommended in SEWRPC Planning Report No. 7, Volume 3, Chapter VIII; and any necessary changes in the network maps will be made.

In addition, the following data will be maintained current on an annual basis for each link in the arterial network: facility type; jurisdictional system designation; federal aid category; node location by State Plane Coordinates; link location by zone, district and county, and link length; right-of-way width; pavement width; pavement type; number of traffic lanes, turning lanes; vertical alignment; percent passing opportunity; area type; link capacity; speed limit; and average running speed. In addition, pavement condition, traffic volume, and vehicle-miles of travel will be updated at regular two-year intervals. The maintenance of these data will be coordinated with the state to ensure compatibility with the State Highway Network Data Information (HNDI) System.

Characteristics indicative of the level of service provided by the arterial street and highway facilities will also be monitored on an annual basis. These characteristics include a congestion index, defined as the ratio of traffic volume count to operational capacity (volume-capacity ratio); accident rates; and peak- and off-peak-hour-operating speeds. Special studies will be carried out to ensure that certain data are maintained within the levels of accuracy and precision required for the continuing transportation planning effort. As resources permit, these studies will include a determination of factors affecting capacity, such as directional split, peak-hour factors, percentage of commercial traffic factors, load factors, turning movement percentages, and traffic signal splits, and will

be conducted in cooperation with state, county, and city traffic engineering operations to ensure that the basis for the calculation of facility capacity continues to represent average urban and rural use conditions at reasonable levels of service.

Within the surveillance function of the continuing land use and transportation study, a continuing traffic volume counting program for the Region will be conducted in cooperation with the Wisconsin Department of Transportation, the Milwaukee County Highway Department, and several of the local units of government, including the Cities of Kenosha, Milwaukee, Racine, Waukesha, Wauwatosa, and West Allis. This program will provide, on a continuing basis, the traffic volume count data necessary to monitor traffic growth within the Region, measure the level of congestion on the various segments of the arterial system, provide a basis for comparing the results of traffic simulation model applications used in the planning process with ground counts, and will yield traffic flow information frequently requested by several public and private agencies throughout the Region. The traffic count program will be evaluated annually to ensure that the location and frequency of traffic counts obtained in each major phase of the program, including the control count, seasonal count, and coverage count phases, is properly related to any changes in the volume and pattern of traffic flow within the Region. Following a thorough analysis of the traffic count data, traffic count factors will be developed for facilities with various operating characteristics within selected subareas of the Region. Such traffic count adjustment factors will include annual average daily and weekday factors and monthly average daily and weekday factors. In addition, certain other traffic flow characteristics will be monitored, including weekday, weekend, monthly, and seasonal traffic variation factors. Special traffic count programs may be conducted to assist in monitoring changes in traffic demand, to obtain data on the impact of new highway facilities, and to permit surveillance of the performance of the traffic flow simulation models.

Changes in travel time on the arterial system provide a good measure of the effect of traffic growth and street and highway facility improvements on the operation of arterial street and highway systems. Travel time studies will be conducted to monitor changes in both peak- and off-peak-hour-travel times on the arterial system to the level of accuracy required for use in the traffic simulation models, including the modal split, trip distribution, and traffic assignment submodels, and to provide a measure of the level of service provided by the arterial street and highway system. A travel time study of the entire arterial system within the Region will be conducted in 1972 to coincide with the conduct of the proposed new regional travel survey, with an annual updating of the travel time data on those segments of the arterial system for which average vehicle operating speeds are judged to have increased as a result of improvements to the facility or decreased due to higher traffic volumes.

An integral portion of the inventory phase of a second continuing regional land use-transportation study will be an areawide accident study. In order to identify dangerous, accident-prone areas within the Region and to compare the accident experience between various facilities on an areawide basis, an arterial network map showing accident rates for intersections and links by accident type will be prepared. Such a map will, after its preparation, be updated annually, consistent with the availability of accident data and the needs of the continuing study. It is anticipated that the necessary accident data will be available from the Wisconsin Division of Motor Vehicles and from local police department records, and all efforts will be coordinated with the Wisconsin Bureau of Highway Safety Promotion.

3.2.1.2 Transit Facilities and Service Levels

The inventory of existing transit facilities and levels of service, conducted under the initial regional land use-transportation planning effort, will be maintained current. The following data will be maintained current on an annual basis for each link in the transit network: type of link; link travel time, based upon stop spacing and average running speeds; average running speed; walk time, based upon stop service area size and population distribution within the stop service area; transfer time, based upon headways of intersecting routes; link length; link location by zone, district, and county, and node location by State Plane Coordinates. In a similar manner, the following data will be maintained current on an annual basis for each line in the transit network: type of service; line number; hours of service; frequency and regularity of service; line capacity; quantity of service, based upon seats per bus and service frequency for the total 24-hour service period and for each of the morning and evening peak-hour service periods; and line passenger volumes. In addition, the following data will be maintained current for each transit company within the Region: revenue passengers carried annually, fare structure, operating cost, and accidents.

Special transit service studies may be conducted to monitor changes in transit utilization habits and to obtain data on the impact of improved service on transit utilization.

3.2.1.3 Transportation Terminal Facilities

The inventory of the supply and type of automobile parking facilities available in the central business districts of the Cities of Kenosha, Milwaukee, and Racine, carried out under the original regional land use-transportation effort, will be maintained current by utilizing data from the files of the traffic engineering department of the cities concerned. In addition, new inventories of the supply and type of automobile parking facilities available will be made of all areas

proposed as major retail and service centers on the adopted regional land use plan. Data to be maintained current for each block within the central business districts will include: the total number of on-street spaces; the number of short-term, on-street spaces and attendant utilization costs; the number of long-term, on-street spaces and attendant utilization costs; and where available, data permits turnover rates. Similar data will be maintained current for off-street public and private spaces.

The updating of truck terminal locations and sizes will be accomplished through the continuing land use survey described below. If analyses of the results of the land use survey updating so indicate, special studies will be made on the location and relocation of truck terminals, including the number of vehicle loading/unloading docks; the number of vehicles loaded/unloaded; the service area; and annual tonnage handled.

The inventory of airports and air operations data developed as a result of the regional airport planning program referred to earlier in this Study Design will be maintained current on an annual basis. Such data include: airport name; location; type of ownership; name of owner; runway surface; number of runways; runway length; runway lighting; number of based aircraft; FAA classification; number and type of operation at each airport; number of commercial air-carrier passengers; amount of baggage mail and freight handled; and type of commodity.

3.2.1.4 Automobile and Truck Availability

The inventory of automobile and truck availability prepared under the initial land use-transportation study will be maintained current by county and by civil division on an annual basis. This data will continue to be obtained from reports on motor vehicle registration published by the Wisconsin Department of Transportation, Division of Motor Vehicles. In addition, data obtained in the proposed new regional travel survey will be used to update the inventory of automobile and truck availability for each traffic analysis zone. This information will provide a current measure of one of the key independent parameters used in the trip generation equations.

3.2.2 Inventory of Existing Transportation Movement and Behavioral Factors Affecting Travel Habits and Patterns

The Initial Regional Land Use-Transportation Study: Among the major inventories conducted under the initial regional land use-transportation study in 1963 was an inventory of existing transportation movements and travel habits and patterns within the seven-county Southeastern Wisconsin Region. This inventory, the largest and most exhaustive inventory of travel ever conducted in the Region, consisted of a home interview, a truck and taxi, a postal questionnaire, and a roadside external survey.

Common to all of these surveys was the collection of data relating to the geographic location and the land use at the origin and at the destination of each trip, the mode of travel utilized, the purpose of the trip, and the times of travel for each trip. As a part of the home interview survey, data were obtained also which traced the history of changes in the home and work addresses of the heads of household, and included information relating to the reason for the change, and to certain corresponding personal and household characteristic data at the time of change. Also as a part of the home interview survey, adult members of a sub-sample of households were asked to reply to an attitudinal questionnaire, giving their opinions concerning the quality of existing travel and their suggestions for improving such travel and concerning existing costs of housing, their preferences in housing types, and the reasons for selecting their existing housing units and neighborhoods, as well as the principal items to be considered in the selection of new homes and neighborhoods.

In this inventory, travel data were obtained from approximately 16,000 households and from approximately 3,600 truck and taxi operators through personal interviews in the urbanizing areas of the Region, from approximately 11,000 households and approximately 3,000 truck and taxi operators in the postal questionnaire surveys in the largely rural areas of the Region, and from the drivers of approximately 43,000 vehicles entering or leaving the Region through roadside interviews conducted at the external cordon of the Region.

One other survey of personal travel was conducted during the initial regional land use-transportation study. In the spring of 1964, the principal mass transit carrier inaugurated a new type of service within the Region. This new service, utilizing freeway facilities for nearly the entire length of the line, provided direct nonstop bus service during the peak commuting periods of each weekday between an outlying suburban shopping center and the central business district of the City of Milwaukee. The results of a survey of the passengers on this new service, appropriately called "freeway flyer" service, measured not only the personal characteristics of the passengers and of the origins and destinations of their Freeway Flyer trips but also provided an accounting of the number of passengers who did not have a choice of mode when the trip was made and of the number who had converted from commonly driving an auto to using the bus in this new service.

The First Continuing Regional Land Use-Transportation Study: Primary emphasis in the first continuing regional land use-transportation study, conducted during the period from July 1966 through December 1969, was placed upon the surveillance of basic planning and engineering data collected in the initial study and upon implementation of the adopted regional land use and transportation plans prepared under that study. Major region-wide origin-destination surveys were neither contemplated nor consummated during this period, but a number of important minor

origin-destination surveys were completed in the first continuing regional land use-transportation study.

These surveys included the following:

1. A second origin-destination survey of freeway flyer passengers on the Mayfair route, originally surveyed in 1964, and a similar first survey of freeway flyer passengers on a newly instituted Bayshore route. Both of these surveys were conducted in 1966.
2. Roadside origin-destination surveys of recreation travel in Mauthe Lake and Terry Andrae State Parks and in the Root River Parkway area in Greendale in 1968.
3. Roadside origin-destination surveys of travel generated by General Mitchell Field in 1968.
4. Origin-destination surveys of freeway flyer passengers on each of the newly instituted Capitol Drive, West Allis, and Hales Corners routes in 1969.

Need For A Second Inventory Of Travel Within The Region: Inventories of the existing arterial street and highway system of the Region and of the existing service levels on that system and inventories of the existing transit facilities and levels of transit service conducted under the initial regional land use-transportation study were reinventoried under the surveillance function of the first continuing land use-transportation study. Except for such limited special purpose origin-destination surveys as the series of freeway flyer surveys, the airport survey, and the three park and parkway surveys, however, no other inventory which would provide up-to-date information on current travel patterns on a region-wide basis has been made since the initial study in 1963. It is believed that a reliable measure of the impact on the patterns of travel brought about by a large number of varied and highly significant changes which have occurred within this Region since the initial study can only be accomplished through a new complete inventory of travel.

In any consideration of the need for a new survey of travel within the Region, it must be recognized that the use of, and therefore need for, the data from such a survey is a function of the philosophy and concepts underlying the comprehensive areawide transportation planning effort in any particular region. In southeastern Wisconsin that process is not directed exclusively at the development of long-range transportation system plan but is directed at the development of a comprehensive regional development plan and at securing implementation of such plan through appropriate short-range and operational, as well as long-range planning efforts. To this end the areawide planning agency must fully understand the forces which shape regional

land use, as well as transportation system development and must be able to meet in a timely and positive manner requests from federal, state, and local officials for information pertinent to the making of day-to-day land use as well as transportation facility development decisions. Thus, within the context of a comprehensive regional planning program, the use of travel survey data for the formulation and calibration of the traffic simulation models required for the preparation of long-range transportation system plans is only one use of that data. The data are also required to permit the Commission to be actively involved in transportation system improvement project selection and design, in operations planning, and in the provision of valid information required to make day-to-day development decisions within the Region. The information required may range from providing data on day-time versus night-time population levels and densities through data on the socioeconomic characteristics of transportation facility users in relation to fare and schedule adjustments to data bearing on the adequacy of the size of a local taxicab fleet or the adequacy of interregional scheduled air transportation service. Perhaps the most important purpose of the data, however, is to provide public officials with an understanding of the forces which shape the demand for land and for supporting transportation facilities and services within the Region and of the trends in changes in these forces over time. Such understanding can only come from a comprehensive travel survey which provides complete information not only on travel habits and patterns but on the basic demographic, economic and land use activities which create the demand for travel.

Based upon such a broadly defined use of travel survey data, a complete new survey of daily travel within the Region is recommended to be undertaken in 1972 for the following specific reasons:

1. Major improvements in the regional transportation system have taken place since the conduct of the basic travel inventories under the initial regional land use-transportation study. In 1963 there were a total of only 61 miles of freeway open to traffic in the entire Region; and this mileage consisted largely of scattered, disconnected segments, very little of which served the urban areas of the Region. By the end of 1969, there were a total of 152 miles of freeway open to traffic within the Region, almost two and one-half times the 1963 mileage. Moreover, this freeway mileage had been molded into a relatively well-integrated system of freeways, at least as compared to the disconnected segments of 1963 and most of this system now serves the urban areas of the Region. Because of this dramatic change in the transportation system, it is vital to measure the effects of this change on such basic travel characteristics as the amount of travel generated, the spatial distribution of that travel, and the length of that travel, effects undetectable by traffic count monitoring an unaccounted

for in the trip generation and trip distribution models utilized in the continuing regional transportation planning program.

2. The inauguration since 1963 of freeway flyer service in several urban areas of the Region. Surveys of ridership on five freeway flyer routes established since 1963 revealed that an entirely different kind of transit rider was attracted by this service. One important finding was that more than one-half of the riders of freeway flyers had a choice of mode available to them at the time the trip was made compared to less than one-tenth of the riders of the more conventional transit system having such a choice in 1963. Another important finding was that the freeway flyer had attracted many new transit riders accounting for more than one-half of total riders, most of which had formerly made the trip as auto drivers: a startling reversal of a continued downward trend in transit utilization. Still other important changes have occurred in the transportation system which must affect travel patterns and modal choice within the Region. Revenue passengers carried yearly within the Region declined from nearly 95 million in 1963, to about 74 million revenue passengers in 1969, a loss of more than 21 million passengers or more than 22 percent. Most of this decrease in ridership has occurred since 1966, including a loss of 16 million revenue passengers by the Milwaukee & Suburban Transport Company and a loss of more than 1 million revenue passengers each in the Racine and Kenosha urban areas. Entirely new transit systems are in operation in the Racine and Kenosha urbanized areas, the original systems in operation during the 1963 origin-destination survey having been abandoned. A careful, in-depth reexamination of the factors affecting choice of travel mode is, therefore, essential. Such a reexamination must be based upon new behavioral data, data collected in a manner so as to insure full inclusion of transit as well as non-transit users in the necessary surveys.
3. Massive changes have occurred since 1963 in the location and densities of residential, commercial, and industrial development within the Region, including the development of three new regional shopping centers, each of which is larger than any existing in 1963; the development of three large new industrial parks in outlying areas of the Region; a renaissance of high-rise office building construction in the central business district of Milwaukee; and the completion of several major urban renewal projects, all of which may have significantly changed travel habits and patterns.

The 1970 U. S. Census of Population and Housing records the population of Milwaukee County at 1,054,249 persons compared to the SEWRPC plan forecast for that county in 1970 of approximately 1,170,000, a difference of 115,751 persons, or about 11 percent. If the U. S. Census population count is correct, or approximately so, then the amount of travel generated by residents of Milwaukee County may have been overstated in the transportation plan. On the other hand, the number of automobiles forecast by the Commission to be available to Milwaukee County residents in 1970 very nearly match the estimates of such automobile availability derived from Motor Vehicle Department auto registration and the total amount of travel thereby generated may not vary from the forecast as significantly as would otherwise have appeared certain. It is certain, however, that tremendous changes in Milwaukee County have occurred since the initial survey in 1963. Many thousands of residential structures have been demolished under urban renewal programs in the interim, altering to a great degree the composition of a large part of the most highly urbanized part of the county, as those households uprooted became reestablished, uprooting others in the process. It is, therefore, absolutely vital to the sound development of the entire transportation system of this Region that a clear understanding of the current kinds and quantity of travel and the patterns of travel generated by this most important area be achieved. Only a new origin-destination survey will make such an understanding possible.

There have been changes of a considerable nature in other areas of land use development which were not provided for in the preparation of the regional land use-transportation plans and which would necessarily have had a very significant impact on the patterns of travel contained in the plans. Probably the most serious deviation from the recommended land use plan is the observed continuation of urban sprawl, particularly in Waukesha, Washington, and Ozaukee Counties. Important to the transportation plan, too, is the location or shift in the location and the degree of expansion of several major traffic generators, including for example, three major vocational schools in the Waukesha, West Bend, and Elkhorn areas, respectively, the Brookfield Square and South Ridge regional shopping centers, and the "new town" development at Northridge.

4. A complete travel survey conducted during the second continuing study would derive considerable benefit from correlation with the U. S. decennial census data, such as the socioeconomic characteristics of the resident population and certain of their travel characteristics, including, most importantly, the quantity and spatial distribution of trips to work.

5. The great changes in the physical and operational characteristics of the arterial highway network and the mass transit systems require that new data be provided to evaluate the continued validity of the entire battery of transportation simulation models developed in the initial regional land use-transportation study. The opportunity to test these models using data obtained in the 1970 census and to compare traffic assignment results using the new data with traffic assignments for the staged 1970 regional land use and transportation plans is timely.

It is important to note, that there has been observed, particularly in informational and public hearings relating to the construction of freeways within this Region, a growing tendency on the part of many, both in the private and public sectors, to discount the effectiveness and validity of mathematical simulation models prepared by the Commission which were based upon 1963 patterns of travel. Such lack of acceptance, regardless of its merit and of all argument against it, is not likely to diminish in the future unless new travel data are obtained.

6. Importantly, a new inventory of travel would provide new transportation related data for a second point in time: a reference point against which the assumptions in, and the results of, the mathematical simulation models of the recommended transportation plan can be evaluated. A new inventory of travel will also provide a new and reliable base upon which the proposed annual update of travel information must be founded.
7. Finally, it has become apparent that the original origin-destination survey conducted by the Commission in 1963 gave insufficient attention to certain areas of the overall demand for transportation facilities and services within the Region. These areas included transit trip generation and modal choice, weekend travel habits and patterns, and goods movements. A new inventory of travel will permit greater emphasis to be placed on these three important subject areas which require and deserve careful attention within the Region.

It should be noted that none of the foregoing reasons advanced in support of a new travel survey within the Region relate directly to any need to reformulate or recalibrate the traffic simulation models developed by the Commission. Instead, those reasons relate to the need to provide valid travel data in support of short-range, as well as long-range planning, operations planning, day-to-day decision-making concerning regional development, and most importantly a better understanding of the forces shaping regional development

and transportation demand. It should also be noted, however, that the new travel data will permit a very rigorous and true test of the continued validity of the entire battery of mathematical models used in the regional transportation planning effort to be made.

Major Elements Of The Proposed Regional Inventory Of Travel: The following outline sets forth the necessary major work elements of a proposed regional inventory of travel in southeastern Wisconsin. The outline is intended to establish the general scope and content of the study: to permit the development of initial cost estimates for budgetary purposes; to establish a practical time sequence and schedule for the necessary work; and to develop an organizational structure for the proposed work including a determination of staff requirements.

The outline is based upon the following assumptions:

1. That the primary purpose of the regional inventory of travel is to obtain current measures of the kinds, amounts and distributional patterns of travel in the Region to provide: a) a thorough evaluation of the effect on travel patterns of the massive changes in the transportation system and in the land use pattern of the Region since the initial inventory of travel in 1963; b) a true test of the continuing validity of the entire battery of mathematical models utilized in the preparation of the regional transportation plan; and c) a new factual base of travel data upon which proposed annual inventories of travel may be built to maintain such data current.
2. That a series of origin-destination surveys will be undertaken as a single inventory of travel and that the field work of such surveys will be conducted within the period between April 15 and November 30 in the year to be selected for such an inventory and which will include such major surveys as a home interview survey; a truck - taxi survey; and an external cordon survey. That, in addition, a number of special origin-destination studies will be conducted within this inventory of travel including an in depth survey of mass transit; a survey of goods movement; and a survey of weekend travel.

Inventories: Following is a description of the personal, socio-economic, and travel data to be collected under the major origin-destination travel survey. In addition to the inventories conducted in 1963, it is proposed that three special surveys be conducted as part of the general inventory of travel within the second continuing regional land use-transportation study. These special surveys are: a) a survey of mass transit, b) a survey of weekend travel, and c) a survey of goods movement. The methodology to be followed for each of the various surveys will be outlined in

a Study Design consisting of a series of technical staff memoranda dealing with each major phase of the work.

1. Screenline Survey--as in the 1963 screenline survey, data to be collected will include the total number and type of all vehicles crossing each screenline in each direction for each hour period during an average weekday within the survey period. Manual vehicle classification counts will be conducted at each screenline station for periods of 16 hours or 24 hours depending on the average daily traffic volume passing the station. This classification data will be supplemented with machine traffic counts at each station taken over non-successive 48-hour periods. Such counts will be obtained during the survey period for each day of the week in a manner to yield average weekday and weekend day traffic volume data. In addition, for screenlines intersecting local bus routes in urban areas, the hourly volume of bus passengers crossing the screenline in each direction during the survey period will be obtained.
2. Home Interview Survey--a comprehensive home interview survey will be conducted for a sample of households throughout the Region. This survey will include three elements, namely, a personal, socioeconomic, and travel characteristics survey; a personal opinion survey; and a household history survey.
 - a. Personal, Socioeconomic, and Travel Characteristics--information to be collected in the home interview survey will, as in the initial home interview survey, include such personal characteristic data relating to each resident and to each visitor as the age, sex, race, driver license status, industry of employment, and occupation, to such trip characteristic data as the geographic locations and the land uses at the origin and destination of each trip, the trip arrival and departure times, the purpose of the trip, the number of blocks walked at each end of the trip, the mode of travel utilized, the number of passengers carried and the kind of parking utilized in each auto driven trip, and whether a transit trip-maker had the alternative of making the trip as an auto driver; and to such household characteristic data as the type of living quarters and the type of structure in which the quarters are located, the number of persons in the household, the number of automobiles garaged there and the household annual income.
 - b. Personal Opinion--also as a part of the home interview survey, and also as in the initial survey, information will be obtained from household members in a sub-sample

of households relating to their reasons for selecting a particular mode of travel, and concerning their opinions of the quality of existing transportation facilities and services, of how these facilities and services may best be improved, and of the kind of transportation facilities which should be provided for in long-range planning. Also in this questionnaire, household members will be requested to give the most important reasons for selecting their existing dwelling units and for selecting their present neighborhoods as well as the principal items to be considered in selecting new quarters and new neighborhoods.

- c. Household History--as in the initial home interview survey, information will be obtained in the new inventory tracing the changes in the home and work address of each head of household over a period of the last decade or more. Where a change in the home address occurred information concerning the reason for the move will be obtained, and where a change in either the home or work address occurred additional information will be obtained relating to whether the house is owned or rented, the market value of the structure if owned, or the monthly rental of the dwelling unit if rented, and the type of structure in which the unit was contained.

The sample rate for the home interview survey including the household history survey and the attitudinal questionnaire survey will be an average rate of approximately 3 percent. The number of households expected to be listed for interview under such a sample rate will amount to approximately 16,000 - 17,000. In this survey, unlike the initial inventory, the home interview technique will be employed both in the urban and in the rural parts of the Region.

3. Truck and Taxi Survey--information to be collected in the truck and taxi survey will, as in the initial survey, include such information concerning the vehicle as the type, license number, make, and year of manufacture; the garaging address; the name and address of the operator of the vehicle; and the kind of business and industry for which it is used. Information to be obtained concerning the trips made by this vehicle include the geographic locations and the land uses at trip origin and destination; the purpose of the trip; the start and arrival times of the trip; and the commodity delivered or picked up on each trip.

The sample rate for the truck and taxi survey will be an average rate of approximately 6 percent. The total number of trucks and taxis combined expected to be listed for

interviews under such a sample rate will amount to approximately 4200 - 4600 vehicles. In this survey, also unlike the initial inventory, the personal interview technique will be employed both in the urban and in the rural parts of the Region.

4. External Surveys--in the 1963 travel inventory, information concerning external travel was obtained solely from interviews conducted with operators of automobiles, trucks, and taxis "at the roadside" on a cordon line around the Region. In the Spring of 1968 additional information concerning external travel was obtained through personal interviews with persons entering or leaving the Region via the air transport modes at General Mitchell Field as a part of the first continuing regional land use-transportation study. Data collected in this survey included such information concerning the respondents as the age and sex; such information concerning the vehicle types and the number of occupants; and such information concerning the trip as the geographic location and land use at the origin or the destination of the trip, the trip purpose at the airport, the trip purpose at the trip origin or destination, the time of interview, and the identification of the interview station. For each airline passenger information was obtained, also, concerning the location of the non-region end of the trip as well as the home address of the airline passenger. In the Fall of 1971, a survey of commercial and private air travel was conducted as a part of the comprehensive regional airport planning program. The objective of this survey was to obtain an in-depth profile of the personal and travel characteristics for airline passengers, and general aviation pilots and users at General Mitchell Field and at all public and private general aviation airports open for public use which serve residents of the Region. Data collected in this survey will be used to update the travel data collected in the 1968 survey.

In the new inventory of external travel, it is proposed that roadside interviews be again conducted at the boundary of the Region with the operators of automobiles, trucks and taxis; and that, for the first time, inventories of external travel by railroad and by intercity bus be conducted in order to provide a complete accounting of external travel.

- a. Cordon Interview--in the proposed survey to be conducted at the boundary of the Region, information collected will include such information concerning the vehicle, as the vehicle type, the number of occupants, and the garaging address; and such information concerning the trip, as the geographic location and the land use at the origin and destination, the purpose of the trip, the identification of the interview station through which the

vehicle passes, and the time of interview. Additionally, information concerning the commodity delivered or picked up will be obtained from the drivers of trucks and, for those vehicles which just pass through the Region, the route of entrance or exit will be determined.

- b. On Board Railroad--in the proposed weekday survey of external travel by railroad, interviews will be conducted on the trains with all persons having origins inside and destinations outside of the Region on all railroads serving passengers in the Region. Counts of through passengers will also be taken. The information to be collected will include the age, sex and home address of the passenger, the geographic location and land use at the trip origin and destination, the trip purpose, the time of the trip, and the availability of an automobile as an alternative mode of travel on that particular trip.
 - c. On Board Bus--in the proposed weekday survey of external travel by bus, personal interviews where possible will be conducted with bus passengers having origins inside and destinations outside of the Region. Where interviews are not possible a questionnaire will be given to each such bus passenger for completion aboard the bus. The bus drivers will be expected to assume the responsibility for collecting and returning such questionnaire forms. Information to be obtained in this survey will also include the age, sex and home address of each passenger, the geographic location and the land use at the trip origin and destination, the trip purpose, the time of the trip, and the availability of an automobile as on alternative mode of travel on that particular trip.
5. Mass Transit Survey--special emphasis is intended to be placed in the new origin-destination survey on the determination of the factors affecting modal choice and the use of mass transit. Special surveys related to mass transit are proposed which can provide not only the information necessary to develop a better understanding of the existing transit travel habits and patterns and the factors affecting these habits and patterns and the choice of mode and to develop long-range plans for the improvement of transit service within the Region but, most importantly, to provide a sound basis for the revision and improvement of existing transit service to better serve current transit travel needs, thereby assisting to maintain a viable mass transit system within the Region. Three special mass transit technical studies are proposed to be included in the overall

origin-destination survey, which together should permit in-depth analysis of travel habits and patterns of potential, as well as existing, transit users, which will be particularly useful in day-to-day decision-making concerning mass transit service improvements within the Region: 1) an on-bus behavioral survey of the existing transit ridership within the Region; 2) special transit oriented surveys of selected major commercial, industrial, and institutional traffic generators within the Region; and 3) special transit oriented surveys of selected residential areas which should be expected, but may not be exhibiting, high rates of transit utilization.

- a. User Survey--under the special mass transit survey, of existing transit ridership, it is proposed that a questionnaire form be given to each inbound mass transit passenger on a representative average weekday. Information requested on this form would include the home address of the passenger, the place and time of boarding, the geographic locations, land use, and trip purpose at the points of trip origin and destination; the point of transfer and the route transferred to; the age, sex, race, occupation, and household income; driver license status; the availability of an automobile as an alternative mode for the trip; and the time of the beginning of the trip. Survey personnel would be stationed aboard each bus to distribute the questionnaires, to encourage complete returns by all passengers, and to tally the number of persons boarding and unboarding the mass transit vehicle at various key locations as the vehicle proceeds on its route, thus not only obtaining accurate information on passenger traffic flow volumes, but control totals to be used in connection with the analysis and expansion of the results of completed questionnaires.

Emphasis in this survey would be directed at providing data for two areas of analysis: 1) an examination of the factors which lead "choice" as opposed to "captive" riders to choose mass transit as the mode of transportation over the private auto, and 2) an examination of true transit desire line trip patterns by a careful analysis of transfer data. The latter would be particularly useful as a basis for short-term action-oriented transit improvement programs, as well as for long-term transit improvement programs. As a part of this survey, it is proposed to identify the choice riders in the on-vehicle surveys and then to reinterview these choice riders on a sub-sample basis at their homes in order to obtain the necessary travel and related socioeconomic data which would permit analysis of the factors affecting their modal choice.

- b. Major Trip Generator Survey--Under the special mass transit survey, a survey of travel habits and patterns at major commercial, industrial and institutional trip generators is proposed in order to permit a more precise analysis of the origins and destinations of the travel related to these generators, with particular emphasis on determination of trips having common areas of origin and destination and similar time patterns. Analysis of the data collected in this survey should permit recommendations to be made concerning the routing and scheduling of transit service in order to better adapt transit service to the needs of the area, thereby encouraging its use. This survey should be particularly useful in adapting the rapid transit system recommended in the adopted regional transportation plan to reverse and cross-town commuting patterns and will permit examination of the feasibility of operating transit vehicles directly between various areas of the Region on a non-transfer basis.

Under this special survey, it is proposed to collect data on the resident addresses of employees working in the major traffic generators through either examination of the employer's personnel data files or through personal interviews. The addresses so collected will be coded to the block face utilizing the Commission's geographic base file in order to permit analysis of practical transit routes which could be used to provide direct service to and from the major traffic generators. At such time that these potential routes have been delineated, an application for federal grants to promote and provide service along selected routes could be recommended as a part of a transit improvement action program.

It is anticipated that about 10 major traffic generators will be selected for survey, including selected major industrial employment concentrations, selected major shopping centers, and the two major universities within the Region.

- c. Non-User Survey--finally, under the special mass transit survey, a special home interview survey of resident travel habits and patterns, as well as of public attitudes toward existing transportation facilities and services will be conducted supplementary to the regular home interview survey. Under this special survey, it is proposed to select three carefully delineated, relatively small residential areas within the Region and to conduct the home interview surveys within these selected residential areas at a relatively high sampling rate, probably approximating 33 percent of the total resident

households. The residential areas will be selected to represent areas wherein transit service has been maintained at a relatively high level but where transit utilization has nevertheless declined substantially, as well as newly developing areas to which new forms of transit service have been extended and from which increases in transit utilization should be expected.

Information to be obtained in the home interviews will include data concerning the geographic location of the households; type of structure in which each household is located; automobile availability; income; age, sex, race, occupation, industry and auto driver license status of each member of the household; data concerning resident tripmaking, such as the geographic locations and the land use at trip origins and destinations; trip purpose; modes of travel utilized; the start and arrival time of trips; the number of blocks walked at trip origins and destinations; the number of passengers carried in automobiles; and the type of auto parking utilized; and for transit users only a determination of whether an alternative mode of travel was available for each given trip. Information will be obtained concerning the opinions and attitudes of the residents with respect to the quality and quantity of existing transportation services and facilities, including mass transit services and facilities and the means for improving such services and facilities. Information will also be obtained on the changes in household addresses and the work addresses of the heads of households over the previous 11-year period. For each change of home or work address, information will also be obtained concerning the reasons for the move, whether the housing unit was owned or rented, and the market or rental values of the dwelling unit at the time of change.

The data obtained in this survey should permit an analysis of why people do not use transit, as well as why people use transit, and will permit an analysis to be made of the adequacy of the 3 percent average home interview sample rate proposed to be used in the overall home interview survey, as a basis for transit planning.

6. Weekend Travel Survey--under the proposed survey of weekend travel, questionnaires will be sent to the identical addresses sampled in the new home interview survey in order that comparisons can be made in the differences in the kinds of travel made between average weekday and weekend travel in these households. Information to be collected in this survey will include such travel characteristic information as the geographic locations, the land uses and the trip purposes at the

trips origins and destinations, trip arrival and departure times, the number of blocks walked at each end of the trip, the mode of travel utilized, the number of passengers carried and the kind of parking utilized in each auto driven trip, and whether a transit tripmaker had the alternative of making the trip as an auto driver; all of which characteristics would have been also obtained in the new home interview survey.

Information concerning the amount and the kinds of trips which cross the boundary of the Region on weekends will also be obtained in this survey. Such data will include information concerning the type, the garaging address and the number of occupants of the vehicle; the geographic location and land uses at origin and destination, the purpose of the trip, the identification of the interview station, the time of interview, the commodity delivered or picked up will be obtained from drivers of trucks and the route of entrance or exit of those vehicles just passing through the Region.

7. Goods Movement Survey--under the proposed survey of goods movement, an inventory will be conducted of the movement of goods into, out of, and through this Region. The data resulting from this survey combined with data collected on the truck and taxi survey concerning the movement of goods within the Region will provide a comprehensive description of the magnitude and flow of goods by type in southeastern Wisconsin. Knowledgeable estimates of existing interregional goods movement will be obtained through personal interviews with representatives from all types of carriers in the freight handling industry, including rail, truck, shipping, pipe line, and air carriers. Intra-regional goods movement will as noted above, be obtained in part in the truck and taxi survey. The total data relating to goods movement thus obtained and the data to be obtained in a separate inventory of existing freight facilities providing freight service to southeastern Wisconsin will provide a permanent bench mark against which estimates of future goods movement and facility requirements can be evaluated.

In the interest of economy both in time and in costs, information collected through personal interviews or mailback questionnaires in the external bus, railroad and airline surveys, and in the special survey of mass transit described above, will relate to one direction only, except for a single question concerning whether or not a return trip is anticipated. The extremely high degree of reciprocity inherent in such trips make such a procedure entirely valid.

Summary: It is recommended, therefore, that a total reinventory of travel within the Region be conducted in 1972, underlying a home

interview survey with an overall average regional sampling rate of 3 percent of the total households. The various components of this reinventory, together with the information on the universe to be sampled, the sampling rate and sample size, and the information to be collected and issues to be addressed are summarized on Table 1 (pages 46-54). It is further recommended that upon completion of the new travel survey, annual travel demand surveillance surveys be initiated, utilizing an approximately 0.6 percent sample of total regional households, either through selection of a permanent sample or through sampling annually of 20.0 percent of the total samples selected in 1972, with annual adjustments to reflect observed land use changes occurring within each traffic analysis unit. The sampling rate will be varied by subarea of the Region on the basis of the size and density characteristics of the subareas in order to obtain a valid and representative sample of this travel characteristics of the subareas as well as within the Region as a whole. Included in the proposed reinventory of travel, in addition to the home interview origin-destination studies conducted, would be the external cordon interview surveys, traffic volume and vehicle classification counts, and truck and automobile fleet-owner surveys necessary to obtain a comprehensive inventory of travel habits and patterns and transportation needs within the Region. The extension of the travel inventories to a six- or seven-day basis will be considered in order to develop data on weekend travel habits and patterns. A goods movement study will also be conducted.

3.2.3 Inventory of Land Use

The original plan design concept in southeastern Wisconsin involved the preparation of both a land use plan and a transportation plan as two inextricably interrelated major elements of a comprehensive regional plan. A complete reinventory of land uses within the Region was provided in 1970 for the purpose of updating the original 1963 and 1967 regional land use inventories. The resulting land use information will become a major input into almost all continuing regional planning programs and will draw on the files of the various public agencies operating within the Region to supplement the land use inventory. The land use inventory for 1970 and analysis of the data from that inventory were completed in 1970 and 1971. The land use inventory will be updated as necessary to permit proper conduct of the new regional travel survey proposed to be conducted in 1972 and proper analysis of the data from that survey in relation to land use development.

The reinventory of land use will provide up-to-date information on land use changes within the seven-county Region which can be directly related to the 1970 Census of Population and Housing and to the 1970 staged land use and transportation plans for the Region. In addition, up-to-date land use data will serve as a major input into the reevaluation of the 1990 land use and transportation plans and will enable the Commission to establish a current data base for the extension of the

SUMMARY TABLE OF CONTINUING LAND USE-TRANSPORTATION STUDY ORIGIN-DESTINATION INVENTORIES

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
1. Screenline Classification and Traffic Count	Information to be collected in this survey will include the volume and type of all motor vehicle and the number of local transit passengers crossing each screenline in each direction for each hour period during an average weekday within the survey period. Motor vehicles will be classified into the following categories: passenger cars; taxis; buses; motor cycles; two axle, single tire trucks; two axle dual tire trucks; and tractor-trailer combinations. Machine traffic counts will be obtained at each screenline station for each day of the week. To obtain the best results from this check, the location of the screenline must be carefully selected and accurate ground counts and vehicle classifications must be obtained at every street or highway crossing the screenline.	The major purpose of the screenline survey is to provide information which can be used to check the completeness and accuracy of all vehicle and local bus passenger trips which occur within the study area as reported in the travel inventories. The screenline check will be made by comparing the number of vehicles by type and the number of local bus passengers which are counted crossing the screenline to the number of vehicle or bus passenger trips reported to have crossed the screenline from the origin-destination surveys. Checks of the travel data will be made by direction of crossing for each hour period as well as for the twenty-four hour total during an average weekday.	To provide the confidence in the expanded travel data that is needed and to be sure that meaningful and reliable forecasts of travel demand can be made, the travel data collected in the origin-destination survey must be submitted to a series of accuracy checks. The issues addressed by the screenline survey will be: 1) the hourly and twenty-four hour total number of vehicles by type counted crossing the screenline in each direction during an average weekday within the survey period; and 2) the hourly and twenty-four hour total number of bus passengers on each local bus route counted crossing the screenline in each direction during an average weekday within the survey period.
<u>Sample Universe</u>			
All vehicles and local transit passengers crossing each screenline to be established within the Region.			
<u>Sample Rate</u>			
100 percent			
<u>Sample Size</u>			
The number of vehicles to be counted and classified is dependent upon the number of screenlines established and the traffic volume on each street and highway intersected by a screenline. The number of local transit passengers counted is dependent upon the total volume of ridership on the bus routes crossing the screenline.			

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
2. Home Interview Survey			
<p>a. Personal, Socioeconomic and Travel Characteristics.</p> <p><u>Sample Universe</u></p> <p>All households in Region.</p> <p><u>Sample Rate</u></p> <p>Varying from an average of 1.50 percent in the highly urban areas to an average of 8.33 percent in the largely rural areas of the Region. Average rate overall, 3.00 percent.</p> <p><u>Sample Size</u></p> <p>Approximately 17,000 households.</p>	<p>Information to be obtained in this survey will include personal socioeconomic characteristic data relating to regional residents and visitors such as age, sex, race, occupation and industry of employment, and auto driver license status; trip characteristic data such as the geographic locations of and land uses at points of trip origin and destination, trip purpose, times of arrival and departure, mode of travel utilized, number of blocks walked at origin and destination, number of passengers carried, kind of parking utilized in each auto driver trip, and alternative modes of travel available to transit passengers; and household characteristic data such as type of living quarters and type of structure in which such quarters are contained, number of persons per household, number of automobiles garaged at a household, and household annual income.</p>	<p>The information obtained in this survey will provide current measures of the independent variables of the battery of traffic and land use simulation models which measures will be used to test the continuing validity of the models, or, if necessary, in the formulation of new models. The survey data will also provide detailed information relating to current regional travel habits and patterns and to changes in these habits and patterns over time upon which sound recommendations to assist operating transportation agencies, public or private, can be made, and upon which a better understanding of the forces shaping the demand for transportation within the Region can be developed. The survey data will also provide a large bank of up-to-date demographic, economic, and land use information and material, not available from secondary sources, vital to local units and agencies of government, and highly useful to business and industry, as well as to private citizens of the Region.</p>	<p>The survey is addressed to such major issues as: 1) the continuing validity of the traffic simulation models; 2) the evaluation of the need for making changes in the adopted regional land use and transportation plans and of the desirability at this point in time of extending the horizon of the target year beyond 1990; and 3) the continuing need to provide up-to-date information and sound recommendations concerning land use and transportation system development and transportation system operation to local units and agencies of government, to business and industry and to private citizens of the Region.</p>
<p>b. Personal Opinion Survey</p> <p><u>Sample Universe</u></p> <p>All household sampled in home interview survey.</p>	<p>Information to be obtained in this survey will include personal opinions and attitudes of respondents concerning the relative convenience, comfort, cost, safety, and speed of various modes of travel; concerning the quality of existing transportation facilities and services; concerning how these facilities may</p>	<p>The information obtained in this survey will provide a current measure of public opinions and attitudes and of shifts in such opinions and attitudes concerning transportation facilities and services and preferences in housing types and services. Consideration of such opinions in the preparation of both short and long range land use and</p>	<p>The personal opinion survey is addressed to such major issues as: 1) increased citizen participation in the formulation and implementation of land use and transportation plan recommendations through thorough consideration of resident opinions and attitudes; and 2) the reappraisal of public attitudes and opinions</p>

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
Personal Opinion Survey (Continued) <u>Sample Rate</u> 25 percent <u>Sample Size</u> Approximately 4,200 households.	best be improved; and concerning the kind of transportation facilities which should be emphasized in long range planning. Personal opinions and attitudes of respondents will also be obtained relating to the principal reasons for selecting present housing units and present neighborhoods and the principal items which would be considered in selecting new housing units and new neighborhoods.	transportation plans is one important way of increasing the public participation in plan formulation and implementation. The information collected in this survey also contributes important inputs to the regional housing demand simulation model now in process of formulation.	through examination of the current status of and changes over time in such attitudes and opinions relating to transportation facilities and services and housing types and amenities and locations.
c. Household History Survey <u>Sample Universe</u> All households sampled in home interview survey. <u>Sample Rate</u> 100 percent <u>Sample Size</u> Approximately 17,000 households.	Information to be obtained in this survey will include for each head of household for the year of the survey and for each other year during the past 12 years; the home address, the number of household members, work address, market value of house and land or monthly rental of the housing unit, type of structure in which the housing unit is contained, whether the unit is owner occupied or rented, family income range, and number of family members contributing to such income, number of automobiles, and educational attainment of the head of household. Where a change of home address occurred, the reason for the move also will be obtained. It is important to note that the home interview, personal opinion, and household history surveys all involve the same sampled households and data from one survey can, therefore, be employed without prejudice to either or both of the other two surveys.	The information obtained in this survey will have a variety of important uses in the ongoing regional land use and housing studies, including determination of intra-regional and interregional migration patterns, the reasons underlying changes in home address, the relationship between place of residence and place of work, and the trends in housing selection by a household over time. The data will provide input necessary to the surveillance of the continued validity of the regional land use simulation model. The data will also provide a current measure of such important characteristics as housing renter-owner status, educational attainment of head of household, market values of house and land, rental values of housing, and of changes in these characteristics over time, all of which add importantly to the regional data base.	The household history survey will be addressed to such major issues as: 1) the continuing validity of the land use simulation model; 2) the effects of internal migration of families and jobs upon regional travel patterns; and 3) the effects of changing household characteristics over time on the quantity of trips made and the modes of travel selected.

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
<p>3. Truck and Taxi Survey</p> <p><u>Sample Universe</u></p> <p>All trucks and taxis in Region.</p> <p><u>Sample Rate</u></p> <p>Trucks--vary from an average of 4 percent in the highly urban areas to an average of 8.33 percent in the largely rural areas. Average rate 6.0 percent. Taxis--50 percent.</p> <p><u>Sample Size</u></p> <p>Approximately 4,300 trucks and 300 taxis.</p>	<p>Information to be obtained in this survey will include for each vehicle the type, license number, make and year of manufacture, garaging address, name and address of the vehicle operator, and kind of business and industry in which it is used. Data will also be obtained relating to trips made by the vehicle, including the geographic locations of and land uses at points of trip origin and destination, trip purpose, times of arrival and departure, the total number of miles traveled, and the type and weight of each commodity picked up or delivered on each trip, including the locations of points of origin and destination of such commodities.</p>	<p>The information obtained in this survey will provide an inventory of the current distribution of trucks and taxis by type and of changes in this distribution over time; and a current measure of the travel patterns of such vehicles and of changes in these patterns over time. The information will be used as input to test the continued validity of the traffic simulation validity of the traffic simulation modes, and will be essential to determining the pattern and volume of the movement of goods within the Region.</p>	<p>The truck and taxi survey will be addressed to such major issues as: 1) the continuing validity of the regional traffic simulation models as the models relate to truck and taxi trip generation and distribution; 2) inter- and intra-regional movement of goods; 3) truck terminal location and 4) adequacy of taxi cab fleet sizes and operations.</p>
<p>4. External Surveys</p> <p>a. Cordon Interview Survey</p> <p><u>Sample Universe</u></p> <p>All external motor vehicle drivers and passengers including weekend travel.</p> <p><u>Sample Rate</u></p> <p>25.0 percent average overall.</p>	<p>Information to be obtained in this survey will include vehicle type, number of occupants, time of crossing the cordon, and the garaging address. Data concerning each auto driver and auto passenger will include the geographic locations of and land uses at points of trip origin and destination and trip purpose. Data concerning truck trips will include the geographic locations of and land uses at points of trip origin and</p>	<p>Information obtained in this survey will provide data required to test the continuing validity of the traffic simulation models, and will provide an in-depth understanding of the amount and spatial distribution of resident and nonresident travel crossing the Region's external boundaries. Such data will, moreover, provide an important input to the regional goods movement survey and will contribute data important to inter-regional rail and air as well as highway transportation planning.</p>	<p>The cordon interview survey will be addressed to such issues as: 1) the continued validity of the regional traffic simulation models as the models relate to person and vehicular travel crossing the boundaries of the Region; 2) the interregional movement of goods; 3) the total interchange of travel by all modes between the Region and other regions; and operations planning related to interregional travel.</p>

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
<p>Cordon Interview Survey (Continued)</p> <p><u>Sample Size</u></p> <p>Approximately 40,000 vehicle drivers and 48,000 vehicle passengers.</p>	<p>destination, trip purpose, and the weight, type and the locations of points of origin and destination of each commodity picked up or delivered at each stop within the Region. Data will also be obtained concerning additional trips made within the Region, if any, by non-resident persons and vehicles.</p>		
<p>b. On-Board Railroad Survey</p> <p><u>Sample Universe</u></p> <p>All internal to external railroad passengers (internal origin).</p> <p><u>Sample Rate</u></p> <p>100 percent</p> <p><u>Sample Size</u></p> <p>Approximately 400 passengers.</p>	<p>Information to be obtained in this survey will include for each railroad passenger whose trip originated within the Region the age, sex, and race of the passenger, the geographic locations of and land uses at the true origin and ultimate destination of the trip, trip purpose, the mode of travel to the boarding station; the times of trip beginning and ending, and the availability of an automobile as an alternative mode of travel for that particular trip. Counts of "through passengers" will also be made.</p>	<p>Not previously obtained, these data are intended to become a part of a complete file on regional travel. Such data will provide a better understanding of total internal-external travel as it relates to the Region through quantification of interregional railway travel, and will be important to sound interregional air and highway as well as rail transportation planning.</p>	<p>The on-board railroad survey will be addressed to such major issues as: 1) the total interchange of travel by all modes between the Region and other regions; 2) operations planning related to interregional travel.</p>
<p>c. On-Board Bus Survey</p> <p><u>Sample Universe</u></p> <p>All internal to external coach line passengers (internal origin).</p>	<p>Information to be obtained in this survey will include for each motor bus passenger whose trip originated within the Region the age, sex, and race of the passenger, the geographic locations of and land uses at the true origin and ultimate destination of the trip, the mode of travel to the boarding station, trip purpose, the times of trip beginning and</p>	<p>Not previously obtained, the information is also intended to become a part of a complete data file on regional travel. Such data will also provide a better understanding of total internal-external travel as it relates to the Region through quantification of interregional bus travel and will be important to sound interregional air and rail as well as highway transportation planning.</p>	<p>The on-board bus survey will be addressed to such major issues as: 1) the total interchange of travel by all modes between the Region and other regions; and 2) operations planning related to interregional travel.</p>

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
On-Board Bus Survey (Continued)	ending, and the availability of an automobile as an alternative mode of travel for that particular trip.		
<u>Sample Rate</u>	Counts of "through passengers" will also be made.		
100 percent			
<u>Sample Size</u>			
Approximately 1,000 passengers.			
5. Mass Transit Survey			
a. User Survey	Information to be obtained in this survey will include the sex, age, race, occupation, driver license status, and the home address of the passenger; the place and time of boarding; the geographic locations of and land uses at points of trip origin and destination; the modes of travel on boarding and unboarding trip purpose; the point of transfer and route number transferred to; the availability of an automobile as an alternative mode of travel for that particular trip; and whether the trip made was a part of a round trip. Tallies will be made for control purposes of the number of persons boarding and unboarding the transit vehicle as it proceeds over the route. Persons who are identified in the survey as riding transit by choice will be reinterviewed at their homes on a subsample basis in order to determine the factors leading to such a choice.	Desire lines of transit travel compared with actual lines of such travel as revealed in the survey will provide one measure of the effectiveness of the existing transit systems. The patterns of transit travel as documented in the survey will provide an in-depth examination of transit travel and will be used to formulate recommendations to the transit carriers on the means for improving the level and quality of service provided. Identification in this survey of factors leading to transit ridership by choice will be examined in an attempt to refine the existing modal split model.	The mass transit survey will be addressed to such major issues as: 1) the effectiveness of the configurations of existing transit systems to serve existing desire lines of transit travel and total person travel; 2) the adequacy of existing levels and quality of transit services being provided; 3) the development of a data base sufficiently detailed to support recommendations relating to transit at an operational level; and 4) the need for an in-depth examination of the personal characteristics and attitudes leading to transit ridership by choice.
<u>Sample Universe</u>			
All internal mass transit passengers in Region (one direction only).			
<u>Sample Rate</u>			
100 percent			
<u>Sample Size</u>			
Approximately 100,000 passengers with subsample of approximately 2,000 choice transit riders to be reinterviewed at home.			

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
<p>b. Major Traffic Generator Survey</p> <p><u>Sample Universe</u></p> <p>Selected major traffic generators in Region having rosters of 2,000 or more.</p> <p><u>Sample Rate</u></p> <p>100 percent</p> <p><u>Sample Size</u></p> <p>Approximately 10 major traffic generators.</p>	<p>Information to be obtained in this survey will include the resident addresses of all employees (in the case of universities, resident addresses of all students and faculty) working at the major traffic generators to be surveyed. Such generators will include selected major manufacturing plants, major shopping areas, and major universities within the Region.</p>	<p>An analysis of resident addresses will be made for each major traffic generator in order to identify those areas in which common points of origin and destination are sufficiently concentrated, taking into consideration trip time patterns, to warrant consideration of the provision of direct transit service. When direct service is found to be practical, an application for a demonstration grant to provide service on such routes would be recommended as a part of a transit improvement action program.</p>	<p>The major traffic generator survey will be addressed to such issues as: 1) encouraging new or increased transit utilization at major industrial, commercial and institutional centers where person trip interchanges having common points of origins and destinations at approximately common points in time are sufficiently concentrated to appear to warrant support for the recommendations of new or expanded mass transit services.</p>
<p>c. Non-User Survey</p> <p><u>Sample Universe</u></p> <p>Three selected high-density residential areas having a combined total of approximately 7,000 households.</p> <p><u>Sample Rate</u></p> <p>33 1/2 percent</p> <p><u>Sample Size</u></p> <p>Approximately 7,000 households.</p>	<p>Information to be obtained in this survey will include all of the information to be obtained in the complete Home Interview Survey including the personal, socioeconomic, and travel characteristics survey, the personal opinion survey, and the household history survey, and in addition will include the collection of information relating specifically to the reasons why respondents have decreased the amount of, or no longer travel at all, by transit. Such respondents will also be asked to describe the circumstances under which they would begin, resume, or increase the amount of travel by transit.</p>	<p>The information, obtained in this survey identifying the reasons why people have reduced their travel, or no longer travel, by mass transit will be used to make recommendations, where possible, for changes in the transit systems which could overcome the objections to transit as determined in the survey.</p>	<p>The non-user survey is addressed to such major issues as: 1) increased mass transit utilization throughout the transit systems service areas; and 2) a determination of the adequacy of a 3 percent home interview sample rate for a mass transit planning purposes.</p>

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
6. Weekend Travel Survey	Respondents in households sampled in the home interview survey will be requested upon completion of the interview to keep a log of the trips made by household members on the Saturday or Sunday following the date for which travel was obtained in the home interview. The data required in this survey will include the geographic locations of and the land uses at points of trip origin and destination; trip purpose; times of arrival and departure; mode of travel utilized; number of blocks walked at trip origin and destination; and alternative modes of travel available to transit passengers.	Not previously obtained, these data are intended to become a part of a complete data file on regional travel. Survey results will permit for the first time a large number of comparisons of the quantitative and qualitative differences between average weekday and weekend travel such as, for example, differences in choice of mode of travel, in pattern of travel, in trip purpose, in land use, and by time of day. Because weekend travel is anticipated to be heavily weighed by recreational tripmaking, the results of the survey are expected to provide important inputs to the studies of recreational demand and to the need for transportation service, both private and public, to meet this demand within the Region.	The weekend travel survey is addressed to such major issues as: 1) the determination of the differences between average weekend and average weekday travel with respect to the quantity, pattern, purpose, land use at points of origin and destination, and modal choice; 2) the effects of these differences on the demand for transportation facilities and services; and 3) on the relative demand for specific kinds of recreational facilities and services.
<u>Sample Universe</u>			
All households sampled in home interview survey.			
<u>Sample Rate</u>			
Saturday--50 percent. Sunday--50 percent.			
7. Goods Movement Survey	Information to be collected in this survey of the movement of goods into, out of, and within the Region will include the name, home base address and type and characteristics of carrier; the type, quantity and value of each commodity being shipped; and the geographic locations of the points of origination and destination of each commodity shipment. In addition to the inventories of the movement of goods an inventory will be made of the component parts of the regional freight handling system which is composed basically of railroad yards and terminals, truck terminals, shipping ports, airports, and pipeline terminals as well as manufacturing plants warehouse and wholesale facilities,	Not previously obtained, the information is intended to become a part of a complete data file on regional travel. The information obtained in the goods movement and freight facility inventories will provide a data base of current interregional and intra-regional commodity movement and a physical description of the existing freight handling system within the Region. The inventory data will provide an understanding of the interrelationships in freight handling among the various components of the regional system, and will reveal the degree of participation made by each mode of transportation in the interregional and intra-regional collection and distribution of goods.	The goods movement and freight facility inventories are addressed to such major issues as: 1) the determination of the existing dimensions of goods movement; the characteristics of goods, goods handling, and goods flow: the characteristics of goods carriers; and the characteristics of goods demand by factories by retail and wholesale establishments by service related industries and by residences; 2) the development and evaluation of forecasts of future goods movement and goods handling facilities scaled against benchmark data provided by the inventories; and 3) the formulation of mathematical freight model which can simulate the flow of goods into, out of, and within the Region.
<u>Sample Universe</u>			
All moving freight having origins and/or destinations within the Region.			
<u>Sample Rates</u>			
To be determined.			
<u>Sample Size</u>			
To be determined.			

Inventory	Data to be Collected	Application of the Data	Issues to be Addressed
Goods Movement Survey (Continued)	retail centers, governmental and institutional facilities.		

land use plan and the transportation plan beyond the original 1990 design year. Since the land use changes within the urban areas of the Region affect the land use and transportation plans as much as such land use changes in areas of peripheral expansion and growth, good land use information of the entire Region is required in order that adequate reinventory and reevaluation of these changes is made as they affect regional plan implementation. The updating procedure will utilize the same land use categories and techniques used in the original 1963 land use inventory, including, however, any refinements in land use coding adopted for the 1967 land use update. Certain categories of land use may be further subdivided in order to obtain greater detail and in order to assure greater compatibility with the types of zoning districts recommended for application in regional land use plan implementation in the Commission model zoning ordinance.¹⁵

The updating will be accomplished primarily from low altitude, large-scale aerial photography flown in the spring of 1970 and at regular five-year intervals thereafter. Field checks similar to those used in the original land use inventory will be carried out in order to assure the accuracy of the data acquired through aerial photo interpretations, and all data will be reduced through a system of land use codes to a form suitable for consolidated machine data processing. Where applicable, recently completed local land use inventories, such as those carried out by the Commission for the Kenosha and Racine Planning Districts, will be incorporated into the land use updating process. Particular attention will be paid to the peripheral urban area expansion patterns in order to monitor development in this area and to determine its compatibility with the regional plan proposals. Quantitative and qualitative comparisons will be made of land use changes and the proposals embodied in the adopted regional land use plan. Appropriate graphic displays of 1970 land use distributions for both the county and regional levels will be developed for publication. By combining the land use information compiled during this land use update with 1970 U. S. Census information on population and employment within controlled geographic areas, appropriate measures of changes in land use intensity will be produced. As already mentioned, these elements will be important inputs into any reevaluations to be made on the impacts of new urban growth patterns on the continued validity of the 1990 regional land use and transportation plans; and they will also be important as major reference sources for the proposed extension of the design year of the regional plan.

In addition, the need for more detailed regional land use inventories on a parcel-by-parcel basis will be investigated. Special detailed land use inventories may be required in conjunction with detailed

¹⁵See Appendix A, SEWRPC Planning Guide No. 3, Zoning Guide, April 1964.

regional and subregional land use planning programs of the Commission, such as the Milwaukee County mass transit technical study, the various jurisdictional highway planning studies, the regional airport planning program, and the Racine Planning District Program. The means for assigning state plane coordinates to any detailed parcel inventories will be considered. Special floor area surveys, trip generator surveys, and a regional housing study may be the initial recipients of any detailed land use coding techniques established during the second continuing land use-transportation study.

Due to the large number of general-purpose units of government, as well as the many special-purpose districts within the Southeastern Wisconsin Region, the use of secondary sources for the collation of land use information is not considered practical if the data are to be uniform and consistent over the entire Region. The most expeditious method of collecting current land use data is by complete reinventory. Complete reinventory by one primary agency will allow for careful quality control and a higher quality product. It is for these reasons and the aforementioned purposes that it is proposed to conduct a complete reinventory of existing land use at regular five-year intervals in the Southeastern Wisconsin Region beginning in 1970, with an update to coincide with the new regional travel survey proposed to be conducted in 1972.

3.2.4 Inventory of Community Plans and Zoning

Data collected in the initial regional land use-transportation study efforts on adopted county and local land use plans and zoning ordinances and kept current during the initial continuing study will be updated every five-years in the continuing land use-transportation study. Assessments will be made of changes in local development objectives and the compatibility of these changes within adopted regional development objectives and the impacts these changes have on the implementation of the regional land use plans.

The updating of the community plans and zoning will involve a resurvey of the present status of the local community plans and zoning documents and, in particular, the levels of adoption and implementation these documents have received by the various units of government. The information will be gathered through personal interviews with public officials, and analysis of all changes revealed through the interview process in the local plans and zoning from the initial 1963 inventory will be mapped by community onto the Regional Planning Commission's base maps and will be used for comparison of compatibility with the regional land use-transportation plan and serve as a major input for regional plan reevaluations. The update of the community plans and zoning data will be facilitated through the ongoing community assistance programs of the Commission. All information, when obtained, will be analyzed in respect to their influence on the implementation of the regional land use and transportation plans and the impact made upon the regional natural resource base.

3.2.5 Inventory of Demographic and Economic Factors

3.2.5.1 Regional Population Factors and

3.2.5.2 Current Population Estimates

Under the initial work programs of the Commission, including, but not limited to, the initial regional land use-transportation study effort, an extensive amount of detailed demographic information was collected and analyzed for various geographic units within the Southeastern Wisconsin Region. To maintain these data current will require the continuation of ongoing data collection procedures; the assimilation into the Commission's data files of demographic data collected by other agencies, primarily, the U. S. Bureau of the Census; and the development of new programs and procedures whereby estimates of current size, characteristics, and distribution of the population can be prepared and disseminated. In order to achieve these objectives, the programs or procedures outlined below will be undertaken during the second continuing land use-transportation study.

Completion and Maintenance of a Regional Street Address Coding

Guide: Under the initial land use-transportation study, an address coding guide was developed which facilitated the coding of trip-ends to U. S. Public Land Survey one-quarter sections. This initial coding guide was particularly useful within the Milwaukee, Racine, and Kenosha urbanized areas of the Region. Under the first continuing land use-transportation study, in cooperation with the U. S. Department of Commerce, Bureau of the Census, the initial coding guide was refined and detailed to facilitate the computerized coding of data to the block face of any given street address. In addition, additional features were added to the guide, such as the census tract number, the postal zip code number, the municipal ward number, and the congressional district number. Under the second continuing land use-transportation study, it is anticipated that the computerized street address coding guide will be completed for the remaining portions of the Region for which address systems are in effect and that a method will be developed whereby the guide can be systematically maintained current for maximum utility. This street address coding guide will be used extensively in the automatic coding of trip origin-destination data collected under the new major travel survey to be conducted in 1972.

Preparation of a Geographic Base File: In order to facilitate retrieval of census data from the files of the U. S. Bureau of the Census, a nationwide effort has been mounted by the Bureau, with the support and encouragement of the U. S. Department of Housing and Urban Development and Transportation, to develop geographic base files in each metropolitan area. These geographic base files are to be prepared through a process known as the DIME (Dual Independent Map Encoding) process, which entails the assignment of X-Y grid coordinate values to certain

geographic features, such as street intersections, streams or railroad crossings of streets, and significant directional changes on curved streets and dead-end streets. It is anticipated that, under the second continuing land use-transportation study, the Commission will work cooperatively with the Bureau to establish the geographic base file within the Region utilizing the Wisconsin State Plane Coordinate System as the basis for the coordinate assignment.

Preparation of Community Socioeconomic Profiles: Repeated requests for information about various communities within the Region have precipitated the need for community socioeconomic profiles which would record in one document the relevant data about each community which is now contained in various Commission files and reports. Effective plan implementation efforts also require a consistent and readily available up-to-date data base for specific areas within the Region. It is, therefore, proposed to: 1) prepare a data base file and report for each minor civil division within the Region drawing upon existing primary data in the Commission's files and secondary data from such sources as federal census documents, state agency records, and selected community files and to include such information as population size, characteristics, and distribution; birth, death, and migration rates; school enrollment data; employment; assessment value summaries; platting activity; annexations; public financial resource data; land use information; automobile availability; and trip generation; 2) to assist, upon specific request and on a cost-reimbursable basis, in the conduct of annual local school population censuses in order to obtain current school-age population; total population; school enrollment by district; family migration information; and place-of-work-place-of-residence information for workers in each household; and 3) to prepare a socioeconomic data file for each traffic analysis zone within the Region which will include all of the socioeconomic data about the community and school district that can be disaggregated to the smaller zones and aggregated into zones larger than the civil division. The data obtained in the 1970 Federal Census of Population and Housing will be obtained from the Bureau of the Census by means of special requests for use in the preparation of the minor civil division and traffic analysis zone data files and reports indicated above. Data collected in the new major regional travel survey will also be used to update the socioeconomic data file for each traffic analysis zone.

Preparation of a Detailed Report on the Population of Southeastern Wisconsin: Under earlier Commission work programs, a detailed planning report was prepared which traced historic population growth in the Region; described the current (1960) population size, characteristics, and distribution; and presented short- and long-term forecasts of the population within the Region. Under the initial and first continuing land use-transportation studies, these early forecasts were reviewed and modified. It is anticipated that, with the availability of the 1970 census data, the second continuing land use-transportation study

will foster the preparation of a second major planning report dealing with the changes which have occurred within the Region since 1960 with regard to population size, characteristics, and distribution and that the forecasts prepared under earlier studies will be reviewed and modified, if warranted.

3.2.5.3 Regional Economic Factors and

3.2.5.4 Current Employment Estimates

Under the initial work programs of the Commission, including, but not limited to, the initial regional land use-transportation study, an extensive amount of detailed information about the economy of the Region was collected and analyzed. Under the first continuing land use-transportation study, employment estimates were maintained current on an annual basis. Under the second continuing land use-transportation study, the program to prepare annual employment estimates will be continued. These estimates will be prepared by using employment data reported to the Wisconsin Department of Industry, Labor, and Human Relations by firms employing an average of three or more workers covered by unemployment compensation insurance, the data being factored to produce an estimate of total employment. The data obtained through the 1972 origin-destination studies will be used in order to develop current estimates by traffic analysis zone of the total employment. These estimates are required in the application and evaluation of the traffic simulation models. In addition, a major review of national and regional economic activity patterns will be undertaken in order to assess the impact of any changes in such patterns on the economy of southeastern Wisconsin. This review will entail thorough in-depth analyses of all the regionally dominant industries and will include special analyses of the retail, wholesale, and service industries. A report will be issued on the economy of the Region which will trace changes within the economic base and structure since 1963 and which will reexamine the industry group forecasts prepared under earlier Commission work programs and under the initial regional land use-transportation study. Specific attention will also be given to such factors as the size, skills, productivity levels, and employment rates of the labor force, on the number, type, and location of jobs; on changing levels of income; and on industrial linkages in the chain of supplies, services, raw materials, processes, and markets.

3.2.6 Inventory of Public Financial Resources

Under the initial land use-transportation study, a complete review of the public revenue and expenditure patterns of the 153 constituent county and local units of government and of the various school districts within the Region was accomplished. Particular attention was focused on the revenues available and the monies expended for

highway purposes in order to make a proper assessment of the financial feasibility of alternative functional transportation plans. Under the first continuing land use-transportation study, the information pertaining to revenues available and monies expended for highway purposes was maintained current on an annual basis in order to make a proper assessment of the financial feasibility of jurisdictional highway plans. Under the second continuing land use-transportation study, it is anticipated that all data initially collected will be brought to a current status through the establishment of a close working relationship with the Bureau of Municipal Audit of the Wisconsin Department of Administration and with the Wisconsin Department of Transportation, which routinely collect such data.

Also under the initial land use-transportation study, data were collected pertaining to the assessed and equalized value of real and personal property which are important components of the public financial resource base of the Region. Under the first continuing land use-transportation study, an update of these data pertaining to assessed and equalized values of real property was conducted. It is anticipated that these data will be further updated under the second continuing land use study.

3.2.7 Inventory of Planning Legislation

Under the initial land use-transportation study, an inventory was made of the legal framework for planning and plan implementation existing within the Region. The results were presented in SEWRPC Technical Report No. 6, Planning Law in Southeastern Wisconsin. Because of the continual changes occurring in the law through statutory amendments and court decisions, it will be necessary to periodically update these data on the legal framework within which plan preparation, modification, and implementation must be carried out. It is anticipated that the planning law inventory under the second continuing study focus on the specific means by which the various levels of government operating within the Region can refine and preserve the two major types of corridors identified in the adopted land use and transportation plans. These two corridor types--travel and environmental (natural resource)--are essential elements of the adopted plans and, as such, deserve thorough, specific consideration. The proposed inventory and evaluation of means available to preserve these corridors will serve as a guide to the various governments in their implementation efforts.

3.2.8 Inventory of Natural Resource and Public Utility Base

Under the initial study, an extensive amount of information about the quality, extent, and future development potential of the natural resource base of the Region as well as the extensive information on the public and private utility systems in the Region was collected,

analyzed, and incorporated into the land use and transportation plan designs. In order to maintain these data current and to assess the status after several years of urban growth within the Region, the inventories of existing scenic, scientific, and historic sites; existing and potential park sites; and existing prime wildlife habitat areas, forest and woodlands, wetlands, prime agricultural lands, and utility systems will be reevaluated during the second continuing regional land use-transportation study. In addition, special studies will be undertaken to develop ways and means by which the resource base might be protected. Basic inputs to these studies that will be considered in addition to the natural resources include the detailed watershed planning proposals and the detailed regional public utilities planning proposals and their respective impacts upon the region-wide development possibilities and natural resource elements.

Some of these inventories and reevaluations will be done in conjunction with cooperating agencies at the local, county, and state level to indicate current conditions, trends, and specific recommendations for the future role of the natural resource base as it relates to the regional plan and the increasing population and urbanization trends of southeastern Wisconsin.

Chapter IV

ANALYSES AND FORECASTS

4.1 DATA CONVERSION, FILING, AND RETRIEVAL

Under the initial land use-transportation study, more than 92 million individual items of planning information concerning past, present, and probable future conditions within the Region have been recorded and stored in the Commission's basic data files. Most of this information was contained on machine punch cards; some was contained on magnetic tape, and some was contained on printed forms. The basic system approach used for data retrieval was to produce summary card files from one or more basic survey card files and to use the summary file for present and future reporting. The primary reason for the selection of this approach was that it represented a simple and inexpensive means of retrieving data while preparing a base for future retrieval. The greatest drawback to this approach is that it leads to a tremendous proliferation of data files. Most of the data in the files developed under the initial regional land use-transportation study were maintained in a current state under the first continuing study; and, in order to expedite the maintenance of these data, a more effective system for data conversion, filing, and retrieval was developed.

The basic geographic data collection unit generally adhered to under both the initial and continuing data collection programs was the U. S. Public Land Survey quarter section. There are, however, many necessary and useful geographic configurations which do not coincide with the quarter-section unit, such as the civil division, the census tract, the school district, traffic analysis zones and districts, and many special-purpose districts. In addition, areas such as the central business districts of cities within the Region require a more refined (smaller) unit for information organizing and analysis purposes. Consequently, the data system was designed to permit the ready collation of data for various geographic units so that the information on file can be aggregated or disaggregated in an efficient and timely manner.

The systems approach used for data retrieval was changed under the first continuing land use-transportation study to maintaining basic data files on magnetic tape and producing summary reports directly from the basic data file. This change was possible because of the advent of third generation computers, which are significantly less expensive than comparable second generation computers; and the resultant reduction in computer costs allowed installation of a computer equipped with magnetic tape drives. In most cases a summary report can be produced in less time by passing an entire base file on tape than by reading a deck of summary cards. During the first

continuing study, therefore, the only new files generated were those that resulted from the gathering of new data. Retrieval from data gathered in the initial study was accomplished using the same techniques as those for new data; that is, data were retrieved from the basic data files on magnetic tape.

The conversion of punch card and magnetic tape records to a master-file information system based upon use of an IBM System 360 Model 20 tape-oriented system resulted in the creation of a planning data bank which permits the efficient conversion, filing, and retrieval of the planning and engineering data essential for areawide comprehensive planning. This conversion and such extension as was necessary to accommodate new data collected under the first continuing study resulted in the development of a total of over 700 data files, consisting of 560 reels of magnetic tape and over 1 million punched cards containing more than 100 million individual items of planning information. A summary list of the major data files is contained in Appendix D of this Study Design.

Much of the data contained in the planning data bank will have to be maintained in a current state under the second continuing regional and land use-transportation study. The sheer magnitude of the data base precludes the installation of a fully automated data filing and retrieval system, at least within the staff and budgetary limits of the study. Efficient and economical data filing and retrieval will, nevertheless, be accomplished through continued refinement of the interactive information system established under the initial study and the first continuing study. The total number of data files will be significantly reduced by merging and consolidating files, as well as by culling obsolete and redundant information. Additional cross indices will be established to facilitate retrieval and to integrate the Dual Independent Map Encoding (DIME) system of the U. S. Bureau of the Census, described above, into the Commission data filing and retrieval system. As new data are collected under the continuing study, including the proposed new regional travel survey, these data will be integrated into the existing data files, rather than generating additional files to accommodate the data. In this manner current and historic socioeconomic, land use and travel data will be maintained for each U. S. Public Land Survey quarter-section or each traffic analysis zone as appropriate. Existing data conversion and retrieval "software" will be reevaluated and improved as necessary.

4.2 DATA ANALYSES AND

4.3 DATA FORECASTS

As already noted, planning data have been collected and assembled under both the initial and first continuing regional land use-transportation study by U. S. Public Land Survey quarter-sections. In addition, specially coded traffic analysis zones and districts

were delineated comprising one or more quarter-sections; and existing corporate limits lines of the local governmental units were delineated. Both are used as subareas for data presentation within the regional planning concept. Because of the rapidity with which local municipal boundaries can change and the need to keep regional planning data usable and relevant under these rapidly changing local conditions, a study of planning data analyses areas may be undertaken. This study would define rational urban service areas and generally include, but not be limited to, the existing corporate limits, as well as extraterritorial planning jurisdiction boundaries, of the minor civil divisions within the Region. For these plan analyses areas to be compatible with the Regional Planning Commission's data base and methods of retrieval and presentation, delineations will be made to the nearest quarter-section line and/or to the nearest traffic analysis zone boundary. The relevance and usability of data presented to local units of government would be increased for use in day-to-day decision-making by the delineation and use of such planning areas.

The traffic analysis zone layout developed during the initial land use-transportation study will be reviewed and revised as required to improve the results of the traffic simulation model application. The traffic analysis zone system will be periodically reviewed in relation to the arterial street and highway network and particularly to changes in that network. The travel demand contributed to the network emanates from the traffic zone centroids; and, therefore, the location, number, and distribution of these centroids must be properly related to the traffic zone system itself, a fact necessitating full coordination between the zone system and the functional arterial network. The number of zones, as well as their size and distribution, will also be adjusted as closely as possible to census tract boundaries so as to enable census information to be readily adaptable to traffic analysis zone aggregation. Zone boundaries will be adjusted to conform to final freeway locations, arterial street changes, and changes in other major physical barriers which serve to form a logical division between differing types of land use activities. Finally, the traffic analysis zones and districts will be reviewed and revised in relation to the most recent land use inventory information; that is, the completed 1967 and 1970 land use update. The necessary revisions in the zone and district boundaries will be made once during the second continuing study in conjunction with the proposed new regional travel survey.

Forecasts of possible and probable future events and conditions are necessary to any planning operation. It is also imperative, once plans have been prepared on the basis of such forecasts, that the continuous monitoring of changing conditions be accomplished in order to determine the continued relevance of the forecasts. It is anticipated that the forecasts prepared under the initial study program will, as a part of the surveillance and reappraisal functions, be monitored and updated as necessary. The necessity to update forecasts of primary input data required in the preparation of the regional land

use and transportation plans will be determined based upon the analysis and evaluation of data resulting from the 1970 census and the major travel survey to be conducted in 1972. These forecasts include: population, employment, public financial resources, land use demand, automobile and truck availability, and travel demand.

The Commission's work program has, from its inception, embraced utilization of a unique combination of conventional graphic and analytic planning techniques with newer systems engineering techniques, including simulation modeling. Regional population and employment forecasts under the initial regional land use-transportation study effort were made independently, employing four separate conventional techniques for regional population forecasting and four separate techniques for economic forecasting, including three conventional techniques and a simulation model technique.¹⁶ Conventional techniques were used to prepare forecasts of public financial resource availability, land use demand, and automobile and truck availability. Simulation model techniques were utilized for the preparation of forecasts of the spatial distribution of the various land uses and of travel demand. This dual approach will be continued, with conventional and simulation model techniques being applied to the monitoring and updating of the population, employment, and land use demand forecasts; conventional techniques being applied to the forecast of public financial resource and automobile and truck availability; and simulation model techniques exclusively being applied to the forecast of travel demand.

4.2.1 Demographic Analysis and

4.3.1 Population Forecast

Under the initial land use-transportation study, in addition to analyzing the size, composition, and geographic distribution of the 1960 population, eight methods of forecasting future population levels were developed and tested; and from among their results, a "single best" estimate was selected for plan design purposes.¹⁷ Under the second continuing study, in addition to the monitoring of the population forecasts on an annual basis, the Commission is again undertaking the analysis of the size, composition and distribution of the 1970 levels of population based on the programmed availability of the 1970 census data. The availability of the 1970 census data will also provide a current base upon which to reevaluate the population forecasts and underlying methodologies prepared under the initial study. In

¹⁶ See SEWRPC Planning Report No. 7, Volume 2, Forecasts and Alternative Plans--1990, pages 31-41.

¹⁷ See SEWRPC Planning Report No. 7, Volume 2, Forecasts and Alternative Plans--1990, Chapter II.

addition, the possible extension of the plan design year beyond 1990, as described in Chapter V of this Study Design, would also precipitate such a reevaluation of the forecasts. Also, because of the continuous need for current, long-range, and reliable small area demographic data, it may be necessary to develop population forecasts techniques applicable to areas smaller than the county, such as the minor civil division and the traffic analysis zone, to supplement the small area population forecasts now made primarily through evaluation of regional land use development.

4.2.2 Economic Analysis and

4.3.2 Employment Forecast

Under the initial land use-transportation study, employment within the Region was analyzed with respect to size, composition, and spatial distribution and four methods of forecasting future employment levels for the Region were developed and tested; and from among these, a "single best" estimate was selected for plan design purposes. Under the second continuing study, in addition to the need for the monitoring of the forecasts in light of current knowledge, the need for small area information will require an analysis of the size, composition and spatial distribution of employment and the development of a new employment forecasting technique to meet this need. Moreover, any extension of the plan design year beyond 1990 will necessitate a reevaluation of the forecasts and the underlying methodologies employed.

4.2.3 Public Financial Resources Analysis and

4.3.3 Public Financial Resources Forecast

Under the initial land use-transportation study, two basic forecasts of public revenues were prepared: one of total local government revenues and one of total highway revenues available for use within the Region by all levels of government. Under the second continuing study program, it is anticipated that, in addition to monitoring changes in total public revenue and expenditure patterns, particular efforts will be made to continually analyze and evaluate highway expenditure patterns as a measure of progress towards implementation of the staged regional transportation plan and the individual jurisdictional highway system plans.

4.2.4 Land Use Demand Analysis and

4.3.4 Land Use Demand Forecast

Under the initial land use-transportation study, forecasts for future land use to accommodate the forecast future population were developed by applying existing land use ratios. The analysis was carried out

for all the alternative plans as well as the unplanned alternative, and incorporated into the recommended regional land use plan.

Under the continuing land use-transportation study, it is recommended the the comparisons between the 1963 land use and population levels and the resulting land use demand forecasts be reevaluated using population and land use ratios derived from recent surveys such as the 1968 historic platting study, the 1967 and 1970 land use inventory, and the 1970 U. S. census of population. Such analysis using the current data can reveal any departures from the forecast data developed in 1963 which proposed modifications of existing land use trends. Finally, detail analysis of major land use centers such as commercial, industrial, and parks will enable the development of some measures of performance to indicate whether land uses are being established in accordance with the plan and also note any abrupt departures from the plan.

4.2.5 Automobile and Truck Availability and

4.3.5 Automobile and Truck Availability Forecast

Automobile and truck availability forecasts prepared under the initial land use-transportation study will continue to be monitored by county and by civil division on an annual basis. The primary source of information will continue to be the reports on motor-vehicle registration published by the Wisconsin Department of Transportation, Division of Motor Vehicle Registration. Data, obtained in the proposed new regional travel survey will also be valuable in monitoring automobile and truck availability. These data will be analysed in light of the continued rapid decrease in the ratio of persons per automobile available and the effect such decrease may have on the validity of the forecasts. Further analyses will be conducted to confirm the trip generation to automobile and truck availability relationships observed in the initial travel survey.

4.2.6 Travel Demand Analysis and

4.3.6 Travel Demand Forecast

Under the initial regional land use-transportation study, forecasts of travel demand within the Region were made for the years 1970, 1980 and 1990. These travel demand forecasts will be analyzed and evaluated in light of the results of the new travel survey proposed to be conducted in 1972. New forecasts will be prepared and staged to a new target year utilizing the traffic simulation models as those models may have been revised or refined on the basis of the new travel survey data, and utilizing such revised or refined measures of the socioeconomic and land use parameters for each traffic analysis zone as may be necessary. Minor modifications and refinements in

the forecasts will continue to be made, as required under the continuing study to provide current estimates of the future travel demand for the Region as a whole and for subareas of the Region, as required for transportation plan refinement and implementation.

Using data provided by the new origin-destination survey proposed to be conducted in 1972 and by various continuing study inventories, including the land use, population and economic activity inventories, current estimates will be prepared by zone of the socioeconomic and land use parameters of the trip generation model formulated under the initial regional land use-transportation study. The model will then be applied to produce a forecast of current zonal trip productions and attractions. These will be compared with the results of the new travel survey, the differences evaluated and the trip generation equations revised or refined as necessary, and new productions and attractions calculated. The modal split and trip distribution models will then be applied to these trip productions and attractions to prepare both new transit and new vehicle-trip tables. These will be compared with the results of the new travel survey, the differences again evaluated and the modal split and trip distribution models recalibrated as necessary. The recalibrated models will be used to calculate new trip tables, which will then be assigned to the respective current transportation system networks. Assigned transit and vehicular traffic volumes will then be compared with current traffic volume counts on an individual link, corridor, and screen-line, as well as areawide, basis. These comparisons may indicate a need to further revise, refine or recalibrate the travel forecasting models. As already indicated, the forecasts of travel demand for the years 1980 and 1990 prepared under the initial regional land use-transportation study, will be reappraised in light of the analyses conducted, and forecasts for a new target year, to be selected, prepared. The selection of the new target year will depend upon consideration of many factors, including the need to provide traffic forecasts for at least a 20 year forecast period, the results of the revised population, economic activity and land use demand forecasts to 1990 and beyond, and an evaluation of the relationship of these revised forecasts to the adopted land use and transportation plans.

4.4 SIMULATION MODEL APPLICATION

4.4.1 Demographic Simulation Model

A population forecasting model based upon the cohort-survival technique of population estimation was developed under the first continuing regional land use-transportation study. Inputs to the model include birth, death, and migration levels and rates; and the model was run on an IBM-360 computer. The model will be applied under the second continuing study, utilizing new data inputs from the 1970 census as a supplementary and independent means of population forecasting. In addition, the model will be modified to provide population forecasts by race, as well as age and sex.

4.4.2 Economic Simulation Model

Under the initial land use-transportation study, a series of long-range regional economic forecasts were made using a dynamic input-output Regional Economic Simulation Model that generated a synthetic history of the regional economy based on forecasts of national consumer, government, and export spending. The base year used for data collection and the subsequent determination of the model parameters was 1963. To provide continuing economic forecasts as checks on conventionally prepared forecasts, the model data will be updated in 1970 and a new series of economic forecasts prepared using 1970 as a base year. The data categories that would require updating before new forecasts can be made are:

1. Input-output parameters, national and regional, relating the sales and purchases of all the industries in the model.
2. Internal resource parameters in each industry, relating material purchases, capital spending, employment, and wages in each industry to the output of that industry.
3. Updated history of the exogenous variables of consumer purchases, Federal Government purchases, and gross exports for the years 1964-1970 and forecasts of these same variables for 1980, 1990, and any new plan design year that may be established.

In addition, the rationale and techniques upon which the model was based will be reviewed and any necessary and desirable changes in the structures of the model made. These may involve the regrouping of certain industries and the modification of some equations. The model was originally run on an IBM-7090 computer and will be converted to run on an IBM-360 computer.

4.4.3 Land Use Simulation Model

A Land Use Simulation Model was developed and applied in the initial land use-transportation study to aid in the formulation of land development and public works program policies necessary to implement the selected regional land use plan. In the model runs, residential land development was simulated, based on a planned transportation network and prelocated employment and commercial areas. The model was run on an IBM-7090 computer using the LP-90 linear programming package and will be converted to run on an IBM-360 computer. A set of policies emphasizing the crucial nature of sanitary sewer planning was developed as a result of the simulation test runs.

Under the continuing study program, the simulation model will again be applied as a test of plan effectuation, utilizing new input on land development costs and development trends. In addition, the

rationale and techniques upon which the model was based will be reviewed and any necessary or desirable changes in the structure of the model made.

4.4.4 Traffic Simulation Models

Under the initial land use-transportation study, a series of traffic simulation models were developed which could be used to mathematically simulate trip generation, modal split, trip distribution, and traffic flow within the Region. The data provided by the new travel survey proposed to be undertaken within the Region under the continuing regional land use-transportation study in 1972 will not only contribute to a reevaluation and refinement of the traffic simulation models but will permit many special analyses to be made that will contribute to a better understanding of travel habits and patterns within the Region and of the forces shaping those habits and patterns. Important among these analyses will be those relating to changes in public attitudes toward transportation modes and service levels; to time and spatial patterns in travel; to trip generation, and to choice of mode. Also important, however, will be analyses relating to the advancement of the state of the art of transportation planning, such as comparisons of the results of special high sample rate transit travel surveys with the results of more conventional low sample rate home interview surveys.

4.4.4.1 Trip Generation Model¹⁸

During the first continuing regional land use-transportation study, the regional trip generation model was recalibrated and reviewed for subregional areas in conjunction with work done by the Commission staff under the Milwaukee County Mass Transit Technical Planning Study and the jurisdictional highway planning studies. A detailed review of the trip generation equations will be accomplished using current measures of the independent parameters provided by the 1972 regional travel survey and by the 1970 census data as updated through certain continuing study inventories, including current inventories of land use, population, and employment. A comparison will be made by traffic analysis zone of the number of trips generated by the model and of the actual trips reported in the new travel survey in order to check the continued validity of the model. Consideration will be given to refining the model, utilizing the socioeconomic, land use and travel data collected in the new regional travel survey, with particular emphasis upon the development of new independent parameters which can be more readily estimated from data which are periodically available through continuing inventories which can be readily and economically conducted. Such refinement is intended to permit the more ready application of current measures of the independent parameters on a periodic basis thereby facilitating continuing checks of the validity of the trip generation

¹⁸ SEWRPC trip generation equations are shown in Tables 2, 3, and 4.

model. Such model refinement will be conducted in light of the current state of the art of traffic simulation modeling, as that art has progressed since 1963. In this respect considerations will be given to not only exploring the relationships existing between trip ends and land use and socioeconomic characteristics through regression analysis; but also to exploring the relationships of trip ends to land area (land area trip rate analysis) and to the use of household types rather than traffic analyses zones as analytical units (cross-classification analysis).

4.4.4.2 Modal Split Model

In conjunction with the Milwaukee County Mass Transit Technical Planning Study, the modal split model initially developed for the preparation of the regional transportation plan was recalibrated for the Milwaukee metropolitan area. The recalibration of the model included some restructuring to achieve a greater sensitivity to changes in the level of service provided by both the highway and transit systems. Consideration will be given to further refinement of the model utilizing the socioeconomic, land use and travel data collected in the new regional travel survey. A comparison of reported and estimated travel will be made using current measures of the level of service provided by the transit and highway systems as well as current measures of automobile availability, socioeconomic characteristics of households, and trip data. Attention will be given to recalibrating and refining the submodels for the Racine and Kenosha areas as well as the submodel for the Milwaukee area. Consideration will also be given to developing a trip interchange modal-split model in order to provide a second method of transit trip forecasting. The development of this second model and any recalibration of the previously developed modal split sub-regional models will be conducted only after extensive review of the current state of the art of modal choice simulation.

Consideration will be given to developing as a part of the continuing study and in cooperation with the transit operators within the Region, a model, methodology or technique for preparing short-term transit service demand estimates which can be used as an aid in the operational planning for route extensions and revisions, scheduling and rescheduling, and which can be of assistance in making current planning decisions concerning the provision of transit service. The results of the special transit oriented portions of the proposed new regional travel survey will be utilized in the development of such a technique.

4.4.4.3 Trip Distribution Model

During the first continuing study, the regional trip distribution model was recalibrated for subregional areas in conjunction with work for the Milwaukee County Mass Transit Technical Planning Study. Further recalibration and refinement of the trip distribution model

will be undertaken, using the current travel pattern data developed from the new regional travel survey. Again, comparative analyses of the reported trip lengths and the simulated trip lengths will be made to identify any changes in the trip length frequency distribution which may be occurring and the need for recalibration and refinement of the model. Changes made to the trip generation and modal split models may also require certain changes in the distribution model.

4.4.4.4 Traffic Assignment Model

During the initial continuing study, the inputs to the transit-traffic assignment models were converted to run under the HUD IBM-360 Transit Assignment Package. During the second continuing study, the inputs to the highway traffic assignment model have been converted to run under the FHWA IBM-360 Highway Assignment Package. The transit and highway networks will be periodically updated to reflect the current status of the arterial street and highway and transit systems. Results of highway and transit travel time studies and special capacity studies will be used to maintain the assignment models current. The continued validity of the traffic assignment model will be checked by comparing simulated traffic volumes to traffic counts.

Minor modifications and refinements will continue to be made on a subarea basis to provide for plan implementation purposes more refined traffic volume forecasts. In addition, a major effort will be made to not only convert the traffic simulation model and peripheral programs to run on an IBM-360 computer, using the U. S. Department of Transportation, "Planpac" highway-oriented package of computer programs and the U. S. Department of Housing and Urban Development transit-oriented package of computer programs, but to run these programs in-house on the Commission's equipment.

The traffic simulation model will be refined under the second continuing study to permit morning-peak, evening-peak, and off-peak hour traffic assignments to be made for both the highway and transit systems and added to obtain average daily traffic flows. This refinement is expected to be accomplished through the use of the trip data obtained in the new regional travel survey and may involve the development of peak period trip generation, modal split, and trip distribution as well as traffic assignment models. As previously reported, the models will be retested by assigning traffic demand derived from current measures of the independent parameter provided by the continuing study inventories to the highway network and comparing the results with traffic volume counts on an individual location, corridor, and screenline basis using the 1972 travel data obtained from the origin-destination studies and the 1972 highway and transit networks.

Table 2

SEWRPC REGIONAL PERSON TRIP GENERATION EQUATIONS

Dependent Variable	Coefficients of Independent Variables								
	Constant	Employment ^a				Net Land Area (Acres)			
		Total Population	Households	Automobiles Available	Total	Total On Retail and Service Land	Retail On Retail and Service Land	In Residential Use	In Retail and Service Use
Total Person									
Trip Productions									
Home Based Work	-11.0	0.47	0.62	--	--	--	--	--	--
Home Based Shopping	6.5	--	-0.34	1.54	--	--	--	-1.36	--
Home Based Other	- 6.4	--	--	2.47	--	--	--	-1.78	--
All Non-Home Based	5.6	0.24	--	--	0.28	0.82	--	--	--
Total Person									
Trip Attractions									
Home Based Work									
Urbanizing Areas	2.6	--	--	--	1.73	--	--	--	--
Remainder of Region	1.0	--	--	--	2.22	--	--	--	--
Home Based Shopping	- 0.5	--	--	--	--	--	7.14	--	--
Home Based Other	2.9	--	1.43	--	0.27	0.73	--	--	23.48
All Non-Home Based	3.9	--	0.91	--	--	0.97	--	--	--
Transit Person									
Trip Attractions									
Home Based Work	455	--	--	-0.53	0.42	1.09	--	--	--
Home Based Shopping	- 248	--	--	--	--	--	3.21	--	--
Home Based Other ^b	287	--	--	--	0.04	0.16	0.29	--	- 1.50
All Non-Home Based	124	--	--	-0.08	--	0.28	--	--	--

^aThe employment variables used in the trip generation equations are intended to represent zonal employment levels on an average weekday and are calculated as a percentage of the total number of existing and forecast jobs available and assumed filled in the zone.

^bCalculated using data only from zones with more than 100 home-based other transit trip attractions.

Source: SEWRPC.

KWB/DR
12/25/73

Table 3

MILWAUKEE TRANSIT SERVICE AREA TRIP GENERATION EQUATIONS
TRANSIT TRIP EQUATIONS

Dependent Variable	Coefficients of the Independent Variables								Households
	Constant	Population	Autos	Total Employment	Retail & Service	Retail	Total	Residential Land	
					Employment on Retail & Service Land	Employment On Retail & Service Land	Employment On Retail & Service Land		
Trip Productions									
CBD & Non CBD									
Home Based Work	- 39.171	--	-0.529	--	--	--	--	--	0.981
Home Based Shop	- 8.011	--	-0.104	--	--	--	--	--	0.192
Home Based Other	3.708	--	-0.223	--	--	--	--	--	0.367
CBD Only									
Non Home Based	-51.246	--	--	0.089	--	0.502	--	--	--
Non CBD Only									
Non Home Based	41.893	--	--	0.012	0.148	--	--	-0.190	--
Trip Attractions									
CBD									
Home Based Work	-576.217	--	--	0.776	--	1.092	0.227	--	--
Home Based Shop	-487.848	--	--	--	--	3.054	--	--	--
Home Based Other	- 25.692	--	--	0.190	--	0.464	--	--	--
Non Home Based	-115.020	--	--	0.078	--	0.685	--	--	--
Non CBD									
Home Based Work	- 50.903	--	--	0.364	--	--	--	--	--
Home Based Shop	- 66.322	--	--	--	--	0.923	--	--	--
Home Based Other	11.601	0.015	--	--	--	--	0.243	--	--
Non Home Based	- 3.840	--	--	--	--	0.301	--	--	0.020

Source: SEWRPC.

Table 4

MILWAUKEE TRANSIT SERVICE AREA TRIP GENERATION EQUATIONS
TOTAL PERSON TRIP EQUATIONS

Dependent Variable	Coefficients of the Independent Variables						
	Constant	Population	Autos	Total Employment	Retail & Service Employment On Retail & Service Land	Retail Employment On Retail & Service Land	Total Employment On Retail & Service Land
Trip Productions							
CBD & Non CBD							
Home Based Work	-143.019	0.424	0.887	--	--	--	--
Home Based Other	- 58.711	--	1.133	--	--	--	--
Home Based Other	114.887	--	2.193	--	--	--	--
CBD Only							
Non Home Based	-109.018	--	--	0.660	--	--	--
Non CBD Only							
Non Home Based	- 67.353	--	0.515	0.216	3.406	--	--
Trip Attractions							
CBD							
Home Based Work	-310.164	--	--	2.150	--	--	--
Home Based Shop	-659.896	--	--	--	--	4.802	--
Home Based Other	61.595	--	--	0.915	--	--	--
Non Home Based	93.6			0.5534			
Non CBD							
Home Based Work	24.216	--	--	2.094	--	--	--
Home Based Shop	- 28.396	--	--	--	--	10.753	--
Home Based Other	517.161	--	1.212	--	--	--	2.226
Non Home Based	85.76	--	0.584	--	3.538	--	--

Source: SEWRPC.

Chapter V

PLAN DESIGN, REVIEW, AND REEVALUATION; TEST AND EVALUATION; SELECTION AND ADOPTION; AND IMPLEMENTATION

Work under the continuing regional land use-transportation study, will be directed toward plan implementation and will be concerned primarily with plan refinement and detailing, although increasing attention will be given to plan reevaluation as the second continuing study progresses. The major work effort in this respect will continue to be devoted to the planning studies required for the conversion of the functional highway system plan produced under the initial regional land use-transportation study to a jurisdictional plan and to the planning and engineering studies required to achieve advance reservation of rights-of-way for the , eaway, arterial street, highway, and transit facilities recommended in the adopted plans through corridor refinement and official mapping.

- 5.1 REGIONAL LAND USE AND TRANSPORTATION PLAN REVIEW AND REEVALUATION
- 6 REGIONAL LAND USE AND TRANSPORTATION PLAN TEST AND EVALUATION
- 7 REGIONAL LAND USE AND TRANSPORTATION PLAN SELECTION AND ADOPTION

The 1970 federal census, coupled with the land use and travel habit reinventories proposed in this Study Design including the proposed new regional travel survey, will provide a sound basis for a comprehensive, in-depth examination of the trends in regional development which may have emerged since the adoption of the regional land use and transportation plans in 1966 and for a comparison of these trends with the regional development plans and the objectives and standards upon which these plans were based, as well as of the policies and programs required for plan implementation. It is proposed that, upon completion of the proposed land use and travel habit reinventories under the second continuing study, and upon receipt of the data from the proposed new regional travel survey, that a major planning report be prepared, setting forth the results of a careful analysis of the findings of the reinventories and the implications of these analyses with respect to the continued validity of the plans. The report would carefully document any major departures from the plan recommendations which may have occurred since their adoption; analyze the implications which such departures might have for the regional development objectives upon which the plans are based as well as for the plans themselves, and the policies and programs for implementation; and recommend necessary revisions in both the adopted regional land use and transportation plans.

The report would also examine the need to set a new plan design year beyond 1990. In the selection of such a design year, consideration would be given to the concept of an "ultimate" plan for the long-range development of the Region, as well as to the use of specific interim

target years. The recommendations with respect to revision of the target years and/or preparation of a plan for the ultimate development of the Region would provide the basis for the preparation of a Study Design for the third continuing regional land use-transportation study, extending from 1975 through 1979 and such a design would provide for the preparation of land use and transportation plans for the new target years.

8.1 EXTENSION OF PLANNING AND ENGINEERING DATA

Upon appropriate request, land use, socioeconomic, and transportation planning data as may be useful in the day-to-day work of both public and private agencies within the Region will be provided. Under the second continuing regional land use-transportation study, assistance will be provided upon request to local units of government for work such as the preparation of traffic operations plans designed to increase the traffic-carrying capacity of arterial street and highway facilities so that, through a systematic application of traffic engineering principles and techniques, a more efficient and safer transportation system might be created. Certain data needed to prepare these traffic operations plans including arterial street and highway facility inventory data, traffic count data, and estimates of future traffic volumes, can be made available to the local units of government from the SEWRPC files maintained current under the continuing study. The proposed new regional travel survey will be essential to the continued extension by the Commission of socioeconomic and travel habit and pattern data.

8.2 TRANSIT PLAN IMPLEMENTATION

Transit plan implementation efforts under the second continuing regional land use-transportation study will continue to be directed toward the corridor refinement studies necessary to preserve the rights-of-way required for the busway proposed in the adopted regional transportation plan. These efforts require the continued close cooperation between the staff of the Regional Planning Commission and the staffs of the Division of Highways of the Wisconsin Department of Transportation and the Milwaukee County Expressway and Transportation Commission. In addition, engineering and planning services with respect to local transit operations and short term planning will be provided upon request to local units of government and to transit operators to assure the continuance and improvement of all transit service within the Region. It is anticipated that portions of the corridor refinement studies and local transit service studies will be carried out under special interagency agreements. Again the data from the new regional travel survey will be extremely valuable to the transit plan implementation, and absolutely essential to the operations planning.

The Commission will also, under the continuing regional land use-transportation planning program, continue to develop its leadership

role in multi-modal transportation planning within the Region by developing both the data base and skills which can provide assistance not only in long-term transit system plan implementation but also in short-term transit operations planning as may be required by transit operators within the Region. To this end, the Commission will explore the means of institutionalizing this role by strengthening and, if necessary, adding staff skills in the transit planning area. The initial effort in this respect, however, will necessarily have to focus on the collection of the basic data essential to short-term transit operations, as well as long-term transit systems planning; and to this end, the scope of the new regional travel survey proposed to be conducted within the Region in 1972 has been expanded to include in-depth transit travel surveys. These surveys will provide a good basis for beginning to develop the strengthened staff skills needed for short-term operations planning.

8.3 JURISDICTIONAL HIGHWAY PLANS

Because a total street and highway system must serve several important functions and because two of the most important of these functions-- traffic movement and land access--are basically conflicting, the total street and highway system of the Region was, under the initial regional land use-transportation study, divided into functional subsystems according to the primary character of service which the individual facilities comprising each subsystem were expected to provide. Three functional groups of facilities were recognized in the necessary functional classification: arterial, collector, and minor (local land access). Only the first of these groups was considered to be of direct concern in areawide planning; and, therefore, the initial land use-transportation planning effort divided the total street and highway system into only two classes: arterial and "all other." The arterial system included freeways, expressways, and certain parkways, as well as standard surface arterial streets and highways, which together comprised an integrated areawide system. Thus, the initial regional land use-transportation planning effort produced a "functional" plan which identified the existing arterial street and highway system, determined its existing and probable future deficiencies, and recommended specific additions and improvements required to serve adequately existing and forecast travel demands.

One of the first, and most essential, tasks in converting the functional plan produced under the initial land use-transportation planning effort to an action program is the conversion of the functional plan to a jurisdictional plan. This requires the assignment of jurisdictional responsibility for the various facilities comprising the total arterial street and highway system, as identified in the plan, to the various levels and units of government concerned. Just as a functional classification of highway facilities is essential to transportation plan preparation, a jurisdictional classification is essential to plan implementation. In addition, the assignment of

jurisdictional responsibility for the various portions of the total arterial street and highway system is essential to:

1. Promote implementation of the adopted regional transportation plan.
2. Provide a sound basis for the efficient multi-jurisdictional management of the total arterial street and highway system and for the attainment of the necessary intergovernmental coordination in that management and thereby to avoid conflicts over, and duplication in, the administration, financing, design, construction, maintenance, and operation of the individual facilities which must comprise the total arterial street and highway system.
3. Provide a sound basis for the efficient design and improvement of the total arterial street and highway system by combining into subsystems those facilities which, because of the type and level of service provided, should have similar standards for design, construction, operation, and maintenance.
4. Provide a basis for the establishment of a sound, long-range fiscal policy and for the systematic programming of arterial street and highway improvements and thereby to assure the most effective use of the total public resources in the provision of highway transportation, focusing the appropriate resources and capabilities on corresponding areas of need.
5. Provide a basis for the more equitable distribution of highway system development costs and revenues among the levels and agencies of government concerned.

The jurisdictional plan thus specifies the governmental level and unit which should have responsibility for acquiring, constructing, maintaining, and operating each of the existing and proposed facilities which comprise the total physical system.

SEWRPC Planning Report No. 7, Volume 3, Recommended Regional Land Use and Transportation Plans--1990, Chapter VII, "Plan Implementation," recommends that the functional plans produced under the initial land use-transportation study effort be converted to jurisdictional plans on a county-by-county basis through a cooperative effort involving the Division of Highways of the Wisconsin Department of Transportation, the county highway committees, the local units of government, and the Regional Planning Commission. Under the first continuing study, a jurisdictional highway planning study was completed for Milwaukee County;¹⁹ and studies were initiated in Ozaukee, Racine, Walworth,

¹⁹

See SEWRPC Planning Report No. 11, A Jurisdictional Highway System Plan for Milwaukee County, March 1969.

and Waukesha Counties. It is proposed to initiate jurisdictional highway planning operations in the remaining two counties--Kenosha and Washington--under the second continuing regional land use-transportation planning effort.

The work will continue to be done on a county-by-county basis under the aegis of the County Highway Committee, and a special Inter-governmental Technical Advisory Committee will be created in each county to assist in the jurisdictional planning operation.

The planning operation itself requires the development of a set of criteria which may be used as a basis for the assignment of jurisdictional responsibility. The criteria deemed most significant to a jurisdictional classification will be related to three basic characteristics of the facilities: trip service, area service, and operational characteristics of the facilities themselves. The plans produced assign jurisdictional responsibility to three levels of government--state, county, and local--and the finished jurisdictional plans recommend for each county, within the context of the adopted state and regional highway plans, a system of state trunk, county trunk, and local trunk highways. The plans, in addition, contain recommendations concerning realignment of the various federal aid systems necessary to implement the adopted functional and jurisdictional plans.

8.4 TRAFFIC CORRIDOR REFINEMENT

The transportation facilities shown on the recommended regional transportation plan represent general locations, either on and along existing rights-of-way or on new locations, within traffic corridors varying from one-quarter up to two miles in width. Once the jurisdictional responsibility for a facility has been assumed by the appropriate state, county, or local units of government, it will become necessary to refine these traffic corridor locations within the context of the continuing transportation planning process as a prerequisite to any reservation of the necessary right-of-way for the facilities.

This corridor refinement requires the preparation of precise and definitive plans by the state, county, or local units of government having jurisdictional responsibility, working in close cooperation with the other agencies and local units that have related transportation system and land use development responsibilities. Such plans must ultimately set forth proposals for the precise centerline location and ultimate right-of-way width required for each facility for frontage road treatment and alterations in related existing facilities, for types of access control, and for the types and locations of grade separations and interchanges.

Surveying, mapping, and electronic computing techniques now available make the preparation of such definitive plans along new locations feasible without the need of resorting to expensive and time-consuming field location surveys. Such plans can be developed entirely upon photogrammetrically compiled topographic and cadastral maps when the horizontal control for such maps consists of relocated and monumented U. S. Public Land Survey corners related to the precise and accurate field identification of the proposed facility location, as well as land acquisition, without the need for traditional, time-consuming, and expensive centerline location surveys.

The preparation of such definitive plans will do much to allow state and local officials to bring the full weight of plan implementation devices at their disposal to bear upon the reservation and advance acquisition of the necessary right-of-way, as well as to assist county and local planners in making intelligent recommendations on desirable highway-related land use development alternatives.

The adopted regional transportation plan includes recommendations for approximately 291 miles of new freeways, 8.5 miles of new expressways and parkways, 67 miles of improved existing freeways, 192 miles of new standard arterials, and 929 miles of reconstructed standard arterials. The adopted plan also includes recommendations concerning 89 miles of modified rapid transit lines and approximately 4.3 miles of rapid transit line. Staff and budgetary limitations have precluded simultaneous action on all of these recommended major traffic corridors contained in the regional transportation plan. Therefore, the necessary corridor refinement studies have been limited initially to the recommended freeway, expressway and parkway, and rapid transit facilities and have proceeded in a two-stage operation, consisting of preliminary corridor refinement studies followed by precise mapping and exact centerline location studies. The work has been under the joint efforts of the Division of Highways of the Wisconsin Department of Transportation, Milwaukee County Expressway and Transportation Commission, the seven county highway committees, the local units of government, and the Regional Planning Commission. The Regional Planning Commission has coordinated such work and will, upon request, make all necessary traffic assignments and administer precise mapping contracts. The Division of Highways and the Milwaukee County Expressway and Transportation Commission have provided the necessary engineering studies needed to determine centerline locations and right-of-way requirements.

During the second continuing study, corridor refinement studies will be continued to be conducted and will follow the two-step process initiated in the first continuing study.

In the first step of the corridor refinement studies, the one-quarter mile to two-mile wide major transportation corridors shown on the adopted regional transportation plan will be narrowed to a one-quarter

mile-wide corridor. In the second step, the necessary topographic and cadastral maps of the refined corridor will be prepared and the centerline location and right-of-way requirements delineated on these maps. The location maps produced by the second stage will provide the basis for advance reservation of right-of-way through official mapping, subdivision control, and zoning. Map 2 shows the status of the 291 miles of freeways proposed in the transportation plan.







The data from the new regional travel survey will be particularly valuable to the corridor refinement and centerline location studies providing current data on travel demand useful not only in the engineering design but also in the presentation of the designs and alternatives thereto at the necessary public hearings.

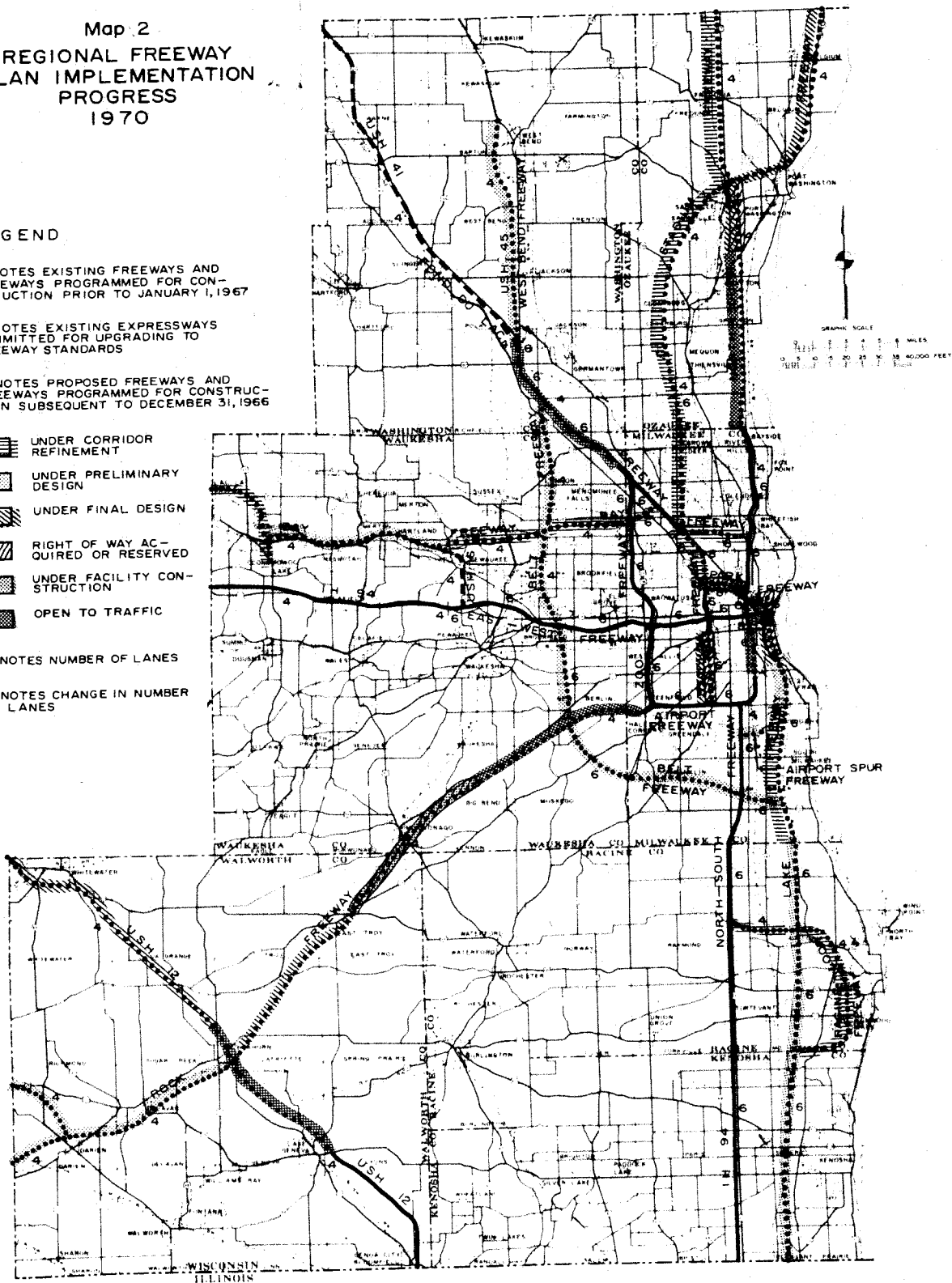
SUMMARY

It will be seen from the foregoing that the plan design efforts contemplated under the second continuing regional land use-transportation study will be most closely related to the service and plan implementation function. They will, moreover, provide important feedbacks to the surveillance and reappraisal functions. Major plan revisions for a new target year would await analyses of the data provided by the 1970 U. S. Census and by reinventories proposed in this Study Design and would probably not be initiated until 1975.

Map 2 REGIONAL FREEWAY PLAN IMPLEMENTATION PROGRESS 1970

LEGEND

- DENOTES EXISTING FREEWAYS AND FREEWAYS PROGRAMMED FOR CONSTRUCTION PRIOR TO JANUARY 1, 1967
- - - DENOTES EXISTING EXPRESSWAYS COMMITTED FOR UPGRADING TO FREEWAY STANDARDS
- DENOTES PROPOSED FREEWAYS AND FREEWAYS PROGRAMMED FOR CONSTRUCTION SUBSEQUENT TO DECEMBER 31, 1966
-  UNDER CORRIDOR REFINEMENT
-  UNDER PRELIMINARY DESIGN
-  UNDER FINAL DESIGN
-  RIGHT OF WAY ACQUIRED OR RESERVED
-  UNDER FACILITY CONSTRUCTION
-  OPEN TO TRAFFIC
- 8 DENOTES NUMBER OF LANES
- 6, 8 DENOTES CHANGE IN NUMBER OF LANES



Chapter VI

SCOPE, TIMING, STAFF, EQUIPMENT, COST, AND COMMITTEE STRUCTURE

SCOPE

The scope of the work program recommended to be accomplished under the second continuing land use-transportation study as described herein is summarized in Table 5. The data sources, the level of detail, and the frequency of collection or analysis are noted for each major work element. Careful review of this table will make the comprehensive nature and potential usefulness of the second continuing study more readily apparent. It should be noted that certain work elements of significant importance to a continuing land use-transportation planning function in the Southeastern Wisconsin Region have been included in this five-year Study Design which were not included as a part of the first continuing land use-transportation study. These work elements include: a reinventory of existing transportation movements and behavioral factors affecting travel habits and patterns, reanalyses of the economic base and structure of the Region, and reanalyses of the regional population characteristics in 1970.

TIMING

General

Because the proposed planning program is a continuing one, any time schedule must recognize that certain work elements will be accomplished on a recurring annual basis, while others will be accomplished on a project basis involving one major work element during the five-year period extending from January 1, 1970, through December 31, 1974. Work elements of the former type will include the updating of the population inventory, economic inventory, automobile and truck availability, traffic volume count data and the arterial street and highway and transit network revisions. Work elements of the latter type will include the land use inventory, the natural resources inventory, the public utility inventory, the community plans and zoning inventory, the travel inventories, and the planning law inventory.

New Regional Travel Survey

The new travel survey, including preparation, field inventories, data reduction, and analysis is expected to require up to two calendar years to complete. An estimated time schedule for the major elements of the origin-destination study is shown in Figure 3. This schedule is subject to revision prior to undertaking this study, but represents the best estimate possible at this time. Study organization and cost estimates are predicated upon this recommended schedule, which identifies all of the major project work elements.

This Study Design outlines the general methodology to be followed for each of the various surveys. In view of the need to develop specific procedures

TIMING OF MAJOR WORK ELEMENTS OF A
 COMPREHENSIVE REGIONAL ORIGIN-DESTINATION STUDY

Major Work Elements	1st Year												2nd Year					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Study Organization and Detailed Study Design																		
Inventory-Collection of Basic Travel Data																		
1. Screenline Classification and Traffic Counts																		
2. Home Interview Survey																		
3. Truck Taxi Survey																		
4. External Surveys																		
5. Mass Transit Survey																		
6. Weekend Travel Survey																		
7. Goods Movement Survey																		
Data Coding and Editing																		
Data Processing																		
Contingency Checks																		
Accuracy Checks																		

Table 5

SUMMARY TABLE OF CONTINUING LAND USE-TRANSPORTATION

STUDY WORK PROGRAM ELEMENTS: 1972-1976

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
1. STUDY DESIGN	Previous Study Designs and Operation Plans and Secondary Sources	Specific Work Elements	Once during each five year period	n/a
2. FORMULATION OF OBJECTIVES, PRINCIPLES, STANDARDS (Monitor)	Planning & Engineering Studies for Plan Implementation Inventory Findings	Region	Annually	Surveillance
3. COLLECTION OF BASIC DATA	(As indicated)	(As indicated)	(As indicated)	Surveillance
3.1 <u>Mapping & Aerial Photography</u>				
3.1.1 General Base Maps (Updated)	Current Aerial Photographs, Public and Private Utility Company Records, Municipal Records, Wisconsin Department of Transportation, Wis. Dept. of Natural Resources	1:24000 to 1:96000 Scale	Annually	Surveillance
3.1.2 Detailed Planning Base Maps (New)	General Base Maps and Primary and Secondary Sources	1:1200 Scale, Two Foot Contour Interval	As prepared for plan implementation	Surveillance

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
3.1.3 Aerial Photography (new)	Contract	1:4800 and 1:24000 Scale	Once during each five year period	Surveillance
3.2 Inventories				
3.2.1. Inventory of Transportation Facilities:				
3.2.1.1. Highway Facilities and Service Levels (Update)	Field Survey, Municipal Records, Wisconsin Department of Transportation	Standard Arterials, Parkways, Expressways, and Freeways	Annually	Surveillance
3.2.1.2 Transit Facilities and Service Levels (Update)	Private Transit Company Records	All Transit lines with one hour service frequency	Annually	Surveillance
3.2.1.3 Transportation Terminal Facilities (Update)	Municipal & Private Company Records & Field Survey	At each Facility	Once during each five year period	Surveillance
3.2.1.4 Automobile and Truck Availability	Vehicle Registration	Civil Division	Annually	Surveillance
3.2.2 Inventory of Existing Transportation Movement and Behavioral Factors Affecting Travel Habits and Patterns (New)	Surveys of: Screenline; Home Interview; Truck and Taxi; External Travel; Mass Transit; Weekend Travel; Goods Movement	Region	Once during each five year period	Surveillance

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
3.2.3 Inventory of Land Use (Update)	Current Aerial Photographs, Field Survey, Local Communities.	Two Digit Land Use Classification. U.S. Public Land Survey Quarter Section.	Once during each five year period.	Surveillance
3.2.4 Inventory of Community Plans & Zoning (Update)	Local Community Plans & Zoning Documents, & Personal Interview.	Seven Major Zoning Categories.	Once during each five year period.	Surveillance
3.2.5 Demographic & Economic Inventories:				
3.2.5.1 Regional Population Factors (New)	U.S. Census Bureau and SEWRPC Published Reports	Minor Civil Divisions, Regional, & U.S.	Once during each five year period.	Surveillance
3.2.5.2 Current Population Factors (New)	U.S. Census Bureau, State Department of Health & Social Services, Milwaukee Journal Consumer Analysis, Annual Public School Censuses, Local Community Estimates, Building Permit Records, Public & Private Utility Company Records.	Minor Civil Divisions & Region	Annually	Surveillance

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
3.2.5.3 Regional Economic Factors (New)	State Dept. of Industry, Labor, & Human Relations; State Dept. of Revenue; State Dept. of Health & Social Services; Milwaukee Journal Consumer Analysis Survey; Wis. Economic Indicators; Misc. National Publications such as Survey of Current Business, the Censuses of Business & Manufacturers, and County Business Patterns; and SEWRPC Published Reports.	Minor Civil Divisions, Region, and U.S.	Once during each five year period.	Surveillance
3.2.5.4 Current Employment Estimates (Update)	State Dept. of Industry, Labor, & Human Relations; State Dept. of Revenue; State Dept. of Health & Social Services; Milwaukee Journal Consumer Analysis Survey; Wis. Economic Indicators, Misc. National Publications such as Survey of Current Business, the Census of Business & Manufacturers, & Co. Business Patterns.	Minor Civil Divisions & Region.	Annually	Surveillance

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
3.2.6 Inventory of Public Financial Resources (Update)	State Dept. of Revenue; State Dept. of Transportation; State Dept. of Administration; Local Municipalities.	Minor Civil Division & Region.	Annually	Surveillance
3.2.7 Inventory of Planning Legislation (Update)	Court Decisions, Statutory Amendments	Municipal, Region, State & United States.	Once during each five year period.	Surveillance
3.2.8 Inventory of the Natural Resource & Public Utility Base (Update)	State Public Service Commission, Local Communities, Private Utility Co. Records, State Dept. of Natural Resources, Field Survey.	Resource Site & Environs, Service Area, Minor Civil Division, County and Region.	Once during each five year period.	Surveillance
4. ANALYSIS AND FORECAST	(As indicated)	(As indicated)	(As indicated)	Reappraisal
4.1 <u>Data Conversion, Filing, and Retrieval</u>	SEWRPC Data Files	Origin & Destination Data by Trip Highway Network Links, Transit Networks Links on Disk, Tape, and Cards, Census Block, U.S. Public Land Survey Quarter Section.	day-to-day	Reappraisal

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
4.2 <u>Data Analysis</u>				
4.2.1 Demographic (Monitor)	Inventory Findings	U.S.Public Land Survey Quarter Section, Traffic Analysis Zone, Minor Civil Division, Region	Once during the five year period.	Reappraisal
4.2.2 Economic (Monitor)	Inventory Findings	Small Geographic Area where Practicable, Minor Civil Division & Region	Once during the five year period.	Reappraisal.
4.2.3 Public Financial Resources (Monitor)	Inventory Findings	Small Geographic Area where Practicable, Minor Civil Division & Region.	Once during the five year period	Reappraisal
4.2.4 Land Use (Monitor)	Inventory Findings	County, Region	Once during the five year period.	Reappraisal
4.2.5 Automobile & Truck Availability (Monitor)	State Dept. of Transportation	Minor Civil Division, County, Region	Once during the five year period	Reappraisal

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
4.2.6 Travel Demand (Monitor)	Inventory Findings, State Dept. of Transportation, Special Studies.	Selected Sub-regional Areas, Regional Boundaries, and Region.	Once during each five year period.	Reappraisal
4.3 <u>Forecasts</u>				
4.3.1 Population (Monitor)	Inventory Findings	Traffic Analysis Zone, Minor Civil Division, Region, U. S. Public Land Survey Quarter Section.	Once during each five year period.	Reappraisal
4.3.2 Employment (Monitor)	Inventory Findings	Small Geographic Area where Practicable, Minor Civil Division & Region.	Once during each five year period.	Reappraisal
4.3.3 Public Financial Resources (Monitor)	Inventory Findings	Small Geographic Area where Practicable, Minor Civil Division & Region.	Once during each five year period.	Reappraisal
4.3.4 Land Use Demand (Monitor)	Inventory Findings	County, Region	Once during each five year period.	Reappraisal

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
4.3.5 Automobile & Truck Availability (Monitor)	State Dept. of Transportation	Minor Civil Division, County, Region	Once during each five year period	Reappraisal
4.3.6 Travel Demand (Monitor)	Inventory Findings, State Dept. of Transportation, Special Studies	Selected Sub-regional Areas, Regional Boundaries & Region	Once during each five year period	Reappraisal
4.4 <u>Model Application</u>				
4.4.1 Demographic Simulation Model (Monitor)	Inventory Findings	Region	Once during each five year period	Reappraisal
4.4.2 Regional Economic Simulation Model (Monitor)	Inventory Findings Special Studies	Region	Once during each five year period	Reappraisal
4.4.3 Land Use Simulation Model (Monitor)	Inventory Findings	Region	Once during each five year period	Reappraisal
4.4.4 Traffic Simulation Model (Monitor)	Inventory Findings	Region	Once during each five year period	Reappraisal
5. PLAN DESIGN AND PLAN REVIEW AND REEVALUATION				
5.1 <u>Regional Land Use and Transportation Plan Review and Reevaluation (New)</u>	Inventory Findings and Analysis, Adopted Functional Transportation Plan, and Special Studies	Minor Civil Division, Counties, and Region.	Once during each five year period	Reappraisal

Table 5 (Continued)

WORK ELEMENT	DATA SOURCES	LEVEL OF DETAIL	FREQUENCY	PRIMARY PLANNING OPERATION FUNCTION
6. PLAN TEST AND EVALUATION	Plan Reevaluation & Redesign	Minor Civil Division, County, & Region	Once during each five year period	Reappraisal
7. PLAN SELECTION AND ADOPTION	Plan Test and Evaluation, Results, & Public Hearings	Region	Once during each five year period	Reappraisal
8. PLAN IMPLEMENTATION	(As indicated)	(As indicated)	(As indicated)	Implementation
8.1 <u>Extension of Planning and Engineering Data</u>	All SEWRPC Data and Study Findings	Highway Network Links to Region	As requested	Implementation
8.2 <u>Transit Plan Implementation (New)</u>	Inventory Findings & Analysis, and Adopted Functional Transportation Plan & Social Studies	Service Areas, Minor Civil Divisions & Counties	Once during each period or as requested.	Implementation
8.3 <u>Jurisdictional Highway Plans (New)</u>	Inventory Findings & Analysis, and Adopted Functional Transportation Plan	County	As requested	Implementation
8.4 <u>Traffic Corridor Refinement (New)</u>	Inventory Findings & Analysis, Adopted Functional Transportation Plan, and Special Studies	Traffic Corridor	As requested	Implementation

Source: SEWRPC.

for the conduct of each of the various surveys and to establish specific data requirements, it is recommended that a detailed study design be prepared during the initial phase of this study. This study design will consist of a series of staff memoranda dealing with each major phase of the work. The memoranda will be prepared by the staff and reviewed and approved by the Technical Coordinating and Advisory Committee on Regional Land Use and Transportation Planning. It is during this phase of the work that the precise methods to be followed, the forms to be used, the staff and equipment requirements and the analytical approaches to be applied will be determined.

STAFF REQUIREMENTS

General

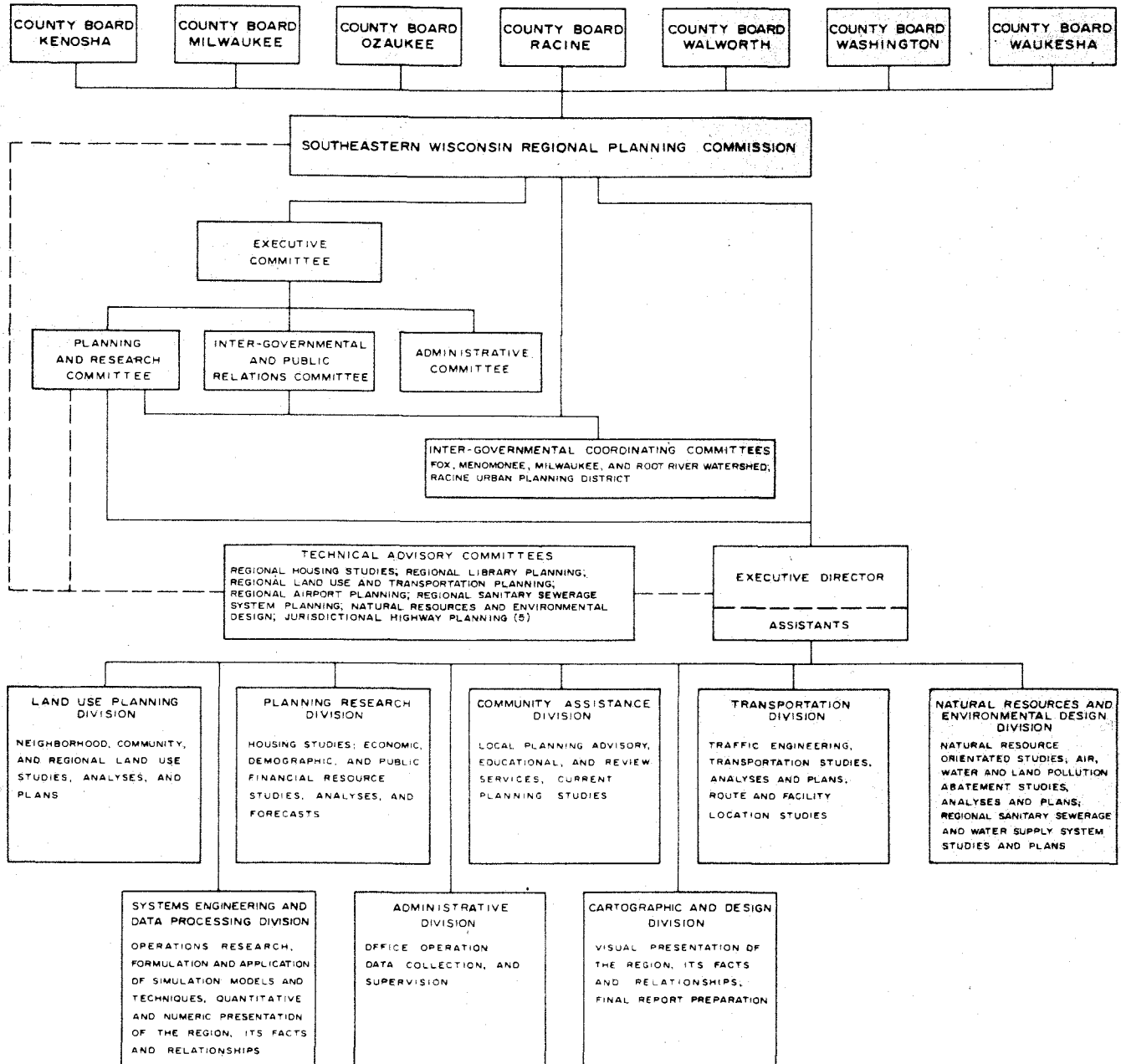
The broad scope of the proposed study requires a staff trained and experienced in many different skills and professional disciplines. The organizational structure for the continuing regional land use-transportation study is shown in Figure 4 and reflects primary reliance upon permanent staff for the performance of the necessary work. To accommodate certain variable workloads encountered for the project-type work elements, particularly the land use, special travel pattern studies, and the proposed new regional travel survey, as well as to involve more actively certain particularly important plan implementation agencies directly in the continuing land use-transportation study effort, the permanent staff will be augmented by the assignment of personnel from cooperating agencies and by the temporary employment of technical and clerical personnel. Interagency staff assignments should include the assignment of planning personnel to the study staff by the U. S. Department of Transportation, the State Department of Transportation, the County of Milwaukee, and the City of Milwaukee. Although the permanent Commission staff is well grounded and experienced in comprehensive urban and regional planning, including comprehensive transportation planning, attention will be given to strengthening existing staff skills in the areas of short-term transit improvement and operations planning under the continuing study.

New Regional Travel Survey

The proposed new regional travel inventory would be carried out by the resident staff of the Regional Planning Commission. The Commission presently employs a full-time staff numbering 56, of which 23 are professional staff members and the remainder are technical and clerical staff members. Five of the Commission professional employees have extensive training and experience in transportation planning, and one of these five is a recognized expert in the conduct of origin-destination surveys and will be designated responsibility for supervising the day-to-day execution of the surveys. The Commission will also assign one Senior Transportation Engineer to the project on a full-time basis. In addition, the State Department of Transportation will be asked to assign a Senior Transportation Engineer to the project on a full-time basis. The resident regional planning staff will be heavily supplemented through the retention of temporary staff employees as necessary to successfully complete the proposed program. This would include the hiring, the training, and

Figure 4

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
EXISTING STAFF AND COMMITTEE STRUCTURE



direction of the necessary home, roadside, and on-vehicle interviewers and coders. The Commission has its own data processing division, including data processing management and systems engineering skills and the necessary key-punch and machine operators to fully process the data collected in the surveys after completion of coding.

EQUIPMENT

The equipment assembled in the initial land use-transportation study under the terms of the contract governing the initial study has been made available to the continuing study and is deemed fully adequate to meet the needs of this study. In addition to the usual office equipment, a data processing center will be required. The center will be equipped with an IBM System 360 Model 22 computer, and necessary support equipment, consisting of the following unit record equipment. Four 4301 Key Tapes and one 029 interpreting key punch. Thus equipped, the data processing center is able to perform all the necessary data reduction and processing operations and all the necessary analyses and forecast computation requirements for the continuing land use-transportation study and for the new regional travel inventory.

COST ESTIMATES

General

Detailed estimated study costs will be prepared as a part of the annual operations plan for each calendar year of work to be undertaken within the five-year continuing study period covered by this document. These costs, which are proposed to be shared by the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, the U. S. Department of Housing and Urban Development, the Wisconsin Department of Transportation, and the Commission, will not, however, include the costs of the proposed new regional travel survey. The costs of that survey are to be shared by the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, and the Wisconsin Department of Transportation and are separately set forth in Table 6.

The estimated costs for the work elements to be undertaken in calendar year 1972, exclusive of the proposed major regional travel survey, are set forth in Table C-1 and are also based upon the scope of work, time schedules, and study organization set forth in this Study Design. The costs were prepared by estimating time and personnel requirements necessary to complete the various subcategories of the work and adding to those costs the necessary equipment, data processing, administrative and report publication costs to obtain total costs. Subsequent annual cost estimates for calendar years 1973, 1974, 1975, and 1976 will be prepared annually utilizing the format of Table C-1.

New Regional Travel Survey

As already noted, the estimated costs of the proposed new regional travel survey are presented in Table 6 and are based upon the scope of work, time

COMPREHENSIVE REGIONAL ORIGIN-DESTINATION STUDY COST ESTIMATES

Study Elements	Total Cost Of Work Element	UMTA Participation		UMTA Funding Share ^a	Wis. DOT/UMTA	FHWA Wis. DOT ^b
		Percent	Amount			
A. Study Organization and Detailed Study Design.	\$ 10,000	--	\$ --	\$ --	\$ --	\$ 10,000
B. Inventory-collection of Basic Travel Data						
1. Screenline Classification and Traffic Counts.	14,000	25	3,500	2,333	1,167	10,500
2. Home Interview Survey	145,000	50	72,500	48,333	24,167	72,500
3. Truck and Taxi Survey	34,000	--	--	--	--	34,000
4. External Surveys.						
a. Cordon Interview.	13,000	--	--	--	--	13,000
b. Bus and Rail Passenger Interviews	6,000	--	--	--	--	6,000
5. Mass Transit Surveys.						
a. User Survey	23,000	100	23,000	15,333	7,667	--
b. Major Trip Generator Survey	16,000	100	16,000	10,667	5,333	--
c. Non-User Survey	25,000	100	25,000	16,667	8,333	--
6. Weekend Travel Survey	30,000	50	15,000	10,000	5,000	15,000
7. Goods Movement Survey	25,000	--	--	--	--	25,000
(Subtotal B).	(\$331,000)	--	(\$155,000)	(\$103,333)	(\$51,667)	(\$176,000)
C. Data Coding and Editing	135,000	47	63,450	42,300	21,150	71,550
D. Data Processing	60,500	47	28,435	18,957	9,478	32,065
E. Contingency Checks.	8,500	47	3,995	2,663	1,332	4,505
F. Accuracy Checks	16,500	47	7,755	5,170	2,535	8,745
Total.	\$561,500	--	\$258,635	\$172,423	86,212	\$302,865

^aEquals two-thirds of work elements which are transit related and in which UMTA participates.

^bThis funding provided by the Wisconsin Department of Transportation under the State Federal Cooperative Highway Planning and Research (HP&R) Program with approximately 65 percent of these funds being provided by the Federal Highway Administration (FHWA).

schedules, and study organization set forth in this Study Design. The costs were prepared by estimating the time and personnel requirements necessary to complete the various subcategories of the work and adding necessary equipment, data processing, administrative and report publication costs to obtain total costs. It should be noted that the cost estimates presented include only the costs of the data collection, processing, and contingency check work required and do not include the costs of any analyses or application of the data. Such analyses and applications are to be made as a part of the Commission's continuing land use-transportation planning program subsequent to the completion of the work costed in Table 6.

It should also be noted that the costs presented in Table C-1 for calendar year 1972 of the continuing regional land use-transportation study and the costs presented in Table 6 for the proposed new regional travel survey are mutually exclusive and do not contain any duplications. On the strength of the assumption that the proposed new regional travel survey will be undertaken in calendar year 1972, the budget for the continuing land use-transportation study for calendar year 1972 was reduced by approximately \$28,000. This reduction reflects the fact that certain personnel, equipment, data processing, and administrative costs would be transferred from the regular ongoing land use-transportation study to the proposed major travel survey.

In any consideration of the cost estimates for the proposed new regional travel survey, it must be recognized that the final costs will be determined by the actual work to be accomplished as set forth in the Detailed Study Design. Variations in costs from the preliminary estimates may occur, especially with respect to the origin-destination surveys since the work required to perform these surveys to the necessary depth and detail will become apparent only as the detailed study procedures and data requirements are developed. Consequently, the cost estimates presented in Table 6 below must be considered tentative with respect to the allocation of total costs among the various subcategories of work; and changes in this allocation must be expected upon completion of the detailed Study Design. Overall study costs, however, should not vary greatly from those estimated in Table 6. It should again be stressed that the cost estimates do not include the cost of data analyses, data application, and report publication, costs which will be included as integral parts of the continuing land use-transportation study within the Region for calendar years 1973 and 1974.

COST ALLOCATION

General

Under the initial regional land use-transportation study, a fixed formula was developed for the allocation of the study costs to the interested agencies of government based upon an analysis of the proportion of the total costs which could be considered to be of a "comprehensive" as opposed to a "transportation" planning nature. The analysis found that the costs of the study were divided approximately equally between work elements of a comprehensive and work elements of a transportation nature. With the U. S. Department of Housing and

Urban Development contributing two-thirds of the cost of the comprehensive planning work elements--the matching one-third of the costs being provided by the Commission--and with the U. S. Department of Transportation and Wisconsin Department of Transportation together contributing 85 percent of the cost of the transportation planning related work elements--the matching 15 percent being provided by the Commission--the formula allocated approximately 22 percent of the total study costs to the Commission, 33 percent to HUD, and 45 percent to the Federal and State Department of Transportation. The 85 percent share was further allocated approximately two-thirds to the Federal Government and one-third to the State Department of Transportation. This formula was subsequently refined and again agreed to by all of the parties concerned in preparation for the first continuing land use-transportation study. The refined formula provided that the U. S. Department of Housing and Urban Development pay for precisely 33 percent of the total cost of the continuing land use-transportation study, the U. S. and Wisconsin Departments of Transportation together for precisely 45 percent of the total study costs, and the Commission precisely for the remaining 22 percent of the study costs.

The inclusion of the Federal Urban Mass Transportation Administration as an additional federal funding agency may require periodic adjustment in the basic formula for the allocation of the costs of the continuing regional land use-transportation study to the various concerned agencies of government. To the extent that UMTA funds are used merely to replace FHWA funds in partial support of work elements under the continuing regional land use-transportation study, the basic cost allocation formula should remain unchanged. This is the situation with respect to the continuing study, exclusive of the proposed new regional travel survey, for calendar year 1972. To the extent that new, primarily transit oriented, functional planning activities are added to the continuing regional land use-transportation study in succeeding years, as will be necessary if the scope of the study is to be broadened to include short-term operational, as well as long-term systems, planning, the total cost of the study and the basic allocation formula will have to change. It is, therefore, recommended that the U. S. Department of Housing and Urban Development, the Federal Highway Administration, the Federal Urban Mass Transportation Administration, the Wisconsin Department of Transportation, and the Regional Planning Commission annually review the basic cost-sharing formula in light of any increase in the overall scope of the functional transportation planning effort and to make such adjustments in the cost-sharing formula as may be dictated by the work proposed to be undertaken in the forthcoming calendar year. Events may also make it desirable or even necessary to include, in the future, the Federal Aviation Administration as a funding agency for the continuing regional land use-transportation study. If such inclusion should come about, together with an accompanying change in the scope of the study to include continuing airport system planning activities, the cost allocation formula would be subject to change.

As noted above, it is recommended that UMTA participate in the annual cost of the continuing regional land use-transportation study beginning in calendar year 1972, but that UMTA participation be in the first year limited to the provision of "replacement" dollars for primarily transit oriented work

elements. In succeeding calendar years, UMTA participation may be expected to change as increasing emphasis is placed upon transit planning within the framework of the continuing regional land use-transportation study. In addition, it is recommended that UMTA participate, as set forth below, in the funding of the proposed new regional travel survey in calendar year 1972.

New Regional Travel Survey

The comprehensive regional travel survey proposed to be undertaken within the Region in calendar year 1972 is of direct interest to many levels and agencies of government operating within the Region, but particularly to the Wisconsin and U. S. Departments of Transportation and, within the latter Department, to the Federal Highway and Urban Mass Transportation Administrations. In order to recognize these interests and concomitant responsibilities, it is recommended that the survey costs be shared by the Wisconsin Department of Transportation and the U. S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration. Because all elements of the proposed planning program are closely interrelated, any attempt to allocate costs between the state and the two federal agencies concerned must be somewhat arbitrary. It is recommended that the Urban Mass Transportation Administration finance all of the costs of those work elements which are required primarily, if not solely, for transit planning and plan implementation programs within the Region and particularly for transit operations planning within the Region. These consist of work elements B.5.a, B.5.b., and B.5.c. on Table 6, totaling \$64,000. In addition, it is recommended that UMTA participate in one-quarter of the screen line classification and traffic counts, and in one-half of the home interview survey, of the weekend travel survey and 47 percent of the data coding and editing, of data processing, of contingency checks, and accuracy checks (work elements B.1., B.2., B.6., C., D., E., and F. of Table 6) totaling \$194,635 bringing the total cost of the work elements in which UMTA participates to \$258,635, of which two-thirds, or \$172,423, would be funded by UMTA. It is further recommended that the Federal Highway Administration participate in the financing of the costs of all those remaining work elements not funded entirely by UMTA to the extent of 65 percent of the remaining costs, or \$196,862. Accordingly, the recommended allocation of the total study cost would be as follows:

U. S. Department of Transportation

Urban Mass Transportation Administration	\$172,423
Federal Highway Administration	<u>196,862</u>
Subtotal	\$369,285
Wisconsin Department of Transportation	<u>\$192,215</u>
Total	\$561,500

The foregoing costs could be spread over two calendar years by the agencies concerned should this prove to be necessary.

COMMITTEE STRUCTURE

The committee structure established under the initial regional land use-transportation study and reorganized under the first continuing study is, with two major changes, proposed to be maintained under the second continuing study as the basis for actively involving the various governmental bodies, technical agencies, and private interest groups operating within the Region in the land use-transportation study effort. The SEWRPC Technical Coordinating and Advisory Committee on Regional Land Use-Transportation Planning, as shown on Figure 4, will be continued with its present composition expanded for the second continuing study by the addition of a representation of the Federal Urban Mass Transportation Administration. (See Appendix E for subcommittee structure used for complete Committee membership). In addition to the foregoing, technical coordinating and advisory committees will be established in each county to coordinate the necessary jurisdictional highway plan preparation work. The SEWRPC Intergovernmental and Public Relations Committee, a standing Committee of the Regional Planning Commission, will function as the Intergovernmental Coordinating Committee on Regional Land Use-Transportation Planning, replacing the Intergovernmental Coordinating Committee provided under the original organizational structure for the initial regional land use-transportation study. (See Appendix E for complete membership).

Chapter VII

SUMMARY

The 1962 Federal Aid Highway Act requires that, in order to be eligible for continued federal aid for new highway construction, all urbanized areas in the United States must have underway a continuing, comprehensive, areawide transportation planning process carried on cooperatively by the state and local communities. Following the completion in December of 1966 of an initial regional land use-transportation study, which produced a land use plan and a transportation plan for southeastern Wisconsin, the necessary continuing land use-transportation planning program was founded within the seven-county Region by written memoranda of understanding executed in the spring and summer of 1965 between the State Department of Transportation, Division of Highways; the Southeastern Wisconsin Regional Planning Commission; and the governing bodies of the counties, cities, villages, and towns directly affected by the planning requirements of the 1962 Federal Aid Highway Act.

A Prospectus for a continuing regional land use-transportation study was subsequently published by the Regional Planning Commission in August of 1967. This Prospectus recommended the establishment of a continuing transportation planning effort in southeastern Wisconsin that would meet the requirements of the 1962 Federal Aid Highway Act. The study, mounted pursuant to the Prospectus, became known as the first continuing regional land use-transportation study and was approved for the 42-month period extending from July 1966 through December 1969. Following approval of this Prospectus by all the units and agencies of government concerned, a Study Design for the continuing regional land use-transportation study was prepared. This Study Design outlined the major work elements to be undertaken under that first continuing study. The first continuing land use-transportation planning effort in southeastern Wisconsin was conducted in accordance with that Study Design through December 31, 1969, with the work progress, findings, and recommendations being published annually in the Annual Reports of the Commission.

In December of 1969, a cooperative agreement for the second continuing regional land use-transportation study in southeastern Wisconsin was negotiated by the agencies concerned, in which it was agreed that the continuing study would be conducted in accordance with two basic documents: the first consisting of a general plan setting forth the background for, and framework within which the continuing areawide land use-transportation planning effort was to be conducted, including information on the objectives of the study; the organization for the study; the functions of the study; and the general scope, content, and timing of all recurring inventories, analyses, and forecasts and plan design and implementation efforts. This Study Design constitutes that document. The second type of document was to consist of an annual operations plan which, within the framework of the general plan for the continuing work program, as set forth in this Study Design, is to set forth specifically the work elements to be conducted in each individual calendar year, a description of the specific work elements to be accomplished during the calendar year, the staff and

budgetary requirements for the calendar year, and the allocation of the total study costs between participating agencies. The annual operations plan is to be prepared each year and is subject to review and approval by the State Division of Highways and the U. S. Bureau of Public Roads.

OBJECTIVES OF THE CONTINUING STUDY

The continuing regional land use-transportation study, as established in southeastern Wisconsin, has six specific objectives:

1. To meet the planning requirements of the 1962 Federal Aid Highway Act and the 1964 Federal Urban Mass Transportation Act, so as to continue to qualify the constituent state and local units of government concerned for federal aids in partial support of the development of highway and transit facilities within the Region and to assist in meeting the planning review requirements of Section 204 of the Federal Demonstration Cities and Metropolitan Development Act and the U. S. Bureau of the Budget Circular Memorandum A-95, issued pursuant to the Federal Inter-governmental Cooperation Act.
2. To continuously update and revise the data collected in, and the forecasts prepared under, the initial regional land use-transportation study, so that the full value of these data and forecasts can be realized and development decisions within the Region made intelligently upon current factual information.
3. To periodically update and revise the plans prepared under the initial study effort in light of changing conditions within the Region.
4. To provide for the continued integration of the land use and transportation planning efforts within the Region with other elements of the comprehensive areawide planning effort, including the preparation of watershed development, sewerage and water supply, airport, park, library, and community shelter plan elements.
5. To periodically evaluate alternatives to the adopted plans as significant changes in community values and conditions are identified.
6. Finally, and perhaps most importantly, to convert the plans prepared under the initial study effort into action programs for plan implementation.

The attainment of the foregoing objectives will require a continuation of the close working relationships established under the initial study between the Commission and those agencies of government and private organizations responsible for land use and transportation system development within the Region. It will also require a continuing modification and adaptation of the plans and means of implementation to changing conditions. Local planning and

plan implementation efforts must continue to be closely coordinated with each other and with the efforts of the state and federal agencies involved, using the evolving, documented, long-range regional plans as a basis for such coordination. Moreover, the data collected, the plans prepared, and the plan implementation policies recommended in the initial planning effort must be extended in a meaningful manner as a basis for making development decisions within the Region on a day-to-day basis.

FUNCTIONS

To meet the foregoing objectives, the continuing regional land use-transportation study must perform five basic functions:

1. Surveillance, under which regional development is carefully monitored and analyzed in relation to the adopted land use and transportation plans; the forecasts and basic assumptions underlying these plans; and the techniques used in the preparation and evaluation of those plans, including the various mathematical simulation models.
2. Reappraisal, under which the continued validity and effectiveness of the regional land use and transportation plans, in light of the surveillance findings, are evaluated.
3. Service and plan implementation, in which the regional land use and transportation plans are converted into action programs and the plans and the data and forecasts underlying the plans extended to sponsoring agencies and constituent local units of government as a basis for day-to-day decision-making.
4. Procedural development, in which new techniques are developed and older techniques refined in order to make the continuing land use-transportation study process more efficient and effective.
5. Documentation, or the issuance of an Annual Report presenting the findings and recommendations of the continuing land use-transportation planning process.

It is anticipated that increasing attention will have to be given in the continuing regional land use-transportation study to short-term operations planning problems as opposed to long-term systems planning problems. This increase in the scope of the study will be necessitated by state and federal requirements that the Commission, as the official areawide planning agency for southeastern Wisconsin, prepare annual transportation priority improvement programs for both highway and transit facilities and services and strengthen the multi-modal transportation functions of the Commission providing, as a part of the ongoing plan implementation and service function, assistance to the transit operators within the Region in the area of transit operations planning.

APPENDICES

Appendix A

TYPICAL RESOLUTION ENACTED BY LOCAL UNITS OF GOVERNMENT CONCERNED
PROVIDING FOR THE ESTABLISHMENT OF A CONTINUING LAND USE
TRANSPORTATION PLANNING PROCESS IN THE SOUTHEASTERN WISCONSIN REGION

RESOLUTION

WHEREAS, the (Common Council) (Village Board) (Town Board) (County Board) of the (City) (Village) (Town) (County) of _____, Wisconsin, is aware of the comprehensive transportation planning requirements of the 1962 Federal-Aid Highway Act of 1962, hereinafter referred to as the Act, which provide that:

"It is declared to be in the national interest to encourage and promote the development of transportation systems embracing various modes of transport in a manner that will serve the States and local communities efficiently and effectively. To accomplish this objective the Secretary shall cooperate with the States, as authorized in this title, in the development of long-range highway plans and programs which are properly coordinated with plans for improvements in other affected forms of transportation and which are formulated with due consideration to their probable effect on the future development of urban areas of more than fifty thousand population. After July 1, 1965, the Secretary shall not approve under Section 105 of this title any program for projects in any urban area of more than fifty thousand population unless he finds that such projects are based on a continuing comprehensive transportation planning process carried on cooperatively by States and local communities in conformance with the objectives stated in this section."

and

WHEREAS, the Secretary of the United States Department of Commerce, referred to above, through the Bureau of Public Roads has interpreted "cooperatively" to mean the establishment of a formal procedure - supported by a written memorandum of understanding - between the State and the governing bodies of the local communities within the "Urbanized Area" for carrying out the transportation planning process on a continuing basis in a manner that will insure that the planning decisions are reflective of and responsive to both the programs of the State and the needs and desires of the local communities, and

WHEREAS, the (City) (Village) (Town) (County) of _____ has been designated by the Bureau of the Census as a part of the (Milwaukee) (Racine) (Kenosha) Urbanized Area and therefore subject to the provisions of the Act, and

WHEREAS, the State will be expected to show by suitable evidence that concerted efforts have been made to carry out the intent of the Act with respect to cooperative action by all Urbanized Area political subdivisions, and

WHEREAS, it is of mutual benefit to the municipalities within the Urbanized Area and the State, and also in the public interest to comply with the requirements of the 1962 Federal-Aid Highway Act, and

WHEREAS, the transportation planning process is concerned with all facilities used for the movement of persons and goods (including terminal facilities and traffic control systems) and is based on:

Collection, analysis, and interpretation of pertinent data concerning existing conditions and historic trends, such data relating specifically to the following enumerated elements: (1) economic factors affecting development, (2) population, (3) land use, (4) transportation facilities including those for mass transportation, (5) travel patterns, (6) terminal and transfer facilities, (7) traffic control features, (8) zoning ordinances, (9) financial resources, and (10) social and community value factors such as preservation of open space, historical sites and buildings, parks, and recreational facilities, and environmental amenities and aesthetics.

Establishment of community goals and objectives.

Preparation of forecasts of future area land development and travel patterns.

Selection from alternatives, adoption, implementation, and continuing evaluation, refinement, and updating of land use and transportation and public facility plans, and

WHEREAS, the Southeastern Wisconsin Regional Planning Commission has been created under Section 66.945 of the Wisconsin Statutes to provide advisory areawide planning services in a region consisting of the counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha, and to prepare and maintain a comprehensive plan for that region, and

WHEREAS, the (City) (Village) (Town) (County) of _____ is within _____ County and is represented on the Southeastern Wisconsin Regional Planning Commission by duly appointed Commissioners from said County, and

WHEREAS, the Southeastern Wisconsin Regional Planning Commission is by formal agreement with and financial assistance of the State Highway Commission of Wisconsin engaged in a Regional Land Use-Transportation Study intended to produce a comprehensive transportation plan for the region which includes the (City) (Village) (Town) (County) of _____, and

WHEREAS, the (City) (Village) (Town) (County) of _____ recognizes the Southeastern Wisconsin Regional Land Use-Transportation Study as outlined in the Study Prospectus dated April 1962 and in the contract relating to said study between the State Highway Commission of Wisconsin and the Southeastern Wisconsin Regional Planning Commission dated December 12, 1962, as being reflective of its needs and desires in the continuing,

cooperative, comprehensive transportation planning process required by the 1962 Federal-Aid Highway Act,

NOW THEREFORE, BE IT RESOLVED, that in conformance with the requirements and objectives of the 1962 Federal-Aid Highway Act, the (City) (Village) (Town) (County) of _____ agrees to cooperate with the State Highway Commission of Wisconsin, through the Regional Land Use-Transportation Study of the Southeastern Wisconsin Regional Planning Commission in the preparation of a comprehensive transportation plan and in the continuing planning process for the (Milwaukee) (Racine) (Kenosha) urbanized area and the Southeastern Wisconsin Region.

BE IT FURTHER RESOLVED, that to develop and maintain a meaningful and attainable transportation planning process in conformance with the provisions and objectives stated above, the (City) (Village) (Town) (County) of _____, with the State Highway Commission of Wisconsin, will evidence cooperation by mutual utilization of the organizational structure and working arrangements established for the Regional Land Use-Transportation Study of the Southeastern Wisconsin Regional Planning Commission as a means of continuing coordination of state and local transportation plans on a regional basis.

Passed and Adopted this _____ day of _____, 1965

Approved this _____ day of _____, 1965

Attest: _____

Table A-1

UNITS OF GOVERNMENT BY RESOLUTION
PLEDGING AGREEMENT AND COOPERATION WITH
THE STATE HIGHWAY COMMISSION OF WISCONSIN
THROUGH THE CONTINUING PLANNING PROCESS OF THE
SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

<u>Unit of Government</u>	<u>Date of Adoption</u>
Kenosha County	August 17, 1965
City of Kenosha	June 21, 1965
Town of Somers	June 14, 1965
Town of Pleasant Prairie	August 23, 1965
Milwaukee County	June 16, 1965
City of Cudahy	June 15, 1965
City of Franklin	June 2, 1965
City of Glendale	June 1, 1965
City of Greenfield	June 2, 1965
City of Milwaukee	July 13, 1965
City of Oak Creek	June 15, 1965
City of South Milwaukee	June 15, 1965
City of St. Francis	July 20, 1965
City of Wauwatosa	June 15, 1965
City of West Allis	July 6, 1965
Village of Bayside	June 3, 1965
Village of Brown Deer	June 7, 1965
Village of Fox Point	June 22, 1965
Village of Greendale	June 1, 1965
Village of Hales Corners	June 14, 1965
Village of River Hills	June 25, 1965
Village of Shorewood	June 7, 1965
Village of Whitefish Bay	June 7, 1965
Racine County	July 27, 1965
City of Racine	July 6, 1965
Village of Elmwood Park	June 10, 1965
Village of North Bay	June 14, 1965
Town of Caledonia	June 14, 1965
Town of Mt. Pleasant	June 25, 1965

<u>Unit of Government</u>	<u>Date of Adoption</u>
Ozaukee County	June 28, 1965
City of Cedarburg	June 24, 1965
City of Mequon	August 3, 1965
Village of Thiensville	July 8, 1965
Waukesha County	June 22, 1965
City of Brookfield	September 7, 1965
City of Muskego	July 27, 1965
City of New Berlin	June 22, 1965
City of Waukesha	June 15, 1965
Village of Butler	June 15, 1965
Village of Elm Grove	August 9, 1965
Village of Lannon	June 14, 1965
Village of Menomonee Falls	July 19, 1965
Town of Waukesha	July 9, 1965

Appendix B

COOPERATIVE AGREEMENT FOR A
CONTINUING REGIONAL LAND USE AND TRANSPORTATION STUDY
IN SOUTHEASTERN WISCONSIN

This Cooperative Agreement entered into this _____ day of December 1969 by and between the State Department of Transportation, Division of Highways (herein called the Division of Highways) and the Southeastern Wisconsin Regional Planning Commission (herein called the Planning Commission).

WITNESSETH:

WHEREAS, the Planning Commission desires to fulfill its statutory function and duty of preparing, adopting, maintaining and promulgating a master plan for the physical development of the southeastern region of Wisconsin, consisting of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties; and,

WHEREAS, such a plan shall show, among other things, the Planning Commission's recommendations for an integrated transportation network within the Region; and,

WHEREAS, such a regional transportation network must form an integral part of the state and national transportation network; and,

WHEREAS, a plan for an integrated transportation network within the Region has been prepared by the Planning Commission under a cooperative agreement with the State Highway Commission of Wisconsin, the predecessor agency of the Division of Highways; and

WHEREAS, great changes in population density and land development have taken place in the Region and are expected to continue to take place; and,

WHEREAS, these changes in population density and land development have been accompanied by significant shifts in the relative roles and importance of highway, rail, water, and air transport; by the construction of many new transport and terminal facilities and major traffic generators; and by comparable shifts in transportation demands; and

WHEREAS, a great and continuing need exists to define and quantify these changing transportation demands so that a practical and workable integrated transportation system for the Region can be planned, designed, financed, and constructed; and,

WHEREAS, such activities integrated into an areawide land use-transportation study on a continuing basis are a prerequisite to the use of federal highway aids in the region, and

WHEREAS, this contract relating to such a continuing regional land use-transportation study has received approval of the U. S. Department of Transportation, Federal Highway Administration, Bureau of Public Roads; and,

WHEREAS, a separate contract is annually drawn between the Planning Commission and the U. S. Department of Housing and Urban Development, providing for the use of federal planning assistance funds in partial support of the continuing regional land use-transportation study in accordance with Section 701 of the Federal Housing Act of 1954, as amended, all in coordination with the provisions of this contract; and,

WHEREAS, separate agreements have been executed pursuant to the planning requirements of the 1962 Federal Aid Highway Act, as amended, between the State Highway Commission of Wisconsin and 42 of the 43 affected local units of government within the urbanized areas of the Region designating the Planning Commission as the vehicle through which the required continuing, cooperative, comprehensive, areawide transportation planning effort in southeastern Wisconsin should be carried out;

NOW, THEREFORE, in consideration of these premises and of their mutual and dependent needs, promises, and agreements, the parties hereto contract and agree as follows:

- (1) Scope of Work. The Planning Commission hereby agrees to perform and carry out in a satisfactory and proper manner a continuing, cooperative, comprehensive, areawide transportation planning program for the southeastern Wisconsin Region. This program will be conducted in accordance with two types of documents that are hereby made a part of this agreement. These two types of documents and the Regional Planning Commission Annual Reports are together intended to meet the requirements of Bureau of Public Roads Instructional Memorandum 50-4-68, as amended. The first type of document shall consist of a plan for a continuing work program which sets forth the background for, and framework within which, the continuing areawide transportation planning effort in southeastern Wisconsin is to be conducted, including the objectives of the study, the organization for the study, the functions of the study, and the general scope, content, and timing of all recurring inventories, analyses, and forecasts, and plan design and implementation efforts. This document shall be entitled "Study Design for the Continuing Land Use-Transportation Study" and shall cover a five-year period beginning in a federal census year.

The second type of document shall consist of an annual operations plan, which, within the framework of the plan for a continuing work program, will specifically set forth the work elements to be conducted in individual calendar years. The annual operations plan shall be prepared each year in time to permit review of the proposed plan by the Division of Highways and the Bureau of Public Roads prior to the beginning of the calendar year which the plan is intended to govern. The annual operations plan sets

forth, in addition to a description of the specific work elements to be accomplished during the calendar year, the staff and budgetary requirements for the calendar year and the allocation of the total study costs between the participating agencies.

It is understood that the foregoing work will be performed by the staff of the Planning Commission and/or consultants to be retained by the Planning Commission, and will be closely coordinated with the long-range planning efforts of the Division of Highways and the local units of government within the Region. It is understood that this planning program is intended to refine and maintain current and to promote implementation of a workable plan to guide the staged development of transportation facilities to serve the evolving region and will therefore develop and maintain current data on: the overall potential demand for transportation between the various points within the Region and outside the Region based upon alternative arrangements of spatial activity; the relative demand for alternative means of transportation; the major determinants of these demands; future patterns of economic activity, population distribution, and land use based upon long-term impacts of alternative transportation system arrangements; costs and benefits of alternative generalized systems and specific improvements; and programs for the best utilization of existing transportation facilities and for the construction of new transportation facilities within the Region as may be dictated by the developing needs and available financial resources.

The Division of Highways hereby reserves the right to review and advise upon basic study methods, procedures, and analytical techniques to be applied in carrying out the work. The progress of the work shall be subject to review and inspection by the Division of Highways and the Bureau of Public Roads at such time as either may desire.

The Planning Commission will upon request furnish the Division of Highways, for its use, with copies of data, data analysis and synthesis, studies, reports, surveys, proposals, plans, codes and regulations, maps, charts, schedules, photographs, exhibits, and other materials prepared or developed under the provisions of this agreement subject only to a charge for reproduction or special processing costs.

- (2) Area. The Planning Commission shall perform all of the necessary services provided under this agreement for the entire jurisdictional area of the Planning Commission being that Region comprising the Counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha.
- (3) Material To Be Furnished to the Planning Commission. All information, data, reports, records, and maps which are existing,

available, and necessary for the carrying out of the work outlined above shall be furnished to the Planning Commission by the Division of Highways subject only to a charge for reproduction or special processing costs; and the Division of Highways shall cooperate fully with the Planning Commission in carrying out this agreement.

(4) Personnel.

- (a) The Planning Commission represents that it has or will secure as part of the project cost all personnel and consultant services required to perform the services under this contract. Any consultant services so employed shall be in accordance with the provisions of existing State and Federal regulations. There shall be no discrimination against any employee who is employed in the performance of the services to be performed under the agreement or against any applicant for such employment because of sex, race, religion, color, or national origin. Such personnel exclusive of consultants shall not be employees of, or have any contractual relationship with, the Wisconsin Department of Transportation except that certain personnel of the Wisconsin Department of Transportation may, by mutual agreement by and between the Wisconsin Department of Transportation and the Planning Commission, be assigned to the planning program as service agreement personnel. The salary and expenses of such personnel while assigned to the planning program may be charged to the program costs but be paid by the Division of Highways, with such payments being credited against the Division of Highways share of the study costs. The Planning Commission may upon mutual agreement by and between the Division of Highways and the Planning Commission employ the Division of Highways or other public agencies in a consultant capacity to accomplish any specific item of authorized work in the program.
- (b) All of the services required hereunder shall be performed by the Planning Commission or under the supervision of its personnel, and all personnel engaged in the work shall be fully qualified. The Division of Highways and the Bureau of Public Roads reserve the right to review the qualifications of all personnel, staff, or consultants to be employed in accomplishing the work and to reject any individual or consultant deemed not fully qualified.
- (c) The responsible fiscal agent of the Planning Commission, together with key staff members, shall be bonded in the amount of \$100,000.00.

- (5) Coordinating Committees. The Planning Commission agrees to establish the various committees described in the "Study Design for the Continuing Land Use-Transportation Study" and to convene and maintain records for them. The Wisconsin Department of Transportation shall continue to have representation on the Inter-governmental Coordinating Committee, and the Wisconsin Department of Transportation and Bureau of Public Roads shall continue to have representation on the Technical Coordinating and Advisory Committee as outlined in the Study Design.
- (6) Time of Performance. The time of performance of the work to be undertaken under the provisions of this contract are to be determined by the Study Design and the annual operations plans.
- (7) Financing. Funds necessary for the performance of this study program shall be provided jointly by the Division of Highways, the Bureau of Public Roads, the U. S. Department of Housing and Urban Development, and the Southeastern Wisconsin Regional Planning Commission in accordance with the annual operations plans and with this and related agreements between the Planning Commission and the other contributing agencies. It is agreed that any funds made available for this study from any other source shall be applied to lower the total cost of the study to the aforementioned agencies but shall not affect the percentage participation of the agencies as outlined under Item (8).
- (8) Total Cost and Cost Sharing. The total cost of the continuing study for calendar year 1972 is estimated to be \$467,167.00, of which anticipated service charges and other miscellaneous revenues are estimated to contribute \$45,167.00 for net estimated project cost of \$422,000.00. The Division of Highways and the Bureau of Public Roads together shall provide 45.00 percent of the net project cost, estimated as \$189,900.00 and representing 85 percent of the estimated cost of those portions of the project considered to be principally of a transportation and highway planning nature; the U. S. Department of Housing and Urban Development, 33.00 percent, estimated as \$139,260.00, and representing two-thirds of the estimated cost of those portions of the project considered to be principally of a general community planning nature; and the Planning Commission itself, 22.00 percent, estimated as \$92,840.00. The foregoing cost allocation among the various units and levels of government is an estimate based upon an equitable cost distribution of the major transportation and general community planning work elements between the U. S. Department of Housing and Urban Development Section 701 Planning Grant Program and the Bureau of Public Roads Highway Planning Survey Fund Program.

The total cost of the continuing study for each succeeding calendar year and the proportion of this total cost to be borne by the Division of Highways, the Planning Commission, and any other

contributing agencies shall be mutually agreed upon at such time as each annual operations plan is prepared. Upon approval of the annual operations plan by the Planning Commission and the Division of Highways, such plan shall be deemed to constitute an extension of amendment to this contract with respect to the study costs and cost sharing arrangements.

(9) Method of Payment.

- (a) It is agreed that in accordance with this and related agreements between the Planning Commission and all other contributing agencies, all costs during the progress of the study will be shared by the various units and agencies of government involved on the basis of the predetermined percentages of the total estimated cost as these are set forth in this agreement and in all subsequent annual operations plans approved pursuant to the provisions of this contract, and that, therefore, the Division of Highways will pay on behalf of the Bureau of Public Roads and itself their predetermined share of the total actual annual costs, estimated for calendar year 1970 as 45.00 percent, regardless of individual work element costs.
- (b) It is further agreed, however, that upon completion of this phase of the continuing planning program, and after payment, provision for payment, or reimbursement of all program costs is made, the final cost of the project to each contributing agency shall be determined from the actual cost of the major work elements.
- (c) It is agreed that the Division of Highways and Bureau of Public Roads' share of the study costs will be made available to the Planning Commission in the amount of and upon the receipt of adequately detailed monthly expenditure reports and requisitions submitted to the Division of Highways for reimbursement of its pro-rata share on a work progress basis. The Division of Highways and Bureau of Public Roads' total annual contribution, however, shall not exceed the amount agreed upon for any calendar year in the annual operations plan for that year, without the specific written permission of the Division of Highways. Said monthly reports shall be in such detail as required for the Division of Highways to requisition the Federal share from the Bureau of Public Roads.
- (d) It is agreed that if necessary the Division of Highways may advance funds to carry out the work in accordance with the time schedule and that any such advance in any calendar year will be deducted from the Division of Highways allocated share due in the next following calendar year. Advances for any calendar year shall be the subject of a supplemental

agreement between the Division of Highways and the Planning Commission.

- (e) It is agreed that the Planning Commission shall establish for the program a separate account to which all funds provided for, accruing to, or otherwise received from the federal, state, and local units of government or any other quasi-public or private source under the provisions of this contract shall be deposited, which account shall be hereafter collectively referred to as the "Continuing Transportation Study Program Account."

The Planning Commission shall charge to the Continuing Transportation Study Program Account all eligible costs of the program; and all costs, including paid services and expenses contributed by the Planning Commission and the Division of Highways shall be supported by properly executed payrolls, time records, invoices, contracts, or vouchers evidencing in proper detail the nature and propriety of the charges. All checks, payrolls, invoices, contracts, vouchers, orders, or other accounting documents pertaining to the program shall be clearly identified and readily accessible. The Division of Highways and the Bureau of Public Roads shall have authority to review or audit all such records and the "Continuing Transportation Study Program Account."

- (f) It is the intent and purpose of this contract that the program expenditures and costs shall be confined to those necessary to directly carry out the program, including charges for administrative services, office space, office equipment and supplies, office utilities, transportation, and communications; and no part of the program account shall be used by the Planning Commission for expenditures or charges that are (1) contrary to the provisions of this agreement, (2) not directly for the carrying out of the program, and (3) incurred without the consent of the Division of Highways after written notice of the suspension or termination of any or all of the Division of Highways obligations under the provisions of this contract. Salaries, wages, and expenses of officers and employees of the Planning Commission, other than Commissioners, and employees of the Division of Highways who have been assigned specifically for the purpose of directing or participating in the program and who devote part of their official time directly to the program under specific assignments and respecting whom adequate records of the time devoted to the services performed for the program are maintained may be considered as proper costs of the program to the extent of the time and expenses thus devoted and recorded, if they are otherwise in accordance with the provisions hereof.

- (g) All non-expendable equipment purchased in whole or in part under the initial regional transportation study effort shall continue to be used for the continuing study effort under this agreement without further charges to any of the parties concerned. Upon termination of this or, if applicable, a succeeding agreement, title to such non-expendable equipment and any such equipment purchased in whole or in part as a charge to this agreement shall be vested with the contributing agencies in proportion to their actual cost contribution to the purchase of the equipment. By mutual agreement any contributing agency may acquire clear title to such equipment by reimbursing the other agencies for their pro-rata share of the then current value of the equipment, which value shall be established by agreement between the contributing agencies, including the Bureau of Public Roads. Failure to obtain such mutual agreement shall constitute cause to dispose of the equipment and credit each contributing agency on the basis of their pro-rata share of the total cost of the terminated study. Expendable equipment and materials shall be disposed of in similar manner.
- (h) The Planning Commission shall carry out the program and shall incur obligations against and make disbursements of Continuing Transportation Study Program Account funds only in conformity with the latest annual budget for the program. The annual budget may be revised from time to time, and any such revisions which may affect the total overall cost of the study shall be submitted to the Division of Highways for review and approval. A new annual budget will be prepared each year as a part of the annual operations plan.
- (10) Insurance. The Planning Commission shall maintain valuable document insurance covering the value of study materials, and the cost of this item shall be chargeable to the total project cost.
- (11) Termination of Agreement for Cause. If, through any cause, the Planning Commission shall fail to fulfill in timely and proper manner its obligations under this agreement, or if the Planning Commission shall violate any of the covenants, agreements, or stipulations of this agreement, the Division of Highways shall thereupon have the right to terminate this agreement by giving written notice to the Planning Commission of such termination and specifying the effective date thereof at least sixty days before the effective date of such termination. In such event, copies of all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports pertaining to the study shall, at the option of the Division of Highways, become its property; and the Planning Commission

shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents.

- (12) Changes. The Division of Highways or the Planning Commission may, from time to time, request changes in the scope of the services to be performed hereunder. Such changes, including any increase or decrease in the amount of the Division of Highways cost which are mutually agreed upon by and between the Division of Highways and the Planning Commission, shall be incorporated in written amendments to this contract.
- (13) Identification of Documents. All reports, maps, and other documents completed as a part of this agreement, other than documents prepared exclusively for internal use within the Planning Commission shall carry the following notation on the same page (or in the case of maps, in the same block) containing the name of the Planning Commission:
- The preparation of this (report, map, document, etc.) was financed in part through a joint planning grant from the Wisconsin Department of Transportation, Division of Highways, the U. S. Department of Transportation, Bureau of Public Roads, and the U. S. Department of Housing and Urban Development, under the provisions of the Federal Aid Highway Legislation and Section 701 of the Housing Act of 1954, as amended.
- (14) Progress Reports. Immediately after the close of each calendar month a report on the progress of the work shall be submitted to the Division of Highways, a copy of which will then be transmitted to the Bureau of Public Roads.
- (15) Copyright. No reports, maps, or other documents produced in whole or in part under this contract shall be the subject of an application for copyright by or on behalf of the Planning Commission.
- (16) Plans and Reports. Reports suitable for publication may be prepared by the Planning Commission on study methods, findings, and proposals. No reports, maps, or other documents produced in whole or in part under this contract shall be published under this contract without the review and approval of the Division of Highways and the Bureau of Public Roads. However, where agreement cannot be reached on all elements of such documents, each party shall have the right to publish independently, in which event non-concurrence of the other party shall be set forth in the applicable publication if requested.

- (17) Release of Information Prior to Publication of Report. Neither party shall release information developed under this contract prior to publication of approved pertinent reports except upon written approval of the other party.

IN WITNESS WHEREOF the Division of Highways and the Planning Commission have executed this AGREEMENT as of the date first above written.

Attesting
Witness

SOUTHEASTERN WISCONSIN
REGIONAL PLANNING COMMISSION

Deputy Secretary

BY

Chairman

Date

Attesting
Witness

WISCONSIN DEPARTMENT OF TRANSPORTATION,
DIVISION OF HIGHWAYS

Secretary, Highway Commission

BY

Chairman, Highway Commission

Date

Appendix C

OPERATIONS PLAN FOR THE CONTINUING REGIONAL LAND USE-TRANSPORTATION
STUDY IN SOUTHEASTERN WISCONSIN--1972

Mr. T. J. Hart, Administrator
Division of Planning
Wisconsin Department of Transportation
4802 Sheboygan Avenue
Madison, Wisconsin 53702

Dear Mr. Hart:

In the negotiation of the cooperative agreement governing the conduct of the continuing regional land use-transportation study in southeastern Wisconsin, the agencies concerned agreed that the continuing program would be conducted in accordance with two types of documents that together would meet the requirements of the Federal Highway Administration Instructional Memorandum 50-4-68 as amended. The first type of document was to consist of a general plan for the continuing regional land use-transportation planning program and, as such, was to set forth the background for, and the framework within which, the continuing areawide land use-transportation planning effort was to be conducted, including necessary information of the objectives of the study; the organization for the study; the general functions of the study; and the general scope, content, and timing of all recurring inventory, analysis, forecast, and plan design and implementation efforts. The latest revised version of this document is entitled "Study Design for the Continuing Land Use-Transportation Study--1972 through 1976," and a copy of this study design is attached.

The second type of document was to consist of an annual operations plan, which within the framework of the general plan for the continuing work program as set forth in the Study Design, is to set forth specifically but briefly the work elements to be conducted in each individual calendar year. The annual operations plan is to be prepared each year in time to permit review and approval of the proposed plan by the funding agencies prior to the beginning of the calendar year which the operations plan is intended to govern, is to include, in addition to a description of the specific work elements to be accomplished during the calendar year, the funding requirements for the

Mr. T. J. Hart
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calendar year and a recommended allocation of the costs between the participating agencies.

This letter, together with the proposed budget attached hereto and the Commission 1970 Annual Report, is intended to constitute the operational plan for the continuing regional land use-transportation study in southeastern Wisconsin for calendar year 1972. We hereby request the review and approval of that plan by the state and federal agencies concerned.

In calendar year 1972 the Commission intends to continue to place primary emphasis on the surveillance function. In addition, however, work efforts will be undertaken under the plan reappraisal function, and considerable emphasis will once again be placed on the extension of planning and engineering data on a day-to-day basis as a part of the Commission plan implementation and community assistance activities. Also, work will continue on the preparation of jurisdictional highway system plans for Racine, Walworth and Waukesha Counties. More specifically, the proposed operations plan for calendar year 1972 proposes that the following work be undertaken with respect to each work element outlined in the approved Study Design:

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| 1. Study Design | No work effort is anticipated under this element in 1972. |
| 2. Formulation of Objectives, Principles, Standards | Continued monitoring and evaluation of the validity of the regional development objectives, principles, and standards is anticipated. |
| 3.1.1. General Base Maps | Annual updating of the general base maps will continue in 1972. |
| 3.1.2. Detailed Planning Base Maps | Due to work activities related to the proposed regional inventory of transportation movement and behavioral factors affecting travel habits and patterns (see 3.2.2. below), preparation of additional detailed planning base maps will be required. |
| 3.1.3. Aerial Photography | No work effort is anticipated under this element in 1972. |
| 3.2.1.1. Highway Facilities and Service Levels | Monitoring of service levels will continue during 1972. |
| 3.2.1.2. Transit Facilities and Service Levels | Monitoring of service levels will continue during 1972. |

Mr. T. J. Hart
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| 3.2.1.3. | Transportation
Terminal Facilities | Monitoring of facilities will continue during 1972. |
| 3.2.1.4. | Automobile and Truck
Availability | Monitoring of automobile and truck availability will continue during 1972. |
| 3.2.2. | Inventory of Existing
Transportation Movement
and Behavioral Factors
Affecting Travel Habits
and Patterns | Effort on this work element will be confined to the major regional travel survey anticipated to begin early in 1972 and will be funded separately from the continuing regional land use-transportation study. |
| 3.2.3. | Inventory of Land Use | Since the 1970 land use inventory was completed in 1970, effort on this work element during 1972 will include only general land use inventory monitoring and data handling and displaying. |
| 3.2.4. | Inventory of Community
Plans and Zoning | Effort on this work element during 1972 will include only monitoring of community plans and zoning and the estimated budget reflects actual costs for this work in 1971. |
| 3.2.5.1. | Regional Population
Factors | Since the 1970 Census of Population has been completed the Commission does not expect to expend the extensive efforts required previously to prepare for, and evaluate the results of, the census, therefore, efforts on this work element will be limited to only annual monitoring tasks. |
| 3.2.5.2. | Current Population
Factors | Based on previous years experience, it is anticipated that a somewhat greater staff effort will be required in the area of population estimating including preparation of several techniques. |
| 3.2.5.3. | Regional Economic
Factors | Effort on this work element during 1972 is expected to remain the same as that anticipated in the 1971 operations plan since extensive effort in this work element was carried out in 1971. |

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| 3.2.5.4. | Current Employment Estimates | Effort on this work element is expected to be de-emphasized in 1972 due to the completion of employment forecasts and estimates during 1971. |
| 3.2.6. | Inventory of Public Financial Resources | Effort on this work element is expected to be increased in 1972 because of work efforts on jurisdictional highway plans and previous years cost experience. |
| 3.2.7. | Inventory of Planning Legislation | Effort on this work element is expected to be increased in 1972 to coincide with major reevaluation of the adopted regional plans. |
| 3.2.8. | Inventory of the Natural Resource and Public Utility Base | Effort on this work element will be increased during 1972 for purposes of evaluating the impact of existing urban development on the natural resource and public utility base. |
| 4.1. | Data Conversion, Filing, and Retrieval | Some additional work effort in the area of electronic data processing is expected due to the new regional travel survey in 1972. Increases in estimated cost of this work element are basically required for increases in personnel costs and machine rentals. |
| 4.2.1. | Demographic | Effort on this work element is expected to continue at approximately the same rate as was anticipated in the 1971 operations plan as 1970 census data continues to become available. |
| 4.2.2. | Economic | Effort on this work element is expected to continue at approximately the same rate as was anticipated in the 1971 operations plan as economic sample data becomes available from the 1970 census. |
| 4.2.3. | Public Financial Resources | Effort on this work element is expected to increase due to increased work effort in the inventory phase of the operations plan (see 3.2.6. above). |

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| 4.2.4. | Land Use Demand | Effort on this work element will be decreased during 1972 due to the fact that special analyses as a part of the regional land use inventory were completed during 1971. |
| 4.2.5. | Automobile and Truck Availability | Effort on this work element is expected to continue as a monitoring function during 1972. |
| 4.2.6. | Travel Demand | Effort on this work element will be included in the new regional travel survey (see 3.2.2. above). |
| 4.3.1 | Population | Extensive effort had been anticipated in this work element in 1971, but because the 1970 census data did not become available as rapidly as anticipated much of the work effort in this element had to be delayed until 1972. |
| 4.3.2. | Employment | Effort on this work element is expected to increase substantially in 1972 as a result of the availability of 1970 census data to complete preparation of new employment forecasts begun during 1971. |
| 4.3.3. | Public Financial Resources | No work effort is anticipated under this work element in 1972. |
| 4.3.4. | Land Use Demand | Effort on this work element will include only ongoing monitoring during 1972. |
| 4.3.5. | Automobile and Truck Availability | Effort on this work element will include only ongoing monitoring during 1972. |
| 4.3.6. | Travel Demand | Effort on this work element will include only ongoing monitoring during 1972. |
| 4.4.1. | Demographic Simulation Model | Effort on this work element will decrease in 1972 following the completion of the development of the demographic model in 1971. |
| 4.4.2. | Economic Simulation Model | Effort on this work element is expected to increase in 1972 to include a reevaluation of the model components. |

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| 4.4.3. | Land Use Simulation Model | No work effort in either the reconceptualization or application of this model is anticipated during 1972. |
| 4.4.4. | Traffic Simulation Model | It is anticipated that additional funds will be required for use in traffic model development and application during 1972 as a result of data from the travel survey becomes available. |
| 5.1. | Regional Land Use and Transportation Plan Review and Reevaluation | Work effort on this work element is expected to decrease during 1972 to a basic monitoring task. |
| 6. | Plan Test Evaluation | Effort on this work element is expected to be substantial during 1972 due to the proposed major reevaluation of the adopted regional land use plan. |
| 7. | Plan Selection and Adoption | No work effort on this element is expected in 1972. |
| 8.1. | Extension of Planning and Engineering Data | Effort on this work element annually requires a substantial amount of Commission staff time and fluctuates annually based on the interest and activity within the Region related to the land use and transportation plans. Effort on this work element, however, is expected to decrease substantially over that anticipated in the 1971 operations plans. |
| 8.2. | Transit Plan Implementation | Effort on this work element is expected to remain approximately the same as that anticipated in the 1971 operations plan. |
| 8.3. | Jurisdictional Highway Plans | Effort on this work element is expected to remain approximately the same as that anticipated in the 1971 operations plan. |
| 8.4. | Traffic Corridor Refinement | Effort on this work element is expected to remain approximately the same as that anticipated in the 1971 operations plan. |
| 9.1. | Administrative Costs | Administrative costs are expected to increase during 1972 primarily due to shifts in staff and annual increases. |

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9.2	Office and Equipment Expenses	Based on current expenditures and expected annual increases, the expenses for office and equipment is expected to increase in 1972.
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The net cost of the continuing regional land use-transportation study during the calendar year 1972 is estimated at \$422,000 of which \$189,900, or 45 percent, has been allocated to the Wisconsin Department of Transportation and the U. S. Department of Transportation; Federal Highway Administration, and Urban Mass Transportation Administration. It should also be noted that the Commission has made application to the U. S. Department of Housing and Urban Development for the funding of that agency's portion of the cost of the continuing regional land use-transportation study for calendar year 1972, totaling \$139,260. In addition, a separate application to the Wisconsin Department of Transportation and to the Federal Highway and Urban Mass Transportation Administrations will be prepared and submitted for state and federal grants in support of the new regional travel survey proposed to be undertaken within the Region in 1972.

To assist you and your staff in the review of the 1972 budget request, we suggest that you refer to the revised "Study Design for the Continuing Land Use-Transportation Study--1972 through 1976" and the Commission's 1970 Annual Report. We call your attention specifically to Figure 2 of the study design which consists of a diagram of the major work elements of the continuing land use-transportation study, and to Table 5 of the study design which consists of a summary of the major work program elements.

We trust that this letter and attachments provide all of the information which you and the concerned federal agencies require to review the operations plan for the continuing regional land use-transportation study in southeastern Wisconsin in calendar year 1972. Should you or your staff have any questions concerning this matter, please do not hesitate to call.

Sincerely,

Kurt W. Bauer
Executive Director

KWB/bg
Enclosures

Table C-1

COST ESTIMATES FOR THE CONTINUING REGIONAL LAND USE-TRANSPORTATION STUDY IN SOUTHEASTERN WISCONSIN FOR
CALENDAR YEAR 1972

WORK ELEMENT	STUDY FUNDING			
	SOURCE OF FUNDS			TOTAL
	USDHUD ^{1/}	WIS-DOT-U.S. DOT ^{2/}	LOCAL	
1. STUDY DESIGN (n/a) ^{3/}	--	--	--	--
2. FORMULATION OF OBJECTIVES, PRINCIPLES, AND STANDARDS	330	450	220	\$ 1,000
3. COLLECTION OF BASIC DATA				
<u>3.1 Mapping & Aerial Photography</u>				
3.1.1. General Base Maps	1,650	2,250	1,100	5,000
3.1.2 Detailed Planning Base Maps	1,650	2,250	1,100	5,000
3.1.3 Aerial Photography (n/a)	--	--	--	--
(Subtotal - 3.1 Mapping & Aerial Photography)	(\$ 3,300)	(\$ 4,500)	(\$ 2,200)	(\$ 10,000)
<u>3.2 Inventories</u>				
3.2.1 Inventory of Transportation Facilities:				

WORK ELEMENT	STUDY FUNDING			
	SOURCE OF FUNDS			TOTAL
	USHUD ^{1/}	WIS-DOT U.S. DOT ²	LOCAL	
3.2.1.1 Highway Facilities and Service Levels	\$ 2,805	\$ 3,825	\$ 1,870	\$ 8,500
3.2.1.2 Transit Facilities and Service Levels	1,320	1,800 ⁵	880	4,000
3.2.1.3 Transportation Terminal Facilities	1,650	2,250	1,100	5,000
3.2.1.4 Automobile and Truck Availability	99	135	66	300
3.2.2 Inventory of Existing Transportation Movement and Behavioral Factors Affecting Travel Habits and Patterns ^{4/}	--	--	--	--
3.2.3 Inventory of Existing Land Use	825	1,125	550	2,500
3.2.4 Inventory of Community Plans and Zoning	825	1,125	550	2,500
3.2.5 Demographic & Economic Inventories:				
3.2.5.1 Regional Population Factors	495	675	330	1,500
3.2.5.2 Current Population Factors	825	1,125	550	2,500

WORK ELEMENT	STUDY FUNDING			
	SOURCE OF FUNDS			TOTAL
	USHUD ^{1/}	WIS-DOT-U.S. DOT ²	LOCAL	
3.2.5.3 Regional Economic Factors	\$ 825	\$ 1,125	\$ 550	\$ 2,500
3.2.5.4 Current Employment Estimates	495	675	330	1,500
3.2.6 Inventory of Public Financial Resources	825	1,125	550	2,500
3.2.7 Inventory of Planning Legislation	495	675	330	1,500
3.2.8 Inventory of the Natural Resources and Public Utility Base	1,650	2,250	1,100	5,000
(Subtotal - 3.2 Inventories)	(\$ 13,134)	(\$ 17,910)	(\$ 8,756)	(\$ 39,800)
(Subtotal - 3. Collection of Basic Data)	(\$ 16,434)	(\$ 22,410)	(\$ 10,956)	(\$49,800)
4. ANALYSES AND FORECASTS				
4.1 <u>Data Conversion, Filing, and Retrieval</u>	\$ 45,870	\$ 62,550	\$ 30,580	\$139,000
4.2 <u>Data Analysis</u>				
4.2.1 Demographic	1,650	2,250	1,100	5,000
4.2.2 Economic	1,650	2,250	1,100	5,000

WORK ELEMENT	STUDY FUNDING			
	SOURCE OF FUNDS			TOTAL
	USDHUD ^{1/}	WIS-DOT-U.S. DOT ^{2/}	LOCAL	
4.2.3 Public Financial Resources	\$ 660	\$ 900	\$ 440	\$ 2,000
4.2.4 Land Use Demand	1,650	2,250	1,100	5,000
4.2.5 Automobile and Truck Availability	165	225	110	500
4.2.6 Travel Demand (n/a)	--	--	--	--
(Subtotal - 4.2 Data Analyses)	(\$ 6,600)	(\$ 9,000)	(\$ 4,400)	(\$ 20,000)
<u>4.3 Forecasts</u>				
4.3.1 Population	\$ 3,300	\$ 4,500	\$ 2,200	\$ 10,000
4.3.2 Employment	2,475	3,375	1,650	7,500
4.3.3 Public Financial Resources (n/a)	--	--	--	--
4.3.4 Land Use Demand	990	1,350	660	3,000
4.3.5 Automobile and Truck Availability	165	225	110	500
4.3.6 Travel Demand	165	225	110	500
(Subtotal - 4.3 Forecasts)	(\$ 6,270)	(\$ 8,550)	(\$ 4,180)	(\$ 19,000)
<u>4.4 Model Application</u>				
4.4.1 Demographic Simulation Model	\$ 330	\$ 450	\$ 220	\$ 1,000

WORK ELEMENT	STUDY FUNDING			
	SOURCE OF FUNDS			TOTAL
	USDHUD ^{1/}	WIS-DOT-U.S. DOT ^{2/}	LOCAL	
4.4.2 Regional Economic Simulation Model	\$ 825	\$ 1,125	\$ 550	\$ 2,500
4.4.3 Land Use Simulation Model (n/a)	--	--	--	--
4.4.4 Traffic Model	990	1,350	660	3,000
(Subtotal - 4.4 Model Application)	(\$ 2,145)	(\$ 2,925)	(\$ 1,430)	(\$ 6,500)
(Subtotal - 4. Analyses and Forecasts)	(\$ 60,885)	(\$ 83,025)	(\$ 40,590)	(\$184,500)
5. PLAN DESIGN & PLAN REVIEW & REEVALUATION				
5.1 <u>Regional Land Use and Transportation Plan Review and Reevaluation</u>	\$ 1,650	\$ 2,250	\$ 1,100	\$ 5,000
(Subtotal - 5. Plan Design)	(\$ 1,650)	(\$ 2,250)	(\$ 1,100)	(\$ 5,000)
6. PLAN TEST AND EVALUATION	\$ 3,300	\$ 4,500	\$ 2,200	\$ 10,000
7. PLAN SELECTION AND ADOPTION (n/a)	--	--	--	--
8. PLAN IMPLEMENTATION				
8.1 <u>Extension of Planning and Engineering Data</u>	\$ 13,860	\$ 18,900	\$ 9,240	\$ 42,000
8.2 <u>Transit Plan Implementation</u>	\$ 7,920	\$ 10,800 ⁵	\$ 5,280	\$ 24,000
8.3 <u>Jurisdictional Highway Plans</u>	\$ 9,240	\$ 12,600	\$ 6,160	\$ 28,000

WORK ELEMENT	STUDY FUNDING			
	SOURCE OF FUNDS			TOTAL
	USDHUD ^{1/}	WIS-DOT-U.S. DOT ^{2/}	LOCAL	
8.4 <u>Traffic Corridor Refinement</u>	\$ 1,980	\$ 2,700	\$ 1,320	\$ 6,000
(Subtotal - 8. Plan Implementation)	(\$ 33,000)	(\$ 45,000)	(\$ 22,000)	(\$100,000)
9. ADMINISTRATIVE COSTS AND OFFICE AND EQUIPMENT EXPENSES	\$	\$	\$	\$
9.1 <u>Administrative Costs</u>	\$ 16,054	\$ 21,891	\$ 10,702	\$ 48,647
9.2 <u>Office and Equipment Expenses</u>				
9.2.1 Rent	9,147	12,474	6,099	27,720
9.2.2 Office, Drafting and Data Processing Supplies	5,280	7,200	3,520	16,000
9.2.3 Reproduction	2,805	3,825	1,870	8,500
9.2.4 Telephone	1,980	2,700	1,320	6,000
9.2.5 Postage	495	675	330	1,500
9.2.6 Travel	1,155	1,575	770	3,500
9.2.7 Publication	1,650	2,250	1,100	5,000
(Subtotal - 9.2 Office and Equipment Expenses)	(\$ 22,512)	(\$ 30,699)	(\$ 15,009)	(\$ 68,220)
(Subtotal - 9. Administrative Costs and Office and Equipment Expenses)	(\$ 38,566)	(\$ 52,590)	(\$ 25,711)	(\$116,867)

WORK ELEMENT	STUDY FUNDING			
	SOURCE OF FUNDS			TOTAL
	USDHUD ^{1/}	WIS-DOT-U.S. DOT ²	LOCAL	
GROSS TOTAL PROJECT COSTS	\$154,165	\$210,225	\$102,777	\$467,167
<u>Anticipated Miscellaneous Revenues</u>	14,905	20,325	9,937	45,167
NET PROJECT COSTS	\$139,260	\$189,900	\$ 92,840	\$422,000
Percent of Total	33.00	45.00	22.00	100.00

¹U. S. Department of Housing and Urban Development.

²Wisconsin Department of Transportation-Division of Highways (Wis. DOT)-U. S. Department of Transportation, Federal Highway Administration (FHWA), see Footnote 5 for cost sharing between Wisconsin Department of Transportation and U. S. Department of Administration, Urban Mass Transportation Administration (UMTA) for work element 3.2.1.2 and 8.2

³Work element not scheduled in calendar year 1972, or scheduled as a part of a separate Commission work program.

⁴Work proposed to be conducted as a part of a second regional origin and destination study which is scheduled to begin during calendar year 1972 and be completed during calendar year 1973, and is proposed to be funded separately from the continuing regional land use-transportation study.

⁵Cost for work element 3.2.1.2--Transit Facilities and Service Levels and 8.2--Transit Plan Implementation are allocated as follows:

	USHUD	UMTA	FHWA	WIS. DOT	LOCAL	TOTAL
3.2.1.2	1,320	1,347	--	453	880	4,000
8.2	7,920	8,080	--	2,720	5,280	24,000
Total	9,240	9,427	--	3,173	6,160	28,000
	33%	34%	--	11%	22%	--

Appendix D

Table D-1

SUMMARY LIST OF MAJOR DATA FILES

Card No.	Description	Program/ Project	Year Collected	Primary/ Secondary Source	Year Updated	Detail List Unit
001	Person and Household Characteristics Data for Urbanizing Areas - Home Interview.	P-23	1963	P	--	HH
00P	Person and Household Characteristics; for Outlying Areas - Postal Questionnaire.	P-23	1963	P	--	HH
002	Person Trip Data for Urbanizing Areas - Home Interview.	P-23	1963	P	--	Pers. Trip
007	Person Trip Data for Outlying Areas - Postal Questionnaire.	P-23	1963	P	--	Pers. Trip
003	Vehicle Trip Data for Trips Entering and Leaving the Region - Roadside Interview.	P-23	1963	P	--	Veh. Trip
004	Truck and Taxi Characteristic and Trip Data for Urbanizing Areas - Operator Interview.	P-23	1963	P	--	Veh. Trip
008	Truck and Taxi Characteristic and Trip Data for Outlying Areas - Postal Questionnaire.	P-23	1963	P	--	Veh. Trip
005	Household History Data for Urbanizing Areas - Personal Interview.	P-23	1963	P	--	HH
006	Personal Opinion Survey Data for Urbanizing and Outlying Areas - Postal Questionnaire.	P-23	1963	P	--	Person
245	Vehicle Data for Trips Entering and Leaving West Bend - Roadside Interview.	P-23	1963	S	--	Veh. Trip

Table D-1 (Continued)

Card No.	Description	Program/ Project	Year Collected	Primary/ Secondary Source	Year Updated	Detail List Unit
065	Person and Vehicle Data for Trips Entering and Leaving General Mitchell Airport - Roadside Interview	P-70	1968	P	--	Pers. Tri
224	Freeway Flyer Person Trip Data For Mayfair Line - Personal Interview.	P-23	1964	P	1967	Pers. Tri
010	Freeway Flyer Person Trip Data for Mayfair and Bayshore Lines - Personal Interview.	P-70	1967	P	--	Pers. Tri
012	Freeway Flyer Person Trip Data for Treasure Island Capitol Drive, Treasure Island West Allis, and Hales Corners Lines - Personal Interview.	P-70	1969	P	--	Pers. Tri
488	Person Trip Data for Urbanizing and Outlying Areas - Forecast for Years 1970, 1980, and 1990.	P-23	Forecast	P	--	Pers. Tri
495	Vehicle Trip Data for Trips Entering and Leaving the Region - Forecast for Years 1970, 1980, and 1990.	P-23	Forecast	P	--	Veh. Trip
521	Truck Trip Data for Urbanizing and Outlying Areas - Forecast for Years 1970, 1980, and 1990.	P-23	Forecast	P	--	Veh. Trip
336	Auto and Truck Availability Data for 1963.	P-23	1963	P & S	Annually	Veh.
489	Auto and Truck Availability Data - Forecast for Years 1970, 1980, and 1990	P-23	Forecast	P	--	Veh.
319	Arterial Highway Network Inventory Data for 1963.	P-23	1963	P & S	Annually	Link
320	Transit Network Inventory Data for 1963.	P-23	1963	S	Annually	Link
154	Vehicle Classification Inventory Data for 1963.	P-23	1963	P	--	Veh.
155	Traffic Count Inventory Data for 1963.	P-23	1963	P & S	Triennial	Link
160	Arterial Highway Network Description Data for Years 1970, 1980, and 1990 And Transit Network Description Data.	P-23	Forecast	P	Annually	Link

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Card No.	Description	Program/ Project	Year Collected	Primary/ Secondary Source	Year Updated	Detail List Unit
535	Arterial Highway Network Construction Cost Data for 1990.	P-23	1965	P	--	Link
496	Arterial Highway Traffic Assignment Volume Data for Years 1970, 1980, and 1990.	P-23	Forecast	P	--	Link
035	Person and Vehicle Data for Trips Entering and Leaving Mauthe Lake State Park and Terry Andrae State Park - Roadside Interview.	P-70	1968	P	--	Pers. Trip
036	Person and Vehicle Data for Trips on the Root River Parkway between W. Grange Avenue and S. 76th Street - Roadside Interview.	P-70	1968	P	--	Pers. Trip
015	Land Use Inventory Update	P-70	1968	P	1968	1/4 Sec.
018	Detailed Land Use Milwaukee River Watershed (Outside Region)	P-70	1968	P	--	1/4 Sec.
020	1963 Detail Land Use Inventory	P-23	1963	P & S	1967	1/4 Sec.
021	Potential Park & Open Space Inventory	P-23	1964	P	1968	1/4 Sec.
029	Public & Private Recreation Area Inventory	P-70	1967	S	--	Civ. Div.
168	Inventory of Existing Recreation Areas for Region	P-23	1964	S	1968	1/4 Sec.
169	Inventory of Existing Historic Sites for Region.	P-23	1964	S	--	1/4 Sec.
181	City of Milwaukee Detail Land Use Inventory.	P-23	1964	S	--	1/4 Sec.
190	City of Milwaukee, Racine & Kenosha, CBD Land Use Block Totals	P-23	1963	S	--	1/4 Sec.
203	1963 Land Use Summary by County, Town Range, by Land Use	P-23	1968	P	--	Tn, Range
207	1963 Land Use Summary by Traffic District & Zone	P-23	1964	P	--	Dist. Zone
258	1963 Land Use Population Analysis by Zone	P-23	1964	P	--	Zone
333	1963 Urban Developed Land by Quarter Section	P-23	1964	P	--	1/4 Sec.

Card No.	Description	Program/ Project	Year Collected	Primary/ Secondary Source	Year Updated	Detail List Unit
470	Plan A - Existing & Planned Land Uses (Controlled Existing Trend Plan 1990)	P-23	1965/66	P & S	--	1/4 Sec.
476	Plan A - Land Use Summary By Zone	P-23	1965/66	P & S	--	1/4 Sec.
504	Plan B - Existing & Planned Land Uses (Corridor Plan 1990)	P-23	1965/66	P & S	--	1/4 Sec.
507	Plan B - Land Use Summary by Zone	P-23	1965/66	P & S	--	Zone
514	Plan C - Existing & Planned Land Uses (Satellite City Plan 1990)	P-23	1964/66	P & S	--	1/4 Sec.
517	Plan C - Land Use Summary By Zone	P-23	1964/66	P & S	--	Zone
544	Plan D - Existing & Forecast Land Uses (Uncontrolled Sprawl 1990)	P-23	1966	P & S	--	1/4 Sec.
547	Plan D - Land Use Summary by Zone	P-23	1966	P & S	--	Zone
704	Plan E - Existing & Planned Land Uses (Recommended Regional Land Use Plan 1990)	P-23	1966	S	--	1/4 Sec.
707	Plan E - Land Use Summary By Zone	P-23	1966	S	--	Zone
714	Plan F - Existing & Planned Land Uses (Recommended Regional Land Use Plan 1980)	P-23	1966	S	--	1/4 Sec.
717	Plan F - Land Use Summary by Zone	P-23	1966	S	--	Zone
724	Plan G - Existing & Planned Land Uses (Recommended Regional Land Use Plan 1970)	P-23	1966	S	--	1/4 Sec.
727	Plan G - Land Use Summary by Zone	P-23	1966	S	--	1/4 Sec.
730	Plan E - Environmental Corridor Lands (1990 Recommended Plan)	P-23	1966	S	--	1/4 Sec.
733	Plan E - Neighborhood Delineations of 1990 Recommended Plan.	P-23	1966	P	--	1/4 Sec.
821	Mass Transit Study Land Use & Structure Condition Inventory	MT52	1969	P	--	1/4 Sec.

Card No.	Description	Program/ Project	Year Collected	Primary/ Secondary Source	Year Updated	Detail List Unit
E019	1967 Detailed Land Use Inventory	P-70	1967/68	P	--	1/4 Sec.
1458	1963-67 Existing Land Use Data	P-70	1967/68	P & S	--	1/4 Sec.
023	Quarter Section Closure & Area	P-70	1968	P	1969	1/4 Sec. Corner
070	Land Use Design Model Input	PD-1	1963/67	P & S	1969	1/4 Sec.
213	Regional Economic Model Data Catalog	P-23	1963/64	P & S	--	SIC Group
433	Land Use Simulation Model	P-23	1963/64	P & S	--	Major Use
485	Soils Data for Land Use Models	P-23	1963/65	P	--	Soils Type
361	Regional Water Quality Study Input	P-23	1963	P	Annual	Sampling Station
388	Water Use Analysis by Watershed by Station by Parameter	P-23	1965	P	--	Sampling Station
432	Water Quality Analysis by Watershed, by Station, by Parameter	P-23	1966	P	--	Sampling Station
022	Kenosha Planning District Land Use Inventory	P-42	1966	P	--	Parcel
032	Inventory of Local Planning Agencies	P-70	1967	S	--	Cil. Div.
289	Commun. Plans & Zoning - Total Area Figures	P-23	1964	S	1967	1/4 Sec.
385	Existing School and School Site Inventory	P-23	1965	S	1968	Tn Range
013	Historic Platting Inventory	P-70	1968	P	--	1/4 Sec.
132	Industrial Survey Summary	P-23	1964	P	--	Company
143	Wisconsin Industrial Comm. Employment Data	P-23/ P-70	1964	P	1969	Company

Card No.	Description	Program/ Project	Year Collected	Primary/ Secondary Source	Year Updated	Detail List Unit
152	Land Use Assessment - Full Value	P-23/ P-70	1964	S	1969	Civil Di
156	Personal Property Value, Land-Use	P-23/ P-70	1964	S	1969	Civil Di
250	Financial Resources Tax Structure	P-23	1964	S	1968	Civil Di
267	Intercensal Population Estimate for Cities, Towns, and Villages in Each County	P-23	1964	P	Annually	Civil Di
270	Number of households by Family Size Group	P-23	1964	P	--	Traffic Zone
275	Financial Resources Receipts and Disbursements	P-23	1964	S	1968	County
317	Economic Data from Survey of Current Business	P-23	1964	S	--	SIC Code
370	Current & Projected Population Figures	P-23	1965	P	--	Traffic Zone
523	Population Forecasts by Age & Sex for Southeastern Wisconsin Region	P-23	1966	P	--	County
E100	Census Coding Guide	P-90	1968	P	1970	1/4 Sec
106	1963 Address Coding Guide	P-23	1963	S	1969	1/4 Sec
040	1970 Census Coding Guide	P-116	1969	S	--	Block Face

Source: SEWRPC.

Appendix E

COMMITTEE MEMBERSHIP LISTS

Intergovernmental and Public Relations Committee of the
Southeastern Wisconsin Regional Planning Commission

Eugene Hollister, Chairman. Member, Walworth County Board of Supervisors;
Chairman, Walworth County Park and Planning
Commission; Commissioner, SEWRPC.

Theodore F. Matt, Vice Chairman . . . Member, Waukesha County Board of Supervisors;
Member, Waukesha County Park and Planning
Commission; Member, Town of Oconomowoc Plan
Commission; Commissioner, SEWRPC.

George C. Berteau Commissioner and Chairman, SEWRPC

Ralph J. Huiras Chairman, Ozaukee County Board of Supervisors;
Commissioner, SEWRPC.

Donald Knapp. Member, Kenosha County Board of Supervisors;
Commissioner, SEWRPC.

Richard C. Nowakowski Member, Milwaukee County Board of Supervisors;
Commissioner, SEWRPC.

Joseph A. Schmitz Chairman, Washington County Board of
Supervisors; Member, Village of Germantown
Plan Commission; Commissioner, SEWRPC.

Garth R. Seehawer Member, Racine County Board of Supervisors;
Commissioner, SEWRPC.

Technical Coordinating and Advisory Committee on
Regional Land Use-Transportation Planning

The Technical Coordinating and Advisory Committee on Regional Land Use-Transportation Planning is divided into several functional subcommittees. Members of the Committee often serve on more than one subcommittee. The following key identifies the various functional subcommittees: 1) Land Use Subcommittee; 2) Highway Subcommittee; 3) Socio-Economic Subcommittee; 4) Natural and Recreation-Related Resources Subcommittee; 5) Transit Subcommittee; 6) Utilities Subcommittee; 7) Traffic Studies, Models, and Operations Subcommittee.

Stanley E. Altenbern (5). President, Wisconsin Coach Lines, Inc.,
Waukesha

Jack M. Bennett (1, 4). City Engineer, City of Franklin

Richard Brandt (1). Manager, Markets and Sales Program,
Wisconsin Gas Company, Milwaukee

Robert W. Brannan (2, 5). Transportation Director, Milwaukee County
Expressway and Transportation Commission

Robert R. Brown (5) General Superintendent, The Milwaukee Road,
Milwaukee

Martin E. Bruening (5, 7) Traffic Engineer, City of Milwaukee

Thomas R. Clark (2, 5, 7) Urban Planning Supervisor, District 2,
Division of Highways, Wisconsin Department
of Transportation

Arnold L. Clement (1, 2). Planning Director and Zoning Administrator,
Racine County

Robert W. Dachelet (1, 6) City Engineer, City of West Bend

Vencil F. Demshar (2) County Highway Commissioner, Waukesha County

Russell A. Dimick (2) City Engineer, City of Cedarburg

Arthur Doll (1, 4). Bureau of Outdoor Recreation Planning,
Wisconsin Department of Natural Resources,
Madison

John L. Doyne (1, 5). County Executive, Milwaukee County

Michael Drozd (4) County Agricultural Agent, Ozaukee County

Gerald M. Elliott (1, 3). Director of Business Research, Wisconsin
Telephone Company, Milwaukee

Thomas G. Frangos (1, 4, 6) Administrator, Division of Environmental
Protection, Wisconsin Department of Natural
Resources, Madison

John M. Fredrickson (1, 2, 3, 4). . . Village Manager, Village of River Hills

Kenneth E. Fry (3, 5) Commissioner, Department of City Development,
City of Milwaukee

Arne L. Gausmann (1, 2, 3, 4, 5, 7) : Director, Bureau of System Planning,
Wisconsin Department of Transportation,
Madison

Norman N. Gill (1, 3) Executive Director, Citizens Governmental
Research Bureau, Milwaukee

Herbert A. Goetsch (2, 4, 6). Commissioner of Public Works, City of Milwaukee

Howard W. Gregg (2, 4). General Manager, Milwaukee County Park
Commission

J. H. Groenier (2, 5, 7). Planning and Research Engineer, U. S. Bureau
of Public Roads

Douglas F. Haist (1, 2, 3, 4, 5, 7) . Director, Bureau of Policy Planning, Wisconsin
Department of Transportation, Madison

R. William Harms (1). Meteorologist in Charge, U. S. Department of
Commerce, Milwaukee

Roger A. Harris (1, 2, 6) Director of Public Works, City of Cudahy

Sebastian J. Helfer (3) Director, Campus Planning and Construction,
Marquette University, Milwaukee

Bill R. Hippenmeyer (1, 2, 3, 5). . . Director of Planning, City of Oak Creek

Lester Hoganson (2, 6). City Engineer, City of Racine

Donald K. Holland (2, 6). Director of Public Works, City of Kenosha

Karl B. Holzwarth (2, 4). Parks Director, Racine County

Maurice J. Hovland (4). County Agricultural Agent, Washington County

Stanley Ihlenfeldt (1, 4) County Agri-Business Agent, Walworth County

Paul G. Jaeger (1, 2, 4). County Agricultural Agent, Kenosha County

Paul Johnson (1, 4) Area Conservationist, U. S. Soil Conservation
Service, Waukesha

Cyril Kabat (1, 4). Assistant Director, Bureau of Research,
Division of Services, Wisconsin Department
of Natural Resources, Madison

Al J. Karetski (1, 2). Director, Bureau of Local and Regional Planning, Wisconsin Department of Local Affairs and Development, Madison

Maurice L. Kimbrough (2, 7). City Engineer, City of West Allis

Robert Kolstad (1, 2, 4) City Planner, City of Kenosha

Thomas A. Kroehn (4, 6). Regional Director, Division of Environmental Protection, Wisconsin Department of Natural Resources, Milwaukee

Francis D. Kuckuck (2, 6). City Engineer, City of Wauwatosa

Wilmer Lean (2, 7) County Highway Commissioner, Walworth County

Ray D. Leary (3, 6). Chief Engineer and General Manager, Milwaukee Metropolitan Sewerage Commissions

Elwin G. Leet (1, 3, 4). County Agricultural Agent, Racine County

Russell Leitch (3) Trade Specialist, Field Services, U. S. Department of Commerce, Milwaukee

William L. Marvin (2, 7) Director, Traffic Engineering Department, American Automobile Association, Madison

Henry M. Mayer (5) Operations Manager, Milwaukee and Suburban Transport Corporation, Milwaukee

Elam E. McElroy (3). Manager, Economic Research Division, Metropolitan Milwaukee Association of Commerce

George Mead (3). Marketing Research Manager, The Milwaukee Journal

Robert J. Mikula (4) County Landscape Architect, Milwaukee County Park Commission

Leo Mortensen (1, 3) Area Director, U. S. Department of Housing and Urban Development

Melvin Noth (2, 6) Director of Public Works, Village of Menomonee Falls

Robert H. Paddock (2, 5, 7). Division Engineer, Bureau of Public Roads, U. S. Department of Transportation, Madison

Jack Peters (1, 2, 3, 4, 5, 6) Assistant Director for Planning and Relocation, U. S. Department of Housing and Urban Development

Jim Popp (1, 2, 7) Acting Chief of Planning, Federal Aviation Administration, U. S. Department of Transportation, Chicago

John B. Prince (6) Electrical Systems Engineer, Wisconsin Electric Power Company, Milwaukee

Carl H. Quast (1, 2) Planning Director, Department of City Development, City of Milwaukee

Richard Repert (3) Associate for United Community Services Planning, United Community Services of Greater Milwaukee

Albert P. Rettler (2, 7) County Highway Commissioner, Washington County

Donald Roensch (1, 6). Director of Public Works, City of Mequon

William D. Rogan (1, 4). County Agri-Business Agent, Waukesha County

Gordon Rozmus (1, 3) Associate Planner, City of Wauwatosa

Dr. Eric Schenker (5, 7) Professor, Department of Economics, University of Wisconsin-Milwaukee

Donald H. Schwenk (2). City Manager, Central Greyhound Lines, Milwaukee

John A. Seefeldt (2, 3) Municipal Port Director, City of Milwaukee
Harvey Shebesta (2, 5, 7) District Engineer, District 9, Division
of Highways, Wisconsin Department of
Transportation
Earl G. Skagen (2, 4, 7). County Highway Commissioner, Racine County
Leland C. Smith (4) County Horticultural Agent, Kenosha County
Walter J. Tarmann (1, 4). Executive Director, Waukesha County Park
and Planning Commission
Rodney Vanden Noven (6) Director of Public Works, City of Waukesha
John P. Varda (7) General Manager, Wisconsin Motor Carriers
Association, Madison
Leo Wagner (2). County Highway Commissioner, Kenosha County
Hampton Waring (1, 3) Engineer of Plant Extensions, Wisconsin
Telephone Company, Milwaukee
Frank A. Wellstein (1, 2, 4, 5, 6, 7). City Engineer, City of Oak Creek
Sylvester N. Weyker (2) County Highway Commissioner, Ozaukee County
Henry B. Wildschut (2, 7) County Highway Commissioner and Director
of Public Works, Milwaukee County
Thomas N. Wright (1, 3) Director of Planning, City of Racine

SEWRPC Staff:

Kurt W. Bauer (6) Executive Director
William E. Creger (2, 5, 7) Chief Transportation Planning Engineer
Robert L. Fisher (1, 4) Chief Land Use Planner

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